



Evaluation Kits Based on i.MX RT Series Crossover Processors

The i.MX RT EVK development platform featuring the i.MX RT series crossover processors in low cost package, take designs to the next level, reduce complexity and accelerate time to market.

The i.MX RT1050, i.MX RT1060, and i.MX RT1064 EVKs are a 4-layer and the i.MX RT1020 EVK is a 2-layer through-hole USB-powered PCB. At its heart lies the i.MX RT crossover processor, featuring NXP's advanced implementation of the Arm® Cortex®-M7 core. This core operates at speeds up to 600 MHz to provide high CPU performance and best real-time response.

KEY FEATURES

- ▶ Up to 1 MB on-chip RAM which can be flexibly configured as TCM
- ▶ Various memory interfaces, including SDRAM, Raw NAND Flash, NOR Flash, SD/eMMC, QuadSPI
- ▶ The i.MX RT1050, i.MX RT1060 and i.MX RT1064 EVKs have rich multimedia, including LCD display, parallel camera, 2D graphics acceleration, camera interface
- ▶ Audio interfaces, SPDIF and multiple I²S audio interfaces
- ▶ A wide range of interfaces to support both wired (Ethernet, USB, CAN, etc.) and wireless standards such as Wi-Fi®, Bluetooth®, BLE, ZigBee® and Thread™

- ▶ Abundant peripherals: Up to 2x HS USB OTG, 2x SDIO, 3x CAN, 2x 10/100 ENET with 1588, 8x UART, 4x SPI, 4x I²C, 4x Flex PWM, 4x Quad Timer, 4x ENC, 4x PIT, 2x GPT, 2x 12-bit ADC, 4x analog comparators
- ▶ Advanced power management module with DC-DC and LDO that reduces the complexity of an external power supply and simplifies power sequencing

TARGET APPLICATIONS

- ▶ **Audio Subsystem**—professional microphone, guitar pedals
- ▶ **Consumer Products**—Smart appliances, cameras, LCDs, QR reader, barcode scanner
- ▶ **Home and Building Automation**—HVAC climate control, security, lighting control panels, IoT gateways
- ▶ **Industrial Computing Designs**—EBS, PLCs, factory automation, test and measurement, M2M, HMI control assembly line robotics, QR readers, barcode scanners
- ▶ **Motor Control and Power Conversion**—3D printers, thermal printers, unmanned autonomous vehicles, robotic vacuum cleaners



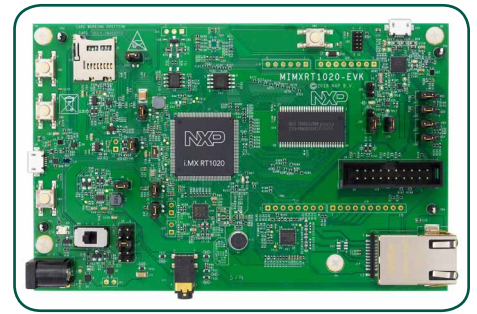
i.MX RT SERIES EVK FEATURES

EVK	i.MX RT1020	i.MX RT1050	i.MX RT1060/RT1064
Processor	<ul style="list-style-type: none"> MIMXRT1021DAG4A 500 MHz Arm® Cortex®-M7 core 144 LQFP 	<ul style="list-style-type: none"> MIMXRT1052DVL6B 600 MHz Arm® Cortex®-M7 core 196 MAPBGA 	<ul style="list-style-type: none"> MIMXRT1062DVL6A/MIMXRT1064DVL6A 600 MHz Arm® Cortex®-M7 core 196 MAPBGA
Memory	<ul style="list-style-type: none"> 256 Mb SDRAM memory 64 Mb QSPI Flash TF socket for SD card 	<ul style="list-style-type: none"> 256 Mb SDRAM memory 512 Mb Hyper Flash 64 Mb QSPI Flash TF socket for SD card 	<ul style="list-style-type: none"> 256 Mb SDRAM memory 512 Mb Hyper Flash 64 Mb QSPI Flash TF socket for SD card
Display	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Parallel LCD connector Camera connector 	<ul style="list-style-type: none"> Parallel LCD connector Camera Sensor Module
Audio	<ul style="list-style-type: none"> Audio codec 4-pole audio headphone jack External speaker connection Microphone 	<ul style="list-style-type: none"> Audio codec 4-pole audio headphone jack External speaker connection Microphone SPDIF connector 	<ul style="list-style-type: none"> Audio codec 4-pole audio headphone jack External speaker connection Microphone SPDIF connector
Connectivity	<ul style="list-style-type: none"> Micro USB host connector Micro USB OTG connector Ethernet (10/100T) connector CAN transceivers Arduino® interface 	<ul style="list-style-type: none"> Micro USB host connector Micro USB OTG connector Ethernet (10/100T) connector CAN transceivers Arduino® interface 	<ul style="list-style-type: none"> Micro USB host connector Micro USB OTG connector Ethernet (10/100T) connector CAN transceivers Arduino® interface
Debug	<ul style="list-style-type: none"> JTAG connector Onboard DAP-link debugger 	<ul style="list-style-type: none"> JTAG connector Onboard DAP-link debugger 	<ul style="list-style-type: none"> JTAG connector Onboard DAP-link debugger
Sensor	<ul style="list-style-type: none"> 6-axis eCompass (3-axis magnetometer, 3-axis accelerometer) sensor FXOS8700CQ 	<ul style="list-style-type: none"> 6-axis eCompass (3-axis magnetometer, 3-axis accelerometer) sensor FXOS8700CQ 	<ul style="list-style-type: none"> 6-axis eCompass (3-axis magnetometer, 3-axis accelerometer) sensor FXOS8700CQ
Part Number	MIMXRT1020-EVK	IMXRT1050-EVKB	MIMXRT1060-EVK/ MIMXRT1064-EVK
Display	N/A	RK043FN02H-CT 4.3"	RK043FN02H-CT 4.3"

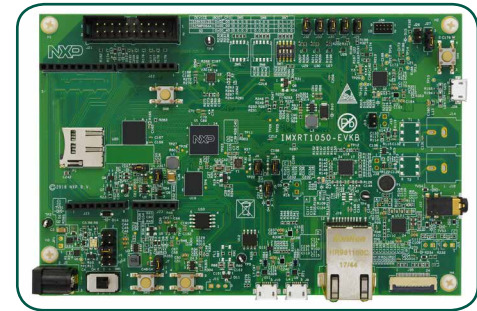
SOFTWARE AND TOOLS

Customers can simplify product design with MCU usability and leverage current toolchains, including MCUXpresso, IAR, and Keil. The i.MX RT processor allows for rapid and easy prototyping and development with MCUXpresso, SDK with Amazon FreeRTOS, Zephyr® OS, Arm® Mbed™ and the global Arm ecosystem. Additionally, customers can expand their low-cost EVK with compatible Arduino hardware shields.

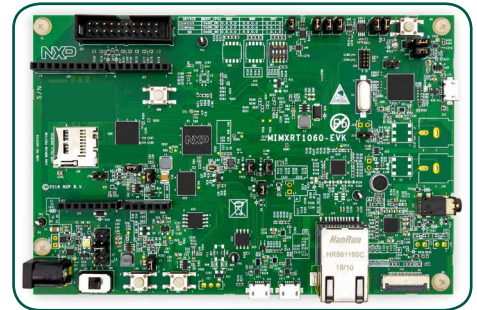
i.MX RT1020 EVK



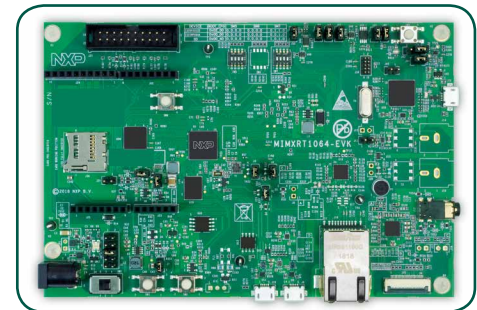
i.MX RT1050 EVK



i.MX RT1060



i.MX RT1064



www.nxp.com/iMXRT and imxcommunity.org

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