

# EVALUATION KIT BASED ON i.MX 8M MINI APPLICATIONS PROCESSORS



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

The i.MX 8M Mini EVKB hardware and software board support packages provide a comprehensive platform for evaluation of the i.MX 8M Mini and i.MX 8M Mini Lite applications processors utilizing 1, 2, or 4 Arm® Cortex®-A53 cores and 1 Cortex-M4 core. It offers high performance with low power consumption, flexible options for memory and high-speed interfaces, as well as industry-leading audio and video capabilities.

The EVKB offers a large assortment of features to support graphics, video, image processing, audio and voice functions. It is complemented by optimized drivers and software to enable a variety of applications for the embedded consumer and industrial markets.

The EVKB topology consists of a base board and a compute module. The compute module plugs into the base board, which enables the MIPI-DSI and MIPI-CSI connectors, USB 3.0 connector, and PCIe® high-speed interfaces for connected, high-performance embedded applications. In addition, the base board has a SD/MMC slot, a 10/100/1000 Ethernet port, and a 3.5 mm speaker jack. A MIPI-DSI to HDMI adapter card and a mini-SAS cable are included for out-of-the-box display capabilities.

The compute module is a size-optimized design that contains the i.MX 8M Mini applications processor, a PMIC and an LPDDR4 and eMMC. This module provides wireless connectivity via an AzureWave SDIO-based Wi-Fi®/Bluetooth® module.

## **AUDIO, VIDEO, AND GRAPHICS**

The EVK includes hardware-accelerated video and graphics capabilities. The integrated video support decodes most relevant video formats such as 264, VP8, and VP9 for video decode, and H.264, VP8 for video encode and renders up to 1080p60 video resolution. Applications such as video-streaming human-machines interfaces (HMIs), surveillance and robotics can take advantage of the high level of multimedia integration. Proven system solutions for audio and voice enablement are provided through NXP's ecosystem partners.

## **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 Mini EVKB provides capabilities to develop these key functionalities.

## TARGET APPLICATIONS

- General-purpose HMI solutions
- Building automation — fire and security panel, elevator control, HVAC control, surveillance monitoring
- Smart homes — surveillance monitoring, video doorbell, voice-controlled light switches, smart appliances, smart thermostats
- Imaging and machine vision — retail inventory management, thermal/IR scanners, drones, mobile service robots
- Video conferencing — two-way 1080p video conferencing for industrial, consumer or medical applications
- Audio entertainment — soundbars, audio/video receivers, wireless speakers, portable music players, public address systems

## i.MX 8M MINI EVKB COMPUTE MODULE

PART NUMBER	8MMINILPD4-EVKB
Memory	<ul style="list-style-type: none"> <li>• 2 GB 32-bit LPDDR4</li> <li>• SD/MMC connector</li> <li>• 32 MB QSPI NOR flash</li> </ul>
Processor	<ul style="list-style-type: none"> <li>• i.MX 8M Mini Quad applications processor</li> <li>• 4 x Arm® Cortex®-A53 core running @ 1.8 GHz</li> <li>• Arm Cortex-M4 core running @ 400 MHz</li> </ul>
Power Management	<ul style="list-style-type: none"> <li>• NXP® PCA9450AA PMIC</li> </ul>
Wireless	<ul style="list-style-type: none"> <li>• AzureWave AW-CM358SM (NXP 88W8987): Wi-Fi® 5 (802.11ac) and Bluetooth 5.1</li> <li>• Onboard chip antenna</li> <li>• External antenna connector</li> </ul>

## i.MX 8M MINI EVKB BASE BOARD

Display/ Camera Connectors	<ul style="list-style-type: none"> <li>• MIPI-CSI camera mini-SAS connector</li> <li>• MIPI-DSI display mini-SAS connector</li> </ul>
Audio	<ul style="list-style-type: none"> <li>• Audio DAC 24-bit 192 kHz stereo</li> <li>• HP jack 3.5 mm audio connector</li> <li>• Board expansion connector for audio interfaces</li> </ul>
Connectivity	<ul style="list-style-type: none"> <li>• 10/100/1000 Ethernet</li> <li>• USB 3.0 Type C connector</li> <li>• PCIe® M.2 interface</li> </ul>
Debug	<ul style="list-style-type: none"> <li>• JTAG connector</li> <li>• UART via USB</li> </ul>
Tools and OS support	<ul style="list-style-type: none"> <li>• Linux®</li> <li>• Android™</li> <li>• FreeRTOS (enabling the Cortex-M core)</li> </ul>

## ORDERING INFORMATION

Part Number: 8MMINILPD4-EVKB

Memory: 2 GB LPDDR4, 32 GB eMMC 5.1

## i.MX 8M MINI EVKB CONTENTS


- i.MX 8M Mini EVKB base board 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 Mini-SAS cable

## SOFTWARE AND TOOLS


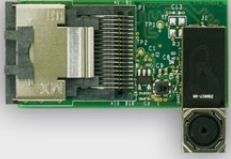
The i.MX 8M Mini EVKB comes pre-installed with a boot image flashed. Hardware design files, software tools and board support packages (BSPs) for Linux, Android and FreeRTOS are available from NXP to use as a reference for starting designs. Other reference designs and tools are also available from NXP's ecosystem partners. Additional information can be found at [www.nxp.com/iMX8MMiniEVK](http://www.nxp.com/iMX8MMiniEVK).

There are a number of accessory boards that pair with the i.MX 8M Mini EVKB that include support for cameras and displays. Visit [www.nxp.com/i.MX8-ACCESSORY-BOARDS](http://www.nxp.com/i.MX8-ACCESSORY-BOARDS) to see the complete list.

## i.MX 8M MINI EVKB DISPLAY BOARD

DESCRIPTION	PART NUMBER	PHOTO
MIPI-DSI OLED Display	MX8_DSI_OLED1/ MX8_DSI_OLED1A	

## i.MX 8M MINI EVKB ACCESSORY BOARDS

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

[www.nxp.com/iMX8MMiniEVK](http://www.nxp.com/iMX8MMiniEVK) and [imxcommunity.org](http://imxcommunity.org)

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