



SILICON LABORATORIES

**Si4136**

# ISM RF SYNTHESIZER WITH INTEGRATED VCOs FOR WIRELESS COMMUNICATIONS

## Features

- Dual-Band RF Synthesizers
  - RF<sub>1</sub> VCO Fixed Frequency Range of 2300 MHz to 2600 MHz
  - RF<sub>2</sub> VCO Fixed Frequency Range of 2000 MHz to 2400 MHz
- IF Synthesizer
  - IFOUT Center Frequency of 62.5 MHz to 1000 MHz
  - Integrated VCOs, Loop Filters, Varactors, and Resonators
- Only Two Passive External Components Required
- Low Phase Noise
- 5  $\mu$ A Standby Current @ 3 V
- 15.7 mA Typical Supply Current at 3.6 V
- 3.0 V to 3.6 V Operation
- Low Profile 24-pin TSSOP Package

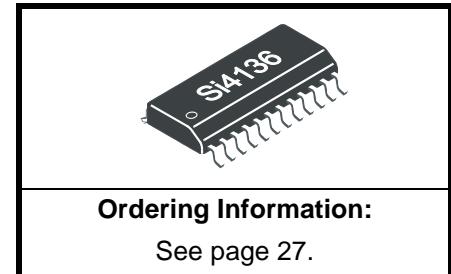
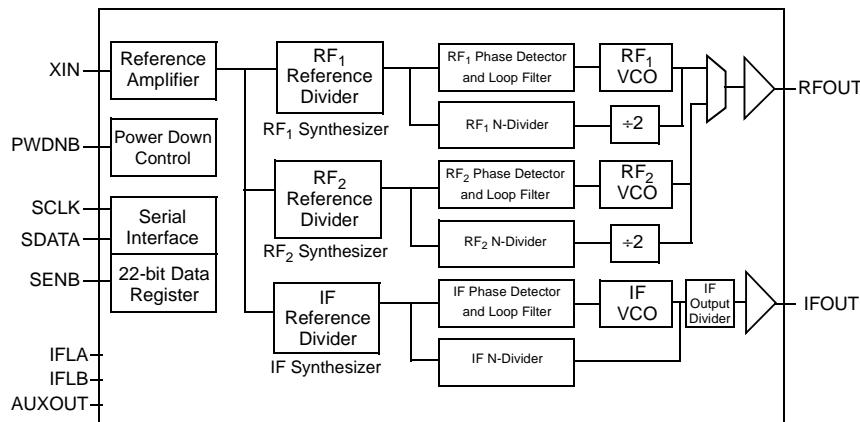
## Applications

- ISM Band Communications
- Wireless LAN and WAN
- SMR Applications
- Dual-Band Applications

## Description

The Si4136 is a monolithic integrated circuit that performs both IF and RF synthesis for wireless communications applications. The Si4136 includes three VCOs, loop filters, reference and VCO dividers, and phase detectors. Variables for dividers and power down settings are programmable through a three-wire serial interface.

## Functional Block Diagram



**Ordering Information:**  
See page 27.

## Pin Assignments

### Si4136

SCLK	1	•	24	SENB
SDATA	2		23	VDDI
GNDR	3		22	IFOOUT
GNDR	4		21	GNDI
NC	5		20	IFLB
GNDR	6		19	IFLA
NC	7		18	GNDD
GNDR	8		17	VDDD
GNDR	9		16	GNDN
GNDR	10		15	XIN
RFOUT	11		14	PWDNB
VDDR	12		13	AUXOUT

Patents pending