



FEATURES

- GPS/GLONASS or GPS/BDS RTK
- cm-level accuracy RTK receiver
- Support moving base RTK
- Base or rover mode configurable
- 12mm x 16mm small size
- Weighs 2 gram

The S1216F8-RTK is a cost-effective OEM GNSS receiver that delivers centimeter-level position accuracy for various high-precision aerial mapping and machine guidance control applications. When configured in moving-base mode, it provides high precision heading information.

The S1216F8-RTK can receive RTCM 3.x data from a base station, or another S1216F8-RTK receiver in base mode outputting SkyTraQ raw measurement, to perform carrier phase RTK processing, achieving centimeter-level accurate relative positioning. In challenging signal environments where cm-level RTK positioning is not possible, S1216F8-RTK delivers high accuracy Differential-GNSS and GNSS positioning.

The S1216F8-RTK has a size of 12mm x 16mm. This very small size makes it easy to integrate into applications requiring high precision RTK positioning.

TECHNICAL SPECIFICATIONS

Receiver Type

167 Channels L1 C/A Code
GPS/GLONASS or GPS/BDS

Performance Spec

Hot/Warm/Cold Start 1 / 28 / 29 sec
Reacquisition 1 sec
Velocity Accuracy 0.05m/sec
Timing Accuracy 10nsec
Acceleration 2g

Sensitivity

Cold Start -148dBm
Tracking -160dBm

Position Accuracy

Autonomous 2.5m CEP
DGPS < 1m
RTK 1cm + 1ppm

Heading Accuracy

50cm baseline 0.27 degree 1- σ

Communication

3.3V UART serial
57600 baud, 8, N, 1

Supported Protocol

Rover Mode

NMEA-0183 V3.01 GPGGA, GPGLL,
GPGSA, GPGSV,
GLGSA, GLGSV,
BDGSA, BDGSV
GPVTG, GPRMC

RTCM-SC104

3.0, 3.1

Base Mode

SkyTraQ Raw Data

PHYSICAL CHARACTERISTICS

Size 12mm x 16mm
Weight 2g

Electrical Characteristics

Voltage 3.3V +/- 5%
Current 70mA

Environmental Characteristics

Working temperature -40°C ~ +85°C
Storage temperature -55°C ~ +100°C
Humidity 5% ~ 95%

Ordering Information

Part Number	Description
S1216F8-RTK-GL	GPS/GLONASS RTK Receiver Module
S1216F8-RTK-BD	GPS/BDS RTK receiver Module

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