Scalable multicore solutions breaking the boundaries of user experience

i.MX 6 Series of Applications Processors

The i.MX 6 series of applications processors is a feature and performance scalable multicore platform that includes single-, dual- and quad-core families based on the ARM® Cortex® architecture, including Cortex-A9, combined Cortex-A9 + Cortex-M4 and Cortex-A7 based solutions up to 1.2 GHz.

TARGET APPLICATIONS

- Automotive infotainment
- Digital signage
- E-Readers
- Human-machine interface
- Home energy management systems
- In-flight entertainment
- Intelligent industrial control systems
- IP phones
- IPTV
- Portable medical devices
- Smartbooks
- Tablets
- Point-of-sale devices
- Digital cluster
- Vehicle to vehicle connectivity
- Home audio systems
- Secure smart-connected devices

Targeting consumer, industrial and automotive applications, the i.MX 6 series combines broad levels of integration and power-efficient processing capabilities all the way up to bleeding edge 3D and 2D graphics, as well as high-definition video, to provide a new level of multimedia performance for an unbounded next-generation user experience. The i.MX 6 series is supported by our proprietary companion power management integrated circuits (PMICs).

NINE SCALABLE FAMILIES

The **i.MX 6QuadPlus** family encompasses a quad-core platform running up to 1 GHz with 1 MB of L2 cache, enhanced hardware accelerated graphics, prefetch and resolve engine and optimized 64-bit DDR3 or 2-channel, 32-bit LPDDR2 support. Integrated FlexCAN and MLB busses, PCI Express® and SATA-2 provide excellent connectivity while integration of dual, 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 6Quad** family encompasses a quad-core platform running up to 1.2 GHz with 1 MB of L2 cache, hardware accelerated graphics and 64-bit DDR3 or 2-channel, 32-bit LPDDR2 support. Integrated FlexCAN and MLB busses, PCI Express® and SATA-2 provide excellent connectivity while integration of dual lane MIPI display ports, MIPI camera port and HDMI v1.4 makes it an ideal platform for consumer, automotive and industrial multimedia applications.

The **i.MX 6DualPlus** family provides dual cores running up to 1 GHz with 1 MB of L2 cache, enhanced hardware accelerated graphics, prefetch and resolve engine and optimized 64-bit DDR3 or 2-channel, 32-bit LPDDR2 support. Leveraging the same integration of the i.MX 6QuadPlus family, the i.MX 6DualPlus provides a scalable solution for consumer, automotive and industrial applications.

The **i.MX 6Dual** family provides dual cores running up to 1.2 GHz with 1 MB of L2 cache, hardware accelerated graphics 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. With integrated FlexCAN and MLB busses, PCI Express, LVDS, and support for MIPI cameras and displays as well as HDMI v1.4, the device is a great fit for consumer, automotive and industrial multimedia centric applications.

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 6SoloX** family introduces single cores running up to 1.0 GHz (Cortex-A9) and 227 MHz (Cortex-M4) with 256 KB of L2 cache and 32-bit DDR3/LPDDR2 support. Integrated LVDS, FlexCAN, and PCIe Express enables the i.MX 6SoloX to be a low-power and flexible platform for consumer, automotive and industrial applications that require real-time responsiveness and a higher level of system integrity.

The **i.MX 6SoloLite** family provides a single core running up to 1.0 GHz with 256 KB of L2 cache and 32-bit DDR3/LPDDR2 support. Targeted integration of an electronic paper display (EPD) controller makes it an ideal solution for next generation e-readers and other emerging consumer and embedded devices using EPD technology.

The **i.MX 6UltraLite** family introduces a single Cortex-A7 core running up to 528 MHz with 128 KB of L2 cache and 16-bit DDR3/LPDDR2 support. This efficient, cost–optimized multi-market applications processor, with integrated power management, advanced security unit and wide range of connectivity interfaces, provides new ways to address performance scalability and low power for secure smart homes and IoT applications. Join fellow i.MX developers online at **imxcommunity.org**.

i.MX 6 SERIES AT A GLANCE

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i.MX6UltraLite

- Single ARM® Cortex®-A7 up to 528 MHz
- 128 KB L2 cache, NEON™, VFP, TrustZone®
- X16 LPDDR2, DDR3/LV-DDR3
- 2X 10/100 Mb/s + IEEE 1588
- 2X 12-bit ADC (1 with resistance touch control)
- 10/100 Ethernet MAC

i.MX6SoloLite

- Single ARM, Cortex-A9 up to 1.0 GHz
- 256 KB L2 cache, NEON, VFPvd16 TrustZone
- 2D graphics
- 32-bit DDR3 and LPDDR2 at 400 MHz
- Integrated EPD controller
- 10/100 Ethernet MAC

i.MX6SoloX

- Single Cortex-A9 up to 1.0 GHz
- Single Cortex®-M4 up to 200 MHz
- 256 KB L2 cache, NEON, VFP, TrustZone
- 3D and 2D graphics
- 32-bit DDR3 and LPDDR2 at 400 MHz
- Dual Gigabit Ethernet MAC w/ hardware AVB support
- PCIe® controller plus PHY
- LVDS controller plus PHY
- Analog camera interface
- 8-channel, 12-bit ADC
- MLB and FlexCAN controllers

i.MX6Solo

- Single Cortex-A9 up to 1.0 GHz
- 512 KB L2 cache, NEON, VFPvd16 TrustZone
- 3D graphics with one shader
- 2D graphics
- 32-bit DDR3 and LPDDR2 at 400 MHz
- Gigabit Ethernet MAC
- Integrated EPD controller
- HDMIv1.4 controller plus PHY
- LVDS controller plus PHY
- PCIe controller plus PHY
- MLB and FlexCAN controllers

i.MX6DualLite

- Dual Cortex-A9 up to 1.0 GHz
- 512 KB L2 cache, NEON, VFPvd16 TrustZone
- 3D graphics with one shader
- 2D graphics
- 64-bit DDR3 and 2-channel 32-bit LPDDR2 at 400 MHz
- Gigabit Ethernet MAC
- Integrated EPD controller
- HDMIv1.4 controller plus PHY
- LVDS controller plus PHY
- PCIe controller plus PHY
- MLB and FlexCAN controllers

i.MX6Dual

- Dual Cortex-A9 up to 1.2 GHz
- 1 MB L2 cache, NEON, VFPvd16 TrustZone
- 3D graphics with four shaders
- Two 2D graphics engines
- 64-bit DDR3 and 2-channel 32-bit LPDDR2 at 533 MHz
- Gigabit Ethernet MAC
- Integrated SATA-II
- HDMIv1.4 controller plus PHY
- LVDS controller plus PHY
- PCIe controller plus PHY
- MLB and FlexCAN controllers

i.MX6DualPlus

- Dual Cortex-A9 up to 1.0 GHz
- 1 MB L2 cache, NEON, VFPvd16 TrustZone
- Enhanced 3D graphics with four shaders
- Enhanced Two 2D graphics engines
- Prefetch & Resolve Engine
- Gigabit Ethernet MAC
- Optimized 64-bit DDR3 and 2-channel 32-bit LPDDR2 at 533 MHz
- Integrated SATA-II
- HDMIv1.4 controller plus PHY
- LVDS controller plus PHY
- PCIe controller plus PHY
- MLB and FlexCAN controllers

i.MX6Quad

- Quad ARM, Cortex-A9 up to 1.2 GHz
- 1 MB L2 cache, NEON, VFPvd16 TrustZone
- 3D graphics with four shaders
- Two 2D graphics engines
- 64-bit DDR3 and 2-channel 32-bit LPDDR2 at 533 MHz
- Gigabit Ethernet MAC
- Integrated SATA-II
- HDMIv1.4 controller plus PHY
- LVDS controller plus PHY
- PCIe controller plus PHY
- MLB and FlexCAN controllers

i.MX6QuadPlus

- Quad Cortex-A9 up to 1.0 GHz
- 1 MB L2 cache, NEON, VFPvd16 TrustZone
- Enhanced 3D graphics with four shaders
- Enhanced Two 2D graphics engines
- Prefetch & Resolve Engine
- Gigabit Ethernet MAC
- Optimized 64-bit DDR3 and 2-channel 32-bit LPDDR2 at 533 MHz
- Integrated SATA-II
- HDMIv1.4 controller plus PHY
- LVDS controller plus PHY
- PCIe controller plus PHY
- MLB and FlexCAN controllers

Consumer Industrial Automotive

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Product Longevity

Energy Efficient Solutions by Freescale