

Features

- 2.4 – 2.5 GHz Frequency Range
- Ultra-Compact Front-End RF Integrated Circuit (RFIC)
- Integrated LNA, Transmit/Receive Switch, Bypass, Antenna Switch, Input / Output Matching
- Low Noise Figure / Low Current Rx LNA Modes
- 11dB / 13 dB Rx LNA Gain Options
- 2dB Noise Figure
- 4mA Low Current Rx LNA Mode
- 1.4 dB Bi-Directional Bypass Insertion Loss
- 1.8 – 3.6 V Operation
- 2.0 x 2.0 mm QFN-16 Package
- -40°C to 105°C Temperature Range

Description

The 8TR2211 Front-End RFIC combines an LNA, Transmit / Receive Switch, Bi-Directional Bypass, and Antenna Switch for Bluetooth® Smart, 802.15.4 ZigBee™/ Thread, and proprietary ISM wireless systems in the 2.4GHz band packaged in a 2.0 x 2.0 x 0.45mm 16-pin QFN.

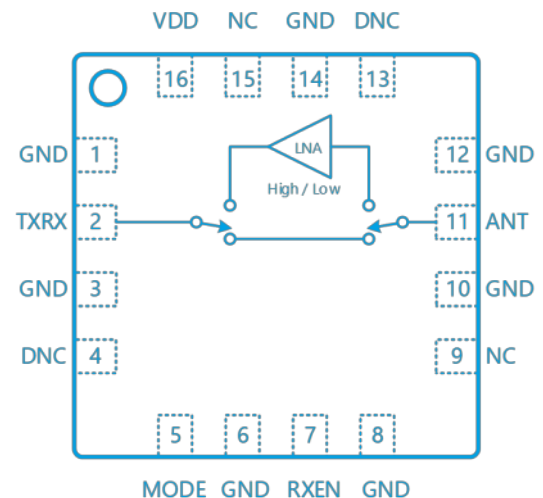
Logic Table

MODE	RXEN	Operational Mode
0	0	Bypass Mode = Sleep Mode
0	1	LNA Low Current Mode
1	0	LNA Low Noise Figure Mode
1	1	LNA Low Noise Figure Mode

Applications

- Bluetooth® Low Energy (BLE) Devices
- 802.15.4 ZigBee® / Thread Mesh Networks
- IoT (Internet of Things) / M2M Connectivity
- Bluetooth® Audio
- Bluetooth® Mesh Networks
- Sports and Medical Wearables
- Consumer Electronics, Toys
- Smart Home Appliances, Remote Controllers
- Wireless Sensor Nodes
- Beacons
- Proximity Sensors
- Range Extenders

Functional Block Diagram



Key Specifications

Bi-Directional Bypass		RX		RFIC	
Parameter	Typical	Parameter	Typical	Parameter	Typical
Bypass Insertion Loss	1.3 dB	Gain (Low NF/ Low Current)	13 dB / 11 dB	Frequency Range	2.4 - 2.5 GHz
Bypass Current (same as Sleep), 2.7V	0.5 µA	Noise Figure (Low NF/ Low Current)	2.0 dB / 2.5 dB	Supply Voltage	1.8 - 3.6 V
Bypass Current (same as Sleep)	0.6 µA	Supply Current (Low NF/ Low Current)	7 mA / 4 mA	Control Voltage	> 1.2 V High < 0.3 V Low
Input Return Loss	-8 dB	Input P1dB / IIP3	-5 / +5 dBm	ESD (HBM)	1000 V
Output Return Loss	-8 dB	Input / Output Return Loss	-8 dB / -8 dB	Temperature Range	-40 to 105°C

At 3.0V Vdd unless otherwise specified.