

TECHNICAL FEATURES S9 III PLUS



RECEIVER

Channels	220 GPS: Simultaneous L1 C/A, L2E, L2C,L5 GLONASS: Simultaneous L1 C/A, L1P, L2 C/A (GLONASS M Only), L2P SBAS: Simultaneous L1 C/A, L5
Satellite Tracked	GALILEO (reserved): Simultaneous L1 BOC, E5A, E5B, E5AltBOC1 COMPASS: B1 (QPSK), B1- MBOC (6,1, 1/11), B1-2 (QPSK), B2 (QPSK), B2-BOC (10,5), B3 (QPSK),B3BOC (15,2,5), L5 (QPSK)
Position Rate	Up to 20 Hz (50 Hz optional)
Signal Reacquisition	< 1 sec
RTK Signal Initialization	typically < 10 s
Hot Start	typically < 15 s
Initialization Reliability	> 99.9 %
Internal Memory	256 MB
Micro SD Card	4 GB Internal Memory (Over 60 days of raw static data storage with recording sample every 1 second)

POSITIONING¹

HIGH PRECISION STATIC SURVEYING (Long time observations)	
Horizontal	2.5 mm + 0.3 ppm RMS
Vertical	5 mm + 0.5 ppm RMS
CODE DIFFERENTIAL POSITIONING	
Horizontal	0.25 m + 1 ppm RMS
Vertical	0.45 m + 1 ppm RMS
SBAS POSITIONING (Typical)	
Horizontal	0.5 m RMS
Vertical	0.85 m RMS
REAL TIME KINEMATIC (< 25km) – NETWORK SURVEYING ³	
Fixed RTK Horizontal	10 mm + 1 ppm RMS
Fixed RTK Vertical	20 mm + 1 ppm RMS

COMMUNICATION

Connectors I/O	7-pins Lemo and 5-pins Lemo interfaces. Multicable with USB interface for connecting with PC
Bluetooth Device	2,4 GHz class II: maximum range is 50 m
Reference Outputs	CMR, CMR+, sCMRx, RTCM 2.3, RTCM 3.0, RTCM 3.1
Navigation Outputs	ASCII (NMEA-0183) GSV, AVR, RMC, HDT, VGK, VHD, ROT, GGK, GSA, ZDA, VTG, GST, PJT, PJK, BPQ, GLL, GRS, GBS

INTEGRATED GNSS ANTENNA

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

Specifications subject to change without notice

INTERNAL RADIO

Frequency Range	403 - 473 MHz
Channel Spacing	12.5KHz / 25 KHz
Emitting Power	0.5 /1/2 W
Maximum Range	3-4 Km (urban environment), 5-6 Km with optimal conditions ⁴
Protocol	Transparent EOT/EOC/FST, SATEL, South, Stonex Type 1, TRIMTALK II/Ile, TRIMMARK 3, TRIMTALK 450S

WIRELESS MODULE

Band	GSM/GPRS/EDGE : 850/900/1800/1900 MHz WCDMA/HSDPA : 2100/1900/850 MHz
Output Power	GSM850, EGSM900 : 33 dBm(2W) GSM1800, PCS1900 : 30 dBm(1W) WCDMA : 23 dBm

POWER SUPPLY

Battery	2500 mAh high capacity Lithium battery, Voltage 7.2 V
Voltage	9 to 15 V DC external power input with over-voltage protection
Working Time in Static Mode (GPS+GLONASS)	7 hours
Working time in GSM RTK with Cable Connection (GPS+GLONASS)	6.5 hours
Working time in wireless network RTK with Bluetooth connection (GPS+GLONASS)	around 4 hours
Charge time	typically 7 hours
Power consumption	< 3.8 W
Remaining time battery light blinking	1 hour

PHYSICAL SPECIFICATION

Weight	1.2 Kg with internal battery, radio standard UHF antenna
Operating Temperature	-30°C to 60°C (-22°F to 140°F) (internal radio TX 50°C)
Storage Temperature	-40°C to 80°C (-40°F to 176°F)
Waterproof/Dustproof	IP67. Protected from temporary immersion to depth of 1 meter and from 100% humidity
Shock Resistance	Designed to survive a 2 m pole drop on concrete
Vibration	Vibration resistance
Winter Grade Option	Operating at -40°C (-40°F)

1. 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.
2. Depends on SBAS system performance.
3. Network RTK precisions depends on the network performances and are referenced to the closest physical base station.
4. Varies with the operating environment and with electromagnetic pollution.



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