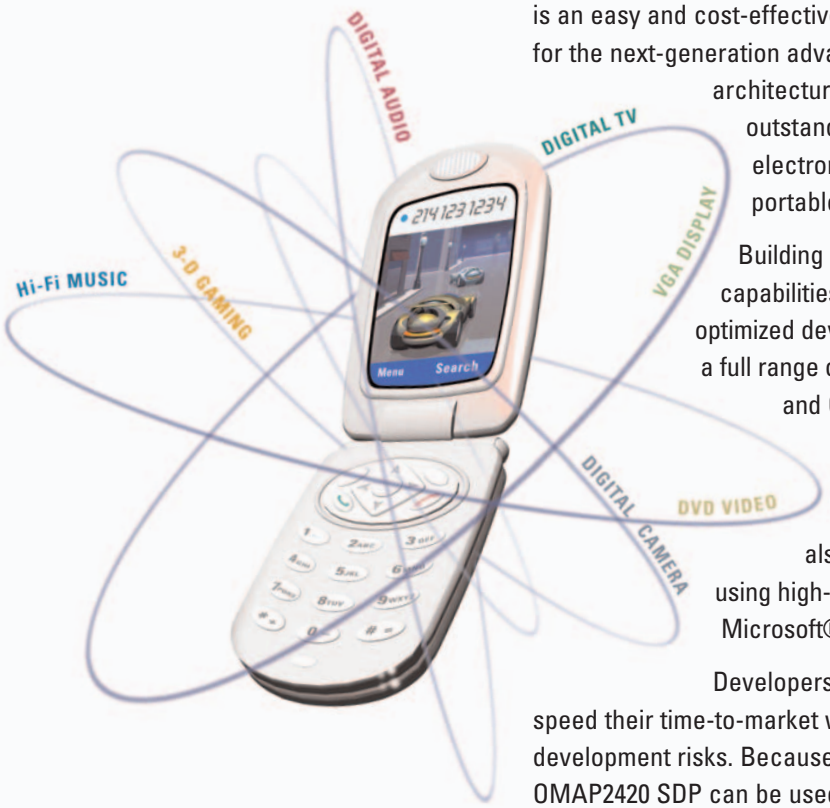
Software Development Platform for the OMAP2420 Processor

OMAP™
TEXAS INSTRUMENTS TECHNOLOGY

Key benefits:

- Cost-effective Software Development Platform (SDP) for the OMAP2420 processor
- Maximum visibility into performance to support optimization and debugging
- Flexible configuration to support customer's product requirements
- Proven second-generation architecture for SDP
- Complete set of software tools and support
- Software-only functional simulation for development (available separately)
- Support for high-level operating systems (HLOS)
- Faster time-to-market for developers

OVERVIEW

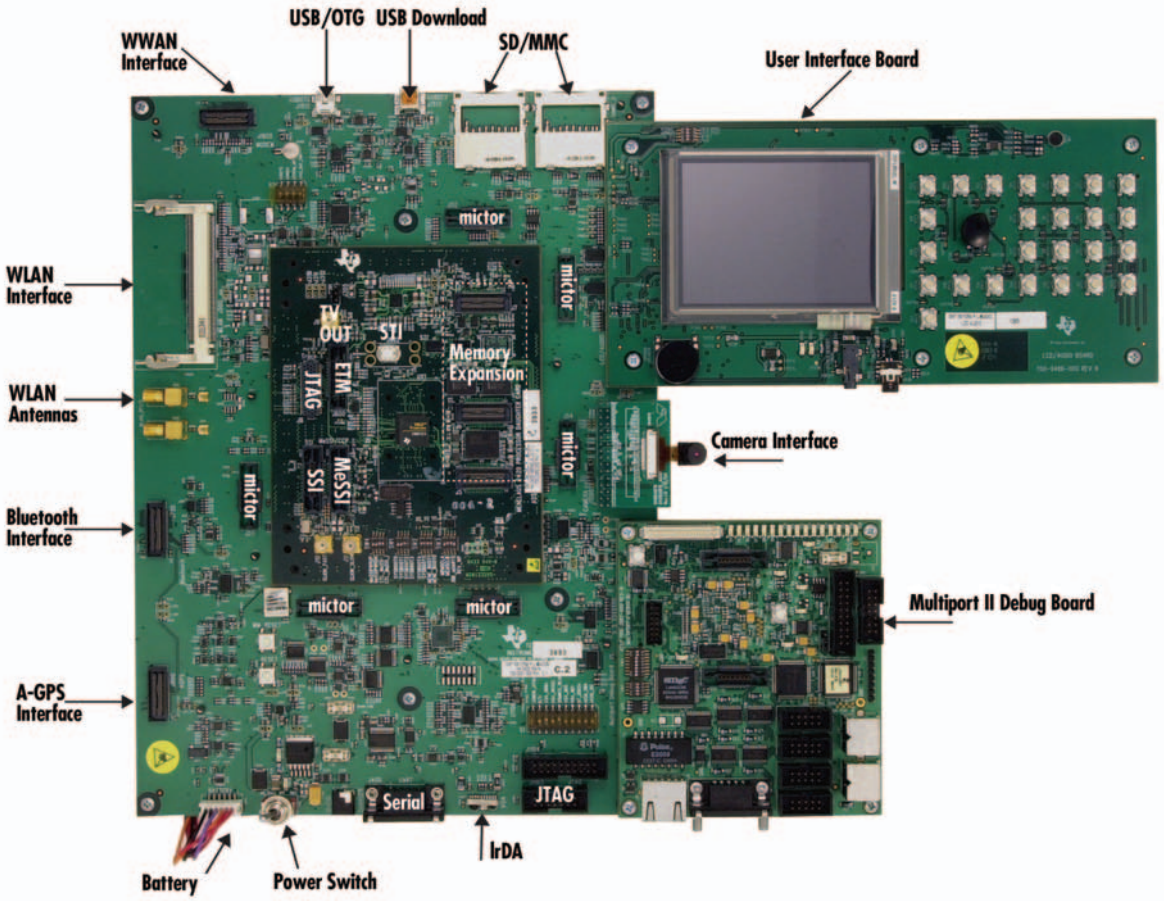


Texas Instruments' (TI's) OMAP2420 Software Development Platform (SDP) is an easy and cost-effective way to develop, evaluate and test software for the next-generation advanced mobile handsets based on the OMAP™ 2 architecture. The OMAP 2 architecture provides an outstanding foundation for merging high-end consumer electronics in "All-in-One" smartphones or converged portable multimedia devices.

Building software to leverage TI's OMAP platform's full capabilities requires a flexible design environment with optimized development tools. TI meets this need by providing a full range of software, services and support to developers and OEMs. The software support ranges from utilities to configure and prepare the board for development to full functional system simulation (available separately). Board support packages are also available separately to support development using high-level operating systems (HLOS) such as Linux®, Microsoft® Windows Mobile™ and Symbian™.

Developers and OEMs can use the OMAP2420 SDP to speed their time-to-market with differentiated products and lower their development risks. Because it is a production equivalent system, the OMAP2420 SDP can be used to deliver applications such as 4+ megapixel cameras, DVD quality video, high-end gaming console functionality, HiFi music with 3D sound effects, digital TV, high-speed wireless connectivity and more. It provides flexibility throughout the software development and debug process by offering visibility on all components and the ability to develop all necessary peripheral drivers. Additional plug-ins for mobile connectivity capabilities such as *Bluetooth*® wireless technology or wireless LAN (WLAN) can be added and debugged onboard.

OMAP2420 SDP



Key benefits:

- Leverages the modular and multi-engine OMAP 2 architecture
- Supports development on and evaluation of the OMAP2420 processor
- Main board with daughter cards architecture for easy customization and expansion
- Defined interfaces for assisted-GPS (A-GPS), WLAN, *Bluetooth* wireless technology, camera and others
- Easy access to interfaces and signals for easy monitoring and debugging

Key attributes:

- ARM1136 at 330 MHz
- TMS320C55x™ DSP at 220 MHz
- 2D/3D hardware MBX/VGP accelerators, up to 2 million polygons/sec
- Still pictures > 4 Mpixels
- Full motion video encoding or decoding at rates up to VGA at 30 frames per second
- 5-Mbit internal SRAM supporting a VGA display
- Video out supporting an external TV display
- Integrated memory controllers supporting Mobile DDR memories
- Complete peripheral set
- Full, built-in hardware security platform
- Supports all major air interface standards and operating systems (OS)

OMAP2420 Software Development Platform Kit

- OMAP2420 main board
- OMAP2420 processor daughter card
- Multi-port Debug II
- User interface
- Omnivision OV9640 camera
- Power supply (adapters for the US, UK, Central Europe)
- Four RS-232 cables
- USB cable
- Stylus
- Software tools (diagnostics and tools required to test and operate the hardware)

OMAP2420 optional interfaces

- *Bluetooth* wireless technology
- A-GPS
- WLAN
- Modem (GSM/GPRS)
- High-speed USB OTG via memory module interface

OMAP2420 daughter card

Memory

- 133-MHz, 512-Mb, 32-bit DDR
- 512-Mb, 16-bit NAND
- 512-Mb NOR
- Support for M-Systems disk-on-chip
- Optional memory interface modules

ETM and STI support

TWL92230 (OMAP24xx companion power management IC)

OMAP2420 main board

IrDA

Serial interface

JTAG

2 – SD/MMC

TSC2101 codec/touchscreen controller

Camera

- 1.3 to 4 Mpixel

Diagnostic Mictor connectors

USB

- On-The-Go (OTG)
- USB Host (Download)

OMAP2420 multi-port debug II

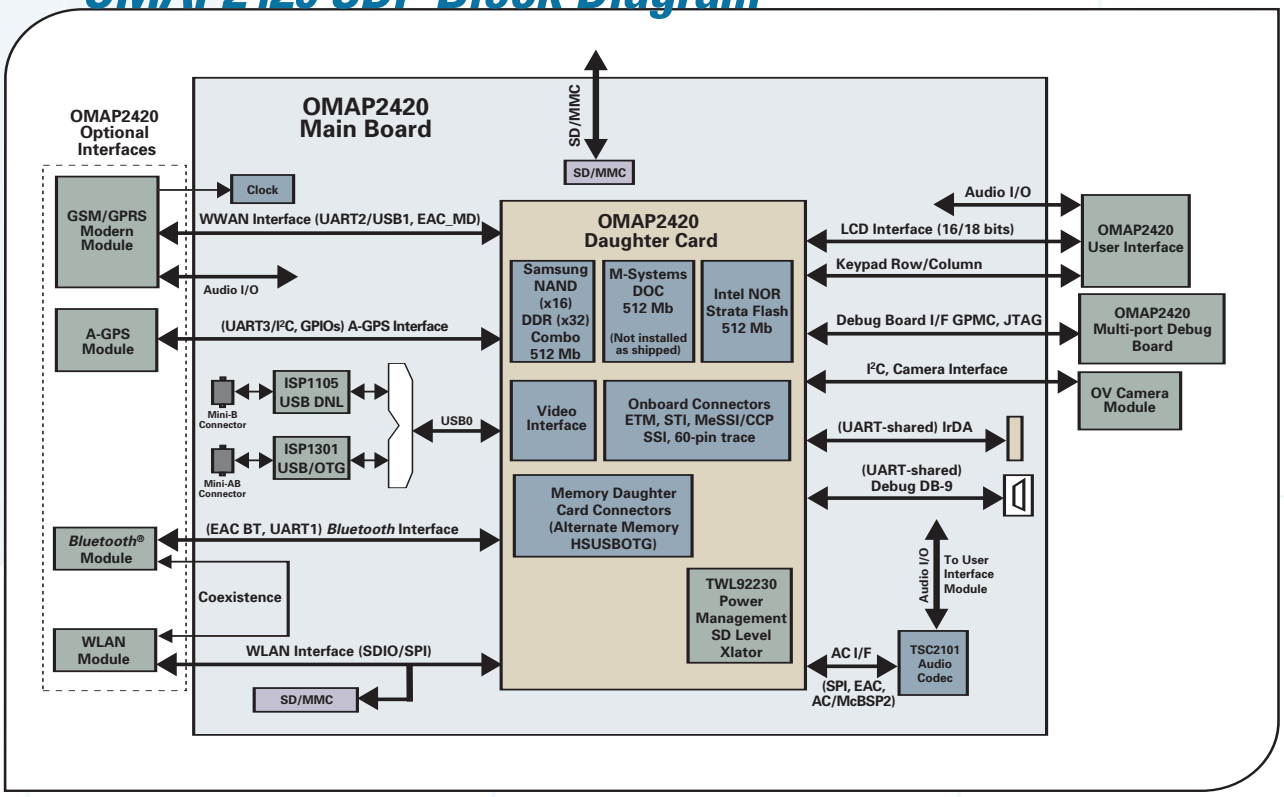
- 10-Mbps Ethernet
- 5 serial ports
- Dual PS/2 interfaces
- JTAG/multi-ice
- LED
- Eight GPIOs

OMAP2420 user interface

User interface

- QVGA LCD display
- Touchscreen
- Smartphone keypad
- Speaker, microphone
- Mono headset connector jack
- Stereo headphone connector jack

OMAP2420 SDP Block Diagram



Software and tools

TI has multiple tools partners delivering a wide range of development tools for the OMAP2420 SDP. Some of these tools partners are shown in the list below.
See www.ti.com/wireless for more information.

HLOS tools

- Symbian OS™
  - OMAP2420 CCS – Texas Instruments
  - CodeWarrior™ OEM v3.0 – Metrowerks™
  - ARM RealView™ V2.2 – ARM Ltd
  - Lauterbach Trace 32 Source Level Debugger – Lauterbach
- Linux®
  - GNU based tools – OSF
  - Lauterbach Trace 32 Source Level Debugger – Lauterbach
  - For more information see http://linux.omap.com
- Microsoft® Windows Mobile™
  - Embedded Visual C++ – Microsoft
  - Platform Builder – OEM – Microsoft
- DSP tools
  - OMAP2420 CCS – Texas Instruments
  - Lauterbach Trace 32 C55 Debugger – Lauterbach

Simulation tools

TI has worked with Virtio, Inc., to create virtual, high-performance software simulation of the TI OMAP2420 SDP. This virtual platform (VP) powers dramatic gains in developer productivity by allowing a software developer to use their familiar development environment while creating applications, middleware, operating system baseports and drivers. For example, the VP integrates with software developer's development tools of choice including Microsoft´s Platform Builder and eMbedded Visual Tools, Metrowerks CodeWarrior, ARM® Development Suite (ADS) and more. Using the VP for the OMAP2420 processor and OMAP2420 SDP makes it possible for a development organization to start development quickly, to enable a large number of software developers and then to optimize and debug the software at full speed.

For more information see www.virtio.com

Documentation

- Schematics
- Quick Start Guide
- User's Guide

The OMAP2420 software development board is available without a modem.

For more information, please contact a TI sales representative or OMAP Developer Network manager.

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