MAX2580

LTE Small-Cell MIMO Transceiver

Highest Level of RF Transceiver Integration and Performance Saves Board Space and Accelerates Time-to-Market

ⓘ This product is Not Recommended for New Designs. Some versions may be No Longer Available or being discontinued and subject to Last Time Buy, after which new orders can not be placed.
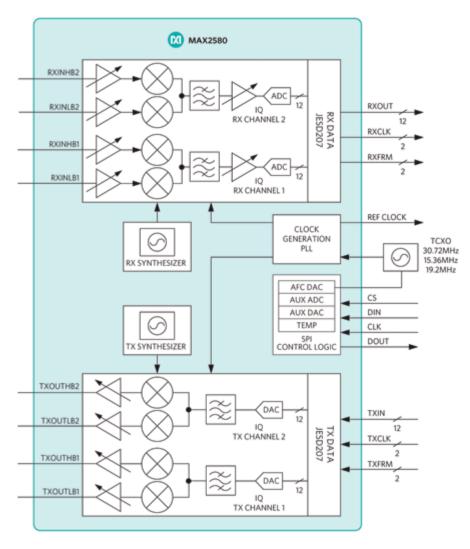
Overview

Description

The MAX2580 is a highly integrated, multistandard transceiver for 4G (LTE) small-cell basestations. The transceiver is capable of operating in both TDD and FDD modes in all LTE bands. It incorporates two fully integrated and independent transmit and receive paths, enabling full support of MIMO operation. Each receive path includes multiple input ports to support monitoring of out of band channels. The transceiver includes all components of the RF front-end as well as baseband amplifiers, data converters and channel selection filters. The MAX2580 requires only a few external components to work as an all-band, multimode, MIMO transceiver with programmable RX and TX channel bandwidths to support all LTE configurations.

IQ mismatch of both RX and TX paths is factory calibrated to meet the EVM requirement for 64QAM modulation in select bands. In addition, the TX path does not require an external SAW filter to meet emission and desensitization specifications in some applications.

All decimation/interpolation and channel selection filters are included on chip. For data transmission to the BBIC, the transceiver includes a JESD207-compliant parallel interface. The device is controlled via a standard SPI interface.

MAX2580: Block Diagram

MAX2580

RXINHB2

RXINLB2

RXINHB1

RXINLB1

IQ
RX CHANNEL 2

ADC
12

IQ
RX CHANNEL 1

ADC
12

RX DATA
JESD207

RXOUT
12

RXCLK
2

RXFRM
2

RX SYNTHESIZER

CLOCK
GENERATION
PLL

REF CLOCK

TCXO
30.72MHz
15.36MHz
19.2MHz

AFC DAC
AUX ADC
AUX DAC
TEMP
SPI
CONTROL LOGIC

CS
DIN
CLK
DOUT

TX SYNTHESIZER

TXOUTHB2

TXOUTLB2

TXOUTHB1

TXOUTLB1

IQ
TX CHANNEL 2

DAC
12

IQ
TX CHANNEL 1

DAC
12

TX DATA
JESD207

TXIN
12

TXCLK
2

TXFRM
2

Enlarge+

Key Features

- Operates in All LTE bands from 700MHz to 2700MHz
- Selectable Channel Bandwidth: GSM, 10MHz LTE, 20MHz LTE
- Fully Integrated Fractional-N Synthesizers
- Parallel JESD207 Baseband Data Interface
- All Decimation, Interpolation, and Channel Selection Filters are Included
- Fully Integrated DC Offset Removal
- 2% EVM
- RSSI and AGC
- On-Chip Regulators
- Temperature Sensor
- 4-Wire SPI Interface

Applications/Uses

- LTE Femtocell and Picocell Basestations