



APPLICATIONS

- Wireless handsets
- Personal navigation devices
- Host platform devices

SiRFstarIII GSD3t

High Performance, Satellite Signal Processor, Host Coupled Single Die

PRODUCT OVERVIEW

This single die, small footprint implementation of SiRFstarIII™ architecture provides a cost-effective solution for high-volume embedded applications where host processor resources are available to execute SiRFNav®—SiRF’s high performance navigation software suite, providing Autonomous navigation, Aided-GPS navigation (both user plane and control plane), and SiRFInstantFix™. This 90-nanometer IC is capable of signal acquisition at -160 dBm.



GENERAL SPECIFICATIONS

Supported Software

Standard

- SiRFNav Autonomous GPS software

Premium

- SiRFNav A-GPS (SLC)
- SiRFLoc® Client (SLC) A-GPS Multimode Location Engine™ for GSM/3GPP and IS-801A
- SiRFInstantFix extended ephemeris service for very fast TTFFs

Smallest Footprint Package

- Type: 49-pin WLCSP with a ball pitch of 0.4mm
- Dimensions: 3.12 mm x 3.17 mm; Height: 0.68 mm
- Typical total solution footprint: 30 mm²

Low Production Cost Package

- Type: 49-pin TFBGA with a ball pitch of 0.5 mm
- Dimensions: 4 mm x 4.5 mm; Height: 0.68 mm
- Typical total solution footprint: 40 mm²

KEY FEATURES

- Single die SiRFstarIII proprietary Satellite Signal Processor technology
- High sensitivity: -160 dBm signal acquisition capability (Aided-GPS)
- Integrated ROM and controller to minimize host platform loading
- 90 nm RFCMOS for cost effective baseband + RF integration
- On-chip LNA reduces total solution cost and footprint
- Extremely low power
- Reduced pin count and small package size simplifies PCB layout
- TCXO power supply control through integrated FET switch

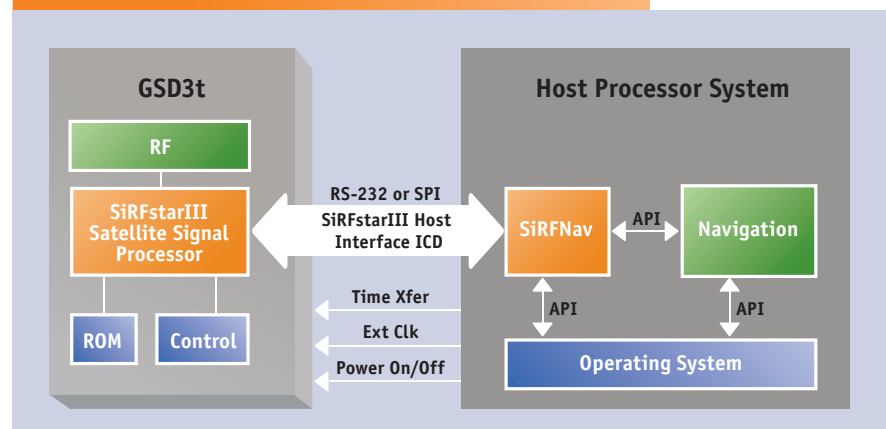
GPS Architecture Highlights

- Premium SiRFstarIII architecture with 200,000+ effective correlators for fast TTFF and high sensitivity acquisition

GPS Features

- SiRFNav host software with: real-time navigation for location based services
- Advanced Power Management and Adaptive TricklePower™ plus low energy-per-fix in point position applications
- Multimode A-GPS support: Autonomous, MS Based, MS Assisted
- Location protocol libraries supporting RRC, RRLP, 3GPP2, SUPL, E-911

GSD3t BLOCK DIAGRAM



TECHNICAL SPECIFICATIONS

Horizontal Position Accuracy¹

Autonomous <2.5 m

Velocity Accuracy²

Speed <0.01 m/s

Heading <0.01°

Time To First Fix^{3,4}

Hot start - Autonomous <1 s

Warm start - Autonomous <36 s

Cold start - Autonomous <36 s

MS Based - GSM coarse time <0.6 s

MS Assisted - GSM coarse time <5.3 s

Sensitivity⁴

Autonomous acquisition -143 dBm

GSM / UMTS coarse time aided -155 dBm

CDMA precise time aided -160 dBm

Tracking -160 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 SSIII sat. signal processing

System Integration

I/O Interface UART and SPI

External reference clock 16.369, 16.8, 26, 38.4 MHz

RTC input 32.768 kHz

Power⁵

Continuous tracking (1 Hz) 50 mW

TricklePower (1 Hz) 25 mW

Energy per fix 40 mW-s

Standby current 5 μ A

Host CPU Requirements

Typical processing load 1-6 MIPS

Size

Package dimensions 3.12 x 3.17 x 0.4 mm

Typical design footprint 30 mm²

1. 50% 24 hr static, -130 dBm 2. 50% @ 30 m/s 3. 50% -130 dBm Fu 0.5 ppm Tu \pm 2 s Pu 30 Km 4. Dependent on host processor speed 5. -142 dBm \approx 28 dB-Hz with 4 dB noise figure 6. Average, TricklePower 200:1

ORDERING INFORMATION

Part Number	Temp. Range	Description
GSD3t-7029	-40° to +85° C	SSIII Satellite Signal Processing FBGA
GSD3t-7028	-40° to +85° C	SSIII Satellite Signal Processing WLCSP

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

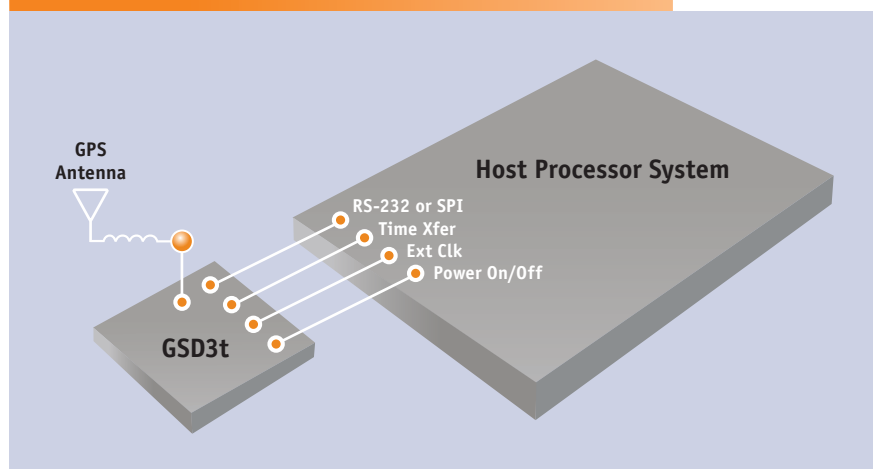
For cellular handset applications where space is at a premium, the GSD3t offers two excellent package options; one for low cost production and one for small footprint mainstream design.

The GSD3t 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. In Aided GPS applications, the GSD3t can achieve Time-To-First-Fix (TTFF) in approximately 60 seconds at -160 dBm signal levels typical of indoor reception environments.

For personal navigation devices with high-end host processors, the GSD3t with SiRFNav software provides SiRF Autonomous mode GPS navigation, setting a new performance benchmark for high-sensitivity navigation.

SiRF's 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 TTFFs, even in weak signal environments.

GSD3t SYSTEM CONFIGURATION



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主要产品线:



U-blox 全系列GPS模块

U-blox GPS原装板卡/评估套件

U-blox GPRS模块



RISE-GPS系列u-blox GPS模块评估板
专业化成品GPS板卡



RISE-M系列GPS模块
大客户定制GPS解决方案



RISE 800MHz高速ARM11嵌入式CPU
支持DDR2代内存及H.264硬解压和2D及3D图形加速



MID及UMPC方案
PCBA方式及专业产品大客户定制模式



GPS电子罗盘成品
GPS导航仪, GPS电子警示器