



MSM6xxx Chipset System Solutions

Overview

At QUALCOMM CDMA Technologies (QCT), we strive to constantly improve the indispensable communication tools we all use every day. QCT creates state-of-the-art chipsets, system software, development tools and products, such as the Launchpad™ suite of technologies and software. We support the most advanced digital wireless features and functionality available for wireless devices and base stations while continually reducing complexity, cost and board-space requirements.

Solutions for the World Market

Addressing all major second- and third-generation technologies, including CDMA2000, UMTS (WCDMA), GSM and GPRS, QCT has developed the MSM6xxx family of products to support the 3G marketplace with key multimode, multiband wireless technologies. Designed to enable true wireless global roaming, QCT's chipsets and system software integrate radioOne™ direct conversion technology and the Launchpad suite, which supports BREWapi™ (Binary Run-time Environment for Wireless™ Applications Programming Interface), video capabilities, MP3, gpsOne-based position location, Bluetooth connectivity and other multimedia applications. QCT's products will allow manufacturers and operators to address market-specific needs for a wide variety of products encompassing the diverse customer bases of North and South America, Europe and Asia.

RadioOne Technology

The MSM6xxx family of chipsets and system software uses QCT's new radioOne direct RF-to-baseband conversion technology to support key multimode, multiband 2G and 3G wireless technologies. The radioOne solution represents a revolutionary technology for CDMA transceivers that uses Zero Intermediate Frequency (ZIF), or direct conversion, architecture for the wireless handset market. Direct conversion eliminates the need for large IF SAW filters and additional IF circuitry, which enables the production of cost-effective multiband and multimode handsets that can be produced in smaller form factors.

Using advanced techniques developed by QCT to enable high-dynamic-range receivers, the radioOne solution solves the problem of stringent interference specifications with which CDMA phones must comply. RadioOne technology also provides frequency synthesis and eliminates many passive elements in converting baseband signals to and from RF. A single external local oscillator is used for the CDMA receiver, which provides the capabilities needed to operate on systems around the world, and simplifies the process of procuring parts and the cost of designing CDMA handsets.

MSM6XXX™ CHIPSET SOLUTIONS

Launchpad™ Suite

Members of the MSM6xxx family selectively incorporate key capabilities from QCT's Launchpad suite of advanced technologies, including gpsOne-based position location, Bluetooth connectivity capabilities, UMTS Subscriber Identity Module (SIM), and multimedia features such as Qtv™ streaming MPEG-4 video player, Qtunes™ audio decoders, including support for MP3, enabling high-quality music reproduction, JPEG encoder/decoder, Qsynth™ synthesizer software for 48-polyphony, 128-instrument general MIDI music generator and Compact Media Extensions (CMX™) software for MIDI, text and graphics-based multimedia applications.

All members of the MSM6xxx family also support QUALCOMM's BREWapi™, giving handset manufacturers the ability to develop embedded wireless applications and other BREW™-based products quickly, easily, and in a variety of languages.

High Integration

By combining a variety of system technologies onto a single chip, the highly integrated MSM6xxx family will provide manufacturers with solutions that offer the latest 3G features while requiring fewer components and reducing bill-of-materials costs, component count and system power consumption. These solutions will require less board space and enable smaller devices that offer improved talk time and permit longer-running multimedia applications.

MSM6xxx Family Solutions

The MSM6xxx family is the first wireless chipset family to leverage a common overall systems architecture for baseband, radio and software elements, enabled by the radioOne direct conversion architecture. Designed to support key multimode, multiband 3G and 2G wireless technologies, the various members of the MSM6xxx family will support the worldwide 3G IMT-2000 standard, including CDMA2000 1X, 1xEV-DO and UMTS (WCDMA), as well as 2G/2.5G cdmaOne™ (IS-95A/B), GSM/GPRS, AMPS and position location technologies.

As with all QCT chipset solutions, the MSM6xxx family is designed with forward and backward compatibility in mind to allow operators using earlier generation handsets to move easily into 3G wireless communications.

- The **MSM6000™** solution is the first MSM chipset to interface with radioOne architecture. The MSM6000 chipset and system software enables entry-level CDMA2000 1X handsets that are price competitive with GSM handsets. It is backward compatible with IS-95A/B and optimized to support voice and basic data

while enabling CDMA2000 network benefits. The MSM6000 solution includes a seamless migration path to 3G services and applications, improved voice capacity, 14.4 kbps data, and support for R-UIM, two-way SMS applications, and Advanced Forward Link Triangulation (AFLT) position location technology.

- The **MSM6050™** chipset and system software is a mid-tier 3G CDMA2000 1X solution that optimizes the features of QCT's MSM5105™ and MSM5100™ chipsets with improved processing power, a new memory interface and key Launchpad features, such as gpsOne position location capabilities, PureVoice VR, CMX multimedia software, JPEG encoder/decoder, Qtunes MP3 support, MIDI ringer, USB and R-UIM support. The MSM6050 solution offers tri-mode operation (CDMA cellular, CDMA PCS and AMPS cellular) and supports data rates of up to 153 kbps in the forward and reverse links.
- The **MSM6100™** chipset and system software is a mid-tier 3G CDMA2000 1X solution that builds upon all of the features of QCT's MSM5100, such as integrated gpsOne position location and Bluetooth technologies, with improved processing power plus support for data rates of up to 307 kbps in forward and reverse links, and simultaneous voice and data. The MSM6100 solution also includes an integrated Java accelerator, cost-effective memory interface, JPEG encoder/decoder, a low-complexity MPEG-4 encoder for camera phone applications, a streaming MPEG-4 player, a 2D/3D graphics accelerator for advanced gaming applications and MMC support.
- The **MSM6200™** chipset and system software is QCT's second-generation UMTS (WCDMA) solution that also supports GSM/GPRS. The MSM6200 supports data rates of up to 384 kbps for UMTS (WCDMA). For GSM/GPRS, the MSM6200 solution supports Phase 2+ and class A, multislot class 12 data services. The MSM6200 solution also supports QCT's Launchpad suite, including position location (enabled with the MGP6200™ multimode GPS processor), Bluetooth connectivity capabilities, Qtunes MP3 player software and a MIDI music synthesizer for high-quality ring tone applications.
- **MSM6250™** chipset and system software, a UMTS/GSM/GPRS multimode solution that features integration of advanced multimedia technologies and position location capabilities, supports GSM 850, 900, 1800 & 1900 MHz and UMTS 1800 MHz & 1900 MHz, and offers data rates of up to 384 kbps. The MSM6250 solution supports QCT's Launchpad suite, including position location (enabled with an integrated multimode GPS processor), Bluetooth connectivity capabilities, Qtunes MP3 player software, MIDI-based multimedia software, video and still image record and playback as well as supporting the BREWapi™ applications platform.

- The **MGP6200™** multimode GPS chipset offers a simple interface to the MSM6200 or other wireless devices to enable Assisted GPS (A-GPS) operation and standalone GPS operation. The MGP6200 chip supports A-GPS-based location applications on GSM, GPRS and UMTS (WCDMA), and offers three standards-supported modes of A-GPS operation (mobile-assisted, mobile-based and standalone). These modes are optimized to address different application requirements. The MGP6200 chip provides the performance necessary for the demands of value-added position location services and mobile E-commerce/wireless Internet applications in markets worldwide.
- The **MSM6300™** system solution supports 3G and 2G standards, including CDMA2000 1X and GSM/GPRS. The MSM6300 supports data rates of up to 307 kbps on forward and reverse links simultaneously. For GSM/GPRS, the MSM6300 solution supports Phase 2+ and class B, multislots class 8 data services. The MSM6300 solution also incorporates the advanced feature set of QCT's Launchpad suite, including gpsOne-based position location, Bluetooth connectivity capabilities, Qtunes MP3 player software, CMX MIDI-based multimedia software, JPEG encoder/decoder, a low-complexity MPEG-4 encoder for camera phone applications, a streaming MPEG-4 player, a 2D/3D graphics accelerator for advanced gaming applications and MMC support.
- The **MSM6500™** solution supports CDMA2000 1X, CDMA2000 1xEV-DO for high-speed data, GSM and GPRS for roaming. Offering CDMA2000 1X data rates of up to 307 kbps and 1xEV-DO data rates of up to 2.4 Mbps in the standard 1.25 MHz channel bandwidth, the MSM6500 solution supports QCT's Launchpad suite, including gpsOne-based position location technology,

Bluetooth connectivity capabilities, USB host controller functionality, Qtunes MP3 player software, CMX MIDI-based multimedia software, JPEG encoder/decoder, a low-complexity MPEG-4 encoder for camera phone applications, a streaming MPEG-4 player, a 2D/3D graphics accelerator for advanced gaming applications and MMC support. For GSM/GPRS, the MSM6500 solution supports Phase 2+ of GSM and GPRS class 8 data services. Capacity and data throughput improvements are also realized for IS-95A/B, CDMA2000 1X and 1xEV-DO networks by supporting receive diversity on these technologies.

Multimode Support

Each member of the MSM6xxx family addresses specific market requirements for price point, feature set and global roaming capabilities.

QCT's Commitment to Customer Support

As with all QCT products, the MSM6xxx family features the unparalleled customer support you have come to expect from your partner of choice for complete wireless communications solutions. QCT is committed to providing innovative multimode, multi-network chipsets, system software and development tools. We can help ensure your competitive success in the wireless communications marketplace for 3G and beyond.

Additional information on QCT's solutions can be obtained on our Websites at www.cdmatech.com or www.umtschips.com.

Multimode Support					
	IS-95A/B	CDMA2000 1X	CDMA2000 1xEV-DO	UMTS (WCDMA)	GSM/GPRS
MSM6000	✓	✓			
MSM6050	✓	✓			
MSM6100	✓	✓			
MSM6200				✓	✓
MSM6250				✓	✓
MSM6300	✓	✓			✓
MSM6500	✓	✓	✓		✓



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