SiRFstarIIt Chip Set and SiRFNav Software

GPS Tracker Chip Set and Software for Consumer Products

SiRF Chips and Software

ARCHITECTURE HIGHLIGHTS

SiRF's Industry Leading GPS available for Host Systems

- GPS tracking engine chipset plus navigation software
- Signal acquisition using 1920 time/frequency search channels
- Wide Area Augmentation System (WAAS) support
- Satellite signal tracking engine performs GPS acquisition and tracking functions
- Multipath-mitigation hardware
- Cold Start under 45 seconds

Low Power

- TricklePower™ mode reduces power with no extra parts
- Capable of very fast starts from low power mode

Maximizes GPS Position Availability

- SingleSat™ updates in reduced visibility
- Superior urban canyon performance FoliageLock™ for weak signal tracking
- Compatible with SiRFDRive™

FAMILY HIGHLIGHTS

GSP2t- Highly Integrated Digital IC

- Integrated Satellite GPS Signal Processor acquires and track satellites autonomously, outputting measurements through a serial port
- Integrated high-precision Real-Time Clock
- Analog to digital convertor (ADC) for heading gyro input, odometer counter input for vehicle speed, 1 PPS output

GRF2i - Cost Effective RFIC

- On-chip VCO and reference oscillator
- Integrated IF filter and LNA
- Single stage L1 to IF down-conversion
- Simplified digital interface

SiRFNav™ Modular Software

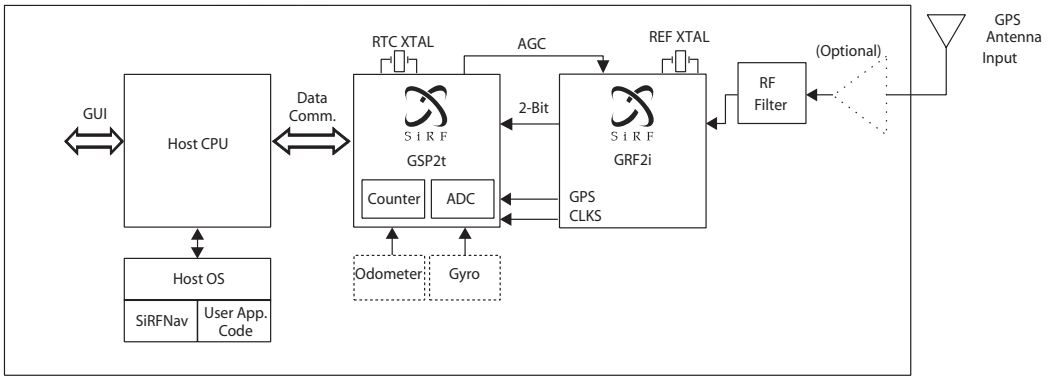
- Runs on host system processor and memory to generate Position, Time and Velocity from the GSP2t measurements.
- Easily integratable into multi-thread processors and operating systems.
- Maximum throughput consumption - 4MIPS (5 MIPS with SiRFDRive dead reckoning).

SiRFstarIIt ARCHITECTURE

SiRFstarIIt makes it easy and economical to add high-performance SiRFstarII technology to systems that are based on many popular processors and operating systems. The SiRFstarIIt solution allows GPS function to be added at minimal cost in components and circuit board area, by sharing the host system's processor and memory resources. The chipset acquires and tracks satellites, then sends raw measurements to the host processor running the SiRFNav software in parallel with the host applications. The SiRFNav software module computes position time and velocity. For enhanced accuracy and navigation reliability, WAAS corrections can be applied or GPS measurements can be combined with dead reckoning data and processed by SiRFDRive software.

The chipset consists of the GSP2t highly integrated digital chip, GRF2i integrated RF receiver and the SiRFNav software. The two chips are packaged as 9mm 48 pin LQFP packages and require minimal external components thanks to their high level of integration. SiRFNav software is designed for easy porting to host systems.

SiRFstarIIt BLOCK DIAGRAM



1 Evaluate

2 Develop

3 Build

TECHNICAL SPECIFICATIONS

Position Accuracy	
Autonomous	<10m
WAAS	<5m
Receiver	
Tracking	L1, CA code
Channels	12
Max. Update Rate	10Hz
Sensitivity	-172dBW
Max. Altitude	<60,000 ft
Max. Velocity	<1,000 knots
Protocol Support	NMEA, SiRF Binary
Acquisition	
Reacquisition Time	100msec
Hot Start	<8sec
Warm Start	<38sec
Cold Start	<45sec
Power	
Full Power	<170mW
Power Saving Mode	<40mW
Voltage	2.7-3.3V

APPLICATIONS

The SiRFstarIIt is designed to be embedded into large volume applications that use multi-thread processors and real time operating systems. The SiRFstarIIt hardware can be added to the host motherboard within an area as small as two square centimeters, and with minimal increment in bill of material. The accurate positioning and built in dead reckoning support provide optimum performance for automotive navigation and entertainment systems. Small size and low cost also make the SiRFstarIIt the solution for portable devices such as hand-held navigators and Personal Digital Assistants where space and cost are critical.

The GSP2t's on-chip wheel tick counter and analog to digital convertor for heading gyros make the SiRFstarIIt particularly well suited to automotive applications. Speed and heading information may also be brought in through the automotive bus to the host process. The SIRFDRive closely coupled dead reckoning software combines GPS and DR measurements to provide continuous and accurate navigation in the most challenging operating environments such as urban canyons and tunnels. GPS measurements calibrate the dead reckoning sensors allowing the use of economical hardware, while dead reckoning data optimizes and cross-checks the GPS solutions.

CHIP ORDERING CONFIGURATION

RF CHIP PACKAGES

Chip Name	Part Number	Package
SiRFstarII GRF2i	1540-0005	LQFP, 48 pin

DIGITAL CHIP PACKAGE

Chip Name	Chip PN	Package
SiRFstarII GSP2t	GSP2t-7200	LQFP, 48 pin

For more information, contact your SiRF representative, call our sales force on +1 (408) 467-0410, or visit us at www.sirf.com.

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