



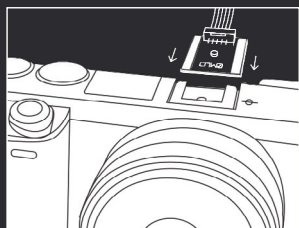
REACH M2 | M+

RTK GNSS modules for precise navigation and UAV mapping

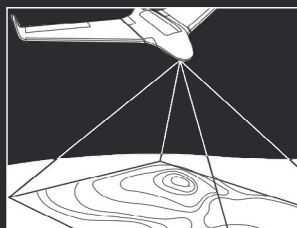
PPK system for UAV mapping with centimeter accuracy

Reach logs precise tracks and the exact moment when each photo is taken. This allows to cut number of checkpoints and create precise 3D models.

How does it work?



1. Reach connects to the camera hot shoe port which is synchronized with the shutter.



2. Sub-microsecond accurate photo time marks are stored in a raw data RINEX log during the flight.



3. Download the RINEX logs from your airborne Reach module and a base station after the flight.



4. Use the free RTKLIB software to process RINEX files and get a list of precise photo coordinates.

Reach is used in drones of:

EVENT 38
UNMANNED SYSTEMS

TUFFWING



Choosing between Reach M+ and Reach M2

Reach M2 provides more robust performance and quicker initialization compared to Reach M+. Both receivers provide centimeter accuracy in RTK and PPK modes.

| | M+ | M2 |
|---------------------------|-------------|--------------|
| RTK | Up to 10 km | Up to 60 km |
| PPK | Up to 20 km | Up to 100 km |
| Time to first fix | 1-2 minutes | ~5 seconds |
| Frequency bands | L1 | L1/L2/L5 |
| RINEX logging update rate | Up to 14 Hz | Up to 20 Hz |

Reach M+ Reach M2

Specifications chart



| Mechanical | M+ \$265 | M2 \$450 |
|--|---|--|
| Size | 56.4 x 45.3 x 14.6 mm | 56.4 x 45.3 x 14.6 mm |
| Weight | 35 g | 35 g |
| Operating temperature | -20...+65°C | -20...+65°C |
| Electrical | | |
| Input voltage on USB and JST-GH connectors | 4.75–5.5 V | 4.75–5.5 V |
| Antenna DC bias | 3.3 V | 3.3 V |
| Average current consumption at 5 V | 200 mA | 200 mA |
| GNSS | | |
| Signals | GPS/QZSS L1C/A, GLONASS L1OF, BeiDou B1I, Galileo E1-B/C, SBAS | GPS/QZSS L1C/A, L2C, GLONASS L1OF, L2OF, BeiDou B1I, B2I, Galileo E1-B/C, E5b |
| Update rate | 14 Hz GPS / 5 Hz GNSS | 20 Hz GPS / 10 Hz GNSS |
| Tracking channels | 72 | 184 |
| IMU | 9DOF | 9DOF |
| Connectivity | | |
| Interfaces | USB, UART, Event | USB, UART, Event |
| Wi-Fi | 802.11 b/g/n | 802.11 b/g/n |
| Bluetooth | 4.0/2.1 EDR | 4.0/2.1 EDR |
| Data | | |
| Position output | NMEA, LLH/XYZ (RMC, GGA, GSA, GSV) | NMEA, LLH/XYZ (RMC, GGA, GSA, GSV) |
| Correction input | RTCM2, RTCM3 | RTCM2, RTCM3 |
| Internal storage | 8 GB | 16 GB |
| Logs | RINEX2.X, RINEX3.X | RINEX2.X, RINEX3.X |
| Positioning | | |
| Static | H: 5 mm + 1 ppm, V: 10 mm + 2 ppm | H: 4 mm + 0.5 ppm, V: 8 mm + 1 ppm |
| Kinematic | H: 7 mm + 1 ppm, V: 14 mm + 2 ppm | H: 7 mm + 1 ppm, V: 14 mm + 1 ppm |

More information at emlid.com