



Enabling secure
and connected
IoT applications

i.MX 6SoloX Applications Processors

Expanding the i.MX 6 series, the highly integrated, multi-market i.MX 6SoloX applications processor is designed to enable secure and connected homes and vehicles within the Internet of Things.

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

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 realtime 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.

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

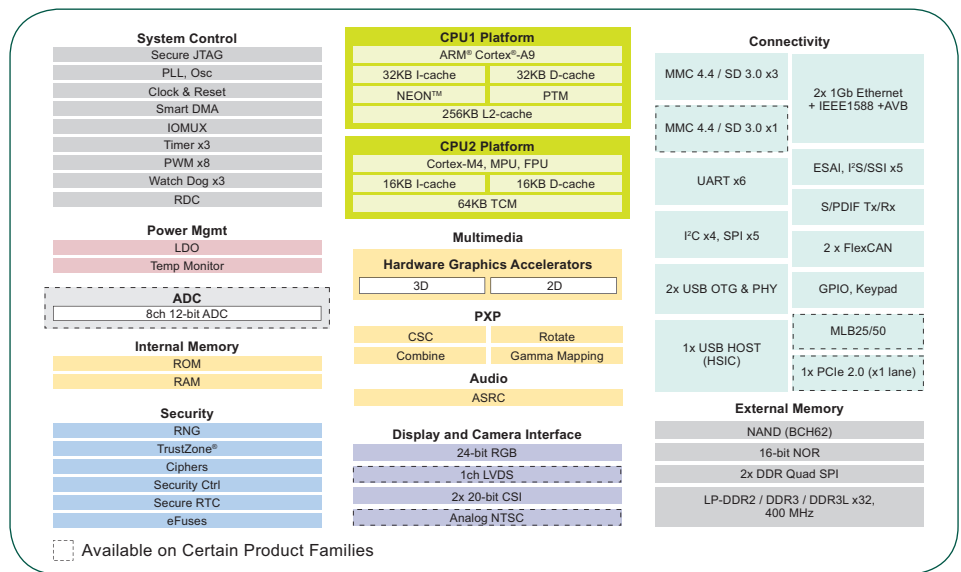
With three different package options, each qualified for consumer, industrial, and automotive standards, the i.MX 6SoloX applications processor is enabling smaller form factors than ever before for the IoT. Select the 19x19 MAPBGA to bring out the most features and GPIO or select the 14x14 MAPBGA to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

SOFTWARE AND TOOLS

The i.MX 6SoloX applications processor is supported by the SABRE Board for Smart Devices and comes with an SD card pre-installed with the Linux® operating system. We also offer the Android™ OS.

The Cortex-M4 core on the i.MX 6SoloX processor is supported by the MQX™ RTOS. More information is available at www.nxp.com/SABRESDB

i.MX 6SoloX APPLICATIONS PROCESSOR BLOCK DIAGRAM



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

i.MX 6SoloX PROCESSOR DEVICE OPTIONS

	Consumer Devices					Industrial Devices					Automotive Devices		
Temp	-20C to 105C					-40C to +105C					-40C to +125C		
ARM Cortex-A9 Core	1GHz					800MHz					800MHz		
Cortex-M4 Core	227MHz					200MHz					227MHz		
Other Features	2x GbE, CAN, Parallel LCD					2x GbE, CAN, Parallel LCD					2x GbE, CAN, MLB, Parallel LCD		
Part Number Extension	6X1	6X3	6X2	6X3	6X4	6X1	6X3	6X2	6X3	6X4	6X1	6X2	6X4
GPU	N	Y	N	Y	Y	N	Y	N	Y	Y	N	N	Y
Package	Pin Compatible		Pin Compatible			Pin Compatible		Pin Compatible					
	17x17		17x17			17x17		17x17			17x17		
	0.8mm pitch		0.8mm pitch			0.8mm pitch		0.8mm pitch			0.8mm pitch		
	400-ball		400-ball			400-ball		400-ball			400-ball		
	OR		OR			OR		OR			OR		
	14x14		19x19			14x14		19x19			14x14		
	0.65mm pitch		0.8mm pitch			0.65mm pitch		0.8mm pitch			0.65mm pitch		
	400-ball		529-ball			400-ball		529-ball			400-ball		
PCIe	n/a		Y			n/a		Y			n/a		Y
LVDS	n/a		n/a			n/a		n/a			n/a		Y
SDIO	3		3			3		3			3		4
Analog Camera Input	n/a		n/a			n/a		n/a			n/a		Y
12-bit ADC	Y		n/a			Y		n/a			Y		Y

www.nxp.com/iMX6SoloX
imxcommunity.org

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