

## 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 <sup>1</sup> , HAS <sup>1</sup>
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 <sup>3</sup>	
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.

### 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

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

**Topo  
GEOS**

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