



Fact Sheet

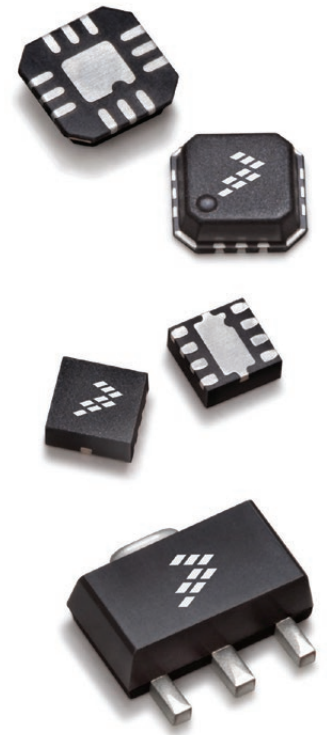
Medium Power PAs and LNAs for Femtocells

Overview

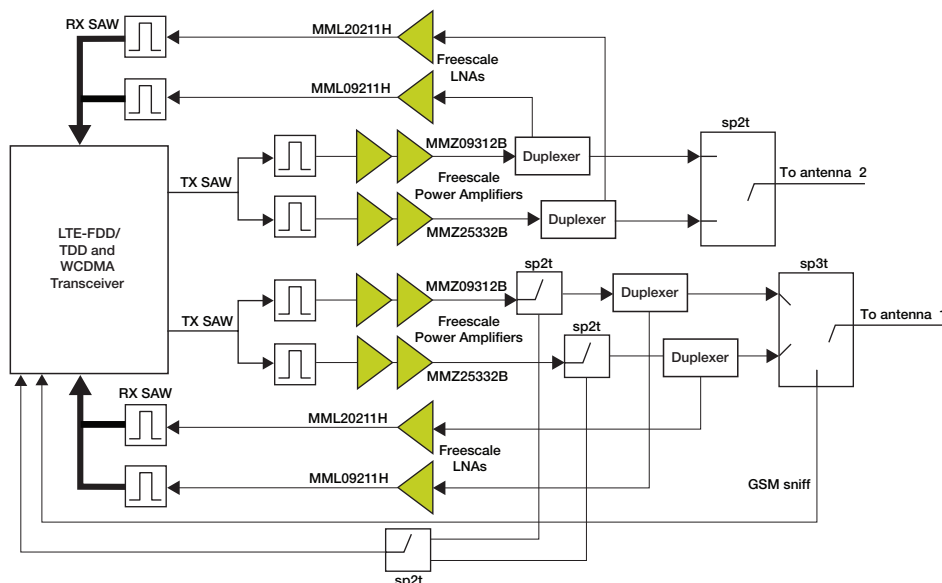
Freescale RF femtocell solutions provide high-bandwidth, high-linearity optimized MMICs for LTE (FDD/TDD) and W-CDMA SOHO femtocell base station applications. Our MMICs comprise linear amplifiers and low noise amplifiers. Based on InGaP HBT technology, the linear amplifiers contain active bias networks for excellent over temperature performance and require minimal impedance matching for ease of use over a broad frequency range. The GaAs E-pHEMT low noise amplifiers provide excellent noise figures for optimum receiver sensitivity.

Our Comprehensive Solution

We offer complete femtocell solutions based on the QorIQ Qonverge BSC913X-based development platform. A dual band RF module, designed by Benetel, featuring Freescale linear amplifiers and low noise amplifiers is available (see block diagram). This module is capable of operating over all UMTS frequency bands of interest (700–1000 MHz and 1700–2700 MHz), features antenna port output power of 13 dBm in a 2 × 2 MIMO configuration and is designed with a JESD207 interface to the BSC9131 reference design board. A high-performance 3G/4G transceiver chip completes the end-to-end development system for LTE (FDD/TDD) and W-CDMA air interfaces.



RF Module Block Diagram



High Performance Amplifiers

Part Number	Frequency Range (MHz)	Test Frequency (MHz)	Small Signal Gain (dB)	Gain Stages	P1dB (dBm)	OIP3 (dBm)	Supply Voltage (V)	Supply Current (mA)	Package
MMZ09312B ⁽¹⁾	400–1000	900	31.7	2	29.6	42	3–5	74	QFN 3 × 3
MMA20312BV	1800–2200	2140	27.2	2	30.5	44.5	3–5	70	QFN 3 × 3
MMA20312B	1800–2200	2140	27.2	2	30.5	44.5	5	70	QFN 3 × 3
MMA25312B ⁽¹⁾	2300–2700	2500	26	2	31	40	3–5	124	QFN 3 × 3
MMZ25332B ⁽¹⁾	1800–2800	2500	26.5	2	33	48	3–5	390	QFN 3 × 3

⁽¹⁾ On chip power detector

Low Noise Amplifiers

Part Number	Frequency Range (MHz)	Test Frequency (MHz)	Small Signal Gain (dB)	Noise Figure (dB)	P1dB (dBm)	OIP3 (dBm)	Supply Voltage (V)	Supply Current (mA)	Package
MML20211H	1400–2800	2140	18.6	0.65	21.3	33	5	60	DFN 2 × 2
MML09211H	400–1400	900	21.3	0.52	22	32.6	5	60	DFN 2 × 2
MML09212H	400–1400	900	37.5	0.52	22.8	37	5	150	QFN 3 × 3
MML20242H	1400–2800	2140	32.5	0.7	24	39.5	5	160	QFN 3 × 3
MML09231H	700–1400	900	17.2	0.36	24.5	37.4	5	55	DFN 2 × 2

Freescale offers comprehensive global in-region support to help you with your design. Contact your local Freescale sales office or authorized Freescale distributor for additional information and sample availability.



LTE-FDD/TDD and W-CDMA (HSPA+) Capable RF Module

For more information on the RF module or to order, visit freescale.com/BSC913XRF

For more information on the RF low power portfolio, visit freescale.com/RFlowpower

For more information on the QorIQ Qonverge platform, visit freescale.com/QorIQQonverge



Freescale, the Freescale logo and QorIQ Qonverge are trademarks of Freescale Semiconductor, Inc., Reg. U.S. Pat. & Tm. Off. All other product or service names are the property of their respective owners. © 2012, 2014 Freescale Semiconductor, Inc.

Document Number: RFFEMTOCELLFS REV 1 12/2014