

Product Overview

Virtio and Texas Instruments have created the VPOM-1510 Virtual Platform. This virtual platform is a high performance software emulator of the Texas Instruments Innovator™ Kit for OMAP™ Platform. With this fast full-function software emulation, software developers can start developing and integrating their software. VPOM-1510 powers dramatic gains in developer productivity by integrating with the software developer's preferred development environment, delivering a complete desktop development environment for application, middleware, operating system and driver development.

VPOM-1510 models all the components listed as well as the entire user interface from device interface to touch-screen, stylus and terminals. The platform integrates with the most important software development tools available for the OMAP architecture.

Virtio offers two product packages for VPOM-1510: a standard Virtual Platform (VP) and a Platform Development Kit (PDK). With the VP a developer can preset hardware configurations to develop and test new software configurations to boot operating systems, run

applications or develop low-level drivers. The PDK offers the same functionality as the VP, with the added ability to customize platform hardware by using the authoring tools included with the PDK license. In addition, the VPOM-1510 PDK provides a customizable user interface and graphic skins for early evaluation of product usability.

Since VPs are software, they can easily be distributed electronically. Virtio licensing allows the user to send evaluation copies of their platform to colleagues and customers.

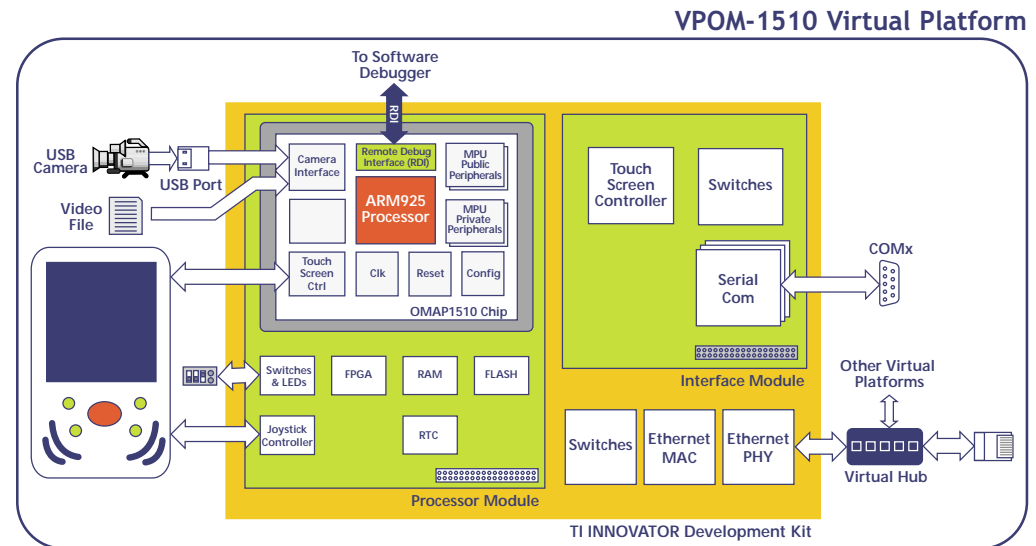
Benefits

- Allows dramatic gains in software developer productivity through concurrent development and integration
- Cost effective development target available on your desktop
- Provides you with an integrated development environment to maximize productivity within existing flow
- Reclaims lost integration time due to physical prototype being unavailable to developers
- Simplifies extended team collaboration via electronic distribution

Capabilities

- Runs actual TI Innovator Kit for the OMAP1510 Platform targeted binaries
- Interfaces to RDI compatible debuggers (including Metrowerks CodeWarrior™ for ARM and ARM® Developer Suite (ADS))
- Integrates with software development tools of choice: including Microsoft's Platform Builder and eMbedded Visual Tools, ADS, Metrowerks CodeWarrior, and more
- Provides high level of system visibility and control, through breakpointing and single-stepping inside peripheral hardware models

- Includes real-world connections such as serial, network and video streaming
- Allows camera application development and test through a USB camera connected to the host computer and from a video file
- Provides high level of system visibility by viewing of system registers and variables inside peripheral hardware models
- Features photo realistic Innovator device skin with emulated touch screen
- Customize the VPOM-1510 Virtual Platform with custom peripherals and skins using the Virtio PDK



Virtual Components

- **Innovator Processor Module:**
 - Real-time clock (RV5C387A)
 - FPGA
- **OMAP1510 System-On-Chip:**
 - TI925T ARM9TDMI processor
 - Ultra low power device (ULPD)
 - DPLL (3)
 - Clock manager
 - MPU peripherals (Interrupt controller (2), LCD controller, Watchdog, DMA, OS timer (3), MPU interface (MPUI), IDCode, DSP MMU*, Memory Interface traffic controller*, MPU TI peripheral bus (TIPB) bridges*, LOCAL BUS*, LOCAL BUS MMU*)
 - MPU public peripherals (UART (3), UART periph. bus switches, RTC, I2C, Camera interface, Timer (TIM32K), Pulse width timer (PWT), Pulse width level (PWL), MPU I/O, Mailbox, Frame adjustment counter (FAC)*, Multi-channel buffered serial port (McBSP)*, MMC/SD interface*, LED pulse generator, Microwire interface*, USB controller (Host & Client)*)
 - Shared peripherals (GPIO, MCSI (2)*, McBSP (2)*)

- **Innovator Interface Module:**
 - Touch screen controller (ADS7846)
 - RS232 Transceiver (2)
 - Switches
 - **Innovator Breakout Board**
 - Ethernet controller (LAN91C96)
 - Switches
- * *Limited functional model*

Architecture

The VPOM-1510 Virtual Platform is a software simulation of TI Innovator Development Kit for OMAP1510. VPOM-1510 is designed for the development of embedded applications and hardware with the TI OMAP1510 applications processor. The diagram shows the specific components supported with this platform.

Performance

The exceptional performance of the VPOM-1510 Virtual Platform provides for executing application software on top of the virtual hardware at speeds sufficient for developers to boot RTOS's like Microsoft® Windows® CE, Symbian OS™ and embedded Linux® in seconds – see www.virtio.com/vpom-1510 for up-to-date specific boot and run times.

Configurations Available from Virtio

The software package listed below is included with this virtual platform:

- TI Boot Loader

The following are available as separate downloadable packages:

- Microsoft® Windows® CE .NET*
- Symbian OS™ (7.0)

* *Includes a free 30 day evaluation image*

Proven Configurations

The configurations below have been tested to work with the VPOM-1510 Virtual Platform:

- MontaVista™ Linux®
- Nucleus® OS
- Nokia Series 60
- PSI iBoot™

An updated list is available at www.virtio.com/vpom-1510

Platforms Supported

Windows® NT 4.0/2000/XP Professional

System Requirements

- Pentium 750Mhz
- 128Mb RAM
- 65Mb of free HD space

Summary

The VPOM-1510 Virtual Platform enables concurrent software development and early hardware/ software integration of embedded system designs using the TI OMAP1510 Platform.

This fast software model has advantages over the hardware development board in installation, configuration and use, unsurpassed observability and controllability and easy electronic distribution. VPOM-1510 combined with the developer's preferred development environment delivers a complete solution for software developers to maximize productivity. This gives each developer an environment to concurrently develop and integrate their software with the target hardware, testing the actual binaries used on the real hardware when it becomes available. By equipping a software development team with a Virtio PDK and VPs the team can create complete platform models to efficiently develop software – even before hardware exists.