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i80

SMART GNSS RECEIVER



SURVEYING & ENGINEERING

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HIGH-PERFORMANCE GNSS RECEIVER EXTENDED CONNECTIVITY

The i80 GNSS is a highly versatile GNSS receiver designed to provide robust accuracy even in harsh environments to any demanding surveying project. Its full-GNSS 220-channel GNSS core engine starts outputting survey-grade centimeter RTK results within seconds to significantly increase your productivity in the field.

The innovative hot swappable batteries, high resolution LCD display and rugged design make the i80 indispensable for demanding survey applications. Its internal 3.75G network modem, UHF Rx/Tx module, Bluetooth and Wi-Fi connectivity allow seamless configuration to perfectly match your survey project requirements.

FULL GNSS FOR HIGH PRODUCTIVITY

Combining GPS, Glonass, Galileo and BeiDou positioning systems.

Powered by a 220-channel GNSS core engine, the i80 GNSS provides reliable centimeter survey-grade accuracy to any demanding project.

EASY CONFIGURATION AT YOUR FINGERTIPS

With two control buttons and LED status.

The 128 x 64 dpi LCD display gives entire control to the i80 GNSS. Whatever your survey requirements, the various work survey modes -UHF, NTRIP, GNSS data recording can be activated directly in the field.

UNINTERRUPTED OPERATION

3 400 mAh dual hot-swappable batteries.

Dual hot-swappable batteries allow extended full day fieldwork when connected to RTK network services. You can concentrate on your land surveying or topographic project without caring about power drop.

RUGGED TECHNOLOGY

Advanced Linux OS in heavy duty enclosure.

Meeting the stringent IP68 standard to withstand the most demanding environmental conditions, the i80 GNSS cast magnesium chassis secures your investment. It can pair with your preferred 3rd party software seamlessly via a simple configuration web interface.

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**PREMIUM VERSATILE
GNSS SOLUTION**



**HIGH-PERFORMANCE
IN ANY ENVIRONMENTS**

SPECIFICATIONS

GNSS Characteristics ⁽¹⁾	
Channels	220
GPS	L1C/A, L2C, L2E, L5
GLONASS	L1C/A, L1P, L2C/A, L2P, L3
Galileo	E1, E5A, E5B
BeiDou	B1, B2
NavIC (IRNSS)	L1C/A, L5 (QZSS, WAAS, EGNOS,
GNSS Accuracies ⁽²⁾	
Real time kinematics (RTK)	Horizontal: 8 mm + 1 ppm RMS
	Vertical: 15 mm + 1 ppm RMS
	Initialization time: < 5 s
	Initialization reliability: > 99.9%
Network RTK	Horizontal: 8 mm + 0.5 ppm RMS
	Vertical: 15 mm + 0.5 ppm RMS
	Initialization time: < 10 s
	Initialization reliability: > 99.9%
Post-processing kinematics (PPK)	Horizontal: 8 mm + 1 ppm RMS
	Vertical: 15 mm + 1 ppm RMS
	Initialization time: < 5 s
	Initialization reliability: > 99.9%
Post-processing static	Horizontal: 2.5 mm + 0.1 ppm RMS
	Vertical: 3.5 mm + 0.5 ppm RMS
SBAS	0.5 m RMS
Code differential	Horizontal: 0.25 m + 1 ppm RMS
	Vertical: 0.50 m + 1 ppm RMS
Time to first fix ⁽³⁾	Cold start: < 45 s
	Hot start: < 10 s
	Signal reacquisition: < 2 s
Hardware	
Size (H x W)	124 mm x 140 mm (4.9 in x 5.5 in)
Weight	1.02 kg (2.2 lb)
Environment	Operating: -40°C to +65°C (-40°F to +149°F)
	Storage: -40°C to +85°C (-40°F to +185°F)
Humidity	100% condensation
Ingress protection	IP67 waterproof and dustproof, protected from temporary immersion to depth of 1 m
Shock	Survive a 2-meter pole drop
LCD	128 x 64 dpi sunlight readable
Tilt sensor	Ebubble
	Tilt compensator ⁽⁴⁾
Certifications and Calibrations	
FCC Part 15 (class B Device), FCC Part 22, 24, 90; CE Mark; CTick; Bluetooth EPL; IGS & NGS Antenna Calibration; MIL STD 810G, Method 514.7	

Communications and Data recording	
Network modem	Integrated 3.75G modem
	HSPA+ 21 Mbps (down load), 5.76 Mbps (upload)
Wi-Fi	WCDMA 850/900/1700/1900/2100
	EDGE/GPRS/GSM 850/900/1800/1900
Bluetooth®	802.11 b/g/n, access point mode
Ports	V4.1
	2 x 7 pin LEMO port (external power, data down load, firmware are update, RS232)
UHF radio	1 x UHF antenna port (TNC female)
	Standard Internal Rx/Tx: 410 - 470 MHz
Data formats	Transmit Power: 0.5 W to 2 W
	Protocol: CHC, Transparent, TT450
Data storage	Link rate: 9600 bps to 19200 bps
	Range: typical 3-5 km, optimal up to 5 km
Electrical	FCC Certified Internal Rx/Tx: 403-473 MHz
	Transmit Power: 0.1 W to 1 W
Power consumption	Protocol: 3AS, 4FSK, Transparent, TT450
	Link rate: 9600 bps to 19200 bps
Liion battery capacity	Range: optimal up to 5 km
	RTCM 2.x, RTCM 3.x, CMR, CMR+, SCMRX
Operating time on internal battery ⁽⁵⁾	input and output
	HCN, HRC, RINEX 2.11, 3.02
External power input	NMEA 0183 output
	NTRIP Client, NTRIP Caster
Data storage	32 GB
Electrical	
Power consumption	3.2 W (depending on user settings)
Liion battery capacity	2 x 3400 mAh, 7.4 V
Operating time on internal battery ⁽⁵⁾	UHF receive/transmit (0.1 W): 6 h
	Cellular receive only: Up to 9 h
External power input	Static: Up to 10 h
	9 V DC to 36 V DC



*All specifications are subject to change without notice.

(1) 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 clear unobstructed conditions, multi-paths, satellite geometry and atmospheric conditions. Performances assume minimum of 5 satellites, follow up of recommended general GPS practices. (3) Typical observed values. (4) The accuracy of tilt compensator varies with operating environment and electromagnetic pollution. (5) Battery life is subject to operating temperature.

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