



Quick Start Guide

Computer System Requirements

Supported Systems

- Operating System: Windows 7/8/10
- USB: USB 2.0 and later

Minimum Requirements

- Processor: Core i5 at 2.7 GHz
- RAM: 4 GB
- Free Hard Disk Space on C: drive: 20 GB

Install Software

- From Download: Download the latest ComProbe installer from FTE.com. Once downloaded, double-click the installer and follow the directions.

<http://www.fte.com/hsu-soft>

1. Apply Power

Insert the USB cable between the HSU unit with ProbeSync USB port and your computer USB 2.0 port. The computer USB port provides the only power needed by the HSU hardware.

2. Connect the Frontline HSU to the Device Under Test

The Frontline HSU hardware is designed for use with TTL voltage levels, 0 to 5 volts max (exceeding the 5.0 volts max damages the Frontline hardware). The Frontline HSU hardware interprets 0 to 0.8 volts as a logical zero, and 2.0 to 5.0 volts as a logical one. To ensure accurate data collection and proper operation, connect the Frontline HSU to the TTL side of any transceivers, line drivers, or line receivers.

Use the table below to determine the connection configuration you need for monitoring signals on the source device. Disconnecting and reconnecting the wires in a different configuration negates the validity of the following table. To avoid confusion, we recommend that you maintain the color code as expressed in this table.

Only "Data Connection" and "Ground" need to be connected, all the other signals are optional.

When using the HSU unit in conjunction with ProbeSync enabled Frontline devices, the HSU CAT 5 cable must be connected to the Frontline device providing the synchronizing clock. Connect the HSU CAT 5 connector to the synchronizing device OUT connector.



The table below provides information on the ProbeSync CAT 5 cable RG-45 connector pin out.

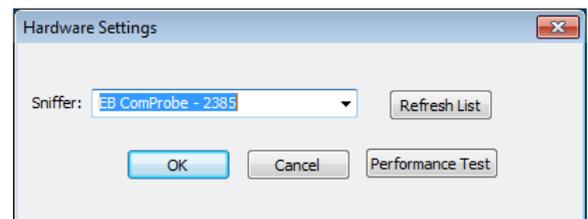
Table 1 - HSU with ProbeSync Pin Out

Wire Label	Label/Wire Color	Signal	Meaning
G	Green	Ground	Ground
G	Green	ProbeSync Ground	ProbeSync Ground (CAT 5)
C	Blue	ProbeSync Clk	CLOCK_OUT_P of Master (CAT 5)
T	Brown	ProbeSync Clk	CLOCK_OUT_N of Master (CAT 5)
0	Orange	ProbeSync Link	LINK_OUT of Master (CAT 5)
1	White/Orange stripe	ProbeSync Clk Select	CLOCK_SELECT of Master (CAT 5)
2	Red	CH0	Data Connection (TX)
3	Orange	CH1	Data Connection (RX)
4	Yellow	RTS	Request to send
5	Green	CTS	Clear to send
6	Blue	DSR	Data Set Ready
7	Purple	DTR	Data Terminal Ready
8	Black	CD	Carrier Detect
9	Brown	RI	Ring Indicator

3. Hardware Settings

The **Hardware Settings** window appears automatically the first time you run Frontline software. To get back to the **Hardware Settings** menu later, select **Options** menu, **Hardware Settings** the on the **Control** window. Use the **Hardware Settings** window to select which Frontline HSU to monitor (if you have more than one connected). Click the **OK** button.

It is recommended that you run your PC **Performance Test**. The HSU unit is a very CPU-intensive analyzer and although the HSU hardware is capable of capturing data at speeds of up to 8 Mbps, actual data rates may be limited by the speed of your PC. The Performance Test will tell you the maximum data capture rate your PC can handle.



4. HSU Configuration - Datasource

Click the I/O Settings icon  on the **Control** window. The analyzer needs to know the bit rate, parity, length, and number of stop bits being used in the circuit under test.

There are two groups of settings, one for the **Channel 0**, and one for the **Channel 1**. To change the **Bit Rate**, **Parity**, word **Length** or number of **Stop** bits, click on the down arrow next to the setting box and choose an option from the list. For **Bit Rate**, you can either

choose a listed rate or enter a rate. After entering the settings for **Channel 0**, click the **Copy CH0** button to apply the same settings to the **Channel 1** row.

Click the **OK** button.

5. HSU Start Capture

- Click the Start Sniffing icon on the HSU with ProbeSync datasource toolbar.
- As data is being captured, the **Capture Status** message in the **Control** window indicates the synchronization status of the HSU analyzer.



When you are capturing data, there are several important concepts to consider.

- Files are placed in **My Capture Files** by default and have a .cfa extension. Choose Directories from the Options menu on the **Control** window to change the default file location.
- Watch the status bar on the **Control** window to monitor how full the file is. When the file is full, it begins to wrap , which means the oldest data will be overwritten by new data.
- Click the **Stop** icon  to temporarily stop data capture. Click the **Start Capture** icon again to resume capture. Stopping capture means no data will be added to the capture file until capture is resumed, but the previously captured date remains in the file.

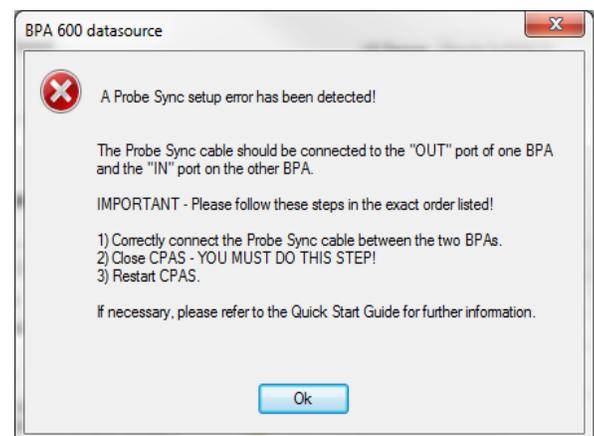
6. HSU Capture with ProbeSync

ProbeSync™ allows multiple Frontline analyzers to work seamlessly together and to share a common clock. Clock sharing allows the analyzers to precisely synchronize communications stream and to display resulting packets in a single shared view. When capturing data with the HSU unit using the ProbeSync technology, the maximum capture data rate is 6 Mbit/sec.

When configured for ProbeSync capture, one device provides the clock to the other device in a "master-slave" arrangement, not to be confused with Bluetooth® device master-slave relationships. The clock is provided by a CAT 5 cable between the HSU hardware with another Frontline analyzer **OUT** connector—sending the synchronizing clock.

The HSU unit with ProbeSync technology is *always* the device receiving the synchronizing clock, that is, it is *always* the "slave" in the chain and thus will *always* physically appear at the end of the chain.

Should the hardware be incorrectly connected , that is the HSU CAT 5 connector is plugged into to an **IN** connector on the other ComProbe hardware, an error message will appear. Follow the instructions in error message. To continue click on the **OK** button. The datasource **Status** window will also display a warning message suggesting information sources.



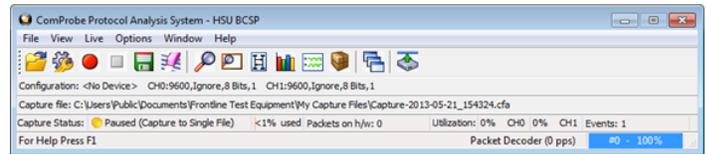
In the device providing the clock, the datasource dialog **Start Sniffing**  button initiates the capture for both devices. On the HSU unit the datasource dialog **Start Sniffing** button is disabled. For the Frontline device providing the synchronizing clock, that device's status window in the Datasource dialog will announce the synchronizing function of each.

Data captured in the synchronized devices will appear in the **Frame Display**, **Event Display**, **Bluetooth Timeline**, **Bluetooth low energy Timeline**, and **Coexistence View**.

Data saved as a capture file will include data captured on both devices.

7. Analyze Data

From the Control window toolbar select the following icons to view and analyze the captured data.



-  **Event Display** - for framed data, used to conduct byte-level analysis.
 -  **Frame Display** - for framed data, used to conduct protocol-level analysis.
 -  **Message Sequence Chart (MSG)** - Displays information about messages passed between protocol layers.
 -  Show Statistics- supplies basic information about the data on the network..
 -  Signal Display-provides a graphical view of control signal transitions that you can manipulate after you have captured data.
 -  Breakout Box- provides a real-time graphical view of control signals.
 -  Extract Data/Audio - pull out data from various decoded Bluetooth® protocols. Once you have extracted the data, you can save them into different file types, such as text files, graphic files, email files, .mp3 files, and more.
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This quick start guide provides sufficient information to begin the data capture. Detailed hardware and software information is contained in the ComProbe HSU User Manual. The manual is available on FTE.com.

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