Texas Instruments’ 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 over 1 billion mobile phones in the last 15 years and today powers the majority of all wireless mobile phones worldwide. TI OMAP technology is at the heart of nearly all 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, m-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™ Software for Pocket PC and Smartphone offer an advanced real-time system with a full feature set to power cost-efficient next-generation smart wireless devices. Microsoft Windows Mobile incorporates the same OS kernel as Windows CE.NET along with additional applications for the targeted device.

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. 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 has allowed TI to design solutions that get manufacturers to market quickly with optimized 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 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.

TI has worked closely with Microsoft to optimize and certify Windows Mobile software for the OMAP family of processors and will continue to support future OS versions. Furthermore, TI has collaborated with Microsoft to offer DSP hardware accelerated Windows Media in certain OMAP platforms.

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 Software Packages and Board Support Packages (BSP) for Microsoft Windows Mobile-based devices help manufacturers get to market faster on:
  - Microsoft Pocket PC and Pocket PC Phone Edition
  - Microsoft Smartphone
- Support for the latest TI wireless technologies including:
  - GSM/GPRS and EDGE
  - 802.11 WLAN and Bluetooth® co-existence – Hollywood™ mobile DTV solution
  - WCDMA and UMTS
- GPS for location-based services
- OMAP hardware DSP accelerated Windows Multimedia
- 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
For those manufacturers developing smartphones or wireless PDAs, and who would like to get started quickly with OMAP 2 processors without using a full reference design, TI provides BSPs that provide the core drivers and OEM adaptation layer (OAL) for the OMAP 2 processors and software development boards. In addition, hardware accelerators on OMAP 2 processors for Microsoft’s DirectShow™ and Direct3D™ Mobile speed the seamless execution of multimedia graphics and advanced 3D gaming graphics. The OMAP BSPs and their support for multimedia and 3D graphics have all been integrated and validated on TI’s reference hardware as well as Microsoft’s Windows CE Test Kit (CETK) and Logo Test Kit (LTK) to ensure quality and compatibility.

This level of software integration delivers enhanced product quality with a maximum of software reuse to reduce manufacturers’ development costs and shorten their time-to-market for new products. Rather than expending development resources on software system integration, manufacturers can concentrate on compelling and differentiated features which improve the competitiveness of products in the marketplace.
TI offers a complete reference design software package for wireless PDAs and Smartphones which supports the latest versions of the Microsoft Windows Mobile Software for Pocket PC Phone Edition or Smartphone using TI’s OMAP73x, OMAP850 and OMAPV1030 reference design platforms. With these reference design software packages, manufacturers are able to 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:

- Pocket PC or Smartphone Reference Software, optimized for the OMAP platform
- Advanced Power Management
- Drivers for all on-chip and most board peripherals
- Suite of flexible bootloader and flashing tools

Each OMAP73x, OMAP850 and OMAPV1030 reference 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

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 reference design OMAP platforms and development systems
- Microsoft Platform Builder for Windows CE.NET
- Hardware-assisted debug through TI XDS-class JTAG using eXDI for Microsoft Platform Builder
- Microsoft eMbedded Visual C++
- Virtio Virtual Platform Simulation
- TI’s Code Composer Studio™ 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.
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 developing 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.

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

TI’s independent 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 device using Microsoft Windows Mobile on the OMAP platform.

www.ti.com/omap
www.microsoft.com/windowsmobile
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, GPS and mobile digital TV using
TI’s DRP™ technology and 90 nanometer process technology. TI’s mobile
connectivity solutions easily integrate with TI’s cellular modem solutions,
OMAP™ processors and OMAP-Vox™ solutions so manufacturers can
get products to market efficiently and fast. TI is also looking to the future
by driving development of future mobile technologies such as Ultra
Wideband, FM radio and others.

**Bluetooth® Wireless Technology—BlueLink™ Solutions**

TI focuses on delivering Bluetooth technology for mobile devices. By
leveraging its innovative DRP technology, TI’s single-chip Bluetooth
wireless solutions integrate a RF and Bluetooth processor that is
optimized to mix with the various 2.5G and 3G communication standards.
TI’s single-chip Bluetooth solutions deliver high performance with low
power and lower system cost, enabling manufacturers to provide opti-
mized Bluetooth wireless personal area networking (WPAN) connectivity
to their mobile devices.
**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. Innovative performance levels, the industry’s lowest power and smallest size and interoperability across mobile standards bring embedded and battery-powered applications a new level of functionality and extended battery life. TI also offers support for Voice over WLAN (VoWLAN) technologies to deliver seamless voice and data connectivity between WLAN and cellular networks.

TI’s experience 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 throughput, range and responsiveness. With no antennae isolation requirements and providing for shared antenna designs, it is ideal for mobile phone designs.

**Mobile Digital TV–Hollywood™ Mobile DTV**

Mobile digital broadcast TV (DTV) combines the two best-selling consumer products in history—TVs and mobile phones. TV will drive demand for the next generation of wireless mobile phones because consumers want both communications and entertainment—all in one place and in one device. TI technology is driving mobile digital TV with Hollywood™ mobile broadcast solutions, the wireless industry’s first digital TV on a single piece of silicon, which captures broadcast signals and allows consumers to watch live TV programming on their handset. Together, a Hollywood single chip and an OMAP™ processor will bring you the same TV you watch at home—but on your cell phone.

**GPS–NaviLink™ Solution**

TI addresses assisted GPS (A-GPS) and stand-alone GPS with a highly integrated single-chip solution interfaces with TI’s wireless chipsets and delivers precision location capabilities to markets ranging from voice-centric handsets to high-end multimedia smart phones. TI’s GPS5300 NaviLink™ 4.0 single-chip solution for A-GPS applications is optimized for 3G mobile phones. Through DRP technology, TI is able to provide the smallest size and lowest cost A-GPS discrete solution with low power and high performance to mobile phone manufacturers.

For more information  
www.ti.com/windowsmobile