



# 2.4 GHz High-Gain, High-Efficiency Front-end Module

## SST12LF03

### Product Brief

SST12LF03 is a fully integrated Front-End Module (FEM) for WLAN 802.11b/g/n and Bluetooth® systems. SST12LF03 RF module includes a PA, a LNA, and an antenna switch, making it ideal for WLAN/BT embedded applications where small size and high performance are required. Based on GaAs PHEMT/HBT technology, SST12LF03 operates within the frequency range of 2.4- 2.5 GHz with a very low DC-current consumption. The Transmitter chain has excellent linearity, typically 3% added EVM up to 19 dBm output power for 54 Mbps 802.11g operation, while meeting 802.11b spectrum mask at 22 dBm. The receiver chain provides a low noise amplifier and has options for simultaneous WLAN and Bluetooth operation. The SST12LF03 is offered in a 20-contact UQFN package.

## Features

- Input/output ports are matched to 50Ω internally and DC decoupled.
- Packages available
  - 20-contact UQFN – 3mm x 3mm x 0.55mm
- All non-Pb (lead-free) devices are RoHS compliant

### Transmitter Chain:

- High gain:
  - Typically 28 dB gain across 2.4–2.5 GHz over temperature -20°C to +85°C for Transmitter.
- High linear output power (at 3.3V):
  - Meets 802.11g OFDM ACPR requirement up to 21 dBm
  - 3% added EVM up to 19 dBm for 54 Mbps 802.11g signal
  - Meets 802.11b ACPR requirement up to 22 dBm
- High power-added efficiency/Low operating current for 802.11b/g/n applications
  - ~25% @ P<sub>OUT</sub> = 22 dBm for 802.11b/g
- Low shut-down current (~2 μA)
- Limited variation over temperature
  - ~1 dB power variation between -20°C to +85°C
  - ~2 dB gain variation between -20°C to +85°C
- Temperature and load insensitive on-chip power detector
  - >20 dB dynamic range, temperature-stable, on-chip power detection

### Receiver Chain:

- LNA ON:
  - Typically 12 dB gain
  - 3.1 dB noise figure
  - >5dB P1dB

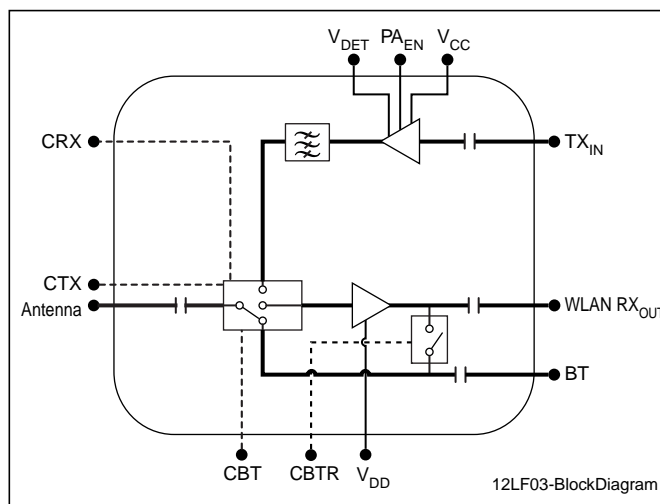
### Bluetooth Path:

- Typically 2.5 dB loss
- Simultaneous BT/WLAN Rx mode:
  - 8 dB gain
  - 3.1 dB noise figure

## Applications

- WLAN (IEEE 802.11b/g/n)
- Home RF
- Cordless phones
- 2.4 GHz ISM wireless equipment
- Zigbee®
- Bluetooth®

## Block Diagram





## Product Ordering

### Valid combinations for SST12LF03

SST12LF03-Q3DE

### SST12LF03 Evaluation Kits

SST12LF03-Q3DE-K

**Note:** Valid combinations are those products in mass production or will be in mass production. Consult your SST sales representative to confirm availability of valid combinations and to determine availability of new combinations.

## Contact Information

Thank you for your interest in Microchip RF products. The data sheet for this device contains proprietary information. To obtain a copy of the data sheet, contact your local Microchip sales representative or distributor at the link below.

### Global Sales and Distribution

**Table 1:**Revision History

Revision	Description	Date
A	• Initial release of Product Brief	Jan 2012

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Memory sizes denote raw storage capacity; actual usable capacity may be less.

SST makes no warranty for the use of its products other than those expressly contained in the Standard Terms and Conditions of Sale.

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