

G90 Receiver Technical Features

RECEIVER

Satellite signals tracked	GPS: L1 C/A, L2P, L2C, L5
	GLONASS: L1, L2, L3
	BEIDOU: B1I, B2I, B3I, B1C, B2a, B2b
	GALILEO: E1, E5a, E5b, E6
	QZSS: L1, L2, L5, L6
	IRNSS: L5
PPP	SBAS
	B2b PPP, HAS
Channels	1408
Position Rate	Up to 50 Hz
Signal Reacquisition	< 1 s
RTK Signal Initialization	< 5 seconds
Hot Start	Typically < 15 s
Initialization Reliability	> 99.9 %
Internal Memory	64 GB
IMU rate	200 MHz
Tilt range	IMU $\pm 60^\circ$
RTK + IMU	5 mm + 0.3 mm/ $^\circ$

POSITIONING¹

HIGH PRECISION STATIC SURVEYING	
Horizontal	2.5 mm + 0.5 ppm RMS
Vertical	3.5 mm + 0.5 ppm RMS
REAL TIME KINEMATIC (< 30 Km) – NETWORK RTK ²	
Fixed RTK Horizontal	8 mm + 1 ppm RMS
Fixed RTK Vertical	15 mm + 1 ppm RMS
PPP Accuracy	< 20 cm RMS
SBAS Accuracy ³	< 60 cm RMS

INTEGRATED GNSS ANTENNA

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

INTERNAL RADIO

Type	Tx – Rx 2 W
Frequency Range	410 - 470 MHz
Channel Spacing	12.5 KHz / 25 KHz
Range ⁴	3-4 Km in urban environment Up to 10 Km with optimal conditions

INTERNAL MODEM

Band	LTE FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/ B19/B20/B25/B26/B28 LTE TDD: B38/B39/B40/B41 UMTS: B1/B2/B4/B5/B6/B8/B19 GSM: B2/B3/B5/B8 Nano SIM card
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BELOW CAMERA

Resolution	5 MP
Image frame rate	20 frame/s
Field of view	76°

REAR CAMERA

Resolution	2 MP
Image frame rate	20 frame/s
Field of view	52°

LASER

Color	Green
Precision	2 mm
RTK + Laser accuracy	2.5 cm -5 m / 4 cm -10 m
Range	30 m

COMMUNICATION

I/O Connectors	Type-C for charging and data transfer
Bluetooth	2.1 + EDR, V5.2
Wi-Fi	802.11 a/ac/b/g/n
Web UI	To upgrade the software, manage the status and settings, and download data. Smartphone, tablet, or other electronic device with Wi-Fi capability can be used.
Reference outputs	RTCM 3.x
Navigation outputs	NMEA 0183

POWER SUPPLY

Battery	Built-in battery, 7000 mAh
Power	12V DC
Working Time	Up to 10 hours
Charge Time	Typically 4 hours

PHYSICAL SPECIFICATION

Dimensions	Ø 142 x 59 mm
Weight	810 g
Operating Temperature	-40°C to 65°C (-40°F to 149°F)
Storage Temperature	-40°C to 80°C (-40°F to 176°F)
Waterproof/Dustproof	IP67
Shock Resistance	Designed to endure to a 2 m pole drop on hardwood floor with no damage
Humidity	100% non-condensing

Specifications are subject to change without notice.

- 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 the baseline, the longer the occupation time must be.
- Network RTK precision depends on the network performances and are referenced to the closest physical base station.
- Depends on SBAS system performance.
- Varies with the operating environment and with electromagnetic pollution.

**Topo
GEOS**

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