

# Using the Geo 7 Integrated Laser Rangefinder in TerraSync

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The Geo 7 has an optional integrated laser rangefinder module that can work directly with TerraSync to record offsets. The following instructions will show you how to setup and use the integrated rangefinder with TerraSync.

## Setting Up the Laser


To ensure that you are getting the best accuracy from the integrated laser rangefinder, it's best to calibrate the sensor and align the camera with the rangefinder before collecting data. You will also want to verify that the rangefinder is recording the measurement in the correct measurement units.

- Connect the laser rangefinder to the Geo 7 as shown in the [Quick Start Guide](#).
- On the Geo 7, go to Start> Settings> Sensor Calibration. Do the full calibration as shown with the on screen instructions.




*Note: You will want to be away from any metal or magnetic objects when performing the calibration. For more information on calibrating the Geo 7, please refer to the support note [here](#).*

- On the Geo 7, go to Start> Settings> Laser Alignment. Align the laser as shown with the on screen instructions.


*Note: You will want to point the rangefinder at a wall or surface 3-6 meters away that enables you to still see the red laser dot for best alignment results. For more information on aligning the laser rangefinder, please refer to the support note [here](#).*

- For ease of working with the rangefinder, you can program the buttons to open the rangefinder utility. Under Start> Settings> Personal> Buttons> Program Buttons select the Camera Button then from the Assign a program dropdown list, select Rangefinder.
- Open the Rangefinder Utility under Start.
- Click the Setting button. 
- Under Laser Height enter how far from the ground your laser will be.
- You can set your preference for the North Reference, Distance Units, and Angle Units.
- Close the Rangefinder Utility.

1. Select a button:

Button	Assignment
 Button	<Left Softkey>
 Button	<Right Softkey>
 Button	Rangefinder

2. Assign a program:

Rangefinder 

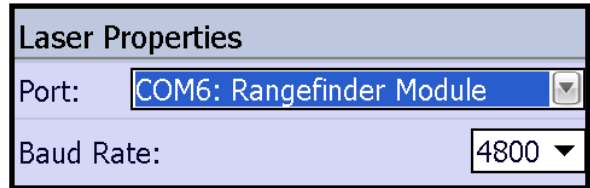


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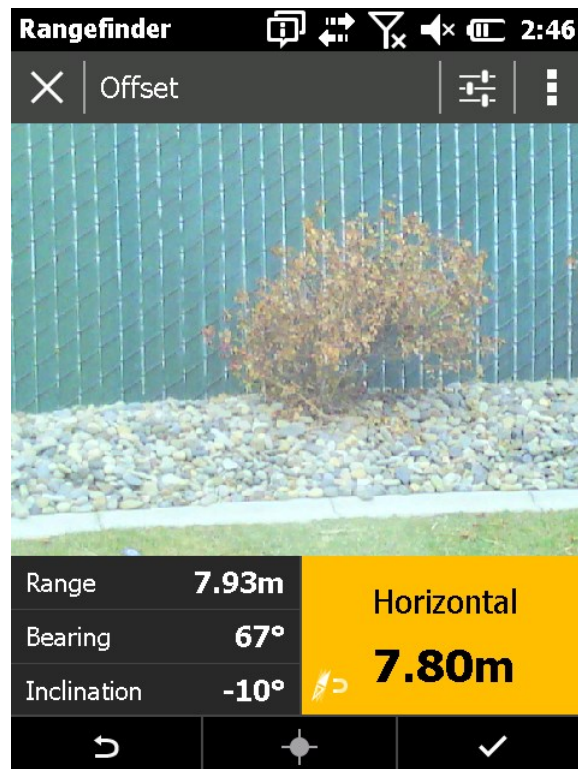
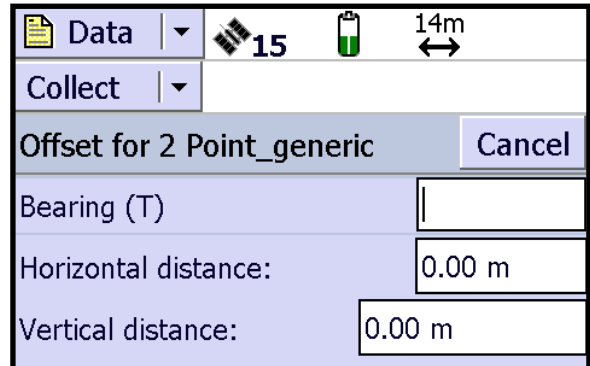
## Configuring the Rangefinder in TerraSync

- Open TerraSync on the Geo 7 under Start.
- Go to Setup> External Sensors.
- Check the box next to Laser then click the Properties button.
- Choose COM6: Rangefinder Module for the Port.
- Choose 4800 for the Baud rate.
- Click Done to save the setting.



## Recording an Offset in TerraSync

- Open a new data file in TerraSync then select the feature that you would like to record the offset for.
- Average your GPS position then pause collection.
- Fill out any attributes that you have.
- Click on Option and choose Offset> Distance– Bearing from the list.
- Press the button you assigned to the rangefinder to open the Rangefinder Utility.
- Click the Workflow button  and choose Offset.
- Use the crosshairs on the screen to center the laser onto the feature you are collecting the offset for.
- Press the button you assigned to the rangefinder to record the offset. The information for the offset will display at the bottom of the screen. If you are satisfied with the measurement, press the check button to accept. If you aren't satisfied with the measurement, press the undo button to recapture the measurement.



Once you accept the measurement in the rangefinder utility, it will close and return you to TerraSync. The offset should be automatically populated with the measurement from the rangefinder.

Data	17	6.0m
Collect		
Offset for 2 Point_generic	Cancel	
Bearing (T)	67.41°	
Horizontal distance:	7.80 m	
Vertical distance:	-0.27 m	

## **Recording QuickPoints in TerraSync**


The integrated rangefinder does support the QuickPoint capture to rapidly collected multiple features of the same feature type with the same attributes. This option is only available for point features and will only collect one GNSS position per feature.

- Open a new data file in TerraSync.
- In the Data/ Collect windows, click on Options and select Repeat from the list.
- Select the feature class that you would like to collect.
- Fill out the attribute then average your GNSS positions for the feature.
- Click Done to finish the feature.

This will save the attribute info that you entered for the feature and for future quickpoints that you will be collecting.

In the Data/ Collect windows, click on Options and select QuickPoint.

The QuickPoint Window will open.

- Press the button you assigned to the rangefinder to open the Rangefinder Utility.
- Click the Workflow button  and choose Offset.
- Use the crosshairs on the screen to center the laser onto the feature you are collecting the offset for.
- Press the button you assigned to the rangefinder to record the offset. The information for the offset will display at the bottom of the screen. If you are satisfied with the measurement, press the check button to accept. If you aren't satisfied with the measurement, press the undo button to recapture the measurement.
- Once you accept the measurement in the rangefinder utility, it will close and return you to TerraSync. The position for the quick point will automatically be collected and you should the feature is finished.