RTK Quick Start for facility APS3G

862 Keith Williams March 13, 2017 APS3G 1794

Equipment Setup

ALWAYS connect a UHF antenna before powering ON the APS-3, use the 440-470MHz antennas.
Install two batteries per receiver.
Setup APS-3 labeled base over your fixed base control point and record instrument height.
If not specified below, use the default settings that are already programmed into the controller.

Survey

Press power on Archer2 and start Septentrio FieldGenius
Select New Project, name it, select and change Project Settings:

Project settings: Set Units and Scale(default is Meters), and select Coordinate System.
Coordinate System: Select UTM Zone. If not in pulldown, select Edit List and Add Predefined.
Horizontal Datum: Recommend using **UTM Zones, NAD83**
Vertical Datum: Recommend **Ellipsoidal**

Base setup

- With base on and set over control point, select GNSS Reference, and then Connect. You may need to click the Select instrument box if GNSS Reference is not displayed. The unit will ask if you want to Initialize raw data logging of GNSS data; select yes if you may want to post process the raw data or no if you will not reoccupy the base position.
- Select the tool icon  then Sensor Configure, and provide an antenna height (height over control point). Model will be Altus APS-3L and Measure Point will be Bottom of antenna mount.
- Select Start Reference from the map screen. There will be two commonly used methods, Known Position and Average Position. If you know the position of your control point, you would use Known Position and enter those control point coordinates (Lat/Long/Ellipsoid height). If you do not know the coordinates, select Averaged Position and then click on Start Reference. Allow the position to be averaged for about three minutes and then select Set Position.
- Set the name of your base coordinate and select Store Pnt.
- Link Configure screen will open up, select Connect
- Your base is now running and transmitting corrections to the rover (which is not yet running).
- Select the tool icon, and chose Instrument Disconnect to disconnect from the base.

Rover Setup

- Turn on the rover.
- Under Select Instrument, select the GNSS Rover and click Connect. Select No for Initialize raw data (see Troubleshooting for more info)
- This will open the Link Configure screen, click Connect.
- From the map screen, click on Antenna and enter the height (often 2.00m for a fixed height bi-

pole).

- You are now ready to measure and record your points; this is done by clicking the *RTK Fixed icon, naming the point and then clicking Store Pnt.

*RTK Fixed will be displayed if tolerances are met. If not met, you will receive RTK Float, or Auton(Autonomus). Note that these tolerances can be edited under the instrument tool, and then sensor configure.
When the survey is finished, hold down the power button on the receivers until the lights shut off, and in the controller, select the plumb bob symbol and the Exit. All data will be saved on the controller.

Troubleshooting

Radio link—currently the radio link is set to transmit at 0.5W. If you are surveying a large site, have a good line of site between base and rover, and are experiencing dropped radio connection, you may want to turn this transmit power up to the maximum 1W. This is done by connecting the GNSS reference, select the tool icon, select Link Configure, and then select Setup under Link Device. Change the power from 0.5 to 1W and exit back out.

No RTK Fix or Float—Make sure that your GNSS Reference (Base) receiver is setup with a very good skyview. If the base and rover are not able to see the same five satellites, you will not get a fix. So, the more satellites the base can see the better chance of the rover seeing the same satellites.

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