



**Would you ask Dutch how many
channels are enough?**



220 Channels on Board

NEW Stonex® S9

GNSS RTK Receiver

GNSS module specifications

- Channels: 220.
- Satellite signals tracked:
 - GPS: Simultaneous L1 C/A, L2E, L2C, L5.
 - GLONASS: Simultaneous L1 C/A, L1 P, L2 C/A (GLONASS M Only), L2 P.
 - SBAS: Simultaneous L1 C/A, L5.
 - GIOVE-A: Simultaneous L1 BOC, E5A, E5B, E5AltBOC1.
 - GIOVE-B: Simultaneous L1 CBOC, E5A, E5B, E5AltBOC1.
 - COMPASS: (reserved): 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).
- Very low noise GNSS carrier phase measurements with <1 mm precision in a 1 Hz bandwidth.
- High precision multiple correlator for GNSS pseudorange measurements.
- Unfiltered, unsmoothed pseudorange measurements data for low noise, low multipath error, low time domain correlation and high dynamic response.
- Proven low elevation tracking technology.
- Up to 20 Hz raw measurement & position outputs.
- RTK signal initialization typically less than 10 sec*.
- Signal recapture: <1 sec*.
- Initial capture time: <15sec*.
- Internal Memory: 64 MB (over than 15 days of raw static data storage with recording sample every 15 seconds).

Receiver accuracy

- Static horizontal accuracy: 3mm ± 1ppm (RMS)*.
- Static vertical accuracy: 5mm ± 1ppm (RMS)*.
- Fixed RTK horizontal accuracy: 1cm ± 1ppm (RMS)*.
- Fixed RTK vertical accuracy: 2cm ± 1ppm (RMS)*.
- Code differential positioning accuracy: 0.45m (CEP)*.
- Stand Alone RTK positioning accuracy: 1.5m (CEP)*.
- SBAS positioning accuracy typically <5m (3D RMS)*.

Connection devices

- Connectors I/O: 9-pins serial port (baud rate up to 115.200kbps) and 5-pins LEMO interfaces.
- Multicable with USB interface for connecting with PC.
- 2.4GHz Bluetooth® device class II: maximum range over than 50m.
- Internal Radio: frequency 450MHz.
- GSM/GPRS data modem: maximum range over than 70km.
- External cell phone support for RTK and VRS operation (optional).
- External radio: frequency 450MHz, emitting power and maximum range depending on model. Maximum range over than 22km.

Serial protocols

- Reference outputs: CMR, CMR+, RTCM 2.1, RTCM 2.3, RTCM 3.0, RTCM 3.1.
- Navigation outputs: ASCII (NMEA-0183 GSV), AVR, RMC, HDT, VGK, VHD, ROT, GSK, GSA, ZDA, VTG, GST, PJT, PJK, BPO, GLL, GRS, GBS, GSOF.

GSM module

The GSM board mounts a EM 310 unit for GSM/GPRS communication. This module supports:

- Single band operation at 800 MHz.
- Dual band operation at 900 MHz and 1800 MHz.
- Tri-band operation at 800 MHz, 900 MHz, 1800 MHz.
- Packet data service of GPRS: CLASS 10.
- Maximum rate of transmission 85.6 kbit/s.
- Embedded TCP/IP protocol suite that supports multiple links and provides ACK answer and large-capacity cache.

Power Supply

- 9V to a 15V DC external power input with over-voltage.
- Voltage: 7.2 V.
- Working time in static mode: typically over than 6 hours.
- Working time in RTK rover mode: typically over than 4 hours.
- Charge Time: typically less than 7 hours.
- Power consumption: <3.8 W.
- Remaining time with battery light blinking: over than 1 hour.

Physical specification

- Size: Height 96 mm x Diameter 186mm. 60 mm from the center of the rubber loop to the bottom.
- Weight: 1.2 Kg with internal battery and radio standard UHF antenna.
- Operational temperature: -25°C to 60°C (-13°F to 140°F)
- Storage temperature: -55°C to 85°C (-67°F to 185°F)
- Waterproof: protected from temporary immersion to depth of 1 meter and from 100% of humidity.
- Dustproof.
- Shock resistance: designed to survive a over than 2m pole drop on the concrete.
- Vibration resistance.

* This specification depends on weather and satellite visibility conditions

