Evaluation Kit Based on i.MX 8M Nano Applications Processors

The i.MX 8M Nano EVK is a feature-rich development platform that enables evaluation and development of high-performance, scalable and cost-optimized solutions.

The i.MX 8M Nano EVK hardware and software board support packages provide a comprehensive platform for evaluation of the i.MX 8M Nano and i.MX 8M Nano Lite applications processors utilizing 1, 2, or 4 Arm® Cortex®-A53 cores and 1 Cortex-M7 core.

The EVK offers a large assortment of features to support graphics, video, image processing, audio and voice functions. Optimized drivers and software complement the EVK and enable a variety of applications for the embedded consumer and industrial markets.

The EVK topology consists of a baseboard and a compute module. The compute module is a size-optimized design that contains the i.MX 8M Nano applications processor, PMIC, DRAM, eMMC, and provides wireless connectivity via an SDIO-based Wi-Fi®/Bluetooth® module. The i.MX 8M Nano and i.MX 8M Mini use the same baseboard, proof that a single hardware design can support both solutions.

The compute module plugs into the baseboard, which provides MIPI-DSI and MIPI-CSI connectors, a USB 3.0 connector, and PCIe® high-speed interfaces ideal for embedded and connected high-performance applications. In addition, the baseboard has a microSD™/MMC slot, 10/100/1000 Ethernet port, and includes a 3.5 mm headphone jack. Included in the box is the MIPI-DSI to HDMI adapter card and miniSAS cable, to provide out-of-the-box display capabilities.

TARGET APPLICATIONS

▸ General-purpose Human Machine Interface (HMI) Solutions

▸ Building Automation — fire and security panel, elevator control, HVAC control, smart access control, IoT gateway

▸ Smart Homes — voice controlled light switches, smart appliances, smart thermostats, service robots

▸ Imaging and Machine Vision — retail inventory management, thermal/IR scanners, drones, mobile service robots

▸ Healthcare — patient monitor, infusion pump, activity and wellness monitor

▸ Audio Entertainment — soundbars, audio video receivers, wireless speakers, portable music players, public address systems

PROVEN HARDWARE DESIGN

The compute module is the processing and connectivity core of your smart, connected system. The hardware design is a size-optimized 6-layer board with high-speed DDR4, proven to work at speed with our Linux® and Android™ operating systems. Fast track your product development by using this design as your starting point. Design collateral is available on **nxp.com**.

VERSATILE PLATFORM FOR DEVELOPMENT

The EVK system includes the functionality required for you to build your smart, connected application. Wi-Fi 5 is included in the box (no additional board required), and display and camera accessory boards lets you prototype a HMI or vision based system.

HMI AND CONNECTIVITY

Today, HMI applications must respond accurately, and in 4 milliseconds, to touch screen and gesture inputs. Connectivity is a must, demanding increasingly faster and more reliable wired and wireless capabilities, associated with security to protect privacy and sensitive data. The i.MX 8M Nano EVK provides capabilities to develop these key functionalities.

i.MX 8M NANO EVK COMPUTE MODULE

Part Number	8MNANOD4-EVK
Memory	• DDR4 x16 w/2 GB
	• 16GB eMMC
	• MicroSD/MMC connector • QSPI w/64 MB
Processor	• i.MX 8M Nano Quad applications processor • 4 x Arm® Cortex-A53 @ 1.5 GHz • Arm Cortex-M7 @ 750 MHz
Power Management	• Murata Type 1MW
Wireless	• Wi-Fi 802.11 a/b/g/n/ac MIMO 2x2 • Onboard chip antenna • External antenna connector

i.MX 8M NANO EVK BASE BOARD

Display/Camera Connectors	• MIPI-CSI Camera mini-SAS connector • MIPI-DSI Display mini-SAS connector
Audio	• Audio DAC 24-bit 192 kHz stereo • HP Jack 3.5 mm audio connector • Board expansion connector for audio interfaces
Connectivity	• 10/100/1000 Ethernet • USB 3.0 Type C connector • PCIe M.2 interface
Debug	• JTAG connector • UART via USB
Tools and OS support	• Linux® • Android™ • FreeRTOS™

ORDERING INFORMATION

Part Number: **8MNANOD4-EVK**
Memory: 2 GB DDR4, 16 GB eMMC 5.0/5.1

i.MX 8M NANO EVK CONTENTS

▸ i.MX 8M Nano EVK baseboard and compute module

▸ Quick Start Guide

▸ USB 3.0 Type C to Type A

▸ USB 2.0 Type A to Type Micro

▸ USB Type C power supply

▸ HDMI MIPI-DSI to HDMI adapter card and miniSAS cable

SOFTWARE AND TOOLS

The i.MX 8M Nano EVK comes pre-installed with a boot image flashed to the on-board eMMC device. Hardware design files, software tools and board support packages (BSPs) for Linux, Android and FreeRTOS are available from NXP to use as a reference for starting designs. Other reference designs and tools are also available from NXP's ecosystem partners. Additional information can be found at **www.nxp.com/iMX8MNanoEVK.**

There are a number of accessory boards that pair with the i.MX 8M Nano EVK including support for cameras and displays. Visit **www.nxp.com/i.MX8-ACCESSORY-BOARDS** to see the complete list.

i.MX 8M NANO EVK DISPLAY BOARD

Description	Part Number	Photo
MIPI-DSI OLED Display	MX8_DSI_OLED1	

i.MX 8M NANO EVK ACCESSORY BOARDS

Description	Part Number	Photo
MIPI-DSI to HDMI Adapter	(IMX-MIPI-HDMI included with the Evaluation Kit)	
MIPI-CSI Camera	MINISASTOCSI	