



Comprehensive Radio Solutions

RFX250-20 RF Subsystem Quad-band GSM radio solution

Overview

The RFX250-20 RF subsystem provides a highly integrated, comprehensive radio solution for GSM and GPRS terminals. This solution offers antenna-to-bits functionality using less than 230 mm² of valuable board space.

The RFX250-20 full radio subsystem functions over the GSM850, EGSM900, DCS1800 and PCS1900 frequency bands. This solution is based on Freescale's revolutionary Polar architecture, which delivers an optimal balance with low current, small size and, most important, a highly manufacturable radio. The MMM6000 is an EDGE-compatible transceiver. By using this transceiver and dedicated GSM/GPRS power amplifier, customers can easily upgrade to EDGE by replacing it with a GSM/EDGE power amplifier.

MMM6000 Transceiver

The MMM6000 transceiver provides the highest level of integration available today. It includes data converters typically found in a separate analog baseband. This solution is one of the first DigRF digital interface standard-compliant radios. The direct-conversion receiver architecture integrates low-noise amplifiers (LNAs), as well as the receive and transmit voltage-control oscillators (VCOs).

The transmit section is based on polar modulation architecture with direct modulation of the VCO by a fractional-N synthesizer and allows a filter-free transmit lineup.

An on-chip transmit/receive sequencer generates appropriate timing events for the transmitter calibration and the GMSK transmit/receive burst, limiting the RF hardware dependency of the Layer 1 engine software to an absolute minimum. The MMM6000 provides all of this functionality in a compact 9 x 11 mm package.

Key Benefits

- Complete antenna-to-bits functionality no separate analog baseband required
- Highest level of integration provides extremely compact 230 mm² board area
- Optimized GSM/GPRS subsystem solution using revolutionary Polar transceiver with usage of dedicated GSM/GPRS front-end power amplifier; provides extremely low current consumption
- Complies with industry-standard DigRF interface for ease of design
- Embedded microcontroller provides less dependency on Layer 1 software and simplifies software programming







Key Features

- Quad-band: GSM850, EGSM900, DCS1800 and PCS1900
- GMSK Power Class 4 operation in GSM850 and EGSM900 bands
- GMSK Power Class 1 operation in DCS1800 and PCS1900 bands
- Direct conversion/filter-free revolutionary Polar transmitter
- · Lowest current consumption

- Open-loop power control
- Streamlined programming model for rapid software implementation
- DigRF interface to digital baseband processor
- Auto-calibrated transmitter
- Current limiter to prevent high current under VSWR
- Anti-saturation IP for switching transient suppression

Learn More:

For more information about Freescale's products, please visit www.freescale.com/cellularRF.



