



## **SmartDiagnostics<sup>®</sup> Application Note** **Guide to Performing a Wireless Site Survey**

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### **Overview**

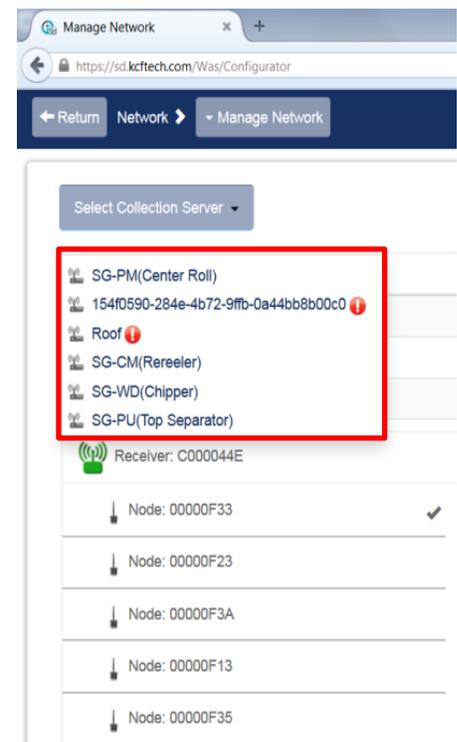
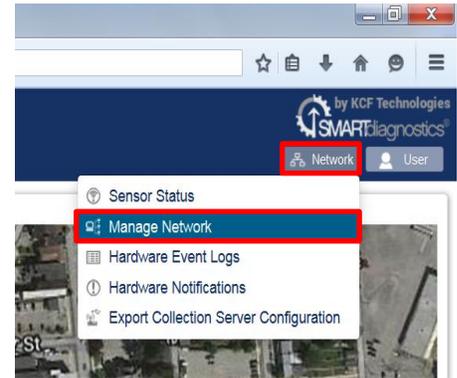
This guide helps customers evaluate the wireless coverage area of wireless receivers and the complimentary wireless communication range of sensors in their facility. It complements the Wireless Network Installation Planning procedure.



## Performing a Site Survey

The Site Survey method below is the most effective way to characterize the wireless coverage area or range of a PRN.

1. Set the PRN and Collection server in a target evaluation location.
  - a. The PRN should be positioned as close to the actual mounting location as possible.
  - b. Note the serial number of the PRN and name of the Collection Server.
  - c. Pay attention to the orientation of the PRN antenna. It should generally be pointing upward and parallel to the sensor antenna.
2. Open the SmartDiagnostics® software and ensure the sensor node is joined to the network
  - a. Click on the “Network” button under the SmartDiagnostics® logo.
  - b. Choose the “Manage Network” option. A list of all the Collection Servers in your account will appear.
  - c. Choose the Collection Server that you noted in step 1.
  - d. Click on the PRN (Receiver) and find the serial number of the sensor node. Select the correct sensor that you would like to use for the site survey (a check mark should appear next to the serial number and a setup menu for that node should unroll to the right of the sensor nodes, see Figure 2).
  - e. If the sensor is not listed, then it is not part of the network. To diagnose networking problems, please see the SmartDiagnostics® User’s Guide.





Receiver: C000044E	
Node: 00000F33	✓
Node: 00000F23	
Node: 00000F3A	
Node: 00000F13	
Node: 00000F35	
Node: 00000F37	
Node: 00000F32	
Node: 00000F36	

Node: 00000F33	
Node Type	KCF Vibration Node
Serial Number	00000F33
Last Update	a few seconds ago
Battery Voltage	3.14 V
Battery Remaining	0 %
Collect Now	<input type="button" value="Collect Now"/>
Temperature	99.56 °F
Firmware Version	2.2.3
Site Survey Enabled	<input type="text" value="On"/> <input checked="" type="checkbox"/> <input type="button" value="x"/>
Sampling Frequency	<a href="#">1024 Hz</a>
Update Interval	<a href="#">5 minutes</a>
Averages	<a href="#">1</a>

3. Enable “Site Survey mode” in the software by finding the site survey field and changing the “Off” setting to “On.”
  - a. After changing the setting, you must click the check mark next to the box to save the change. In 5-20 seconds, an orange LED will light up inside the sensor. When this LED is lit, the node is ready to perform the site survey.
  - b. The LED indicates that communication is reliable. The light responds with roughly a 4 second latency.
4. Perform the site survey by moving the sensor throughout the facility
  - a. Note the locations where the LED turns off and remains off. This will define the perimeter of the wireless communication coverage for a given PRN location.
  - b. Evaluate specific sensor locations that are critical and note the status on the facility map.
  - c. Placing the sensor in the most representative target location is important because metal around the antenna and the orientation of the antenna influence the communication reliability.
  - d. Adjust the Collection Server and PRN locations and repeat the survey until the facility has been fully evaluated.
5. In the SmartDiagnostics® software, disable “Site Survey” mode.
  - a. Follow the same procedure as used to turn the LED “On”, except chose the “Off” option.
  - b. If left on, the LED will reduce battery life.

