

2.4 GHz RF Front End

CC2590/CC2591

- 2.4 GHz Range Extender for low-power RF-ICs
- Up to +14 and +22 dBm output power (CC2590/CC2591 respectively)
- Up to 28 dB increased link budget
- >15 times the Line of Sight range

Description

CC2590/CC2591 is a range extender specially designed for all existing and future RF transceivers and System-on-Chip solutions from Texas Instruments. It is a cost-effective and high performance RF Front End for low-power and low-voltage wireless applications in the 2.4 GHz band.

CC2590/CC2591 increases the link budget by providing a power amplifier for improved output power and an LNA with low noise figure for improved receiver sensitivity. It contains PA, LNA, switches, RF-matching, and balun for simple design of high performance wireless applications.

CC2590/CC2591 provides a small size design with its 4x4mm QFN-16 package.

Key Specifications

CC2590

- Up to +14 dBm output power
- Up to +20 dB increased link budget
- 22 mA transmit current @ 3V and +12 dBm output power
- 4.6 dB LNA noise figure including RX/TX switch

CC2591

- Up to +22 dBm output power
- Up to +28 dB increased link budget
- 112 mA transmit current @ 3V and +20 dBm output power
- 4.8 dB LNA noise figure including RX/TX switch

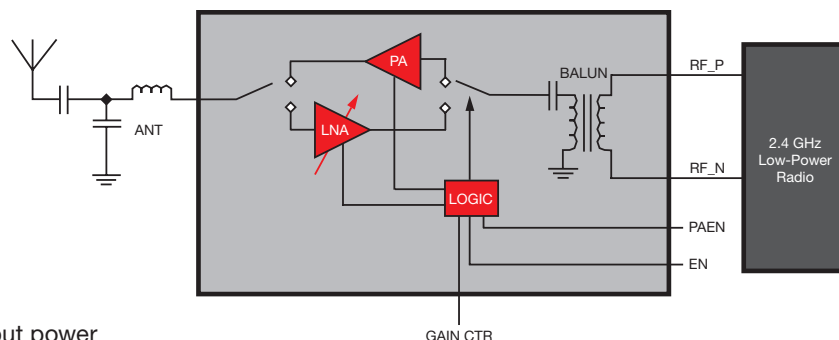
CC2590/CC2591

- Seamless interface to TI Low-Power RF devices
- 6 dB Typ improved sensitivity on CC24xx and CC2500, CC2510 and CC2511
- Very few external components: Integrated PA, LNA, switches, inductors, balun and matching network
- Low receive current: 3.4 mA in HIGH gain mode, 1.7 mA in LOW gain mode
- 100 nA in power down
- Digital control of LNA gain by HGM pin
- RoHS compliant 4x4 mm QFN-16 package

Applications

- All 2.4 GHz ISM band systems
- Wireless sensor networks
- Wireless industrial systems
- ZigBee systems
- Wireless consumer application
- Wireless audio

CC2590/CC2591 Block Diagram



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