

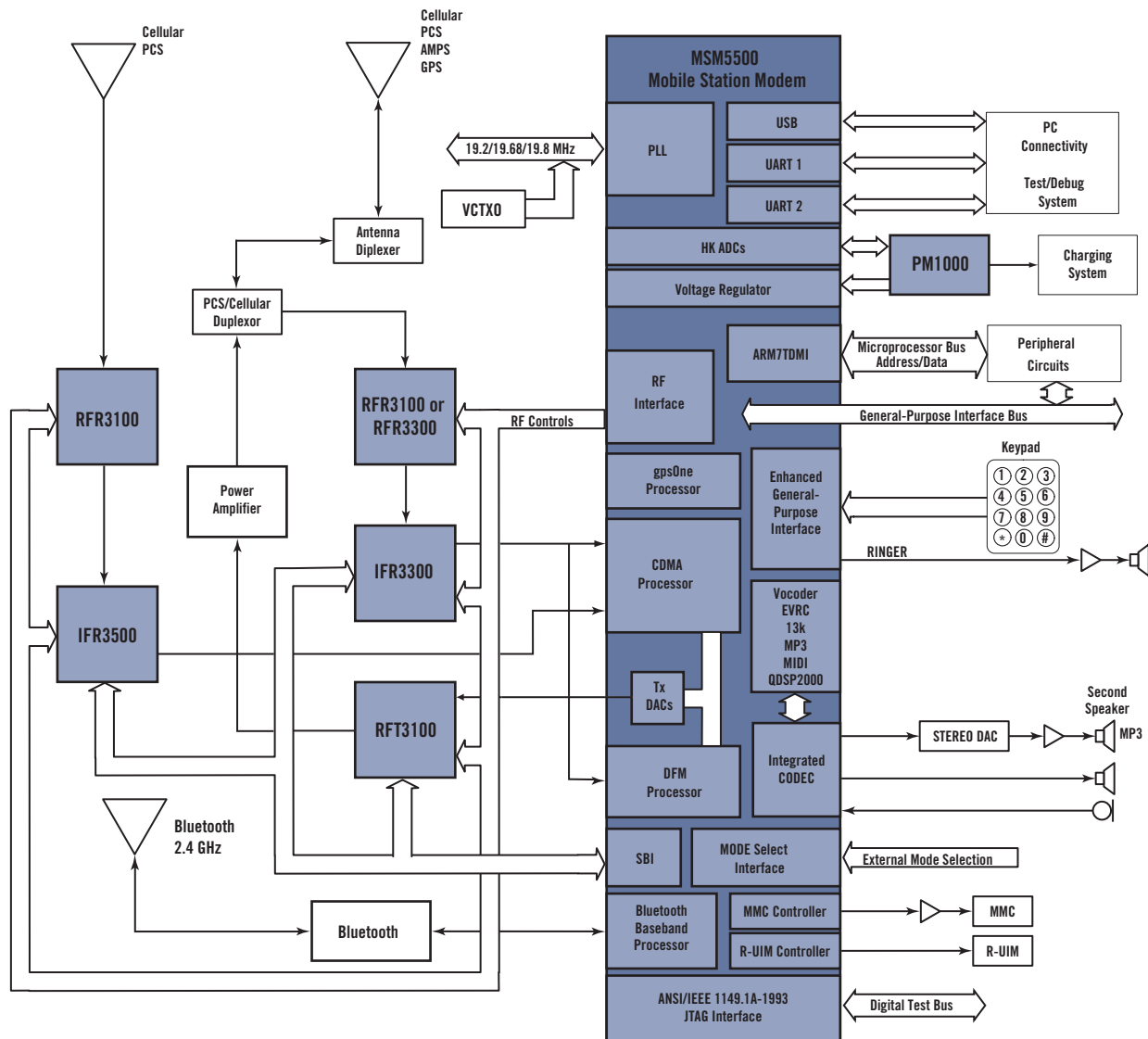
MSM5500® MOBILE STATION MODEM

QUALCOMM CDMA TECHNOLOGIES

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ENABLING THE FUTURE OF COMMUNICATIONS™

MSM5500® MOBILE STATION MODEM



MSM5500 Functional Block Diagram

High Data Rate Overview

The Internet has changed the way we think about information, entertainment and communications. QUALCOMM CDMA Technologies' High Data Rate (1xEV) technology will change the way we access it. 1xEV is a high-speed, high-capacity wireless data technology that provides up to 2.4 megabits per second (Mbps) in a 1.25 MHz channel, and will stimulate the growth of wireless-access products and services, one of the Internet's fastest expanding segments.

With 1xEV, a user experiences an "always on" connection, but the channel will only be in use during the transmission of data bursts. As a result, a large number of users are able to share the channel.

QUALCOMM's 1xEV system is optimized for packet data services, with a decentralized architecture based on IP protocols and platforms. It is well suited for fixed, portable and mobile applications, providing an extremely low cost-per-bit. Compatibility with existing CDMA networks facilitates deployment and minimizes system costs. The technology is compatible with IS-95A/B and third generation (3G) networks, which enables existing cdmaOne™ service providers to obtain higher capacities and superior performance for their customers by optimizing voice and data spectrum separately, serving both applications from the same network.

MSM5500 Highlights



With QUALCOMM's 1xEV technology, consumers will have access to services that were previously available only through wired connections to the Internet or enterprise networks. It will be possible to receive audio- and video-based information or large files — such as those for presentations, spreadsheets or audits — using a mobile device. In conjunction with the advancement of telematics, it will also be possible for large amounts of data for information, navigation or entertainment to be received in cars and trucks.

The MSM5500® chipset and system software is the first solution to support the 1xEV technology. The MSM5500 1xEV chip is capable of 2.4 Mbps peak rate on the forward link and 153 kilobits per seconds (Kbps) peak rate on the reverse link. Compatible with the IS-2000 standard, the MSM5500 chipset also doubles the voice capacity of IS-95A/B systems. To leverage current cdmaOne manufacturers' systems, the MSM5500 chipset interfaces with QUALCOMM's RFT3100™ device as well as the IFR3500™ or IFR3300™ devices. The MSM5500 chipset includes the full feature set of the MSM5100™, with Bluetooth® and gpsOne® capabilities as well as multimedia features such as Qtunes™ MP3 player software and Compact Media Extension™ (CMX™) MIDI based multimedia software.

Also incorporated in this advanced design is dual-receive chain diversity that will enhance a device's 1xEV throughput. The MSM5500 will be fabricated in a 0.18 um process with two packaging options. One configuration is packaged in a 0.8 mm ball pitch 208-pin Fine Pitch Ball Grid Array (FBGA) package, with operating voltage at 2.5 to 3.0 V. In this package, the receive diversity is multiplexed through the keypad and some GPIO pins. This configuration is offered as MSM5100 pin-compatible to enable rapid development.

The diversity receive functionality will also be packaged in a 0.8 mm ball pitch 320-pin Fine-Pitch Ball Grid Array (FBGA) package, with operating voltage at 2.5 to 3.0 V, where the diversity pins are dedicated.

MSM5500 software includes a full suite of Internet protocols for fast development of data applications, and ships fully tested and integrated into QUALCOMM's CDMA development tools for fast and flexible development.

MSM5500 Features

- 1xEV compliant
- Single ARM7TDMI® microprocessor subsystem
- Full-speed (12 Mbps) Universal Serial Bus interface device mode for fast and simple PC interconnect
- Integrated memory with 8-, 16- and 32-bit memory access, zero wait state operation
- Provides Point-to-Point Protocol (PPP) data connectivity to external data devices (e.g., laptop) via the USB or RS-232 serial interface
- Support for receive diversity in 1xEV
- CDMA2000® 1X and 1xEV interoperability. Ability to do handoffs from 1xEV to CDMA2000 1X and vice versa. Ability to monitor CDMA2000 1X paging channel in 1xEV data session.
- Sockets API for high data rate applications
- Sleep controller for low-power operation
- ANSI/IEEE 1149.1A-93 compliant JTAG interface
- Embedded Trace Macrocell. ETM allows native mode debugging of the ARM® processor.
- Embedded QDSP2000™ digital signal processor core
- Voice mode V1 (EVRC, PureVoice®), all radio configurations
- CMX support for MIDI, text and graphics-based multimedia applications with optional software
- Standard MIDI ringer
- R-UIM interface
- UART for diagnostic monitor, low-data-rate connection
- SBI for IF/RF interface
- 2.5 to 3.0 V
- 208- or 320-pin Fine-Pitch Ball Grid Array (FBGA) package

Development Support

As part of the MSM5500 product offering, QUALCOMM provides system software, a 1xEV development platform, application notes, debugging assistance, field test and manufacturing support to facilitate fast development projects.

QUALCOMM continues to lead the industry with the development of a versatile wireless data solution. In conjunction with an existing voice network, or standalone data network, 1xEV offers a high-speed, cost-effective wireless data solution. The MSM5500 chipset and system software is the most advanced solution for wireless access to the Internet.



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