

TI Sitara™ AM335x Arm^(R) Cortex™-A8 Microprocessors



Key Features and Benefits

- Feature-rich Arm Cortex-A8-based solution with performance up to 1 GHz to design robust, lower-power solutions
- Fully integrated solution including key peripherals such as CAN, 2-port Gigabit Ethernet switch, USB+PHY, acceleration and LPDDR1/DDR2/DDR3 reduces BOM costs
- Optional support for both EtherCAT® and PROFIBUS® industrial interfaces
- Programmable Real-time Unit (PRU) adapts to new application-specific standards with user configurable I/Os
- Flexible power management options to minimize active power while enabling standby power as low as 7 mW, prolonging battery life and enabling portable products
- System-on-a-chip with display subsystem including touch screen controller, 3D graphics accelerator and display controller
- Wireless connectivity support pre-integrated including Wi-Fi™, Bluetooth® and other technologies, including support for Wi-Fi Direct™
- Processor SDK eases design by providing out-of-box demos and benchmarks
- Broad software support for Linux, Android™ and Windows® Embedded Compact 7, in addition to a variety of third-party RTOS offerings, providing design flexibility

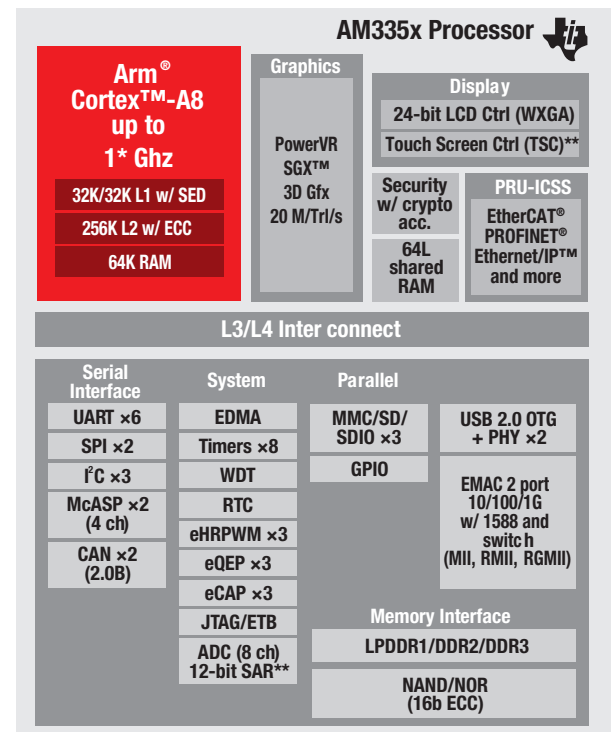
Overview

Texas Instruments (TI) continues to optimize and expand its portfolio of industry-leading Arm microprocessors (MPUs) with seven new AM335x devices that deliver new levels of integration at very low price points. The AM335x Arm MPUs offer the highest DMIPs per dollar while delivering optional 3D graphics acceleration and key peripherals. The combination of graphics and connectivity support makes this solution ideal for portable navigation systems, handheld gaming devices, education and home/building automation solutions. The AM335x Arm MPU includes support for a robust set of software solutions. Software development kits are available for free download on ti.com for Linux and TI RTOS. Leveraging these low-cost and flexible development tools, customers can easily migrate from a microcontroller (MCU)- or Arm9-based solution or cost optimize their current Arm Cortex-A8 design.

Scalability

With a broad Arm MPU portfolio of more than 120 product options available today, customers can migrate within TI's Arm MPU product line from earlier software-compatible AM1x Arm9™-based devices to the Arm Cortex™-A8 line of devices. For software development, AM335x processors leverage the Processor SDK, a software development kit that allows for

easier code reuse and migration among Sitara Arm processors. Customers can also take advantage of design similarities to migrate to software-compatible DSP+Arm devices or to video processors. This easy scalability, enabled by software compatibility within TI's Arm MPU products and across other TI processor generations, can quickly expand market opportunities for new end products and reduce development time.



* 720 MHz only available on 15x15 package. 13x13 is planned for 500 MHz.

** Use of TSC will limit available ADC channels
SED: Single error detection/parity

▲ AM335x block diagram

Get started today

Hardware, software and support to make development easy

- Evaluate the processor features on the included LCD touch screen within minutes of opening the EVM box
- Linux™ and TI RTOS support
- Processor SDK
- Responsive design support and active online TI E2E community: e2e.ti.com.

The AM335x Cortex-A8 Arm MPUs are sampling today, available at www.ti.com/am335x. Development is easy and can begin in minutes with TI's all-inclusive



▲ AM335x Starter Kit

development kit, which includes a 7" LCD touch screen and Wi-Fi™. Designers can begin development today with the \$995 USD **TMDXEVM3358** general-purpose Evaluation Module or the \$206 USD **TMDSSK3358**

Starter Kit. BeagleBone, a low-cost community development board is also available at a price point of U.S. \$89 to enable easy I/O expansion and provide fast development with a single USB cable. More information is available at beagleboard.org/bone.

Community support

TI's online community at e2e.ti.com supports AM335x Arm Cortex-A8 MPUs. Ask questions, share knowledge, explore ideas, and help solve problems with fellow engineers. Developers utilizing the BeagleBone can get support from a large beagleboard.org open-source community.

Pin-to-Pin Compatible	Arm Cortex-A8 (MHz)		Graphics	CAN & PRU-ICSS		Package	Availability	Software Compatible
	AM3359	800	3D graphics	CAN	Dual-Core PRU All Protocols	15x15 / 0.8mm	In Production	
	AM3358	600/800/1000	3D graphics	CAN	Dual-Core PRU Standard Protocols	15x15 / 0.8mm 13x13 / 0.65mm*	In Production	
	AM3357	300/600/800		CAN	Dual-Core PRU All Protocols	15x15 / 0.8mm	In Production	
	AM3356	300/600/800		CAN	Dual-Core PRU Standard Protocols	15x15 / 0.8mm 13x13 / .65mm*	In Production	
	AM3354	600/800/1000	3D graphics	CAN		15x15 / 0.8mm 13x13 / 0.65mm*	In Production	
	AM3352	300/600/800/1000		CAN		15x15 / 0.8mm 13x13 / 0.65mm*	In Production	
	AM3351	300/600				13x13 / 0.65mm*	In Production	

- ✓ Standard protocols for AM335x include Profibus, Profinet RT/IRT, Ethernet/IP, SERCOS III, and more
- ✓ All protocols for AM335x include Standard protocols plus EtherCAT and POWERLINK

Package	15x15mm (ZCZ)	*13x13mm (ZCE)
Arm speed	Up to 1000 MHz	Up to 600 MHz
USB 2.0	x2	x1
EMAC	2-port switch	-Single port

¹ Top protocols supported are:
EtherCAT®, PROFIBUS®,
Ethernet_IP/POWERLINK/SERCOS-III/PROFINET

▲ AM335x Arm Cortex-A8 microprocessor peripheral options

SAFE HARBOR STATEMENT: This publication may contain forward-looking statements that involve a number of risks and uncertainties. These “forward-looking statements” are intended to qualify for the safe harbor from liability established by the Private Securities Litigation Reform Act of 1995. These forward-looking statements generally can be identified by phrases such as TI or its management “believes,” “expects,” “anticipates,” “foresees,” “forecasts,” “estimates” or other words or phrases of similar import. Similarly, such statements herein that describe the company’s products, business strategy, outlook, objectives, plans, intentions or goals also are forward-looking statements. All such forward-looking statements are subject to certain risks and uncertainties that could cause actual results to differ materially from those in forward-looking statements. Please refer to TI’s most recent Form 10-K for more information on the risks and uncertainties that could materially affect future results of operations. We disclaim any intention or obligation to update any forward-looking statements as a result of developments occurring after the date of this publication.

IMPORTANT NOTICE FOR TI DESIGN INFORMATION AND RESOURCES

Texas Instruments Incorporated ("TI") technical, application or other design advice, services or information, including, but not limited to, reference designs and materials relating to evaluation modules, (collectively, "TI Resources") are intended to assist designers who are developing applications that incorporate TI products; by downloading, accessing or using any particular TI Resource in any way, you (individually or, if you are acting on behalf of a company, your company) agree to use it solely for this purpose and subject to the terms of this Notice.

TI's provision of TI Resources does not expand or otherwise alter TI's applicable published warranties or warranty disclaimers for TI products, and no additional obligations or liabilities arise from TI providing such TI Resources. TI reserves the right to make corrections, enhancements, improvements and other changes to its TI Resources.

You understand and agree that you remain responsible for using your independent analysis, evaluation and judgment in designing your applications and that you have full and exclusive responsibility to assure the safety of your applications and compliance of your applications (and of all TI products used in or for your applications) with all applicable regulations, laws and other applicable requirements. You represent that, with respect to your applications, you have all the necessary expertise to create and implement safeguards that (1) anticipate dangerous consequences of failures, (2) monitor failures and their consequences, and (3) lessen the likelihood of failures that might cause harm and take appropriate actions. You agree that prior to using or distributing any applications that include TI products, you will thoroughly test such applications and the functionality of such TI products as used in such applications. TI has not conducted any testing other than that specifically described in the published documentation for a particular TI Resource.

You are authorized to use, copy and modify any individual TI Resource only in connection with the development of applications that include the TI product(s) identified in such TI Resource. NO OTHER LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE TO ANY OTHER TI INTELLECTUAL PROPERTY RIGHT, AND NO LICENSE TO ANY TECHNOLOGY OR INTELLECTUAL PROPERTY RIGHT OF TI OR ANY THIRD PARTY IS GRANTED HEREIN, including but not limited to any patent right, copyright, mask work right, or other intellectual property right relating to any combination, machine, or process in which TI products or services are used. Information regarding or referencing third-party products or services does not constitute a license to use such products or services, or a warranty or endorsement thereof. Use of TI Resources may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

TI RESOURCES ARE PROVIDED "AS IS" AND WITH ALL FAULTS. TI DISCLAIMS ALL OTHER WARRANTIES OR REPRESENTATIONS, EXPRESS OR IMPLIED, REGARDING TI RESOURCES OR USE THEREOF, INCLUDING BUT NOT LIMITED TO ACCURACY OR COMPLETENESS, TITLE, ANY EPIDEMIC FAILURE WARRANTY AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

TI SHALL NOT BE LIABLE FOR AND SHALL NOT DEFEND OR INDEMNIFY YOU AGAINST ANY CLAIM, INCLUDING BUT NOT LIMITED TO ANY INFRINGEMENT CLAIM THAT RELATES TO OR IS BASED ON ANY COMBINATION OF PRODUCTS EVEN IF DESCRIBED IN TI RESOURCES OR OTHERWISE. IN NO EVENT SHALL TI BE LIABLE FOR ANY ACTUAL, DIRECT, SPECIAL, COLLATERAL, INDIRECT, PUNITIVE, INCIDENTAL, CONSEQUENTIAL OR EXEMPLARY DAMAGES IN CONNECTION WITH OR ARISING OUT OF TI RESOURCES OR USE THEREOF, AND REGARDLESS OF WHETHER TI HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

You agree to fully indemnify TI and its representatives against any damages, costs, losses, and/or liabilities arising out of your non-compliance with the terms and provisions of this Notice.

This Notice applies to TI Resources. Additional terms apply to the use and purchase of certain types of materials, TI products and services. These include; without limitation, TI's standard terms for semiconductor products (<http://www.ti.com/sc/docs/stdterms.htm>), [evaluation modules](#), and [samples](http://www.ti.com/sc/docs/sampterm.htm) (<http://www.ti.com/sc/docs/sampterm.htm>).

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
Copyright © 2017, Texas Instruments Incorporated