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/soderale-soft

1. Sodera LE Front Panel
Frontline Sodera LE front panel is shown below. The panel provides controls to power up and shut down the Frontline Sodera LE hardware, and it provides indicators to show the power and capture status.

Sodera LE Front Panel Controls and Indicators

<table>
<thead>
<tr>
<th>Control</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTENNA</td>
<td>Connect to the front panel antenna SMA connector. Used for wideband wireless capture of Bluetooth low energy transmissions. Maximum useable signal level: -10 dBm.</td>
</tr>
<tr>
<td>WIRED</td>
<td>Low sensitivity RF input suitable for conductive testing that utilizes a wired connection from the devices under test (DUTs). Conductive testing allows for isolation of the DUTs from environmental interference.</td>
</tr>
</tbody>
</table>
Maximum useable signal level: 27 dBm.

RF overload indicator. If the RF signal level on either the ANTENNA or WIRED connector is too high, then this LED will light red. RF overload occurs when the signal level is greater than 27 dBm. Should an RF overload occur with the ANTENNA in use, try switching to the less sensitive WIRED connector to relieve the problem.

LED illuminates when the Sodera LE unit has been powered up using the power button. See Table 2 - Sodera LE Front Panel Power and Overload Indicators on page 2 for more information.

Not used.

Press and then release the button to power on or power off the system.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Color</th>
<th>State</th>
<th>Status Indicated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>None</td>
<td>Off</td>
<td>Unit is powered off.</td>
</tr>
<tr>
<td></td>
<td>Green</td>
<td>Constant</td>
<td>Unit is powered on.</td>
</tr>
<tr>
<td></td>
<td>Amber</td>
<td>Constant</td>
<td>Unit is powering on.</td>
</tr>
<tr>
<td></td>
<td>Red</td>
<td>Blinking</td>
<td>Unit has reached thermal overload. See 4. Applying Power, on the next page.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Constant</td>
<td>Unit has reach thermal overload and has shut down. See 4. Applying Power, on the next page.</td>
</tr>
<tr>
<td>Overload</td>
<td>Red</td>
<td>Occassional</td>
<td>Illuminates each time RF power at the Antenna or Wired connectors has exceeded 27 dBm.</td>
</tr>
</tbody>
</table>

2. Sodera LE Rear Panel Connectors
The rear panel is shown below. The panel provides connectors for external power and for connection to the computer hosting the Frontline software.

DC9V: 1.7 mm jack connector to the Frontline supplied AC-to-9 VDC power adapter.
USB: USB 2.0 port for connecting the Sodera LE unit to the host computer where the Frontline software resides. This connector provides host computer command, control, and data transfer.

**Note:** All other connectors are not used.

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### 3. Attach Antenna

![Antenna Attachment Point](image)

Remove the Frontline Sodera LE hardware from the box and attach the antenna to the **ANTENNA** SMA connector on the front panel.

### 4. Applying Power

The Sodera LE hardware is powered by an external 9 VDC power source using an AC-to-DC power adapter.

**Note:** Only use the Frontline supplied power. Do not substitute with another power adapter.

To apply power to the Sodera LE hardware, connect the provided AC-to-DC power adapter to the **DC9V** connector on the rear panel and then connect the adapter into an AC source.

To start the Sodera LE hardware, depress the Power button on the front panel and then release. This action will provide a clean start for the Sodera LE hardware.

The front panel **Power** LED indicator will be green.

Should the Sodera LE hardware reach thermal overload temperature between 50 °C and 60 °C (122 °F and 140 °F), it will shut down.
If the fan becomes blocked, the Sodera LE unit will power down. Should this happen check that nothing is blocking the airflow to the unit’s air inlet, or that nothing is impeding the fan from spinning freely. Clear any obstructions and then apply power to the unit.

5. Sodera LE Data Capture Method

When the Frontline Sodera LE is connected to the Host PC running Frontline software, the Select Data Capture Method... window will display the Sodera LE options.

![Select Data Capture Method](image)

Select **Wideband Bluetooth, Low energy (Sodera LE)**

Click on Run. The Frontline software will display the Sodera LE Control window.
6. Control Window

![Sodera LE Control Window]

7. Sodera Window - Datasource

![Sodera LE Datasource Window]

8. Sodera LE: Record—Begin Capture

When starting a capture session

- the active status of all devices is cleared in the **Wireless Devices** panes,
- the **Security** pane is emptied, and
- the **Event Log** pane retains all prior logged events.

On the Capture Toolbar, click on the **Record** button, or select **Record** from the **Capture** menu option. When the **Record** button changes to **Recording**, Sodera LE hardware is capturing data from all active **Bluetooth** devices within range and is recording data on the PC.

On the Capture Toolbar, clicking on the **Recording** button, or selecting **Recording** from the Capture menu options will halt live capture.

The **Wireless Devices** pane populates with any newly discovered devices. Selecting devices for analysis can be done while recording.

**Note:** The Capture Toolbar **Analyze** button will be grayed out until some wireless devices have been selected for analysis.
The **Security** pane will show all encrypted *Bluetooth* links.

The **Event Log** pane will begin to populate with information, warnings, and error messages.

The **Status Bar** will show a running total of captured packets.

**Note:** Starting a new capture session will clear all unsaved data from both the Sodera LE hardware and the Frontline software. If it has not been saved, then a pop-up warning message will appear.

### 9. Sodera LE: Selecting Devices for Analysis

Once a Sodera LE capture session starts by clicking on **Record** on the Capture Toolbar, data from all active devices within range or data from wired connections is being captured. To analyze the data using the Frontline software, you select specific devices of interest to include in the analysis.

In the **Wireless Devices** pane, place a check in the row of each active device 🅱️ to be analyzed. Active devices can also be selected while the recording is in process.

**Note:** Data filtered by the device selection is an "OR" function, not an "AND" function. When selecting device1, device2, device3, ... the recorded data filtered into the analyzer is data involving device1 OR device2 OR device3 OR .... However, if in the Options menu, analysis if LE Empty packets is selected an AND function is included. For example: (device2 AND LE Empty packets) OR (device3 AND LE Empty packets).

The following table lists some common data capture and device selection scenarios.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Wireless Devices Pane Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyzing traffic between a slave Device Under Test (DUT) and its master.</td>
<td>Select only the slave DUT for analysis</td>
</tr>
<tr>
<td>Analyzing all traffic on a piconet</td>
<td>Select the Master for analysis</td>
</tr>
</tbody>
</table>

The Sodera LE is now ready to begin protocol- and event-level analysis.
10. Sodera LE: Starting Analysis

The analysis begins by clicking on the Analyze button, or selecting Analyze from the Capture menu. Alternatively, click on the Start Analyze button in the Control window. The Sodera LE hardware will begin sending captured packets involving the selected device to the Frontline software.

Once analysis has begun, you cannot change the device selection. All device rows in the Wireless Devices pane are grayed-out. To stop the analysis, click on the Analyzing button. You can then change your device selection and restart analysis by clicking on the Analyze button.

To stop the Analysis click on the Analyzing button or click on the Control window Stop Analyze button.

Conducting analysis from a capture file is identical to the live capture method.

11. Capturing Sodera LE Analyzed Data to Disk

**Note:** Record is not available in Viewer mode. Analyze/Analyzing is available in Viewer mode, allowing different analyses to be performed on previously recorded and saved captures.

1. Click the Record button on the Standard Toolbar. Sodera LE will begin capturing data from all wireless devices within range.
2. In the Wireless Devices pane select the active devices for analysis.
3. Click on Analyze button, or click the Start Analyze button to begin capturing to a file. This Start Analyze button is located on the Control window, Event Display, and Frame Display.
4. 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.
5. 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.
6. Click the Analyzing button, or click the Stop Analyze button to stop analyzing.
7. To clear captured data, click the Clear icon.

   - If you select Clear after stopping analysis, a dialog appears asking whether you want to save the data.
     - You can click Save File and enter a file name when prompted.
     - If you choose Do Not Save, all data will be cleared.
     - If you choose Cancel, the dialog closes with no changes.
   - If you select the Clear icon while a capture is occurring:
     - The capture stops.
     - A dialog appears asking if you want to save the capture
     - You can select Yes and save the capture or select No and close the dialog. In either case, the existing capture file is cleared and a new capture file is started.
     - If you choose Cancel, the dialog closes with no changes.

**Note:** The Sodera LE/Frontline software system does not support host PC hibernation or sleep mode. If the PC does inadvertently go into hibernation or sleep mode, the user should close and then restart the Frontline software.
12. Sodera LE Technical Specifications/Service Information

- Dimensions: 160 mm wide X 56 mm tall X 167 mm deep (6.3” X 2.2” X 6.6”)
- Weight: 1.4 kg (3.1 lb)
- Humidity: Operating: 0% - 90% (0 °C – 35 °C), non-condensing
- Temperature: 0 °C to +40 °C (32 °F to +104 °F)
- Power Input: 9 VDC (tip positive)
- Max Power: 12 W

Service Notes

The Sodera LE hardware does not contain any user serviceable items. Any repairs and maintenance must be performed by a service technician that has been trained and approved by Frontline.

Before any service is performed on the Sodera LE hardware, all power sources must be removed. This includes disconnecting any power sources from the DC9V input power connector on the rear panel.

This quick start guide provides sufficient information to begin the data capture. Detailed hardware and software information is contained in the Sodera LE User Manual. The manual is available on FTE.com.

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Publish date: 1/17/2017