

i.MX RT1170 First GHz Crossover MCU with Arm® Cortex®-M7 and Cortex-M4 Cores

i.MX-RT1170

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i.MX RT1170 crossover MCUs are part of the EdgeVerse[™] edge computing platform and are setting speed records at 1 GHz. This ground-breaking family combines superior computing power and multiple media capabilities with ease-of-use and real-time functionality. The dual core i.MX RT1170 MCU runs on the Arm® Cortex®-M7 core at 1 GHz and Arm Cortex-M4 at 400 MHz, while providing advanced security. The i.MX RT1170 MCU offers support over a wide temperature range and is designed for consumer, industrial and automotive markets.

i.MX RT1170 Crossover MCU Block Diagram

System Control	Main CPU Platform			Connectivity				
DC-DC and LDO	Arm® Cortex®-M7 (up to 1 GHz)		ASRC		GPIO			
DO-DC and EDO	32 KB D-cache w/ ECC 32	2 KB I-cache w/ ECC NVIC		3 x CAN-FE)		HS GPIO	
2 x eDMA	Up to 512 KB TCM w/ ECC			8-ch. DMIC		6 x I ² C		
Message Unit	Secondary CPU Platform			2 x eMMC/SD		4 x I²S/SAI		
	Arm Cortex-M4 (up to		2 x EMVSIM		8 x 8 Keypad			
PLL, OSC	16KB D-cache 16KB I-cache w/ Parity Check w/ Parity Check		10/	10/100 ENET w/ IEEE® 1588		S/PDIF Tx/Rx		
Resource Domain Control	FPU MPU NVIC 256 KB TCM w/ ECC			1Gbps ENET w/ AVB		6 x SPI		
	230 KB TCW W/ ECC			1Gbps ENET w/ TSN		12 x UART		
Secure JTAG, SWD	Multimedia 2D GPU with Vector Graphics Acceleration			2 x FlexIO		2 x USB 2.0 OTG w/ PHY		
Semaphore	2D Graphics Acceleration (PXP) Resize, CSC, Overlay, Rotation		Timers					
			1 x EWM		4 x Quadrature ENC			
Temp Monitor	MIPI® CSI	MIPI® CSI Parallel CSI MIPI DSI Parallel LCD		4 x FlexPWM		4 x QuadTimer		
	MIPI DSI							
Internal Memory	External Mem	al Memory		6 x GP Timer		4 x Watchdog		
Up to 2MB SRAM Total	Dual Channel QSPI FLASH x2 w/ Encrypted Execution HyperRAM™/HyperFLASH™/PSRAM			An			nalog	
(Configurable ECC)			2 x 12b ADC 4.2		2 Msps	4 x Analog Comparator w/ 8b DAC		
ROM	External Memory Controller w/ Memory Crypto Engine 8/16/32-bit SDRAM/LPSDRAM 8/16-bit Parallel NAND/NOR Flash/FPGA/SRAM/8080			1 x 12b DAC				
		Security						
AES-128/256 Code Watchdog	Timer DES/3DES	eFuse	Elliptic Curve Cryptography		НАВ		Memory Crypto Engine	
RSA4096 Secure RA	M Secure RTC	SHA-1/SHA-2	SRAM PUF/UDF		Tamper De	etection	TRNG	
ailable on certain products within the family								

View additional information for i.MX RT1170 First GHz Crossover MCU with Arm® Cortex®-M7 and Cortex-M4 Cores.

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