Evaluation Kit Based on i.MX RT1050 Crossover Processors

The i.MX RT1050 EVK is an entry-level development platform featuring the i.MX RT1050 crossover processor in a small, low-cost package.

The i.MX RT1050 EVK is a 4-layer through-hole USB-powered PCB. At its heart lies the i.MX RT1050 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.
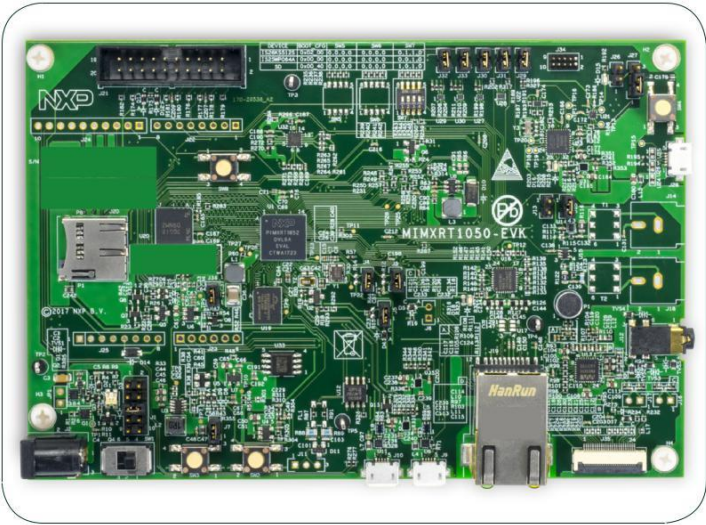
KEY FEATURES

▶ 512 KB on-chip RAM which can be flexibly configured as TCM

▶ Various memory interfaces, including SDRAM, Raw NAND Flash, NOR Flash, SD/eMMC, QuadSPI

▶ Rich multimedia, including LCD display, parallel camera, 2D graphics acceleration, camera interface, SPDIF and multiple I$_2$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: 2x HS USB OTG, 2x SDIO, 2x CAN, 1x 10/100 ENET with 1588, 8x UART, 4x SPI, 4x I$_2$C, 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

▶ 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

▶ Motor Control and Power Conversion—3D printers, thermal printers, unmanned autonomous vehicles, robotic vacuum cleaners

i.MX RT1050 EVK

i.MX RT1050 LCD

ORDERING INFORMATION

Part Number: MIMXRT1050-EVK
Display (4.3"): RK043FN02H-CT

MIMXRT1050-EVK FEATURES

CPU Board	
Processor	• MIMXRT1052DVL6A processor • 600 MHz Arm® Cortex®-M7 core
Memory	• 256 Mb SDRAM memory • 512 Mb Hyper Flash • Footprint for QSPI Flash • TF socket for SD card
Display	• Parallel LCD connector • Camera connector
Audio	• Audio codec • 4-pole audio headphone jack • External speaker connection • Microphone • SPDIF connector
Connectivity	• Micro USB host connector • Micro USB OTG connector • Ethernet (10/100T) connector • CAN transceivers • Arduino® interface
Debug	• JTAG connector • Onboard DAP-link debugger
Sensor	• 6-axis eCompass (3-axis magnetometer, 3-axis accelerometer) sensor FXOS8700CQ

SOFTWARE AND TOOLS

Customers can simplify product design with MCU-like 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 FreeRTOS, Arm® Mbed™ and the global Arm ecosystem. Additionally, customers can expand their low-cost EVK with compatible Arduino hardware shields.

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