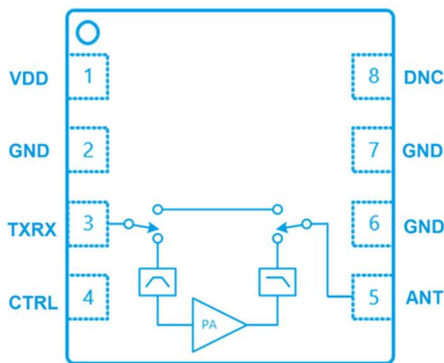


Description

The 8TR1215 provides range extension for Bluetooth[®] Smart, 802.15.4 ZigBee[™]/ Thread, ANT+, and proprietary ISM wireless systems in the 2.4GHz band.

This application-friendly RFIC provides PA plus Bypass with Tx/Rx switches in an ultra-compact package. It requires only a single supply voltage and a single logic control signal.

Block Diagram



Logic Table

CTRL	Operational Mode
0	Bypass Mode = Shutdown Mode
1	TX PA Mode

Key Specifications

At VDD=1.8V, Zo=50Ω, unless noted otherwise.

TX PA		BI-DIRECTIONAL BYPASS		GENERAL	
Parameter	Typical	Parameter	Typical	Parameter	Typical
Large-Signal Gain	12 dB	Insertion Loss	2.4 dB	Frequency Range	2.4 - 2.5 GHz
Saturated Output Power	+11 dBm	RF Power Rating	20 dBm	Supply Voltage	1.5 – 2.3 V
Supply Current @ +10dBm	17 mA	Return Loss	-12 dB	Control Voltage High	> 1.2 V
2 nd /3 rd Harmonics up to +10dBm	-47 dBm/MHz*	Supply Current (Bypass=Shutdown)	0.4 μA	Control Voltage Low	< 0.3 V
		ESD (HBM)	3000 V	Switching Time (Bypass <-> TX PA)	0.8 μs
		Temperature Range	-40 to 125°C		

*Using external harmonic filter.

Applications

- Bluetooth[®] Low Energy (BLE) Devices
- 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

Features

- 2.4 – 2.5 GHz Frequency Range
- 1.8V Nominal Operating Voltage
- Integrated PA, Bypass, Tx/Rx-Ant Switch
- Low TX Current for Battery Operated Devices
- 17mA at +10dBm Output Power at 1.8V
- 9 dBm EDR Power
- Ultra-Low Bypass Current
- Bi-Directional Bypass with Low Insertion Loss
- 1-Bit Control between Bypass and PA Modes
- 2.0 x 2.0 x 0.45mm Package with 0.5mm Pitch
- -40°C to 125°C Temperature Range