SiRF Chips + GPS Software

APPLICATIONS ➤High-end consumer ➤Premium automotive

SiRFstarIII GSC3 and GSC3f

Flagship Performance

PRODUCT OVERVIEW

The new performance benchmark is set with the introduction of SiRFstarIII™ real-time navigation technology that delivers -159 dBm signals and tracks more than 20 satellites. These star performers pack over 200,000 correlators—for fast and deep signal searches, even through urban canyons and dense foliage—into a simpler, smaller design, providing a premium drop-in GPS solution for portable and wireless devices. Internal flash memory is optional (GSC3f).

GENERAL SPECIFICATIONS

Supported Software

Standard

- GSW3 GPS software (API compatible with GSW2)

Premium

- SiRFInstantFix™ extended ephemeris service
- SiRFDRive® GPS/Dead Reckoning software for continuous and accurate positioning
- SiRFLoc® Client A-GPS Multimode Location Engine™ for GSM/3GPP

Package

- Type: 140-ball grid array (BGA) with a pitch of 0.65 mm
  Pb free
- Dimensions: 7 mm x 10 mm;
  Height: 1.4 mm
- Expected total solution footprint:
  130 mm^2

KEY FEATURES

- SiRFstarIII™ GSP Core
- Digital and RF in a single package
- 50-MHz ARM7TDMI processor plus 1 Mb SRAM to enable user tasks
- SiRFLoc Client A-GPS multi-standard support: 3GPP, 3GPP2, PDC, iDen, TIA-916
- Supports seven reference frequencies between 13 MHz and 33 MHz
- Extensive GPS receiver peripherals: two UARTS, high speed serial bus, battery-backed SRAM, ten GPIOs
- 4 Mbit flash memory option

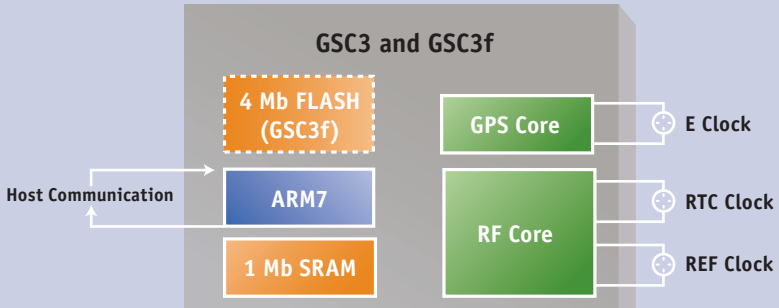
GPS Architecture Highlights

- 200,000+ effective correlators for very fast TTFF and high sensitivity acquisition
- Low 100 ms interrupt load on microprocessor
- High sensitivity for indoor fixes
- SBAS (WAAS and EGNOS) support

GPS Features

- Real time navigation for Location Based Services (LBS)
- Supports 20-channel GPS and FCC E911 Mandate

GSC3 and GSC3f BLOCK DIAGRAM



TECHNICAL SPECIFICATIONS

Horizontal Position Accuracy[1]	
Autonomous	<2.5 m
SBAS	<2.0 m
Velocity Accuracy[2]	
Speed	<0.01 m/s
Heading	<0.01°
Time To First Fix[3]	
Hot start - Autonomous	<1 s
Warm start - Autonomous	<35 s
Cold start - Autonomous	<35 s
MS Based - GSM coarse time	<6.5 s
MS Assisted - GSM coarse time	<16 s
Sensitivity[4]	
Autonomous acquisition	-142 dBm
GSM / UMTS coarse time aided	-155 dBm
CDMA precise time aided	-155 dBm
Tracking	-159 dBm
Receiver	
Tracking	L1, CA Code
Channels	12
Max update rate	1 Hz
Max altitude/velocity	<60,000 ft/<1,000 knots
Protocol support	AI3/F, SiRF Binary, NMEA
System Integration	
I/O Interface	UART and SPI (2H06)
External reference clock	13, 16.369, 16.8, 19.2, 24.55, 26, 33.6 MHz
RTC input	32.768 kHz
Power[5]	
Continuous Autonomous operation	130 mW
TricklePower	70 mW
Size	
Package dimensions	7 x 10 x 1.4 mm
Design footprint	130 mm^2

1. 50% 24 hr static, -130 dBm 2. 50% @ 30 m/s 3. 50% -130 dBm Fu 0.5 ppm Tu ±2 s Pu 30 Km 4. -142 dBm ≈ 28 dB-Hz with 4 dB noise figure 5. Average, TricklePower 200:1.

ORDERING INFORMATION

Part Number	Temp. Range	Description
GSC3-7875	-40° to +85° C	
GSC3f-7879	-40° to +85° C	With Flash

For more information about this and related products, contact your SiRF representative, or call our sales force at (1) (408) 467-0410, or visit www.sirf.com.

For the location of your nearest authorized SiRF distributor, visit www.sirf.com.

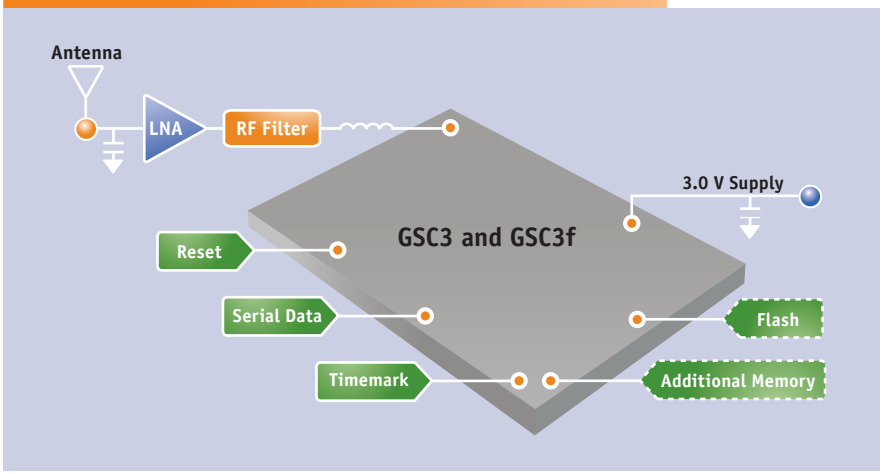
HIGHLIGHTED ADVANTAGES

Supporting multiple reference frequencies, the GSC3 RF section is the most highly integrated SiRF RF implementation to date. The GSC3's flash option, the GSC3f, has an integrated 4-megabit flash memory, eliminating the need for an external flash component and significantly simplifying the routing associated with integrating a GPS receiver into a board design.

The GSC3(f) is supported by SiRF standard autonomous software that's setting new performance benchmarks in the portable navigation systems market. The SiRF standard autonomous software also supports SiRFInstantFix technology, which eliminates the initial task of obtaining broadcast GPS data from the satellites themselves, resulting in a faster Time-To-First-Fix (TTFF), even in weak signal environments.

The GSC3(f) supports SiRFLoc Client, the patented Multimode A-GPS software powering mobile phones optimized for location-enabled-services. SiRFLoc improves GPS location capability in wireless system environments by utilizing various modes of wireless infrastructure assistance to improve weak signal reception. Additionally, the GSC3(f) supports SiRFDRive dead reckoning technology for enhanced positioning accuracy and availability.

GSC3 and GSC3f SYSTEM CONFIGURATION



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