

Features

- 2.4 – 2.5GHz Frequency Range
- High Efficiency Optimized for Battery Operation
- Up to +23dBm Output Power
- Receive Gain-Step, Low Current Mode
- 140mA High Efficiency at 23dBm, 3.3V
- 95mA at 20dBm Pout, 3.3V
- Integrated PA, LNA, Antenna Diversity Switch
- 2.5dB Noise Figure
- On-Die Harmonic Filters for FCC/ETSI Compliance
- LNA Bypass Mode
- Integrated Directional Coupler, Power Detector
- On-chip Input/Output Matching Circuitry
- -40°C to 125°C Extended Temperature Range
- Single-Ended Transceiver Interface
- 3.0 x 3.0 x 0.55mm 16-Lead QFN Package

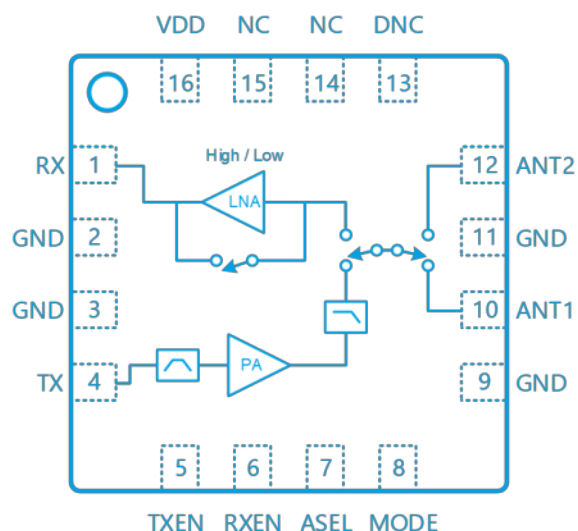
Description

The 8TR8220 is an RF front-end integrated circuit (IC) intended for 2.4GHz wireless systems such as ZigBee™, Thread, RPMA, proprietary ISM protocols for Wireless Local Area and Low Power Wide Area Networks (LP-WAN). It is optimized for battery-operated applications for improved efficiency. The 8TR8220 combines a PA, bypass, an LNA, and double pole, double throw (DPDT) antenna diversity switch in a 3.0 x 3.0 x 0.55mm 16-pin QFN package.

Applications

- IoT (Internet of Things) / M2M Connectivity
- Low Power Wide Area Networking (LP-WAN)
- Ingenu RPMA Networks
- Smart City, Smart Metering, Smart Lighting
- 802.15.4 ZigBee™/ Thread Networks
- 802.15.4g Wireless Smart Utility Network
- Smart Home Gateways, Sensor Nodes
- Industrial, Factory Automation
- Wireless Sensor Networks

Functional Block Diagram



Key Specifications

TX		RX		CHIP	
Parameter	Typical	Parameter	Typical	Parameter	Typical
Small-Signal Gain	35dB	Small-Signal Gain	8 dB / 12 dB	Frequency Range	2.4 - 2.5GHz
Saturated Output Power	+23dBm	Noise Figure	2.5 dB	Supply Voltage	2.7 - 3.6V
Output Current at 23dBm	140mA	Input P1dB / IIP3	-5dBm/+5dbm	Control Voltage	1.2V
Input Return Loss	-10dB	Bypass Insertion Loss	2.5dB	Shutdown Current	1uA
Output Return Loss	-10dB	In/Out Return Loss	-8dB	ESD (HBM)	1000V
2 nd /3 rd Harmonics @ 23dBm at ANT	-30dBm/MHz	Quiescent Current	4mA/8mA	Temperature Range	-40 to 125°C

At 3.3V Vdd unless otherwise specified.