SiRF
A CSR plc Company

SiRF Chips + GPS Software

APPLICATIONS ➤Mainstream automotive ➤Mainstream consumer

SiRFstarIII GSC3f/LPx

High Performance, Lowest Power Flash GPS Solution

PRODUCT OVERVIEW

Consuming 30% less power than its predecessor, this star performer delivers top-notch accuracy, -159 dBm tracking, and tracks all satellites in view, setting the benchmark for real-time navigation, even through urban canyons and dense foliage. High performance SiRFstarIII™ technology packs over 200,000 correlators—for fast and deep signal searches—into this design, providing makers of portable and wireless devices with a low-power premium GPS solution. Pin-to-pin replacement for the GSC3f/LP.

GENERAL SPECIFICATIONS

Supported Software

Standard

- GSW3 GPS software (API compatible with GSW2)

Premium

- SiRFInstantFix™ extended ephemeris technology
- SiRFDRive® GPS/Dead Reckoning software for continuous and accurate positioning for in-dash navigation
- 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
- Typical total solution footprint:
  130 mm^2

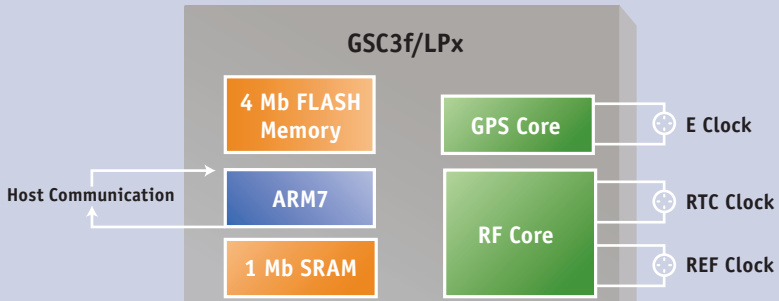
KEY FEATURES

- SiRFstarIII™ GPS Core
- Digital and RF in a single package
- 50-MHz ARM7TDMI processor plus 1 Mb SRAM to enable user tasks
- 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 integrated flash memory
- Tracking power consumption: 23 mW using patented TricklePower™ technology

GPS Architecture Highlights

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

GSC3f/LPx 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	<1.5 s
MS Assisted - GSM coarse time	<6.6 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	up to 20
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
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	46 mW
TricklePower	23 mW
Size	
Package dimensions	7 x 10 x 1.4 mm
Typical 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
GSC3fLPx-7989	-40° to +85° C	Internal 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.

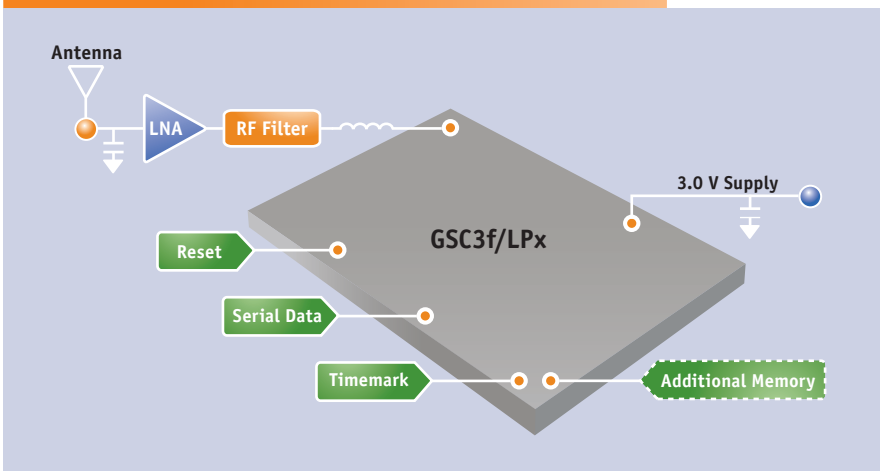
HIGHLIGHTED ADVANTAGES

Supporting multiple reference frequencies, the GSC3f/LPx RF section is a highly integrated RF implementation. And the integrated 4-megabit flash memory eliminates the need for an external flash component and significantly simplifies the routing associated with integrating a GPS receiver into a board design.

The GSC3f/LPx 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 GSC3f/LPx 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 GSC3f/LPx supports SiRFDRive technology for enhanced positioning accuracy and availability.

GSC3f/LPx SYSTEM CONFIGURATION



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