Ultra-compact GNSS SiP Module CS101

CS101 is an ultra-compact single-band multi-constellation GNSS SiP module. It offers high sensitivity, low power consumption, anti-jamming capabilities. CS101 can track multiple GNSS systems simultaneously, including GPS, BDS, GLONASS, Galileo and QZSS, providing users with fast, accurate and high performance positioning experiences.

Featuring with ultra-small size and low power consumption, this module is suitable for wearable devices, trackers and handheld devices, etc.

Technical advantages

» L1 band, BDS/GPS/GLONASS/Galileo/QZSS
» Compact Integration: built in LNA, SAW and TCXO
» Low power consumption
» Adaptive anti-jamming capability
» Real-time and predicted A-GNSS
» Package: LGA53: 4. 5x4. 5x1. 1 (mm)

Product block diagram
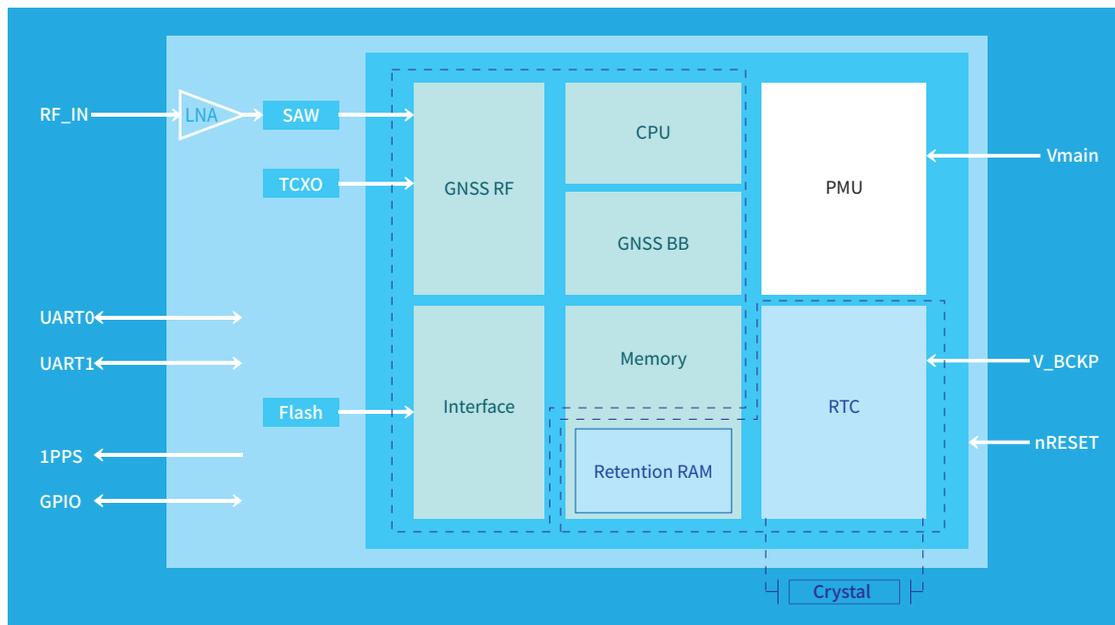
Product Specifications

Performance Index

Supported GNSS Constellation	GPS: L1C/A
	BDS: B1I, B1C
	GLONASS: G1
	Galileo: E1B/C
	QZSS: L1C/A
Position Accuracy(CEP) [1]	Horizontal accuracy: 2m
	Velocity accuracy: 0. 1m/s
TTFF [2]	Cold start: 26s
	Hot start: 1s
	Re-acquisition: 2s
Sensitivity [3][4]	Cold start: -149dBm
	Hot start: -155dBm
	Tracking: -165dBm
	Re-acquisition: -159dBm
Power consumption [5]	Tracking : 13mA @3.3V (DCDC mode)
	Aquisition: 15.5mA @3.3V (DCDC mode)
Update rate	1Hz ~ 5Hz
Data format	NMEA-0183, ICOE protocol

Others

Main power supply	1. 8V~3. 6 V
Backup power supply	1. 7V~3. 6 V
Communication interface	UARTx2
Operating temperature	-40℃~+85℃
Storage temperature	-40℃~+85℃
Reliability and certification	Complies with JEDEC standards RoHS and REACH requirements
Package	LGA53: 4. 5x4. 5x1. 1（mm）
Application restrictions	Acceleration≤4g
	Altitude<18,000m
	Velocity<515m/s

Note:

[1] Simulated linear motion at constant velocity (33 m/s)

[2] Instrument-measured satellite signal strength: -130 dBm

[3] C/N0 of 41 dB-Hz achieved at -130 dBm signal level

[4] With external Low-Noise Amplifier (LNA) implementation

[5] The test result is based on DCDC mode and Vmain for 1. 8V supply

*This feature is still under development.

Final performance parameters will be documented in the subsequent product release specification.

Application scenarios

Handheld devices   Trackers   Smart watches