

W2SG0008i

GPS Receiver Module based on SiRFstarIV™

Description

The W2SG0008i module is robust, reliable and compact GPS receiver module based on CSR's SiRFstarIV™ architecture, featuring excellent receiver performance. It provides easy, flexible and scalable way for system manufacturers to add GPS positioning, locationing and/or navigation capabilities to their products. This module includes integrated MAC, baseband, RF front-end, LNA, crystal, oscillator, SAW filter; and is fully optimized to yield excellent receive sensitivity performance through careful design. It supports UART, I2C and SPI host interfaces. It is certified for global markets and supports full operation in industrial operating temperature range.

Features

- ✦ Small footprint: 6.75 mm x 6.75 mm x 2 mm
- ✦ Compact, robust, reliable design for easy integration
- ✦ GPS Technology based on SiRFstarIV™ architecture
- ✦ Support for SBAS (WAAS, EGNOS, MSAS, GAGAN)
- ✦ Protocols for output data: NMEA and OSP
- ✦ Support for UART, I2C and SPI host interfaces
- ✦ Global certifications available: FCC, IC, CE
- ✦ Excellent receiver sensitivity up to -163 dBm
- ✦ Single power supply operation, 1.8V DC
- ✦ Ultra-low power consumption
- ✦ Optimized RF and electrical design
- ✦ Supports industrial temperature range operation

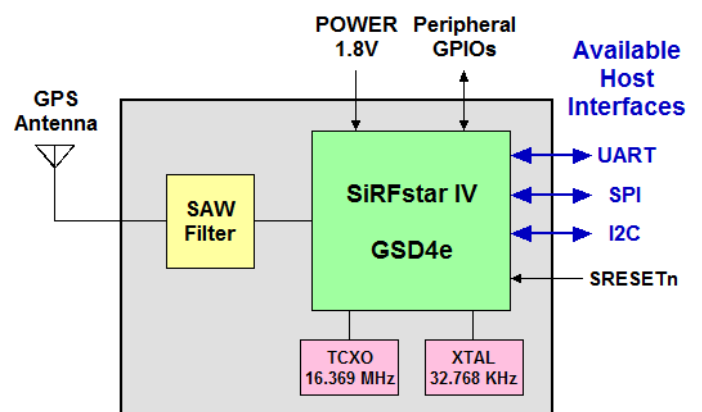


QFN Footprint: 6.75 mm x 6.75 mm x 2 mm

Applications

- ✦ IoT (Internet of Things)
- ✦ M2M (Machine-to-Machine)
- ✦ Personal navigation devices
- ✦ Health and fitness monitoring devices
- ✦ Mobile internet devices, smart phones
- ✦ Gaming systems
- ✦ Asset tracking, Logistics handhelds
- ✦ Personnel locators, tags
- ✦ Drones, UAVs
- ✦ POS terminals, Logistics management terminals
- ✦ Smart homes

Block Diagram



Specification

Single RF input
Satellite Constellations Supported: GPS
Number of track verification channels: 48
Removes in-band jammers up to 80 dB-Hz

Boot-up Mechanism: from internal ROM
Default boot-up Baud Rate: 4800 bps over NMEA
Communication Protocols:
OSP
NMEA

Configuration Methods:
OSP/NMEA message level configuration
Customer Configuration Kit (CCK)

Power Management Options:
Continuous mode
Push-to-Fix mode
Trickle Power mode

Mitigation of Signal Interference:
Multipath interference
CW, narrowband and wideband interference
Cross-correlation interference

Maximum Update Rate: 5 Hz
Maximum Altitude: < 60,000 feet
Maximum Velocity: < 1,000 knots
Maximum Receive Sensitivity: -163 dBm

Horizontal positioning accuracy:
Autonomous: < 2.5 meters (24 hr static @ -130 dBm)

Velocity accuracy @ 30 m/s:
Speed: < 0.01 m/s
Heading: < 0.01°

TTFF @ -130 dBm:
Hot start: < 1 s
Warm start: < 35 s
Cold start: < 35 s

Receive Sensitivity:
Acquisition: -147 dBm
Tracking: -163 dBm
Navigation: -160 dBm

Electrical Data

Power Supply: 1.8V DC
Peripheral GPIOs: 1.8V operation

Interfaces

UART: Flow control support
Baud rates to 1.2288 Mbps

SPI: Supports up to 6.84 MHz max clock input
Supports SPI mode 1 and SPI mode 3
Supports most/least significant bit order
Slave mode operation

I2C: Bit rate of 100 kbps or 400 kbps
Single Master Mode
Configurable address format 7-bit/10-bit

Certifications

FCC: 15 B
IC: ICES-003
CE: EN 300 440-2 v1.4.1
EN 301 489-1 v1.8.1
EN 301 489-3 v1.4.1

Part Ordering

W2SG0008i-B-T: Baud-Rate = 4800 bps, on Trays

Development Kits

W2SG0008i EVK-1: W2SG0008i Module on Evaluation Board, Onboard GPS Passive Chip Antenna, External GPS Active Antenna, Software, Application Notes

W2SG0008i EVK-2: W2SG0008i Module on Evaluation Board, Onboard GPS Passive Chip Antenna, Software, Application Notes

Additional Information:

For the latest collaterals, please visit the Wi2Wi Extranet Portal at: <http://www.wi2wi.com/mgr/>