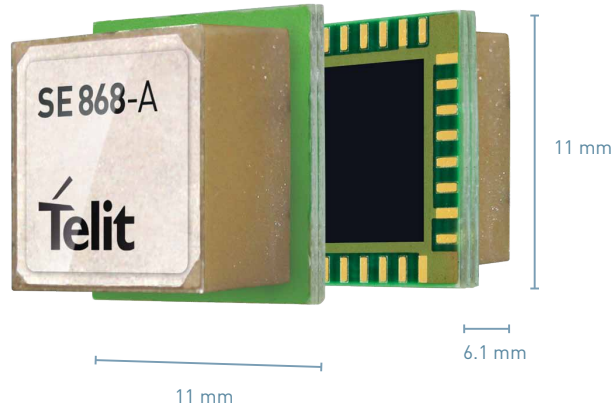# Telit

11 mm

6.1 mm

11 mm

JUPITER **SE868**-A

GNSS Embedded

Product Description

The Jupiter SE868-A is the representative of a new multi-constellation GNSS module family with embedded highper-forming SMT antenna.

The SE868-A is packaged in a 11 x 11 mm "cavity like" PCB solution with embedded Flash memory and integrated LNA on one side with an SMT antenna on the opposite side. This sophisticated architecture provides customers a completely integrated solution optimized RF path and standard SMT mounting operation without any constraint in terms of host PCB. The SE868-A, unlike most competitive solutions, does not require a guard in the host PCB around the RF PIN zone, minimizing the RF detuning after soldering on the host PCB.

The SE868-A is designed to fully support GPS, QZSS and GLONASS and it is Galileo ready. The SE868-A is capable to track GPS + GLONASS (and eventually Galileo) constellations simultaneously, providing the positioning data though standard UART.

The Jupiter SE868-A supports ephemeris file injection (A-GPS) as well as Satellite Based Augmentation System (SBAS) to increase position accuracy. Its onboard software engine is able to locally predict ephemeris up to three days in advance, starting from ephemeris data broadcast by GNSS satellites received by the module and stored in the internal Flash memory.

The Jupiter SE868-A features the best GNSS integrated antenna solution in the market with best-in-class sensitivity and current consumption.

Key Benefits

- Multi-constellation GNSS module with integrated high performing 9 x 9 mm SMT antenna
- Compliant with GPS and GLONASS standards
- SMT mounting not requiring holes on host PCB
- Ready for Galileo

- Low power processing core delivers current optimized multi-constellation tracking
- Ultra-sensitive -165 dBm (tracking) RF front-end
- Embedded LNA allows use of passive antennas
- Supports ephemeris file injection (A-GPS)
- Satellite Based Augmentation System (SBAS) compliant

Family Concept

Our positioning product portfolio is the result of over twenty years of experience in GNSS applications. Telit has developed a range of products compatible with the well-known GPS constellation as well as its Russian counterpart GLONASS. Moreover, our portfolio is fully aligned with the upcoming service launch of Europe's Galileo constellation. Valuable features such as Dead Reckoning, Precision Timing, as well as speed and reliability assured by multi-constellation coverage, provide additional benefits for your application.

Your application development effort can also benefit significantly from the seamless integration between Telit's 2G cellular and positioning modules. This bundling of cellular and positioning modules significantly reduces development complexity without adding costs. Multi-constellation positioning products applied together with our eCall/ERA-GLONASS compliant cellular modules bring you ready-to-use emergency automotive tracking solutions for the European and Russian markets.

Typical applications include fleet management systems, European GPS-assisted road tolling systems, cellular base stations, in-car navigation systems, automotive telematics systems, and GPS-based personal sports training monitors.

Combine your **GNSS** module with

Cellular modules

Short Range modules

www.telit.com

ENABLING THE IoT
IS WHAT WE DO.

JUPITER **SE868**-A

Product Features

- 32-pad QFN package with embedded SMT antenna
- Embedded 9 x 9 mm GPS+GLO SMT antenna
- Frequency Bands: GPS L1, GLONASS L1, QZSS L1, Galileo E1
- Standards: NMEA
- Jamming rejection
- Data logging
- A-GPS: ephemeris file injection
- EGNOS, WAAS, GAGAN and MSAS capability embedded with correction of positional errors due to ionospheric and orbital disturbances

Environmental

- Dimensions: 11 x 11 x 6.1 mm
- Weight: 2 g
- Temperature range:
  - Operating temperature: -40 to +85°C
  - Storage temperature: -40 to +85°C

Interfaces

- UART
- PPS for precise timing

Approvals

- RoHS compliant
- R&TTE

Electrical & Sensitivity

- Current consumption
  - Low power tracking: ‹ 10mA
  - Full power tracking: ‹ 25 mA (GPS+GLO)
  - Full power acquisition: ‹ 30 mA (GPS+GLO)
- Sensitivity
  - Acquisition: -148 dBm
  - Navigation: -163 dBm
  - Tracking: -165 dBm
- Power supply
  - Range from 2.8 up to 4.3 V
- Positional accuracy (CEP50): Autonomous Positional Error ‹ 3 m
- Accuracy
  - Speed: ‹ 0.01 m/s
  - Heading: ‹ 0.01 deg
- Time to first fix (90% @ -130 dBm)
  - Hot start: 1 s
  - Cold start: ‹ 35 s

[09.2015]

Join the Telit Technical Forum

For a quicker and more rewarding integration experience join the Telit Technical Forum. There you can browse the first open forum covering all IoT topics, get direct support by region (EMEA, North America, Latin America, APAC), take part in this quickly growing IoT community and exchange experiences.