

Sitara AM335x ARM Cortex-A8 Microprocessors Expand Design Capabilities



Imagine upgrading from ARM9-based product designs to add 3D interactive touch screens, higher resolution displays, faster performance and multiple, flexible integrated connectivity options for a more robust offering — all while keeping design costs and power levels low. Visualize taking these new products to market in six months with an inexpensive development platform and free, complete software development kit. Texas Instruments makes this design vision a reality with its new [Sitara-AM335x ARM-Cortex-A8 microprocessors](#) [1].

“The new Sitara AM335x ARM Cortex-A8 microprocessors from TI allow designers to explore infinite possibilities for upgrading their systems without increasing cost or power consumption,” said Dipti Vachani, general manager, Sitara ARM microprocessors, TI. “Moreover, TI gives you all the tools, free software and 24/7 support to design. That's true design ease — paramount to every TI embedded processor offering.”

Starting at \$5 and consuming as low as 7 mW of power, the AM335x ARM Cortex-A8 microprocessors provide low power consumption, prolonging battery life and reducing heat emissions, to enable portable, pocket-sized, fan-less applications. Offering developers high performance with advanced 3D graphics capabilities, touch screen controller and sophisticated peripherals all on a single chip reduces printed circuit board (PCB) space, complexity and bill of materials (BOM) costs by as much as \$40 for smaller sized applications such as portable navigation, handheld gaming and educational devices, home and building automation and more.

“TI's feature-packed AM335x ARM microprocessors and the associated software and hardware development boards provide embedded system designers with low-cost, low-power and easy-to-use solutions,” said Jim McGregor, chief technology

strategist, In-Stat. "Total system solutions like these allow embedded designers to take advantage of the huge investments in ARM core technology and open source software, such as the Android operating system, to ensure a roadmap for future investments in silicon and software."

Begin development with an \$89 open source development board or complete evaluation module

The AM335x ARM Cortex-A8 microprocessors offer multiple robust development tools. Designers can quickly and easily begin development with the \$89 [BeagleBone](#) [2], the newest, best-value open source hardware platform from the [BeagleBoard.org](#) [2] community. Designers can also use the full-featured [AM335x evaluation module](#) [3] (EVM) with a seven-inch LCD touch screen and access to all peripherals for \$995. The EVM includes TI's WL1271 single-chip 802.11b/g/n + *Bluetooth*® technology in a broadly available [module](#) [4] and is the first widely available platform to enable Wi-Fi Direct™. The combination of the AM335x ARM Cortex-A8 microprocessors and proven WL1271 solution provides a very low-cost, high-performance wireless connectivity platform.

Software supports popular OSes and enables microcontroller-like programming

Accompanying both the BeagleBone and full-featured EVM are a host of software solutions:

- TI EZ software development kit, allowing demo in minutes and development in less than an hour
- Support for Linux, Android and Windows Embedded Compact 7 operating systems
- Compatible security solutions and real-time operating systems (RTOSes) available from third parties, enabling further product customization and simplifying development
- [StarterWare](#) [5] software stack allowing developers to program these microprocessors like a microcontroller, without requiring an operating system

Together these software offerings permit developers to scale the ARM platform, from MCUs to ARM9 devices, ARM Cortex-A8 devices, ARM + DSP devices, as well as video processors and DSPs, saving time and cost.

Sitara AM335x ARM Cortex-A8 microprocessors features and benefits:

Feature

Customer benefit

ARM Cortex-A8 with NEON at up to 720 MHz

Offers robust performance and operating system (OS) to enable application processing, network connectivity (UI) and system control.

Sitara AM335x ARM Cortex-A8 Microprocessors Expand Design Capabilities

Published on Electronic Component News (<http://www.ecnmag.com>)

Flexible power management options, such as TI's [TPS65910](#) [6]

Helps keep power levels as low as 7 mW in standby active mode and enables various portable and fan-

UI and 3D capabilities

- Touch screen controller
- 3D graphics accelerator (20 million triangles per second) and display controller
- Allows development of touch screen interface
- Enables products with rich 3D graphical user interface and multiple displays

Integration of flexible peripherals:

Reduces system complexity, power and BOM cost:

- CAN
- Gigabit Ethernet two-port switch
- Dual USB + PHYs
- LPDDR1/DDR2/DDR3
- PRU
- ADC
- Cryptographic acceleration
- Connection to sensors, actuators and controllers
- Fast network connectivity enabling rapid data transfer
- Host and device support allows flexibility to integrate existing technology while embedded PHYs meet specific needs
- Flexible memory offerings meet specific needs for programming, system responsiveness and power management when desired
- Allows connectivity to [analog](#) [7] sensors and actuators
- Enables hardware acceleration of data protection to protect sensitive information

Pricing and availability

Developers can begin evaluation of the AM335x ARM Cortex-A8 microprocessors with the \$89 [BeagleBone](#) [2] from [BeagleBoard.org](#) [2]. They can also develop on TI's full-featured EVM ([TMDXEVM3558](#) [3]) for \$995, available December 2011. TI's Linux [EZ SDK](#) [8] and support for Android 2.2 are available for FREE download from [ti.com](#) [8] December 2011 with Windows Embedded Compact 7 support coming in 1Q2012. Support for QNX, Mentor and Wind River third-party, RTOSes will be available starting this quarter. These devices ([XAM3358ZCE](#) [9] and [XAM3359ZCZ](#) [10]) are sampling today. Prices for the AM335x ARM Cortex-A8 microprocessors begin at \$4.99 (in 100,000 unit quantities). Application-specific reference designs based on the AM335x ARM Cortex-A8 microprocessors will be available later this year and into 2012.

Learn more at [www.ti.com](#) [11].

Source URL (retrieved on 02/01/2015 - 8:56pm):

<http://www.ecnmag.com/products/2011/10/sitara-am335x-arm-cortex-a8-microprocessors-expand-design-capabilities>

Links:

[1] <http://www.ti.com/dsp-armmpu-am335x-pr-lp>

[2] <http://www.beagleboard.org/>

[3] <http://www.ti.com/dsp-armmpu-am335x-pr-evm>

[4] <http://www.ti.com/wl1271typetn>

[5] <http://newscenter.ti.com/Blogs/newsroom/archive/2011/10/27/operating-system-optional-free-ti-starterware-enables-quick-and-simple-programming-of-ti-embedded-processors-845769.aspx>

[6] <http://www.ti.com/product/tps65910>

[7] <http://www.ti.com/analog>

[8] <http://www.ti.com/dsp-armmpu-am335x-pr-sw>

[9] <http://www.ti.com/dsp-armmpu-am335x-pr-pf1>

[10] <http://www.ti.com/dsp-armmpu-am335x-pr-pf2>

[11] <http://www.ti.com/>