



## APPLICATION NOTE

### Verification of a LAN connection using Telnet

#### INTRODUCTION:

Automating a test can dramatically increase the productivity, throughput, and accuracy of a process. Automating a setup involves connecting a computer to the test instrumentation using a standard communications bus like USB or LAN and then utilizing code entered via a software layer (like LabVIEW, .NET, Python, etc..) to sequence the specific instrument commands and process data.

This process normally goes quite smoothly, but if there are problems, there are some basic troubleshooting steps that can help get your test up-and-running quickly.

In this note, we are going to show how to use Telnet to test the communications connection between an instrument and a remote computer using a [LAN](#) connection to ensure that it is working properly. Once the connection is verified, you can begin to work on the control software.

Telnet provides a means of communicating over a LAN connection. The Telnet client, run on a LAN connected computer, will create a login session on the instrument.

**NOTE:** The Telnet connection requires open sockets on the instrumentation. At this time, not all SIGLENT products feature open sockets. Check the product page FAQs or with your local SIGLENT support office for more information.

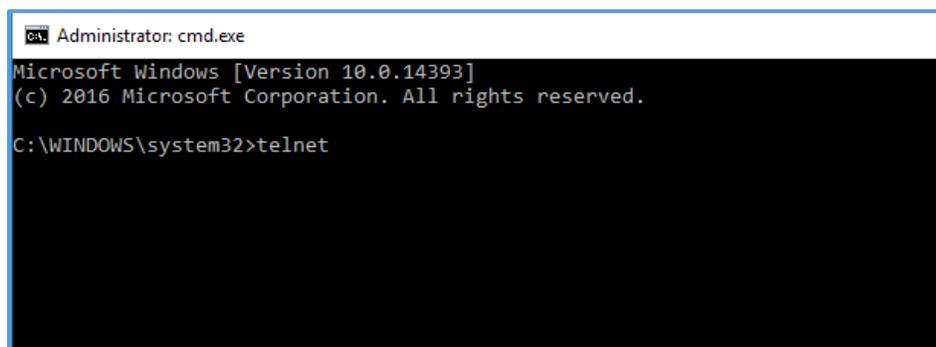
A connection, established between the computer and instrument, generates a user interface display screen with SCPI> prompts on the command line.

Using the Telnet protocol to send commands to the instrument is similar to communicating with USB. You establish a connection with the instrument and then send or receive information using SCPI commands. Communication is interactive: one command at a time.

The Windows operating systems use a command prompt style interface for the Telnet client.

**Steps:**

1. Power on and connect the instrument to the network via LAN
2. Verify that the Gateway, Subnet Mask, and IP address of the instrument are valid for the network you wish to use. This information is typically located in the System Information or IO menu. See the specific instrument user's guide for more information on LAN settings.
3. On the computer, click Start > All Programs > Accessories > Command Prompt.
4. At the command prompt, type in telnet.

A screenshot of a Windows Command Prompt window titled "Administrator: cmd.exe". The window shows the following text: "Microsoft Windows [Version 10.0.14393] (c) 2016 Microsoft Corporation. All rights reserved. C:\WINDOWS\system32>telnet".

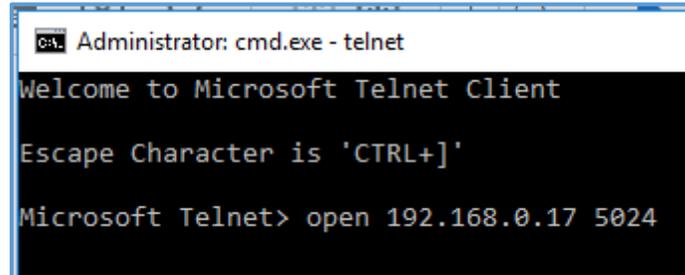
```
C:\WINDOWS\system32>telnet
```

5. Press the Enter key. The Telnet display screen will be displayed.

A screenshot of a Microsoft Telnet Client window titled "Command Prompt - telnet". The window shows the following text: "Welcome to Microsoft Telnet Client Escape Character is 'CTRL+I' Microsoft Telnet>".

```
Welcome to Microsoft Telnet Client
Escape Character is 'CTRL+I'
Microsoft Telnet>
```

6. At the Telnet command line, type: `open XXX.XXX.XXX.XXX 5024` where `XXX.XXX.XXX.XXX` is the instrument's IP address and 5024 is the port. You should see a response similar to the following:

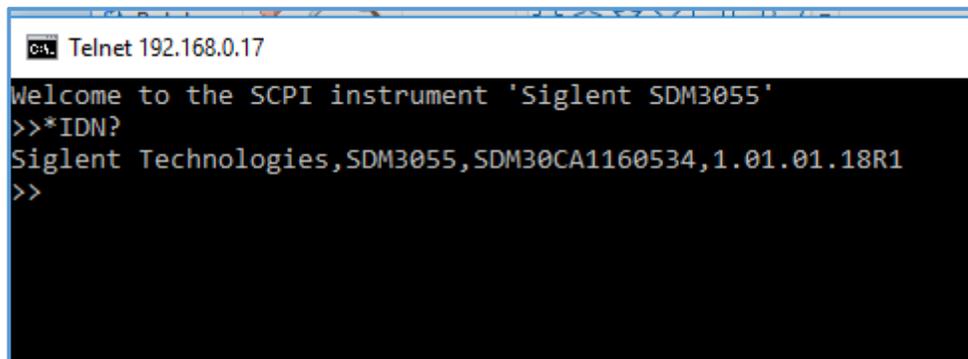
A screenshot of a Windows command prompt window titled "Administrator: cmd.exe - telnet". The window has a black background with white text. The text displayed is: "Welcome to Microsoft Telnet Client", "Escape Character is 'CTRL+]'," and "Microsoft Telnet> open 192.168.0.17 5024".

```
Administrator: cmd.exe - telnet
Welcome to Microsoft Telnet Client
Escape Character is 'CTRL+]'
Microsoft Telnet> open 192.168.0.17 5024
```

7. Now, you can enter any valid command for the specific instrument that you are controlling. See the specific programming guide for the instrument for more information.

This is especially helpful when you are planning a specific test sequence, the effect of delays/timing, or troubleshooting a command. You can send each command one-at-a-time and check the performance of the instrument.

*\*IDN?* is a common identification string query (question or information request) that returns the information from the connected instrument

A screenshot of a Telnet session window titled "Telnet 192.168.0.17". The window has a black background with white text. The text displayed is: "Welcome to the SCPI instrument 'Siglent SDM3055'", ">>\*IDN?", "Siglent Technologies,SDM3055,SDM30CA1160534,1.01.01.18R1", and ">>".

```
Telnet 192.168.0.17
Welcome to the SCPI instrument 'Siglent SDM3055'
>>*IDN?
Siglent Technologies,SDM3055,SDM30CA1160534,1.01.01.18R1
>>
```



For more information, check [SiglentAmerica.com](http://SiglentAmerica.com), or contact your local Siglent office.

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