ComNav Guide to Static

Date: 19th Nov 2018   by: Jason   Revised by: Roy

➢ Settings

Before starting your work, you should configure and check your receiver by CRU software.

Data Log

Manual: When you long press the static button, it will start the static. After long press static button again or receiver turn off, it will finish the static.
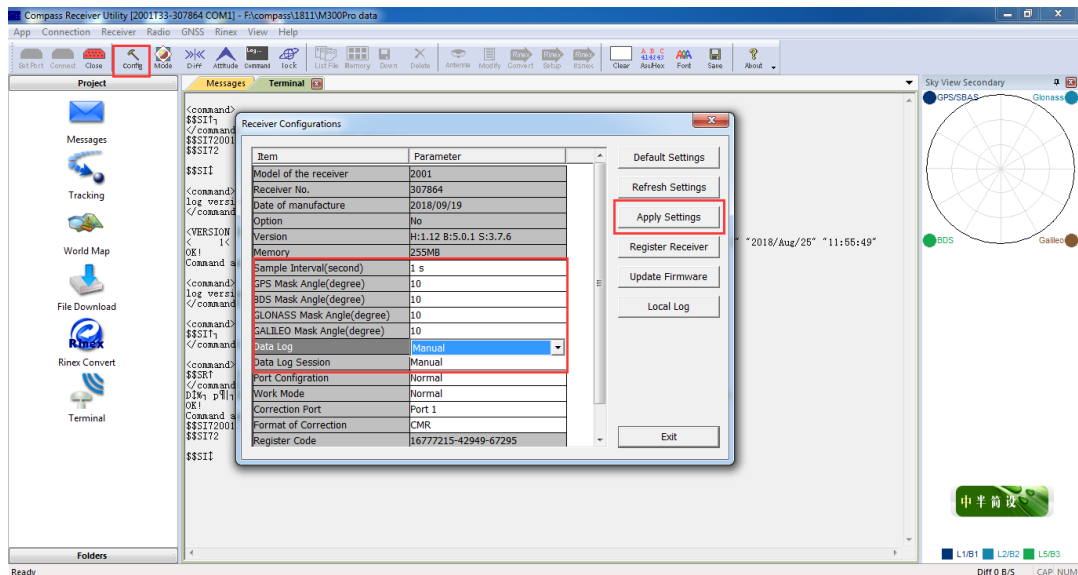
Auto: When receiver turn on, it will start the static.

Data Log session

Manual: it will store a file when you long press static button to finish static work or receiver turn off.

X Hour(X=1, 2, 3, 4, 6, 12): it will store a file every X hour.

Notes: Please click Apply Settings when you finish the configuration.

➢ Observation sites

Sites for static should be chosen for their suitability for observations. A good site should have the following characteristics:

- No obstructions above the 15° cutoff angle.
- No reflecting surfaces (Lake, glass, etc.) that could cause multipath.
- Safe, away from traffic and passers-by. Possible to leave the receiver unattended.
- No powerful transmitters (radio, TV antennas, etc.) in the vicinity.
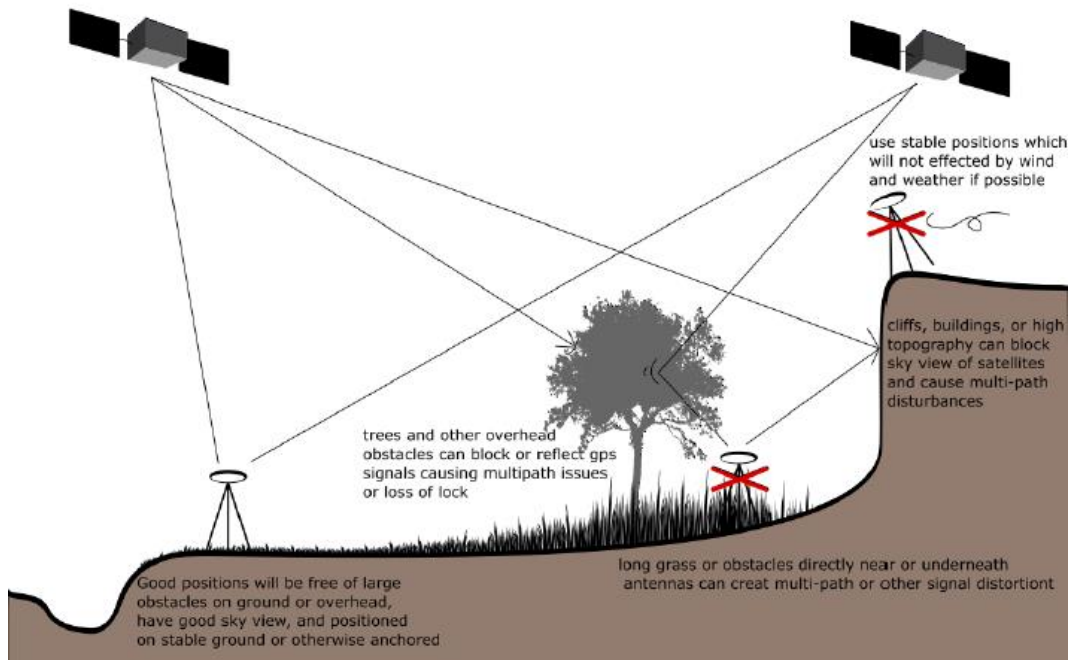
The computation of a baseline in data processing requires that the coordinates of one point (reference) are held fixed. The coordinates of the other point (rover) are computed relative to the "fixed" point.

➤ Planning the network

A network consists of a set of baselines between network points. The design of the network will affect the results that are obtained from the survey. The following principles are recommended for good network design:
- locate control of sufficient quality close to the project area
- use good network geometry
- build network redundancy
- use marks in low multipath environments

The recommended synchronization observation time as below. For the PPK base station, the sample interval must set as 1s.

| Baseline distance(km)	>50	>30	>15	>5
Approximate time	≥4hours	≥2-3hours	≥1-2hours	≥30min
Elevation mask angle	15	15	15	15
Sample interval	10-30	5-15	5-15	1-30

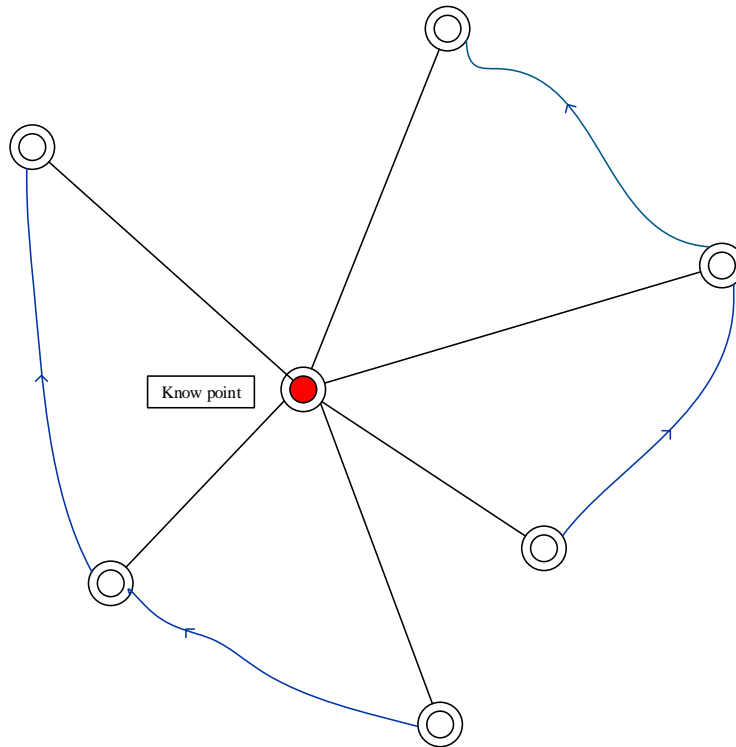Such network is recommended.

1.
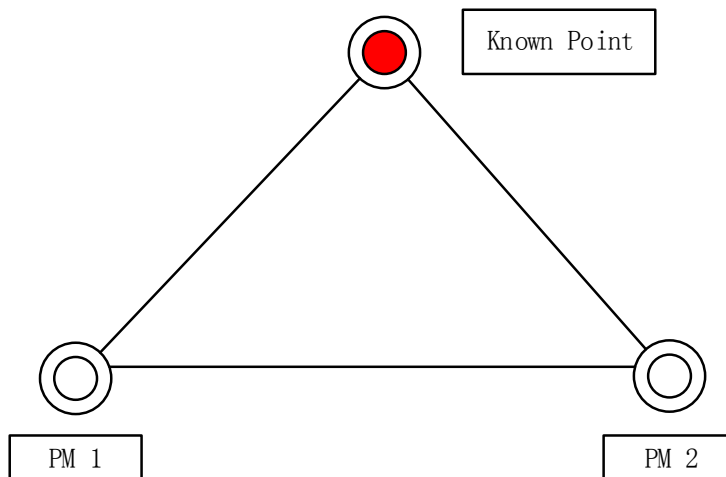
One receiver, the base receiver, is set up over a known point. The other receiver, the rover receiver, is set up over a point whose coordinates are unknown. They collect simultaneous observations at both the base and rover receivers for a certain period of time.

2.
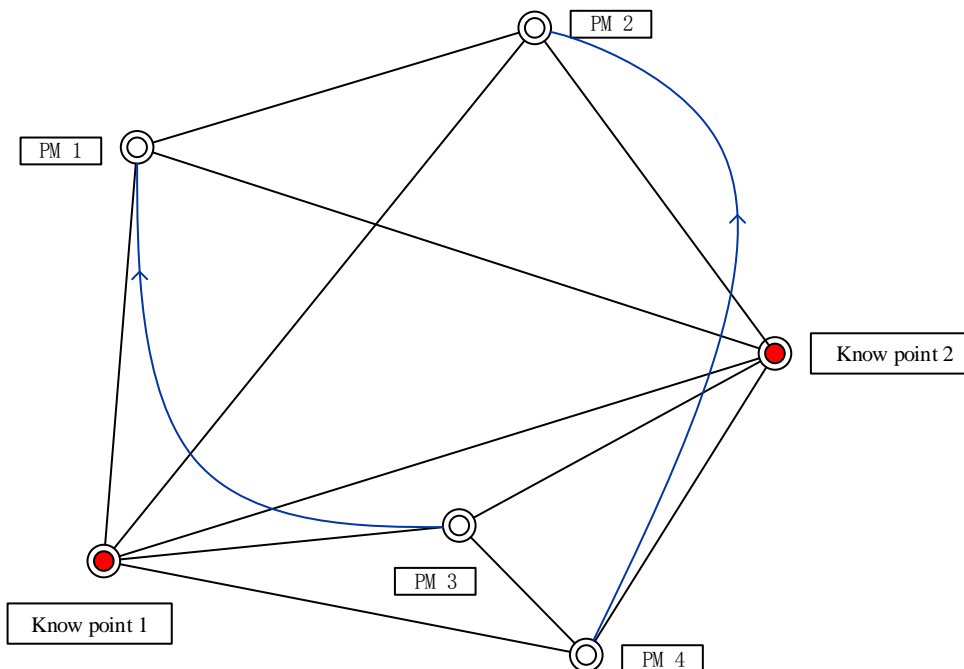
Two receiver, the base receiver, is set up over a known point. The other receiver, the rover receiver, is set up over a point whose coordinates are unknown. When first unknown point is finish, not remove the base receiver and move the rover receiver to other unknown point.

3.

One receiver, the base receiver, is set up over a known point. It keeps continuous observation. The other receiver, the rover receiver, is set up over a point whose coordinates are unknown. They collect the observations in unknown point one by one around the base. In this way, it is more efficient, however the network geometry and reliability is poor and precision is not high.

> ➢ Static Filed Step

1. Set up the receiver and anchor legs so they will not move throughout the survey.

2. Measure and record slant height or bottom height. The antenna height are described as below.

H₁ is slant height

H is bottow height

3. Record station information, location, times and antenna height.

Station Marker	K001
Antenna height(slant or bottom)	1.372m
Receiver SN	3309022
Start time to End time	8:30-9:20

4. Turn on the receiver, long press the static button to start the static. The button and led status are described as below.
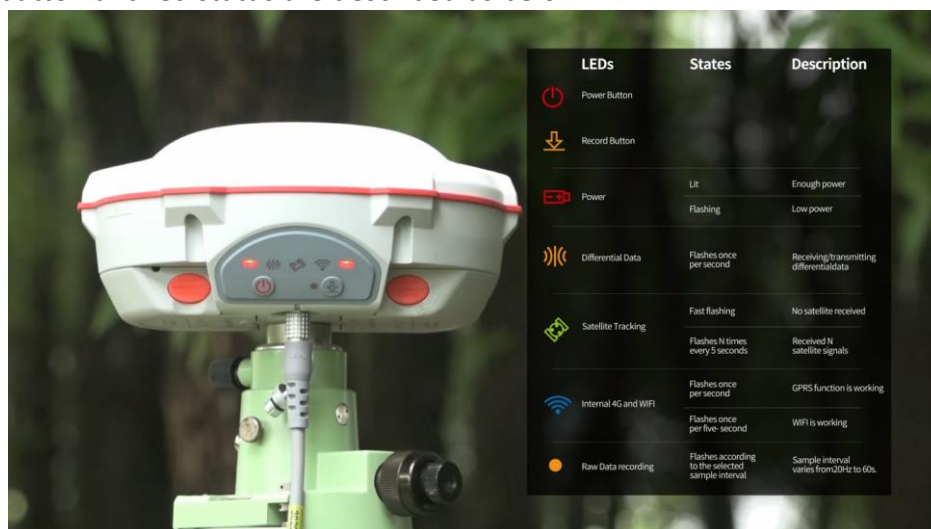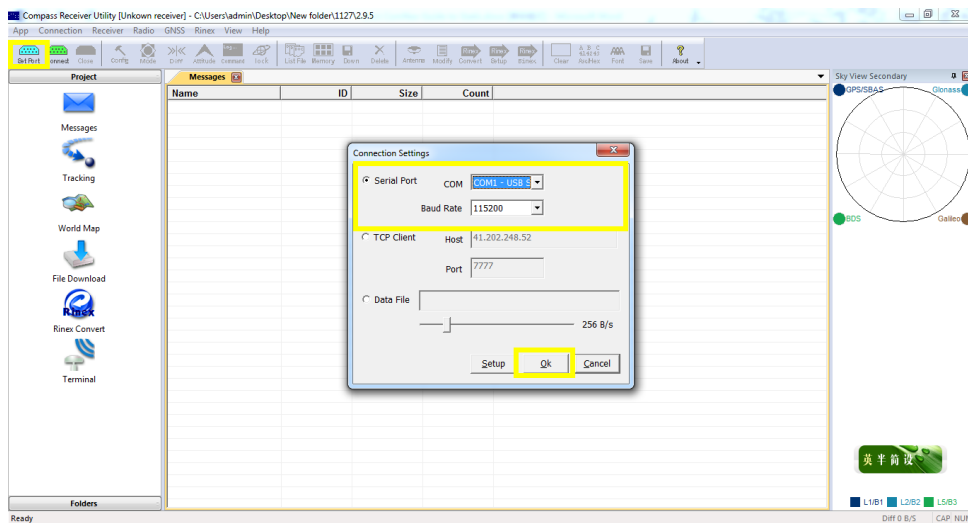
5. Long press the static button or turn off the receiver when you have completed surveys.

   ➢ Data download

1. T300 receiver with SN 310XXXX

   1.1 Connect the receiver with computer, serial cable and USB cable are ok, but USB cable is faster than serial cable.
   1.2 Open the CRU software and choose the correct port, then click connect.
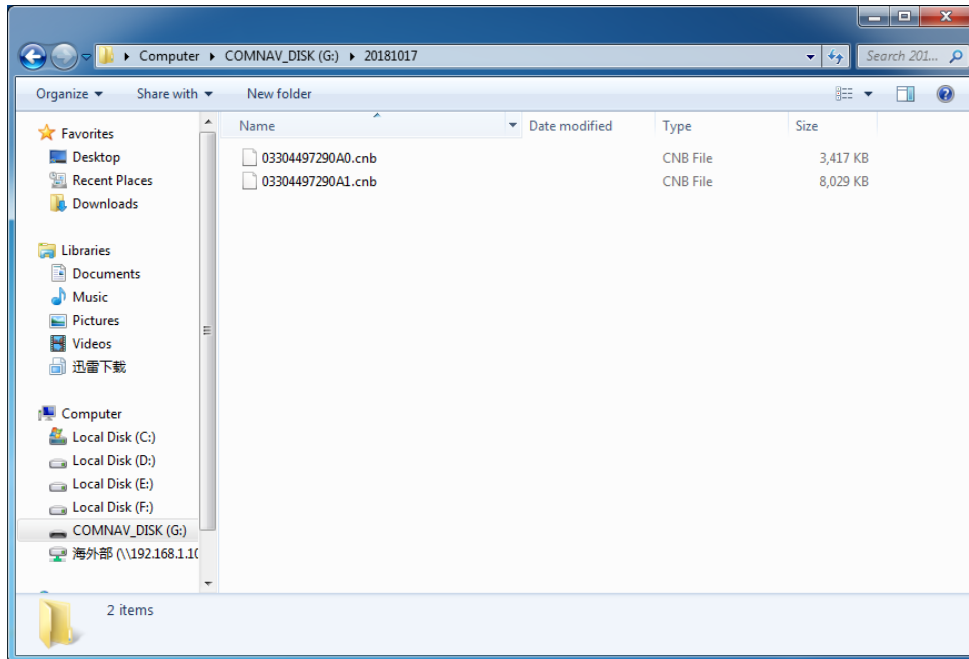

   1.3 Choose the folder in folders, the static data will be saved in this folder.
   1.4 Click file download in project, the static data will show in main interface.

2. T300 receiver with SN 330XXXX & T300Plus

   2.1 Connect the receiver to computer by USB cable
   2.2 Those receiver just like a U- disk, then you will see a comnav disk in windows explorer.

2.3 Copy your static data to your computer.

Notes: Please put a battery in receiver and turn on it before connecting to computer.

Any question please contact us: support@comnavtech.com, skype: comnav.support. Your feedback is much appreciated.