

TAU2202A

GNSS Module with Dead Reckoning

Automotive



PRODUCT DESCRIPTION

TAU2202A is an automotive-grade GNSS module with dead reckoning, which is based on the Allystar CYNOSURE III SoC chips. It supports GPS, BDS, Galileo, and QZSS satellite signals. Combining GNSS positioning and inertial navigation technology makes TAU2202A output positioning data in the environments where GNSS signal quality is poor or even lost (such as tunnels, underground parking, etc.), and provide continuous and accurate positioning for navigation applications.

TAU2202A integrates a 3-axis accelerometer and a 3-axis gyroscope, while supporting other sensor access for multi-source information fusion to achieve higher positioning accuracy. Thanks to its excellent positioning performance in a harsh environment, TAU2202A is able to adapt to environment such as high temperature and strong electromagnetic interference in the vehicle to meet the application requirements of automotive manufacturers.

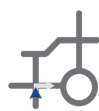
HIGHLIGHTS

- AEC-Q100 certified GNSS chip
- Conform to IATF 16949 standard
- Support GNSS and INS navigation technology
- Support BDS-3 signals and A-GNSS
- Automotive grade module
- Output raw data with built-in 6D IMU
- Support ADR/UDR adaptive switching
- Support free-installation

APPLICATIONS



Automotive Navigation



Lane-level Navigation



Smart Driving



Intelligent Cabin

Product Selector:

Product	Type	GNSS					Feature					Interface			Accuracy		Grade						
	DR Module	Band (S/D/T)	GPS/QZSS	BDS	GLONASS	Galileo	NavIC	Built-in SAW	Built-in LNA	Data Logging	D-GNSS	Oscillator	Built-in inductor	IMU Raw data	UART	CAN	USB	SPI	Meter	Sub-meter	Centimeter	Industrial	Automotive
TAU2202A-1216A00	•	D	•	•	•	○	•	•	•	•	T	•	•	•	○	○	○	•	•	•	•	•	•

T = TCXO

○ = Supported upon request with special firmware.

GENERAL SPECIFICATIONS

GNSS Reception

GPS/QZSS: L1C/A, L5
 BDS: B1I, B1C, B2a
 Galileo^[1]: E1, E5a

* [1] Supported upon request with special firmware

Position Accuracy

GNSS 1.0m CEP

Update rate

Position update 1 Hz
 Sensor output 50 Hz

Time to First Fix (TTFF)

Hot start 1s
 Cold start 30s

Sensitivity^[2]

Cold start -147 dBm
 Hot start -155 dBm
 Reacquisition -155 dBm
 Tracking & Navigation -160 dBm

* [2] Demonstrated with a good external LNA.

Velocity & Time Accuracy

GNSS 0.1 m/s CEP
 1PPS 20 ns

Interfaces

UART 2

Position Error^[3]

UDR: 5% of distance travelled
 ADR: 3% of distance travelled

* [3] GNSS signal lost 120s

Operation Limit

Velocity 515 m/s
 Altitude 18,000m

Operating Condition

Main voltage 3.0-3.6 V
 Digital I/O voltage 3.0-3.6 V
 Backup voltage 1.8-3.6 V

Power Consumption

Acquisition 54 mA @ 3.3V
 Tracking 50 mA @ 3.3V
 Standby 12 uA

ENVIRONMENT DATA

Operation temperature -40°C to +85°C
 Storage temperature -40°C to +90°C
 Certification RoHS & REACH

PACKAGE

Packaging 24 PIN LCC
 Dimensions 12.2*16.0*2.4 mm

