Consumer, industrial and automotive markets

**i.MX 6SoloX applications processors**

Enabling secure and connected IoT applications

**Overview**

Expanding the i.MX 6 series, the i.MX 6SoloX is a highly integrated multi-market applications processor designed to enable secure and connected homes and vehicles within the Internet of Things. The i.MX 6SoloX applications processor is the first device in the market utilizing both the ARM® Cortex®-A9 and Cortex-M4 cores. Its heterogeneous asymmetric architecture provides the ultimate flexibility for customers by enabling a single-chip solution that can run sophisticated operating systems and provide real-time responsiveness. The i.MX 6SoloX incorporates four independently controlled resource domains for maximum effectiveness and security when portioning system resources such as memory and peripherals.

**Target Applications**

- Factory, process and building automation
- Wearable medical devices
- Mobile patient care
- Activity and wellness monitor
- Industrial scanners and printers
- Home audio and appliances
- Test and measurement equipment
- Telematics
- Vehicle-to-vehicle communications
- Entry-level infotainment systems

**CPU1 Platform**

- Cortex-A9
- 32KB L1-cache
- 32KB D-cache
- NEON
- PTM
- 256KB L2-cache

**CPU2 Platform**

- Cortex-M4, MPU, FPU
- 16KB L1-cache
- 16KB D-cache
- 64KB TCM

**Connectivity**

- MMC 4.4 / SD 3.0 x3
- MMC 4.4 / SD 3.0 x1
- UART 16
- PCIe x4, SPI x5
- USB2 OTG & PHY
- USB2 Host & PHY
- USB2 HSIC Host
- 2x 1Gb Ethernet + IEEE1588 +AVB
- MIPI / CSI x5
- LVDS x5
- FlexCAN
- GPIO, Keypad
- MLB25/50
- 1x PCIe 2.0 x1 USB
- eFuses
- NAND (BCH62)
- 16-bit NOR
- 2x DDR Quad SPI
- LP-DDR2 / DDR3 / DDR3L x32, 400 MHz

**i.MX 6SoloX Applications Processor Block Diagram**
## i.MX 6SoloX Features

- **Right-sized 2D and 3D graphics processing unit (GPU)** for enhanced HMI development on small to medium size displays
- **Flexible boot options**, including support for DDR QSPI and raw NAND, and a memory controller that interfaces to both DDR3 and low power mobile DDR2 memory
- **Secure boot**, secure data storage, cryptographic accelerators, resource domain controller for isolation of system resources and secure messaging unit for Cortex-A9 and Cortex-M4 communications
- **Smart integration of standard system interfaces**, including multiple interface options for UI and wireless connectivity, such as SDIO and PCIe, to provide system design flexibility and low overall build of material (BOM)
- **Dual-port gigabit Ethernet with audio video bridging (AVB)** for quality-of-service in automotive and other applications with enhance traffic shaping and packet prioritization

### Package Technology

With three different package options, each qualified for consumer, industrial, and automotive standards, the i.MX 6SoloX processor is enabling smaller form factors than ever before for the IoT. Select the 19x19 MAPBGA to bring out the most features and GPIO or select the 14x14 MAPBGA to minimize board space. The i.MX 6SoloX processor provides multiple compatible and selectable options to choose from.

## i.MX 6 Series Ecosystem

Leveraging the broad ARM community, the i.MX 6 series builds technology alliances to enable better customer solutions and faster time to market. Partner solutions include:

- Tool chains
- Software
- Codecs
- Middleware/applications
- Embedded board solutions
- Design services
- System integrators
- Training

For development tools and third-party resources, visit freescale.com/iMX6SoloX

Join fellow i.MX developers online at imxcommunity.org