



Consumer, industrial and automotive markets

i.MX 6UltraLite applications processors

Power efficient and secure solutions



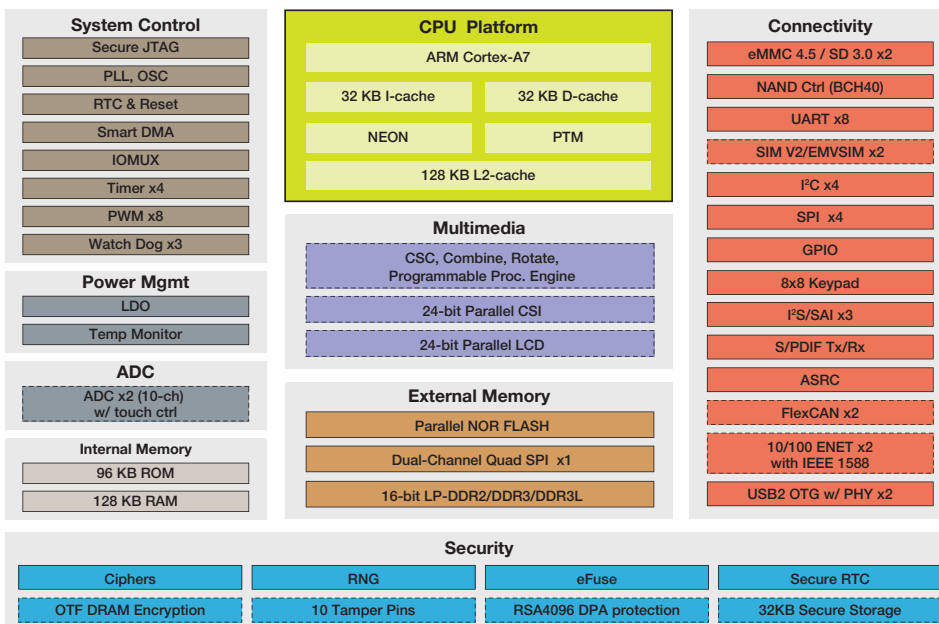
Overview

Expanding the i.MX 6 series, the i.MX 6UltraLite is a high performance, ultra-efficient processor family featuring an advanced implementation of a single ARM® Cortex®-A7 core, which operates at speeds up to 528 MHz. The i.MX 6UltraLite applications processor includes an integrated power management module that reduces the complexity of external power supply and simplifies power sequencing. Each processor in this family provides various memory interfaces, including 16-bit LPDDR2, DDR3, DDR3L, raw and managed NAND flash, NOR flash, eMMC, Quad SPI and a wide range of other interfaces for connecting peripherals such as WLAN, Bluetooth™, GPS, displays and camera sensors. The i.MX 6UltraLite is supported by discrete component power circuitry.

Target Applications

- Automotive telematics
- Human-machine interface (HMI)
- IoT gateways
- Home energy management systems
- Smart energy concentrators
- Intelligent industrial control systems
- Portable medical
- Electronics point-of-sale devices
- Printers and 2D scanners
- Smart appliances
- Financial payment systems

i.MX 6UltraLite Applications Processor Block Diagram



Standard Feature

Optional Feature



i.MX 6UltraLite Device Options

Red indicates change from column to the left

Feature	MCIMX6G0	MCIMX6G1	MCIMX6G2	MCIMX6G3
Speed	528 MHz	528 MHz	528 MHz	528 MHz
Cache	32 KB-I, 32KB-D	32 KB-I, 32KB-D 128 KB L2	32 KB-I, 32KB-D 128 KB L2	32 KB-I, 32KB-D 128 KB L2
OCRAM	128 KB	128 KB	128 KB	128 KB
DRAM	16-bit LP-DDR2, DDR3/DDR3L	16-bit LP-DDR2, DDR3/DDR3L	16-bit LP-DDR2, DDR3/DDR3L	16-bit LP-DDR2, DDR3/DDR3L
eFuse for Customer	512-bit	1024-bit	1536-bit	2048-bit
NAND (BCH40)	Yes	Yes	Yes	Yes
Parallel NOR/EBI	Yes	Yes	Yes	Yes
Ethernet	10/100 MB x 1	10/100 MB x 1	10/100 MB x 2	10/100 MB x 2
USB with PHY	OTG, HS/FS x 1	OTG, HS/FS x 2	OTG, HS/FS x 2	OTG, HS/FS x 2
CAN	0	1	2	2
Security	Basic	TRNG, Crypto Engine (AES/TDES/SHA), Secure Boot	TRNG, Crypto Engine (AES/TDES/SHA), Secure Boot	TRNG, Crypto Engine (AES with DPA/TDES/SHA/RSA), Secure Boot, Tamper Monitor, PCI4.0 pre-certification, OTF DRAM Encryption
Graphic	None	None	PxP	PxP
CSI	None	None	24-bit Parallel CSI	24-bit Parallel CSI
LCD	None	None	24-bit Parallel LCD	24-bit Parallel LCD
Quad SPI	1	1	1	1
SDIO	2	2	2	2
UART	4	8	8	8
I ² C	2	4	4	4
SPI	2	4	4	4
I ² S/SAI	1	3	3	3
S/PDIF	1	1	1	1
Timer/PWM	Timer x2, PWM x4	Timer x4, PWM x8	Timer x4, PWM x8	Timer x4, PWM x8
12-bit ADC	1x8ch	1x8ch	2x8ch	2x8ch

i.MX 6UltraLite Features

- Single ARM Cortex-A7 core can provide a more cost-effective and more power-efficient solution
- Flexible boot options, including support for Quad SPI and raw NAND, and a memory controller that interfaces to both DDR3 and low power mobile DDR2 memory
- Processor delivers hardware-enabled security features that enable secure e-commerce, digital rights management (DRM), information encryption, On-The-Fly

DRAM encryption, secure boot and secure software downloads

- Processor supports connections to a variety of interfaces: two high-speed USB on-the-go with PHY, multiple expansion card ports (high-speed eMMC/SDIO host and other), two 12-bit ADC modules with up to 10 total input channels, two CAN ports, two smart card interfaces compatible with EMV Standard v4.3 and a variety of other popular interfaces (such as UART, I²C, and I²S serial audio)

Package Technology

The i.MX 6UltraLite processor provides multiple compatible and scalable package options. The 14x14 289 MAPBGA with 0.8mm pitch brings out all features and GPIO and is ideal for simple and low cost PCB design. The 9x9 289 MAPBGA with 0.5mm pitch provides smaller form factors than ever before for space constrained applications.

Software and Tools

The i.MX 6UltraLite processor is supported by the i.MX 6UltraLite evaluation kit that includes a CPU module and a base board.

For development tools and third-party resources, visit freescale.com/iMX6UltraLite

Join fellow i.MX developers online at imxcommunity.org



Freescale, the Freescale logo and the Energy Efficient Solutions logo are trademarks of Freescale Semiconductor, Inc., Reg. U.S. Pat. & Tm. Off. ARM is a registered trademark of ARM Limited. Cortex-A7 is a trademark of ARM Limited. All other product or service names are the property of their respective owners. © 2015 Freescale Semiconductor, Inc.

Document Number: IMX6ULTRALITEFS REV 2