



Consumer, Industrial and Automotive Markets

i.MX 6 Series of Applications Processors

Scalable multicore solutions breaking the boundaries of user experience

Overview

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.

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 companion Freescale power management ICs (PMICs).

Nine Scalable Families

The **i.MX 6QuadPlus** family encompasses a quad-core platform running up to 1.2 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, 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 6DualPlus** family provides dual cores running up to 1.2 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,












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
- Smartbooks
- Tablets
- Point-of-sale devices
- Digital cluster
- Vehicle to vehicle connectivity
- Home audio systems
- Secure smart connected devices





i.MX 6 Series at a Glance

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i.MX6UltraLite	i.MX6SoloLite	i.MX6SoloX	i.MX6Solo	i.MX6DualLite	i.MX6Dual	i.MX6DualPlus	i.MX6Quad	i.MX6QuadPlus
<ul style="list-style-type: none">Single ARM® Cortex®-A7 up to 528 MHz128 KB L2 cache, Neon, VFP, TrustzoneX16 LPDDR2, DDR3/LV-DDR32X 10/100 Mb/s + IEEE 15882X 12-bit ADC (1 with resistance touch control)10/100 Ethernet MAC	<ul style="list-style-type: none">Single Cortex®-A9 up to 1.0 GHz256 KB L2 cache, Neon, VFPv16 Trustzone2D graphics32-bit DDR3 and LPDDR2 at 400 MHzIntegrated EPD controller10/100 Ethernet MAC	<ul style="list-style-type: none">Single Cortex®-A9 up to 1.0 GHzSingle Cortex®-M4 up to 200 MHz256 KB L2 cache, Neon, VFP, Trustzone3D and 2D graphics32-bit DDR3 and LPDDR2 at 400 MHzDual Gigabit Ethernet MAC w/ hardware AVB supportPCIe controller plus PHYLVDS controller plus PHYAnalog camera interface8-channel, 12-bit ADCMLB and FlexCAN controllers	<ul style="list-style-type: none">Single Cortex®-A9 up to 1.0 GHz512 KB L2 cache, Neon, VFPv16 Trustzone3D graphics with one shader2D graphics32-bit DDR3 and LPDDR2 at 400 MHzGigabit Ethernet MACIntegrated EPD controllerHDMIv1.4 controller plus PHYLVDS controller plus PHYPCIe controller plus PHYMLB and FlexCAN controllers	<ul style="list-style-type: none">Dual Cortex®-A9 up to 1.0 GHz512 KB L2 cache, Neon, VFPv16 Trustzone3D graphics with one shader2D graphics64-bit DDR3 and 2-channel 32-bit LPDDR2 at 400 MHzGigabit Ethernet MACIntegrated EPD controllerHDMIv1.4 controller plus PHYLVDS controller plus PHYPCIe controller plus PHYMLB and FlexCAN controllers	<ul style="list-style-type: none">Dual Cortex®-A9 up to 1.2 GHz1 MB L2 cache, Neon, VFPv16 Trustzone3D graphics with four shadersTwo 2D graphics engines64-bit DDR3 and 2-channel 32-bit LPDDR2 at 533 MHzGigabit Ethernet MACOptimized 64-bit DDR3 and 2-channel 32-bit LPDDR2 at 533 MHzIntegrated SATA-IIHDMIv1.4 controller plus PHYLVDS controller plus PHYPCIe controller plus PHYMLB and FlexCAN controllers	<ul style="list-style-type: none">Dual Cortex®-A9 up to 1.2 GHz1 MB L2 cache, Neon, VFPv16 TrustzoneEnhanced 3D graphics with four shadersEnhanced Two 2D graphics enginesPrefetch & Resolve EngineGigabit Ethernet MACOptimized 64-bit DDR3 and 2-channel 32-bit LPDDR2 at 533 MHzIntegrated SATA-IIHDMIv1.4 controller plus PHYLVDS controller plus PHYPCIe controller plus PHYMLB and FlexCAN controllers	<ul style="list-style-type: none">Quad Cortex®-A9 up to 1.2 GHz1 MB L2 cache, Neon, VFPv16 TrustzoneEnhanced 3D graphics with four shadersEnhanced Two 2D graphics enginesPrefetch & Resolve EngineGigabit Ethernet MACOptimized 64-bit DDR3 and 2-channel 32-bit LPDDR2 at 533 MHzIntegrated SATA-IIHDMIv1.4 controller plus PHYLVDS controller plus PHYPCIe controller plus PHYMLB and FlexCAN controllers	
								

 Consumer

 Industrial

 Automotive

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 200 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.

For development tools and third-party resources, visit freescale.com/iMX6series

Join fellow i.MX developers online at imxcommunity.org

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