

C6A816x C6-Integra™ DSP+ARM® Processors



Key Features and Benefits

- The highest performing single-core floating-point DSP in the market, running at 1.5 GHz, enables signal-processing-intensive algorithms and the ability to run highly precise applications in floating- and fixed-point.
- The processor's integrated DSP+ARM system-on-chip (SoC) is suited for products requiring intensive signal processing, comprehensive system control, a responsive graphical user interface and the ability to run applications under advanced operating systems. This integration saves board space, power consumption, manufacturing costs and discrete memory costs and allows for faster performance due to the high-speed interconnect between two cores.
- Highly integrated, high-bandwidth peripherals with a large set of network connectivity and storage options incorporated into a single chip, meet the demand for high-performance applications by providing quick transmission of data on and off of the chip.
- Graphics and display engines support multiple high-quality displays with 3-D graphics, 1920 × 1280 resolution, enabling more intuitive graphical user interfaces (GUIs) and the ability to output to multiple displays simultaneously. TI's EZ Software Development Kit (SDK) allows easy evaluation of the device within minutes and a single installation that includes all software and tools required to start development easily.

Overview

Texas Instruments (TI) continues to expand the performance of its processors with the new C6A816x C6-Integra™ DSP+ARM processor generation, featuring the highest performing floating- and fixed-point digital signal processor (DSP) on the market today. The product line also features an integrated high-performance ARM Cortex™-A8 CPU, high-bandwidth peripherals and 3-D graphics and multi-HD display engines. Enabling intensive signal processing and analytics, the new C6A816x generation is ideal for machine vision applications such as visual inspection, guidance and identification, test and measurement applications such as signal generation and analysis, and tracking and control applications such as avionics and sonar.

Technical details

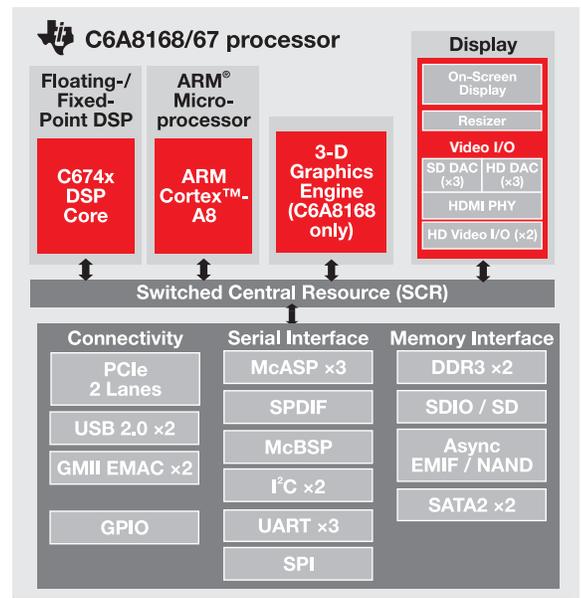
Highly-integrated high-bandwidth peripherals reduce system cost and enable more user-friendly features:

- DDR3/DDR2 up to 1.6-GHz external memory interface provides necessary memory bandwidth for signal-processing-intensive algorithms
- Two-lane 5.0GT/s PCIeExpress (PCIe) 2.0 facilitates high-speed connection to computer backplanes and FPGAs
- Two USB 2.0 ports
- HDMI 1.3 TX
- SATA 3.0-Gbps interfaces up to two external drives, enabling high-speed connectivity to storage

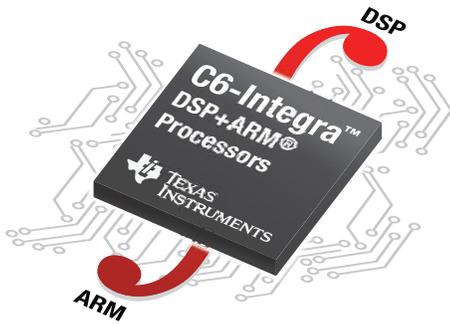
- 10/100/1000 Mb/s Ethernet Mac (EMAC) that supports Gigabit Media Independent Interface (GMII), allowing customers to add connectivity to new designs
- SGX 3-D graphics engine – Up to 27M polygons/second (C6A8168 only)
- Support for multiple HD displays (up to 1920 × 1280)

Scalability

With a broad portfolio of software-compatible devices, customers can scale within the C6-Integra DSP+ARM generation of processors from earlier ARM9™-based OMAP-L138 and OMAP-L137 devices to the C6A816x C6-Integra processors and future lower-power and lower-cost devices in the C6-Integra product portfolio. Because they share common architectural elements, customer can also migrate to software-compatible TI Sitara™ ARM MPU devices for applications that do not



▲ C6A8168/67 block diagram



require intensive signal processing or migrate to DaVinci™ video processing devices to add HD video functionality. This scalability is enabled by software compatibility within the C6-Integra™ products and across other TI processor generations can quickly expand market opportunities for new end products and reduce development time.

Community support

C6A816x C6-Integra DSP+ARM® processors are supported by TI's online community at

e2e.ti.com. Software support is available through the EZ SDK, which allows easy evaluation of the device within minutes and easy development with a single installation that includes all software and tools required to start development.

Get started today

The C6A816x C6-Integra DSP+ARM processors are sampling today, available at www.ti.com/c6a816x. The C6-Integra generation of devices offers a roadmap of lower-power C6-Integra processors, the first of which are expected in early 2011.

Development is easy and can begin in minutes with TI's all-inclusive evaluation modules (EVMs), which include a base EVM (with video capture capability), LCD panel and TI's EZ SDK. Designers can begin development today (**TMDXEVM8168**) for U.S. \$1,995.

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
- Software and tools required for development are included with the EVM
- Linux today with Windows® Embedded® Compact 7 and Android™ 2.2 coming soon
- Responsive design support and active online TI E2E community: e2e.ti.com.



▲ C6A816x DDR2 Evaluation Module

TI Worldwide Technical Support

Internet

TI Semiconductor Product Information Center Home Page
support.ti.com

TI E2E™ Community Home Page
e2e.ti.com

Product Information Centers

Americas	Phone	+1(972) 644-5580
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