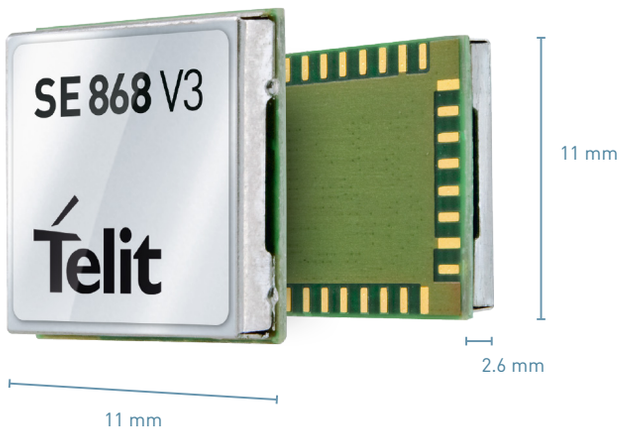
JUPITER **SE868** V3

GNSS Embedded



Product Description

The SE868 V3 is a positioning system that combines GPS, GLONASS, BeiDou, Galileo, and SBAS to provide a high performance position reporting and navigation solution. The SE868 V3 can navigate to -161 dBm and track to -165 dBm, thereby providing improved performance in harsh environments. The SE868 V3 is pin-to-pin compatible with the SE868 V2 as well as the JF2. It can track GPS and GLONASS or BeiDou constellations simultaneously and it is Galileo ready, thereby providing the host device with high-value benefits from multi-constellation navigation in just one period.

The SE868 V3 is encased in an 11 x 11 mm QFN package that has a powerful baseband processor, SQI Flash mem- ory and integrated LNA. Its ultra-sensitive RF front-end enables multi-GNSS indoor fixes and hi-quality navigation in challenging outdoor scenarios such as dense urban areas. The Jupiter SE868 V3 provides high-quality naviga- tion over a serial interface according to the NMEA protocol standard or via OSP binary protocol. Its low power process- ing core delivers optimized multi-constellation tracking plus advanced power management.

The Jupiter SE868 V3 supports ephemeris file injection (A-GPS) as well as Satellite Based Augmentation System (SBAS) to increase position accuracy. Its onboard software engine can predict local short-term ephemeris starting from ephemeris data broadcast by GNSS satellites received by the module and stored in the internal Flash memory.

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 that are 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 are assured by multi-constellation coverage, thereby providing additional benefits for your application.

Your application development effort can also benefit significantly from the seamless integration between Telit's cellular and positioning modules. This bundling of cellular and positioning modules significantly reduces development complexity without adding costs. Multi-constellation positioning products employed together with our eCall/ERA-GLONASS compliant cellular modules enable 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

Complete, Ready to Use Access to the Internet of Things

Key Benefits

- Pin-to-pin compatible with JF2 and SE868 V2
- Full GNSS compliance: GPS, GLONASS, Galileo and BeiDou
- Low power processing core delivers 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
- QTI SiRFstarV™ based

ENABLING END-TO-END IoT SOLUTIONS

JUPITER **SE868** V3

Product Features

- 32-pad QFN package
- Frequency Band: GPS L1, Glonass L1, Galileo E1 and BeiDou B1
- Standards: NMEA and OSP binary
- Jamming rejection
- Low Power Modes
  - Smart GNSS 1 Mode (SG1)
  - High Power Reduction Mode (HPR)
- A-GPS: ephemeris file injection

Environmental

- Dimensions: 11 x 11 x 2.62 mm
- Weight: 1 g
- 34-pad QFN package, requiring only 2 Layer PCB
- Temperature Range
  - Operating temperature: -40 to +85°C
  - Storage temperature: -40 to +85°C

Interfaces

- UART, I^2C and SPI interfaces
- PPS for precise timing
- EGNOS, WAAS, GAGAN and MSAS capability embedded with correction of positional errors due to ionospheric and orbital disturbances
- RTC for efficient power management

Approvals

- RoHS compliant
- RED

Electrical & Sensitivity

- Power supply
  - From 1.71V up to 1.89 V
- Current consumption: GPS+GLO
  - Acquisition : 76 mW
  - Tracking: 70mW
- Low power modes
  - Hibernate: 69 uW
  - SG1 mode: 44-51mW
  - HPR mode: 17-20mW
- Sensitivity: GPS+ GLO
  - Acquisition: -146 dBm
  - Navigation: -161 dBm
  - Tracking: -165 dBm
- Horizontal Positional accuracy (CEP50): GPS+GLO
  - 1.5 m
- Accuracy
  - Speed: 0.01 m/s
  - Heading: 0.01 deg
- Time To First Fix (90% @ -130 dBm) GPS+GLO
  Hot Start: 1.1 s
  - Warm start: 23 s
  - Cold Start: 27 s

[06.2017]

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.

Telit Communications S.p.A.
Via Stazione di Prosecco, 5/B
I-34010 Sgonico (Trieste), Italy
Phone +39 040 4192 200
Fax +39 040 4192 383
E-Mail EMEA@telit.com

Telit Wireless Solutions Inc.
3131 RDU Center Drive, Suite 135
Morrisville, NC 27560, USA
Phone +1 888 846 9773 or +1 919 439 7977
Fax +1 888 846 9774 or +1 919 840 0337
E-Mail NORTHAMERICA@telit.com

Telit Wireless Solutions Inc.
Rua Paes Leme, 524, Conj, 126
05424-101, Pinheiros
São Paulo-SP-Brazil
Phone +55 11 3031 5051
Fax +55 11 3031 5051
E-Mail LATINAMERICA@telit.com

Telit Wireless Solutions Co., Ltd.
8th Fl., Shinyoung Securities Bld.
6, Gukjegeumyung-ro8-gil, Yeongdeungpo-gu
Seoul, 150-884, Korea
Phone +82 2 368 4600
Fax +82 2 368 4606
E-Mail APAC@telit.com

www.telit.com
www.telit.com/techforum
www.telit.com/facebook
www.twitter.com/Telit_IoT