TI's e-book development platform

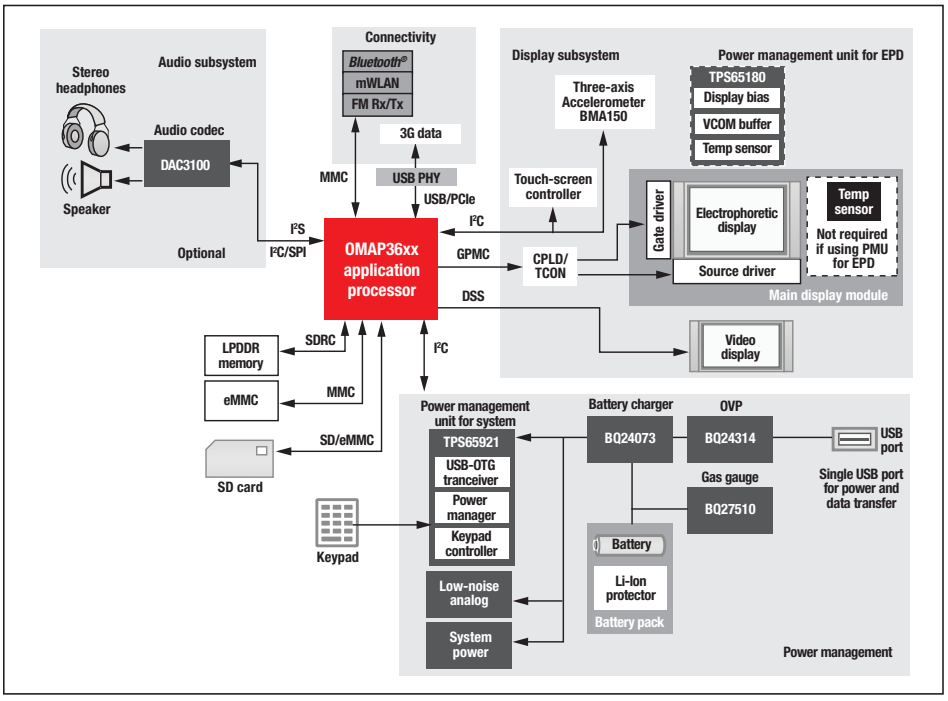
Specially developed for e-readers, TI's development platform is more than a reference design – being hardware- and software-optimized allows our customers to reduce their development time for improved time to market.

Product Bulletin

Overview

The OMAP™ 3 e-book development platform from TI helps manufacturers and developers quickly launch new, innovative e-book readers. The comprehensive platform can accommodate a sleek 6-inch or larger electrophoretic display and includes TI's new OMAP3621 applications processor, WiLink™ 6.0 WLAN/*Bluetooth*®/FM combination connectivity solution and the new TPS6518x electronic paper display (EPD) power management IC, along with other TI power management and analog solutions and 3G modem connectivity support.

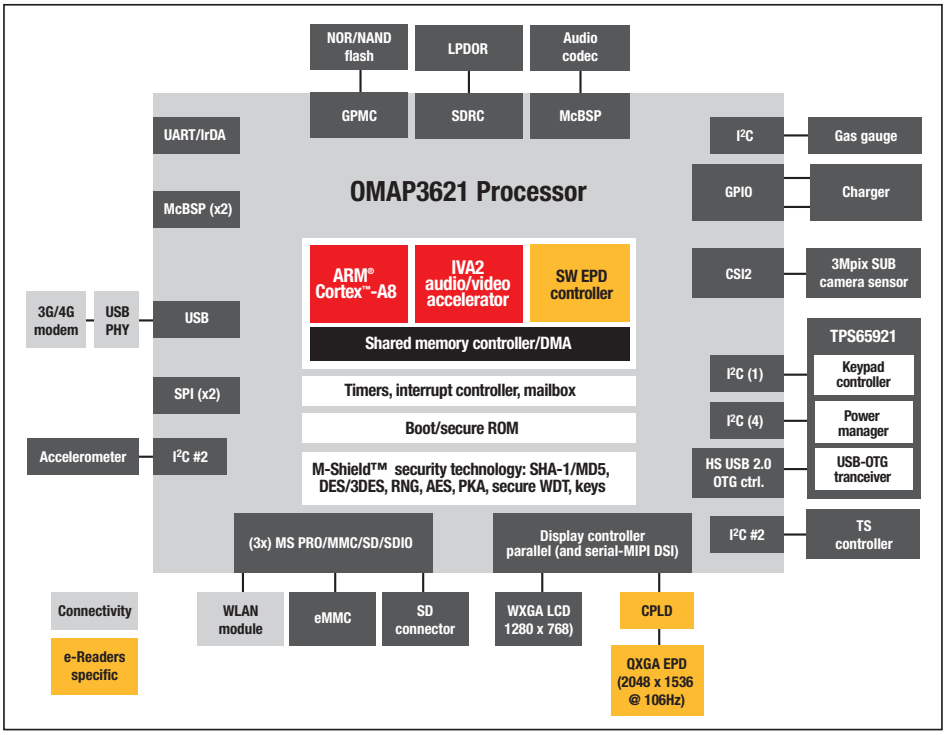
TI's e-book development platform offers a flexible, programmable architecture that allows designers to develop innovative, differentiated e-book readers with features to meet consumers' evolving needs. TI's OMAP e-book solution can support multiple electronic display technologies, including electrophoretic, electromechanical, electrowetting and thin-film transistor liquid crystal displays, giving designers maximum flexibility in designing the right e-book reader solution for their market.



Key features:

- Support for multitasking (reading, listening to music and downloading a book over WLAN, for example).
- Dual display support (two EPDs or EPD and LCD).
- ARM Cortex-A8 CPU integrated with TMS320C64x+™ DSP technology for improved EPD driving.
- The OMAP3621 processor delivers an optimized peripheral set in a 12-mm x 12-mm, 0.5-mm ball-pitch package with low-power DDR memory support. The solution's smaller footprint enables sleek consumer designs while also delivering power and performance metrics that will change how consumers use e-books in the future.
- New single-chip TPS6518x electronic paper display power management IC, with integrated display panel temperature sensor and the unique ability to automate the setting of the VCOM voltage through the I²C interface.
- Allows more than 15,000 page turns on a 6-inch E Ink screen using a slim 1500-mAh battery.
- TI's WiLink™ 6.0 connectivity solution runs in a power-conscious environment using a low-power scanning architecture that continuously scans for available WLAN access points without impacting battery life.
- TI's system-level power optimization extends idle times, allowing an e-book device to last nearly six weeks without the battery needing to be charged.
- Extra features like power-path allows users to use a device with a dead battery instantly when it is plugged into a wall or car charger.

Part	Features
BQ24073	• Fully compliant USB charger: selectable 100- and 500-mA maximum input current; 100-mA maximum current limit ensures compliance to USB-IF standard. • Input-based dynamic power management (V IN-DPM) for protection against poor USB sources. • Instant power-on dedicated hub/host/Chinese/CEA-936-A charger insertion. Integrated dynamic power-path management (DPPM) feature allows the adapter to simultaneously power the system and charge the battery. • Power supplement mode allows the battery to supplement the AC input current. • Autonomous power-source selection (AC adapter or BAT). • Full hardware-controlled charge and pre-charge operations, with hardware-selectable charge (100-mA to 1.5-A) and pre-charge (10-mA to 150-mA) currents. • Thermal regulation for charge control. • Safety timer for charge termination.
TPS6518x	• 3.0-V to 6.0-V input voltage range. • Positive-charge pump driver VDDH. • Negative-charge pump driver VEE. • Two adjustable LDOs. • Adjustable VCOM driver. • Integrated power switch. • Integrated temp sensor.
TPS65921	• 3x step-down converters, 3x external linear LDOs for clocks and peripherals tailored to support OMAP™ devices with dedicated system boot sequences. • Supports SmartReflex™ technology Class-3 and dynamic voltage and frequency scaling (DVFS) management for core and I/O step-down converters. • USB 2.0 On-the-Go (OTG)-compliant HS transceiver. • USB power supply (5-V charge pump for VBUS @ 100 mA). • Real-time clock (RTC) and retention modules. • Keypad interface (up to 8 x 8).
TLV320AIC3111	• Stereo audio DAC with 95-dB SNR, mono audio ADC with 91-dB SNR. • Stereo 1-W Class-D BTL 8-Ω speaker driver with direct battery connection. • Microphone with bias, preamp PGA and AGC. • Built-in digital audio processing blocks with user-programmable bi-quad, FIR filters and DRC. • Digital mixing capability: programmable digital audio processor for bass boost/treble/EQ with up to five bi-quads.



▲ *High-level OMAP3621 processor block diagram*

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