SE873K5

GNSS

Product Description

The SE873K5 is the latest addition to Telit SE873 family and is the natural migration path from SE873 and SE873Q5.

The SE873K5 is a multi-constellation receiver in 7x7x2.25 mm QFN-like package including embedded flash, RTC and TCXO, as well as a pre-selection SAW filter for coexistence with other radio technologies; it also includes an adjustable eLNA for usage with either active or passive antennas.

SE873K5 is able to track and navigate simultaneously all four GNSS constellations (GPS + Galileo + Glonass + Beidou) achieving a sensitivity of -165dBm.

The SE873K5 provides GNSS information over a serial port (UART, I2C, or SPI* interface) using the NMEA protocol, and Its low power-processing core delivers several customizable power-saving modes to optimize current draw for the desired use case.

The receiver supports both local and server-based Assisted GNSS (A-GNSS) for for improved TTFF. Satellite-Based Augmentation System (SBAS) corrections from WAAS, EGNOS, MSAS, and GAGAN can be used to increase positioning accuracy. The internal flash memory allows Firmware (FW) updates and customization as well as Extended Ephemeris (EE) storage.

The SE873K5, thanks to its small package, the latest generation chipset, and the advanced power modes is the ideal solution for wearable, light portable devices and battery powered solutions.

Key Benefits

- Complete GNSS module, including TCXO, RTC, LNA and flash memory
- Full GNSS compliance: GPS, Glonass, Galileo and BeiDou
- Flexible power management modes allow improvement to the battery life
- Supports both local and server-based A-GNSS for improved TTFFs
- Satellite Based Augmentation System (SBAS) corrections increase positioning accuracy
- Battery-friendly 1.8 V GPIO
- SAW filter for better immunity and integrated LNA for optimal performances

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 and Chinese counterparts, GLONASS and BeiDou (BDS), respectively. Moreover, our portfolio fully supports the latest addition of f Europe's Galileo constellation. Valuable features such 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 cellular and positioning modules.

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

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Product Features

- Frequency Bands: GPS L1, GLONASS L1, Galileo E1, BeiDou B1, QZSS L1

- Standards: NMEA

- SBAS (EGNOS, WAAS, GAGAN and MSAS) or QZSS L1S capability

- RTC for efficient power management

- Jammer rejection

- Local and server-based A-GNSS

- Low Power modes

- eLNA for optimal performances

Environmental

- Dimensions: 7 x 7 x 2.25 mm

- 20-pad QFN package

- Weight: 0.5 g

- Temperature range:
  - Operating temperature: -40 to +85°C
  - Storage temperature: -40 to +85°C

- Power supply
  - Range from 1.75 up to 1.85 V

Interfaces

- 1st Serial Port: UART, I²C, or SPI*

- 2nd Serial Port: I²C

- 1PPS Time Mark pulse

Approvals

- RoHS complaint

- RED / UKCA

Performance

- Power consumption
  - Hibernate (RTC_mode): 31uW
  - Acquisition: 41mW (GGGB) / 35 mW (GPS)
  - Tracking/Navigation: 42 mW (GGGB) / 24 mW (GPS)

- Sensitivity
  - Acquisition: -147dB
  - Tracking/Navigation: -165 dBm (GPS)

- Positional accuracy - CEP50: 1.5 m

- Time To First Fix (90% @ -130 dBm)
  - Hot start: 1.5 s
  - Cold start: 29s

- 1PPS
  - Jitter (@1-sigma): +/- 5ns

*: roadmap