Reach RS4

EMLID

Datasheet

All-band RTK
GNSS receiver

◇ Centimeter precision under canopy

⅄ Next-gen tilt compensation

✗ L1/L2/L5/L6

⌘ 672 channels

((•)) 2W dual-band radio

🔋 16 hours on one charge

The Reach RS4 is a versatile RTK GNSS receiver designed for challenging fieldwork conditions. It delivers centimeter-level accuracy even under canopies or in urban areas, and features fast tilt compensation, enabling you to measure without levelling the pole.

Ideal for topographic surveys, construction layout, boundary marking, as-built checks, utilities mapping, road alignment and earthwork measurements, the RS4 comes with the Emlid Flow mobile and cloud app to keep every project and team in sync, from the field to the office.

Specifications

Mechanical

Dimensions	128.6 x 128.6 x 99.3 mm (5.06 x 5.06 x 3.91 in)
Weight	920 g (2.03 lb)
Operating t°	-40 to +65 °C (-4 to 149 °F)
Ingress protection	IP68

Positioning

Precision	Static	H: 7mm + 1 ppm V: 14 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
Tilt compensation	RTK + 2mm + 0.3 mm/°
Signal tracked	GPS: L1C/A, L2C, L5
	GLONASS: L1OF, L2OF
	Galileo: E1-B/C, E5a, E6
	BeiDou: B1I, B1C, B2a, B3I
	QZSS: L1C/A, L1C/B11, L2C, L5
	NavIC: L1-SPS Data, L5-SPS
Number of channels	672
Update rate	Up to 10 Hz

Electrical

Autonomy	16 hrs as RTK rover with tilt, 22 hrs of logging
Battery	Li-Ion 5000 mAh, 7.2 V, 36 Wh
Charging	USB Type-C (PD): 5V—3A, 9V—3A, 12V—3A, 15V—3A

Connectivity

Emlid radio*		
LoRa radio	Frequency range	868/915 MHz
	Distance	Up to 8 km
	Power	Up to 1W
UHF radio	Frequency range	410 - 470 MHz
	Protocols	TRIMTALK 450S**
	Modulation type	GMSK
	Power	Up to 2W
LTE modem	Regions	Global
	Bands	FDD-LTE: 1, 2, 3, 4, 5, 7, 8, 12, 13, 18, 19, 20, 26, 28
		TD-LTE: 38, 39, 40, 41
		UMTS (UHPS/FDD): 1, 2, 5, 8
		Quad-band, 850/1900, 900/1800 MHz
	SIM card	Nano-SIM
Wi-Fi		802.11a/b/g/n
Bluetooth		Bluetooth 5.1 (BR/EDR + LE)
Ports		RS-232, USB Type-C
Data protocols	Corrections	NTRIP, RTCM3
	Position output	NMEA, LLH/XYZ
Data logging		RINEX, NMEA, LLH/XYZ, UBX
Internal storage		16 GB

*The exact power and the available frequency range are subject to regional regulations. See the table below.   **TRIMTALK is a trademark of Trimble Inc.

Learn more at emlid.com

Specifications

Connectivity

LoRa mode*

Region	Frequency band, MHz	Channel bandwidth, kHz (radio data rate, bps)	Max output power, W	Protocol	Modulation	Distance**, km
Unrestricted	863-870	125 (810, 1460, 2600, 4560), 250 (9110), 500 (18230)	1	Proprietary	LoRa	Up to 10
	902-928	125 (810, 1460, 2600, 4560), 250 (9110), 500 (18230)	1			
Europe	863-870	250 (9110)	0.025	Proprietary	LoRa	Up to 2
USA	902-928	500 (18230)	0.1, 0.5	Proprietary	LoRa	Up to 8
Canada	902-928	500 (18230)	0.1, 0.5	Proprietary	LoRa	Up to 8
Japan	920.6-928	125 (810, 1460, 2600, 4560)	0.02	Proprietary	LoRa	Up to 2

UHF mode*

Region	Frequency band, MHz	Channel bandwidth, kHz (radio data rate, bps)	Max output power, W	Protocol	Modulation	Distance**, km
Unrestricted	410-470	12.5 (4800), 25 (9600)	2	TRIMTALK 450S***	GMSK	Up to 8
Europe	410-420	12.5 (4800), 25 (9600)	0.5	TRIMTALK 450S***	GMSK	Up to 8
	421-470	12.5 (4800), 25 (9600)	0.5, 1, 2			
USA	410-470	12.5 (4800), 25 (9600)	0.5, 1, 2	TRIMTALK 450S***	GMSK	Up to 8
Canada	450-470	12.5 (4800), 25 (9600)	0.5, 1, 2	TRIMTALK 450S***	GMSK	Up to 8
Japan	426.125	12.5 (4800), 25 (9600)	0.1	TRIMTALK 450S***	GMSK	Up to 8
	429.8125-429.9250	12.5 (4800)	0.1, 0.5, 1			
	449.7125-449.8875	12.5 (4800)	0.1, 0.5, 1			
	469.4375-469.4875	12.5 (4800)	0.1, 0.5, 1			

*Use the correct antenna for your setup.

** Depends on the environment, line of sight, and transmission power.

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