Telit Cinterion

PRELIMINARY

SL871K2L

GNSS

Product Description

The SL871K2 is a member of the SL871 module family. It is based on the low-power AG3352 platform from Airoha.

This module has the same pinout as the xL871 form factor. This family supports multiple constellations, including:

- GPS
- QZSS
- GLONASS
- BeiDou
- Galileo

The SL871K2 module tracks four constellations in the L1 frequency by default, including the modern Beidou B1C signal.

This product outputs a precise one pulse per second (1PPS). Furthermore, it embeds timing-related features like time receiver autonomous integrity monitoring (TRAIM) and surveying mode for high-performance timing applications.*

The SL871K2 supports assisted GNSS (A-GNSS) in autonomous and server-based modes.

Key Features

- Airoha AG3352 core
- GPS, GLONASS, Galileo, BeiDou, QZSS, satellite-based augmentation systems (SBAS)
- Ports: UART, I²C
- 18-pad, 9.7 x 10.1 x 2.5 mm, industry standard LCC
- 1PPS with precise timing capabilities with 8-nanosecond (ns) jitter*
- Timing features (TRAIM, satellite hold, self-survey mode)*
  Low-noise amplifier (LNA) and post-amplification filter
- Multiple low-power options
- Adjustable update rate 1-10 Hz

Key Benefits

- Multiconstellation support for better performance and multiple timing information sources
- Accurate timing capabilities*
- Hardware variants for optimized cost and consumption
- LNA for best performance
- Footprint compatible with SL871 series in 9.7 x 10.1 mm industry standard

Family Concept

The SL871 form factor allows customers to choose from different GNSS technologies using a similar footprint. Modules in this family are offered in a 9.7 x 10.1 mm LCC package.

Our positioning product portfolio results from over 30 years of experience in GNSS applications. Typical applications include:

- Fleet management systems
- GPS- and GNSS-assisted road tolling
- Cellular base stations
- In-car navigation
- Telematics
- Asset tracking
- Personal sports training monitors

SL871K2L

Product Features

- Frequency bands: GPS (L1), GLONASS (L1, FDMA), Galileo (E1), Beidou (B1)
- Standards: NMEA
- Timing mode*
- 47 tracking channels
- SBAS-capable (WAAS, EGNOS, MSAS, GAGAN) QZSS
- GPS and GNSS: Local-and server-generated ephemeris
- Jamming rejection
- Supports active or passive antennas
- Low-power modes
- Position update rate: 1-10 Hz

Environmental

- Dimensions: 9.7 x 10.1 x 2.5 mm
- Weight: 1 g | 18-pad LCC package
- Temperature ranges:
    - Operating temperature: -40 to +85°C
    - Storage temperature: -40 to +85°C

Interfaces

- 1PPS output for precise timing
- UART port
- I²C port

Approvals

- RoHS compliant
- RED

Electrical & Sensitivity

- Power supply (two hardware variants):
    - VCC: 1.75-1.95 V or 2.8-3.6 V
    - Typ: 1.8 V or 3.3 V
- Current consumption (two hardware variants):
    - Acquisition: 41 mW (3.3V)/35mW (1.8V)
    - Tracking: 41 mW (3.3V)/35mW (1.8V)
    - Standby (VBAT): TBD
- Sensitivity: GPS+GLO+GAL+BDS
    - Acquisition: -147 dBm
    - Navigation/tracking: -166 dBm
- Time to first fix (@ -130 dBm): GPS+GLO+GAL+BDS
    - Hot start: 1 s
    - Warm start: 25 s
    - Cold start: 28 s
- Timing accuracy* (1-σ): Jitter ±8 ns
- Positioning accuracy (CEP50): 1.5 m

* May be available on dedicated firmware.

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