Signal Strength Analyzer (SSA)

PRODUCT:

CATALOG NO. 1160

Signal Strength Analyzer (SSA)

METERING LEADER SINCE 1904

THE EASTERN SPECIALTY COMPANY

TESCO – The Eastern Specialty Company

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TABLE OF CONTENTS

1.0 Hardware Overview

1.1   Introduction

TESCO's Catalog 1160 Signal Strength Analyzer (SSA) is a field tool that can be used to determine the location with the highest quality signal when placing an antenna or collector to better serve poorly communicating meters.

The SSA works differently than other RF devices in that it will actually join the network and be able to report back to the operator the signal strength and quality to all neighbors.

Each unit comes with a serial interface cable to setup the internal radio and a battery charger.
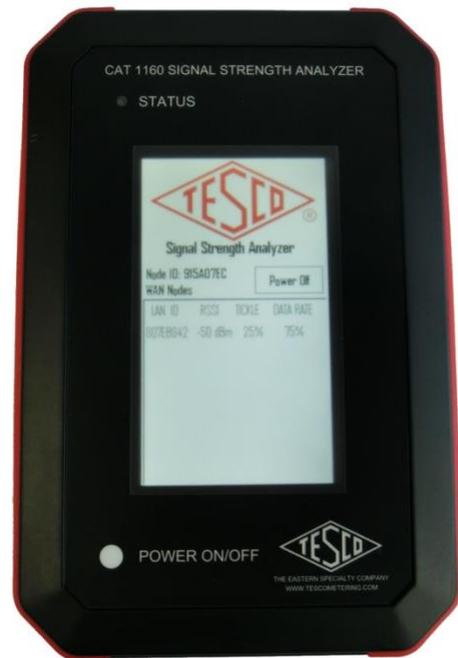
1.2   Contacting TESCO

For Technical Support or Calibration/Repair, please call 215-228-0500.

You can also send an email to **support@tescometering.com** with any questions.

To view, print, or download the latest manual supplement, visit **tescometering.com**.

1.3   General Safety Summary

This device is meant to be used while standing or walking. So long as the case is not damaged, all exterior surfaces are safe and thus this device should pose no safety hazard to the user. As with any other interactive electronic device, TESCO recommends that the user be mindful of their surroundings when using the Catalog 1160.

1.4 Parts and Configuration

1.4.1 Basic Setup

The Cat 1160, because of its new technology, requires that it be set up to join the customer's GridStream network. In order to do this, the customer must first connect the Cat 1160 to a computer that is running Landis + Gyr's RadioShop software, using the supplied USB-C to USB-A cable. The USB-C connector plugs into the port at the bottom of the Cat 1160.

USB-C port

1.4.2   Power and Usage

While you are connecting this device to a computer, and any other time that the Cat 1160 is not in use, it is recommended that it be plugged into the TESCO-supplied charger. The charger port is just to the left of the USB-C port mentioned above.

Charging Port

1.5 Initial Power Up

- Power on button – Once you are ready to use the Cat 1160, simply push down on the white dot below the label "Power On" on the front panel. Make sure you hold the button down for at least 1 second.

- Once the unit powers up, you should see the blue LED in the upper left hand corner of the Cat 1160 begin to flash. At the same time, the main screen should appear.

1.6 Control Panel
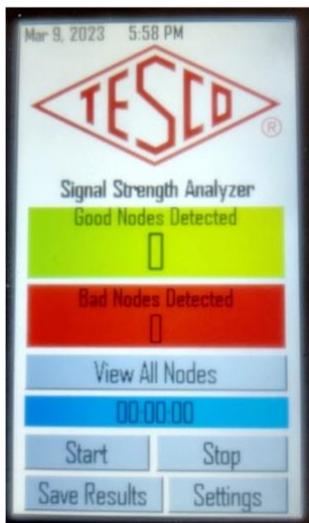
On the main screen, there are several elements.

- "Good Nodes Detected" – This field will display the number of nodes that the Cat 1160 connects to that have the appropriate qualifications. These qualifications can be adjusted, but the default values are:
  o 90dBm<RSSI<-65dBm
  o Tickle>60%
- "Bad Nodes Detected" – This field will display the number of nodes that the Cat 1160 connects to that did not meet the above qualifications.

- "**View All Nodes**" – This is a button that you can press that will take you to the list screen that shows all the nodes that the Cat 1160 has connected to.
- The blue timer field shows the current value of the timer.
- "**Start**" – This is a button that will start a timer (see above). This can be used to further evaluate the validity of the readings by limiting the amount of time that the user should wait in a particular area before requiring a certain number of nodes to appear on the list.
- "**Stop**" – This is a button that will stop the timer. The timer resets when the Cat 1160 is power-cycled.
- "**Save Results**" – This is a button that will save the current list data into memory for later retrieval.
- "**Settings**" – This is a button that will take you to the Settings screen.

1.7 Screen Views

1.7.1 View All Screen

All the nodes that the Cat 1160 has connected to. Highlighted nodes on this list are qualified as "Good Nodes".

- LAN ID – This is the address of the connected radio.
- RSSI – This is a number that represents the received signal strength.
- Tickle – This is a number that represents the percentage of tickle requests that the node responded to.
- Data – This is a measure of the effective data throughput.

1.7.2 Setup Screen
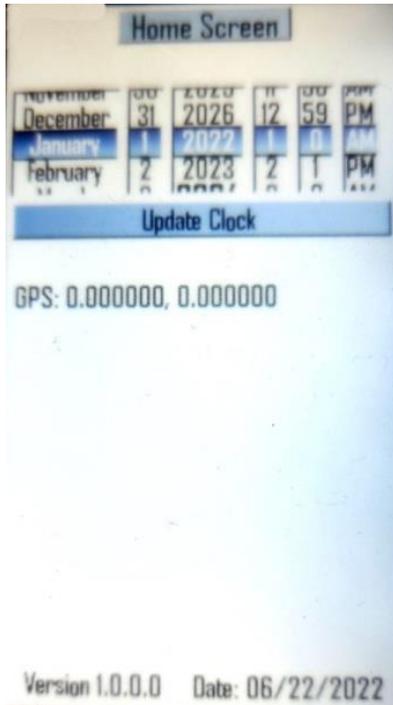
On the "Setup" screen, the user can set the date and time on the Cat 1160. This information is critical if you are saving and retrieving the data from the unit.

2.0 Radio Configuration

2.1 Network and COM port Setup

To change the Network ID, first open the Radio Shop application and make sure that you are connected to the correct USB port on the Cat 1160 (see section 1.4.1). Then make sure that the software is using the correct COM port. This is done by selecting the "connections" icon in the Nodes list on the left-hand side of the screen.

If the software does not automatically connect to the Catalog 1160, try searching for the connection on any available COM port. This can be done by clicking on the "Modify" tab on the right side of the screen and clicking in the checkboxes of the COM ports which the Cat 1160 could be connected to.

Once you've made these selections, click "OK", then on the "Discover" tab. This should cause the software to begin looking for the Cat 1160. Once the Cat 1160 is found, find it in the left-hand column and click on it. The eight character ID number (LAN Address) for the Catalog 1160 radio is printed on the back of the unit.

On the bottom of the screen, click on the "Reports" tab, then find the "Network ID/(CRC Adder)" element in the report and double click it

2.2 Network ID Configuration
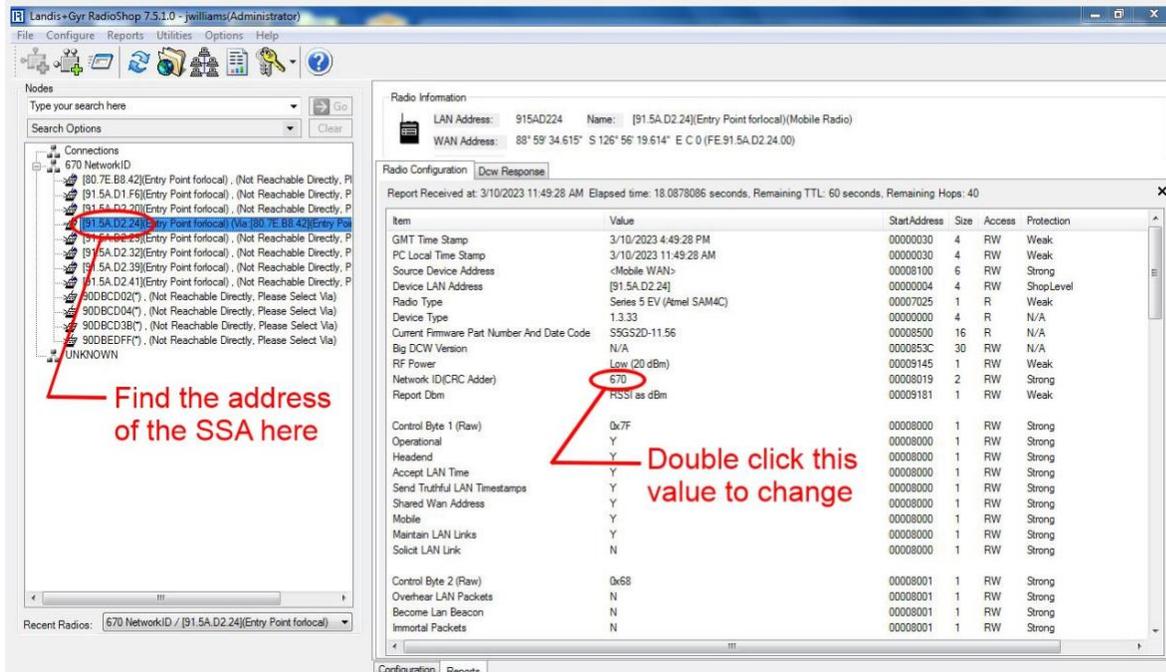
This should open a window that allows you to change the Network ID for the radio. The address in this window is given as two, 2-digit hex numbers. "Offset 0" are the higher two digits and "Offset 1" are the lower two digits. You will have to convert from the decimal Network ID

that you are likely familiar with to its hex equivalent. Most modern calculators or calculator apps can do this for you.
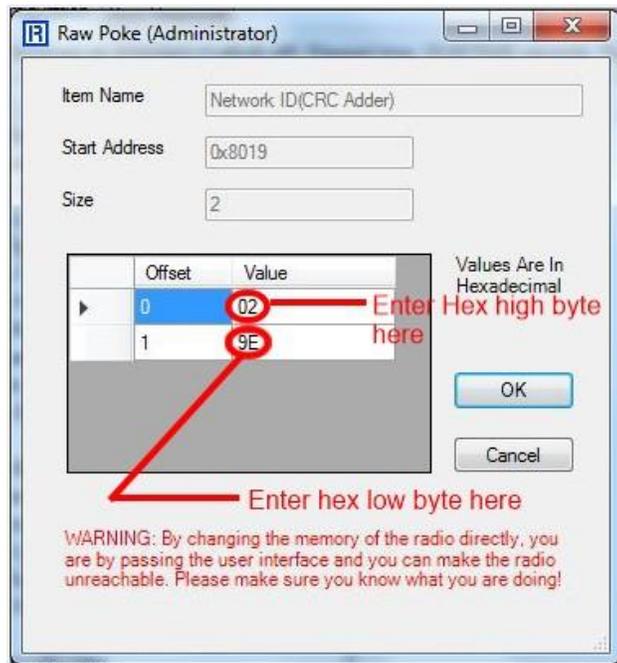
In our example, we will use 1000 as our Network ID. This equates to "3E8". It should be noted here that both Offset values must contain two digits. If there are only 3 Hex digits in the address, fill in a leading 0 for "Offset 0". In our case, "Offset 0" = 03, and "Offset 1" = E8. Enter these values into the "Value" field for each offset.

- Be sure to confirm your entry before proceeding. Then click on "OK".

- Once this is complete, make sure that you refresh the "Reports" tab by right-clicking on the Cat 1160 in the Nodes list and selecting "Repeat Last Command: (Radio Configuration)".

- Check that the Network ID has been changed. If this is confirmed, then you can close the RadioShop application and unplug the USB cable.

LIMITED WARRANTY & LIMITATION OF LIABILITY

TESCO warrants that the units fabricated by TESCO shall be free from defects in material and workmanship at the time of delivery and for one year from the date of delivery (unless Diamond Level Support is selected). If any such item should prove to be defective in material or workmanship under normal intended usage and maintenance during the warranty period, after examination by personnel from TESCO and the Customer, then TESCO shall repair or replace, at its option, such defective item at its expense. This coverage includes parts and labor. Travel expenses for repairs will be invoiced at cost plus a 10% administrative fee. This warranty is limited to the value of the product itself and only to damage to the product itself – no consequential damages are covered under this warranty.