

2.4GHz RF Front-End for BLE, BT EDR

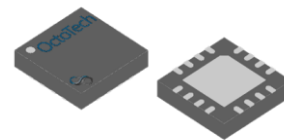
Preliminary Product Brief

Features

- 2.4 - 2.5GHz Frequency Range
- Single-Chip CMOS Front-End IC
- 16 dBm single stage PA
- 2.7 dB Bypass Insertion Loss
- 2.5 dB NF LNA
- Integrated harmonic Filters, ESD.
- 3.3V+/- 10% Supply Voltages
- Temperature Range: -40°C to +125°C
- RoHS and REACH Compliant
- 2.0 x 2.0 x 0.45 mm QFN-16 Package

Description

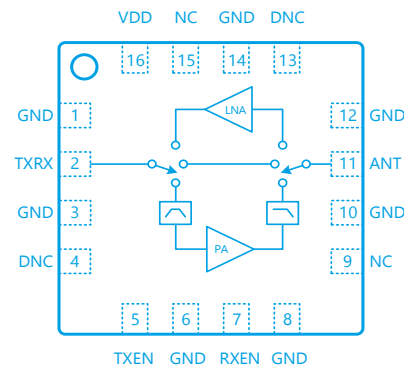
The 8TR8213 is a Single-Chip CMOS Front-End IC that combines a Power Amplifier, Low Noise Amplifier, Bypass, Transmit / Receive Switch, and Antenna Switch designed for Bluetooth® Smart, 802.15.4 ZigBee™/ Thread, ANT+, and proprietary ISM wireless systems in the 2.4GHz band.



Applications

- IoT (Internet of Things) Nodes, Gateways
- M2M (Machine to Machine) Wireless
- Bluetooth, BLE (Bluetooth® Low Energy) 5.1
- ZigBee, ZigBee Thread
- Smart: Home, City, Lighting, Energy
- Industrial and Building Automation
- Wireless Audio and Video
- Drones, Remote Controls, Toys
- Consumer, Wearable Electronics

Functional Block Diagram



TX		RX / BYPASS		RFIC	
Parameter	Typical	Parameter	Typical	Parameter	Typical
Large-Signal Gain	16 dB	Gain	13 dB	Frequency Range	2.4 - 2.5 GHz
Saturated Output Power	+17 dBm	Noise Figure	2.5 dB	Supply Voltage	1.8 - 3.6 V
EDR Spectral Mask	+13 dBm	Supply Current	8 mA	Control Voltage High	>1.2 V
Supply Current @ +15dBm	32 mA	Bypass Insertion Loss	2.7 dB	Control Voltage Low	< 0.3 V
Quiescent Current	12 mA	Bypass Current (same as Sleep)	0.4 µA	ESD (HBM)	1500 V
2 nd /3 rd Harmonics at up to +16dBm	-47 dBm / MHz*	Input P1dB / IIP3	-8 / 0 dBm	Temperature Range	-40 to 125°C

At 3.0V Vdd unless otherwise specified. * In the Application Circuit.