Consumer, Industrial and Automotive Markets

Introducing the i.MX 6 Series of Applications Processors
Scalable multicore solutions breaking the boundaries of user experience

Overview

The i.MX 6 series unleashes a scalable multicore platform that includes single-, dual- and quad-core families based on the ARM® Cortex™-A9 architecture for next-generation consumer, industrial and automotive applications. By combining the power-efficient processing capabilities of the ARM Cortex-A9 architecture with bleeding edge 3-D graphics and high-definition video, the i.MX 6 series provides a new level of multimedia performance to enable an unbounded next-generation user experience.

The i.MX 6 series also brings world-class integration with high-performance multimedia processing, making it the ideal platform for future multimedia-centric applications such as tablets, smart books and human-machine interface (HMI). With integrated LVDS, HDMI v1.4, MIPI DSI display port and MIPI CSI-2 camera port, as well as the ability to support up to four screens simultaneously, the i.MX 6 series provides the flexibility to develop tailored, market-specific solutions with faster time to market.

Target Markets
- Tablets
- eReaders
- Smartbooks
- Smartphones
- Automotive infotainment
- HMI
- Portable medical

Scalable Multicore Solutions

The i.MX 6 series provides a new level of power versus performance by providing a scalable family of single-, dual- and quad-core processors based on the ARM Cortex-A9 architecture. While each core is capable of scaling up to 1.2 GHz, the software-compatible i.MX 6 series allows designers to create a broad portfolio of products based on a common platform, while providing compelling performance advantages for battery-based systems with constrained power budgets. The i.MX 6Quad family introduces a quad-core platform, while the i.MX 6Dual family introduces a dual-core platform, both with up to 1 MB of L2 cache and 64-bit DDR3 and 2-channel, 32-bit LPDDR2 support. The processing power, combined with integrated LVDS, MIPI display port, MIPI camera port and HDMI v1.4, makes them ideal for high-performance mobile applications such as smartbooks and high-end tablets. The i.MX 6Solo family provides a single core with up to 256 MB of L2 cache and an integrated EPD controller, as well as LVDS, MIPI DSI display port, MIPI CSI-2 camera port and HDMI v1.4, making it a flexible platform for eReaders and power-optimized tablet solutions.


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Unbounded User Experience

Next-generation graphics and high-definition video are centric to the i.MX 6 series, with an integrated 1080p encoder/decoder hardware engine and high-performance graphics acceleration. The i.MX 6 series supports up to 1080p video playback at 350 mW, enabling exceptionally long battery life for devices playing high-definition content. The 3-D graphics engine is capable of providing up to 200 Mt/s, which enables ultra vivid, realistic graphics critical for gaming and tablet applications. The combined multimedia processing power of the i.MX 6 series enables a new generation of smart mobile devices and auto infotainment with compelling features such as augmented reality applications, content creation capabilities and multi-channel HD video processing, enabling a new level of user experience.

i.MX 6 Series Features

- Scalable single-, dual- and quad-core offerings based on ARM Cortex-A9 up to 1.2 GHz, with ARMv7™, Neon, VFPv3 and Trustzone support
- 32K instruction and data L1 caches and 256 MB to 1 MB of L2 cache
- Multi-stream-capable HD video engine delivering 1080p60 decode, 1080p30 encode and 3-D video playback in HD
- Superior 3-D graphics performance with quad shaders for up to 200 Mt/s
- Separate 2-D and/or Vertex acceleration engines for an optimal user interface experience
- Stereoscopic image sensor support for 3-D imaging

i.MX 6 Series
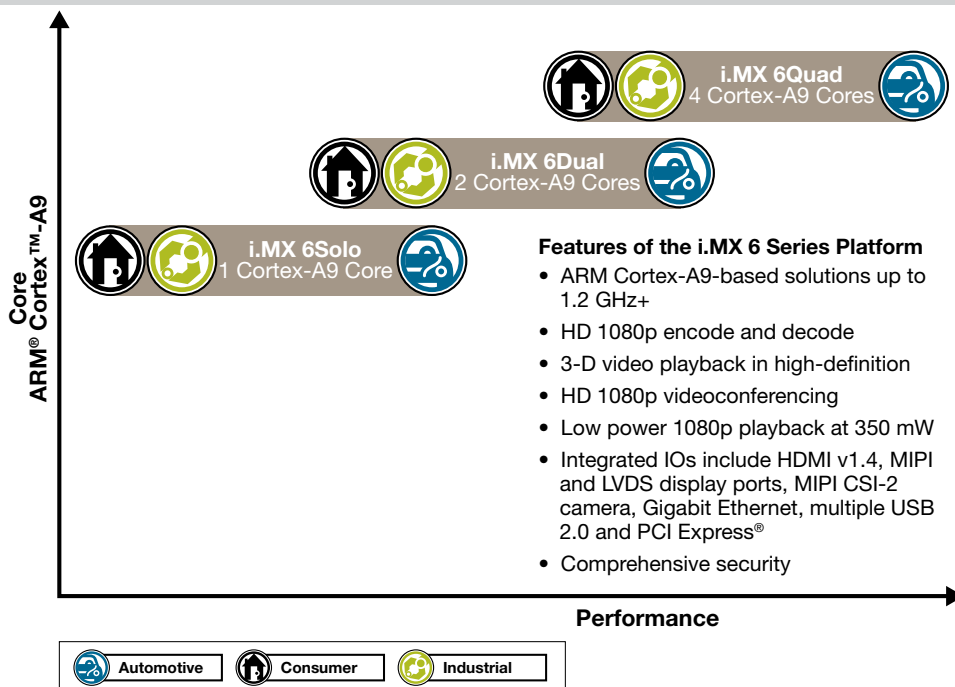
Features of the i.MX 6 Series Platform
- ARM Cortex-A9-based solutions up to 1.2 GHz+
- HD 1080p encode and decode
- 3-D video playback in high-definition
- HD 1080p videoconferencing
- Low power 1080p playback at 350 mW
- Integrated IOs include HDMI v1.4, MIPI and LVDS display ports, MIPI CSI-2 camera, Gigabit Ethernet, multiple USB 2.0 and PCI Express®
- Comprehensive security

- Integrated market-specific IOs, including HDMI v1.4 with integrated PHY, SD3.0, multiple USB 2.0 ports with integrated PHY, Gigabit Ethernet with integrated PHY, SATA-II with integrated PHY, PCI Express® with integrated PHY, MIPI CSI, MIPI DSI, MIPI HSI and FlexCAN for automotive applications
- Comprehensive security features
- Optional integration of an EPD display controller for eReader and similar applications

i.MX 6 Series Benefits

- Compatible single-, dual- and quad-core series enables easy design of a broad portfolio of next-generation products
- Ultra-realisic 3-D gaming and richer user interfaces enabled by an integrated 3-D graphics engine
- Aggressive power management enables high-definition 1080p video playback at 350 mW
- Highly integrated family with a broad range of integrated IOs to reduce design complexity and time to market

Learn More: For current information about Freescale products and documentation, please visit **freescale.com/iMX6series**.

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