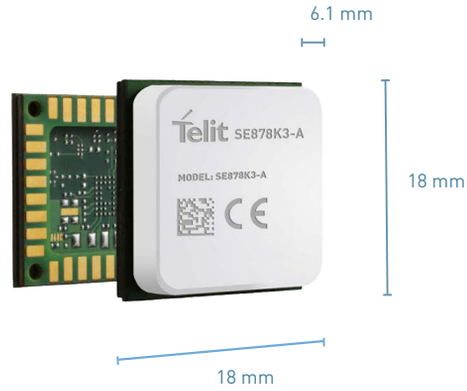
SE878K3-A

GNSS Embedded



Product Description

The Jupiter SE878K3-A GNSS antenna module is a complete multi-constellation GNSS receiver featuring a high sensitivity 17 x 17 mm patch antenna, SAW filter, additional LNA, flash memory, GNSS core, RTC and TCXO. The SE878K3-A uses Telit's "cavity like" PCB package with an optimized RF path supporting standard SMT mounting without constraining the host PCB, minimizing the antenna detuning.

The SE878K3-A support GPS, QZSS and GLONASS, Beidou and it is Galileo ready. The SE878K3-A is capable to track GPS + GLONASS (or Beidou) and Galileo constellations simultaneously, providing the positioning data though standard UART and I2C.

The Jupiter SE878K3-A supports either autonomous than server based A-GPS. Its onboard A-GPS software engine is able to locally predict ephemeris up to three days in advance and store this data in the memory.

Easing the development process for designers with little or no RF experience, the SE878K3-A is compliant with regulatory and industry standards specifications. Additionally, it supports the usage of an external antenna through an embedded RF switch. This feature is particularly useful in applications such as personal trackers and alarms in which the main antenna is the external one and the internal antenna is used as backup when the external is broken or compromised.

The SE878K3-A is designed to Telematics, Tracking & Trace and Alarm applications.

Key Benefits

- Standard variant with integrated 17 x 17 x 4mm SMT antenna
- Additional LNA and SAW filter
- SMT mounting not requiring holes on host PCB
- Ready for Galileo
- Supports ephemeris file injection (A-GPS)
- Satellite Based Augmentation System (SBAS) compliant
- Embedded RF switch to support external antennas as well

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.

AVAILABLE FOR

EMEA
North America
APAC
Australia

Complete, Ready-to-Use Access to the Internet of Things

IoT Modules | Connectivity Plans | Software & Platforms

SE878K3-A

Product Features

- 32-pad QFN package with embedded SMT antenna
- Embedded 17x 17 mm SMT antenna
- Frequency Bands: GPS L1, GLONASS L1, QZSS L1, Galileo E1 and Beidou B1
- Standards: EMEA
- Jamming rejection
- Additional LNA + SAW filter
- A-GPS: ephemeris file injection
- EGNOS, WAAS, GAGAN and MSAS capability embedded with correction of positional errors due to ionospheric and orbital disturbances
- Internal RF switch for external antenna support

Environmental

- Dimensions: 18 x 18 x 6.1 mm
- Weight: <2 g
- Temperature range:
  - Operating temperature: -40 to +85°C
  - Storage temperature: -40 to +85°C

Interfaces

- UART
- I2C
- SPI
- PPS for precise timing

Approvals

- RoHS compliant
- RED

Electrical & Sensitivity

- Current consumption
  - Low power tracking: 34mW
  - Full power tracking: 75mW (G+G)
  - Full power acquisition: 93mW (G+G)
- Sensitivity
  - Acquisition: -148 dBm
  - Navigation: -163 dBm
  - Tracking: -165 dBm
- Power supply
  - Range from 3 up to 4.3v
- Positional accuracy (CEP50):
  Autonomous Positional Error = 2.5m
- Time to first fix (90% @ -130 dBm)
  - Host start: 1 s
  - Cold start: < 35 s

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