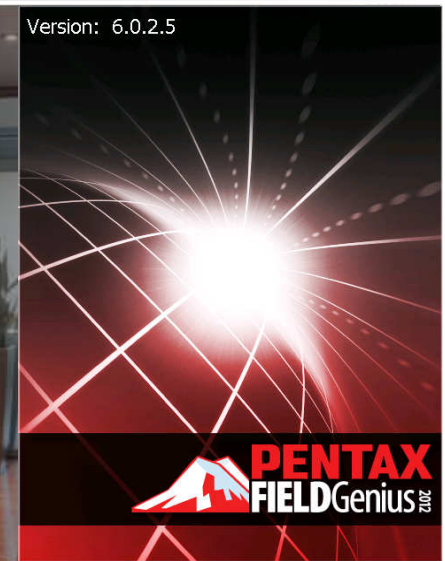




FieldGenius setting to Post-Process data with EZSurv™

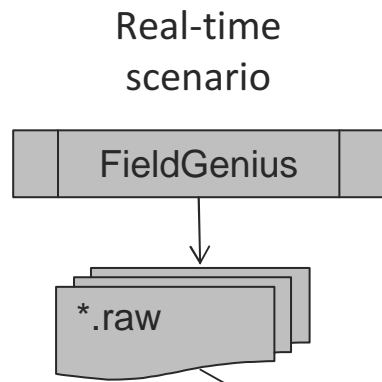
Version: 6.0.2.5



2012 - Training documents / Setting a Base and a Rover in a single Project file



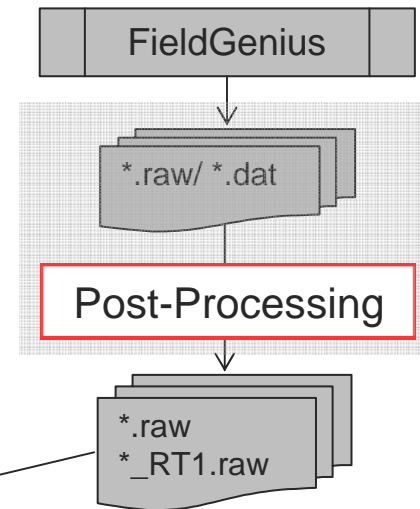
EZSurv™ and FieldGenius



Post-Processing is a simple step inserted into the data flow.

Post-Processing simply rewrites the **raw** file with corrected positions

Post-process scenario





This tutorial explains how to use Field Genius to Post-Process GNSS data using EZSurv Post-Processing software

More specifically, it explains how to use it to set a Base Station and a rover using a single data Collector to record all information in a single project file (*.RAW)

Project Setup (1/2)



To **open an existing project**, use the “Open” button after selecting the appropriate project

To **create a new project**, select the «New Project» button. If you choose to create a new project, you’ll have to enter a project name in the next window.

(not shown here). After entering the name or opening an existing project, you’ll be brought to the “Project Review” window.

Project Manager

This window let you review the parameters associated to the new project B_ROVER.

Click continue, then you will end up in the **Unit Setting** Windows

New project File

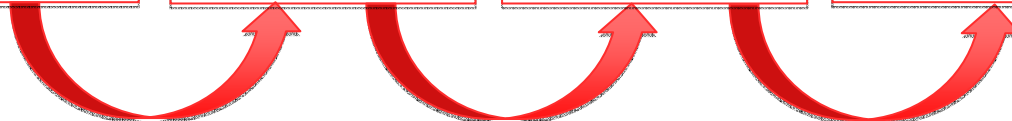
Project Setup (2/2)

Unit Setting Windows -
Set your distance and angle unit

Define a coordinate system

Select or edit a mapping system

Add Predefined or custom coordinate system



Set a GPS Base Station (1/6)

Coordinate System List

Add Predefined New User-Defined

Edit User-Defined Delete User-Defined

Coordinate Systems

UTM83-11	Predefined
UTM83-18	Predefined

Remove From List

OK Cancel

By Clicking OK you get the *Instrument Selection* screen

Instrument Selection

Instrument Type

Total Station GPS Rover 1

Total Station Demo GPS Reference

None GPS Demo

Instrument Profile

Reference Sample

Add Delete Edit

Profiles contain equipment settings and measurement tolerances. 2

Connect the data collector to the instrument and switch the power on prior to pressing the 'Connect' button.

Connect Close

Select GPS Reference and click Edit

Since we do not have any receiver configured yet, we need to edit (2) the instrument profile ("Reference Sample" in this example) associated to the "GPS Reference" instrument type.

If we had configured a receiver in the past, I would simply select the associated profile. Press "Connect" when done.

GPS Profile

Model and Communication 1

Tolerance 2

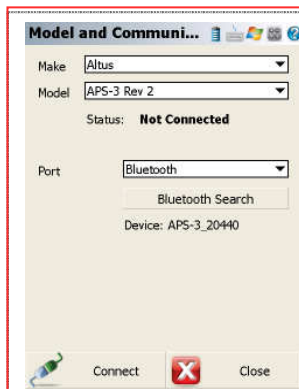
Antenna Height 3

Close

Set these 3 settings



Set a GPS Base Station (2/6)

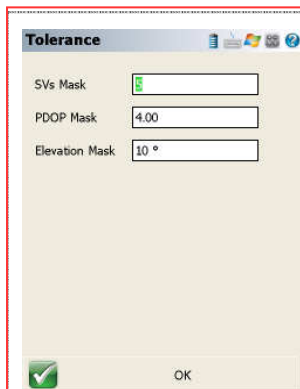


Click on Instrument Setting

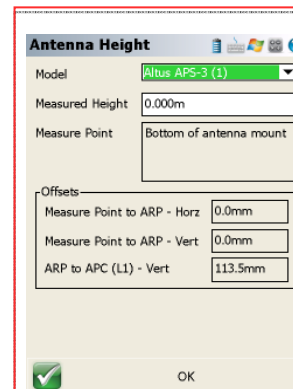
Make: Select the receiver brand

Model: Select the model of the GNSS receiver you're using.

Port: Select the communication medium. If you are using a wired communication, select the appropriate COM port and parameters. "Bluetooth Search" lets you search and pair with bluetooth devices in range of your pocket PC.



Set minimum tolerance (use the proposed one, they are OK)



Set antenna parameters

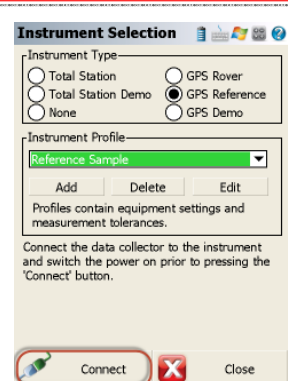
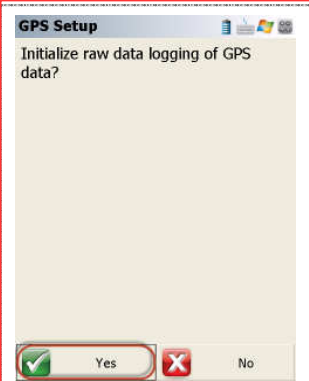
Model: Select the proper antenna model (see the "Measure Point" note to correctly identify your model).

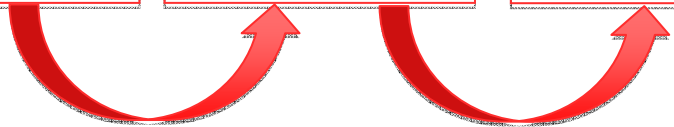
Measured Height: Antenna height to the ARP or to the Measurement Point

Measure Point: Comment on where the measure should be taken on the antenna. Directly linked to the model you chose.

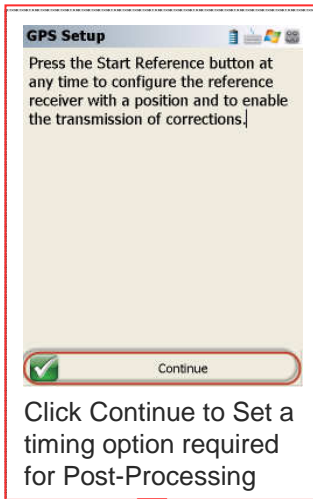


Set a GPS Base Station (3/6)

 <p>Instrument Selection</p> <p>Instrument Type:</p> <p><input type="radio"/> Total Station <input type="radio"/> GPS Rover</p> <p><input type="radio"/> Total Station Demo <input checked="" type="radio"/> GPS Reference</p> <p><input type="radio"/> None <input type="radio"/> GPS Demo</p> <p>Instrument Profile:</p> <p>Reference Sample</p> <p>Add Delete Edit</p> <p>Profiles contain equipment settings and measurement tolerances.</p> <p>Connect the data collector to the instrument and switch the power on prior to pressing the 'Connect' button.</p> <p>Connect Close</p>	<p>Click on Connect to communicate with your receiver</p>	 <p>GPS Setup</p> <p>Initialize raw data logging of GPS data?</p> <p>Yes No</p>	<p>Click yes to start GNSS data recording</p>
<p>You are now back to the <i>Instrument Selection</i></p>	<p>GNSS Raw Data Logging</p> <p>Logging Name: BASE.SBF</p> <p>Logging Rate: 10 Sec</p> <p>Memory Total: 991472 kB</p> <p>Memory Free: 989472 kB</p> <p>Start Logging Stop Logging</p> <p>View Files</p> <p>OK</p>	<p>Set GNSS raw data logging</p>	<p>Logging Name: GNSS File name (for the Base) to be recorded on the receiver SD card. ("BASE" in this example).</p> <p>Logging Rate: Keep the default rate value for the base (10 seconds).</p> <p>Start Logging: Start the raw GNSS data logging. Be sure to press this button before pressing "OK" to get out of this window.</p>



Set a GPS Base Station (4/6)

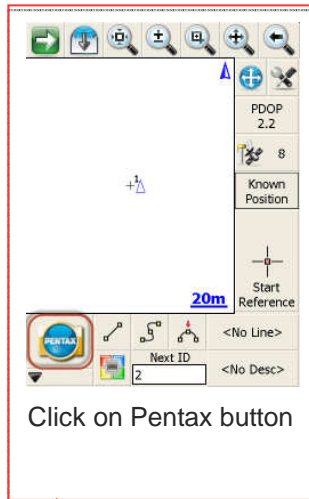


GPS Setup

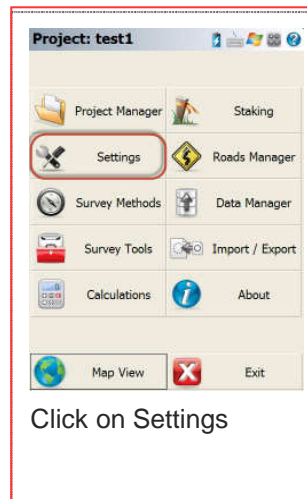
Press the Start Reference button at any time to configure the reference receiver with a position and to enable the transmission of corrections.

Continue

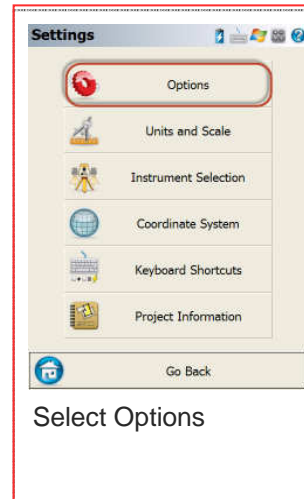
Click Continue to Set a timing option required for Post-Processing



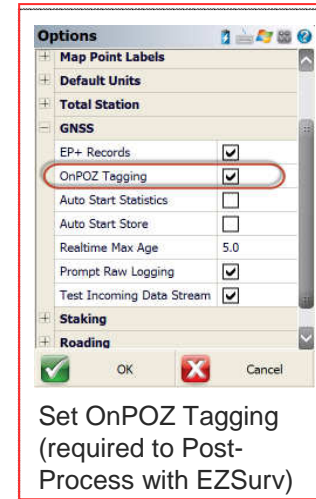
Click on Pentax button



Click on Settings



Select Options



Set OnPOZ Tagging (required to Post-Process with EZSurv)



Set a GPS Base Station (5/6)

Go Back to the Map View – Select Known Position

Set how you want to define you Base Station coordinate

Known Geodetic Position: If you select this option you will be brought back to the map view. By clicking the “Start Reference” button, it will bring you to a page to input a known coordinate. When asked if you want to save the geodetic position to the point database, please select “Yes”. The next page will let you change to point ID, and a description of the point or enter a note. You can leave the default ID or change it. Click on “Store Pnt” when finished.

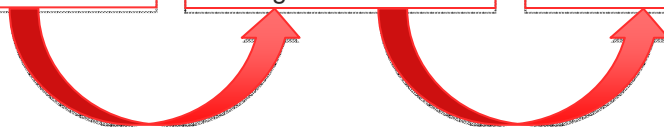
Averaged Geodetic Position. If you select this option you will brought back to map view. By clicking the “Start Reference” button it will bring you to a window that will let you know the “Averaged Geodetic Position” in real time and information about the number of epoch collected and the time spent on the average. Click “Set position” when happy with the average. When asked if you want to save the geodetic position to the point database, please select “Yes”. The next page will let you change the point ID, the description attached to the point or enter a note. You can leave the default ID or change it. Click on “Store Pnt” when finished.

Local Transformation to point: (see FieldGenius manual)



Set a GPS Base Station (6/6)

<p>Link Configure</p> <p>Link Device: Digital UHF Setup</p> <p>Link Communication:</p> <p>GPS Port: Internal Device</p> <p>Baud: </p> <p>Data Bits: Parity: </p> <p>Stop Bits: Flow: </p> <p>Data Format: CMR</p> <p>Station ID: 0</p> <p style="text-align: right;">Connect X Close</p>	<p>Link Device: Choose your communication device. Use the “Setup” button to enter more parameters.</p> <p>Link Communication: Help you configure the communication device you’ve selected.</p> <p>Data format: Options that will let you choose the format of your corrections to be transmitted. Also lets you pick a station ID.</p> <p>After setting, simply press on “Close”.</p>	<p style="text-align: center;">You are back to the Map View – Select Settings</p>
<p>Now you are ask to set correction transmission</p>		<p style="text-align: center;">Now disconnect the instrument</p>





Now your **Base Station is setup**. It has a coordinate, it records raw GNSS data with the timing option (OnPOZ Tagging) and it is transmitting GNSS corrections (*or not, if you are working purely in Post-Processing*).

Now, using the same data collector, you will set you rover to collect your survey data



Setting Rover receiver (1/5)

Go Back to the Map View – Select Settings

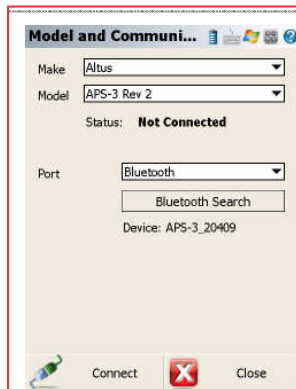
Select GPS Rover

If there is any receiver configured, you will need to edit (2) the instrument profile associated to the “GPS Rover” instrument type. If you had one configured, simply select in the “Instrument Profile” combo list. **Then press “Connect” when done.**

From here there is 5 possible settings



Setting Rover receiver (2/5)

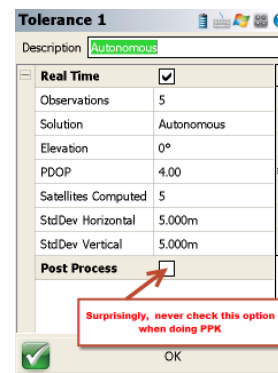


Setting Receiver and communication

Make: Select the receiver brand

Model: Select the model of the GNSS receiver you're using.

Port: Select the communication medium. If you are using a wired communication, select the appropriate COM port and parameters. "Bluetooth Search" lets you search and pair with bluetooth devices in range of your pocket PC.



Create *Tolerance* «profile»

Observations: Number of epoch to record for a point.

Solution: Minimum solution type to record a position (if you want to post-process your data, always use «AUTONOMOUS», then if you have an RTK position it will record it, if you lose RTK it will still record it to be post-processed).

Elevation: Required elevation mask.

PDOP: Minimum PDOP to consider an epoch as valid

Satellites Computed: Minimum number of satellite to consider an epoch as valid (5 is good)

StdDev Horizontal: Minimum horizontal standard deviation to consider an epoch as valid (always put a high number if you want to post process your data)


StdDev Vertical: Minimum vertical standard deviation to consider an epoch as valid (always put a high number if you want to post process your data)

Please do not use the "Post Process" tolerances (check the note on the image).

You can edit the 3 Tolerance «profile» to fit your needs (and edit their Name). During a survey you can switch from one to another to fit your need.

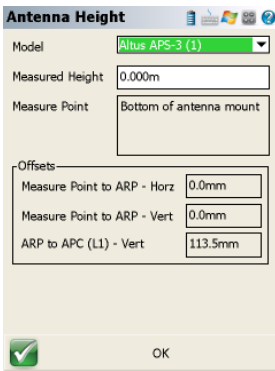


Setting Rover receiver (3/5)



Since you have 3 different tolerance "profiles" when working with a rover, you have to select an Active one. In the example the tolerance [Autonomous] in "Internal GNSS" instrument profile is now active. You can switch from one of these 3 values during your survey.

Select an Active tolerance

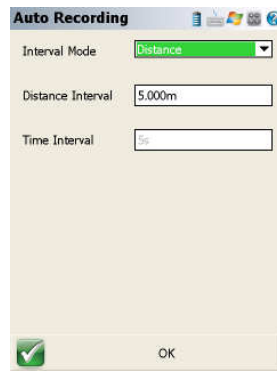


Model: Select the proper antenna model (see the "Measure Point" note to correctly identify your model).

Measured Height: Antenna height to the ARP or to the Measurement Point

Measure Point: Comment on where the measure should be done on the antenna. Directly linked to the model you chose.

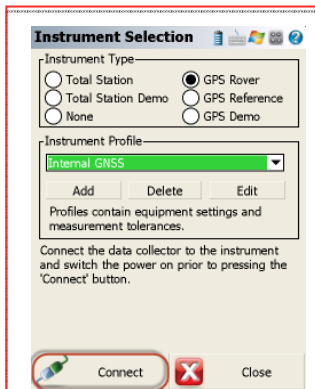
Set Antenna height



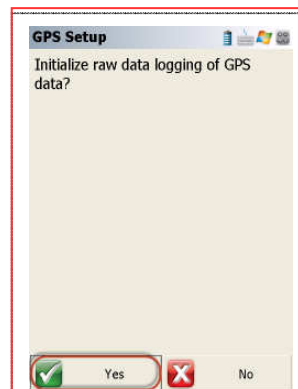
Set Auto recording mode by distance or time



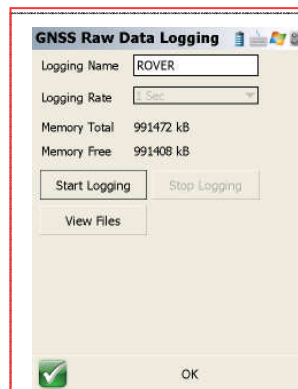
Setting Rover receiver (4/5)



Go back in the *Instrument Selection* screen and click Connect



Click Yes

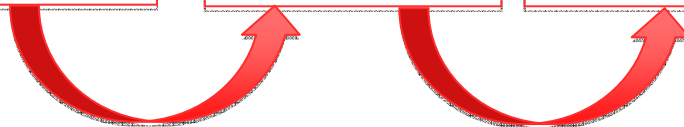


Set GNSS raw data logging – Click OK

Logging Name: GNSS File name (for the rover) to be recorded on the receiver SD card. (“ROVER” in this example).

Logging rate: for a rover is locked at 1 second. This is a direct impact of the “OnPOZ Tagging” option checked earlier.

Start Logging: Start the raw GNSS data logging. **Be sure to press this button** before pressing “OK” to get out of this window.





Setting Rover receiver (5/5)

	<p>Link Device: Choose the communication device you want to use. Use the "Setup" button to enter more parameters.</p> <p>Link Communication: Help you configure the communication device you've selected.</p> <p>Data format: Options that will let you choose what format your corrections will be received or transmitted. Also lets you pick a station ID.</p>		<p>From the Map View, click on Standard Measure button to set the method of data collection (Select Standard Measurement)</p> <p>The duration of a site in the "Standard Measurement" is set by the number of observations you have put in the tolerance profile that is active</p>
<p>Corrections settings - Close</p>	<p>Back to the Map View ready to collect points</p>	<p>Corrections settings - Close</p>	<p>Note that all settings in the Active Tolerance will have a direct impact on recording a point. If the minimum values set in the tolerance settings are not met, FieldGenius will not collect the point. When working with post-processing, always put a high values for these settings.</p>



Your rover is now configured, it is receiving corrections (or not, if you are working purely in Post-Processing) and it is recording raw data.

You can now collect as much points as you want. These points will all be recorded in the same *.RAW file as the one used to start the Base.

You can change your *Active Tolerance* to accommodate your needs while doing a survey. In open area, when working in the radio range, you can use a Tolerance that accepts only RTK point. Whereas, in some other areas, you can select an *Autonomous Tolerance* in order to still work while the radio is down and post-process these positions

Some steps described in this tutorial will not have to be done every time, once set, they can be reused time after time



Collecting points/ Stop Recording

To collect points, in the Map View, Click on the Action button

Repeat this as you want to collect points

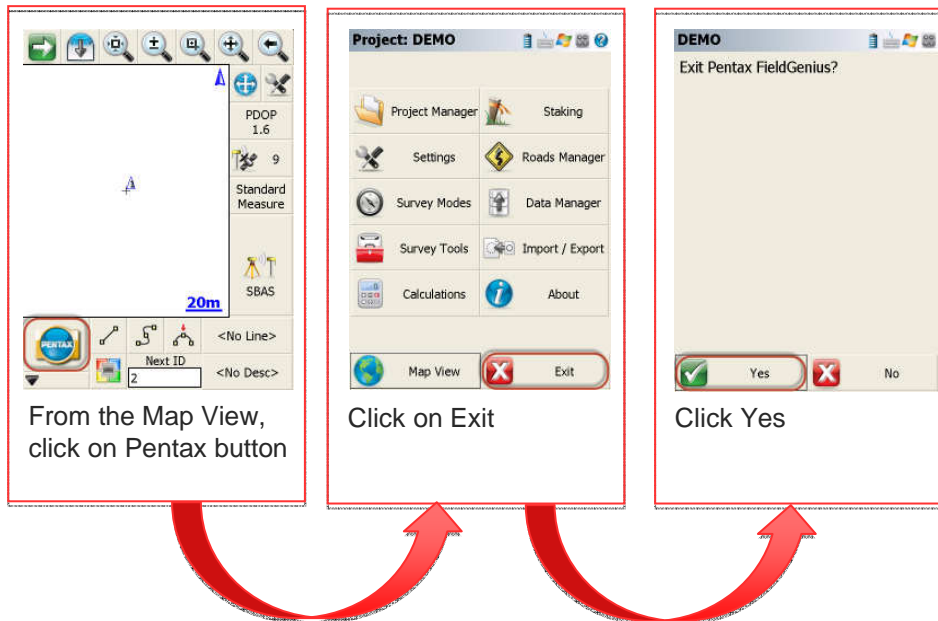
→
To stop the survey

To Stop recording click on Setting

Click on Raw data logging

Click on Stop Logging

Exit FiledGenius





Data Files

Name	Date modified	Type	Description
B_ROVER.cdx	24/11/2012 3:02 AM	CDX File	
B_ROVER.dbf	24/11/2012 3:02 AM	DBF File	
B_ROVER.ini	24/11/2012 3:02 AM	Configuration settings	
B_ROVER.raw	24/11/2012 3:05 AM	RAW File	File from the data collector. Simply import this file in EZSurv for post-processing
B_ROVER_automap.csv	18/12/2005 5:43 PM	Fichier CSV Microsoft Excel	
B_ROVER_figures.cdx	24/11/2012 3:02 AM	CDX File	File from the Base receiver SD card
B_ROVER_figures.dbf	24/11/2012 3:02 AM	DBF File	
BASE.SBF	23/11/2012 3:08 PM	Septentrio Binary Format	
ROVER.SBF	23/11/2012 3:04 PM	Septentrio Binary Format	File from the Rover receiver SD card

Data Files that you should get on your PC after file transfer.