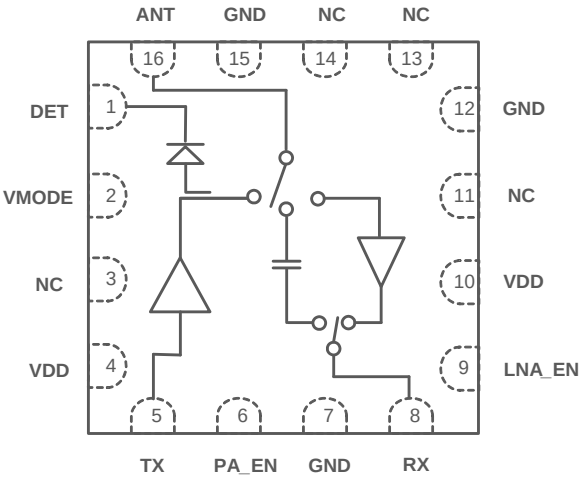
2.4GHZ WLAN RFEIC WITH PA, SP3T, LNA AND RX BYPASS

Block Diagram



Description

RFX8425 is a pure CMOS-based, single-chip/single-die RFeIC (RF Front-end Integrated Circuit) that incorporates all key RF functionality needed for implementing high-performance RF front-end for WLAN 802.11b/g/n and OFDM/256QAM operation in the 2.4GHz band. The RFX8425 architecture integrates a high-efficiency high-linearity power amplifier (PA) with harmonic filter, a directional coupler based power detector, a low noise amplifier (LNA), a SP3T switch for Bluetooth antenna sharing, and an additional SPDT switch for selection between LNA and Bypass in Receive mode. All the impedance matching components and DC-block capacitors are integrated to minimize the PCB footprint for system implementation.

RFX8425 is assembled in an ultra-compact, low-profile 2.3x2.3x0.45mm 16L QFN package. It has simple and low-voltage CMOS control logic, and requires minimal external components. With its high level of integration and ease of PCB design, the RFX8425 is ideal RF front-end solution for implementing 2.4GHz WLAN in PCs, notebooks, tablets, smartphones and many other mobile platforms.

Applications

- 802.11b/g/n + Bluetooth
- Smartphones
- Tablets/MIDs
- Notebook/Netbook/Ultrabooks
- Mobile/Portable Devices
- Consumer Electronics

Parameters	Typical	Conditions
TX		
Small-Signal Gain	27B	
WLAN 11ac Output Power	+18dBm	MCS9/HT40, DEVM=-35dB, VDD=3.3V
WLAN 11n Output Power	+19dBm	MCS7/HT20, DEVM=-33dB, VDD=3.3V
WLAN 11b Output Power	+22dBm	1Mbps CCK Spectrum Mask Compliance
Current Consumption	180mA	At Pout=+18dBm
$2^{nd}/3^{rd}$ Harmonics	-25/-35 dBm/MHz	At Pout=+22dBm, 11b 1Mbps CCK
RX		
Small-Signal Gain	13dB	LNA "ON"
Noise Figure	2.4dB	LNA "ON"
LNA Quiescent Current	9mA	
Rx Bypass Insertion Loss	1dB	Between ANT and RX. LNA "OFF"
CHIP		
Operating Frequency	2.4 - 2.5 GHz	
Supply VDD	3.0 – 3.6 V	Nominal VDD=3.3V
Bypass/Standby Current	2uA	PA_EN = LNA_EN = "Low"
RF Port Impedance	50-Ohm	Single-ended
Control Signals	High Enable	CMOS Logic, <0.4V Low, >1.2V High
Package	16-QFN	2.3mm x 2.3mm x 0.45mm