Base setup

FIXFINDER · findrtk.com

Your own RTK base on a tripod (radio or internet).

Date _____ Site _____ Crew _____ Mount point _____

PICK THE SPOT

- [ ] Clear sky 30° above the horizon all around: open field, hilltop or rooftop. [1]
- [ ] No trees, buildings, cars or people blocking the sky. Keep electronics away from the receiver. [1]
- [ ] A spot where the base is safe from people, animals and theft for the whole day. [2]
- [ ] Within 12 mi (20 km) of where the rover will work (NGS class RT3). [2]

SET UP

- [ ] Fixed-height tripod. Add weights on the legs for long sessions. [2]
- [ ] Center exactly over the mark and level it. [1]
- [ ] Measure from the mark to the bottom of the receiver and enter it (Reach RS3 adds 134 mm itself). [1]
- [ ] Elevation mask 10–15°. [2]
- [ ] Power for the whole day (receiver battery or an external 12 V battery). [2]
- [ ] UHF radio: needs an FCC license; range is typically 3–5 miles. [2]

BASE COORDINATES

- [ ] On a known point: enter its coordinates (best absolute accuracy). [3]
- [ ] No known point: average in FIX using NTRIP corrections. [1]
- [ ] Average in SINGLE only if meter-level absolute accuracy is OK. Rover points are then only right relative to the base. [4]
- [ ] Save the base coordinates and height. Without them you can't repeat the job. [4]
- [ ] Base and rover use the same datum. [1]

CHECK AND FINISH

- [ ] Rover shot on a known point before new work. It catches wrong base heights or coordinates. [2]
- [ ] Check again during the day and once more before you take the base down. [2]

SOURCES (CHECKED OCT 28, 2026)

[1] Emlid docs, Reach RS3: Averaging base position in FIX (placing the base) https://docs.emlid.com/reachrs3/base-setup/setting-up-base-over-known-point/averaged-in-fix/
[2] NGS User Guidelines for Single Base Real Time GNSS Positioning, v2.1 (Aug 2011) https://geodesy.noaa.gov/PUBS_LIB/NGSRealTimeUserGuidelines.v2.1.pdf
[3] Emlid docs, Reach RS3: Choosing base setup method https://docs.emlid.com/reachrs3/base-setup/choosing-base-setup-method/
[4] Emlid docs, Reach RS3: Averaging base position in SINGLE https://docs.emlid.com/reachrs3/base-setup/averaging-base-position-in-single/

Follow your own equipment manual if it differs. Latest version: findrtk.com/tools/checklists