

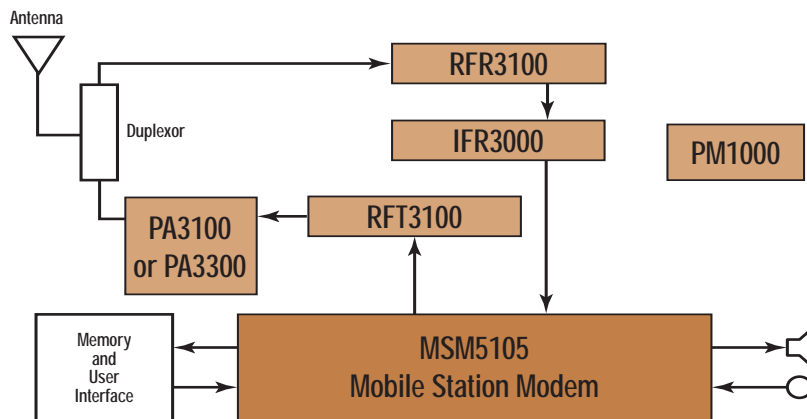


MOBILE STATION MODEM

QUALCOMM
CDMA Technologies
Enabling the Future of Communications.™

MSM5105™

Figure 1. MSM5105 Device in a Subscriber Unit



efficiencies and the rapid time-to-market that the solution delivers for next-generation services.

QUALCOMM has developed a seamless migration path that will allow operators to move easily into the next generation of wireless communications. This path provides compatibility among IS-95A, IS-95B and 3G CDMA 1xMC networks. Manufacturers will benefit by developing products for these networks since they offer shorter product development time, and reduced development and equipment costs by allowing the reuse of hardware, software and network protocols.

OVERVIEW

QUALCOMM's 3G CDMA Multi-Carrier 1xMC solution, the MSM5105 Mobile Station Modem (MSM™) chipset and software is designed to the IS-2000 Standard and enables a doubling of overall IS-95A/B

voice capacity and new, higher-data-rate services. With initial data rates that exceed the ITU requirement for full wide area mobility, the MSM5105 solution will support 153.6 kilobits per second (kbps),

providing manufacturers worldwide with the ability to develop consumer products that provide voice, high-speed data and video over wireless networks. Network operators will also benefit from the cost

3G CDMA ENABLING CHIPSET

QUALCOMM has developed the MSM5105 chipset and system software to support the Phase 1 1xMC of the 3G CDMA Multi Carrier IS-2000 Standard. To enable rapid design times and an easy migration path to 3G 1xMC, the MSM5105 chipset builds on the highly successful IS-95A/B architecture of the MSM3100™ solution. The MSM5105 chipset includes QUALCOMM's existing RFR3100™, IFR3000™, RFT3100™, PM1000™, PA3100™ or PA3300™ RF devices. These devices perform all of the signal

processing and power management in the subscriber unit, from IF to PCM, for compliance with the proposed 3G CDMA release 0 of IS-2000 1xMC standard.

The MSM5105 device is a digital baseband chip that enables manufacturers to meet or exceed the specifications of mobile stations for worldwide cdmaOne and 3G CDMA 1xMC systems, including IS-95A, IS-95B, IS-2000 and its variants for PCS in Japan, Korea and South America. Featuring

support for Quick Paging Channel and including an improved searcher, the MSM5105 provides an increase in handset standby time of up to 50 percent over IS-95A/B handsets. Pin compatible with the MSM3100 device, the MSM5105 device will be available in the same 208-pin Fine-Pitch Ball Grid Array (FBGA) production package.

The MSM5105 device integrates functions that support a tri-mode CDMA/FM subscriber unit. Subsystems

within the MSM5105 device include a CDMA processor, a Digital FM (DFM) processor, a QUALCOMM-designed DSP for voice compression, an ARM® ARM7TDMI microprocessor. Also integrated in the MSM5105 device are analog functions such as an audio voice codec, PLL, transmit DACs, ADCs, memories, a Universal Serial Bus (USB) device controller, a R-UIM controller, 48 user defined, general purpose pins, peripheral interfaces, and an enhanced clock and power management architecture.

CDMA

FUTURE

MSM5105

QUALCOMM CDMA TECHNOLOGIES

MOBILE STATION MODEM



CDMA Technologies
Enabling the Future of Communications.™

MSM5105 FEATURES

General Features

- Pin compatible with the MSM3100 in a 208 FBGA package
- Embedded QDSP2000™ digital signal processor core, enabling a comprehensive set of features such as voice recognition, voice memo, speech compression, acoustic echo cancellation, noise suppression and audio enhancement
- Integrated USB device controller for fast and simple PC interconnect
- Voice mode V1 (EVRC, IS-96A, PureVoice™), all radio configurations
- High-speed data using both fundamental and supplemental channels
- Supports peak rates of up to 153.6 kbps
- Voice Recognition (optional)
 - Speaker-dependent, Speaker-independent and Voice prompt support
 - Multiple language support
- CMX™ support for MIDI, text and graphics-based multimedia applications with optional software

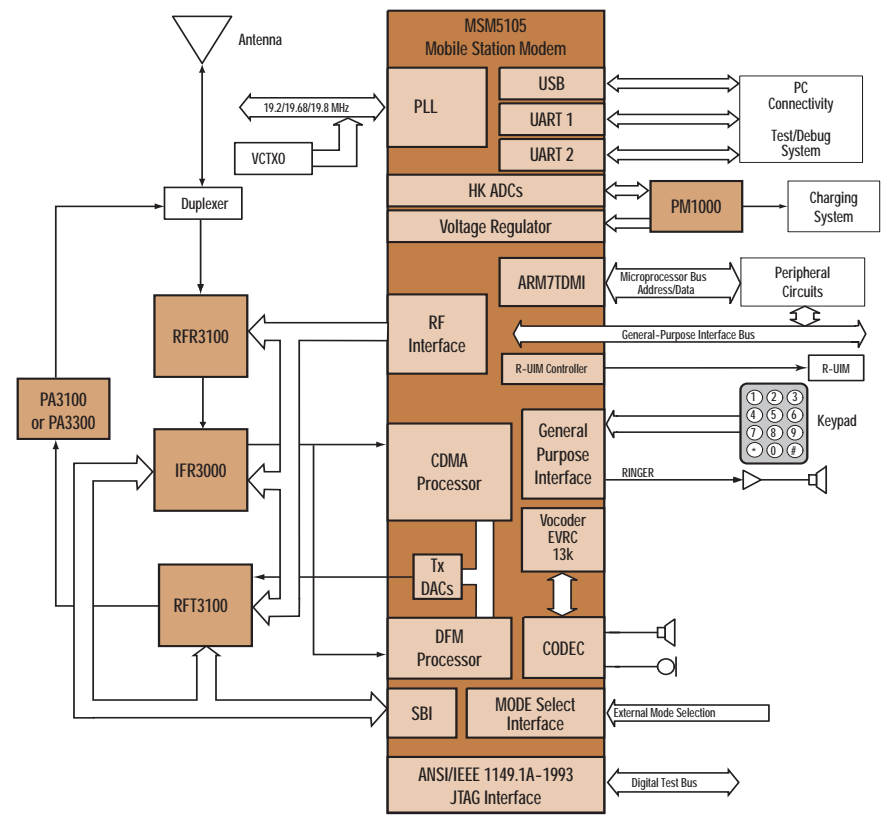
- Enhanced Tx AGC control, eliminating the need for external gain-step compensation circuitry
- 16-bit wide Flash and SRAM support
- Backward compatible with cdmaOne standards
- Standard MIDI ringer
- R-UIM interface

IS-2000 1xMC RTT Features Supported by MSM5105 Device

- Fast 800 Hz Forward Power Control
- Quasi-Orthogonal Functions
- Supplemental Channel (SCH) support
- IS-2000 Forward Quick Paging Channel (F-QPCH) support

- Convolutional encoding/decoding for SCH
- ITU 144 kbps requirement achieved
 - Forward dedicated control channel (F-DCCH)
 - Reverse dedicated control channel (R-DCCH)
- Radio Link Protocol (RLP3)
- Quick Paging Channel

Figure 2. MSM5105 Device Functional Block Diagram



©2001 QUALCOMM Incorporated. All rights reserved. QUALCOMM is a registered trademark and service mark and MSM, Mobile Station Modem, MSM5105, MSM3100, IFR3000, RFT3100, PA3100, PM1000, QDSP2000, PureVoice and CMX are trademarks of QUALCOMM Incorporated. All other trademarks contained herein are the property of their respective owners.
Printed in USA 2/2001 80-V1402-4 Rev X2