



# 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 EVK and i.MX RT1060 EVK 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 EVK and i.MX RT1060 EVK have rich multimedia, including LCD display, parallel camera, 2D graphics acceleration, camera interface
- ▶ Audio interfaces, SPDIF and multiple I<sup>2</sup>S SPDIF and multiple I<sup>2</sup>S 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™

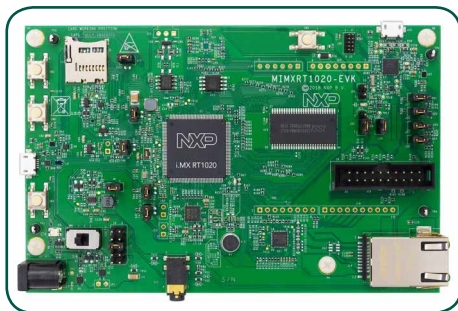
- ▶ Abundant peripherals: Up to 2x HS USB OTG, 2x SDIO, 2x CAN, 1x 10/100 ENET with 1588, 8x UART, 4x SPI, 4x I<sup>2</sup>C, 2-4x Flex PWM, 2-4x Quad Timer, 2-4x ENC, 4x PIT, 2x GPT, 2x 12-bit ADC, 4x analog comparators
- ▶ Advanced power management module with DC-DC and LDO that reduces the complexity of an external power supply and simplifies power sequencing

## TARGET APPLICATIONS

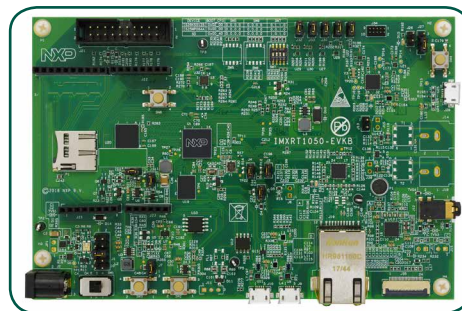
- ▶ **Audio Subsystem**—professional microphone, guitar pedals
- ▶ **Consumer Products**—Smart appliances, cameras, LCDs, QR reader, barcode scanner
- ▶ **Home and Building Automation**—HVAC climate control, security, lighting control panels, IoT gateways
- ▶ **Industrial Computing Designs**—EBS, PLCs, 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



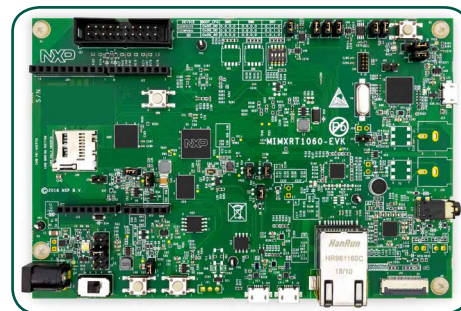
## i.MX RT1020 EVK



## i.MX RT1050 EVK



## i.MX RT1060 EVK



### i.MX RT SERIES EVK FEATURES

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