

### Applications

- High sensitivity / low power GPS / A-GPS apps.
- Personal Navigation Devices (PNDs) , mobile phones, and GPS peripheral devices

### Features

- Single-conversion L1-band GPS radio with integrated IF filter
- Integrated LNA with high-gain (20 dB typ.) and low NF (0.9 dB typ.)
- Integrated antenna switching with active antenna current detection
- Low cascaded system noise figure of 1.2 dB typical
- 2-bit SIGN & MAG digital IF output
- 2.7 V - 3.6 V operation
- Standby current <10  $\mu$ A
- Fully integrated PLL synthesizer, VCO & loop filter compatible with 16.368 MHz ref. frequency
- 4 x 4 x 0.9 mm 24 pin QFN
- Pb-free, RoHS compliant and Halogen free

### Product Description

The SE4150L is a highly integrated GPS receiver IC offering high performance and low-power operation in a wide range of low-cost applications. It is particularly well-suited to high sensitivity L1-band GPS systems.

The SE4150L is ideal for use in GPS receivers needing dual-antenna inputs. The SE4150L includes two RF inputs with integrated antenna switching and external active-antenna current detection. A high-linearity on-chip LNA is used with one of the inputs, allowing the SE4150L to be used in multi-function wireless systems, without the need for additional external LNA devices. A fully integrated image-reject low-IF mixer is used with a linear AGC, an on-chip IF filter, and a 2-bit analogue-to-digital converter (ADC).

The SE4150L features two gain control modes, to optimize the performance of the LNA and mixer for systems which either require high signal handling, or systems which need minimal supply current.

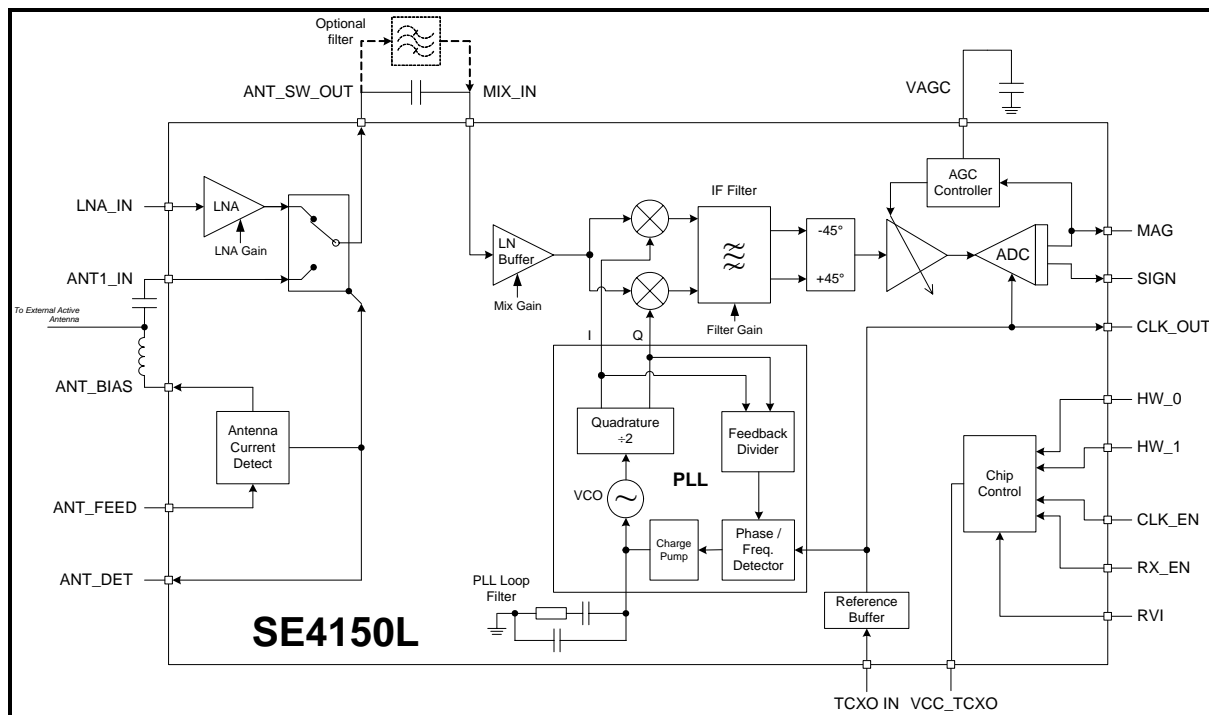
The SE4150L synthesizer is fully integrated including the VCO and PLL loop-filter. The synthesizer can operate from a 16.368 MHz reference frequency, normally with an external TCXO.

### Ordering Information

Part No.	Package	Remark
SE4150L-R	24 pin QFN	Shipped in Tape & Reel

The SE4150L is optimized for operation from a 3.3 V core power supply. It incorporates current-controlled low-spurious output buffers which may operate from a separate external supply. Output buffers supply sufficient current to drive up to 15 pF load directly.

### Functional Block Diagram



<http://www.sige.com>

Email: [sales@sige.com](mailto:sales@sige.com)

**Customer Service Locations:**

North America:  
1050 Morrison Drive, Suite 100  
Ottawa ON K2H 8K7 Canada

Phone: +1 613 820 9244  
Fax: +1 613 820 4933

Hong Kong  
Phone: +852 3428 7222  
Fax: +852 3579 5450

San Diego  
Phone: +1 858 668 3541 (ext. 226)  
Fax: +1 858 668 3546

United Kingdom  
Phone: +44 1279 464217  
Fax: +44 1279 464201

Product Preview

The datasheet contains information from the product concept specification. SiGe Semiconductor, Inc. reserves the right to change information at any time without notification.

Preliminary Information

The datasheet contains information from the design target specification. SiGe Semiconductor, Inc. reserves the right to change information at any time without notification.

Production testing may not include testing of all parameters.

Information furnished is believed to be accurate and reliable and is provided on an "as is" basis. SiGe Semiconductor, Inc. assumes no responsibility or liability for the direct or indirect consequences of use of such information nor for any infringement of patents or other rights of third parties, which may result from its use. No license or indemnity is granted by implication or otherwise under any patent or other intellectual property rights of SiGe Semiconductor, Inc. or third parties. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SiGe Semiconductor, Inc. products are NOT authorized for use in implantation or life support applications or systems without express written approval from SiGe Semiconductor, Inc.

Copyright 2009 SiGe Semiconductor, Inc.  
All Rights Reserved

