

GNSS 50 features

- Receiver with IMU, 1.408 Channels and full constellation
- P9IV Controller
- TopoGEOS Survey Field



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G50 Technical Features

RECEIVER

Satellite signals tracked	GPS: L1 C/A, L1C, L2P(Y), L2C, L5
	GLONASS: G, G2, G3
	BEIDOU: B1I, B2I, B3I, B1C, B2a, B2b
	GALILEO: E1, E5a, E5b, E6
	QZSS: L1, L2, L5
	IRNSS: L5
	SBAS
PPP	B2b PPP ¹ , HAS ¹
Channels	1408
Position Rate	Up to 20Hz
Signal Reacquisition	2-5 s
RTK Signal Initialization	2-5 s
Hot Start	Typically < 5 s
Cold Start	Typically < 30 s
Initialization Reliability	> 99.9 %
Internal Memory	8 GB
Tilt Sensor	IMU and e-bubble
	Supports tilt measurement up to 60°
	Tilt measurement accuracy: 10 mm + 0.7 mm/°tilt
	30° rod tip positioning accuracy within 2cm

POSITIONING

HIGH PRECISION STATIC SURVEYING	
Horizontal	2.5 mm + 0.5 ppm RMS
Vertical	5.0 mm + 0.5 ppm RMS
CODE DIFFERENTIAL POSITIONING	
Accuracy	0.50 m RMS
SBAS POSITIONING ³	
Accuracy	0.60 m RMS
REAL TIME KINEMATIC (< 30 Km) – NETWORK RTK	
Fixed RTK Horizontal	8 mm + 1 ppm RMS
Fixed RTK Vertical	15 mm + 1 ppm RMS

INTEGRATED GNSS ANTENNA

High accuracy multi-constellation micro-strip antenna, zero phase center, with internal multipath suppressive board

INTERNAL RADIO

Type	Tx - Rx Harxon DU1022U
Frequency Range	410 - 470 MHz
Channel Spacing	25 KHz
Power	1.5 W / 0.5 W
Maximum Range	3-5 Km in urban environment
	Up to 10 Km with optimal conditions
Protocols	Satel, PCC4-FSK, PCC-GMSK, TrimTalk450S, South_9600, South_19200 TrimmarkIII

Specifications are subject to change without notice.

1. Available with future firmware update

Accuracy and reliability are generally subject to satellite geometry (DOPs), multipath, atmospheric conditions and obstructions. In static mode they are subject even to occupation times: the longer is the Baseline, the longer must be the occupation time

INTERNAL MODEM

Band	LTE-FDD: B1/B3/B5/B7/B8/B20
	LTE-TDD: B38/B40/B41
	WCDMA: B1/B5/B8
	GSM/EDGE: B3/B8
	Nano SIM card

COMMUNICATION

I/O Connectors	Type-C for charging and data transfer
	TNC for connecting an antenna to a built-in radio
Bluetooth	V5.0+EDR compatible with /BLE
Wi-Fi	802.11 b/g/n/ac
Web UI	To upgrade the software, manage the status and settings, data download, etc. via smartphone, tablet or other electronic device with Wi-Fi capability
Reference outputs	RTCM 3.x
Navigation outputs	NMEA 0183, RINEX 2.1

POWER SUPPLY

Battery	Internal rechargeable (n.2 batteries)
	4800 mAh, 8.4 V
Voltage	adaptive 5V/2A charging
Working Time	Up to 10 hours
Charge Time	5-6 hours

PHYSICAL SPECIFICATION

Dimensions	Φ 142 mm x 58 mm
Weight	800 g (with battery)
Operating Temperature	-30°C to 70°C (-22°F to 158°F)
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Humidity	Resistant to 100% condensation
Waterproof/Dustproof	IP67
Shock Resistance	Drop of 1.5 m pole drop on hardwood floor
	Free fall of 1 m

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