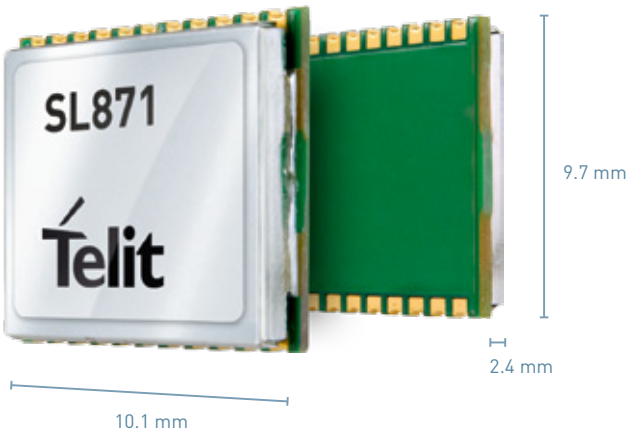
JUPITER **SL871**

GNSS Embedded



Product Description

The Jupiter SL871 is the representative of a new multi-constellation GNSS module family in the Telit portfolio aiming to be the ideal solution for battery-life sensitive GNSS applications that do not require Dead Reckoning, TRAIM and support of communication ports like USB or CAN bus. The SL871 is designed for global compliance with the whole set of GNSS constellations, either already in place (GPS, QZSS and GLONASS) than under deployment – (Galileo and Compass / BeiDou).

The SL871 is capable of tracking GPS + Galileo and GLONASS (or GPS + Galileo and Compass / BeiDou) constellations simultaneously, providing the positioning data though standard UART.

The SL871 is packaged in a 9.7 x 10.1 mm LCC package with an ARM7 baseband processor, embedded Flash memory and integrated LNA. Its ultra-sensitive RF front-end enables multi-GNSS indoor fix, fast fix and navigation in challenging outdoor scenarios such as dense urban areas.

The Jupiter SL871 supports ephemeris file injection (A-GPS) as well as Satellite Based Augmentation System (SBAS) to increase position accuracy. Its onboard software engine is able to locally predict ephemeris three days in advance starting from ephemeris data broadcast by GNSS satellites received by the module and stored in the internal Flash memory.

The Jupiter SL871 features extreme low power consumption either in GPS than in multi-constellation tracking in all operational conditions. Additional advanced power modes and A-GPS help in finding the best balance between accuracy and power consumption, significantly increasing the battery life.

Key Benefits

- Smallest multi-constellation GNSS module in the Telit portfolio
- Compliant with GPS and GLONASS standards
- Compliant with Compass / BeiDou
- Ready for Galileo
- Ready for GNSS constellations under deployment: QZSS, Galileo and Compass
- Low power processing core delivers current 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

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.

Combine your GNSS module with

Cellular modules

Short Range modules

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ENABLING THE IOT
IS WHAT WE DO.

JUPITER **SL871**

GNSS family comparative table

Model	Constellations				Interfaces		Features				
	GPS/ QZSS	GLONASS	GALILEO	BDS	UART	I2C	LNA	DC block	Ant ON	Ant sense	Flash
SL871	●	●	●	●	●	○			●	●	●
SL871L	●	●	●	●	●	○	●	●	●	●	●
SL871-S	●				●				●		
SL871L-S	●				●		●	●	●		

Product Features

- 18-pad LCC package, requiring only 2 Layer PCB
- Frequency Bands: GPS L1, GLONASS L1, QZSS L1, Galileo E1, Compass B1 Bands
- Standards: NMEA
- Jamming Rejection
- Data logging
- A-GPS: ephemeris file injection
- EGNOS, WAAS, GAGAN and MSAS capability embedded with correction of positional errors due to ionospheric and orbital disturbances

Environmental

- Dimensions: 10.1 x 9.7 x 2.4 mm
- Weight: 1 g
- Temperature Range:
  - Operating temperature: -40 to +85°C
  - Storage temperature: -40 to +85°C

Interfaces

- two UARTs
- PPS for precise timing

Approvals

- RoHS compliant
- R&TTE

Electrical & Sensitivity

- Current consumption
  - Low power Tracking : 24 mW
  - Full power Tracking: 66 mW (GPS+GLO)
  - Full power Acquisition: 83 mW (GPS+GLO)
- Sensitivity
  - Acquisition: -145 dBm
  - Navigation: -159 dBm
  - Tracking: -162 dBm
- Power supply
  - Range from 2.8 up to 4.3 V
- Positional Accuracy (CEP50):
  Autonomous Positional Error ‹ 2.5 m
- Accuracy
  - Speed: ‹ 0.01 m/s
  - Heading: ‹ 0.01 deg
- Time To First Fix (90% @ -130 dBm)
  - Hot Start: 1 s
  - Cold Start: ‹ 35 s

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