

S990A TECHNICAL FEATURES

RECEIVER

	GPS: L1 C/A, L1C, L1P, L2C, L2P, L5
	GLONASS: L1 C/A, L1P, L2 C/A, L2P, L3
	BEIDOU: B1, B2, B3, ACEBOC
Signal Tracking	GALILEO: E1, E5a, E5b, ALTBOC, E6
	QZSS: L1 C/A, L1C, L2C, L5, L6
	IRNSS: L5
	SBAS: L1, L5
L-Band	Atlas H10 / H30 / Basic (optional) ⁵
Bridging of RTK outages	aRTK - Works up to 20 minutes
Channels	800
Position Rate	10 Hz (optional 20-50Hz) ³
Signal Reacquisition	< 1 s
RTK Signal Initialization ⁴	2 to 4 seconds
Hot Start	Typically < 15 s
Initialization Reliability	> 99.9 %
Internal Memory	32 GB
Tilt sensor	E-Bubble IMU

POSITIONING¹

STATIC SURVEYING

High Precision Static Horizontal	2.5 mm + 0.1 ppm RMS
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High Precision Static Vertical	3.5 mm + 0.4 ppm RMS
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Static and Fast Static Horizontal	3 mm + 0.5 ppm RMS
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Static and Fast Static Vertical	5 mm + 0.5 ppm RMS
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CODE DIFFERENTIAL POSITIONING	
Accuracy	0.40 m RMS

SBAS POSITIONING ²	
Accuracy	0.60 m RMS

REAL TIME KINEMATIC (< 30 Km) - NETWORK RTK ³	
Fixed RTK Horizontal	5 mm + 0.5 ppm RMS

Fixed RTK Vertical	10 mm + 0.5 ppm RMS
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INTEGRATED GNSS ANTENNA

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

INTERNAL RADIO (optional)⁵

Type	Tx - Rx (1 watt)
Frequency Range	410 - 470 MHz
Channel Spacing	902.4 - 928 MHz
	12.5 KHz / 25 KHz
Range	3-4 Km in urban environment Up to 10 Km with optimal conditions ⁴

Illustrations, descriptions and technical specifications are not binding and may change

- 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.
- Depends on SBAS system performance.
- Network RTK precision depends on the network performances and are referenced to the closest physical base station.
- Varies with the operating environment and with electromagnetic pollution.
- Optional, it can be activated via activation code.

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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COMMUNICATION

I/O Connectors	5 pins Lemo, connect the external power supply and external radio Type-C, for receiver power supply and data transfer 1PPS port
Bluetooth	2.1 + EDR, V4.1
Wi-Fi	802.11 b/g/n
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 2.3, 3.0, 3.2 CMR, CMR+, DGPS
Navigation outputs	NMEA 0183

POWER SUPPLY

Battery	Internal rechargeable 7.2 V - 10,200 mAh
Voltage	9 to 28 V DC external power input with over-voltage protection (5 pins Lemo)
Working Time	Up to 10 hours
Charge Time	Typically 4 hours

PHYSICAL SPECIFICATION

Dimensions	φ 151 mm x 94.5 mm
Weight	1.40 Kg
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
MIL-STD	MIL-STD-810H
Shock Resistance	Designed to endure to a 2 m pole drop on concrete floor with no damage
Vibration	Vibration resistant



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