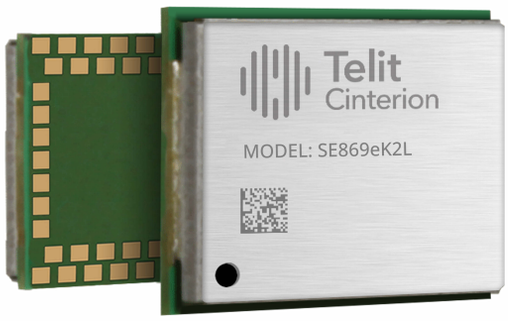
PRELIMINARY

SE869eK2L

GNSS



Product Description

The SL869eK2L is the latest evolution of the SL869 family of modules and is based on the low-power AG3352 platform from Airoha. The new module shares the same pinout of the well established xL869 form factor. The SL869eK2L is designed to support GPS, QZSS, GLONASS, Beidou and Galileo, as well as the Satellite Base Augmentation Systems (SBAS).

The module concurrently tracks four constellations by default, in the L1 frequency, including the modern GPS L1C and BeiDou B1C signals.

SL869eK2L is packaged in the industry standard 12.2 x 16 mm form factor, and introduces additional LGA pins for future applications.

Navigation data is provide in NMEA format through standard UART or I2C interfaces.

Furthermore, this product outputs a precise 1-pulse-per-second (1PPS) and embeds timing-related features like TRAIM and surveying mode for highperformance timing applications.

The SL869eK2L supports Assisted GNSS (A-GNSS), in autonomous as well as server-based modes.

Key Features

- Based on the Airoha AG3352 core
- GPS L1, GLONASS L1, Galileo E1, BeiDou B1, QZSS, SBAS
- Ports: UART, I2C, 1PPS
- 58-pad LGA package 12.2 x 16 mm backward compatible with previous generation 24-pad LCC package
- 1PPS with precise timing capabilities (7 ns jitter*)
- Timing features (TRAIM, satellite hold, self-survey mode)*
- Low-noise amplifier (LNA) and post-amplification SAW filter
- Adjustable update rate 1-10 Hz
- Adjustable timepulse output rate
- Different power supply options for best flexibility

Key Benefits

- Multi-constellation for global coverage and redundancy
- The ability to identify, isolate and remove satellites that may have issues (TRAIM)*
- Ultra accurate 1PPS output (+/- 7 ns)*
- Modern GPS L1C and BeiDou B1C for improved signal robustness
- Footprint Compatible with series SL869 in popular 12.2 x 16 mm industry standard
- Compliant with AFC for Wi-Fi 6E and 7 routers
- Support for Windows Location Services (WLS)*

Family Concept

Telit Cinterion's positioning product portfolio results from over 30 years of experience in GNSS applications. Our offering ranges from GPS-only and multiconstellation receivers to best-in-class multifrequency modules.
The SE869e represents the evolution of the SL869 series, moving from LCC to LGA package and allowing the introduction of new features through the additional connection pins. Telit Cinterion's integrated proprietary commands enable easy transition between variants. These unified command sets reduce development complexity without additional costs. Typical applications include fleet management systems, GPS/GNSS- assisted road tolling, cellular base stations, in-car navigation, automotive telematics, asset tracking, and personal sports training monitors.

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Product Features

- Frequency Band: GPS (L1), GLONASS (L1), FDMA, Galileo (E1), Beidou (B1)
- Standards NMEA
- Timing mode
- 47 tracking channels
- SBAS capable (WAAS, EGNOS, MSAS, GAGAN), QZSS
- GPS/GNSS: local ephemeris prediction
- GPS/GNSS: server predicted ephemeris
- Jammer rejection
- Supports active or passive antenna
- Position update rate: 1-10 Hz

Environmental

- Dimensions: 16 x 12.2 x 2.4 mm
- Weight: 1.8 g | 58-pad LGA package
- Temperature Range
  - Operating temperature: -40 to +85°C
  - Storage temperature: -40 to +95°C

Interfaces

- 1PPS output for precise timing
- 1 UART port
- 1 I^2C port

Approvals

- RoHS compliant
- RED

Electrical & Sensitivity (Target Values)

- Power supply: 3.3 V or 1.8V
- Power consumption (3.3 V, G3B)
- Acquisition: 44 mW
- Tracking: 44 mW
- Power consumption (1.8 V, G3B)
  - Acquisition: 54 mW
  - Tracking: 54 mW
- Sensitivity
  - Acquisition: -148 dBm
  - Navigation/Tracking: -166 dBm
- Time To First Fix
  - Hot Start: 1s
  - Warm start: 25s
  - Cold Start: 28s
- Positional accuarcy (CEP50): 1.5 m
- Timing accuarcy (jitter 1-sigma): ± 7* ns

**On dedicated firmware*

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