Applications

- Dual-mode GPS and Galileo receivers
- Software-defined GNSS radio systems
- High sensitivity / low power GNSS / A-GNSS apps.
- Portable navigation devices, mobile phones, and GNSS peripheral devices
- Telematics equipment

Features

- Single conversion L1-band GPS/Galileo radio with integrated IF filter
- 2-bit serialized digital I/Q output at near-zero IF
- Integrated LNA with high-gain (18.5 dB typ.) and low NF (1.7 dB typ.)
- Low 2.2 dB typ. RF system noise figure
- Low 10 mA operating current with 2.7-3.6 V supply; 8 mA with internal LNA disabled
- Low Standby current 3 µA typical
- Fully integrated VCO and resonator
- Integrated PLL supporting 16.368 MHz reference frequency
- I/O supply range extends down to 1.7 V
- 4 x 4 mm 24 pin QFN, RoHS-compliant package

Ordering Information

Part No.	Package	Remark
SE4120L-R	24 Pin QFN	Shipped in Tape & Reel

Product Description

The SE4120L is a highly-integrated GNSS radio front end IC offering high performance and low power operation in a wide range of low-cost applications. It supports GPS and dual-mode L1-band GPS/Galileo products. The SE4120L features a conditioned interface for software implementations of GNSS baseband signal processing.

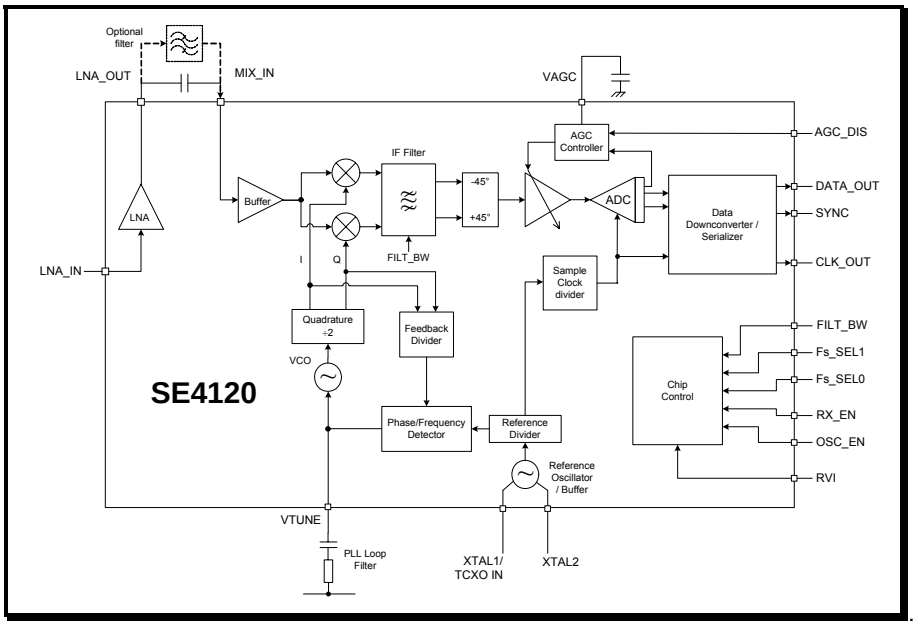
The SE4120L includes an on-chip LNA, a low IF receiver with a linear AGC and an advanced multi-bit I/Q analog to digital converter (ADC) with serialized data output. The receiver incorporates a fully integrated image reject mixer, obviating the need for a SAW filter in many applications. The SE4120L's on-chip IF filter may be adjusted from 2.2 MHz BW (for GPS only) to 4.4MHz BW (for simultaneous reception of Galileo and GPS signals). The digitized I/Q output, centered near-zero IF, is available in a serialized data stream to facilitate software signal processing.

The highly-integrated PLL synthesizer of the SE4120L requires only two passive components to implement an off-chip loop filter.

The SE4120L is optimized for the lowest possible power consumption consistent with a very low external component count.

The SE4120L incorporates current-controlled low-spurious output buffers which may be run from a separate external supply to interface to low voltage systems. Output buffers supply sufficient current to drive most baseband devices directly.

Functional Block Diagram



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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.