

Power Platforms for Entry-Level Smartphones

Consumer demand for increased content, features and affordability with each generation of mobile phone has led to the emergence of the “3G Entry” market. Capitalizing on this trend toward increased mobility and “always on” connectivity, mobile operators and original equipment manufacturers (OEMs) worldwide are tiering their offerings in the 3G space by providing smartphone functionality in the mid tier, while positioning traditional mid tier features as a staple of the low end.

Tiering of smartphones is dependent on operating system, software configurability and hardware features. Entry-level smartphones make tradeoffs in these areas in favor of lower cost. For the RF front end, the product requirements are centered around the choice of air standard and band count, which result from end market positioning and regional focus.

RFMD includes various cellular standards in its definition of entry-level smartphones, including combinations of

EDGE, EDGE downlink, WCDMA, and TD-SCDMA. One key distinction from high-end smartphones is a strong migration to EDGE downlink for the 2G portion, as opposed to full EDGE transmit and receive. For the 3G portion, a key distinction is a high concentration of single band or dual band WCDMA, with some triple band WCDMA phones. High end smartphones focus on three to five bands of WCDMA and may include LTE.

The RF designer of entry level smartphones has a clear bias toward solutions optimized for lower cost, with a minimum standard for current consumption and some band flexibility due to regional customization. To address these needs, RFMD has a compelling portfolio of “Power Platforms”, using either power amplifiers or transmit modules at the core. This allows customers the flexibility to address multiple markets with front end solutions that offer the optimum balance of cost and performance, while maintaining the highest quality standards the market has come to expect from RFMD.

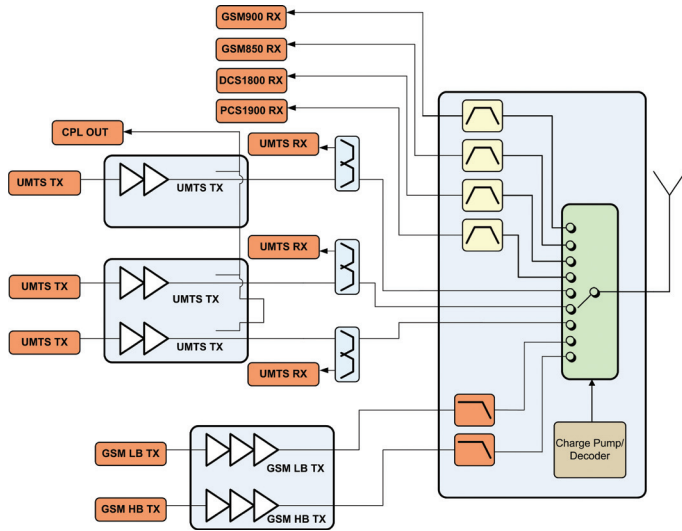
Suggested Applications	For Customers Who Want	Platform Description	Component Options	Part Number	Component Description
WCDMA: Scalable, 1 to >3 bands	PA / switch tuning options, Scalability, Supply chain flexibility	A full selection of 3G power amplifiers and ASMs/SFMs centered around a Powerstar® PA core. (Diagram A)	GPRS / EDGE PAM	RF3225*	QB Polar EDGE
				RF3194*	QB GPRS
			WCDMA PAM	RF722X~	3-mode WCDMA (SB)
				RF724X~	Multi-bias WCDMA (SB)
				RF720X~	3-mode WCDMA (DB)
			ASM / SFM	RF1291	SP10T ASM (8TRx)
				RF1292	SP8T ASM (6TRx)
RF1293	SP10T SFM (5TRx)				
WCDMA: Optimized for 3 bands	Minimal matching, Lower solution cost	A full selection of 3G power amplifiers centered around a Powerstar® TxM core. (Diagram B)	GPRS / EDGE TXM with linear ports	RF3228*	QB Polar EDGE (3TRx)
				RF3229*	QB GPRS (3TRx)
			WCDMA PAM	RF722X~	3-mode WCDMA (SB)
				RF724X~	Multi-bias WCDMA (SB)
RF720X~	3-mode WCDMA (DB)				
WCDMA: Optimized for 1 or 2 bands	Minimal matching, Lower solution cost	A full selection of 3G power amplifiers centered around a Powerstar® TxM core. (Diagram C)	GPRS / EDGE TXM with linear ports	RF3171*	QB Polar EDGE (2TRx)
				RF3230*	QB GPRS (2TRx)
				RF3232*	QB GPRS (2TRx)
				RF3233*	QB Linear EDGE (2TRx)
			WCDMA PAM	RF3234	QB GPRS (1TRx)
				RF722X~	3-mode WCDMA (SB)
				RF724X~	Multi-bias WCDMA (SB)
RF720X~	3-mode WCDMA (DB)				
TD-SCDMA	Reduced component count, Lower solution cost	A TD-SCDMA PA centered around a Powerstar® TXM core. (Diagram D)	GPRS / EDGE TXM with linear ports	RF3232*	QB GPRS (2TRx)
				RF3233*	QB Linear EDGE (2TRx)
			TD-SCDMA PAM	RF7234/A	2-mode TD-SCDMA

* Pin compatible 2G & 2.5G available
 ~ Pin compatible 3G band combinations available

WCDMA: Scalable, 1 to > 3bands

- Compatible chipsets: Qualcomm, ST Ericsson, Mediatek
- Best option for lowest 3G current consumption
- Pin compatible Polar EDGE and GPRS options for handset tiering

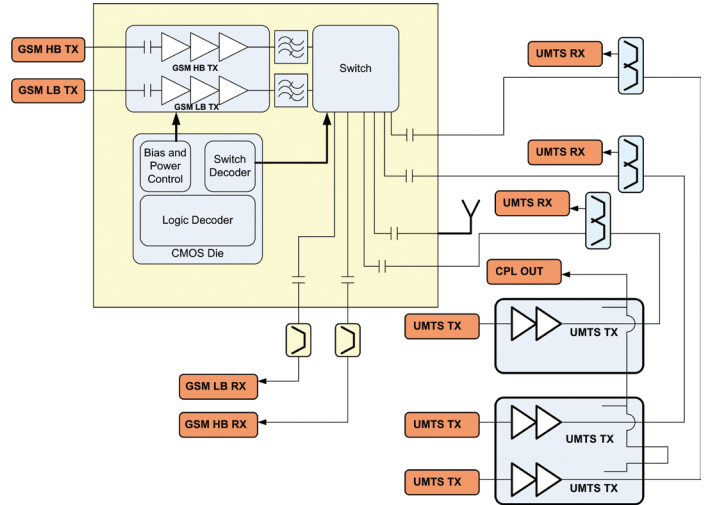
Diagram A



WCDMA: Optimized for 3 bands

- Compatible chipsets: Qualcomm, ST Ericsson
- Excellent 3G current consumption with or without DCDC converter
- Functionally optimized by eliminating unused switch port overhead
- Pin compatible Polar EDGE and GPRS options for handset tiering

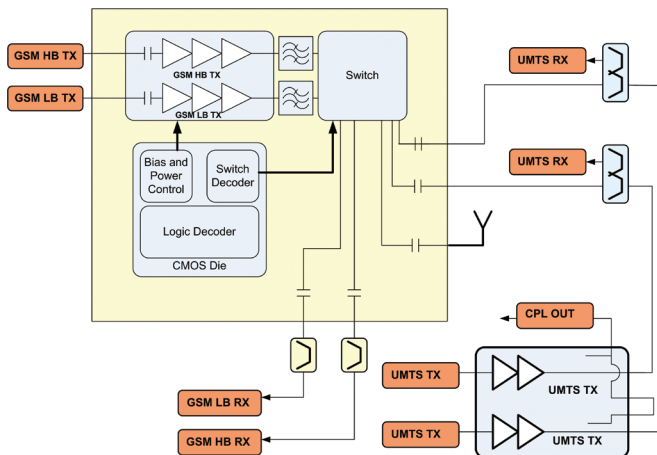
Diagram B



WCDMA: Optimized for 1 or 2 bands

- Compatible with all major chipsets
- Excellent 3G current consumption with or without DCDC converter
- Functionally optimized by eliminating unused switch port overhead
- Pin compatible EDGE and GPRS options for handset tiering

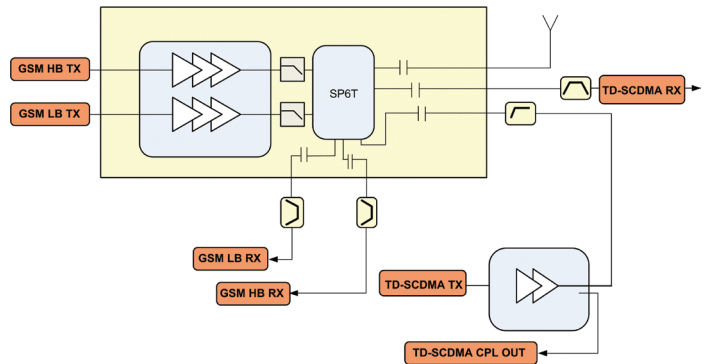
Diagram C



TD-SCDMA

- Compatible with all major chipsets
- Offers highest integration and best performance when using discrete TD-SCDMA PA
- Pin compatible Linear EDGE and GPRS options for handset tiering

Diagram D



Order RFMD products online at www.rfmd.com/rfmdExpress.

For sales or technical support, contact your authorized local sales representative (see www.rfmd.com/globalsales).

Register to receive RFMD's latest product releases with our Email Component Alerts at www.rfmd.com/emailalert.

7628 Thorndike Rd., Greensboro, NC 27409-9421 USA • Phone 336.664.1233

 These products comply with RFMD's green packaging standards.

RFMD® is a trademark of RFMD, LLC. All other trade names, trademarks and registered trademarks are the property of their respective owners. ©2011 RFMD.

CPG.3G.0211.100



Mobility. Connectivity. Energy.™