RTK Positioning with U-Blox AEK-4T + 6T and RTKLIB

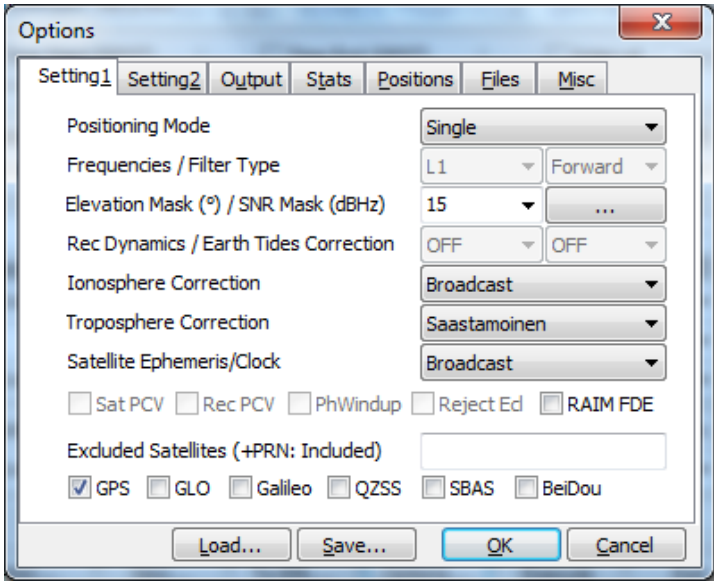
Launch rtklaunch (C:\Program Files (x86)\rtklib_2.4.2\bin\rtklaunch.exe).

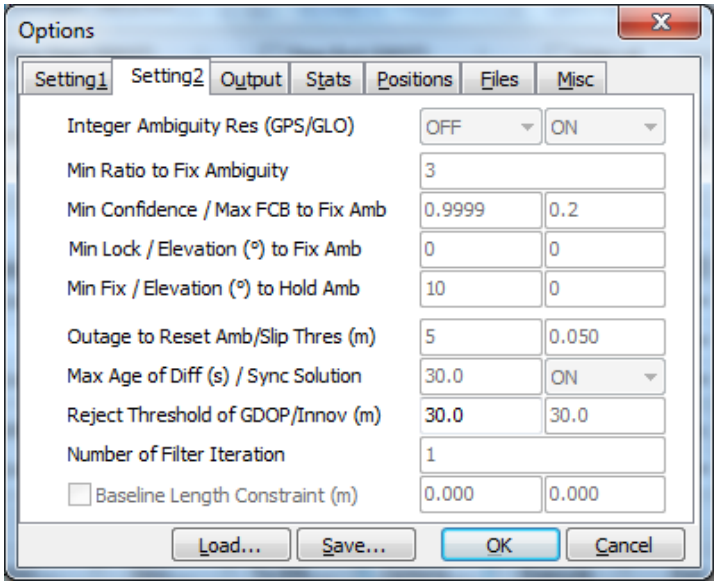
1 Calculation of the single position solutions

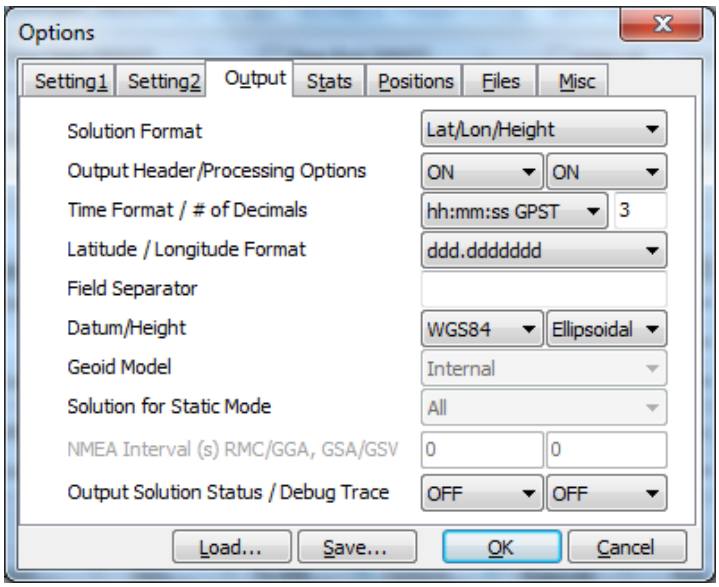
This must be done for the base station as the position of its antenna is needed further in the process.

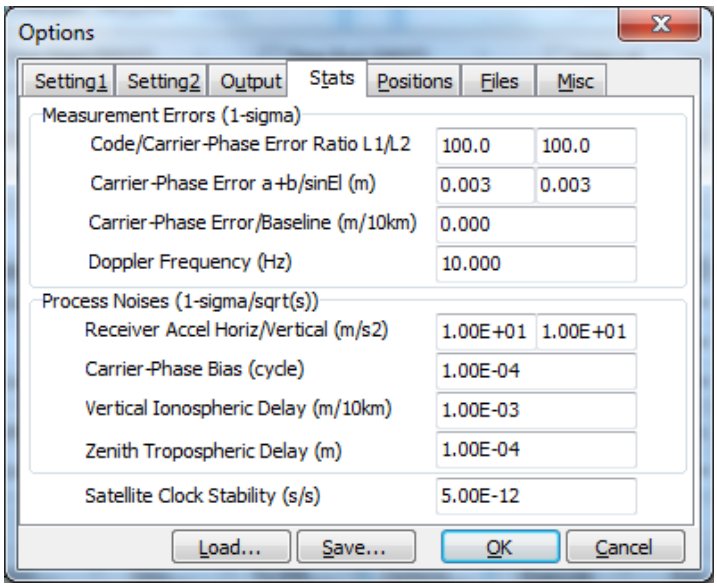
It is interesting to do it also for the rover, to compare this single solution with the future rtk solution.

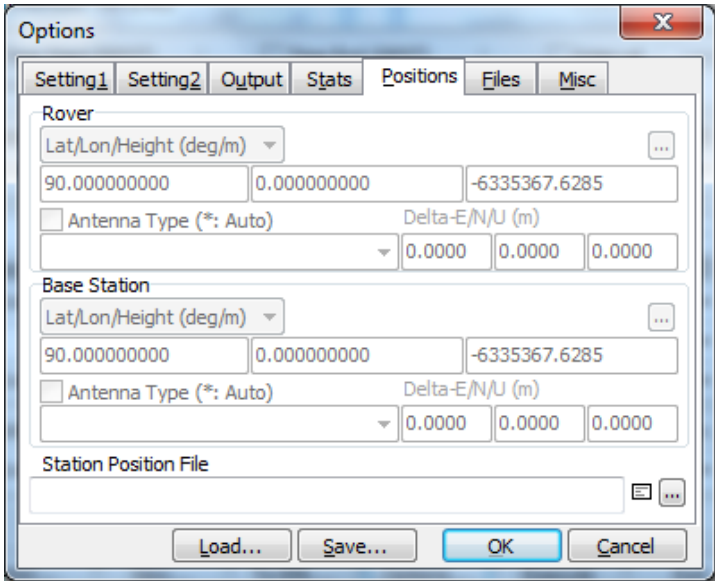
- Click on the RTKPOST icon,
- Set the name of the observation file in the “RINEX OBS” field. This file has been generated during the conversion step and has a “.obs” extension,
- Set the name of the navigation file in the “RINEX *NAV/CLK, SP3, IONEX or SBS/EMS” first field. This file has been generated during the conversion step and has a “.nav” extension,
- The name of the precise ephemeris/clock corrections file can also be set in the “RINEX *NAV/CLK, SP3, IONEX or SBS/EMS” second field. This file can be downloaded from the IGS network and has a “.sp3” extension,
- The name of the satellite augmentation file can also be set in the “RINEX *NAV/CLK, SP3, IONEX or SBS/EMS” third field. This file has been generated during the conversion step and has a “.sbs” extension.
- Press the “Options...” button to set the different options for the calculation of the PVT solutions:

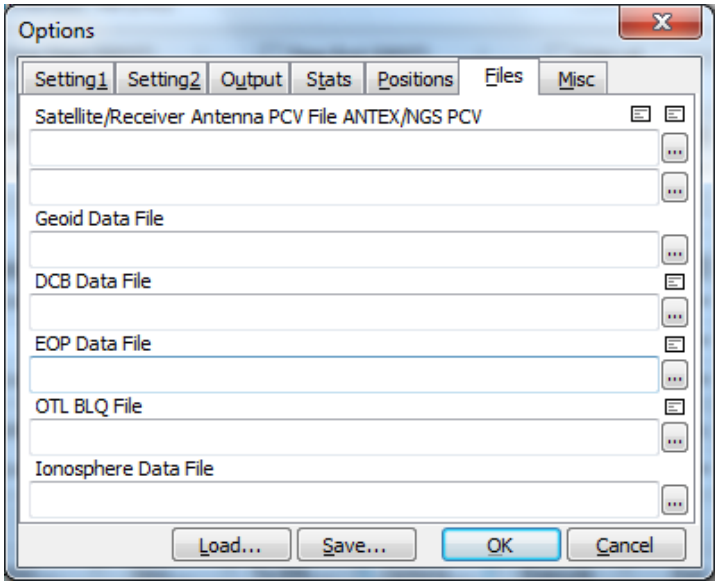


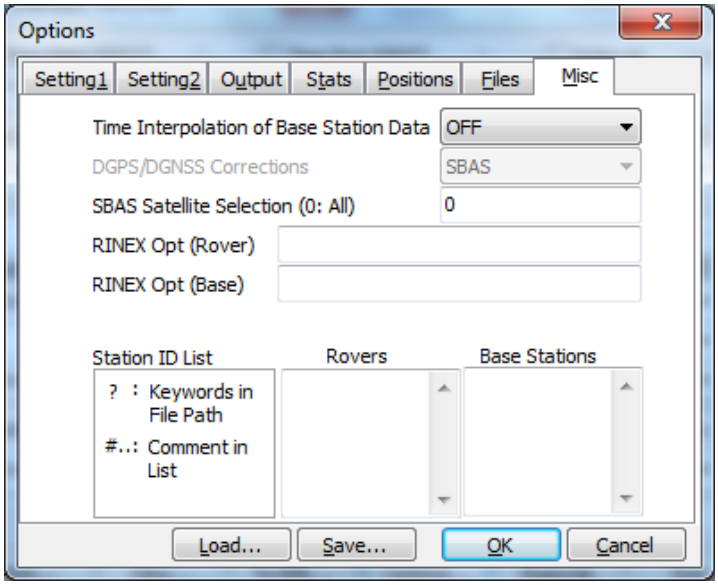








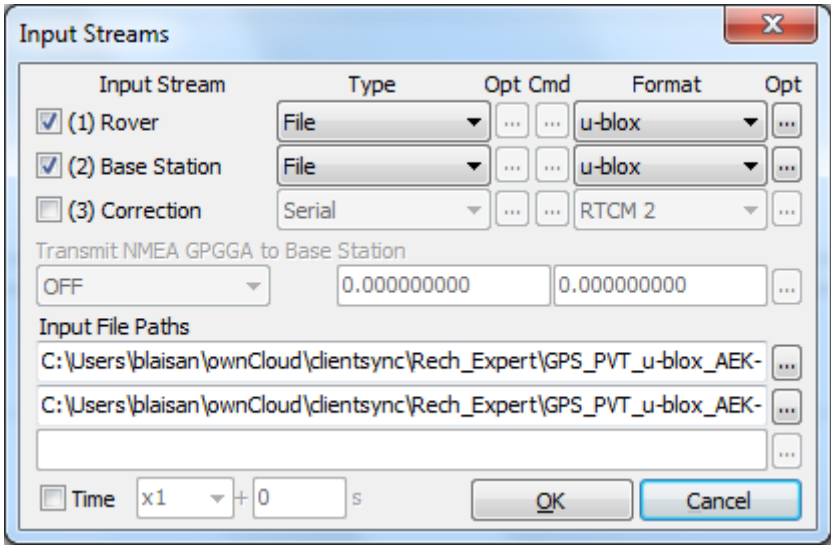




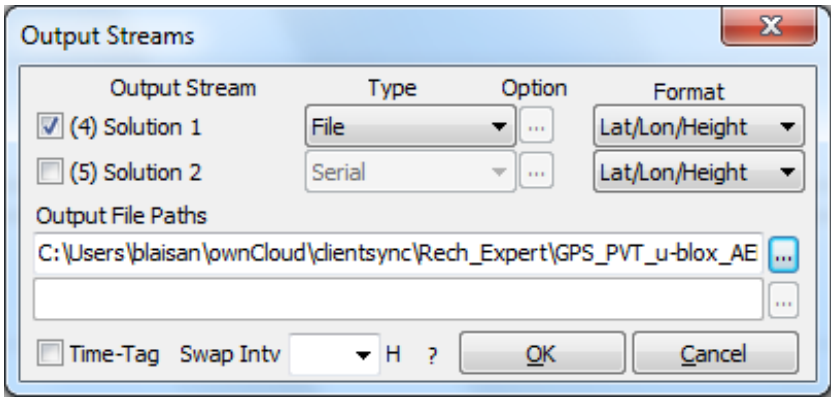
- Press the “Execute” button.
- The “View...” button gives access to the PVT solutions in text format.
- The “Plot...” button plots a 2D representation of the PVT solutions.
    - Write down the average lat/long/height position (ORI= … in the plot window) for further reference.

2 Calculation of the rtk position solution

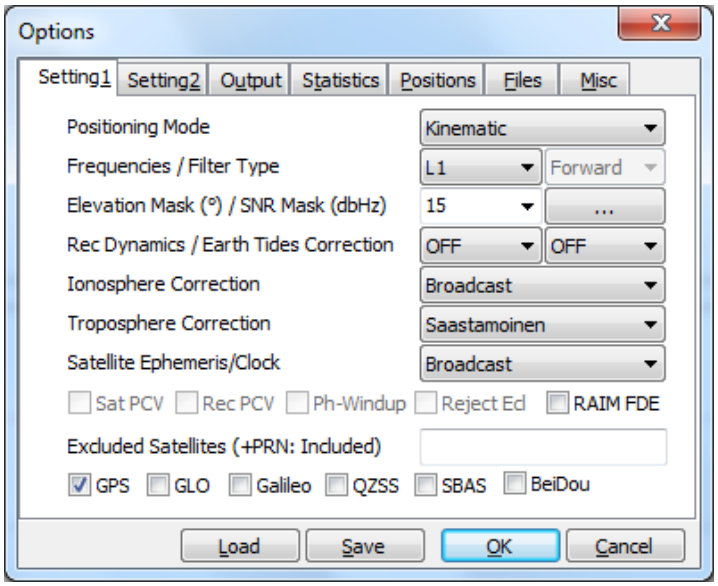
- Click on the RTKNAVI icon,
- Click on the “I” button at the top right and set the ubx file names for the rover and the base station,

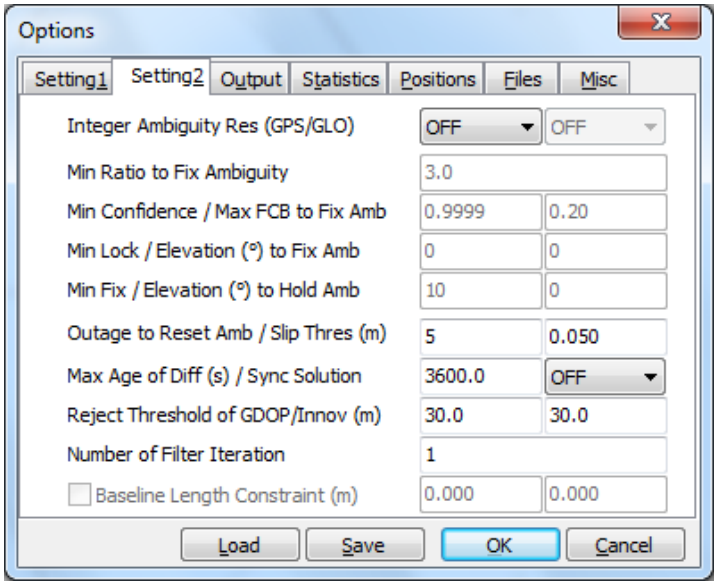


- Click on the “O” button at the top right and set the output file name for the rtk positions of the rover,



- Click on the “Options...” button at the bottom and set the parameters as follows:
  - Positioning Mode to Kinematic,
  - Relax the Max Age of Diff (s) to 1 hour, that is 3600 s,
  - The antenna position of the base station must be set to the average position noted at the end of the single position calculation process,





- Press the “Plot” button, then the “Start” button. At the end of the processing, press the “Stop” button.