Texas Instruments OMAP™ platform optimized for Microsoft® Windows Mobile™-based devices

OMAP™
TEXAS INSTRUMENTS TECHNOLOGY

Texas Instruments' (TI) OMAP™ platform delivers a comprehensive family of reference designs, processors, software and support, providing a wide range of real-time, multimedia-rich capabilities for 2.5G and 3G mobile devices. TI has manufactured the core logic for more than 1 billion mobile phones in the last 15 years and today powers the majority of all wireless mobile phones. TI OMAP technology is at the heart of most Microsoft® smartphones.

TI's industry-leading combination of high-performance and power-efficient processing enables compelling applications such as multimedia messaging (MMS), video and audio content, speech recognition, advanced security, 3D interactive gaming, mobile commerce, location-based services, Java and productivity that will attract users to next-generation devices and services. The OMAP platform provides these advanced features, along with the long battery life that phone users have come to expect.

Microsoft® Windows Mobile™ Classic, Standard and Professional software offer an advanced real-time system with a full feature set to power cost-efficient, next-generation smart wireless devices.

OVERVIEW

Differentiate and get to market faster

MakingWireless

Microsoft Windows Mobile software for the OMAP platform

Developing a successful mobile phone or wireless PDA is more challenging than developing a traditional PC or PDA because of the competing requirements of real-time system performance and always-on power management. Device manufacturers typically face three major hurdles when designing new mobile wireless platforms:

1. OS base port integration and performance optimization
2. Advanced power-management optimization for maximum battery life
3. The time-to-market challenges of optimizing a base port for a particular board while keeping time and resources in the schedule to differentiate the product

Working closely with Microsoft, TI has designed solutions that allow manufacturers to get to market quickly with optimized platforms. TI also worked closely with Microsoft to optimize and certify Windows Mobilesoftware for the OMAP family of processors and will continue to support future OS versions. Furthermore, TI collaborated with Microsoft to offer DSP hardware-accelerated Windows Media in certain OMAP platforms.

Use your valuable engineering resources differentiating products rather than developing base ports and drivers. TI OMAP reference designs and reference design software provide core components, including multimedia, graphics and advanced power management.

TI, the industry leader in wireless communications, has designed the reference designs and software for optimum battery life and real-time performance. By completing this lengthy, iterative process for the manufacturer, TI decreases time to market while increasing the end quality of the product.

TI's OMAP-Vox™ modem software passes applicable portions of Microsoft's Windows Mobile Logo Test Kit (LTK) in addition to the same stringent testing TI has been using for years in creating wireless technologies for leading customers such as Motorola, Ericsson and Nokia.

Key offerings available from TI and third parties for Microsoft Windows Mobile on the OMAP platform include:

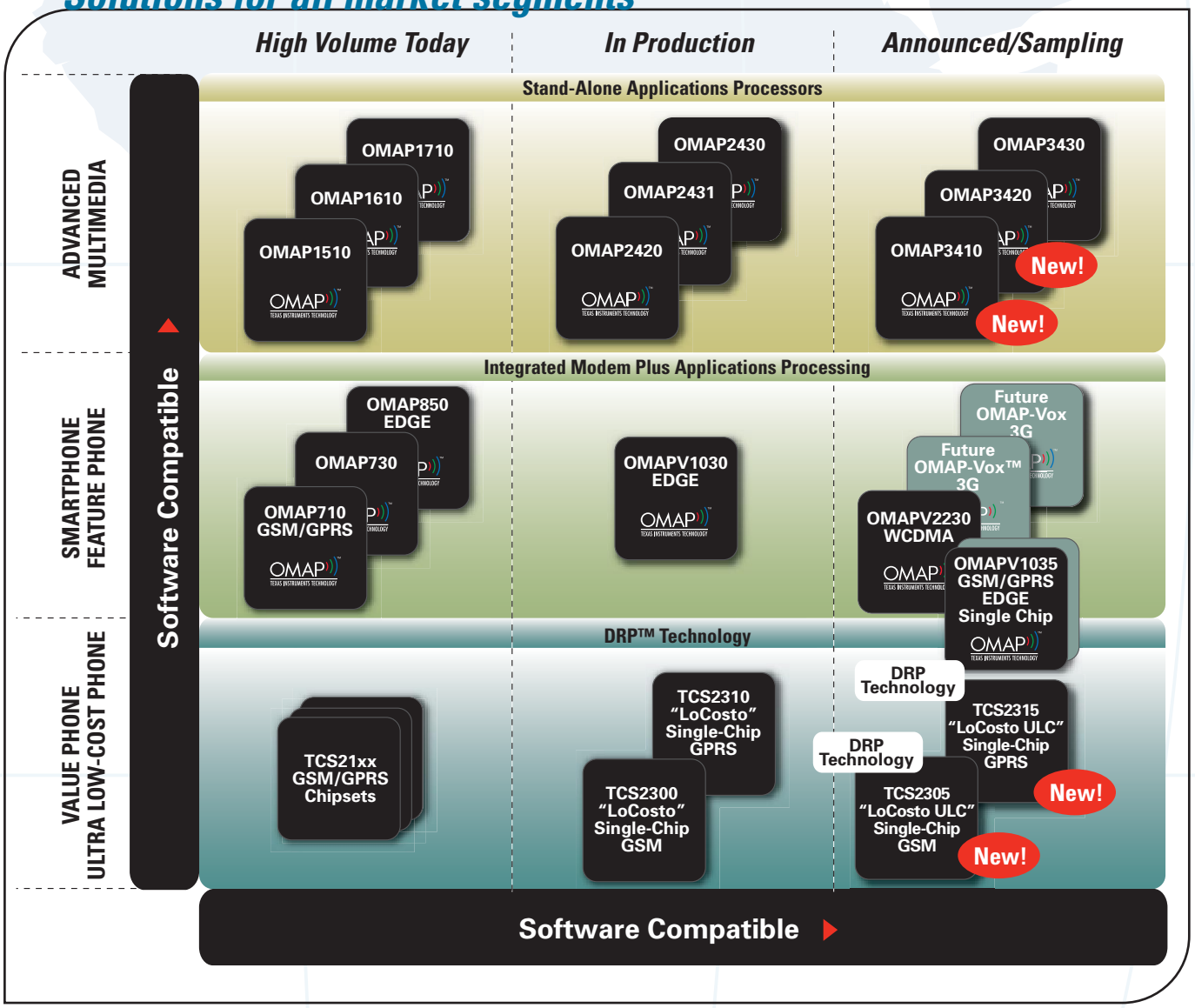
- OMAP platform reference designs from TI provide maximum flexibility for highly differentiated form factors
- OMAP reference design software packages and board support packages (BSPs) for Microsoft Windows Mobile-based devices help manufacturers get to market faster on Microsoft Windows Mobile Classic, Standard and Professional software
- Support for the latest TI wireless technologies, including:
  - GSM/GPRS and EDGE
  - 802.11 WLAN and *Bluetooth*® co-existence
  - Hollywood™ mobile DTV solution
  - FM radio
  - WCDMA and UMTS
- GPS for location-based services
- OMAP hardware DSP-accelerated Windows multimedia
- Hardware-accelerated 2D and 3D graphics
- TI's worldwide support organization with dedicated engineers
- OMAP Developer Network members deliver OMAP-optimized software applications and components that drive next-generation applications
- Independent OMAP Technology Centers (OTC) provide full development support for device manufacturers and network operators by bringing together hardware, software and system integration expertise

Microsoft Windows Mobile OS for the OMAP platform

For manufacturers or developers working on smartphones or wireless PDAs who want to get started immediatly with OMAP processors, TI provides BSPs that provide the core drivers and OEM adaptation layer (OAL) for the OMAP processors and software development boards. In addition, hardware accelerators on OMAP processors for Microsoft's Direct Show™ and Direct 3D™ Mobile speed the seamless execution of multimedia and advanced 3D gaming. OMAP BSPs and their support for multimedia and 3D graphics are integrated and validated on TI's reference hardware as well as with Microsoft's Windows CE Test Kit (CETK) and LTK to ensure quality and compatibility.

This level of software integration delivers enhanced product quality with maximum software reuse, reducing development costs and shortening time to market for new products. Rather than expending development resources on software system integration, manufacturers can concentrate on compelling and differentiated features that will improve the competitiveness of their products in the marketplace.

Solutions for all market segments



Application developers benefit from complete platforms that provide early access to the latest OMAP technology while mirroring the capabilities and peripheral set of leading mobile devices.

Microsoft Windows Mobile reference design software packages for the OMAP platform

TI offers a complete reference design software package for wireless PDAs and smartphones that supports the latest versions of the Microsoft Windows Mobile Standard or Professional software using TI's OMAP73x, OMAP850 and OMAPV1030 reference design platforms. With these reference design software packages, manufacturers can quickly and efficiently design new Windows Mobile-based devices using the OMAP platform for GSM/GPRS- and EDGE- class devices.

The OMAP73x, OMAP850 and OMAPV1030 reference design software packages include:

- Windows Mobile Standard or Professional reference software optimized for the OMAP platform
- Advanced power management
- Drivers for on-chip and board peripherals
- A suite of flexible bootloader and flashing tools

Each OMAP73x, OMAP850 and OMAPV1030 reference design software package also includes support for TI's latest wireless technology:

- Radio Interface Layer (RIL) GSM driver for TI GSM/GPRS/EDGE telephony
- Integrated and validated with TI's GSM/GPRS/EDGE protocol layer
- Support for TI's BlueLink™ *Bluetooth* solutions

Development tools

Microsoft®

virtio

Code Composer v2 studio

A full complement of easy-to-use, world-class software development tools are available for developing with Microsoft Windows Mobile on the OMAP platform:

- TI's OMAP reference design platforms and development systems
- Microsoft Platform Builder for Windows Embedded CE
- Hardware-assisted debugging through TI XDS-class JTAG using eXDI for Microsoft Platform Builder
- Microsoft eMbedded Visual C++
- Virtio Virtual Platform simulation
- TI's Code Composer Studio™ IDE (integrated development environment) for the OMAP platform
  - DSP and ARM IDE and debuggers

These tools allow developers to easily create and optimize real-time wireless applications to take full advantage of the OMAP platform's processing power and low power consumption.

Industry support

Mobile Applications

TI's OMAP Developer Network and Microsoft's Mobile2Market programs deliver full solutions and applications that allow differentiation, quick time to market and faster return on investment. OMAP Developer Network members are creating rich software applications and components that drive next-generation applications in areas like MMS, video and audio content, speech recognition, advanced security, 3D interactive gaming, M-commerce, location-based services, Java and productivity software.

www.ti.com/omapgaming
www.ti.com/omapdevnet
www.microsoft.com/windowsmobile/mobile2market

TI's OTCs provide development support by bringing together a variety of hardware, software and system integration expertise, giving device manufacturers a single point of entry for OMAP development technologies. In addition to working on some of the same application areas as OMAP Developer Network members, OTCs provide:

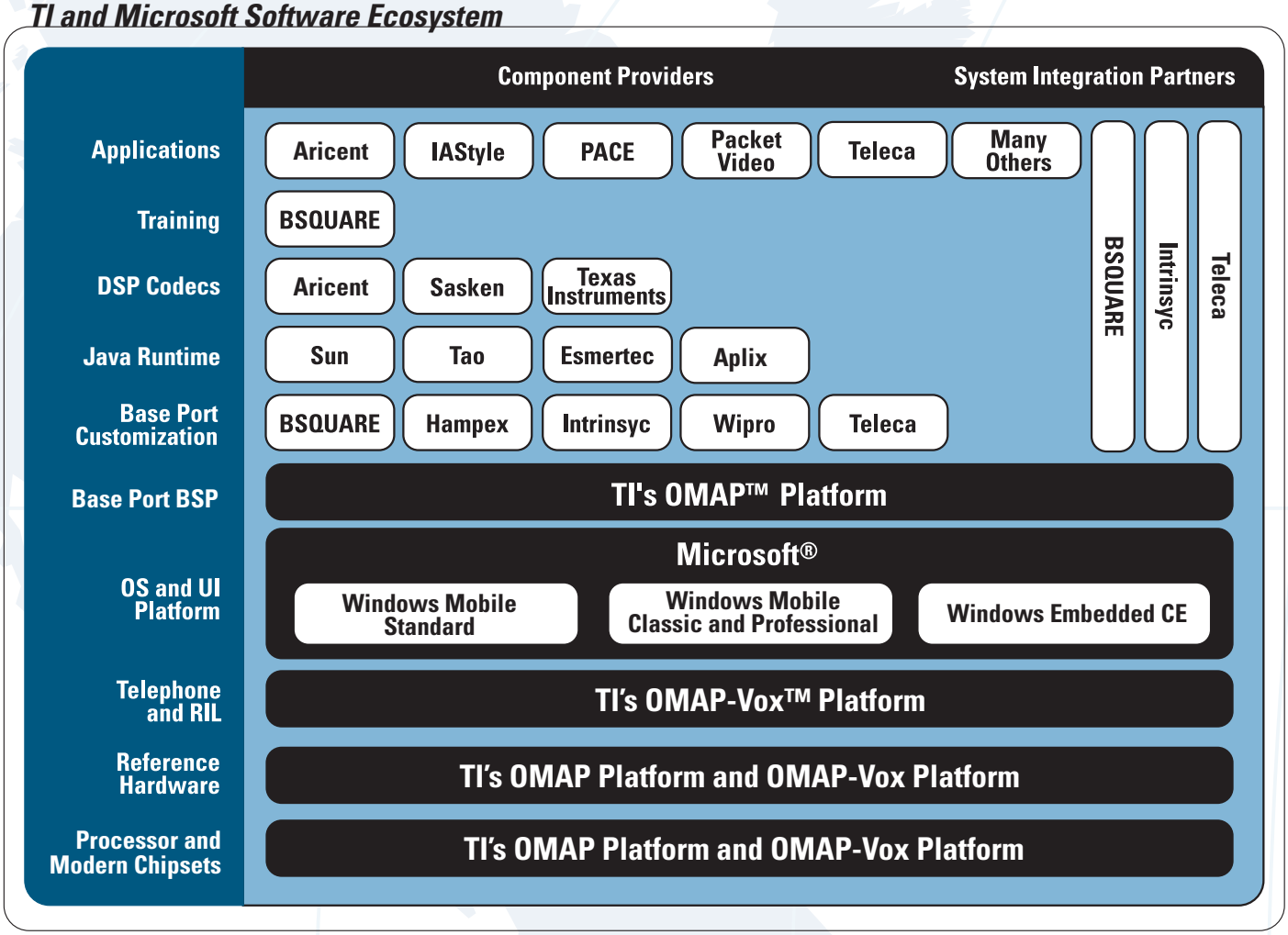
- System integration
- OS support, testing and certification
- Custom software application and component development
- Device driver development
- Hardware design development and testing

www.ti.com/omapotcs

With hardware and software from TI, along with support and software from the OMAP Developer Network, OTCs and Microsoft, manufacturers have a complete solution for developing their mobile devices using Microsoft Windows Mobile on the OMAP platform.

www.ti.com/omap
www.microsoft.com/windowsmobile

TI and Microsoft Software Ecosystem



Mobile Connectivity Solutions

To deliver mobile connectivity on multiple networks in today's Microsoft smartphones, TI's integrated, proven wireless connectivity solutions ensure multi-mode operation and access to a variety of network connections for service anytime, anywhere. TI offers single-chip solutions for *Bluetooth* technology, mobile WLAN and GPS using TI's DRP™ technology and advanced process technology. TI's mobile connectivity solutions easily interface with TI's cellular modem solutions, OMAP processors and OMAP-Vox solutions so manufacturers can get new handsets to market efficiently and fast.

Bluetooth wireless technology—BlueLink™ solutions

TI focuses on delivering optimized *Bluetooth* wireless personal area networking (WPAN) connectivity for mobile devices. By leveraging its innovative DRP technology, TI has delivered five generations of single-chip *Bluetooth* solutions that integrate RF and *Bluetooth* processor. Manufactured in 65 nm, TI's BlueLink 7.0 platform provides a complete hardware and software solution for *Bluetooth* and FM transmit and receive, enabling ease of design and speeding time to market for mobile device manufacturers. The BL6450 is the industry's smallest *Bluetooth* and FM single-chip solution and delivers cost and power savings for mobile handset designs.

802.11 WLAN—WiLink™ solutions

Optimized at the hardware, firmware and driver level, TI solutions deliver the power efficiency, small size, data/access security and spectrum sharing required for mobile WLAN handsets. TI's WiLink 6.0 platform integrates WLAN (802.11a/b/g/n), Bluetooth and FM in a single chip. The two WiLink 6.0 solutions are implemented in 65-nm CMOS processes using TI's DRP technology to meet the low-power, small-form factor and low-cost requirements of handset manufacturers worldwide. TI's WiLink solutions also include Voice over WLAN support with on-chip UMA and IMS acceleration to deliver seamless voice and data connectivity between WLAN and cellular networks.

TI's experience in delivering WLAN and Bluetooth solutions for handsets has resulted in a coexistence package for WLAN and Bluetooth in co-located environments. TI's coexistence platform enables data and voice to be transmitted without interference while optimizing system through-put, range and responsiveness. With no antennae isolation requirements and providing for shared antenna designs, it is ideal for handsets.

GPS—NaviLink™ solutions

TI addresses assisted GPS (A-GPS) and stand-alone GPS with a highly integrated single-chip solution that interfaces with TI's wireless chipsets and delivers precise location capabilities to mobile phones. TI's GPS5350 NaviLink 5.0 single-chip solution for GPS applications is targeted at mass-market handsets to deliver applications such as mobile navigation, 3D maps, location-based services and safety services to consumers. Through DRP technology, TI is able to provide the smallest size and lowest cost GPS discrete solution with low power and high performance to mobile phone manufacturers.

For more information **www.ti.com/windowsmobile**

SWPT009C

IMPORTANT NOTICE

Texas Instruments Incorporated and its subsidiaries (TI) reserve the right to make corrections, modifications, enhancements, improvements, and other changes to its products and services at any time and to discontinue any product or service without notice. Customers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All products are sold subject to TI's terms and conditions of sale supplied at the time of order acknowledgment.

TI warrants performance of its hardware products to the specifications applicable at the time of sale in accordance with TI's standard warranty. Testing and other quality control techniques are used to the extent TI deems necessary to support this warranty. Except where mandated by government requirements, testing of all parameters of each product is not necessarily performed.

TI assumes no liability for applications assistance or customer product design. Customers are responsible for their products and applications using TI components. To minimize the risks associated with customer products and applications, customers should provide adequate design and operating safeguards.

TI does not warrant or represent that any license, either express or implied, is granted under any TI patent right, copyright, mask work right, or other TI intellectual property right relating to any combination, machine, or process in which TI products or services are used. Information published by TI regarding third-party products or services does not constitute a license from TI to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

Reproduction of TI information in TI data books or data sheets is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. Reproduction of this information with alteration is an unfair and deceptive business practice. TI is not responsible or liable for such altered documentation. Information of third parties may be subject to additional restrictions.

Resale of TI products or services with statements different from or beyond the parameters stated by TI for that product or service voids all express and any implied warranties for the associated TI product or service and is an unfair and deceptive business practice. TI is not responsible or liable for any such statements.

TI products are not authorized for use in safety-critical applications (such as life support) where a failure of the TI product would reasonably be expected to cause severe personal injury or death, unless officers of the parties have executed an agreement specifically governing such use. Buyers represent that they have all necessary expertise in the safety and regulatory ramifications of their applications, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of TI products in such safety-critical applications, notwithstanding any applications-related information or support that may be provided by TI. Further, Buyers must fully indemnify TI and its representatives against any damages arising out of the use of TI products in such safety-critical applications.

TI products are neither designed nor intended for use in military/aerospace applications or environments unless the TI products are specifically designated by TI as military-grade or "enhanced plastic." Only products designated by TI as military-grade meet military specifications. Buyers acknowledge and agree that any such use of TI products which TI has not designated as military-grade is solely at the Buyer's risk, and that they are solely responsible for compliance with all legal and regulatory requirements in connection with such use.

TI products are neither designed nor intended for use in automotive applications or environments unless the specific TI products are designated by TI as compliant with ISO/TS 16949 requirements. Buyers acknowledge and agree that, if they use any non-designated products in automotive applications, TI will not be responsible for any failure to meet such requirements.

Following are URLs where you can obtain information on other Texas Instruments products and application solutions:

Products		**Applications**	
Audio	www.ti.com/audio	Automotive and Transportation	www.ti.com/automotive
Amplifiers	amplifier.ti.com	Communications and Telecom	www.ti.com/communications
Data Converters	dataconverter.ti.com	Computers and Peripherals	www.ti.com/computers
DLP® Products	www.dlp.com	Consumer Electronics	www.ti.com/consumer-apps
DSP	dsp.ti.com	Energy and Lighting	www.ti.com/energy
Clocks and Timers	www.ti.com/clocks	Industrial	www.ti.com/industrial
Interface	interface.ti.com	Medical	www.ti.com/medical
Logic	logic.ti.com	Security	www.ti.com/security
Power Mgmt	power.ti.com	Space, Avionics and Defense	www.ti.com/space-avionics-defense
Microcontrollers	microcontroller.ti.com	Video and Imaging	www.ti.com/video
RFID	www.ti-rfid.com		
OMAP Mobile Processors	www.ti.com/omap		
Wireless Connectivity	www.ti.com/wirelessconnectivity		
	TI E2E Community Home Page		e2e.ti.com

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265