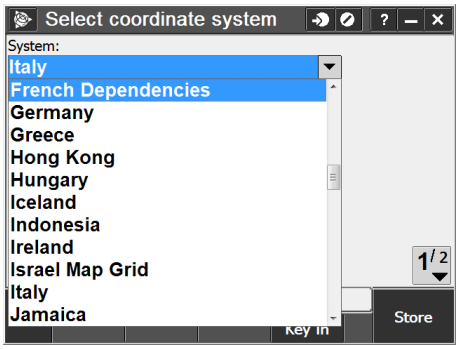
R10 Base & R8s Rover (RTK) Survey
General Survey User Guide Trimble Access

- This guide assumes that the type of survey to be undertaken is RTK. It also assumes there is an O.S. National Grid (OSTN15) coordinate already available for the Base receiver point that can be used.

- If working anywhere else in the world, an appropriate coordinate system must be selected from the available library.

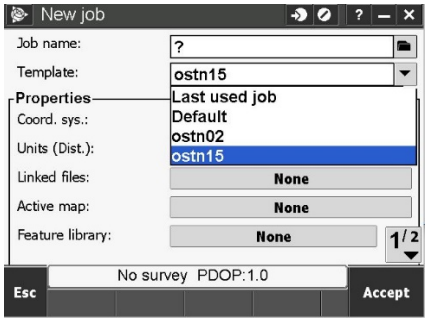


- Set and level the Base receiver over a Survey Marker. In this guide an internal radio is being used with the Base. Ensure that both the Base and Rover receivers are switched on, that the Base and Rover radios are connected and that the equipment is set up ready for RTK surveying.

Starting a new Job

- Press the General Survey button in Trimble Access.

- Press **Jobs>New Job** to reveal the job creation screen, see below. Choose the template you wish to use. In this guide it is assumed that the coordinates are required in O.S. National Grid, which means the OSTN15 and OSGM15 shift grid/Geoid model files should be used.

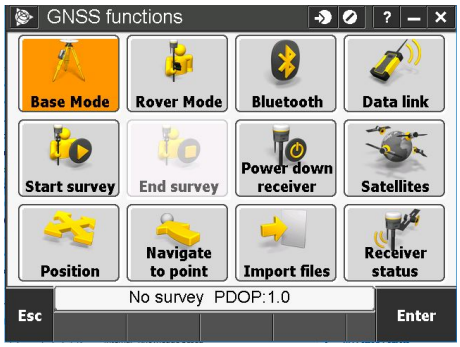


Optional - Press folder button to the right of the job name to create a new folder to store the job.

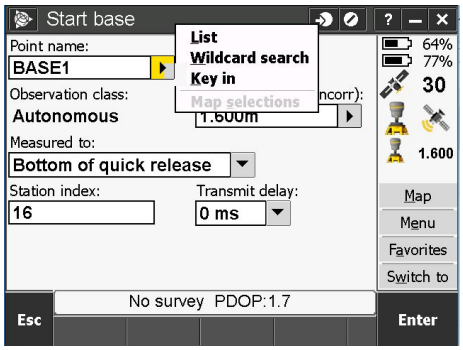
- Press Accept to complete the job creation process.

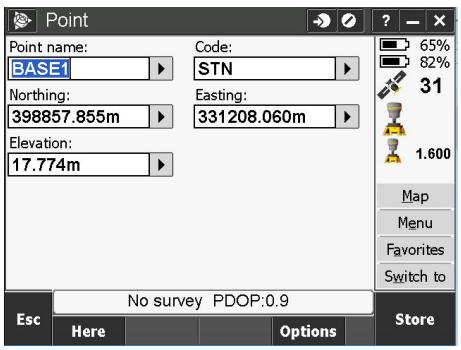
Starting the Base Station Receiver

- From the GNSS functions (Instrument > GNSS Functions) menu select Base Mode, while close to the Base receiver. The Controller will connect via Bluetooth to the Base receiver, assuming that a Bluetooth pairing exists between the two.



- Then press Start Survey and select the survey style RTK. Follow the Start Base receiver steps.





- You will be prompted to enter the Base point name.

- If you have a Base coordinate and it isn't already stored or linked to the job, then click the arrow next to the Point name box and select Key in. Then type in the Base coordinate.

- If you do not have a Base coordinate then use the Key in option and press the Here button at the bottom of the screen.

- *Pressing the <Here> option will obtain an autonomous start up position. (I.e. approx position good to about 3-5 meters).You should* ***only use this option once in any survey. A base started using a Here position will need to be post-processed in order to precisely tie in with a coordinate system.***

- Follow the remaining prompts to confirm the Field Code, Antenna Height, and Measured to settings e.g. Bottom of quick release for tripod set up.

- Please make sure you're measuring the antenna height to the proper reference. So that's "Bottom of Notch" if taking a slanted measurement to the triangular measurement point on the side of the antenna, or "Bottom of Antenna Mount" would be a vertical

measurement to the bottom of the antenna, where it is screwed on to the tribrach, or “Bottom of quick release” if using quick release with an R10.

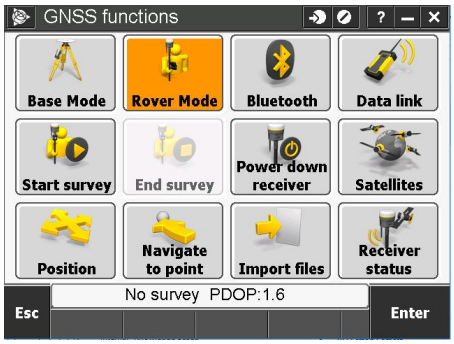
- Press <Enter>. Now select <Start>, a message “Base Started OK” will appear.

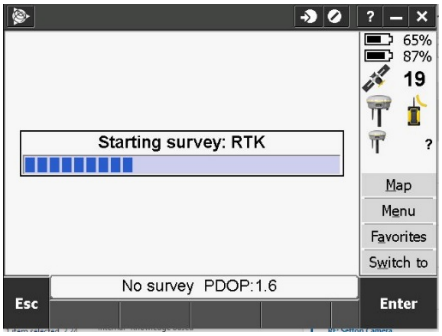
- Check that the “TX” light is flashing on the external radio. This indicates that the Base is transmitting correction data on the radio frequency that it is set to.

- If the RX light is also flashing this suggests that there is other radio traffic on the same frequency, which may cause interference. Change the channel using the buttons on the radio’s interface to find one that is clear of other traffic.

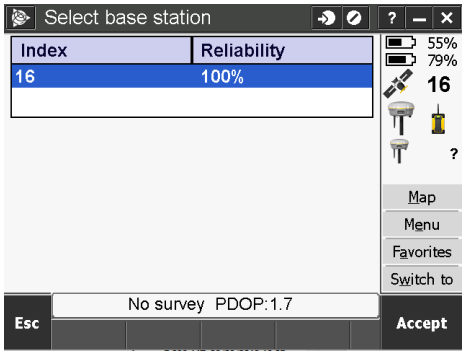
Starting the Rover Receiver for RTK Survey

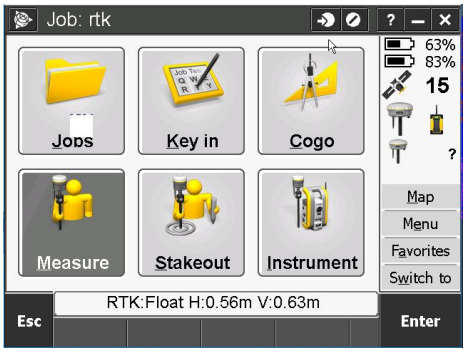
- From the GNSS functions menu select Rover Mode; this will now swap the Bluetooth connection to the Rover receiver.





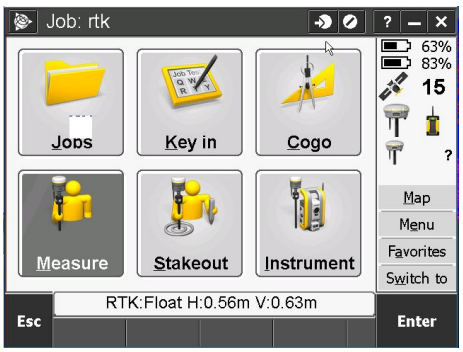
- To start the Rover RTK survey, press Start survey and select the RTK & Infill option; this will initiate the radio connection to the Base. Wait for Radio Link icon to appear on the RHS display – *this means that an RTK radio connection has been established between the Base and Rover*. If prompted confirm <Accept> the Base station Index id.

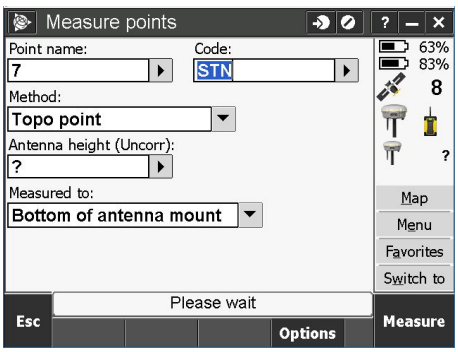




- Wait for Initialisation and a Fixed solution message ("initialisation has been gained"). All the lights on Rover receiver should now be active. (Radio & satellite LEDs flashing, battery light permanently on). Select Measure>Measure Points and commence surveying.

- Fill in the point name, code (using the drop down list or enter manually), antenna height, select measurement method type...





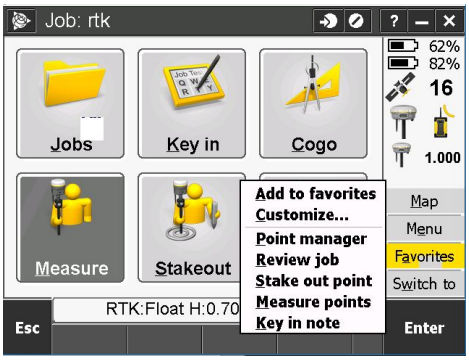
- Rapid Point – Quick, 1 second occupation (least precise, use for soft detail)
- Topo Point - Occupation times of 3 to 5 seconds per point (more precise, use for hard detail)
- Observed Control Point – For surveying control points (most precise method)

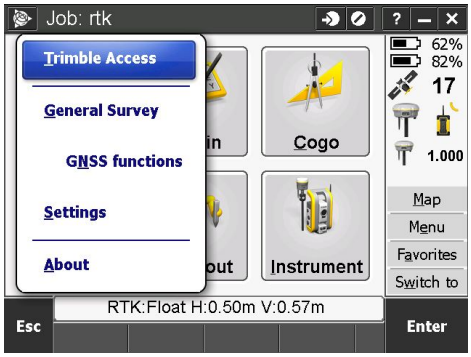
- Press <**Measure**> to measure the point, making sure you have a Fixed position (H, V and RMS typically below 0.030m). Press <Store> if prompted to store the measurement. Note – Use options to amend default settings.

Other Useful Functions

Use the **Switch to** button to view different screens (i.e. Map, Measure points, Point manager) without having to open & close each one, thus saving time.

Using the Trimble icon in the top left corner can also allow quick access to other sub menus and any that are currently open. The **Favorites** button displays a customisable list of functions.



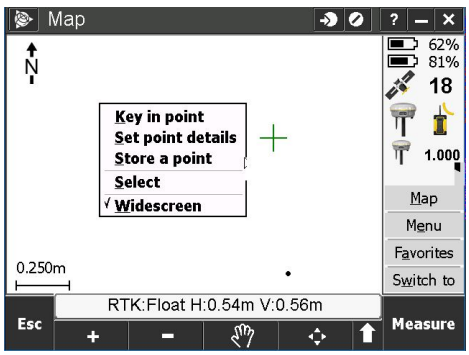


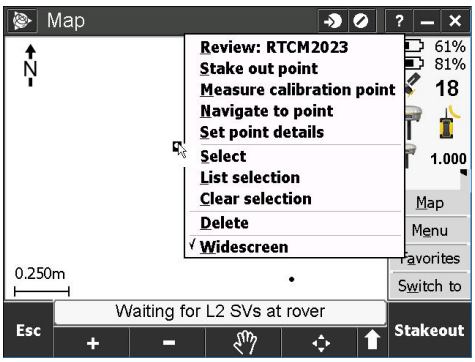
Use the various icons on the RHS of the screen to check battery levels, satellite positions, numbers being tracked and status.

Map functions – Quick Guide

Zoom window - Tap and hold down the Plus button, then drag a window over the map.
Zoom in/out – Tap plus/minus buttons
Zoom extents – Tap the Star button
Access more options using the Up arrow.

Tap to select one or more features on map screen. Tap and hold to reveal context sensitive menus.





End Survey

Measure>End survey or GNSS functions menu and tap the End survey button, power down receiver if required.