



Wireless 2 Wireless

W2SG0004 - Global Positioning Module



The W2SG0004 is a complete systems solution based on the SiRF Star III architecture that was designed specifically for battery powered mobile and embedded products such as personal navigation devices, smart phones, and other portable and handheld devices that feature GPS capability. Its ultra-low power consumption, small form factor, and high receive sensitivity make it ideally suited for such applications. As it is a complete radio receiver solution requiring minimal external components, it allows quick and easy integration into most applications.

Applications

- Personal Navigation Devices (PNDs)
- Mobile Internet devices
- Smartphones
- Personal Digital Assistants (PDAs)
- Pet and asset tracking
- Logistics management terminals

Features

- Small form factor SMD solution, 11.2mm x12mm x2.5mm
- Ultra low power consumption
- Format selectable output data: latitude, longitude, altitude, speed, heading, and time
- Uses NAVSTAR GPS L1 signal
- Allows use of either active or passive antenna
- Software accelerator included for improved sensitivity, satellite acquisition and tracking
- Software controlled LNA included
- Front end optimized for insertion loss, amplifier cross coupling
- Includes TCXO and LNA power control
- Supports E911 mandate
- RoHS compliant

Ordering Information

- W2SG0004-TR - GPS SMD Module, Tape and Reel
- W2SG0004-T - GPS SMD Module, Tray
- W2SG0004-SAM - GPS Module Sample Pack
- W2SG0004-DEV - GPS Module Development Kit

Host Interface

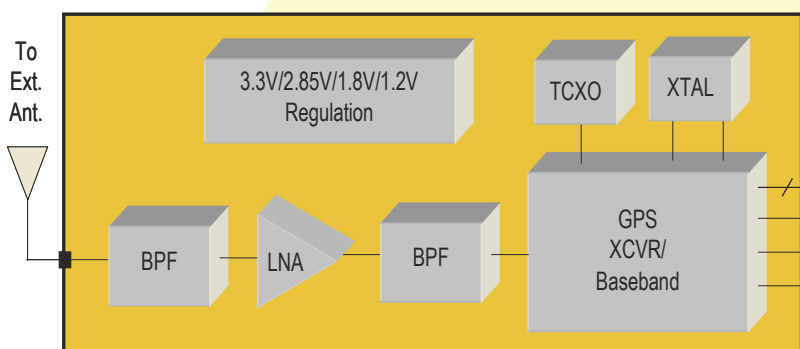
VDD

VSS

UART

GPIO

Flash Enable



W2SG0004 - Specifications

Package Dimensions

- 11.2mm (L) x 12mm(W) x 2.5mm(H)

Package Type

- Solder down module

Input Power

- Supply Voltage : 3.3VDC
- Peak Current : 50 mA

Power Consumption

- RX: 35 mA
- Deep Sleep: 30 μ A

Temperature Range

- Operating: -30° C to + 85° C
- Storage: -40° C to + 85° C
- Humidity: 5% to 95%, Non-condensing

GPS Data Input

- 20 Channel, L1 Code
- Frequency: 1.57542 GHz

I/O

- UART
 - Configurable data rate, 192 Kbps max
 - Optional hardware flow control
- Configurable GPIO

Command Set

- NMEA or SiRF Binary

Acquisition Time (TTFF)

- Hot Start TTFF @ -136 dBm: 0.6 sec
- Hot Start TTFF @ -141 dBm: 0.9 sec
- Hot Start TTFF @ -146 dBm: 1.9 sec
- Cold Start TTFF@-136 dBm: 36 sec
- Reacquisition @ - 136 dBm: 100 msec

Receiver Sensitivity

- Minimum Acquisition Signal: -141 dBm
- Minimum Tracking Signal: -157 dBm

Timing Accuracy

- 1 PPS : 1 μ S (note: not to be used in network timing applications)

Position Accuracy (3D-NAV)

- Stationary:
 - Vertical (Avg): -0.1m
 - Horizontal (Avg): 1.5m
 - Velocity: 0.379 m/s vertical, 0.728m/s horizontal
- Dynamic:
 - Velocity: 1000 kts max
 - Altitude: 60,000 ft. max

Diagnostics

- Configurable via UART