

i.MX RT1050 Crossover MCU with Arm® Cortex®-M7 Core

i.MX-RT1050

Last Updated: Apr 11, 2024

i.MX RT1050 crossover MCUs are part of the EdgeVerse[™] edge computing platform and were introduced as the industry's first crossover MCU. They combine the high performance and high level of integration of an applications processors with the ease-of-use and real-time functionality of a microcontroller. The i.MX RT1050 MCU runs on the Arm® Cortex®-M7 core at 600 MHz.

This device is fully supported by NXP's MCUXpresso Software and Tools, a comprehensive and cohesive set of free software development tools for Kinetis, LPC and i.MX RT microcontrollers. MCUXpresso SDK also includes project files for Keil MDK and IAR Embedded Workbench for Arm. Support for FreeRTOS™ on the i.MX RT1050 MCU is available within the MCUXpresso SDK.

i.MX RT1050 Crossover MCU Block Diagram

System Control	Main CPU Platform		Connectivity
Secure JTAG	Core		eMMC 4.5/SD 3.0 x 2
PLL, OSO	Arm® Cortex®-M7 up to 600 MHz		8 x UART
eDMA	32 KB I-cache	32 KB D-cache	8 x 8 Keypad
4 x Watchdog	FPU	Up to 512 KB TCM	4 x I ² C
6 x GP Timer			4 x SPI
4 x Quadrature ENC	Multimedia 8-/16-bit Parallel Camera Interface		GPIO
4 x QuadTimer	24-bit Parallel LCD (RGB)		3 x I ² S/SAI
4 x FlexPWM	Pixel Processing Pipeline (PXP)		S/PDIF Tx/Rx
IOMUX	2-D Graphics Acceleration Resize, CSC, Overlay, Rotation		2 x CAN
Internal Memory	External Memory		2 x USB 2.0 OTG
Up to 512 KB SRAM/TCM	Dual-Channel Quad-SPI with Bus Encryption Engine		with PHY 1 x 10/100 ENET
96 KB ROM	External Memory Controller 8-/16-bit SDRAM Parallel NOR Flash NAND Flash		with IEEE® 1588
Power Management			ADC/DAC
DC/DC & LDO			2 x ADC (20-ch.)
Temp Monitor	Security		4 x ACMP
Ciphers & RNG	Secure RTC	eFuse	HAB

View additional information for i.MX RT1050 Crossover MCU with Arm® Cortex®-M7 Core.

Note: The information on this document is subject to change without notice.

www.nxp.com

NXP and the NXP logo are trademarks of NXP B.V. All other product or service names are the property of their respective owners. The related technology may be protected by any or all of patents, copyrights, designs and trade secrets. All rights reserved. © 2024 NXP B.V.