Overview

QUALCOMM's chipsets and system software, along with the Launchpad™ platform of integrated applications, allow manufacturers to design and develop a variety of devices that deliver a wide range of features, including high-accuracy gpsOne™ positioning, streaming video, full-color animated gaming, CD-quality music, videoconferencing, and customizable ringers and multimedia content. This expanded ability to differentiate products through robust applications and user interfaces helps manufacturers improve customer loyalty and break into new market segments. And with QUALCOMM's radioOne™ direct conversion architecture for CDMA, the handset development process is streamlined, enabling cost-effective development of multimode, multiband handsets for both 2G and 3G networks.

QUALCOMM is committed to ensuring the success of its customers. QUALCOMM works with its partners to develop products that meet the exact needs of the growing wireless market, providing its customers with complete, fully verifiable solutions, including fully segmented product families, system software, testing and support.

QUALCOMM's partnership approach to customer relationships, superior technology solutions and support for all 3G standards combine to provide QUALCOMM CDMA Technologies (QCT) customers with unique competitive advantages.

Solutions for the World Market

Because we work closely with our industry partners, we understand that each market segment has specific technology requirements and service deployment strategies. We provide solutions for different market segments — solutions that enable manufacturers to develop cost-effective, state-of-the art products that meet the needs of the global marketplace.

QCT's product offerings support the most advanced digital features and functionality available for wireless devices today. Our integrated solutions reduce complexity, board size and power consumption — resulting in smaller, sleeker wireless devices that support feature-rich multimedia applications. The diversity of QCT's chipset and system software solutions enables manufacturers and operators throughout the Americas, Asia and Europe to provide multimode solutions that address major markets and satisfy the needs of unique market segments.

Detailed specifications of QCT's products and technologies can be found on our web site at www.cdmatech.com.

The Launchpad Suite of Applications

The Launchpad suite of applications technologies offers wireless operators and manufacturers a cost-effective, scalable and timely solution for providing advanced wireless data services. This seamlessly integrated solution enables advanced next-generation applications and services that incorporate multimedia, position location, connectivity, customized user interface and storage capabilities. Launchpad features are available for each QUALCOMM chipset, closely matching the specific functionality and cost-target objectives agreed upon in joint product planning with manufacturers and wireless service operators worldwide.

The Launchpad solution provides the necessary features for advanced 3G services, all integrated onto our powerful modem chip solutions. Because it is an integrated, single-source solution, the Launchpad platform enables smaller devices capable of running powerful new applications. With the Launchpad solution, manufacturers no longer need to identify, purchase and integrate a variety of costly third-party hardware and software solutions for advanced data services. This lowers overall costs and decreases development and testing time for next-generation, innovative devices.

radioOne Technology — Direct Conversion RF

QUALCOMM's radioOne ZIF direct conversion technology revolutionizes CDMA radio frequency (RF) products by eliminating the need for intermediate frequency (IF) signal conversion. With radioOne technology, the RF signal is converted directly to baseband, and the baseband signal is converted directly to RF. Because the IF stage is removed, large IF and Surface Acoustic Wave (SAW) filters are no longer needed. The radioOne solution decreases parts count, saves board space, reduces handset size and lowers bill-of-materials (BOM) costs — enabling smaller form factors for wireless products.

Our market-proven MSM6xxx™ chipsets include radioOne ZIF architecture, resulting in cost-effective, multiband, multimode handsets that enable smaller devices while providing a platform for the feature-rich multimedia opportunities supported by the Launchpad suite.

Select MSM6xxx chipsets contain RF devices that are manufactured with highly cost-competitive RF CMOS (Complimentary Metal Oxide) process technology.

MSM6XXX™ CHIPSET SOLUTIONS

Mobile Station Modem (MSM) Solutions

QUALCOMM CDMA Technologies is dedicated to the promise of 3G. As the leader in delivering powerful end-to-end wireless solutions, QUALCOMM is committed to driving innovation and helping ensure the success of our partners' 3G products and services worldwide.

QUALCOMM offers a complete solution to minimize development cycles and improve time-to-market. Our Mobile Station Modem™ (MSM™) solutions are the foundation of this complete solution. Each chipset family is supported by complementary system software, reference designs and detailed documentation, and development tools — ensuring a quick and seamless migration path to 3G. We partner with manufacturers to develop products that meet the exact needs of the growing wireless market, providing complete, fully verifiable solutions that include fully segmented product families, system software, testing and support. We partner with operators to design, develop and test our solutions to maximize performance and ensure reliability.

QUALCOMM's solutions enable quick time-to-market of new handset designs that are cost-effective and meet any variety of feature requirements — allowing our partners to segment and differentiate their product and service offerings.

The MSM6xxx Family of Chipset Solutions

QCT's MSM6xxx family of chipsets and system software provides handset manufacturers with a portfolio of solutions to address next-generation 3G handsets. These chipsets produce cost-effective multimode, multiband solutions that will enable true wireless global roaming.

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 RF-to-baseband conversion architecture, the MSM6xxx family supports worldwide standards, including CDMA2000® 1X, CDMA2000 1xEV-DO, CDMA2000 1xEV-DV and WCDMA (UMTS), plus cdmaOne™ (IS-95A/B), GSM/GPRS and AMPS.

As with all QCT chipset solutions, the MSM6xxx family is designed with forward and backward compatibility to allow CDMA operators using IS-95A/B handsets to move easily into CDMA2000 1X wireless communications. All chipsets in the MSM6xxx family support QUALCOMM's BREW™ system, a complete product and business system for the development and over-the-air deployment of data services on wireless devices.

- QUALCOMM's **MSM6000™** chipset and system software solution enables entry-level voice and basic data CDMA2000 1X handsets that are price competitive with GSM handsets. This solution offers a seamless migration path to 3G services and applications while providing backward compatibility with IS-95A/B. The MSM6000 solution includes support for two-way SMS applications, peak data rates of 14.4 kbps and the Removable User Identity Module (R-UIM) removable smart card solution.
- QUALCOMM's **MSM6025™** chipset and system software solution — an entry-level solution with data support for the expanding CDMA marketplace — addresses the demand for data-enabled CDMA2000 1X devices that drive CDMA2000 1X adoption in new markets worldwide. Compliant with IS-2000, terminals enabled with the MSM6025 solution provide operators up to twice the voice capacity over IS-95A/B solutions and data rates of up to 153 kbps. This chipset also integrates select key features of the Launchpad suite of applications, including Compact Media Extensions™ (CMX™) for animated MIDI-based ringers and R-UIM capability.
- QUALCOMM's **MSM6050™** chipset and system software solution is a mid-tier 3G CDMA2000 1X solution optimized to support voice and data applications, providing data rates up to 153 kbps. Through the Launchpad suite, the MSM6050 solution offers low-cost optimized gpsOne position location technology and select multimedia applications software, including CMX multimedia software, Qtunes™ audio decoder, PureVoice® advanced voice recognition software, MPEG MP3 support and MIDI ringer. The MSM6050 chipset supports quad-mode operation (CDMA cellular, CDMA PCS, AMPS cellular, GPS), as well as the R-UIM removable smart card solution.
- QUALCOMM's **MSM6100™** chipset and system software solution is a high-end multimedia, video and gaming solution with improved processing power built on the powerful ARM926EJ-S™ microprocessor. Fully integrated with the Launchpad suite, the MSM6100 solution also features enhanced camera interfaces, MPEG-4 decoding/encoding, 2D/3D graphics acceleration, Bluetooth® wireless connectivity, gpsOne position location technologies, enhanced digital signal processor cores, dedicated hardware accelerators and new memory interfaces. This chipset supports simultaneous voice and data, with data rates of up to 307 kbps.
- QUALCOMM's **MSM6150™** chipset and system software solution is a single-chip, high resolution multimedia solution for CDMA2000 1X. Fully integrated with the Launchpad suite, the MSM6150 solution includes complete Bluetooth baseband support and support for assisted or standalone GPS. The MSM6150 is an advanced, high-resolution multimedia solution, and includes two low-power, high-performance QDSP4000™ Digital Signal Processor (DSP) cores; a flexible, high-quality camera processor supporting CMOS and CCD sensors up to 4-megapixel; and dedicated hardware cores for high quality video and 2D/3D graphics to enable next-generation multimedia applications.

- QUALCOMM's **MSM6200™** chipset and system software solution is QUALCOMM's second-generation WCDMA (UMTS) solution that also supports GSM/GPRS. The MSM6200 solution enables the development of multimode products for 3G networks and is designed specifically to support European and Asian market needs. An advanced feature set of Launchpad technologies is also supported, including Bluetooth connectivity capabilities, Qtunes MP3 player software and a MIDI music synthesizer for high-quality ring tone applications. This chipset supports data rates of up to 384 kbps for WCDMA (UMTS).

- QUALCOMM's **MSM6250™** chipset and system software solution integrates the applications co-processor functionality into our single-chip solution. This chipset solution operates on all GSM, GPRS and WCDMA (UMTS) networks worldwide. Designed specifically to enable a wide range of products, the MSM6250 solution supports the advanced feature set of the Launchpad suite, including streaming video, audio, still image and video encoding and decoding; 2D and 3D graphics acceleration; Java® acceleration; a megapixel camera interface; Bluetooth wireless connectivity and the gpsOne solution. This single-chip solution eliminates the need for a separate applications processor and interfaces with two different radio

frequency (RF) system solutions: Platform II supports WCDMA (UMTS) 1900 or 2100 MHz, quad-band GSM/GPRS and Assisted GPS (AGPS), and Platform III supports dual-band WCDMA (UMTS) 1900 and 2100 MHz, quad-band GSM/GPRS and AGPS. This chipset supports data rates of up to 384 kbps for WCDMA (UMTS).

- QUALCOMM's **MSM6275™** chipset and system software solution enhances the Launchpad suite of features supported on the MSM6250. The MSM6275 chipset supports High-Speed Downlink Packet Access (HSDPA) and is QUALCOMM's fourth-generation WCDMA (UMTS) solution.

- QUALCOMM's **MSM6300™** chipset and system software solution, a true global roaming solution, supports CDMA2000 1X and GSM/GPRS. This enables manufacturers to design multimode handsets using previous single-mode form factors. A sophisticated multimedia, video and gaming solution fully integrated with the Launchpad suite, the MSM6300 chipset includes enhanced DSP cores, MPEG-4 decoding/encoding, megapixel camera interface, a 3D graphics accelerator, a Java hardware accelerator, the R-UIM solution and other high-end features. The MSM6300 supports data rates of up to 307 kbps.

Multimode Support							
	IS-95A/B	CDMA2000 1X	CDMA2000 1x EV-DO	UMTS (WCDMA)	GSM/GPRS	CDMA2000 1xEV-DV Revision D	CDMA2000 1xEV-DO Revision A
MSM6000	✔	✔					
MSM6025	✔	✔					
MSM6050	✔	✔					
MSM6100	✔	✔					
MSM6150	✔	✔					
MSM6200				✔	✔		
MSM6250				✔	✔		
MSM6275				✔	✔		
MSM6300	✔	✔			✔		
MSM6500	✔	✔	✔		✔		
MSM6550	✔	✔	✔		✔		
MSM6700	✔	✔	✔		✔	✔	
MSM6800	✔	✔	✔		✔		✔

MSM6XXX™ CHIPSET SOLUTIONS

- QUALCOMM's **MSM6500™** chipset and system software solution is a high-capacity, high-speed wireless data solution that supports CDMA2000 1X, CDMA2000 1xEV-DO and roaming on GSM/GPRS systems. With peak data rates of 2.4 Mbps on 1xEV-DO systems, the MSM6500 enables better voice capacity and higher data throughputs in CDMA2000 1X and CDMA2000 1xEV-DO networks. The MSM6500 solution offers simultaneous mode GPS and CDMA operation, which allows searches to be performed during voice and data calls. Fully integrated with the Launchpad suite, the MSM6500 solution supports an advanced feature set of position location, video, audio, gaming, multimedia and wireless connectivity technologies, in addition to support for the R-UIM system solution. USB host controller functionality has also been integrated onto the MSM6500 chipset to enable direct wireless terminal communication with a wide range of accessories, including printers and digital cameras.

- QUALCOMM's **MSM6550™** chipset and system software solution is a single-chip, high resolution multimedia solution for CDMA2000 1xEV-DO. Fully integrated with the Launchpad suite, the MSM6550 solution includes complete Bluetooth baseband support and support for assisted or standalone GPS. The MSM6550 is an advanced, high resolution multimedia solution, and includes two low-power, high-performance QDSP4000 DSP cores; a flexible, high-quality camera processor supporting CMOS and CCD sensors up to 4-megapixel; and dedicated hardware cores for high quality video and 2D/3D graphics to enable next-generation multimedia applications.

- QUALCOMM's **MSM6700™** chipset and system software support integrated voice and simultaneous high-speed packet data, extending the number of standards supported in the MSM6xxx chipset family. The MSM6700 solution supports CDMA2000 Revision D and CDMA2000 1xEV-DO and enables high-performance applications processing for enhanced multimedia functionality, such as video, graphics, camera, camcorder and gaming features in a single integrated device. This solution's backward compatibility with IS-95 and the CDMA2000 Revision 0, A, B and C standards provides CDMA2000 1X operators with a seamless network evolution. The MSM6700 chipset includes support for GSM/GPRS standards, which provides interoperability when roaming on other networks.

- QUALCOMM's **MSM6800™** chipset and system software solution is a single-chip solution supporting CDMA2000 1xEV-DO Revision A and advanced multimedia capabilities. The MSM6800 chipset supports the advanced feature set of QUALCOMM's Launchpad suite in a single integrated device — enabling high-performance applications processing for enhanced multimedia functionality, such as video, graphics, camera, camcorder, 3D gaming and gpsOne functionality. The MSM6800 solution also supports GSM/GPRS and is backwards compatible with IS-95A/B, CDMA2000 1X Revision A and 1xEV-DO Revision 0.

QUALCOMM's Complete Solution — Our Commitment to our Partners

QUALCOMM CDMA Technologies is enabling the future of communications. We work closely with our manufacturer and operator partners to develop solutions that meet market needs today and provide the technology foundation for the wireless communications of tomorrow. Our world-class CDMA engineers create detailed reference designs to accelerate testing and deployment for our partners. And our chipsets and system software are fully integrated and able to bring advanced features and functionality to today's wireless devices. With QUALCOMM CDMA Technologies, manufacturers and operators can offer sophisticated wireless solutions that succeed in the global marketplace.