



Elnav ESR 50
Survey & Engineering



Field2Office® professional solutions

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Specifications

GNSS Characteristics ⁽¹⁾	
Channels	432
GPS	L1, L2, L5
GLONASS	L1, L2
Galileo	E1, E5a, E5b
BeiDou	B1, B2, B3
SBAS	L1
QZSS	L1, L2, L5
GNSS Accuracies ⁽²⁾	
Real time kinematics (RTK)	Horizontal: 10 mm + 1 ppm RMS Vertical: 15 mm + 1 ppm RMS Initialization time: < 10 s Initialization reliability: > 99.9%
Post-processing kinematics (PPK)	Horizontal: 3 mm + 1 ppm RMS Vertical: 5 mm + 1 ppm RMS
Post-processing static	Horizontal: 3 mm + 0.5 ppm RMS Vertical: 5 mm + 0.5 ppm RMS
Code differential	Horizontal: 0.4 m RMS Vertical: 0.8 m RMS
Autonomous	Horizontal: 1.5 m RMS Vertical: 3.0 m RMS
Positioning rate	Up to 10 Hz
Time to first fix⁽³⁾	Cold start: < 45 s Hot start: < 10 s Signal re-acquisition: < 1 s
Hardware	
Size (L x W x H)	137 mm x 137 mm x 106 mm (5.4 in x 5.4 in x 4.2 in)
Weight	1.39 kg (3.06 lb)
Environment	Operating: -40 °C to +65 °C (-40 °F to +149 °F) Storage: -40 °C to +75 °C (-40 °F to +167 °F)
Humidity	95%
Ingress protection	IP67 waterproof and dustproof, protected from temporary immersion to depth of 1 m
Shock	Survive a 2-meter pole drop
Tilt sensor	EBubble leveling
Front panel	6 status LED

Communications And Data Storage	
Network modem	Integrated 3.75G modem HSPA+ 21 Mbps (download), 5.76 Mbps (upload) WCDMA 850/900/1700/1900/2100 EDGE/GPRS/GSM 850/900/1800/1900
Wi-Fi	802.11 b/g/n, access point mode
Bluetooth[*]	v4.1
Ports	1 x 7-pin LEMO port (external power, RS-232) 1 x USB 2.0 port (data download, firmware update) 1 x UHF antenna port (TNC female)
UHF radio	Standard Internal Rx/Tx: 410 MHz to 470 MHz Transmit Power: 0.5 W to 2 W Protocol: CHC, Transparent, TT450 Link rate: 9600 bps to 19200 bps Range: Typical 3 km to 5 km
Data formats	RTCM 2.x, RTCM 3.x, CMR input and output HCN, HRC, RINEX 2.11, 3.02 NMEA 0183 output NTRIP Client, NTRIP Caster
Data storage	8 GB internal memory
Electrical	
Power consumption	4.2 W (depending on user settings)
Li-ion battery capacity	2 x 3400 mAh, 7.4 V
Operating time on internal battery⁽⁴⁾	UHF receive/transmit (0.5 W): 5 h to 7 h Cellular receive only: up to 10 h Static: up to 12 h
External power input	9 V DC to 36 V DC

*Specifications are subject to change without notice.

- (1) Compliant, but subject to availability of BDS ICD and Galileo commercial service definition. GLONASS L3, BDS B3 and Galileo E6 will be provided through future firmware upgrade.
 (2) Accuracy and reliability are determined under open sky, free of multipaths, optimal GNSS geometry and atmospheric condition. Performances assume minimum of 5 satellites, follow up of recommended general GPS practices.
 (3) Typical observed values.
 (4) Battery life is subject to operating temperature.

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