

i.MX Family Comparison Table

The most versatile platform for multimedia and display applications, Freescale ARM-based i.MX processors deliver an optimal balance of power, performance and integration to enable next-generation smart devices. i.MX solutions include processors based on ARM9™, ARM11™, ARM

Cortex-A8 and ARM Cortex-A9 core technologies, and are powering applications across a rapidly growing number of consumer, automotive and industrial markets. Our solutions bring interactivity to a whole new world of products. Products within the i.MX family are Freescale Energy-Efficient Solutions.

Features	i.MX 6Quad	i.MX 6Dual	i.MX 6DualLite	i.MX 6Solo	i.MX 6SoloLite	i.MX53	i.MX50	i.MX35	i.MX28	i.MX25
CPU	4x ARM® Cortex™-A9	2x ARM Cortex-A9	2x ARM Cortex-A9	ARM Cortex-A9	ARM Cortex-A9	ARM Cortex™-A8	ARM Cortex-A8	ARM1136JF-S™	ARM926EJ-S™	ARM926EJ-S
Maximum Clock Speed	1.2 GHz	1.2 GHz	1 GHz	1 GHz	1 GHz	1.2 GHz	800 MHz	532 MHz	454 MHz	400 MHz
I-Cache/D-Cache	32 KB/32 KB L1, 1 MB L2	32 KB/32 KB L1, 1 MB L2	32 KB/32 KB L1, 512 KB L2	32 KB/32 KB L1, 512 KB L2	32 KB/32 KB L1, 256 KB L2	32 KB/32 KB L1, 256 KB L2	32 KB/32 KB	16 KB/16 KB	16 KB/32 KB	16 KB/16 KB
Embedded SRAM	256 KB	256 KB	128 KB	128 KB	128 KB	128 KB	128 KB	128 KB	128 KB	128 KB
External Memory Interface	2x32 LP-DDR2, 1-ch. x 64 DDR3/LV-DDR3, Page and Channel Interleaving	2x32 LP-DDR2, 1-ch. x 64 DDR3/LV-DDR3, Page and Channel Interleaving	2x32 LP-DDR2, 1-ch. x64 DDR3/LV-DDR3	x32 LP-DDR2, DDR3/LV-DDR3	x32 LP-DDR2, DDR3/LV-DDR3	DDR2, DDR3, LP-DDR2, LV-DDR2, NOR, SLC/MLC, Managed NAND	LPDDR2, LPDDR, DDR2, PSRAM, NOR, SLC/MLC, Managed NAND	LPDDR, DDR2, SDRAM, NOR, SLC/MLC NAND	LPDDR, DDR2, LV-DDR2, NOR-via SPI, SLC/MLC, Managed NAND	LPDDR, DDR2, SDRAM, LPDDR, NOR, SLC/MLC NAND
LCD Resolution	2x 4 XGA (2048 x 1536) or 2x WXGA (1280 x 720)	2x 4 XGA (2048 x 1536) or 2x WXGA (1280 x 720)	2x WXGA (1366 x 768)	2x WXGA (1366 x 768)	SXGA+ (1400 x 1050)	UXGA (1600 x 1200)	SXGA+ (1400 x 1050)	Up to SVGA (800 x 600)	Up to WVGA (860 x 480)	Up to VGA (640 x 480)
Touch Screen Controller	No	No	No	No	No	No	No	No	Yes	Yes
Hardware Video Acceleration	HD1080p60 Dual HD720p Video Encode	HD1080p60 Dual HD720p Video Encode	HD1080p30 or Dual HD720p Video Encode, HD1080p30 + D1 Video Decode	HD1080p30 Video Encode, HD1080p30 Video Decode	SW Only	HD720p Video Encode, HD1080p Decode	No	No	No	No
Hardware 2D/3D Graphics Acceleration	DirectX 11 and Open GL, GL ES 2.0, CL EP	DirectX 11 and Open GL, GL ES 2.0, CL EP	Open GL ES 2.0	Open GL ES 2.0	OpenVG 1.1, 2DBLT	Open GL ES 2.0 and OpenVG 1.1	OpenVG	Open VG	No	No
CMOS Sensor Interface	2	2	2	2	1	2	No	1	No	1
Universal Asynchronous Receiver/Transmitter	5	5	5	5	5	5	5	3	6	5
Serial Peripheral Interface/I²C	5/3	5/3	4/4	4/4	4/3	3/3	2/3	2/3	4/2	3/3
USB Controller	4	4	4	4	3	HS USB 2.0 OTG, 3x HS USB 2.0 Host	1x HS OTG, 1x HS Host	HS OTG, HS Host	HS Host/Device, HS Host	HS OTG, HS Host
USB PHY	4 USB2.0: 1x HS OTG + PHY, 1x Host + PHY 2x Host USB HSIC	4 USB2.0: 1x HS OTG + PHY, 1x Host + PHY 2x Host USB HSIC	4 USB2.0: 1x HS OTG + PHY, 1x Host + PHY 2x Host USB HSIC	4 USB2.0: 1x HS OTG + PHY, 1x Host + PHY 2x Host USB HSIC	3 USB2.0: 1x HS OTG + PHY, 1x Host + PHY 1x Host USB HSIC	2	2	2	2	2
Power Management	PF Series 100	PF Series 100	PF Series 100	PF Series 100	PF Series 100	MC34708, MC34709	MC34708	MC13892	Integrated	MC34704B
Digital Audio Interface	SSI/I²S x3, ESAI	SSI/I²S x3, ESAI	SSI/I²S x3, ESAI	SSI/I²S x3, ESAI	SSI/I²S x3	SSI/I²S x3, ESAI	SSI/I²S/AC97 x2	SSI/I²S, ESAI	SSI/I²S	SSI/I²S, ESAI
Ethernet	1 Gb/s + IEEE® 1588	1 Gb/s + IEEE 1588	1 Gb/s + IEEE 1588	1 Gb/s + IEEE 1588	10/100 Mb/s	10/100 Mb/s + IEEE 1588	10/100 Mb/s	10/100 Mb/s	2x 10/100 Mb/s + L2 Switch	10/100 Mb/s
PCI Express	PCIe v2.0	PCIe v2.0	PCIe v2.0	PCIe v2.0	No	No	No	No	No	No
CAN	2	2	2	2	No	2	No	2	2	2
Multimedia Card/Secure Digital Controller	4	4	4	4	4	4	4	2	4	2
Hard Disk Drive Interface	S-ATA II 3 Gb/s	S-ATA II 3 Gb/s	No	No	No	PATA, SATA	No	PATA	No	PATA
Smart Card Interface Module	No	No	No	No	No	No	No	No	No	Yes
Security	Secure Boot, RNG, Tamper Detection, Secure Storage, AES-128, DES 3DES, ARC4, MD5, SHA-1, SHA-224, SHA-256, 16 KB Secure RAM, Tamper Resistant RTC, Secure Debug, OTP Space	Secure Boot, RNG, Tamper Detection, Secure Storage, AES-128, DES 3DES, ARC4, MD5, SHA-1, SHA-224, SHA-256, 16 KB Secure RAM, Tamper Resistant RTC, Secure Debug, OTP Space	Secure Boot, RNG, Tamper Detection, Secure Storage, AES-128, DES 3DES, ARC4, MD5, SHA-1, SHA-224, SHA-256, 16 KB Secure RAM, Tamper Resistant RTC, Secure Debug, OTP Space	Secure Boot, RNG, Tamper Detection, Secure Storage, AES-128, DES 3DES, ARC4, MD5, SHA-1, SHA-224, SHA-256, 16 KB Secure RAM, Tamper Resistant RTC, Secure Debug, OTP Space	Secure Boot, Tamper Reaction, RNG, Key Storage, AES, DES, 3DES, ARC4, MD5, SHA-1, SHA-256, 128 KB Secure RAM, Secure Debug	Secure Boot, RNG, Tamper Detection*, Secure Storage, AES-128, DES, 3DES, ARC4, MD5, SHA-1, SHA-224, SHA-256, 16 KB Secure RAM, Secure Debug	Key Storage, AES-128, RNG, SHA-256, SRTC, E-Fuse, High Assurance Boot, Secure JTAG, Universal Unique ID	Secure Boot, Tamper Detection*, RNG, Key Storage, Secure Debug	Secure Boot, Key Storage, AES, SHA-256	Secure Boot, Tamper Detection, Tamper Reaction, RNG, Key Storage, 3DES, Secure Debug
Timer	3	3	3	3	3	5	2	3	4	4
Real-Time Clock	Secure RTC	Secure RTC	Secure RTC	Secure RTC	Secure RTC	Secure RTC	Secure RTC	1	1	Secure RTC
Pulse Width Modulation	4	4	4	4	4	2	2	1	8	4
Package	21 x 21 BGA 0.8 mm	21 x 21 BGA 0.8 mm	21 x 21 BGA 0.8 mm	21 x 21 BGA 0.8 mm	13 x 13 0.5 BGA	19 x 19 529 TE-BGA 0.8 mm 12 x 12 529 PoP 0.4 mm	17 x 17 400 MAPBGA 0.8 mm 13 x 13 416 MAPBGA 0.5 mm	17 x 17 MAPBGA 0.8 mm	0.8 mm, 289 MAPBGA	17 x 17 MAPBGA 0.8 mm 12 x 12 MAPBGA 0.5 mm
ADC Channels	40 nm, LP	40 nm, LP	40 nm, LP	40 nm, LP	40 nm, LP	No	No	No	8	3
Qualifications	Automotive, Consumer and Industrial	Automotive, Consumer and Industrial	Automotive, Consumer and Industrial	Automotive, Consumer and Industrial	Consumer	Automotive, Consumer and Industrial	Consumer	Automotive, Consumer and Industrial	Automotive, Consumer and Industrial	Automotive, Consumer and Industrial

* Digital tamper detection only available when main power is supplied

Please note:
The product data sheet and reference manual are your best source for the most current and detailed technical data on the i.MX processor you prefer. For documentation on i.MX applications processors, visit freescale.com/imx.

Share ideas, design tips and meet other i.MX fans at imxcommunity.org.



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Document Number:
FLYRIMXPRDCMPR REV 15

