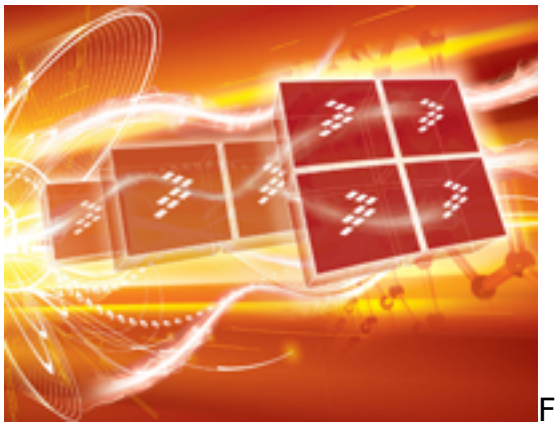
Applications Processors Scale From One to Four Cores



Freescale Semiconductor introduces the i.MX 6 series of quad-, dual- and single-core applications processors designed to deliver outstanding performance and scalability to manufacturers targeting the hottest selling smart mobile, automotive infotainment and embedded device categories.

Integrating one, two or four ARM Cortex-A9 cores running at up to 1.2 GHz each, the i.MX 6 series delivers up to five times the performance of Freescale's current generation of applications processors. This performance provides additional headroom for unbounded user experiences in next-generation tablets, eReaders, smartphones, automotive infotainment systems and other exciting consumer and automotive products.

Potential applications include mobile devices featuring 3D video playback, desktop-quality gaming, augmented reality applications and content creation capabilities – all delivered in ultra-sleek form factors and with significant battery life advantages over many of today's most popular mobile devices.

The i.MX 6 series targets several of the fastest-growing application spaces in the consumer market. According to industry analyst firm In-Stat, standalone eReader shipments will grow from 11.5 million units by the end of 2010 to 35 million in 2014, while the firm's forecast for mobile Internet tablets projects shipments to reach approximately 58 million in 2014, up from 13.7 million in 2010.

Scalability across single-, dual- and quad-core products is a hallmark of the i.MX 6 series. Common SoC IP building blocks enable series-wide software and development tool compatibility, while integrated power management capabilities, a broad range of integrated I/Os, and pin compatibility within package families reduce overall product complexity and development costs. Coupled with planned support for consumer, auto and industrial temperature requirements, the i.MX series offers OEMs fast time-to-value, enabling the rapid creation of complete end-product portfolios that can adjust and scale to meet evolving market demands and requirements.

Continuing to build on its advanced low-power design expertise, Freescale's i.MX 6 series features industry-leading power consumption for demanding applications such as HD 1080p video playback. The i.MX 6 series can deliver up to 24 hours of HD video playback and 30-plus days of device standby time. Integrated power management capabilities reduce the need for external PMICs and help to ensure only those components required for a task are powered.

The product series is comprised of the single-core i.MX 6Solo, dual-core i.MX 6Dual and quad-core i.MX 6Quad processors. Key technical features of the series include:

· Industry-leading four-core design

o Up to four ARM Cortex-A9 cores running at up to 1.2 GHz per core

o Up to 1 MB system level 2 cache

o ARMv7, Neon, VFPv3 and Trustzone support

· Multistream-capable HD video engine delivering 1080p60 decode, 1080p30 encode and 3D video playback in HD

· Exceptional 3D graphics performance with quad shaders for up to 200 MTPS

· Separate 2D and vertex acceleration engines for uncompromised user interface experiences

· Stereoscopic image sensor support for 3D imaging

· Interconnect: HDMI v1.4 w/ integrated PHY, SD3.0, multiple USB 2.0 ports w/ integrated PHY, Gb Ethernet w/ integrated PHY, SATA-II w/ integrated PHY, PCI-e w/ integrated PHY, MIPI CSI, MIPI DSI, MIPI HSI, and FlexCAN for automotive applications

· Support for the VP8 codec

· Support for one of the broadest ranges of major operating system platforms in the industry

· Optional integration of an ePaper display controller for eReader and similar applications

Availability

Freescale plans to begin sampling i.MX 6 series devices later this year. Easy-to-use solutions come with complete reference designs, software and turnkey development technologies that simplify design.

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