

i.MX 6 Series Comparison Table

The industry's first truly scalable multicore platform. i.MX 6 series includes processors based on ARM Cortex-A9, Cortex-A7 and ARM Cortex-M4 core technologies, and are powering applications across

a rapidly growing number of consumer, automotive and industrial markets. The i.MX 6 series is purpose built for the Internet of Things. Products within the series are Freescale Energy-Efficient Solutions.

Features	i.MX 6QuadPlus	i.MX 6Quad	i.MX 6DualPlus	i.MX 6Dual	i.MX 6DualLite	i.MX 6Solo	i.MX 6SoloX	i.MX 6SoloLite	i.MX 6UltraLite
CPU	4x Cortex®-A9	4x Cortex-A9	2x Cortex-A9	2x Cortex-A9	2x Cortex-A9	Cortex-A9	Cortex-A9 Cortex-M4	Cortex-A9	Cortex-A7
Maximum Clock Speed	1.2 GHz	1.2 GHz	1.2 GHz	1.2 GHz	1 GHz	1 GHz	(A9) 1 GHz (M4) 200MHz	1 GHz	528 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, 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	(A9) 32 KB/32 KB L1, 256 KB L2 (M4) 16 KB/16 Kb L1	32 KB/32 KB L1, 256 KB L2	32 KB/32 KB L1, 128 KB L2
Embedded SRAM	512 KB	256 KB	512 KB	256 KB	128 KB	128 KB	128 KB	128 KB	128 KB
External Memory Interface and DDR Bus Speed	2x32 LP-DDR2, 1-ch. x 64 DDR3/LV-DDR3, Page and Channel Interleaving at 533 MHz	2x32 LP-DDR2, 1-ch. x 64 DDR3/LV-DDR3, Page and Channel Interleaving at 533 MHz	2x32 LP-DDR2, 1-ch. x 64 DDR3/LV-DDR3, Page and Channel Interleaving at 533 MHz	2x32 LP-DDR2, 1-ch. x 64 DDR3/LV-DDR3, Page and Channel Interleaving at 533 Mhz	2x32 LP-DDR2, 1-ch. x64 DDR3/LV-DDR3 Page and Channel Interleaving at 400 MHz	x32 LP-DDR2, DDR3/LV-DDR3 Page and Channel Interleaving at 400 MHz	x32 LP-DDR2, DDR3/LV-DDR3 Page and Channel Interleaving at 400 MHz	x32 LP-DDR2, DDR3/LV-DDR3 at 400 MHz	X16 LP-DDR2, DDR3/LV-DDR3 at 400 MHz
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 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 (1280 x 720)	2x WXGA (1280 x 720)	2x WXGA (1280 x 720)*	SXGA+ (1400 x 1050)	WXGA (1366x768)
Touchscreen Controller	No	No	No	No	No	No	No	No	Yes
Hardware Video Acceleration	HD1080p60 Video Decode, Dual HD720p Video Encode	HD1080p60 Video Decode, Dual HD720p Video Encode	HD1080p60 Video Decode, Dual HD720p Video Encode	HD1080p60 Video Decode, Dual HD720p Video Encode	HD1080p30 Video Decode, Dual HD720p Video Encode	HD1080p30 Video Decode, Dual HD720p Encode	SW Only	SW Only	SW Only
Hardware 2D/3D Graphics Acceleration	OpenGL® ES 1.1/2.0/3.0 OpenCL™ 1.1 EP OpenVG™ 1.1, 2DBLT, 8 layer composition, 4 shaders - 720 MHz, Embedded prefetch & resolve engine	OpenGL® ES 1.1/2.0/3.0 OpenCL™ 1.1 EP OpenVG™ 1.1, 2DBLT, 2 layer composition, 4 shaders - 594 MHz	OpenGL® ES 1.1/2.0/3.0 OpenCL™ 1.1 EP, OpenVG™ 1.1, 2DBLT, 8 layer composition, 4 shaders - 720 MHz, Embedded prefetch & resolve engine	OpenGL ES 1.1/2.0/3.0 OpenCL 1.1 EP OpenVG 1.1, 2DBLT, 2 layer composition, 4 shaders - 594 MHz	OpenGL ES 1.1/2.0/3.0, OpenVG 1.1, 2DBLT, 2 layer composition, 1 shader - 528 MHz	OpenGL ES 1.1/2.0/3.0 OpenVG 1.1, 2DBLT, 1 shader - 528 Mhz	OpenGL ES 1.1/2.0, OpenVG 1.1, 2DBLT, 1 shader - 720 MHz	OpenVG 1.1, 2DBLT 2 layer composition	No
CMOS Sensor Interface	2	2	2	2	2	2	2	1	1
Universal Asynchronous Receiver/Transmitter	5	5	5	5	5	5	6	5	8
Serial Peripheral Interface/I²C	5/3	5/3	5/3	5/3	4/4	4/4	4/4	4/4	4/4
USB Controller	1x HS USB 2.0 OTG 3x HS USB 2.0 Host	1x HS USB 2.0 OTG 3x HS USB 2.0 Host	1x HS USB 2.0 OTG 3x HS USB 2.0 Host	1x HS USB 2.0 OTG 3x HS USB 2.0 Host	1x HS USB 2.0 OTG 3x HS USB 2.0 Host	1x HS USB 2.0 OTG 3x HS USB 2.0 Host	1x HS USB 2.0 OTG 2x HS USB 2.0 Host	1x HS USB 2.0 OTG 2x HS USB 2.0 Host	2x HS USB 2.0 OTG
USB PHY	2	2	2	2	2	2	2	2	2
Power Management	Freescale MMPF0100	Freescale MMPF0100	Freescale MMPF0100	Freescale MMPF0100	Freescale MMPF0100	Freescale MMPF0100/MMPF0200	Freescale MMPF0100/MMPF0200	Freescale MMPF0100/MMPF0200	Freescale MMPF3000/Discrete
Digital Audio Interface	SSI/I²S x3, ESAI	SSI/I²S x3, ESAI	SSI/I2S x3, ESAI	SSI/I²S x3, ESAI	SSI/I²S x3, ESAI	SSI/I²S x3, ESAI	SSI/I²S x5, ESAI, SAI	SSI/I²S x3	SAI/I²S x3
Ethernet	1 Gb/s + IEEE® 1588	1 Gb/s + IEEE® 1588	1 Gb/s + IEEE 1588	1 Gb/s + IEEE 1588	1 Gb/s + IEEE 1588	1 Gb/s + IEEE 1588	2x 1 Gb/s + IEEE 1588 + AVB	10/100 Mb/s	2X 10/100 Mb/s + IEEE 1588
PCI Express®	PCIe v2.0	PCIe v2.0	PCIe v2.0	PCIe v2.0	PCIe v2.0	PCIe v2.0	PCIe v2.0*	No	No
CAN	2	2	2	2	2	2	2	No	2
Multimedia Card/ Secure Digital Controller	4	4	4	4	4	4	4*	4	2
Hard Disk Drive Interface	S-ATA II 3 Gb/s	S-ATA II 3 Gb/s	S-ATA II 3 Gb/s	S-ATA II 3 Gb/s	No	No	No	No	No
Smart Card Interface Module	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 Resistent 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 Resistent RTC, Secure Debug, OTP Space	Detection, Secure Storage, AES-128, DES 3DES, ARC4, MD5, SHA-1, SHA-224, SHA-256, 16 KB Secure RAM, Tamper Resistent 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 Resistent 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 Resistent 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 Resistent 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 Resistent RTC, Secure Debug, OTP Space	Secure Boot, RNG, 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, Tamper Resistent RTC, Secure Debug, OTP Space, OTF Encryption/Decryption
Timer	3	3	3	3	3	3	3	3	4
Real-Time Clock	Secure RTC	Secure RTC	Secure RTC	Secure RTC	Secure RTC	Secure RTC	Secure RTC	Secure RTC	Secure RTC
Pulse Width Modulation	4	4	4	4	4	4	8	4	8
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	21 x 21 BGA 0.8 mm	21 x 21 BGA 0.8 mm	14x14 BGA 0.65 mm pitch 17x17 BGA 0.8 mm pitch 19x19 BGA 0.8 mm pitch	13 x 13 0.5 BGA	14x14 289 MAPBGA 0.8 mm pitch 9x9 289 MAPBGA 0.5 mm pitch
ADC Channels	No	No	No	No	No	No	Yes*	No	Yes, Two 12-bit ADC, 1 with touch controller, up to 10 channel
Qualifications	Automotive, Commercial and Industrial	Automotive, Commercial and Industrial	Automotive, Commercial and Industrial	Automotive, Commercial and Industrial	Automotive, Commercial and Industrial	Automotive, Commercial and Industrial	Automotive, Commercial and Industrial	Commercial	Automotive, Commercial and Industrial

* Some features vary across packages



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