

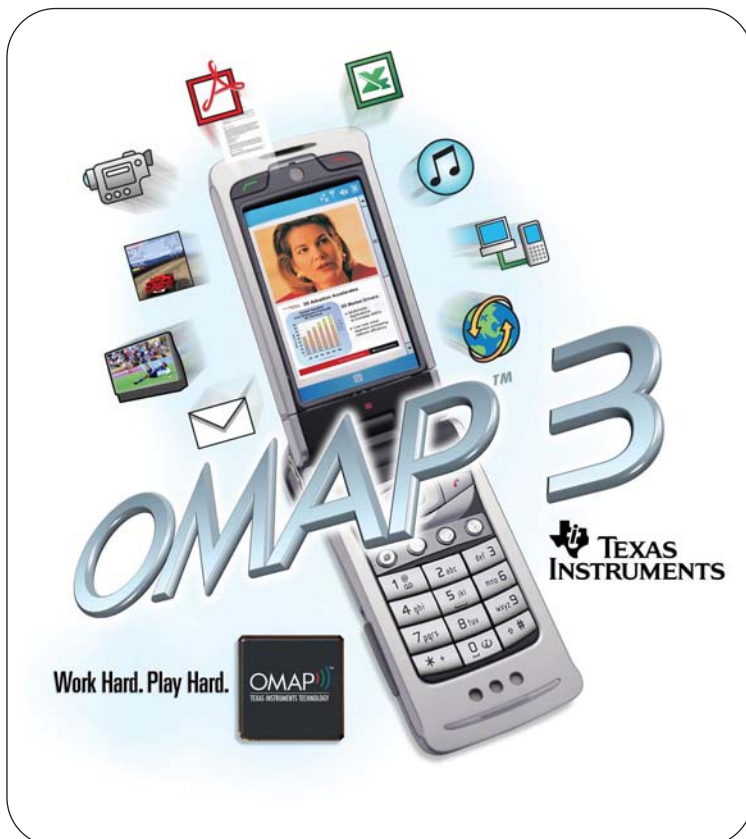
## OMAP3430 multimedia applications processor

*Revolutionizing entertainment and productivity in wireless handheld communications*

### Key features

- New OMAP™ 3 architecture combines mobile entertainment with high-performance productivity applications
- Industry's first applications processor with advanced Superscalar ARM® Cortex™-A8 RISC core enabling 3X gain in performance
- Industry's first applications processor designed in 65-nm CMOS process technology
- IVA™ 2+ (Image Video Audio) accelerator enables multi-standard encode/decode at DVD resolution
- Integrated image signal processor (ISP) for faster, higher-quality image capture, lower system cost and lower power
- Seamless connectivity to Hard Disk Drive (HDD) devices for mass storage
- Leverages SmartReflex™ technologies for advanced power reduction
- M-shield™ mobile security enhanced with ARM TrustZone™ support
- Software-compatible with OMAP™ 2 processors

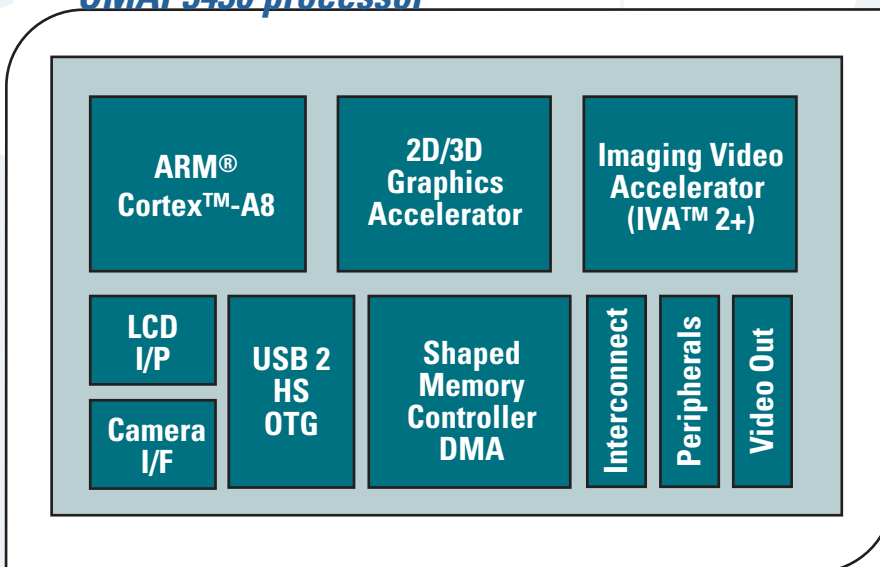
P R O D U C T B U L L E T I N



The new OMAP3430 multimedia applications processor from Texas Instruments (TI) introduces a new level of performance that enables laptop-like productivity and advanced entertainment in 3G handsets. As the first product in TI's OMAP™ 3 family of applications processors with the ARM Cortex-A8 superscalar microprocessor core, the OMAP3430 delivers up to 3X gain in performance over ARM11-based processors. The new processor leverages industry-leading technologies to provide mobile phone battery life together with the performance needed for laptop-comparable productivity software and an audio-video experience equivalent to that of consumer electronics devices.

The OMAP3430 is the industry's first applications processor to be designed in a 65-nanometer (nm) CMOS process technology, reflecting TI's commitment to providing advanced silicon technology that drives a revolution in mobile communications. The device operates at a higher frequency than previous generation OMAP processors, increasing its clock speed over OMAP 2, while lowering the core voltage and adding power reduction features to help prolong battery life. Multimedia applications benefit from faster, higher-quality image capture and processing for cameras, exceptional audio/video performance, enhanced support for external displays and high-speed connectivity interfaces. Extensive mobile security supports the increasingly important role of wireless handsets in e-commerce. Compatible with a wide range of modems, the OMAP3430 opens new areas for compelling new mobile applications that will revolutionize handheld communications in both work and play. The OMAP3430 device fully supports memory stacking via package-on-package technology, with a stackable 12 mm x 12 mm, 515-lead ball-grid array (BGA) package.

### **OMAP3430 processor**



*TI's OMAP3430 is the industry's first applications processor built with the advanced ARM Cortex-A8 RISC core. IVA™ 2+ acceleration complements the RISC for consumer electronics-quality imaging, video and audio.*

## *A new level of performance*

Building on two generations of successful OMAP technology, the OMAP3430 is the first processor in the industry to integrate the superscalar ARM Cortex-A8 core, the newest generation of ARM RISC processors. With features such as deeper pipelines, a dedicated level 2 cache, and execution of up to twice as many instructions per clock cycle, the new high-performance ARM processor provides the processing power required to support high quality productivity applications and faster user interfaces. Mobile workers will be able to more quickly access databases, work on spreadsheets and presentations, use e-mail, send instant messages, browse and download from the Web, attend videoconferences and play audio-video clips. Outstanding gaming capabilities will also be available, thanks to the ARM's integrated vector floating-point acceleration working along with the OMAP3430's dedicated 2D/3D graphics hardware accelerator.

In addition, the OMAP3430 integrates the advanced IVA 2+ acceleration with new support for critical coded functions. IVA 2+ a second-generation, power-optimized version of TI's imaging, video and audio accelerator used in TI's DaVinci™ technology provides up to 4x performance improvement in multimedia processing versus previous OMAP processors. The increased capabilities of the IVA2+ enable multi-standard (MPEG4, H.264, Windows Media Video, RealVideo, H.263 etc.) encode and decode at DVD resolutions. With the advanced multimedia capabilities of the OMAP3430, a multi-standard DVD-quality camcorder can be added to a phone for the first time. Additionally the IVA2+ enables advancements in video teleconferencing with capabilities of performing H.264-based video teleconferencing at greater than CIF resolutions.

## *Image capture, display and storage*

An integrated image signal processor offers a means for quality differentiation, PCB area savings, reduced BOM costs, lower system power and design flexibility. The on-chip camera image pipeline eliminates the need for external circuitry for image capture and processing, while the software image pipeline provides configurable quality for sharper, clearer pictures. Camera sensors up to 12 Mpixel in size can be accommodated by the OMAP3430 so that users experience higher quality images with less shot-to-shot delay. On-the-fly JPEG compression aids in throughput and storage, while power reduction features save battery drain in preview mode and support for serial and parallel sensors provide design flexibility.

The OMAP3430 supports high-quality outputs as well as inputs, enabling easy sharing of multimedia content. Composite and S-video outputs provide flexible connectivity options to extend to TV displays and projectors. For handheld displays, the OMAP3430 can support up to XGA resolution and 16 M colors. The device can also interface to Flatlink™ 3G-compliant serial and parallel displays for use in mobile handsets.

With the increased popularity of using mass storage devices for saving digital media, the OMAP3430 processor boasts fully compliant HDD interfaces for seamless connectivity to even the largest HDD devices. This enables the storage of hundreds of hours of video, thousands of hours of music and thousands of photographs, transforming the handset into a digital library. Additionally, the OMAP3430 includes high-speed USB 2.0 OTG support for faster file transfer of data on/off the handset.

### *Power conservation*

The OMAP3430 leverages the most advanced and effective power management techniques in the market. The chip makes exhaustive use of TI's SmartReflex™ power and performance management technologies, which include a broad range of intelligent and adaptive hardware and software techniques that dynamically control voltage, frequency and power based on device activity, modes of operation and temperature. SmartReflex technologies in OMAP3430 alleviate chip-level leakage power dissipation at 65 nm, allowing the device to have ultra-low active and standby current drain thereby saving critical battery power.

A companion device to the OMAP3430, the TWL4030 power management/audio codec, is designed specifically to maximize battery life and boost system performance in mobile phones. The highly integrated TWL4030 combines SmartReflex-compliant voltage regulators and converters, a high-fidelity audio/voice codec, class-AB/D audio amplifiers, high-speed USB 2.0 OTG transceiver, battery charger circuitry and much more into a single chip, significantly reducing board space and system cost while managing power consumption efficiently.

The TWL4030 is the optimized all-in-one audio and power manager to a host of OMAP processors including the OMAP2430. It is an integrated power management/audio codec device intended for use in portable mobile phone designs which derive

their power from batteries based on Lithium-Ion, Lithium-Ion Polymer or Cobalt Nickel Manganese chemistries. It combines TI's SmartReflex power and performance management technology-compliant voltage regulators and DC/DC converters, an audio/voice codec, class AB/D audio amplifiers, high-speed USB 2.0 OTG transceiver, battery charger circuitry and much more into a highly integrated single chip.



## Security

TI's M-Shield™ mobile security technology enables robust protection of premium copyrighted digital media content, secure protocol applications, and e-commerce applications such as ticketing, banking, brokering and shopping. Enhanced with ARM TrustZone™ support, the OMAP3430 security offering is based on open APIs and provides an environment for secure applications that deliver robust performance, interoperability, greater development speed and large economies of scale.



As the advanced hardware and software security framework for the OMAP3430 processor, M-Shield technology enables new value-added services and increased terminal security, allowing operators, content providers and manufacturers to secure sensitive assets and usage rights for protection against revenue loss. Features include secure flashing and booting so that only authorized software can be loaded on the handset, terminal identity protection that makes stolen phones useless, and network lock protection that prevents users from arbitrarily switching networks on the Web.

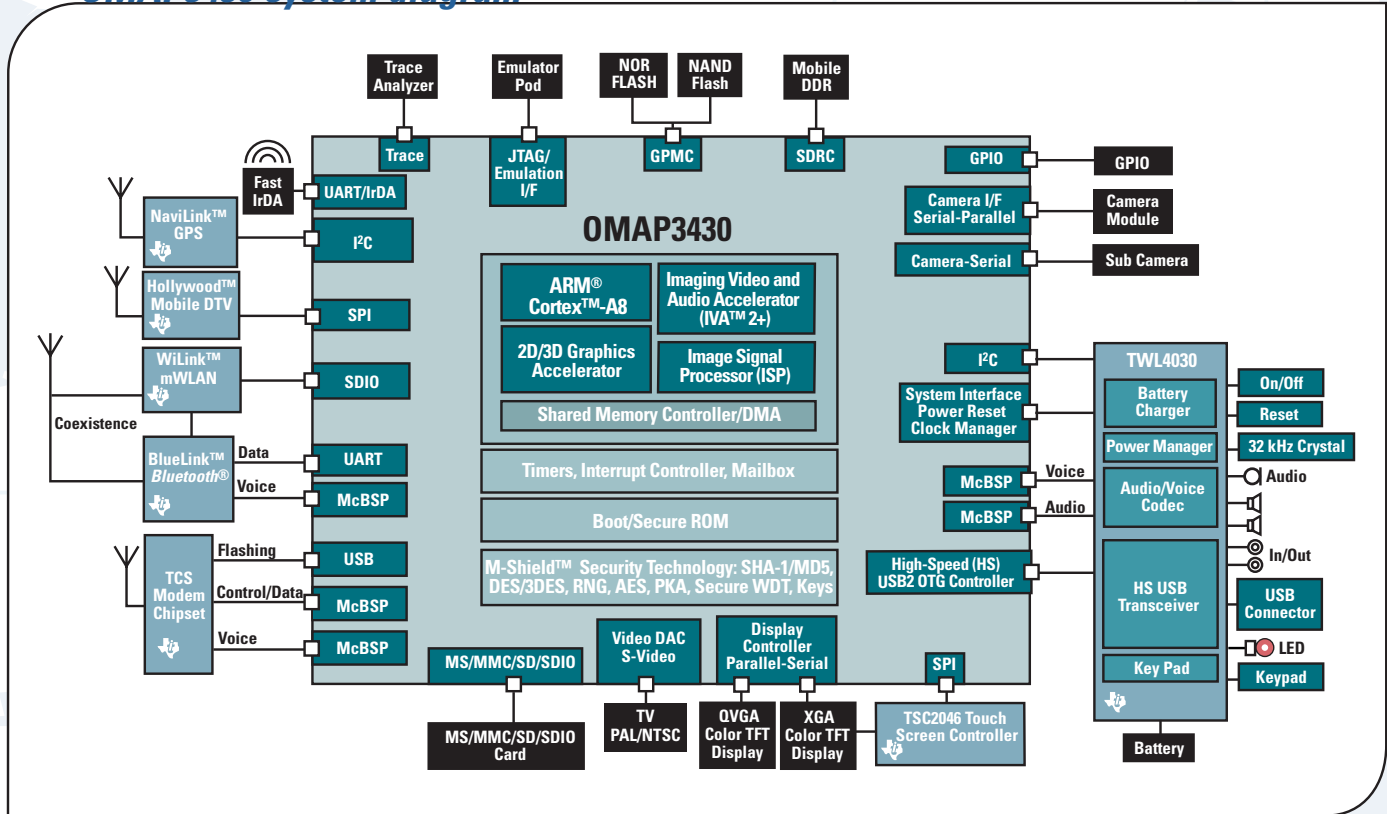
## HLOS

The OMAP3430 is designed to support all high-level operating system (HLOS) platforms, including Linux®, Microsoft® Windows Mobile®, and Symbian™ operating systems. HLOS platforms enable manufacturers and mobile operators to differentiate their products through an easy-to-use, customizable interface and robust, flexible architecture for applications and services.

TI was the first wireless system vendor to offer all major HLOS platforms on mobile phones. As a result, the great majority of smartphones running HLOS today are based on the OMAP platform. Information about the Independent OMAP Technology Centers (OTCs), TI's extensive network of specialized system integrators skilled in all aspects of HLOS porting and integration, is available at [www.ti.com/omapotcs](http://www.ti.com/omapotcs).



## OMAP3430 system diagram



*TI's OMAP3430 opens new areas for compelling new mobile applications that will revolutionize productivity and entertainment applications in handheld communications.*

### *In-depth development support*

The OMAP3430 applications processor is backed by TI's extensive development support, helping you get to market quickly with your product. Code compatibility with other OMAP processors makes it easy to port software, and a sophisticated development environment speeds programming for all on-chip processors. In addition, OMAP 3 processors are supported by the OMAP platform ecosystem, comprised of the OMAP Developers Network and OMAP Technology Centers, as well as systems integrators, development tool providers and leading content providers worldwide.

### *For more information*

To learn more about the OMAP3430, or about other OMAP applications processors from TI, visit [www.ti.com/omap](http://www.ti.com/omap). Find out how the OMAP3430 can open a revolutionary new world of compelling applications for your next product.

## Industry support

### Mobile Applications



TI's OMAP Developer Network delivers 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](http://www.ti.com/omapdevnet)

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
- Operating system support, testing and certification
- Custom software application and component development
- Device driver development
- Hardware design development and testing

[www.ti.com/omapotcs](http://www.ti.com/omapotcs)

With hardware and software from TI along with support and software from the OMAP Developer Network, OTCs and high-level OS platforms manufacturers have a complete solution for developing their mobile device on the OMAP3430 platform.

[www.ti.com/omap](http://www.ti.com/omap)



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