Overview

The RF module for BSC913X-based development platforms, designed by Benetel, can enable all major frequency bands worldwide, including LTE-FDD/TDD and WCDMA (HSPA+) air interfaces. The module features 13 dBm output power at the antenna as well as a low-band Tx/Rx (700 to 1000 MHz) and a high-band Tx/Rx (1700 to 2700 MHz) in a 2x2 MIMO configuration. The design utilizes a 3G/4G transceiver chip and enhanced by our low-noise amplifiers and power amplifiers for maximum stability, accuracy and efficiency.

The RF module is designed for small cell applications with a JESD207 and a MaxPHY interface to the BSC913X SoC. As an integral part of our development platform, the module enables home eNodeB development by wireless infrastructure OEMs. The RF module is designed to support 2x2 MIMO operation in addition to dual frequency bands via software selection. These dual frequency bands are configured as high and low bands—the low ranging from 700 to 1000 MHz and the high from 1700 to 2700 MHz, enabling Benetel to supply a wide range of band combinations. The module includes two transmit outputs and two receiver inputs for each frequency band, allowing support for 2x2 LTE and 3GPP WCDMA (HSPA+) transmission and reception.
Freescale linear GaAs HBT power amplifiers and GaAs E-pHEMT low-noise amplifiers complete the Tx/Rx signal path. The MMZ09312B and MMZ25332B are two-stage high efficiency, class AB amplifiers suitable for all air interface standards. Excellent receiver sensitivity is provided by the MML09211H and MML20211H low-noise amplifiers. These power amplifiers and low-noise amplifiers provide frequency coverage over all UMTS frequency bands.

Features
- 2x2 MIMO on a single card
- Dual-band operation on a single card
- Flexible RF card architecture enables various band combinations
- Dual RF receivers for 2x2 LTE system
- Dual RF transmitters for 2x2 LTE system
- FDD and TDD versions
- Supports all LTE bands and bandwidths
- Supports all WCDMA (HSPA+) bands on a single antenna port
- Modulation schemes up to 64 QAM
- Supports bandwidth from 1.4 MHz to 20 MHz with maximum TX output power of +13 dBm

Interface
- JESD207 and MAXPHY to baseband
- Programmable through the SPI interface
- Dual RF output
- Three supply voltages: 1.8V CMOS, 3.3V, 5V PA

For more information on the RF module for QorIQ Qonverge, visit freescale.com/BSC913XRF
For more information on the QorIQ Qonverge platform, visit freescale.com/QorIQQonverge
For more information on our RF portfolio, visit freescale.com/RFMMIC