

JUPITER SL871L

GNSS Embedded



Product description

The Jupiter SL871L is the new enhanced variant of the Telit SL871 multi-constellation GNSS module.

The new SL871L shares the same pinout and command interface of the standard SL871 but in addition to all the features of the SL871, it embeds also an additional LNA and a DC block in the RF front end.

Compared to SL871, the SL871L offers improved RF sensitivity and faster TTFF thanks to the additional LNA. Moreover, the embedded DC block allows direct input from active antennas.

In terms of power consumption, the SL871L features a slightly higher power consumption compared to SL871 due to the additional LNA.

Like the SL871, the SL871L is designed to support GPS, QZSS, GLONASS and Beidou and is Galileo ready. The SL871L is able to track three different constellations concurrently (GPS + Galileo + GLONASS or GPS + Galileo + Beidou).

The SL871L is packaged in a 9.7 x 10.1mm LCC package and provides navigation position through standard UART or in a secondary communication port configurable as UART or I2C.

The Jupiter SL871L 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 SL871L features extremely low power consumption 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

- GPS, GLONASS and Beidou
- Additional LNA for top level RF sensitivity
- DC Block for direct RF input from active antennas
- Ready for Galileo
- Low power processing core delivers current optimized multi-constellation tracking
- 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. 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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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
- Embedded additional LNA
- Embedded DC block and SAW filter
- 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

- Main UART
- Secondary UART or I2C

Approvals

- RoHS compliant
- RED

Electrical & Sensitivity

- Current consumption
 - Low power Tracking : 34 uW
 - Full power Tracking: 76 mW (GPS +GLO)
 - Full power Acquisition: 93 mW (GPS +GLO)
- Max RF Sensitivity
 - Acquisition: -148 dBm
 - Navigation: -160 dBm
 - Tracking: -165 dBm
- Power supply
 - Range from 3 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: < 31 s



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