# Testing the Flow of Data over a Network Connection Using Wireshark

-by Rob Baird

We often receive phone calls for HYPACK Tech Support from users that are not sure if their network device is communicating properly with HYPACK. While we have the serial port-testing WCOM32 utility built into the HARDWARE program, there is no equivalent program in HYPACK® to test the flow of data over a network connection; however, there *is* a third-party software known as Wireshark that can capture the network packets that come through a specified network port.
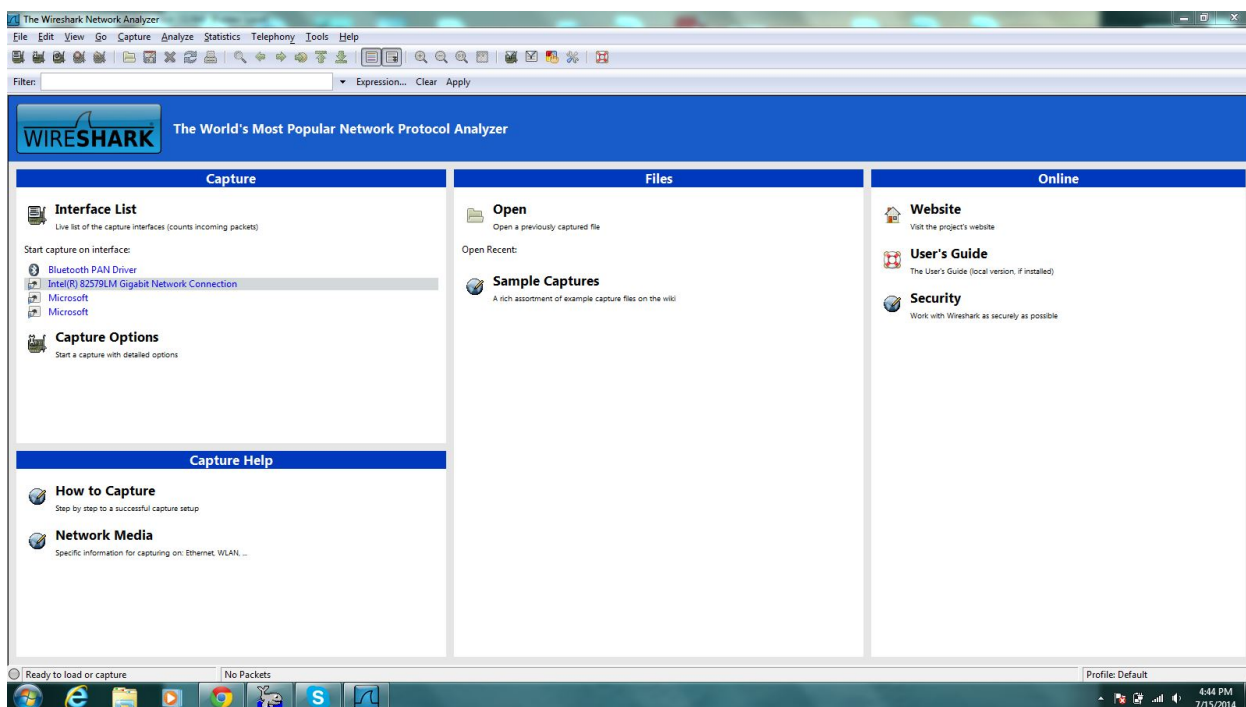
1. **Install the Wireshark Program.** The 32-bit and 64-bit installer packages for the Wireshark program can be found in your \HYPACK 2014\Support\Utilities\Wireshark folder.

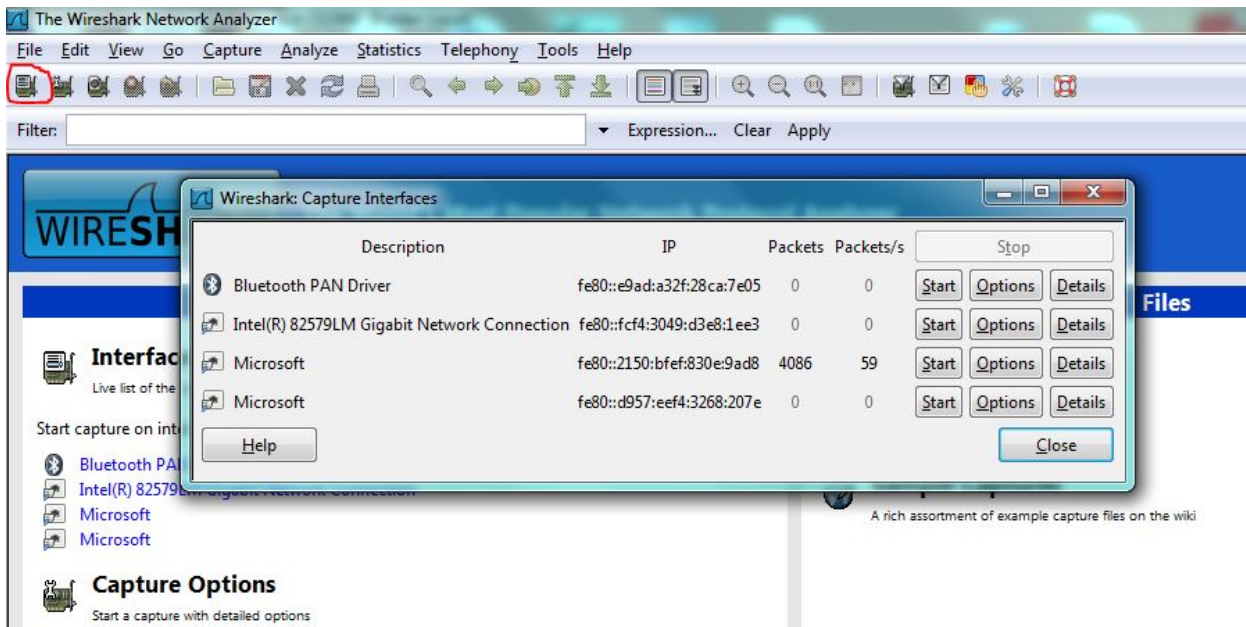   **FIGURE 1.** *Wireshark Install Files in the HYPACK® Install*
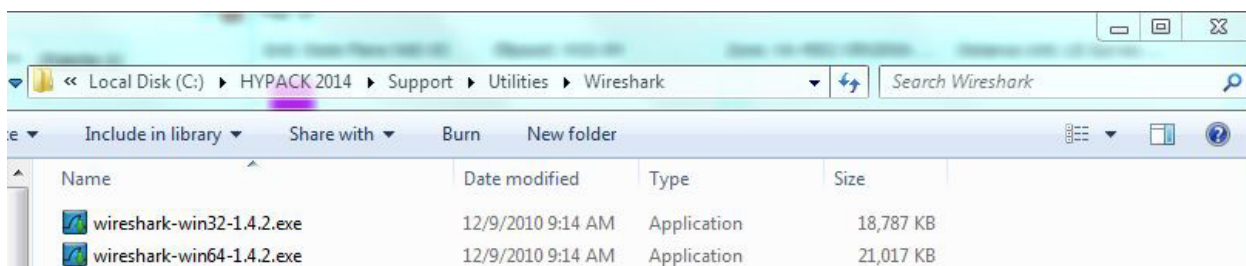
2. Open Wireshark to find the home page.

   FIGURE 2. *Wireshark Home Page*

3. **List the available network connections from which to capture data.** Click on the icon to the top left of the home page.

Launching the Wireshark Capture Interfaces Dialog

4. Identify which network connections have data packets flowing through them and choose the connection from which you would like to view network packets. Click [Start] to display all packets from that connection.

If you don't see any packets coming through your desired network connection, HYPACK will NOT receive any data on that network connection!

Let's say you can see that there are network packets on your 5656 connection, which is a known port specified for a GPS connection, and we want to view all packets coming across. In this example, you would enter the following into the Filter bar:

```
Udp.port == 5656
```

(Note that there are spaces between the port and the first "=" (equal sign), and between the second "=" and the port number.) After opening up port 5656, we should see the flow of data over the network. In this test case, I was connected to a differential GPS that is mounted on the roof at HYPACK and was recognized by my computer as a "Microsoft" connection.

As soon as I typed in the udp.port == 5656, the scroll of network packets started. (See Figure 4.)

2

FIGURE 4. *Viewing the Network Data in Wireshark*
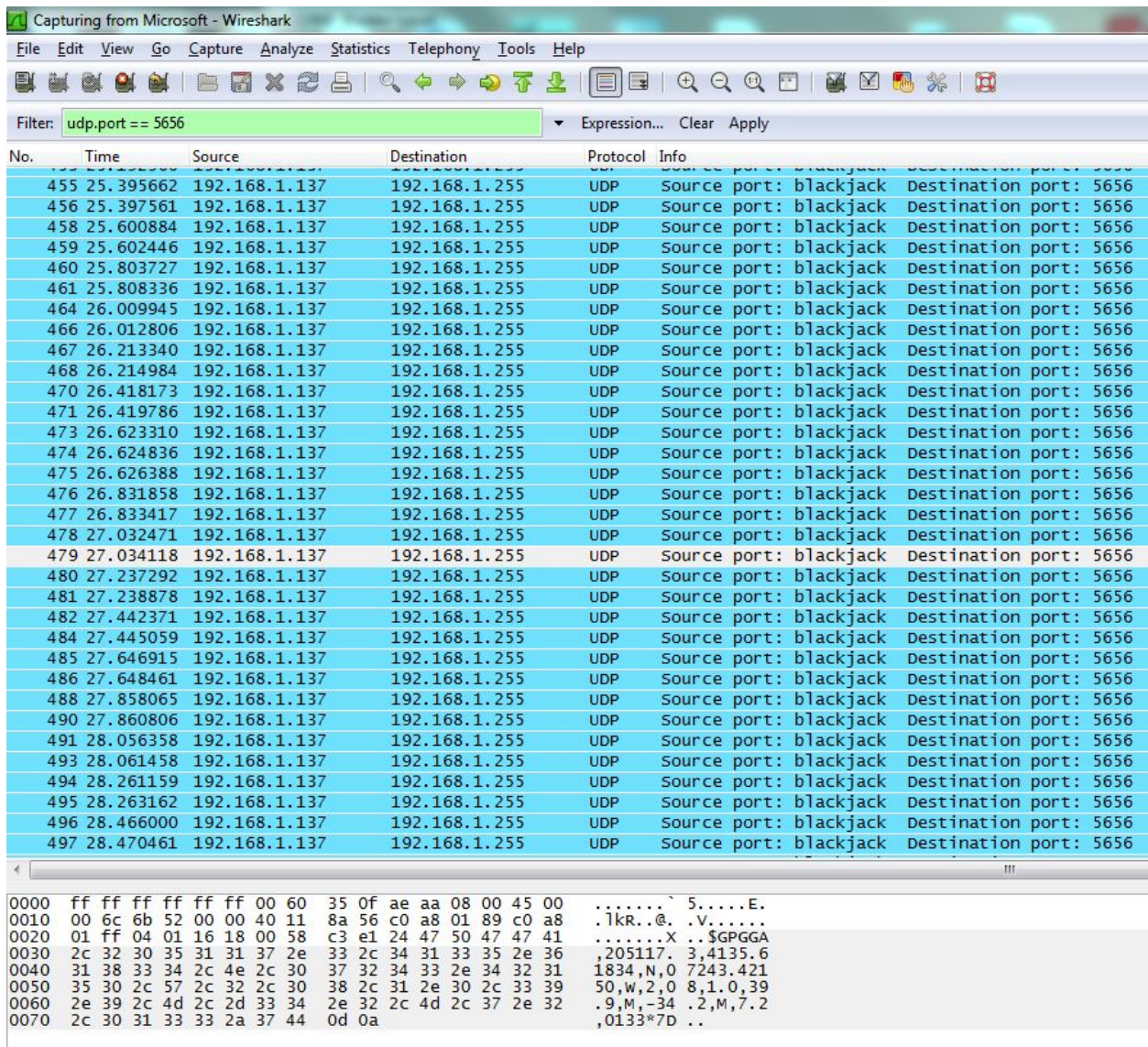
To view the contents of any packet, all I had to do was select a packet and look to the bottom of the screen for the actual format and contents of the network packet.

I selected packet # 479, which shows the IP address and port for the connection. The content of the packet was a $GPGGA message, as shown at the bottom of Figure 4.

In this case, we were able to show the flow of network packets and the content of each packet using the Wireshark program. If the port information was not properly entered, the green Filter bar would instead be red, and no packets would be shown.

Thanks to the inclusion of Wireshark in your HYPACK installation, you now have an easy network connection testing tool that is always at your disposal.