Power-efficient, cost-optimized products

i.MX 6ULL Applications Processors

The high-performance and ultra-efficient i.MX 6ULL processor family features an advanced implementation of a single Arm® Cortex®-A7 core that operates at speeds up to 900 MHz.

TARGET APPLICATIONS

- Human-machine interface (HMI)
- IoT gateways
- Home energy management systems
- Smart energy concentrators
- Intelligent industrial control systems
- Portable medical
- Streaming audio
- Printers and 2D scanners
- Smart appliances
- Low-end e-Reader

The i.MX 6ULL applications processor includes an integrated power management module that reduces the complexity of an 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 6ULL is supported by discrete component power circuitry.

i.MX 6ULL FEATURES

- Single Arm Cortex-A7 core can provide a more cost-effective and 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 supports connections to a variety of interfaces: two high-speed USB on-the-go connections 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, and a variety of other popular interfaces (such as UART, I^2C, and I^2S serial audio)

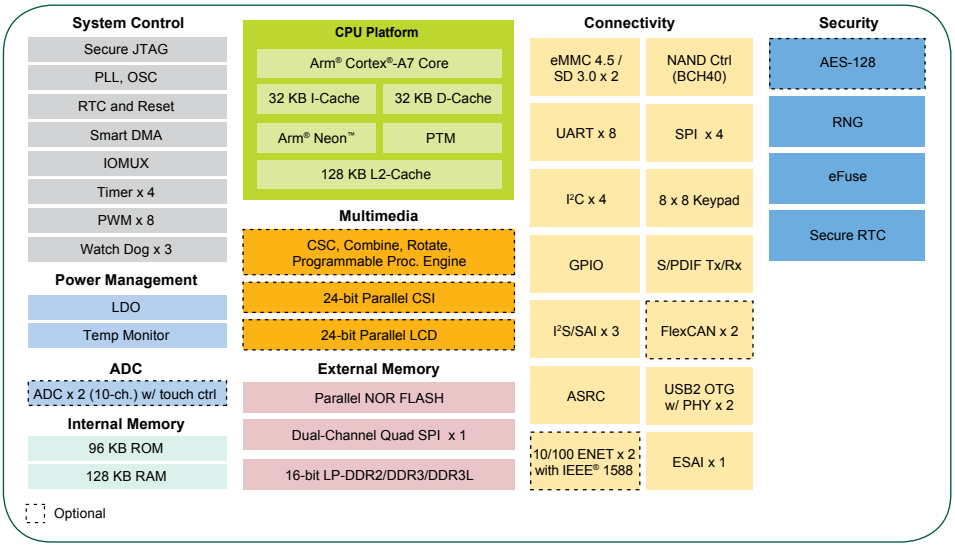
PACKAGE TECHNOLOGY

The i.MX 6ULL processor provides multiple compatible and scalable package options. The 14 x 14 289 MAPBGA with 0.8 mm pitch brings out all features and GPIO. It is ideal for simple and cost-optimized PCB design. The 9 x 9 272 MAPBGA with 0.5 mm pitch provides smaller form factors than ever before for space-constrained applications.

SOFTWARE AND TOOLS

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

i.MX 6ULL APPLICATIONS PROCESSOR BLOCK DIAGRAM



i.MX 6ULL DEVICE OPTIONS

- Red indicates change from column to the left

Feature	MCIMX6Y0	MCIMX6Y1	MCIMX6Y2
Core	Arm® Cortex®-A7	Arm Cortex-A7	Arm Cortex-A7
Speed	528 MHz	528 MHz	528, 800, 900 MHz
Cache	32 KB-I, 32 KB-D	32 KB-I, 32 KB-D 128 KB L2	32 KB-I, 32 KB-D 128 KB L2
OCRAM	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
eFuse for customer	256-bit	256-bit	256-bit
NAND (BCH40)	Yes	Yes	Yes
Parallel Nor/EBI	Yes	Yes	Yes
Ethernet	10/100 MB x 1	10/100 MB x 1	10/100 MB x 2
USB with PHY	OTG, HS/FS x 1	OTG, HS/FS x 2	OTG, HS/FS x 2
CAN	0	1	2
Graphic	None	None	PxP
CSI	None	None	16-bit Parallel CSI
LCD	None	None	24-bit Parallel LCD
QSPI	1	1	1
SDIO	2	2	2
UART	4	8	8
IIC	2	4	4
SPI	2	4	4
I²S/SAI	1	3	3
ESAI	1	1	1
S/PDIF	1	1	1
Timer/PWM	Timer x 2, PWM x 4	Timer x 4, PWM x 8	Timer x 4, PWM x 8
12-bit ADC	1 x 10-ch.	1 x 10-ch.	2 x 10-ch.
Security	None	AES-128, HAB	AES-128, HAB
Temperature	0 °C to 95 °C (Tj) -40 °C to 105 °C (Tj)	0 °C to 95 °C (Tj) -40 °C to 105 °C (Tj)	0 °C to 95 °C (Tj) -40 °C to 105 °C (Tj)

www.nxp.com/iMX6ULL and www.imxcommunity.org

Document Number: IMX6ULLMPUFS REV 3

Product Longevity