1. **SensorConnect**

SensorConnect is the data acquisition utility for configuring and coordinating LORD Sensing devices. SensorConnect provides end-to-end sensing solutions from physical sensing to data interpretation across all LORD Sensing product lines.

The user interface collects and displays data from LORD Sensing wireless sensor networks and inertial sensors.

SensorConnect interacts directly with the SensorCloud™ data aggregation platform for seamless transition to data distribution, alerting, and analysis. Log in to SensorCloud from within SensorConnect to view cloud data alongside locally collected data. Initiate a LiveConnect session with a WSDA-Pro device to remotely configure and interact with sensors from anywhere in the world.

2. **Sensor Installation and Startup**

Download SensorConnect from the LORD Sensing website and install on Windows 7, 8.1, or 10.

SensorConnect uses three main menu tabs: Home, Devices, and Data. A link to the SensorCloud™ platform log-in and a software settings menu is also available. On start-up, SensorConnect scans for attached sensors and opens the home page and displays Data Repositories.

**Data Repositories** – Disc locations where data is stored. This includes the Device List, Dashboards, and Sensor data. Use Data Repositories to separate data as needed. All incoming data is collected and stored in the current active Repository.
3. CONNECTING TO DEVICES

SensorConnect detects LORD Sensing devices operating on an active port. Device connections are managed on the Devices page. Menu options vary between devices (gateways, nodes, and sensors) but have similar interfaces.

**Device Menu** - Current and previously found devices display on the Device Menu.

**Selected Device and Device Menu** - Each device has its own menu. Once selected, the device name is highlighted and the corresponding menu displays. Menu options vary between devices but typically include device configuration, start sampling, sensor mode selections, and data downloading. Select the device name in the devices list to return to the Device Menu. Refer to the device user manual for more information on specific features and settings.

**Add Device** - Manually adds a device that was not added automatically.

**Connecting Wireless Devices** – if the node does not appear automatically it is likely on a different frequency, see Section 6 Working with Wireless Sensor Networks for more information.

**Connecting Inertial Devices** – devices connected via serial port are not detected automatically and require manual identification via the +Add Device button.
4. **COLLECTING DATA**

Data sampling is initiated for each device through its device menu. For a wireless sensor network, sampling is started for the entire network by initiating sampling from the network gateway menu. The Sampling menu options vary depending on the device.

**Sampling Menu** - The Sampling menu includes options for sampling mode, sample rate, and sample duration. Apply the settings to begin collecting data.

**Sampling Indicator** - A blue sampling indicator dot displays when data is being collected from the device.

![Sampling Indicator](image1)

![Sampling Menu](image2)

**Figure 3. Sampling Menu**

**Figure 4. Sampling Indicator**
5. **VIEWING DATA**

**Using Dashboards and Widgets**

View collected data on the Data page using dashboards and widgets. Dashboards act as individual pages. Widgets act as illustrations. Create additional Dashboards using the dropdown menu at the top of the page. This menu is also used to toggle between active dashboards. Create multiple data widgets on each dashboard to display sampled data as a time-series graph, text chart, or simple gauge that displays the most current reading.

This format provides an easy way to organize many sensors and networks and allows the information to be displayed in an appropriate layout.

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**Figure 5. Dashboard**

**Figure 6. Add Widget Menu**
Widget Options

After adding a widget, left click to select and configure it in the Channels and Settings menu. To add or remove channels from a widget, use the Channels menu.

Use the Settings tab to configure widget-specific settings such as widget title, display properties, data range, threshold indicators, and add threshold items.
6 Working with Wireless Sensor Networks

Transmission frequency and device operating modes effect how SensorConnect operates with LORD Sensing wireless sensor networks.

Transmission Frequency

Gateways and sensor nodes need to be set to the same transmission frequency to communicate. If the node is on a different frequency, it needs to be moved to the same frequency as the Gateway. Click on the Gateway and select “Nodes on Other Frequencies” to view the discovered Nodes that can be moved.

Figure 10. Nodes on Different Frequencies

Navigating Graphs

Use a mouse or gestures inside the graph window to adjust the data view.
Node Operational Modes

**Active mode**
- Performing user-set sampling operations
- Status indicator on node binks green once every two seconds

**Idle mode**
- Allows toggling between sampling and sleeping modes
- Allows node configuration
- Status indicator on node pulses green at 1 Hz

**Sleep mode**
- Low power mode
- Checks periodically for an idle command (user-selectable interval)
- Status indicator on node binks blue at check radio interval

Figure 11. Node Operational Modes

Synchronized Sampling

To start sampling for a network of Nodes, select the BaseStation and choose the “Sampling Network” button. To start sampling with an individual Node, select the Node and choose the “Sample” button.

Figure 12. Base Station Menu