Reach RS4 Pro

Datasheet

All-band RTK GNSS receiver with dual cameras

- AR stakeout
- Measurements from photos
- Centimeter precision under canopy
- Tilt compensation
- L1/L2/L5/L6
- 2W dual-band radio

Reach RS4 Pro is a high-precision all-band RTK GNSS receiver with dual cameras that open up new ways to work. Use augmented reality stakeout to see points and lines overlaid on site, speeding up layout and reducing errors. With photo-based measurement, capture hard-to-reach points on building facades, behind fences, or across busy roads — no total station or hazardous setup required. RS4 Pro is ideal for surveying, construction, utilities, roadworks, and any job where you need centimeter accuracy and visual guidance.

Specifications

Learn more at emlid.com

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: 7 mm + 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

*The exact power and the available frequency range are subject to regional regulations. See the table below.

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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

Imaging

Image sensors		1/2.6 in, CMOS, global shutter, Full HD
Field of view	Front camera	H: 64.6°, V: 42.8°
	Bottom camera	H: 63°, V: 42°
Video frame rate		25 fps
Visual capture accuracy		3-5 cm within 10 m

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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