

SimpleLink™ GPS CC4000

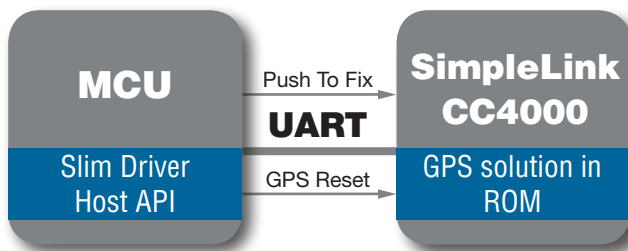
Fully integrated GPS solution



Overview

Know where you are when the need arises with TI's SimpleLink™ CC4000 GPS solution. TI's CC4000 GPS solution provides a quick, accurate, low cost path to add GPS positioning technology to your product. With unmatched performance, TI's CC4000 can deliver accuracy better than 3 meters with autonomous time to fix of 35 seconds. CC4000s' "Watchful Eye" technology automatically maintains satellite positioning information allowing your solution to stay in low power modes longer.

A slim driver coupled with modules from the world's leading manufacturers reduces development time, complexity and cost by allowing you to get to market quicker with known system performance.



Connecting to low memory microcontrollers is enabled by complete software integration on the CC4000.

Module Vendor	TI Part number	Orderable part number	Description
GNS	CC4000-TC6000GN	TC6000-GN	Includes: EEPROM, TCXO, Filter

Key Features and Benefits

Fully integrated GPS solution

- Embedded GPS driver
- NMEA protocol communication
- Reduced system complexity
- Minimal loading on host CPU
- Enables GPS functionality with all MCUs and MPUs

Proven solution with best-in-class performance

- Autonomous cold start Time to first fix (TTFF) of 35 seconds in open sky signal conditions
- Autonomous hot start TTFF of ~1 second in open sky signal conditions
- Tracking accuracy better than 3 meters
- Timing accuracy <100ns (nominal)
- Low power implementation (Push-to-fix activated power management for active and deep sleep)
- Based on 6th generation GPS solution shipping for several years

Complete platform solution and modules

- Sample applications to get started quickly
- Simple APIs
- Modules are available from GNS to simplify development and reduce costs

CC4000 Specifications

Protocol Communication	NMEA (provides time, position, speed, satellite status, and course)
Performance	Autonomous cold start TTFF of 35 seconds in open sky signal conditions Autonomous hot start TTFF of ~1 second in open sky signal conditions Tracking Accuracy better than 3 meters
GPS tracking sensitivity	-162 dBm
Embedded software	Fully integrated GPS driver
Push-to-fix	Single GPIO activates power management for active and deep sleep modes
Ephemeris data	Automatically maintains satellite positioning information, valid for up to 4 hours
Pulse-per-second (PPS) generator	Independent output for high precision timing applications with accuracy <100ns (nominal)
Host interface	UART

Hardware and Software Tools

Hardware

- GNS TC6000-GN evaluation module (EM) board

Additional hardware needed:

- MSP430F5529 Experimenter Board (MSP-EXP430F5529)

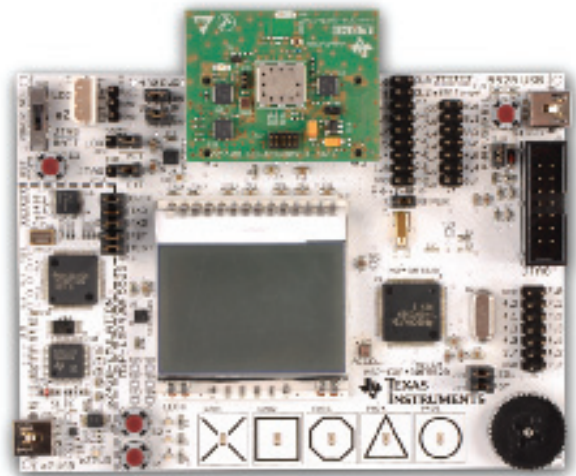
Software

Sample applications:

- NMEA to PC: NMEA data is collected by CC4000 module and sent via USB from the MSP430F5529 to a PC application displaying common GPS parameters
- NMEA to MSP430F5529 LCD: NMEA data is collected and basic GPS parameters parsed and displayed on the LCD
- Google Earth: Over 30 hours of GPS data is stored on SD card (assumes 1GB SD card of MSP-EXP430F5529), post processed (with Navigator PC-based app) and displayed on Google Earth

Freely available PC tools:

- Visual GPS www.visualgps.net/visualgps
 Navigator www.geoblogspot.com
 Google Earth www.google.com/earth



GNS TC6000-GN evaluation module board shown with MSP430F5529 Experimenter Board (sold separately)

Applications

- Asset tracking
- Industrial M2M
- Sports / Fitness
- Precision timing



CC4000 Resources

- Wireless Connectivity Wiki: www.ti.com/connectivitywiki
- E2E Forum: www.ti.com/wiconforum

Module Manufacturers



GPS design services, module manufacturing
www.gns-gmbh.com

www.ti.com/gps

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