Rx IF/BASEBAND PROCESSOR

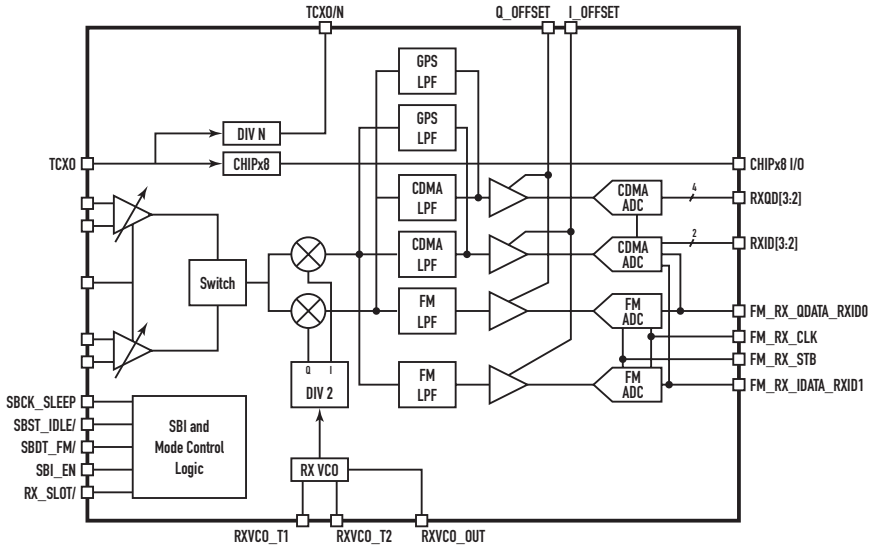
QUALCOMM CDMA Technologies

Enabling the Future of Communications.™

IFR3300™

IFR3300™ QUALCOMM CDMA TECHNOLOGIES

Figure 1. IFR3300 Processor Functional Block Diagram



OVERVIEW

The QUALCOMM IFR3300 Rx IF-to-baseband processor offers significant advantages in size, cost and power. It integrates the Automatic Gain Controls (AGCs), I/Q demodulators, low-pass filters and Analog-to-Digital Converters (ADCs) into a single Application-Specific Integrated Circuit (ASIC). It performs the same IF-to-baseband processing as the IFR3000™ processor, but adds GPS capability. The integrated GPS functionality provides the most cost-effective GPS and IS-95B IF receiver solution. The IFR3300 processor is offered in a 48-pin BCC+ package.

The IFR3300 Rx IF-to-baseband processor is designed for use in dual-mode CDMA and FM portable cellular phones or single-mode plus gpsOne™ enabled phones. It interfaces at RF with the RFR3100™ or RFR3300™ Rx front-end and at baseband with the MSM3300™ Mobile Station Modem (MSM™) device.

SMALLER PACKAGING

Even with the added capability of GPS, the IFR3300 device maintains the package size and pin compatibility with the IFR3000™ device. The result is a more economical solution for performing CDMA, FM and GPS IF-to-baseband processing.

IFR3300 FEATURES

- Supports IS-98 (CDMA) and IS-19 (AMPS) standards for dual-mode operation
- 2.7 V to 3.15 V supply voltage
- Low current: 26 / 21 mA in CDMA Rx / FM Rx modes
- Rx power control through 90 dB dynamic range AGC amplifier
- IF mixer for down-converting IF to analog baseband for CDMA, FM and GPS
- Low-pass filtering for CDMA, FM and GPS I- and Q-component baseband signal demodulation
- 4-bit ADCs convert CDMA or GPS I and Q analog baseband components to digital baseband
- 8-bit ADCs convert FM I and Q analog baseband to digital baseband
- Clock generators for CDMA/AMPS/GPS operation
- VCO for generation of Rx LO mixing signal
- I- and Q-channel DC offset control inputs drive baseband DC voltage offset to zero in CDMA, FM and GPS signal paths
- CDMA and FM mode compatible with the MSM3000 and MSM3100 devices
- GPS mode select through 3-line serial bus interface (SBI) from the MSM3300 device
  - Slotted FM mode
  - Selective power-down
  - Mode selection
- Pin compatible with IFR3000 processor
- 48-pin BCC+ package

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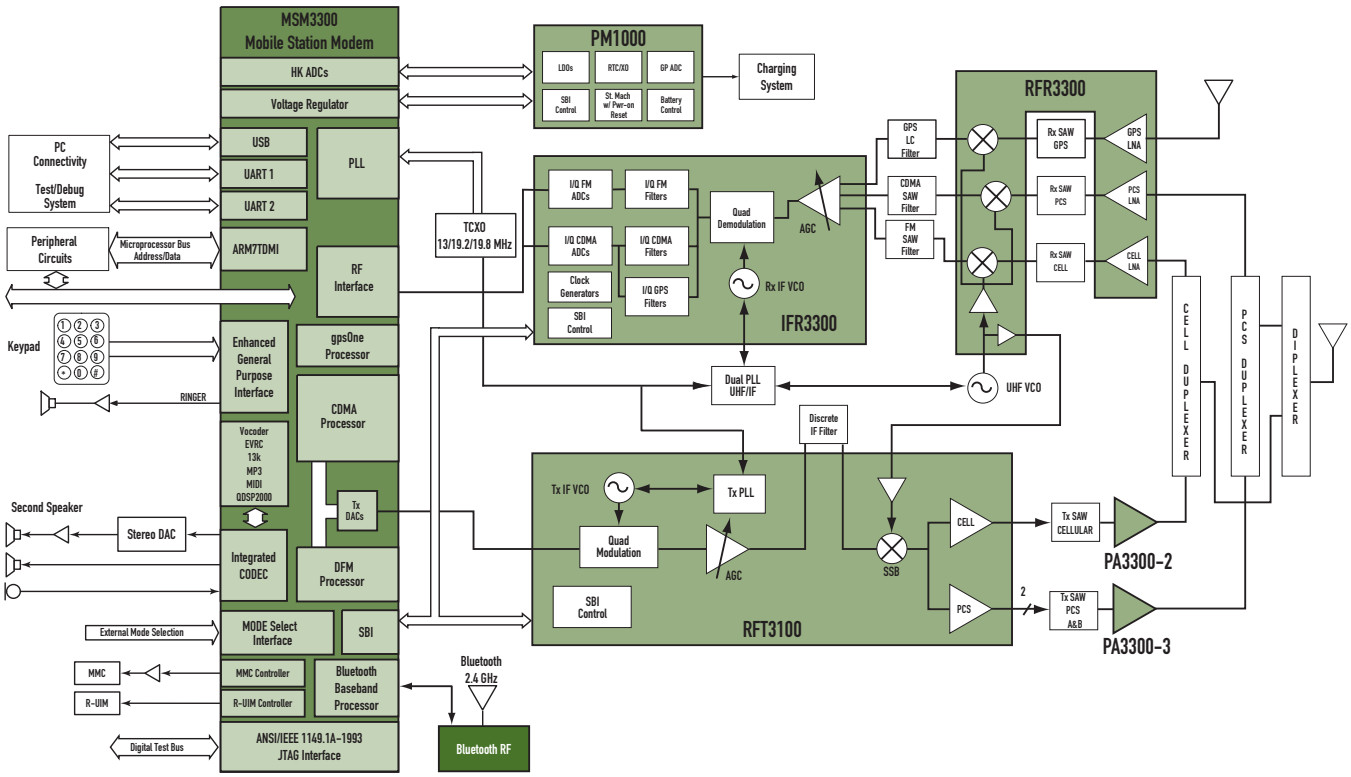
Table 1. IFR Selection Guide

IFR3300 INTERFACE

The IFR3300 processor interfaces directly with QUALCOMM's MSM ASICs. The MSM ASICs are CMOS VLSI integrated circuits that perform all digital processing in the CDMA/FM/GPS subscriber unit.

The combination of IFR3300 and Power Management device, PA3300™ Power Amplifiers and MSM family ASICs form the core of the portable CDMA/FM/GPS subscriber unit.

Figure 2. IFR3300 as Part of QUALCOMM's MSM3300 Chipset Architecture (Dual Band: AMPS and PCS CDMA with GPS configuration shown)



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