



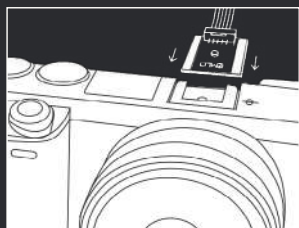
REACH M2 | M+

RTK GNSS modules for precise navigation and UAV mapping

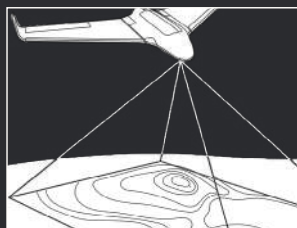
PPK system for UAV mapping with centimeter accuracy

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.

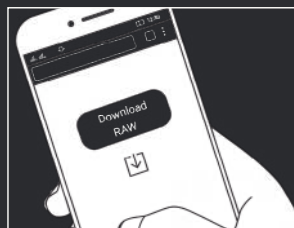
How does it work?



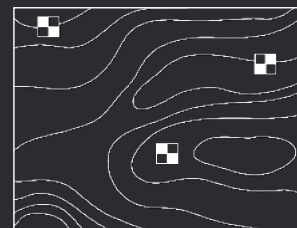
1. Reach connects to the camera hot shoe port which is synchronized with the shutter.



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 33
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	Single-band	Multi-band
RINEX logging update rate	Up to 14 Hz	Up to 20 Hz

Reach M+

Reach M2

Specifications chart



	M+	\$265	M2	\$450
Mechanical				
Size	56.4 x 45.3 x 14.6 mm		56.4 x 45.3 x 14.6 mm	
Weight	20g		20g	
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 / 5 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