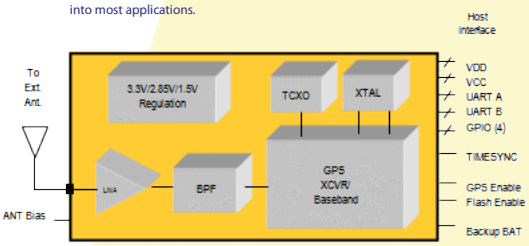
Wireless 2 Wireless

W2SG0006 - Global Positioning Module

The W2SG0006 is a complete systems solution based on the SiRF Star III architecture that was designed specifically for embedded products such as personal navigation devices, ruggedized PCs, automotive aftermarket GPS systems and other medical and industrial systems that feature GPS capability. Its ultra-fast time-to-first-fix, internal battery back-up RAM for position memory, 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

- Warehousing and logistics devices
- Personal Navigation Devices (PNDs)
- Medical Equipment
- Automotive Aftermarket GPS Systems
- M2M Positioning
- POS terminals
- Logistics management terminals

Features

- Small form factor SMD solution, 15mm x15mm x2.5mm
- 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
- Dual UART host interface
- 4 GPIOS

Ordering Information

W2SG0006-TR - GPS SMD Module, Tape and Reel

W2SG0006-T - GPS SMD Module, Tray

W2SG0006-SAM - GPS Module Sample Pack

W2SG0006-DEV - GPS Module Development Kit

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W2SG0006 - Specifications

Package Dimensions

- 15mm (L) x 15mm(W) x 2.5mm(H)

Package Type

- Solder down module

Input Power

- Supply Voltage : 3.3VDC
- Peak Current : 47 mA

Power Consumption

- RX: 47 mA
- Sleep: 74 µA

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 (2)
  - Configurable data rate, 192 Kbps max
  - Optional hardware flow control
  - 4 Configurable GPIO pins

Command Set

- NMEA or SiRF Binary (one per UART)

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: 32.6 sec
- Reacquisition @ - 136 dBm: 100 msec

Receiver Sensitivity

- Minimum Acquisition Signal: -142 dBm
- Minimum Tracking Signal: -157 dBm

Timing Accuracy

- 1 PPS : 1 µS (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

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