

i.MX Family Comparison Table

Freescale's i.MX family of applications processors is designed for use in smartphones, portable media players, portable navigation devices, video surveillance, point-of-sale systems, bar code scanners and many other consumer, industrial, health care and general-purpose

embedded applications. Based on ARM® core technology, the i.MX family is engineered with Smart Speed™ technology to deliver high performance while minimizing power consumption. Extensive integration helps to reduce your design time significantly.

Features	i.MX233	i.MX25	i.MX27	i.MX28	i.MX31	i.MX35	i.MX50	i.MX51	i.MX53
CPU	ARM926EJ-S™	ARM926EJ-S	ARM926EJ-S	ARM926EJ-S	ARM1136JF-S™	ARM1136JF-S	ARM Cortex™ -A8	ARM Cortex™-A8	ARM Cortex™ -A8
Maximum Clock Speed	454 MHz	400 MHz	400 MHz	454 MHz	532 MHz	532 MHz	800 MHz	800 MHz	1 GHz
I-Cache/D-Cache	16 KB/16 KB	16 KB/16 KB	16 KB/16 KB	16 KB/32 KB	16 KB/16 KB	16 KB/16 KB	32KB/32KB	32 KB/32 KB	32KB/32KB L1, 256 KB L2
Embedded SRAM	32 KB	128 KB	45 KB	128 KB	16 KB	128 KB	128 KB	128 KB	128 KB
External Memory Interface	DDR1, LPDDR, NOR-via SPI, SLC/MLC, Managed NAND	LPDDR, DDR2, SDRAM, LPSDR, NOR, SLC/MLC NAND	LPDDR, SDRAM, PSRAM, NOR, SLC/MLC NAND	LPDDR, DDR2, LV-DDR2, NOR-via SPI, SLC/MLC, Managed NAND	LPDDR, SDRAM, PSRAM, NOR, SLC/MLC NAND	LPDDR, DDR2, SDRAM, LPSDR, NOR, SLC/MLC NAND	LPDDR2, LPDDR, DDR2, PSRAM, NOR, SLC/MLC, Managed NAND	LPDDR, DDR2, SDRAM, LPSDR, PSRAM, NOR, SLC/MLC NAND	DDR2, DDR3, LP-DDR2, LV-DDR2, NOR, SLC/MLC, Managed NAND
Flash Boot	MMC, NAND, Serial/SPI	MMC, NAND, NOR, Serial/SPI	NAND or NOR	MMC, NAND, Serial/SPI, USB	NAND or NOR	MMC, NAND, NOR, Serial/SPI	NOR, NAND, OneNAND, SD/MMC, Serial/SPI	SD/MMC, NAND, NOR, Serial/SPI	NOR, NAND, OneNAND, SD/MMC, Serial/SPI, SATA
LCD Resolution	Up to VGA (640 x 480)	Up to VGA (640 x 480)	Up to SVGA (800 x 600)	Up to WVGA (860 x 480)	Up to SVGA (800 x 600)	Up to SVGA (800 x 600)	SXGA + (1400 × 1050)	Up to WXGA (1280 x 800)	UXGA (1600x1200)
Touch Screen Controller	Yes	Yes	No	Yes	No	No	No	No	No
Hardware Video Acceleration	No	No	D1 Video Encode/Decode	No	VGA Encode	No		D1 Video Encode, HD720p Decode	HD720p Video Encode, HD1080p Decode
Image Pre and Post Processor	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes
Hardware 2-D/3-D Graphics Acceleration	No	No	No	No	OpenGL ES	Open VG	OpenVG	Open GL ES and Open VG	Open GL ES 2.0 and OpenVG 1.1
CMOS Sensor Interface	No	1	1	No	1	1	No	2	Yes
Universal Asynchronous Receiver/Transmitter	3	5	6	6	5	3	5	3	5
Serial Peripheral Interface/ Inter-Integrated Circuit (I²C)	2/1	3/3	3/2	4/2	3/3	2/3	2/3	3/3	3/3
USB Controller	HS Host, HS Device	HS OTG, HS Host	HS OTG, HS Host, FS Host	HS Host/Device, HS Host	HS OTG, HS Host, FS Host	HS OTG, HS Host	1x HS OTG, 1x HS Host	HS OTG, 3 x HS Host	HS USB 2.0 OTG, 2x HS USB 2.0 Host
USB PHY	1	2	No	2	No	2	2	1	2
Power Management	Integrated	MC34704B	MC13783 MC34704B	Integrated	MC13783	MC13892	MC34708	MC13892	DA9053 Dialog
Analog Audio	Yes	No	No	No	No	No	No	No	No
Digital Audio Interface	SSI/I²S	SSI/I²S, ESAI	SSI/I²S	SSI/I²S	SSI/I²S	SSI/I²S, ESAI	SSI/I²/AC97 x2	SSI/I²S	SSI/I²S x3, ESAI
Ethernet	No	10/100	10/100	2 10/100 + L2 Switch	No	10/100	10/100 Mbps	10/100	10/100 Mbps + IEEE 1588
Controller Area Network (CAN)	No	2	No	2	No	2	No	No	2
Multimedia Card/Secure Digital (MMC/SD) Controller	2	2	3	4	2	2	4	4	4
PCMCIA/Compact Flash	No	No	Yes	No	Yes	No	No	No	No
Memory Stick Controller	No	No	1	No	2-Pro	1	1-Pro	No	No
Hard Disk Drive Interface	No	PATA	PATA	No	PATA	PATA		PATA	PATA, SATA
Smart Card Interface Module (SIM)	No	Yes	No	No	Yes	No	No	Yes	No
Security	Secure Boot, Key Storage, AES, SHA-1	Secure Boot, Tamper Detection, Tamper Reaction, RNG, Key Storage, 3DES, Secure Debug	Secure Boot, Tamper Reaction, RNG, Key Storage, AES, DES, 3DES, ARC4, MD5, SHA-1, SHA-256, Secure Debug	Secure Boot, Key Storage, AES, SHA-256, PRNG	Secure Boot, Tamper Reaction, RNG, Key Storage, AES, DES, 3DES, ARC4, C2, SHA-1, Secure Debug	Secure Boot, Tamper Reaction, RNG, Key Storage, Secure Debug	Secure Boot, Secure Key Storage, Tamper resistant RTC, RNG, Key Storage, AES-128, SHA-1, SHA-256, 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, 16KB Secure RAM, Tamper Resistent RTC, Secure Debug, OTP space
Timer	4	4	6	4	3	3	2	5	5
Real-Time Clock	1	Secure RTC	1	1	1	1	Secure RTC	Secure RTC	Secure RTC
Pulse Width Modulation (PWM)	5	4	1	8	1	1		2	2
Package	0.8 mm, 169 MAP BGA, 128 LQFP	17 x 17 MAPBGA 0.8 mm 12 x 12 MAPBGA 0.5 mm	17 x 17 404 MAPBGA 0.65 mm 19 x 19 473 MAPBGA 0.8 mm	0.8 mm, 289 MAPBGA	19 x 19 MAPBGA 0.8 mm 14 x 14 MAPBGA 0.5 mm	17 x 17 MAPBGA 0.8 mm	17 x17 400 MAPBGA 0.8mm, 13 x13 416 MAPBGA 0.5mm	19 x 19 529 MAPBGA 0.8 mm 13 x 13 527 MAPBGA 0.5 mm	19x19 529 TE-BGA 0.8mm , 12x12 529 PoP 0.4mm
ADC Channels	6	3	No	8	No	No	No	No	No
Qualifications	Consumer and Industrial	Automotive, Consumer and Industrial	Consumer and Industrial	Automotive, Consumer and Industrial	Automotive, Consumer and Industrial	Automotive, Consumer and Industrial	Consumer	Automotive, Consumer and Industrial	Automotive, Consumer, and Industrial

Please note:
The product data sheet is your best source for the most current and detailed technical data on the i.MX processor you prefer. To download the product's data sheet, visit **freescale.com/imx**.