Product Description

The 802.15.4 Transceiver core supports the PHY layer for a range of wireless PAN standards including Zigbee®, 6LoWPAN, RF4CE and other ISM band applications. The IQ architecture integrates all of the required Radio functions incorporating the complete Rx, Tx and synthesizer subsystems in a 180nm RF CMOS IP core.

An integrated FRAC-N synthesizer can be configured for a wide range of low cost crystal frequencies from 10MHz-52MHz and provides a reference clock output for ease of integration in System On Chip (SoC) applications.

A Flexible Radio Interface that can be optimized for embedded SoC applications.

Typical Applications

- Machine to Machine communication
- Asset Tracking and Smart Metering
- RF Remote control and consumer applications
- Wireless Personal Area Networks

Features

Fully Integrated 802.15.4 Transceiver

- Rx Chain with AGC and RSSI
- Clear Channel Assessment
- Fully integrated FRAC N Synthesizer
- Integrated Loop Filter
- Battery Monitor and Temp Sensor
- Low Jitter Programmable Clock PLL
- Tx Chain with -20 to +3dBm output power

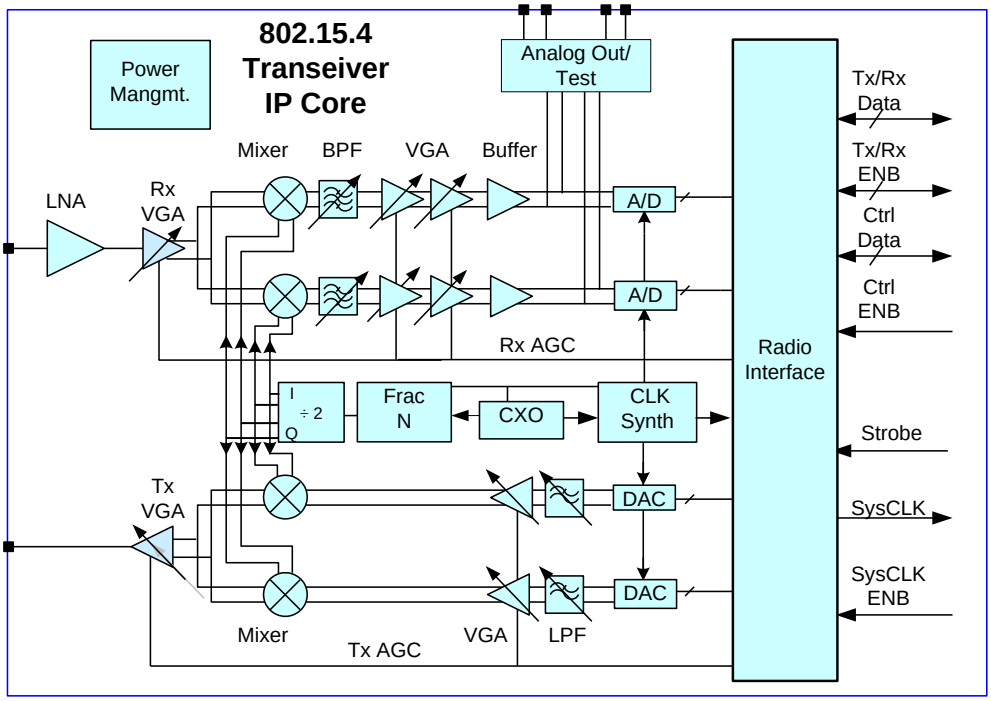
High Performance

- -101dBm sensitivity at 250kbps

Low Power Consumption

- 1.8V supply
- 12mA Rx On mode
- 14mA Tx On mode
- <0.5uA sleep mode

Functional Block Diagram



Specifications

Parameter	Conditions	Units	Min	Typ	Max
RF Frequency Range		MHz	2405		2480
Chip rate	Downconverter only	Mchips/s		2	
Symbol rate		kbps		250	
Channel Spacing				5MHz	
Rx Sensitivity	PER<1%	dBm		-101	
Noise Figure	Maximum Gain	dB		6	
Dynamic Range	Downconverter only	dB		82	
AGC Step size		dB		2	
Input IIP3	Max Gain. +/-5MHz and +/-10MHz	dBm		-10	
Tx Output Power	Programmable	dBm	-20		+3
EVM		%		8	
Supply Voltage		V		1.8	
Rx Mode Current		mA		12	
Tx Mode Current		mA		14	
Sleep Mode		uA			0.5

IP Status - Presilicon

Preliminary Information
This datasheet contains information from the design target specification. RF integration Inc. reserves the right to change information at any time without notification.

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