

# Single-band Multi-system Low-power GNSS Chips

## CC7100 Series

CC7100 series is a single-band multi-constellation GNSS chip developed by ICOE. Utilizing advanced integrated RF/baseband architecture in a compact form factor, these chips deliver optimized power efficiency while maintaining high performance characteristics.

Designed for global deployment, CC7100 series enables concurrent multi-GNSS signal processing with fast TTFF and high positioning accuracy.

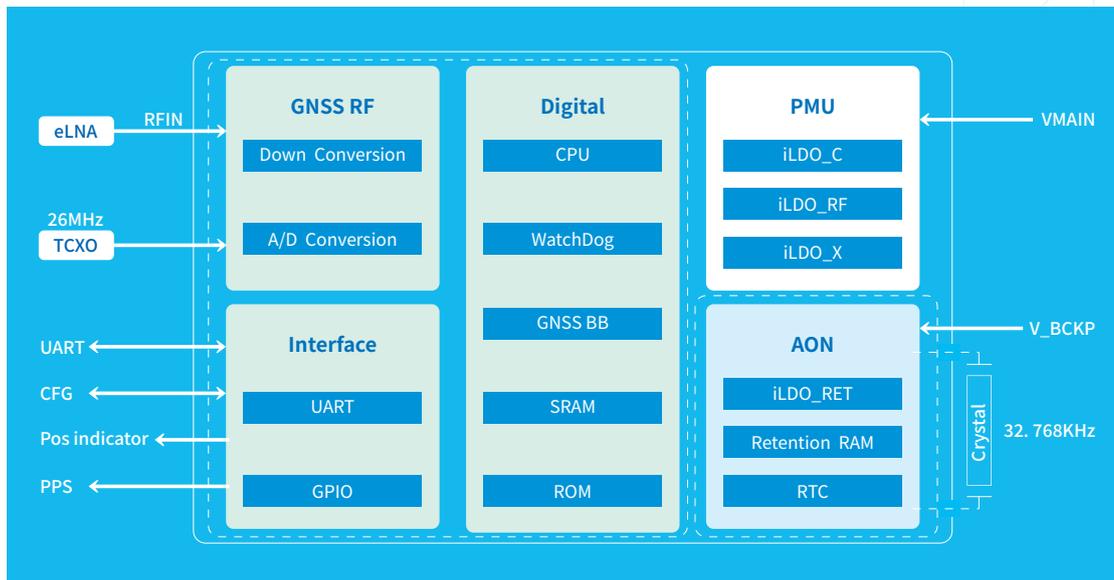
CC7100 series chips support meter-level positioning accuracy with L1 band, suitable for trackers, modules, tablets, two-wheelers, consumer drones, and other products and application fields.



## Technical advantages

- » L1 band, GPS/BDS/GLONASS/Galileo/QZSS
- » Super small size, suitable for size sensitive applications
- » Adaptive anti-jamming capability
- » Real-time and predicted A-GNSS
- » ROM based, supporting dynamic Loading mode (CC7100W)
- » On-chip flash, supporting OTA upgrade (CC7100B/CC7100Q)
- » Package: WLCSP 1. 8x2. 1x0. 5 (mm)  
QFN 4. 4x4x0. 75 (mm)  
BGA 2. 52 x3. 92x0. 69 (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 SBAS
Position Accuracy <sub>(CEP)</sub> <sup>①</sup>	Horizontal accuracy: 1.5m Velocity accuracy: 0.1m/s
1PPS	20ns
TTFF <sup>②</sup>	Cold start: 24s Hot start: 1s Re-acquisition: 1s
Sensitivity <sup>③④</sup>	Cold start: -149dBm Hot start: -155dBm Tracking: -165dBm Re-acquisition: -159dBm
Power consumption <sup>⑤</sup>	<b>CC7100B:</b> Tracking : 15mW Aquisition : 22mW <b>CC7100W/CC7100Q:</b> Tracking : 22mW Aquisition : 32mW
Update rate	1Hz ~ 5Hz
Data format	NMEA-0183, ICOE protocol

## Others

Main power supply	1. 7V ~ 3.6V
IO power supply	1. 7V ~ 3.6V
Backup power supply	1. 7V ~ 3.6V
Communication interface	SPI*x1, I <sup>2</sup> C*x1
Operating temperature	-40 ~ +85°C
Storage temperature	-40 ~ +125°C
Reliability and certification	Complies with JEDEC standards RoHS and REACH requirements
Package	CC7100W: WLCSP30: 1.8x2.1x0.5 (mm), 5000pcs/reel CC7100Q: QFN36: 4.4x4.0x0.75 (mm), 5000pcs/reel CC7100B: BGA: 2.52x3.92x0.69 (mm), 5000pcs/reel
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 supply mode

\*Special firmware supported.

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

## Application scenarios



Trackers



Modules



Smart watches



Two-wheelers



Handheld devices



Dash Cam