

Leica SurvCE Training



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1.0 Introduction

Objectives

In this exercise you will learn how to configure a 1200 Robotic Total Station and Leica SurvCE so that they may communicate.

- At the end of the exercise you should be able to establish communication between Leica SurvCE and a 1200 Robotic Total Station.

Getting Started

For this exercise we need :

- Robotic TPS1200 Total Station with RH1200 radio handle
- RX1250TC with Leica SurvCE

2.0 Configuring the Total Station

Objective

We need to configure the Robotic Total Station.

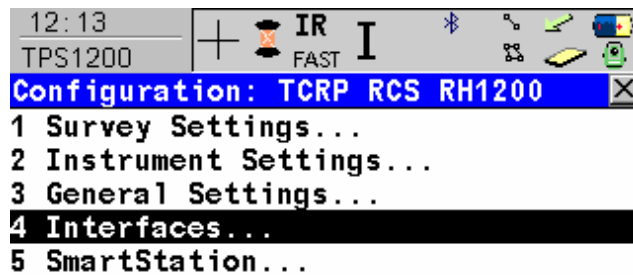
Getting started

Power on the instrument.

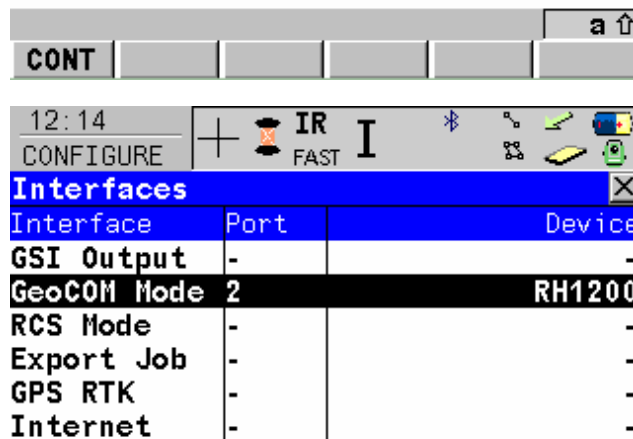
Configuring the robotic total station for communication with SurvCE



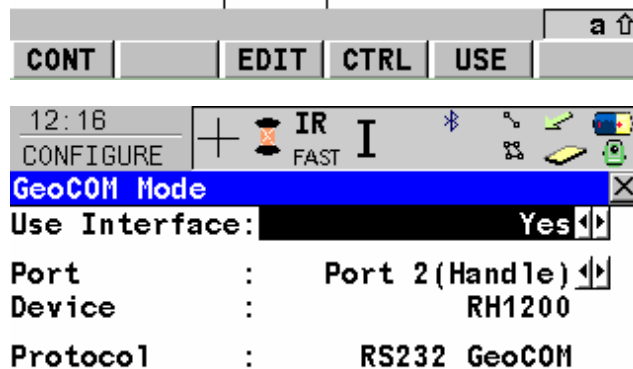
From the **Main Menu**
select **5 Config...**



From the Configuration screen select **4 Interfaces ...**

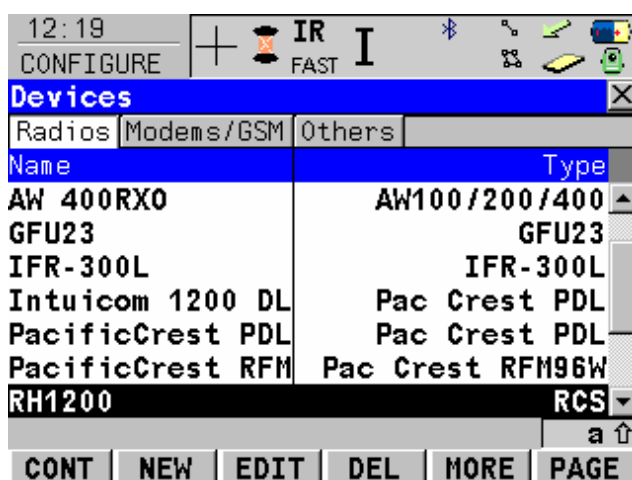


From the Interfaces screen highlight **GeoCOM Mode** and press **F3** for **Edit**.

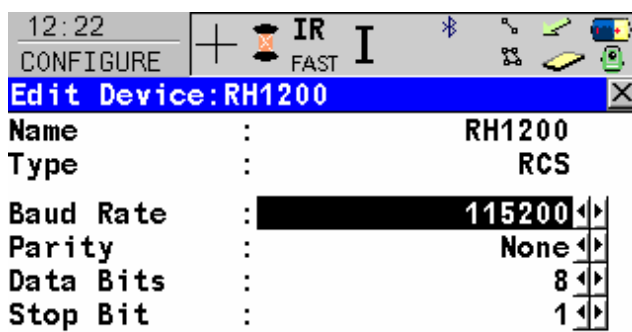


From the GeoCOM Mode screen verify that Use Interface is set to **Yes**. Set the Port setting to **Port 2 (Handle)** and the device should read **RH1200**. Press **F5** for **DEVCE**.





From the Devices screen highlight **RH1200** from the **Radios** tab. Press **F3** for **EDIT**.



Verify that you have the following configuration parameters

- **115200** Baud Rate
- **None** Parity
- **8** Data Bits
- **1** Stop Bits

Press **F1** to store these settings.
Press **F1** three more times to return to the **Main Menu**.



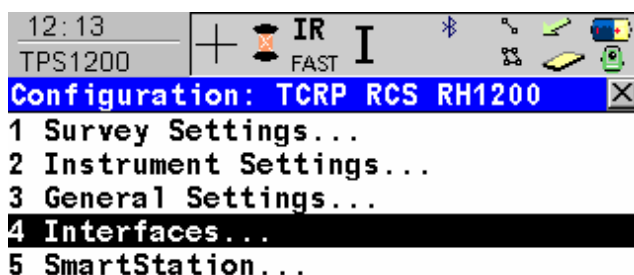
The 1200 is now configured to communicate with Leica SurvCE on the RX1250.

Changing the radio channel on the Instrument

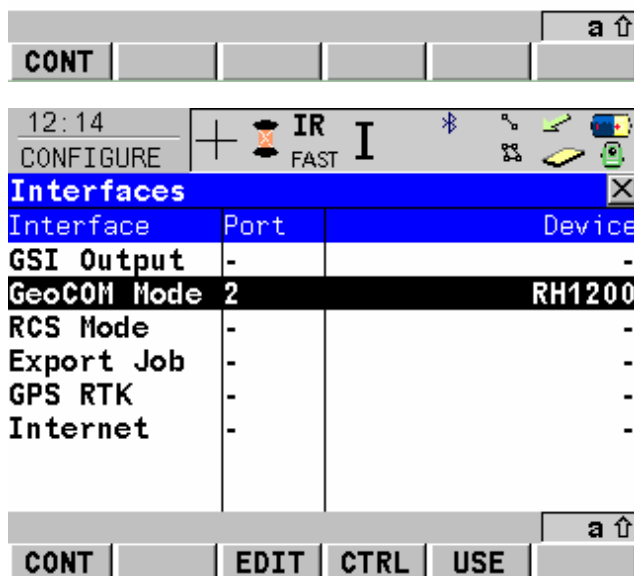


From the **Main Menu**

Select **5 Config...**



From the Configuration screen select **4 Interfaces ...**



From the Interfaces screen highlight **GeoCOM Mode** and press **F4** for **CTRL**.



Enter a value for **Link Number** between 0 and 14. This value must also be entered into **Channel** field of the **Configure Radio** screen in Leica SurvCE later in the exercise.

Set as: **Base**

Press **F1 CONT** to save any changes.

Press **F1 CONT** to return to the **Main Menu**.



3.0 Configuring Leica SurvCE

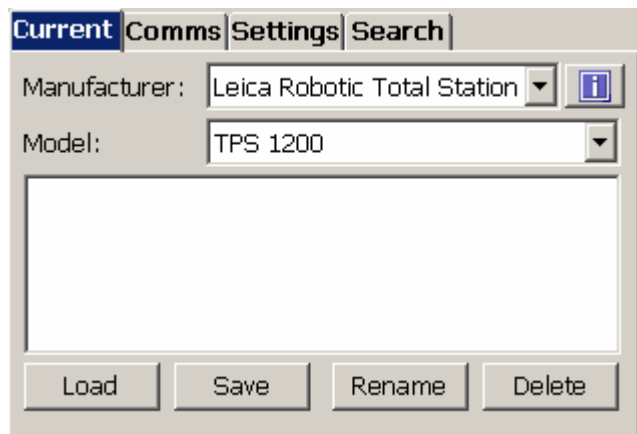
Objective We need to configure Leica SurvCE for use with the Robotic Total Station.

Getting started Power on the RX1250.

Configuring SurvCE for communication with the 1200

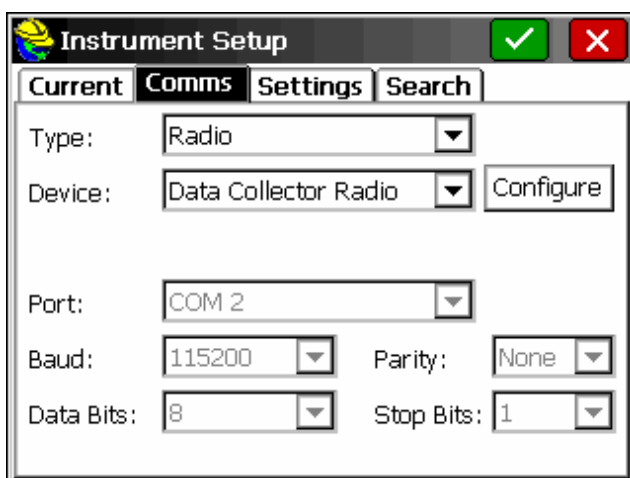


From the **EQUIP** tab press **1** or tap the **Total Station** button on the RX1250.



From the **Current** tab of the **Instrument Setup** screen verify the following settings:

- **Leica Robotic Total Station** Manufacturer
- **TPS1200** Model



Instrument Setup [Green Check] [Red X]

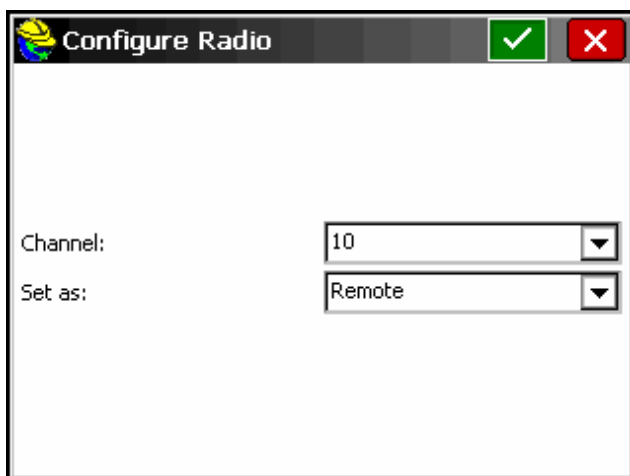
Current Comms Settings Search

Type: Radio [v]
 Device: Data Collector Radio [v] [Configure]
 Port: COM 2 [v]
 Baud: 115200 [v] Parity: None [v]
 Data Bits: 8 [v] Stop Bits: 1 [v]

From the **Comms** tab of the **Instrument Setup** screen verify the following settings:

- **Radio** Type
- **Data Collector Radio** Device

To verify the radio configuration parameters press the **Configure** button.



Configure Radio [Green Check] [Red X]

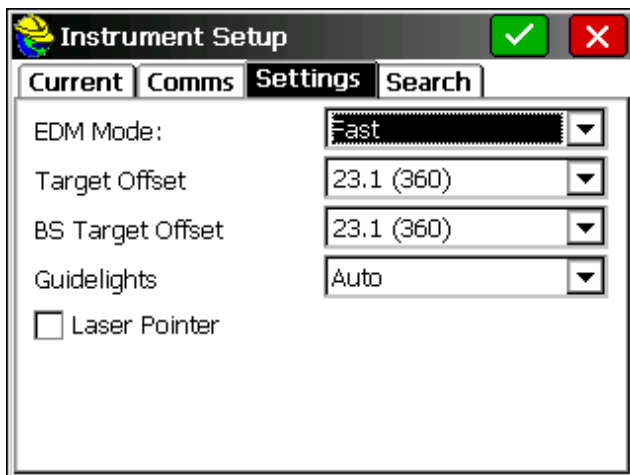
Channel: 10 [v]
 Set as: Remote [v]

Enter the same value in **Channel** that you entered in **Link** on the instrument.

Set as: **Remote**

Tap the [Green Check] on the screen to accept the settings.

Defining the linear measurement settings



Instrument Setup [Green Check] [Red X]

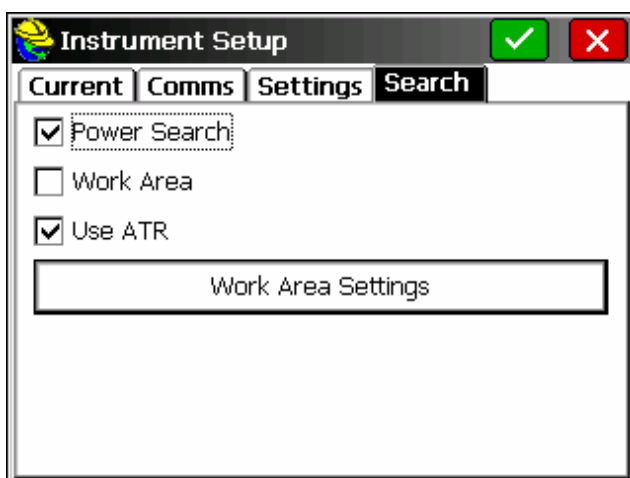
Current Comms Settings Search

EDM Mode: Fast [v]
 Target Offset: 23.1 (360) [v]
 BS Target Offset: 23.1 (360) [v]
 Guidelights: Auto [v]
☐ Laser Pointer

From the **Settings** tab of the **Instrument Setup** screen verify the following settings:

- **Fast** EDM Mode
- **23.1 (360)** Target Offset
- **23.1 (360)** BS Target Offset
- **Auto** Guidelights

Tap the **Search** tab to advance.

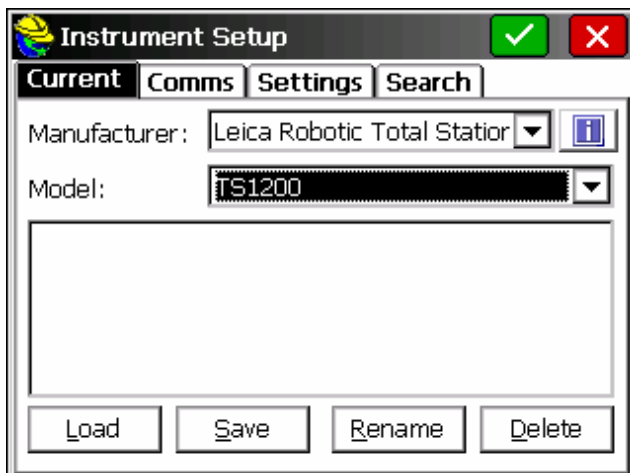


From the **Search** tab of the **Instrument Setup** screen verify the following settings:

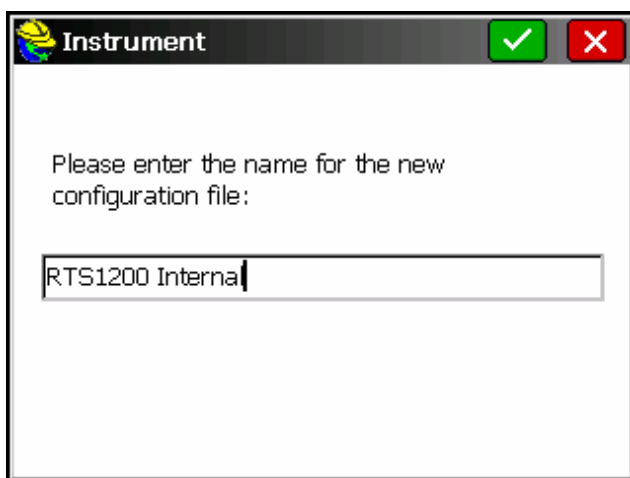
- **Power Search** is enabled
- **Use ATR** is enabled

Tap on the **Current** tab to return to the **Current** tab of the **Instrument Setup** screen to save these settings.

Saving the configuration

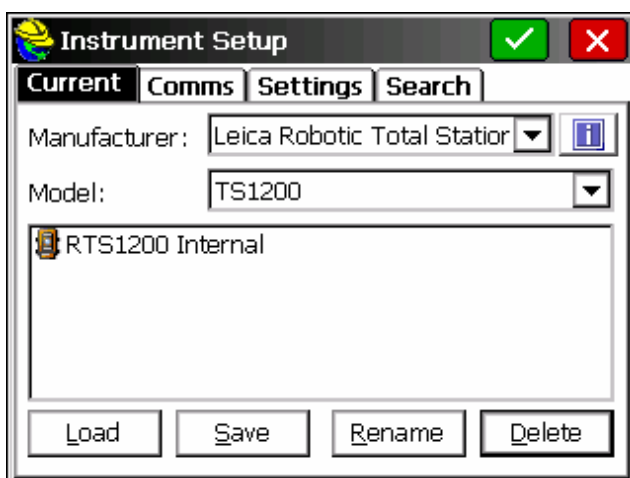


Tap the **Save** button.

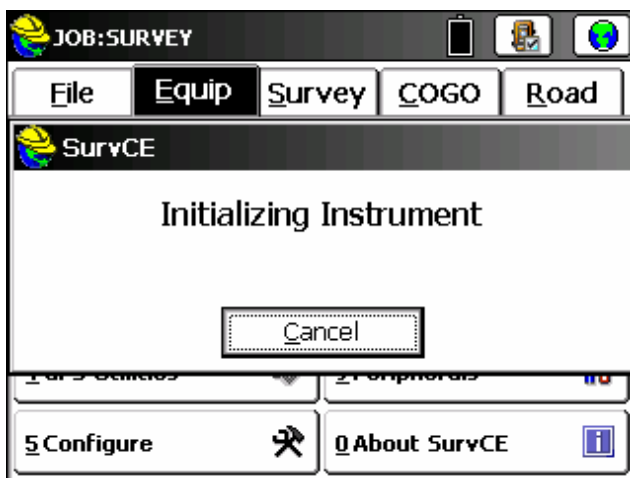


Give the new configuration a

name and press the  key on the RX1250 or tap the  to accept the name.

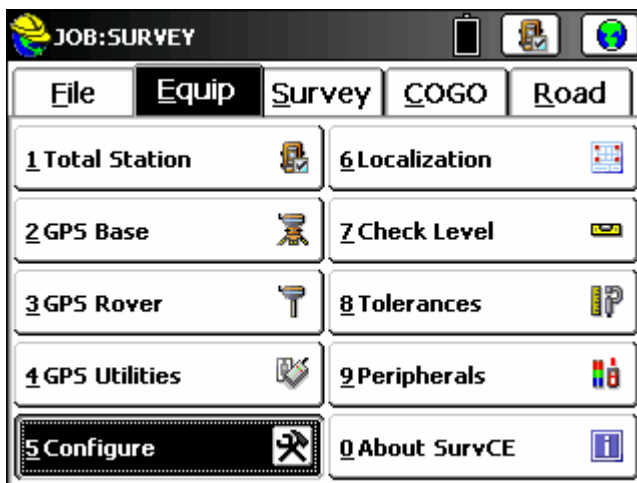


Press the  key on the RX1250 or tap the  to accept the selection.



This screen will appear as communication is established and configuration settings are applied to the TPS1200.

Configuring SurvCE for Data Collection



From the **EQUIP** menu tap the **Configure** button or press the 5 key to access the Configure screen.

Defining the general behaviour of SurvCE

Configure

General View Pt Sets Settings Search

☒ Store Fixed Only (GPS)

☐ Prompt for Total Station Setup

☐ Prompt for Height & Description

☐ Prompt for Point Notes

☒ 3D Mode

☐ Use Virtual Keyboard

No. of Readings to Avg - TS: 1 GPS: 1

Enter/Store Icon - TS: Read & Store

Enter/Store Icon - RTS/GPS: Read & Store

Verify the following settings for this exercise:

- **Store Fixed Only (GPS)** is enabled
- **3D Mode** is enabled
- **Use Graphic Icons in Survey** is enabled
- **Use Audible Alerts** is enabled
- **New Job Use Alphanumeric Format** is enabled

Tap the **View Pt** tab to proceed

Configure

General View Pt Sets Settings Search

☒ 3D Mode

☐ Use Virtual Keyboard

☒ Use Graphic Icons in Survey

☒ Use Audible Alerts

☒ New Job Use Alphanumeric Format

No. of Readings to Avg - TS: 1 GPS: 1

Enter/Store Icon - TS: Read & Store

Enter/Store Icon - RTS/GPS: Read & Store

Defining the view point reference

Configure

General View Pt Sets Settings Search

Method:

In-Out & Left-Right

Ref. Object:

Instrument

Point ID:

Directions From:

Rod

☒ Use CL for Ref. Object (when applicable)

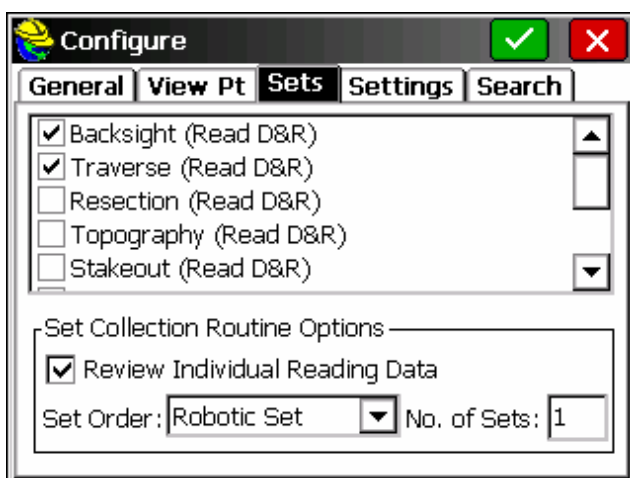
☐ Use Horizontal Clock System

Verify the following settings:

- **In-Out & Left-Right Method**
- **Instrument Ref. Object**
- **Ref. Object Directions From**
- **Use CL for Ref. Object (when applicable)** is enabled

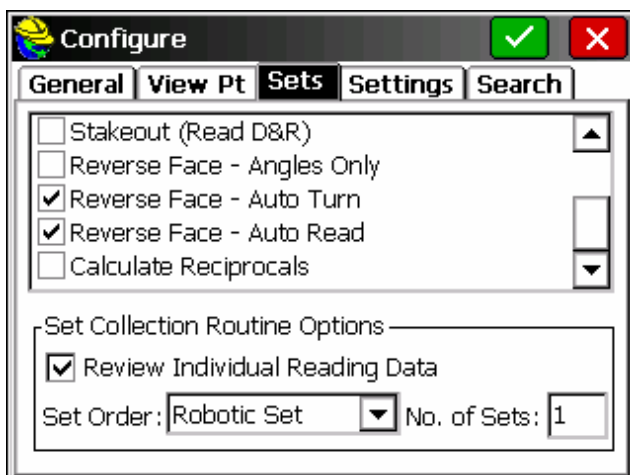
Tap the **Sets** tab to proceed.

Defining how sets are collected



Verify the following settings:

- **Backsight (Read D&R)** is enabled
- **Traverse (Read D&R)** is enabled
- **Reverse Face – Auto Turn** is enabled
- **Reverse Face – Auto Read** is enabled
- **Review Individual Reading Data** is enabled
- **Robotic Set** Set Order
- **1** No. of Sets

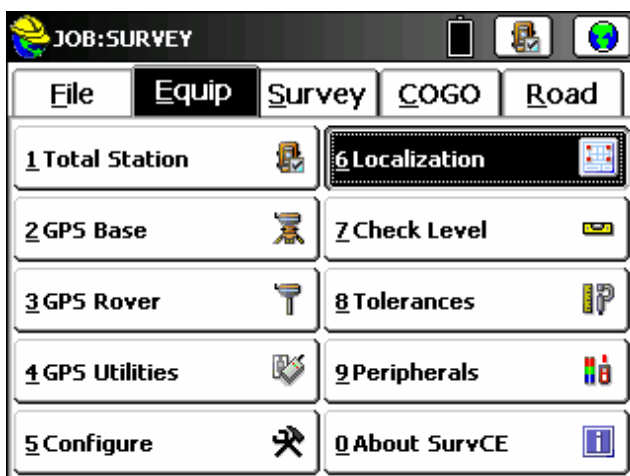


Note that for this exercise we opted to turn robotic sets to our BS and Traverse FS points only. We will only record a single direct measurement for our topographic data collection.

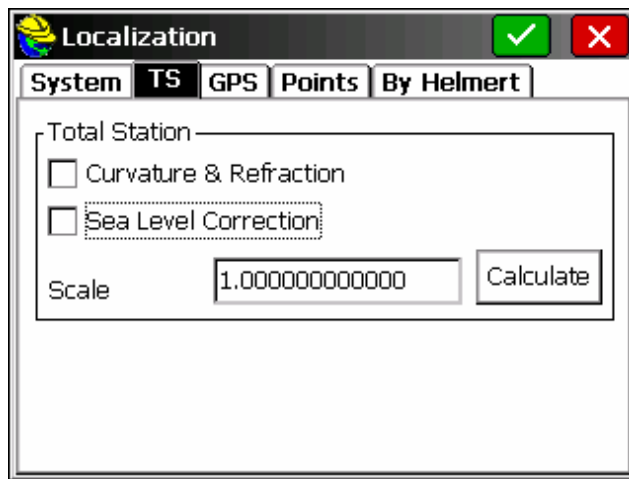
We will not revisit the **Settings** and **Search** tabs because they were previously configured during the instrument configuration process.

Tap the  on the screen to accept the selection.

Applying Curvature and refraction corrections



We will not apply curvature and refraction corrections for this exercise, but if we wanted to we could tap the **Localization** button on the **EQUIP** menu to access that option.



From the **TS** tab we see the options. Let's tap the  on the screen to accept the selection as it currently is configured.

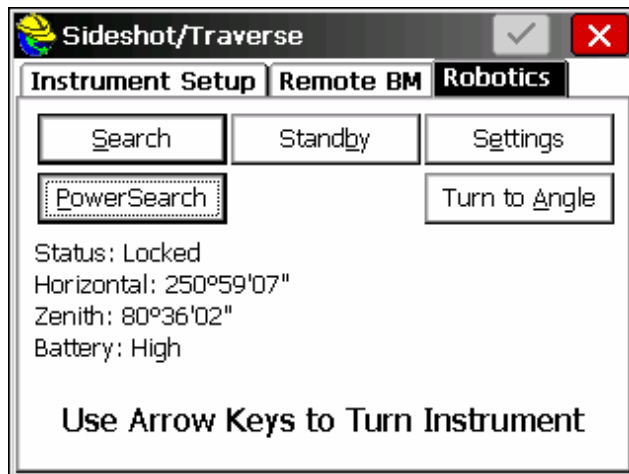
Configuring the Setup



Verify communication.

Go to the **Survey** menu and tap the **Store Points** button or press the **1** key on the keyboard.

Finding the prism



The first thing we need to do is point the instrument at the prism. Go to the **Robotics** tab tap the **Power Search** button.

The instrument will perform a Power Search and lock onto the prism. When this is accomplished you will see a screen similar to this one.

Look for **Locked** Status.