Sniffter Quick Start Guide

Ethernet
Shielded RJ45 connector for 10-BaseT TCP/IP networks. Yellow link and green activity LEDs.

Serial
Serial port for interfacing to serial devices and installing software updates.

Test A and **Test B**
Dual RJ45 connectors for testing cables and tone generation.

Power
A 5.5mm power connector, 5-9VDC.

The Sniffter displays information on a 20-character wide, 4-line, backlit LCD display. Press and release the power button to turn the Sniffter on. To turn the backlight on or off, hold the power button down for 3 seconds (until the backlight changes) and then release.

```
You are lost in a
maze of twisty
passages, all alike.
Action: ▲N ▼S ◀W ▶E
```
Triangles Indicate Actions

The display uses solid triangles to indicate what will happen if the user presses any of the buttons. When there is more information than can fit on the screen, the Sniffter places up and/or down triangles on the right side of the screen indicating that scrolling in that direction will display more text.

```
HW Version: B.0
    Level: 1
 Extension: 0x00
  SN: 12005282344
```
Example of Scrolling Text

Menus are similar to scrolling text, but have an additional right triangle in the left column pointing to the selected menu option. Use the up and down buttons to move the triangle through the menu options and scroll. Use the right button to accept the selected menu option. Use the left button to exit to the previous screen.

```
[Sniffter Main Menu]
▶Network Tools
 Cable Tester
 Cable Ref/Tone Gen
```
Main Menu

Quickly Testing An Ethernet Jack

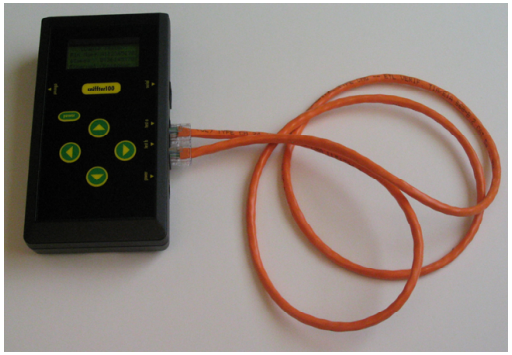
Turn the Sniffter on. Press the right arrow twice to go to the Main Menu and then Auto-Test Internet. Disconnect an Ethernet cable from the back of a PC and connect it to the Sniffter's Ethernet port, or use the blue Ethernet cable to connect the Sniffter to any Ethernet jack.

Once connected you'll soon learn whether you have a working network connection and what the up and download speeds are. Press the right arrow to continue, and then select any of the other network tests for additional information on the connection.

Have questions or need help? Call Tom Collins at 707-265-6622 or email him at tom@tomlogic.com.

Cable Testing

Note that the Sniffter is only testing cable **continuity** (whether a signal reaches the other end of the cable). It cannot detect split pairs or cross-talk on a cable.



```
Insert cable to test
info Test A & Test B
* No Live Circuits *
◀ Exit    Continue ▶
```

To begin a test, insert a cable into the Sniffter's Test A and Test B jacks. You can test in-wall wiring by plugging long cables (that have already been tested) into each wall jack and connecting them to the Sniffter.

The following screen shots show examples for various cable types. The pin map provides a detailed pin-out of the cable. The paired numbers (A above B) represent a connection. For example, in the Ethernet Crossover shot, the first pair of numbers tell you that "pin 1 on Test A goes to pin 2 on Test B".

```
   [Cable Tester]
Pin Map→ A:12345678
↓Type↓   B:36178245
Ethernet Crossover
```
Special Cable Type

```
   [Cable Tester]
Pin Map→ A:12345678
↓Type↓   B:12345678
Standard 4-pair
```
"Straight Through" cable

```
   [Cable Tester]
Pin Map→ A:12345678
↓Type↓   B: 765432
Flipped 3-pair
```
"Flipped" Cable

```
   [Cable Tester]
Pin Map→ A:12345678
↓Type↓   B:
No connection
```
Nothing connected to tester

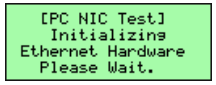
```
   [Cable Tester]
Pin Map→ A:12345678
↓Type↓   B:1 34 67
Unknown Cable Type
```
Open Pins

```
   [Cable Tester]
Pin Map→ A:12345678
↓Type↓   B:* 3* 678
Shorted Cable
```
Shorted Pins (pins 1 and 4 on A go to multiple pins on B)

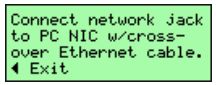
Test PC NIC

In addition to testing the network, it is possible to use the Sniffter to test a computer's NIC (network interface card). With the **Test PC NIC** menu option, you can check for a network link to the PC, see if the PC attempts to dynamically acquire an IP address with DHCP, and find out whether the PC responds to ping packets.

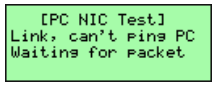
Note that this test will not work if the computer is configured to use a static IP address instead of DHCP. It may be necessary to connect the cables and start the PC NIC Test on the Sniffter **before** turning on the computer to test.



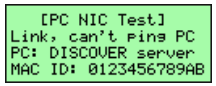
The Sniffter requires about 5 seconds to set itself up the first time you run the PC NIC Test.



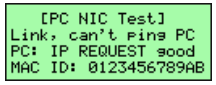
The Sniffter displays this screen until there is a physical connection to a functional, powered PC NIC. Use a crossover Ethernet cable (like the orange one that ships with the Sniffter) to connect the Sniffter's network jack directly to the Ethernet port on the PC's NIC.



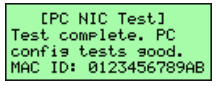
Once link is established (**Link**), the Sniffter waits for the PC to ask for an IP address via DHCP (the Dynamic Host Configuration Protocol). It will continue to display **can't ping PC** until the PC responds to the Sniffter's ping packets.



The PC will initially broadcast a "DISCOVER" message, asking for an IP address from any available DHCP server. The Sniffter emulates a DHCP server and responds with an offer of 10.0.0.10. When the Sniffter receives packets from the PC, it will show the PC's 12-character MAC address on the last line of the display.



If the PC accepts the DHCP server's offer, it will request the address. This screen shows the PC accepting the Sniffter's offer and requesting the address. If the display reads **IP REQUEST bad**, then the PC is asking for a different, incorrect, IP address.



If the PC successfully configures itself with the IP address and starts responding to the Sniffter's ping packets, the display will show **PC config tests good**. The test is complete and the PC should work fine on a DHCP-based network.

Troubleshooting during the PC NIC Test

During the PC NIC Test, the Sniffter will attempt to ping the PC. For additional confirmation, you can try pinging the Sniffter from the PC. On a Windows PC, bring up a command-line or DOS prompt and type "ping 10.0.0.2". If the PC receives responses from the Sniffter (i.e., the pings don't time out), the PC's NIC and Internet (TCP/IP) configuration are good.

You can also try using the winipcfg and ipconfig utilities on Windows PCs to check the status of the NIC and Internet (TCP/IP) settings.

	Symptom	Explanation/Additional Troubleshooting Steps
1	Computer is on but Sniffter is stuck on the "Connect network jack" screen (no link).	Make sure the crossover cable is wired properly (using Sniffter's Cable Test). Make sure the crossover cable connects the Sniffter's Network jack (silver, left-hand side of tester) to the PC's network jack. Reboot the PC. Reinstall the PC NIC drivers on the PC. If possible, try installing a different type of NIC in the PC.
2	Testing doesn't get past **Waiting for packet**.	Make sure the crossover cable is wired properly (using Sniffter's Cable Test). Reboot the PC. Check the Internet (TCP/IP) settings on the computer to confirm that it is configured for DHCP (sometimes referred to as "Acquire an IP address automatically").
3	The PC has an IP address starting with 169.254 (e.g., 169.254.17.237).	When a computer set with DHCP is unable to contact a DHCP server, it will default to an IP address on the 169.254.0.0 subnet. Any time a PC has an address in this range, it has NOT connected to a DHCP server. Try the troubleshooting steps for Symptom #1.
4	Sniffter displays **IP REQUEST bad**.	For some reason, the PC is not accepting the Sniffter's DHCP offers. Reboot the PC. If the test never shows **IP REQUEST good**, then there is a problem with the PC.
5	Sniffter displays **IP REQUEST good**, but the ping test fails (**can't ping PC**).	The PC might have firewall software installed that blocks ping requests. Try temporarily disabling the firewall software. If you can ping the Sniffter from the PC (see instructions above), the PC configuration is OK.

When the test is complete, turn off the Sniffter, reboot the PC, and reconnect it to the network. If the network and PC have tested good, the PC should acquire an IP address from network DHCP servers and be able to connect to your home page and other Internet servers.