Collecting Stop and Go Data Using a GeoMax Zenith 25 GNSS Reciver and MicroSurvey FieldGenius

August 20, 2013

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Introduction

This guide describes how to collect Stop and Go data using your GeoMax Zenith 25 GNSS receiver and MicroSurvey FieldGenius.

The goal will be to import this data into GeoMax Geo Office for later post processing.

Important Note: This guide does not explain how to use GGO. We assume that you are already familiar with this software. If you require assistance using GGO, please contact your local GeoMax dealer for help.
We also assume you have some basic knowledge of FieldGenius such how to create an instrument profile and you have the ability to connect to your receiver. If you require additional assistance, please visit MicroSurvey's Helpdesk:

http://www.microsurvey.com/helpdesk2/

or contact your local GeoMax representative.

Current Version

This guide was written using FieldGenius Version 6.0.6.6. If you are using a different version, your screens may look differently than what is displayed in this guide.

Before you begin

Have your GeoMax Zenith 25 Receiver, and a data collector with FieldGenius installed nearby. You will need them to complete this guide.

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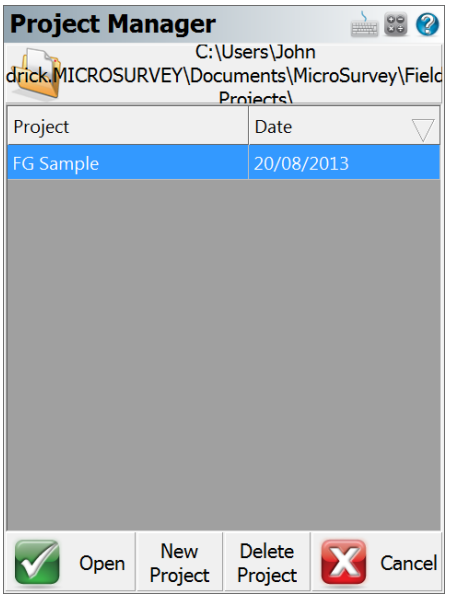
Step	Action	Display
1	• Start FieldGenius. When at the Project Manager screen: We will create a new project. • Tap on the **New Project** button. This takes us to the Create New Project screen.	
2	In the Create New Project screen: • Enter a name for your new project. In this example we will call it ***Stop And Go***. • Press the **OK** button when finished. This takes you to the Project View screen.	

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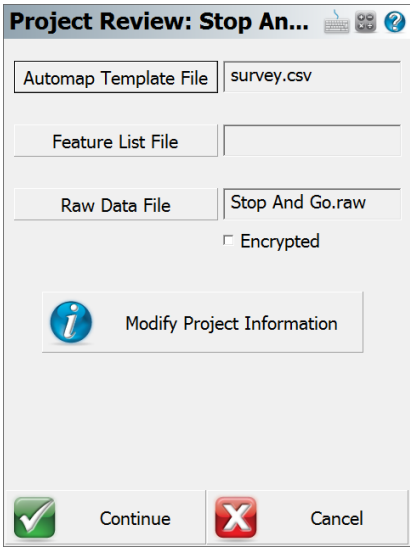
Step	Action	Display
3	In the Project Review screen: **Automap files** contain pre-defined descriptions that can be used in FieldGenius. The template library that you select will be copied into the project's folder with a name of ***yourprojectname***_automap.csv, and any changes that you make to the Automap Library will affect only the project library, not the template library. Use the **Feature List** field to select a feature list that you want to use with the project, for collecting GIS point attributes. The **Raw Data File** field indicates the name of the raw file that is going to be recorded. You can select a different one by pressing the button and either creating a new raw file or choosing an existing one to open. The **Modify Project Information** button will take you directly to the Project Information screen. There you can enter notes about the project. • Leave these fields as they are. • Press the **Continue** button. This takes us to the Unit Settings screen.	

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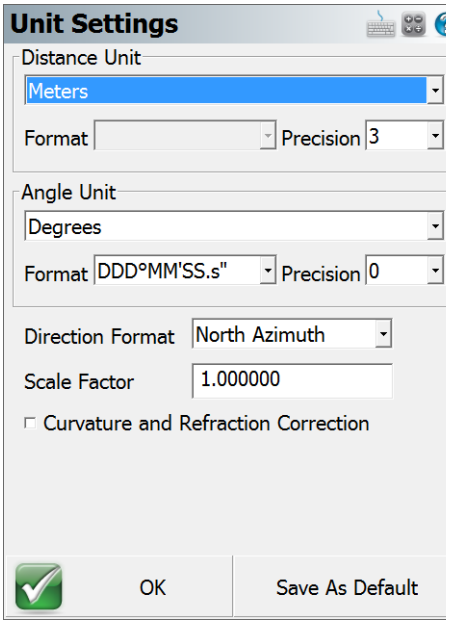
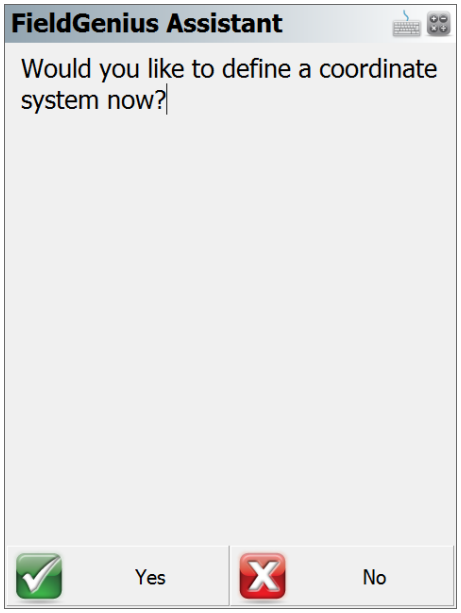
Step	Action	Display
4	In the Unit Settings screen: • Select which units you wish to use. **Important Note**: Once this has been set, you cannot change this project's units again. In this example, we will use the settings displayed on the right. • Press the **OK** button when finished. This takes us to the FieldGenius Assistant screen.	
5	In the FieldGenius Assistant screen: We are prompted to define a coordinate system. **Important Note**: You **must** have a coordinate system selected if you wish to work with GPS/GNSS receivers. • Tap on the **Yes** button**.** This takes us to the Coordinate System Settings screen.	

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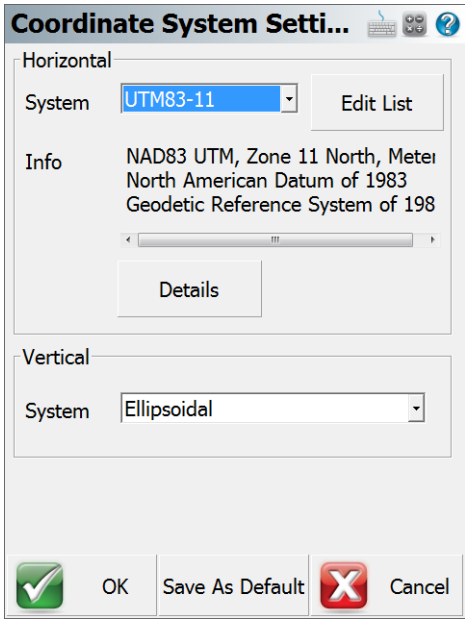
Step	Action	Display
6	In the Coordinate System Settings screen: • Select the coordinate system you wish to work in. **Note:** FieldGenius now comes with a new **Coordinate System Editor**. This was introduced in version 6.0.0. To learn more about the new coordinate system editor, please review the MicroSurvey Technical Guide titled ***MicroSurvey FieldGenius' New Coordinate System Editor***. In this example we will be selecting the **UTM83-11 North** zone coordinate system with ***no geoid*** model (ellipsoidal). • Press the **OK** button. This takes us to the Instrument Selection screen.	

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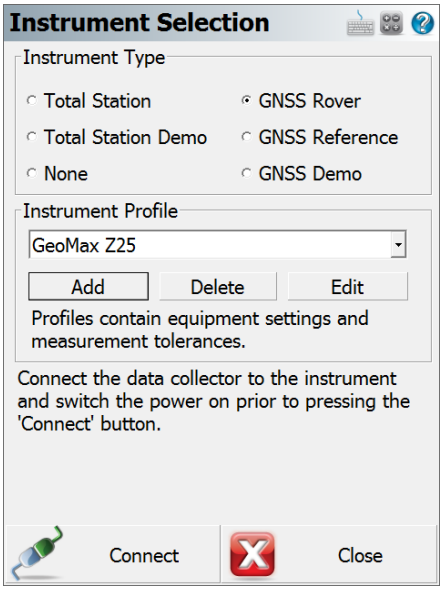
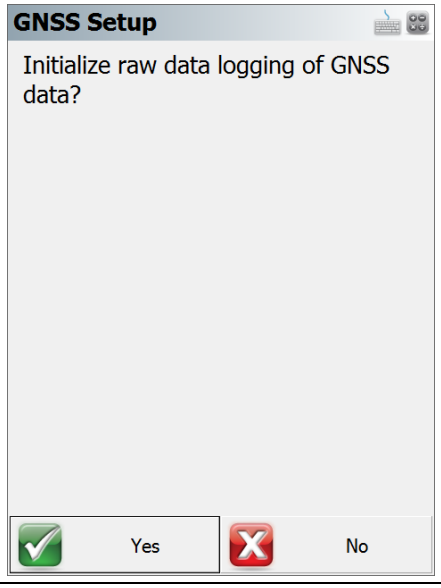
Step	Action	Display
7	In the Instrument Selection screen: • Select your Z25 receiver instrument profile. For more information on creating a Z25 instument profile, go to the MicroSurvey HelpDesk web site and search for the term ***GeoMax Z25***. • Press the **Connect** button. This takes us to the GNSS Setup screen.	
8	In the GNSS Setup screen: Since we intend to collect raw data that will be post processed later in the office, so yes, we will initialize data logging. • Press the **Yes** button. This takes us to the GNSS Raw Data Logging screen.	

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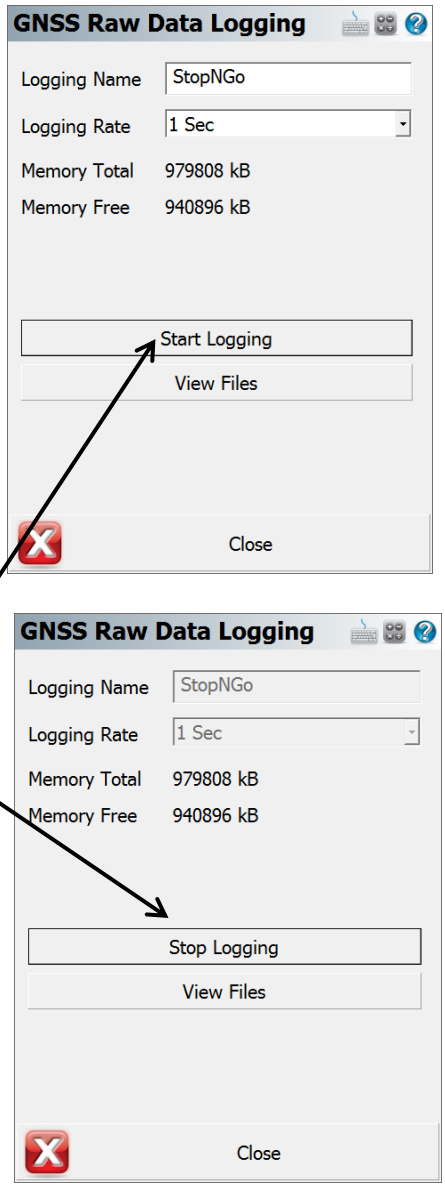
Step	Action	Display
9	In the GNSS Raw Data Logging screen: • Enter a name for the raw data file name in the **Logging Name** field. In this example we are calling it ***StopNGo***. • Select a logging rate using the pull down menu in the **Logging Rate** field. In this example we will use ***1 Sec***. • Press the **Start Logging** button. You will see the **Start Logging** button change to **Stop Logging**. It is the best indicator to know you are logging data. You will also see the **Memory Free** field value decrease as data logging continues. • Press the **Close** button. This takes you to the Link Configure screen.	

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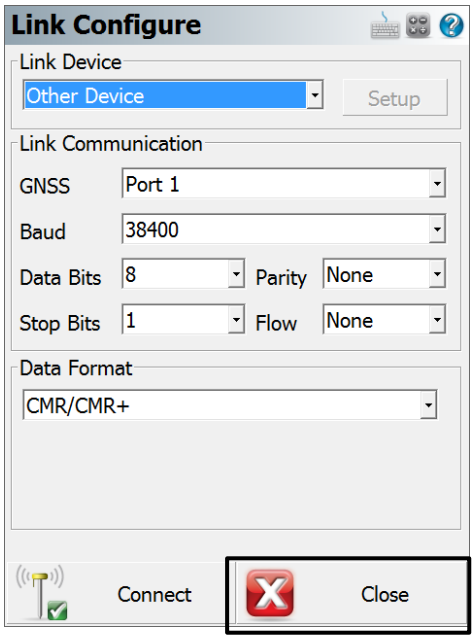
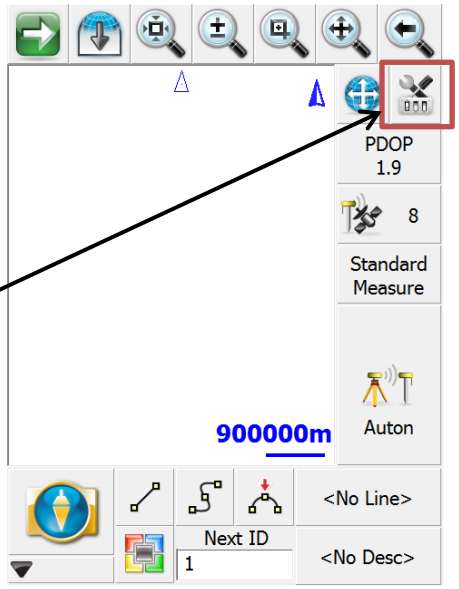
Step	Action	Display
10	In the Link Configure screen: Since this is an exercise in collecting Stop and Go data, we will ignore any RTK connection details. You could be also using RTK data but in this example we will only be working in autonomouse mode. • Ignore these settings and press the **Close** button. This takes us to the Mapview within FieldGenius.	
11	In the Mapview of FieldGenius: In this example we see we are tracking 8 satellites. We now want to configure FieldGenius to collect Stop and Go data. • Press the **Instrument Settings** button. This takes you to the Instrument Settings screen.	

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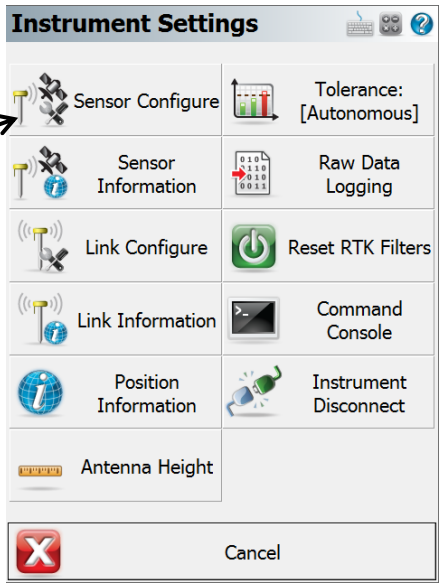
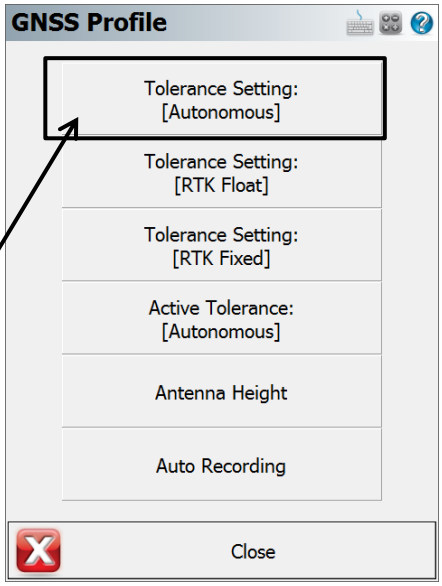
Step	Action	Display
12	In the Instrument Settings screen: • Press the **Sensor Configure** button. This takes us to the GNSS Profile screen.	
13	In the GNSS Profile screen: In this screen we can select our tolerance settings for 3 separate tolerance values. Since this example is only measuring autonomous (non RTK or DGPS positions) we will edit the **Autonomous** tolerance setting. • Press the **Tolerance Setting: Autonomous** button. This takes us to the Tolerance 1 screen.	

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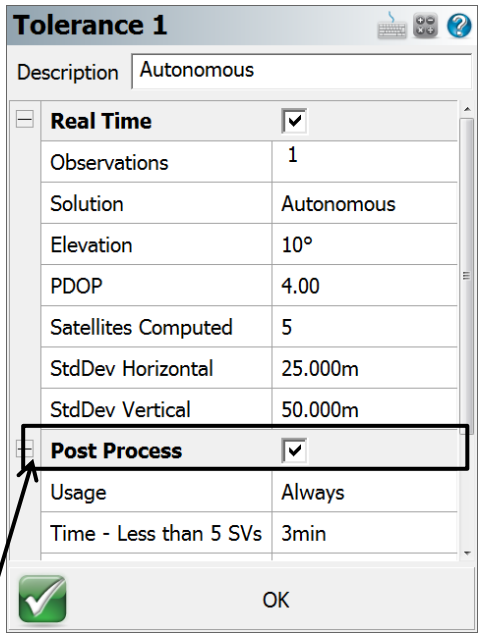
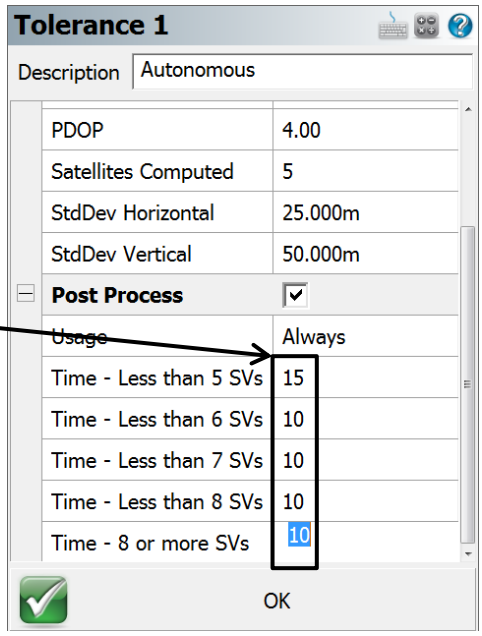
Step	Action	Display
14	In the Tolerance 1 screen: In this screen we can set how many observations will be made per measurement. Since we are not collecting any RTK or DGPS Data, one measurement for our points will be adequate. Also, we are not concerned at all to be within any observation tolerance so we will increase the **StdDev Horizontal** and **StdDev Vertical** fields to a value that will never fail. • Set the **Observations** field to **1**. • Set the **StdDev Horizontal** field to **25 metres** and **StdDev Vertical** field to **50 metres**. ***Important*:** In order to successfully collect Stop and Go data, you must place a check mark in the **Post Process** check box**.** You can also adjust the time values related to the number of available satellites. In this example I will change these values all to 3 minutes to seed up the process. Normally care should be used when determining how long your observation time will be. • **Press the OK** button when finished. This returns us to the GNSS Profile screen.	 

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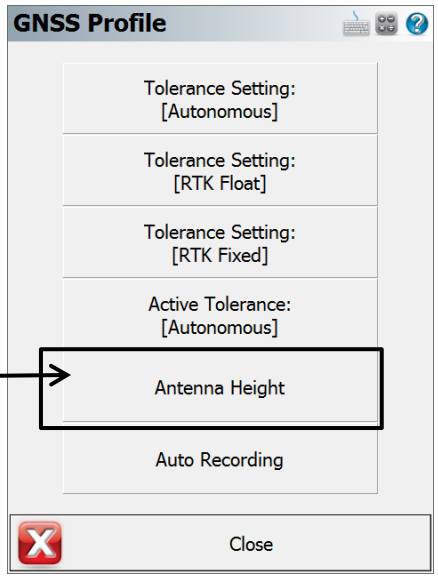
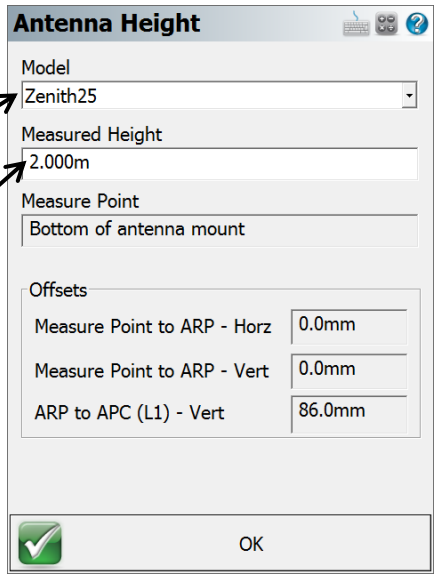
Step	Action	Display
15	In the GNSS Profile screen: While we are here, we should also ensure that we are using the correct antenna and antenna height. • Press the **Antenna Height** button. This takes us to the Antenna Height screen.	
16	In the Antenna Height screen: Use the drop down arrrow in the **Model** field to select **Zenith25**. • Measure and enter the height of your antenna in the **Measured Height** field. In this example we are using a 2 metre tripod. • Press the **OK** button when finished. This returns you to the **GNSS Profile** screen. • Press the **Close** button. This returns us to the Mapview.	

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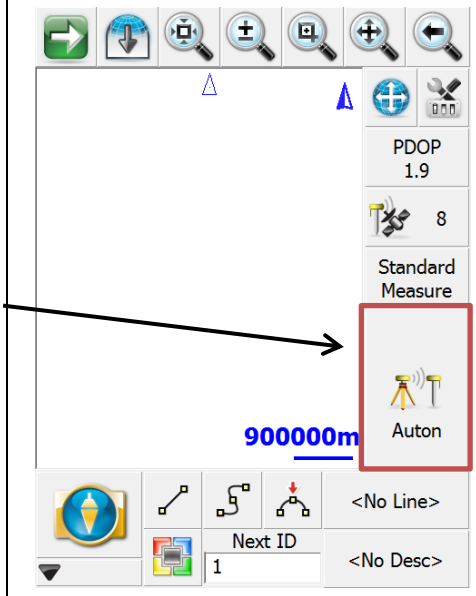
So Far

We have configured FieldGenius to record Stop and Go data while measuring points in real-time mode even though we have no real-time corrections coming in (that is, we are in autonomous mode).

We then set the correct antenna type and entered a height of antenna.

We are now ready to record data. Set up your receiver over the point you wish to measure. Since the receiver's antenna should not move during this occupation, a tripod or bi-pod should be used to steady the antenna.

Step	Action	Display
17	In the MapView screen: We are now ready to measure our first stop and go point. • Tap on the **Measure** button. This takes us to the GNSS Measurement screen.	

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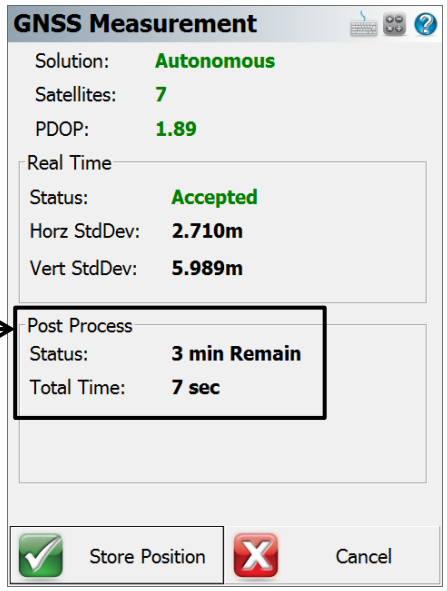
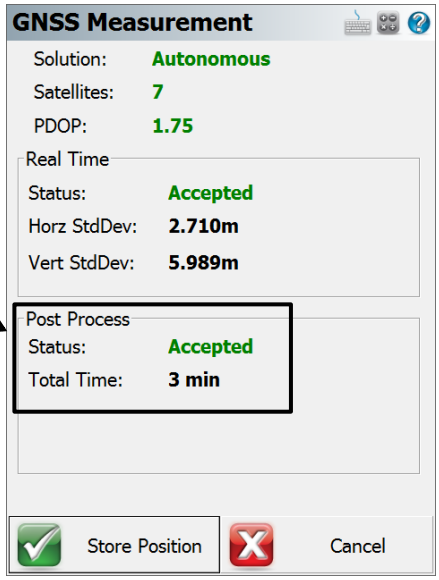
Step	Action	Display
18	In the GNSS Measurement screen: We can see that our initial one epoch measurement was done as the **Real-Time Status** field says *Accepted*. But in the **Post Process** section, we see that we still have 3 minutes of data to collect. (Remember in ***Step 14*** I set all the times to be 3 minutes.). • Do not move the receiver during this time. After the 3 minutes is up, we now see an **Accepted** value in the **Status** field. We now want to store this data with a specific point ID. • Press the **Store Position** button. This takes us to the Store Point screen.	 

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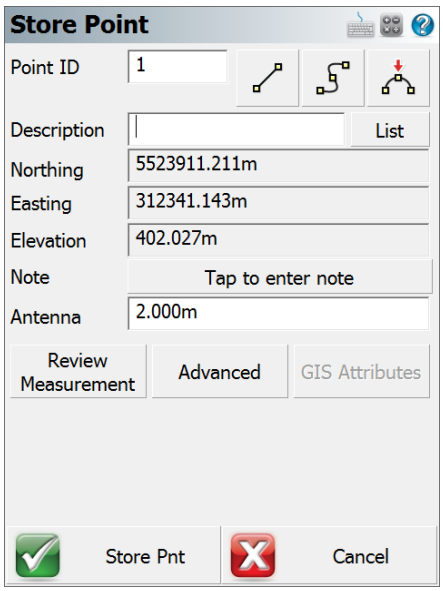
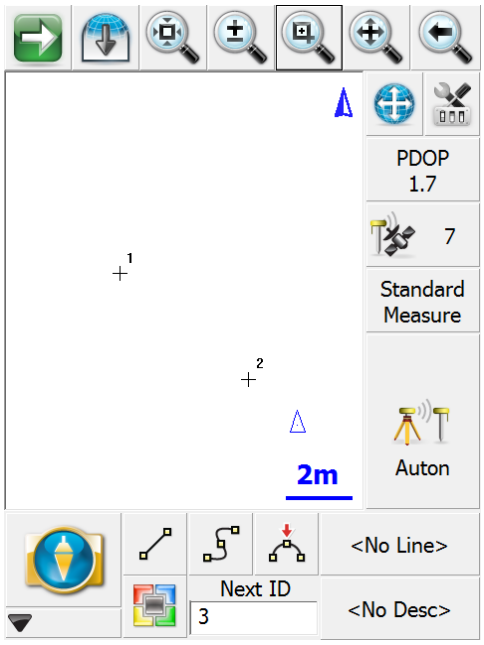
Step	Action	Display
19	In the Store Point screen: We see the local UTM11 coordinates (set in ***Step 6***) in the **Northing**, **Easting**, and **Elevation** fields. We can enter a description for the point here, but in this example we will leave it empty. • Tap on the **Store Pnt.** button. This stores the point and returns us to the MapView screen. We will move the receiver and measure another point. Repeats ***steps 17*** through ***19***.	
20	In the MapView screen: We see our 2 measured points. We will now go to GGO and see the imported data.	

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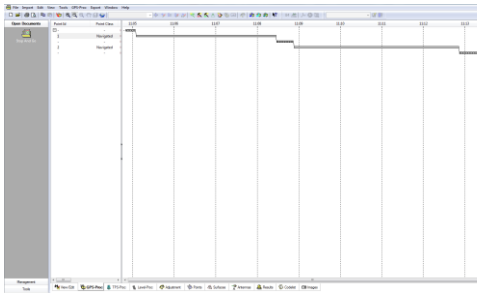
GGO

Remember: This guide assumes you know how to use GGO (GeoMax Geo Office), and providing user guidance on this software is beyond the purview of this training guide.

Step	Action	Display
21	• Start GGO. • Create a new project. • Import your collected data. Under the GPS-Proc tab, you will see the stop and go data that was collected with each observation. You can now select this data as a rover and post process this data with another GNSS receiver's data	

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Collecting Stop and Go Data Using a GeoMax Zenith 25 GNSS Reciver and MicroSurvey FieldGenius, *continued*

Congratulations

You have successfully configured FieldGenius to collect Stop and Go data.

You then entered the correct antenna height and selected the correct antenna model and were ready to start measuring.

You measured 2 points while collecting Stop and Go data.

You then imported the data and were ready to post process it against other GNSS data.

Glossary

GNSS – Global Positioning System
ISP – Internet Service Provider
PIN – Personal Identification Number
PUK – PIN Unlocked Key
GSM – Global System for Mobile Communications
CDMA – Code Division Multiple Access
ISP - Internet Service Provider
NTRIP – Networked Transport of RTCM via Internet Protocol
NTRIP Caster – an HTTP server that accepts request-messages on a single port and then decides where there is streaming data to receive or to send. The caster offers a list of mountpoints that is called a source list or source table.
HTTP: Hypertext Transfer Protocol
SIM - Subscriber Identity Module
RTCM - Radio Technical Commision for Martitime
RTK – Real Time Kinematic

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