REACH RS2

Multi-band RTK GNSS receiver with centimeter precision

For surveying, mapping and navigation.
Comes with a mobile app.

$1899

emlid.com

Key features

Gets fix in seconds

Reach RS2 gets fixed solution in just seconds and maintains robust performance even in challenging conditions. Centimeter accuracy can be achieved on distances over 60km in RTK, and 100km in PPK mode.

Built-in 3.5G modem

Reach RS2 features a power-efficient 3.5G HSPA modem with 2G fallback and global coverage. Now corrections can be accessed or broadcasted over NTRIP independently, without relying on Internet connection on your phone.

22 hours on 1 charge

Up to 22 hours of autonomous work when logging data and up to 16 hours as a 3G rover, even in cold weather. Reach RS2 can charge from a USB wall charger or a power bank over USB-C.

PPP support

RINEX raw data logs are compatible with OPUS, CSRS-PPP, AUSPOS, and other PPP services so now you can get centimeter-precise results in any place on Earth. Process RINEX files in an online service and get position with absolute accuracy.

Engineered to be tough

Reach RS2 is designed to work even in the most challenging environments.

-20°C...+65°C

Tested in conditions that simulate coldest winters and hottest summers.

IP67

RS2 is waterproof up to 1 m depth. Connectors are safely protected from water and dust with silicone plugs.

Polycarbonate body

Rugged 5/8" mount

Covered with elastomer

REACH RS2
L1/L2/L5 RTK GNSS RECEIVER

SIM

RS-232

5/8" mount

USB-C

LoRa radio

Surveying with ReachView

Intuitive software for data collection is available for Android and iOS. With ReachView, you can collect and stakeout points and control your Reach RS2 unit. Set up a base station, log RINEX data, configure NMEA output—everything in one app.

Point collection

Create projects and save points with custom name and description. Set rules for data quality. Data collection is fast and intuitive, because ReachView is designed to feel like most popular map apps.
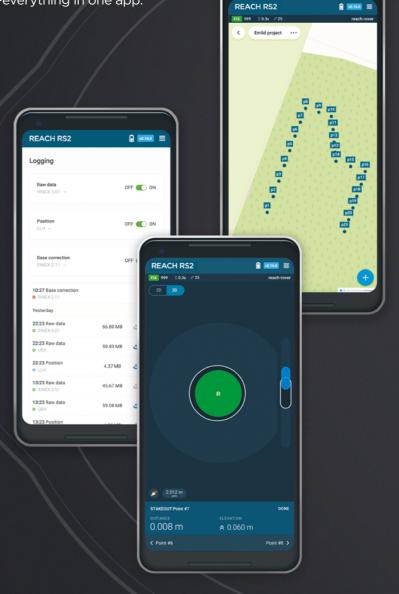
Export
DXF, CSV, GeoJSON, ESRI Shapefile

Stakeout

ReachView guides you like a navigator. On 50cm distance from a point app's interface turns into bullseye view. Move the receiver to align bubbles on the screen, and when it turns green—you are on the point.

Import
CSV, DXF, GeoJSON

Logging

Record raw data, position and base correction logs. 16GB of internal storage, 160 days of logging at 1 Hz.

Log formats
RINEX2.X, RINEX3.X

Base and rover for RTK and PPK

Real-time navigation

Reach RS2 can send precise coordinates over Bluetooth or Wi-Fi to your tablet with a lightbar navigation app. RS-232 interface allows to connect Reach RS2 directly to an autosteer system.

Compatible apps:
MachineryGuide, AgriBus-Navi, Efarmer, Agripilot.

Solution formats:
NMEA, ERB, plain text.

Base station mode

Use RS2 to set up your own base station. Stream corrections over the network via NTRIP/TCP or LoRa radio, record base logs for post-processing. RS2 works with any amount of rovers and is compatible with Reach RS+ and M+.

Compatible with any reciever that supports RTCM3 and NTRIP. External radios are supported over RS-232.

Reach RS2 survey kit

$ 3798

Two Reach RS2 receivers for surveying in RTK and PPK modes

Two full packages, each includes:

Reach RS2 unit
Carry case with a strap
Radio antenna
USB-C cable

Reach RS2 specifications

MECHANICAL

Dimensions	126x126x142 mm
Weight	950 g
Temperature	-20...+65 °C
Ingress protection	IP67 water- and dustproof

GNSS

Signal tracked	GPS/QZSS L1C/A, L2C, GLONASS L1OF,L2OF, BeiDou B1I, B2I, Galileo E1-B/C, E5b
Number of channels	184
Update rates	20 Hz GPS / 5 Hz GNSS

CONNECTIVITY

UHF LoRa radio	Frequency range	868/915 MHz
	Power	0.1 W
	Distance	Up to 8 km
3.5G modem	Regions	Global
	Bands	Quad-band, 850/1900, 900/1800 MHz
	SIM card	Nano-SIM
Wi -Fi		802.11 b/g/n
Bluetooth		4.0/2.1 EDR
Ports		RS-232, USB-C

ELECTRICAL

Autonomy	16 hrs as 3.5G RTK rover, 22 hrs logging
Battery	LiFePO4 6400 mAh, 6.4 V
External power input	6–40 V
Charging	USB-C 5 V 2 A

DATA

Position output	NMEA, LLH/XYZ
Corrections	NTRIP, VRS, RTCM3
Data logging	RINEX at update rate up to 20 Hz
Internal storage	16 GB

POSITIONING

Precision	Static	H: 4 mm+0.5 ppm
		V: 8 mm+1 ppm
	PPK	H: 5 mm+0.5 ppm
		V:10 mm+1 ppm
	RTK	H: 7 mm+1 ppm
		V:14 mm+1 ppm
Convergence time		~5 s typically
IMU		9DOF