

Consumer, Industrial and Automotive Markets

## i.MX 6 Series of Applications Processors

Scalable multicore solutions breaking the boundaries of user experience

### Target Markets

- Tablets
- eReaders
- Smartbooks
- Automotive infotainment
- HMI
- Portable medical
- IPTV
- IP phones
- Home energy management systems

### 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 3D and 2D graphics, as well as 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 options including 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.

### Scalable Multicore Solutions

The i.MX 6 series reaches a new level of power versus performance by providing a scalable family of single-, dual- and quad-

core processor families based on the ARM Cortex-A9 architecture. The pin\* and 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 encompasses a quad-core platform running up to 1.2 GHz with 1 MB of L2 cache, and 64-bit DDR3 or 2-channel, 32-bit LPDDR2 support. High performance integration of LVDS, MIPI display port, MIPI camera port and HDMI v1.4 makes it an ideal platform for consumer, automotive and industrial multimedia applications.

The i.MX 6Dual family provides dual cores running up to 1.2 GHz with 1 MB of L2 cache, and 64-bit DDR3 or 2-channel, 32-bit LPDDR2 support. Leveraging the same integration of the i.MX 6Quad family, the i.MX 6Dual provides a scalable solution for consumer, automotive and industrial applications.

The i.MX 6DualLite family introduces dual cores running up to 1.0 GHz with 512 KB of L2 cache, and 64-bit DDR3 or 2-channel, 32-bit LPDDR2 support. Integrated LVDS, MIPI display port, MIPI camera port and HDMI v1.4 makes it ideal for consumer and industrial

\*i.MX 6SoloLite not pin compatible



applications such as media or market-specific tablets.

The i.MX 6Solo family provides a single core running up to 1.0 GHz with 512 KB of L2 cache and 32-bit DDR3/LPDDR2 support. Integrated LVDS, MIPI display, MIPI camera port, HDMI v1.4, FlexCAN and MLB enables the i.MX 6Solo to be a flexible platform for consumer, automotive and industrial applications.

The i.MX 6SoloLite family introduces a single core running up to 1.0 GHz with 256 KB of L2 cache and 32-bit DDR3/LPDDR2 support. Targeted integration of EPD controller and an LCD controller makes it ideal for next-generation eReaders and smart devices.

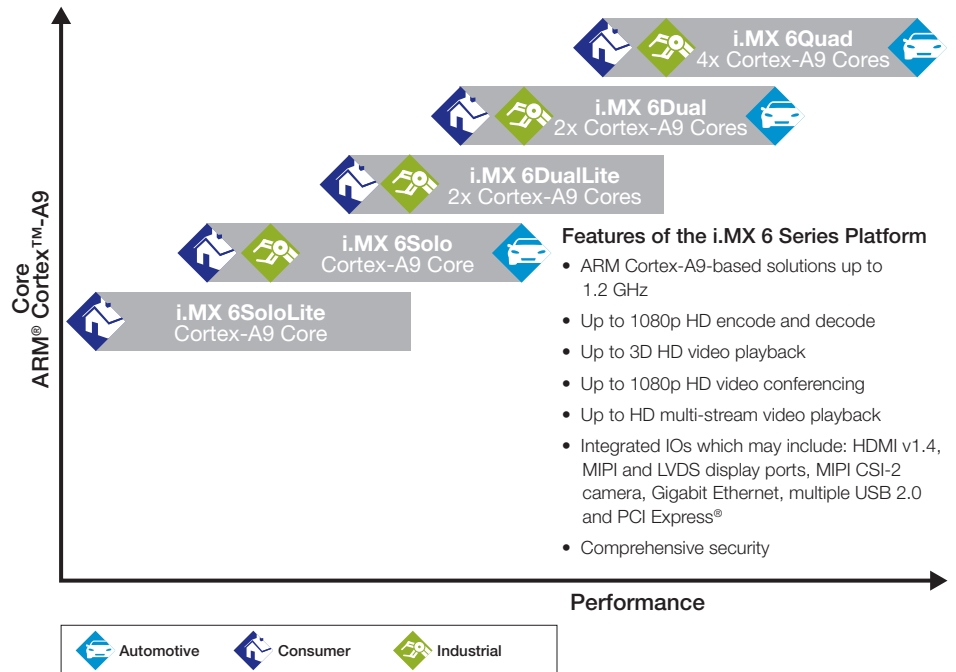
## Unbounded User Experience

Next-generation graphics and high-definition video are centric to the i.MX 6 series, with the series supporting an integrated 1080p encoder/decoder hardware engine and high-performance graphics accelerators in its high performance families. 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 3D 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 multichannel HD video processing for 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 KB to 1 MB of L2 cache

## i.MX 6 Series



- Multi-stream-capable HD video engine delivering 1080p60 decode, 1080p30 encode and 3D video playback in HD in high performance families
- Superior 3D graphics performance with up to quad shaders performing 200 MT/s
- Separate 2D and/or Vertex acceleration engines for an optimal user interface experience
- Stereoscopic image sensor support for 3D imaging
- Integrated market-specific IOs, which may include 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

- Pin\* and software compatible single-, dual- and quad-core families enables easy design of a broad portfolio of next-generation products
- Ultra-realistic 3D gaming and richer user interfaces enabled by an integrated 3D graphics engine in high performance families
- Aggressive power management enables HD multi-stream video playback in high performance families
- Highly integrated family with a broad range of integrated IOs to reduce design complexity and time to market

\*i.MX 6SoloLite not pin compatible

For more information, visit [freescale.com/i.MX6series](http://freescale.com/i.MX6series)



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Document Number: IMX6SRSFS REV 2