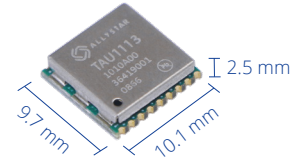# TAU1113

GNSS Positioning Module

`Industrial`

## PRODUCT DESCRIPTION

TAU1113 is a cost-effective low-power GNSS positioning module based on CYNOSURE III Lite GNSS SoC chip. It supports GPS/QZSS, BDS, Galileo, GLONASS and SBAS. The module features SAW, LNA, flash memory as well as an antenna supervisor in a compact form factor.

TAU1113 is a versatile receiver that can be used with active and passive antennas, making it an excellent choice for a wide range of applications such as tracking, telematics and navigation. The fast start-up in combined with the low power consumption and the very low backup current make the TAU1113 particularly suitable for use in battery-powered devices, e.g., for asset tracking.

2.5 mm
9.7 mm
10.1 mm

## HIGHLIGHTS

- Versatile GNSS module supporting GPS/QZSS, BDS, Galileo, GLONASS and SBAS
- Low current consumption of only 16 mA for GPS/QZSS
- Backup current of only 15 µA
- Active and passive antennas supported thanks to built-in SAW and LNA
- Supports Allystar's free-of-charge A-GNSS service for minimal startup times
- Pin-compatible with previous generation TAU1103, TAU1105 and many mainstream GNSS modules

## APPLICATIONS

Bike Sharing     Asset Tracking     Fleet Management     Telematics

Product Selector:

| Product Model | | GNSS | | | | | | | | Feature | | | | | Interface | | | | Accuracy | | | Grade | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | GNSS system mode | Band(S/D/T) | GPS/QZSS | BDS | GLONASS | Galileo | NavIC | SBAS | Built-in LNA | Programmable (Flash) | Data Logging | D-GNSS | Oscillator | UART | I2C | USB | SPI | Meter | Sub-Meter | Centi-Meter | Industrial | Automotive |
| TAU1113 | 01 | S | • | | • | | | • | • | • | • | • | T | • | | | | • | | | • | |
| | 02 | S | • | | • | • | | • | • | • | • | • | T | • | | | | • | | | • | |
| | 03 | S | • | • | • | | | • | • | • | • | • | T | • | | | | • | | | • | |

T = TCXO

# GENERAL SPECIFICATIONS

### GNSS Engine

Cynosure III Lite GNSS Engine

Total 88 GNSS channels

5 Hz maximum update rate

### GNSS Reception

GPS/QZSS: L1C/A

Galileo: E1

GLONASS: G1

BDS: B1I

SBAS: L1

### Position Accuracy*

| | |
|---|---|
| GNSS | 1.5m CEP |
| GNSS (with SBAS) | < 1.0m CEP |

*\* Open sky condition.*

### Sensitivity*

| | |
|---|---|
| Cold Start | -148 dBm |
| Hot Start | -156 dBm |
| Reacquisition | -158 dBm |
| Tracking | -163 dBm |

*\* Demonstrated with a good external LNA.*

### Velocity & Time Accuracy

| | |
|---|---|
| GNSS | 0.1 m/s CEP |
| 1PPS | 20 ns |

### Interfaces

| | |
|---|---|
| UART | 1 |

### Time to First Fix (TTFF)

| Supporting system | Hot start | Cold start |
|---|---|---|
| GPS/QZSS+Galileo+GLONASS+SBAS | 2s | 26s |
| GPS/QZSS+GLONASS+SBAS | 2s | 28s |
| GPS/QZSS+Galileo+BDS+SBAS | 2s | 28s |
| GPS/QZSS | 1s | 28s |

### Operating Condition

| | |
|---|---|
| Main voltage | 2.0-3.63 V |
| Digital I/O voltage | 2.0-3.63 V |
| Backup voltage | 1.8-3.63 V |

### Operation Limit

| | |
|---|---|
| Velocity | 515 m/s |
| Altitude | 18,000m |

### Antenna

Active antenna
Passive antenna

### Antenna Supervision

Antenna short circuit protection and open circuit detection

### Power Consumption

| | | |
|---|---|---|
| Tracking | GPS/QZSS+GLONASS+SBAS | 20 mA @ 3.3V |
| | GPS/QZSS+Galileo+BDS+SBAS | 17 mA @ 3.3V |
| | GPS/QZSS | 16 mA @ 3.3V |
| Standby | 15 uA @ 3.3V | |

# ENVIRONMENT DATA

| | |
|---|---|
| Operation temperature | -40°C to +85°C |
| Storage temperature | -40°C to +85°C |
| Certification | RoHS, REACH, FCC, CE-RED |

# PACKAGE

| | |
|---|---|
| Package | 18 PIN LCC |
| Dimensions | 10.1*9.7*2.5 mm |

ALLYSTAR