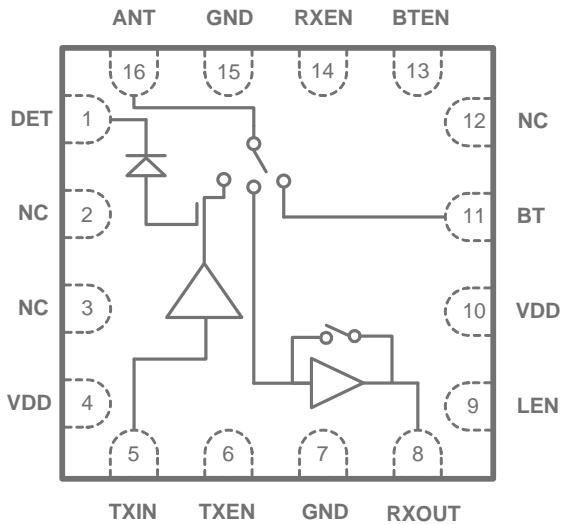


2.4GHZ WLAN RFEIC WITH PA, SP3T AND LNA WITH BYPASS

Block Diagram



Description

RFX8422S is a CMOS-based, single-chip, single-die RFeIC (RF Front-end Integrated Circuit) that incorporates all key RF functionality needed for implementing a high-performance RF front-end solution for WLAN IEEE 802.11b/g/n operation in the 2.4GHz band. The RFX8422S architecture integrates a high-efficiency high-linearity power amplifier (PA) with harmonic filter, a directional coupler based power detector, a low noise amplifier (LNA) with bypass mode, and an SP3T switch for Bluetooth antenna sharing. All the impedance matching components and DC-block capacitors are also integrated to minimize the PCB footprint for system implementation.

RFX8422S is assembled in an ultra-compact, low-profile 2.5x2.5x0.45mm 16L QFN package. It has simple and low-voltage CMOS control logic, and requires minimal external components. With support to direct battery operation, the RFX8422S is ideal RF front-end solution for implementing 2.4GHz WLAN in smartphones and many other mobile platforms.

Applications

- ▶ 802.11b/g/n + Bluetooth
- ▶ Smartphones
- ▶ Tablets/MIDs
- ▶ Gaming
- ▶ Notebook/Netbook/Ultrabooks
- ▶ Mobile/Portable Devices
- ▶ Consumer Electronics
- ▶ Other 2.4GHz ISM Radio

Parameters	Typical	Conditions
TX		
Small-Signal Gain	25dB	VDD=3.6V
WLAN 11g Output Power	+18dBm	802.11g 64QAM/54Mbps, EVM<3%, VDD=3.6V
WLAN 11b Output Power	+21dBm	802.11b CCK/1Mbps Mask Compliance, VDD=3.6V
Current Consumption	170mA	At Pout=+18dBm
2 nd / 3 rd Harmonic	-25dBc / -40dBc	At Pout=+21dBm, CW
RX		
Small-Signal Gain	10dB	
Noise Figure	3dB	
Quiescent Current	10mA	VDD = 3.6 V
Bypass Insertion Loss	8dB	Nominal
Bluetooth Insertion loss	0.8dB	Nominal
CHIP		
Operating Frequency	2.4 - 2.5 GHz	
Supply VDD	2.9 – 4.5 V	Nominal VDD=3.6V
Shut-down Current	6uA	VDD = 3.6V, Control Signals = Low
RF Port Impedance	50-Ohm	Single-ended
Control Signals	High Enable	CMOS Logic, <0.3V Low, >1.2V High
Package	16-QFN	2.5mm x 2.5mm x 0.45mm

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