IMXWNR

i.MX Windows 10 IoT Release Notes

Rev. W1.3.0 — 20 December 2022

Document information

Information	Content
Keywords	i.MX, Windows 10 IoT
Abstract	This document contains important information about the package contents, supported features, known issues and limitations in this release.

1   Overview

i.MX Windows 10 IoT 1.3.0 release includes all necessary code, documents, and tools to assist users in building and running Windows 10 IoT on the i.MX boards from scratch.

Pre-built images are also included for a quick trial on the following platforms:

- i.MX 8M Mini EVK
- i.MX 8M Nano EVK
- i.MX 8M Plus EVK
- i.MX 8M Quad EVK
- i.MX 8QuadXPlus MEK (Silicon Revision C0)

1.1   References

For more information about Windows 10 IoT Enterprise, see Microsoft online documentation.

The following quick start guides available on the NXP website contain basic information on the board and setting it up:

- i.MX 8M Quad Evaluation Kit
- i.MX 8M Mini Evaluation Kit
- i.MX 8M Nano Evaluation Kit
- i.MX 8M Plus Evaluation Kit
- i.MX 8QuadXPlus Multisensory Enablement Kit

Documentation is available online at nxp.com.

1.2   BSP change history

This chapter lists changes in releases including new features and defect fixes.

- 12/2022: W1.3.0
  - **Supported boards:**
    - MCIMX8M-EVK Evaluation Kit
    - 8MMINILPD4-EVK Evaluation Kit
    - 8MNANOLPD4-EVK Evaluation Kit
    - 8MPLUSLPD4-EVK Evaluation Kit
    - MCIM8QXP-MEK (Silicon Revision C0)
  - **New features:**
    - **General**
      - UEFI.fit image is merged to U-Boot FIT image on 8M platforms.
      - UEFI binary is compressed before inserted to uefi.fit on 8M platforms.
      - The firmware name is suffixed with "`_uuu`" if it is compiled with UUU tools.
      - Removed "`-t signed`". The firmware is always signed when using "`-t secured_efi`".

- Custom HAB/AHAB signing keys can be now used by defining the "KEY_ROOT" path.
  - **Audio driver:**
    - Driver `imxaud.sys` has been split into `imxaud.sys` using multi-channel SAI peripheral for i.MX 8M and `imxaudsc.sys` using single-channel SAI peripheral for i.MX 8QXP.
  - **I2C driver:**
    - A new imxlpi2c driver for the LPI2C peripheral is included. Interrupt and polling modes have been supported.
    - A new iMXLpi2cLib driver for the LPI2C peripheral in UEFI is included.
  - **ENET driver:**
    - QoS driver is supported on i.MX 8M Plus.
  - **I2C sensor drivers:**
    - e-Compass FXOS8700 - Accelerometer and Magnetometer is supported on the i.MX 8QXP MEK board.
    - Gyroscope FXAS2100 is supported on the i.MX 8QXP MEK board.
    - Ambient Light Sensor ISL29023 is supported on i.MX 8QXP MEK board.
  - **GPU/display driver:**
    - GPU driver is added for i.MX 8QXP.
    - HDMI display interface is supported for i.MX 8M Plus.
    - GPU driver version is increased to 1.4.
    - GPU driver support for video processing is added for i.MX 8M Nano/Plus.
    - The source code for the GPU driver kernel part (galcore) is included in the BSP.
  - **UART driver:**
    - LPUART is supported for i.MX 8QXP in interrupt mode. No flow control is available for LPUART0 and LPUART2. LPUART1 (m2 slot) has RTS, CTS pins wired.
- **Fixes:**
  - **GPU/display driver:**
    - Unsupported resolution and pixel clock (for example 1280x800, pclk=68.9 MHz) display an error message. As a workaround, the algorithm was changed to set the closest possible pixel clock and display a warning message.
    - i.MX 8M: Resolution 720p is set by default when a display is not connected or it does not support EDID.
  - **USBC:**
    - i.MX 8M Plus: USB 3.0 devices were incorrectly detected as USB 2.0. USB Type-C multiplex/demultiplexer switch "Selection control" pin polarity setting has been added to the ACPI table.
- 10/2022: W1.2.1
  - **New features:**
    - **Wi-Fi and Bluetooth driver:**
      - Wi-Fi AzureWave AW-CB178NF board based on 88W8897 SoC has been supported. Wi-Fi and Bluetooth functionality has been enabled.
        - 8/2022: W1.2.0
          - **Supported boards:**
            - MCIMX8M-EVK evaluation kit
            - 8MMINILPD4-EVK evaluation kit
            - 8MNANOD4-EVK evaluation kit

- 8MPLUSLPD4-EVK evaluation kit
- **New features:**
  - **General**
    - [Visual Studio 2019](#) has been supported, but version 2017 is no longer supported.
    - Firmware update: buildme64.sh switch –cap added to build Firmware capsule. Capsule update working from Uefi shell with capsule stored on SD card: fs0: CapsuleApp.efi fs3: FirmwareCapsuleIMX.cap
    - make-winpe-enterprise.cmd parameters have been updated, see [User's Guide](#) for details.
    - i.MX 8M CPU frequency changed from 1 GHz to 1.5 GHz
  - **GPU driver:**
    - GPU driver has been updated to v1.3.
    - GPU driver added for i.MX 8M Plus and i.MX 8M Nano SOCs.
    - GPU driver support for video processing has been added for i.MX 8M.
  - **Camera driver:**
    - OV5640 camera has been supported for all EVK boards.
    - OV10635 camera has been supported for all EVK boards.
    - YUV422 YUY2 and YUV420 NV12 camera color formats have been supported. The i.MX 8M EVK does not support YUV420 NV12 format.
  - **Display driver:**
    - Windows driver with fixed display mode supported for LVDS display interface for i.MX 8M Plus.
    - Windows driver with fixed display mode supported for MIPI-DSI display interface for i.MX 8M Nano.
  - **VPU driver:**
    - VPU decoder has been supported for i.MX 8M Quad, i.MX 8M Mini, and i.MX 8M Plus EVK boards.
- **Fixes:**
  - **WM8960 driver:** I2C is correctly released when the WM8960 device is removed.
- 8/2022: W1.2.0
  - **Supported boards:**
    - MCIMX8M-EVK evaluation kit
    - 8MMINILPD4-EVK evaluation kit
    - 8MNANOD4-EVK evaluation kit
    - 8MPLUSLPD4-EVK evaluation kit
  - **New features:**
    - **General**
      - [Visual Studio 2019](#) has been supported, but version 2017 is no longer supported.
      - Firmware update: buildme64.sh switch –cap added to build Firmware capsule. Capsule update working from Uefi shell with capsule stored on SD card: fs0: CapsuleApp.efi fs3: FirmwareCapsuleIMX.cap

- make-winpe-enterprise.cmd parameters have been updated, see User's Guide for details.
- i.MX 8M CPU frequency changed from 1 GHz to 1.5 GHz
  - **GPU driver:**
    - GPU driver has been updated to v1.3.
    - GPU driver added for i.MX 8M Plus and i.MX 8M Nano SOCs.
    - GPU driver support for video processing has been added for i.MX 8M.
  - **Camera driver:**
    - OV5640 camera has been supported for all EVK boards.
    - OV10635 camera has been supported for all EVK boards.
    - YUV422 YUY2 and YUV420 NV12 camera color formats have been supported. The i.MX 8M EVK does not support YUV420 NV12 format.
  - **Display driver:**
    - Windows driver with fixed display mode supported for LVDS display interface for i.MX 8M Plus.
    - Windows driver with fixed display mode supported for MIPI-DSI display interface for i.MX 8M Nano.
  - **VPU driver:**
    - VPU decoder has been supported for i.MX 8M Quad, i.MX 8M Mini, and i.MX 8M Plus EVK boards.
  - **Fixes:**
  - **WM8960 driver:** I2C is correctly released when the WM8960 device is removed.
- 8/2022: W1.2.0
  - **Supported boards:**
    - MCIMX8M-EVK evaluation kit
    - 8MMINILPD4-EVK evaluation kit
    - 8MNANOD4-EVK evaluation kit
    - 8MPLUSLPD4-EVK evaluation kit
  - **New features:**
    - **General**
      - Visual Studio 2019 has been supported, but version 2017 is no longer supported.
      - Firmware update: buildme64.sh switch –cap added to build Firmware capsule. Capsule update working from Uefi shell with capsule stored on SD card: fs0: CapsuleApp.efi fs3: FirmwareCapsuleIMX.cap
      - make-winpe-enterprise.cmd parameters have been updated, see User's Guide for details.
      - i.MX 8M CPU frequency changed from 1 GHz to 1.5 GHz
    - **GPU driver:**
      - GPU driver has been updated to v1.3.
      - GPU driver added for i.MX 8M Plus and i.MX 8M Nano SOCs.
      - GPU driver support for video processing has been added for i.MX 8M.
    - **Camera driver:**
      - OV5640 camera has been supported for all EVK boards.

IMXWNR

Release notes

Rev. W1.3.0 — 20 December 2022

5 / 16

- – OV10635 camera has been supported for all EVK boards.
- – YUV422 YUY2 and YUV420 NV12 camera color formats have been supported. The i.MX 8M EVK does not support YUV420 NV12 format.
  - **Display driver:**
    - – Windows driver with fixed display mode supported for LVDS display interface for i.MX 8M Plus.
    - – Windows driver with fixed display mode supported for MIPI-DSI display interface for i.MX 8M Nano.
  - **VPU driver:**
    - – VPU decoder has been supported for i.MX 8M Quad, i.MX 8M Mini, and i.MX 8M Plus EVK boards.
  - **Fixes:**
    - – **WM8960 driver:** I2C is correctly released when the WM8960 device is removed.
- 8/2022: W1.2.0
  - **Supported boards:**
    - – MCIMX8M-EVK evaluation kit
    - – 8MMINILPD4-EVK evaluation kit
    - – 8MNANOD4-EVK evaluation kit
    - – 8MPLUSLPD4-EVK evaluation kit
  - **New features:**
    - **General**
      - – Visual Studio 2019 has been supported, but version 2017 is no longer supported.
      - – Firmware update: buildme64.sh switch –cap added to build Firmware capsule. Capsule update working from Uefi shell with capsule stored on SD card: fs0: CapsuleApp.efi fs3: FirmwareCapsuleIMX.cap
      - – make-winpe-enterprise.cmd parameters have been updated, see User's Guide for details.
      - – i.MX 8M CPU frequency changed from 1 GHz to 1.5 GHz
    - **GPU driver:**
      - – GPU driver has been updated to v1.3.
      - – GPU driver added for i.MX 8M Plus and i.MX 8M Nano SOCs.
      - – GPU driver support for video processing has been added for i.MX 8M.
    - **Camera driver:**
      - – OV5640 camera has been supported for all EVK boards.
      - – OV10635 camera has been supported for all EVK boards.
      - – YUV422 YUY2 and YUV420 NV12 camera color formats have been supported. The i.MX 8M EVK does not support YUV420 NV12 format.
    - **Display driver:**
      - – Windows driver with fixed display mode supported for LVDS display interface for i.MX 8M Plus.

- Windows driver with fixed display mode supported for MIPI-DSI display interface for i.MX 8M Nano.
  - **VPU driver:**
    - VPU decoder has been supported for i.MX 8M Quad, i.MX 8M Mini, and i.MX 8M Plus EVK boards.
  – **Fixes:**
    - **WM8960 driver:** I2C is correctly released when the WM8960 device is removed.
- 6/2022: W1.1.0
  Public release for i.MX 8M Nano and i.MX 8M Plus platforms.
  – **Supported boards:**
    - MCIMX8M-EVK evaluation kit
    - 8MMINILPD4-EVK evaluation kit
    - 8MNANOD4-EVK evaluation kit
    - 8MPLUSLPD4-EVK evaluation kit
  – **New features:**
    - **Camera driver:** OV5640 camera in J1502 connector has been supported on i.MX 8M EVK board.
    - **FlexCAN driver:** FlexCAN device has been supported on i.MX 8M Plus EVK by the imxcan.sys driver.
    - **I2C driver:** I2C expander (PCA6416) has been supported in iMX8BoardInit module and options `SelectCAN1InsteadOfI2C5` and `SelectCAN2InsteadOfPDMStream3` allow configuring corresponding selectors on the Base Board.
    - **GPU driver:** GPU driver has been updated to v1.1.
    - **Debug drivers:** WinDbg over Ethernet has been supported. WinDbg over ethernet requires the `kd_8003_1fc9.dll` library which is not distributed as a part of the BSP. To get this library, contact Microsoft.
    - **ENET driver:** HW checksum offload has been supported in the NDIS miniport driver.
  – **Fixes:**
    - **Audio driver:** A failure during uninstallation in the Device manager has been fixed.
    - **Display driver:** IMX-LVDS-HDMI and IMX-MIPI-HDMI converters: If a native HDMI display resolution exceeds the upper limit, the fixed maximum available resolution is set instead. 1920x1080@60 Hz in case of IMX-MIPI-HDMI and 1280x720@60 Hz in case of IMX-LVDS-HDMI.
    - **SD driver:** Configuration "fixed device" has been changed to "removable device", which allows you to safely remove the SD card by the "Eject" option.
- 4/2022: W1.0.0
  Public release for i.MX 8M and i.MX 8M Mini platforms.
  – **Supported boards:** MCIMX8M-EVK evaluation kit 8MMINILPD4-EVK evaluation kit
  – **New features:**
    - **VPU driver:** Supported codecs HEVC, VP9, H.264, VP8. MPEG-2 and MPEG-4 codecs supported on i.MX 8M only.
  – **Fixes:**
    - **UART driver:** The UART driver failure during uninstallation in the Device manager has been fixed.
    - **I2C driver:** The issue in iMXI2cRead function (when ReadBufferSize == 1) in UEFI has been fixed.

IMXWNR

All information provided in this document is subject to legal disclaimers.

© 2022 NXP B.V. All rights reserved.

Release notes

Rev. W1.3.0 — 20 December 2022

7 / 16

- **buildme 64.sh:** The script has been updated. Updates in UEFI source code were included in firmware.bin only if firmware was built with -c parameter (clean build).
    - **PCIe:** PCIE ATU (Address Translation Unit) setup for PCIE BAR memory-mapped registers in UEFI drivers has been fixed. After this fix, the system works as expected in UEFI and relevant Storage drivers appear in Windows.
- 3/2022: W0.9.1
  Public preview release for i.MX 8M platform.
    - **Fixes:**
        - **eMMC driver:** eMMC tuning parameters add to the Dsdt-Sdhc.asl.
        - **BSP deployment:** Removed invalid characters from make-winpe-enterprise.cmd.
- 1/2022: W0.9.0
  Private preview release for i.MX 8M platform.
    - **Supported boards:** The existing BSP with support for the MCIMX8M-EVK NXP board.

2 BSP supported features

The following table displays the features supported in this BSP release. If no board is explicitly mentioned, the feature is shared across all boards listed in Supported Hardware in the Release contents section; otherwise, the feature is only supported on the boards listed.

Table 1. Supported boards

Board name	Board revision	Schema revision	BSP name
MCIMX8M-EVK	700-29615 REV A3	SCH-29615 REV B4	MX8M_EVK
8MMINILPD4-EVK	700-31407 REV A3	SCH-3140 REV C4	MX8M_MINI_EVK
	700-47712REV X2	SCH-47712 REV A2	
8MNANOLPD4-EVK	700-31407 REV X5 (base board)	SCH-31407 REV C2 (base board)	MX8M_NANO_EVK
	700-38823 REV A (cpu board)	SCH-38823 REV A2 (cpu board)	
8MPLUSLPD4-EVK	700-46370 REV B (base board)	SCH-46370 REV B1 (base board)	MX8M_PLUS_EVK
	700-46368 REV A (cpu board)	SCH-46368 REV A3 (cpu board)	
MCIM8QXP-MEK	700-29683 REV C2 (cpu board)	SCH-29683 REV D4 (cpu board)	MX8QXP_MEK
	700-29918 REV C1 (base board)	SCH-29918 REV C1 (base board)	

Table 2. Supported features

Feature	Supported board	Comment
Boot Image		

IMXWNR

Release notes

Rev. W1.3.0 — 20 December 2022

8 / 16

Table 2. Supported features...*continued*

Feature	Supported board	Comment
U-Boot	All i.MX	• Clock, Anatop regulator, ENET, UART, MMC/SD, e MMC4.3/4.4/4.5.
OP-TEE	All i.MX	• OP-TEE OS is required on the boot partition with the TEE file for OP-TEE enablement.
Machine-specific layer		
Interrupt	All i.MX	• GIC
Clock	All i.MX	• Controls the system frequency and clock tree distribution.
Timer	All i.MX	• System timer tick and broadcast timer support.
GPIO	All i.MX	• GPIO is initialized in earlier phase according to hardware design.
IOMUX	All i.MX	• Provides the interfaces for I/O configuration.
SCFW	i.MX8QXP	• Clock/Power/Security is controlled by the "System Control Firmware". The "imxscfw" driver controls communication channel with this firmware.
DMA engine		
SDMA	i.MX 8M	• SDMA HAL
Character device drivers		
UART	i.MX 8M/Mini/Nano/Plus	• DMA(default) and Interrupt mode configurable in ACPI • UART2 is not available in Windows, used by the Cortex-M4 processor.
LPUART	i.MX 8QXP	• Interrupt mode
Networking drivers		
ENET	All i.MX	• i.MX 8 supports Atheros AR8031 PHY with 10/100/1000 bps mode
ENET QOS	i.MX 8M Plus	• ENET QOS is available on i.MX 8M Plus. • RTL8211 PHY is supported.
PCIe	All i.MX	• i.MX 8 supports M.2 interface.
Sound drivers		

Table 2. Supported features...*continued*

Feature	Supported board	Comment
SAI	All i.MX	• Supports both transmit to and receive from the audio codec.
WM8524 codec	i.MX 8M/Mini/Nano	• Supports playback
WM8960 codec	i.MX 8M Plus/i.MX 8QXP	• Supports playback and record.
USB drivers		
USB Host	All i.MX	• Supports USB-A and USB-C connectors.
Display/GPU		
HDMI	i.MX 8M i.MX 8M Plus	• Up to 1080p

LVDS display interface	i.MX 8M Plus
	i.MX 8QXP
		• i.MX 8M Plus:
		  – Single-channel mode up to 720p
		  – Dual-channel mode up to 1080p (or 1920x1200@60 Hz)
		  – Default mode set to 720p
		• i.MX 8QXP
		  – Single-channel mode up to 1080p
		  – Default mode set to 1080p

IMX-LVDS-HDMI (LVDS to HDMI converter)	i.MX 8M Plus i.MX 8QXP	• Single-channel mode. Default resolution – see above.
MIPI-DSI display interface	i.MX 8M Mini/Nano	• i.MX 8M Nano: supports Windows GPU driver up to 1080p (or 1920x1200@60 Hz). Default resolution set to 720p. • i.MX 8M Mini: no Windows driver, only firmware support up to 1080p. Default resolution with IMX-MIPI-HDMI converter depends on the monitor native mode – 1080p in most cases.
IMX-MIPI-HDMI (MIPI-DSI to HDMI converter)	i.MX 8M Mini/Nano	• Default resolution – see above.
GPU	i.MX 8M /Plus/Nano i.MX 8QXP	• HW acceleration for 3D rendering through D3D11 API, therefore accelerates D2D, XAML, UWP, WinUI, Windows desktop UI, and D3D11 apps.
Camera		

IMXWNR

All information provided in this document is subject to legal disclaimers.

© 2022 NXP B.V. All rights reserved.

Release notes

Rev. W1.3.0 — 20 December 2022

10 / 16

Table 2. Supported features...*continued*

Feature	Supported board	Comment
Camera (SoCs with CSI Bridge)	i.MX 8M/Mini	• Video preview at 720p 30 fps YUYV.
Camera (SoCs with ISI)	i.MX 8M Plus/Nano	• Video preview at 720p 30 fps YUYV and NV12
OV5640 camera	All i.MX	• Second camera configurable in UEFI in <BOARD>.dsc file.
OV10635 camera	All i.MX	• Selectable in UEFI in <BOARD>.dsc file. • i.MX 8M/Mini/Nano/Plus requires an external 12 V PSU and a manual reset every time Windows OS is rebooted. • i.MX 8QXP powers camera via mini SAS connector.
Video		
VPU full feature	i.MX 8M	• Supported codecs HEVC, VP9, H.264, VP8, MPEG-2, and MPEG-4 codecs
VPU limited feature	i.MX 8 Mini/Plus	• Supported codecs HEVC, VP9, H.264, VP8.
General drivers		
uSDHC	All i.MX	• Supports SD, SDXC, eMMC.
I2C	All i.MX	• Supports I2C master mode.
SPI	All i.MX	• Supports SPI master mode.
FlexCAN	i.MX 8M	• FlexCAN low-level driver.
Power management		
Device power management	All i.MX	• Sample PoFx callbacks are implemented in i2c and pwm drivers. Devices entering D3 (power down) and D0 (active) states, WakeUp sample callbacks in i2c driver.
Processor power management	All i.MX	• PEP (Power Engine Plugin) driver is included in this release. Set usePpm to 1 in imxpep.cpp to enable processor power management, and contact NXP for the latest Pep version.

IMXWNR

Release notes

Rev. W1.3.0 — 20 December 2022

11 / 16

Table 2. Supported features...*continued*

Feature	Supported board	Comment
USB Power delivery	All i.MX	• The initial USB Power delivery contract is negotiated in Uboot. See `tcpc_port_config` structure initialization in imx8mp_evk.c, imx8mq_ evk.c, imx8mm_evk.c, and imx8mn_evk.c files for actual setting of voltage and current for given board.

3   Known issues/limitations

Read through all hardware-related reference material and ensure that you have made all the necessary hardware modifications before using the software.

Table 3. Known issues/limitations

Limitation/Workaround	SoC
Boot	
Limitation: Supported boot media are SD and eMMC only. **Workaround:** No workaround.	All
Camera	
Limitation: Only i.MX 8MQ EVK SCH-29615 rev. B4 is supported. Earlier board revisions use different I2C for the camera. **Workaround:** For i.MX 8MQ EVK SCH-29615 rev. B3, choose I2C1 camera device instead of I2C2 in `mu_platform_nxp/NXP/<BOARD>/AcpiTables/ DsdtCamera_<CONFIGURATION>`.asl.	i.MX 8M
Limitation: OV10635 requires an external 12V power source and cannot be reconfigured by software without a power cycle. **Workaround:** After powering off the board, unplug the power supply from the camera and wait a few seconds before powering the camera and EVK board again.	i.MX 8M i.MX 8M Mini i.MX 8M Nano i.MX 8M Plus
Display/GPU	
Limitation: Monitor power-off is emulated by displaying a blank image. **Workaround:**Monitor power-off support will be added in the next release.	All
Limitation: Video Processing of NV12 image format has limited performance on GPU. A video stream from a camera or media player may lose frames or show lag. **Workaround:** Decrease resolution or change format used to YUY2. NV12 processing performance will be improved in the next release.	i.MX 8M Nano i.MX 8M Plus
Limitation: Some monitors/displays may fail reading EDID using on board HDMI interface because of incompatible voltage level shifter on 8MPLUSLPD4-EVK revision A. **Workaround:** Use 8MPLUSLPD4-EVK revision B1 or newer.	i.MX 8M Plus

IMXWNR

Release notes   **Rev. W1.3.0 — 20 December 2022**

12 / 16

Table 3. Known issues/limitations...*continued*

Limitation/Workaround	SoC
Limitation: GPU driver does not support D3D9 (used to accelerate Windows Presentation Foundation apps). **Workaround:** GPU driver for D3D9 will be added in the upcoming release.	i.MX 8M i.MX 8M Plus i.MX 8M Nano i.MX 8QXP
Limitation: Using Remote Desktop to connect to the device results in black screen. **Workaround:** Apply the following register value to run the older XDDM driver for Remote Desktop. reg add "HKLM\System\CurrentControlSet\Control\Terminal Server \WinStations" /v "LoadWddmIDDDriver" /t REG_DWORD /d 0x0 /f	i.MX 8M
GPIO	
Limitation: EXP_IO pins on EXP CN connector cannot be used as GPIOs because they are connected to PCA6416 I/O expander for which there is no driver implemented. **Workaround:** Use the GPIO pin on the EXP CN connector connected directly to the SoC's pin with GPIO functionality instead of connecting to the PCA6416 I/O expander.	i.MX 8M Mini i.MX 8M Nano i.MX 8M Plus
SPI	
Limitation: The LPSPI peripheral is not supported. **Workaround:** LPSPI support will be added in the next release.	i.MX 8QXP
HAL Drivers	
Limitation: The HAL Extensions must be signed by certificates provided by Microsoft. The required certificates that are included in WDK have expired. **Workaround:** Download the Microsoft Kits Package from Collaborate and use the "Windows OEM HAL Extension Test Cert 2017 (TEST ONLY)" and "Windows OEM Intermediate 2017 (TEST ONLY)" found in the `EWDK.iso` file or contact Microsoft for help.	All
SDHC	
Limitation: The `imxusdhc.sys` in crash dump mode does not read HW-specific settings from ACPI so these values are hardcoded in the `SdhcSlot Initialize()` method. **Workaround:** Keep these values synchronized with values in Dsdt-Sdhc.asl ACPI table.	All
Limitation: The `sdport.sys` in the recommended Windows build 19044. 1288.2110060501.21h2 could cause the blue bug check screen. This could be observed when encrypting volumes with Bitlocker or running Cfimager. **Workaround:** Install KB5014023 or enable test signing (*/test_signing*) and patch the operating system with the sdport.sys included in bsp (*/patch_sdport*) as described in Installing Windows IOT Enterprise, eMMC. If test signature is not enabled, */patch_sdport* will cause a blue screen.	All
Limitation: SDCARD insertion/removal can cause a bug check if the delay between insertion/removal is too short. **Workaround:** Wait a few seconds before insertion/removal.	All
UART/LPUART	

Table 3. Known issues/limitations...*continued*

Limitation/Workaround	SoC
Limitation: The RTS-CTS hardware flow control is not available. **Workaround:** No	All
USB	
Limitation: The size of SDRAM is limited to 3 GB due to a USB host controller issue. **Workaround**: There is a plan to fix this issue at Microsoft provided USB stack update. Contact Microsoft to obtain this fix. As soon as this fix is available, the size of SDRAM can be increased to 6 GB in `\mu_platform_nxp\NXP\EVK_ iMX8MP_6GB\EVK_iMX8MP_6GB.dsc` by modifying `giMX8TokenSpaceGuid. PcdBank1MemorySize` to 0x00000000C0000000.	i.MX 8M Plus
VPU	
Limitation: VPU not supported on i.MX 8QXP. **Workaround:** VPU will be added in the next release.	i.MX 8QXP

4   Revision history

Table 4. Revision history

Revision number	Date	Substantive changes
W0.9.0	1/2022	Private preview release for i.MX 8M platform.
W0.9.1	3/2022	Public preview release for i.MX 8M platform.
W1.0.0	4/2022	Public release for i.MX 8M and i.MX 8M Mini platforms.
W1.1.0	6/2022	Public release for i.MX 8M Nano and i.MX 8M Plus platforms.
W1.2.0	9/2022	Sections 1.2 and 3 are updated.
W1.2.1	10/2022	Section 1.2 is updated.
W1.3.0	12/2022	i.MX8 QuadXPlus MEK board support added

5　Legal information

5.1　Definitions

Draft — A draft status on a document indicates that the content is still under internal review and subject to formal approval, which may result in modifications or additions. NXP Semiconductors does not give any representations or warranties as to the accuracy or completeness of information included in a draft version of a document and shall have no liability for the consequences of use of such information.

5.2　Disclaimers

Limited warranty and liability — Information in this document is believed to be accurate and reliable. However, NXP Semiconductors does not give any representations or warranties, expressed or implied, as to the accuracy or completeness of such information and shall have no liability for the consequences of use of such information. NXP Semiconductors takes no responsibility for the content in this document if provided by an information source outside of NXP Semiconductors.

In no event shall NXP Semiconductors be liable for any indirect, incidental, punitive, special or consequential damages (including - without limitation - lost profits, lost savings, business interruption, costs related to the removal or replacement of any products or rework charges) whether or not such damages are based on tort (including negligence), warranty, breach of contract or any other legal theory.

Notwithstanding any damages that customer might incur for any reason whatsoever, NXP Semiconductors' aggregate and cumulative liability towards customer for the products described herein shall be limited in accordance with the Terms and conditions of commercial sale of NXP Semiconductors.

Right to make changes — NXP Semiconductors reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.

Applications — Applications that are described herein for any of these products are for illustrative purposes only. NXP Semiconductors makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.

Customers are responsible for the design and operation of their applications and products using NXP Semiconductors products, and NXP Semiconductors accepts no liability for any assistance with applications or customer product design. It is customer's sole responsibility to determine whether the NXP Semiconductors product is suitable and fit for the customer's applications and products planned, as well as for the planned application and use of customer's third party customer(s). Customers should provide appropriate design and operating safeguards to minimize the risks associated with their applications and products.

NXP Semiconductors does not accept any liability related to any default, damage, costs or problem which is based on any weakness or default in the customer's applications or products, or the application or use by customer's third party customer(s). Customer is responsible for doing all necessary testing for the customer's applications and products using NXP Semiconductors products in order to avoid a default of the applications and the products or of the application or use by customer's third party customer(s). NXP does not accept any liability in this respect.

Terms and conditions of commercial sale — NXP Semiconductors products are sold subject to the general terms and conditions of commercial sale, as published at http://www.nxp.com/profile/terms, unless otherwise agreed in a valid written individual agreement. In case an individual agreement is concluded only the terms and conditions of the respective agreement shall apply. NXP Semiconductors hereby expressly objects to applying the customer's general terms and conditions with regard to the purchase of NXP Semiconductors products by customer.

Suitability for use in automotive applications — This NXP product has been qualified for use in automotive applications. If this product is used by customer in the development of, or for incorporation into, products or services (a) used in safety critical applications or (b) in which failure could lead to death, personal injury, or severe physical or environmental damage (such products and services hereinafter referred to as "Critical Applications"), then customer makes the ultimate design decisions regarding its products and is solely responsible for compliance with all legal, regulatory, safety, and security related requirements concerning its products, regardless of any information or support that may be provided by NXP. As such, customer assumes all risk related to use of any products in Critical Applications and NXP and its suppliers shall not be liable for any such use by customer. Accordingly, customer will indemnify and hold NXP harmless from any claims, liabilities, damages and associated costs and expenses (including attorneys' fees) that NXP may incur related to customer's incorporation of any product in a Critical Application.

Export control — This document as well as the item(s) described herein may be subject to export control regulations. Export might require a prior authorization from competent authorities.

Translations — A non-English (translated) version of a document, including the legal information in that document, is for reference only. The English version shall prevail in case of any discrepancy between the translated and English versions.

Security — Customer understands that all NXP products may be subject to unidentified vulnerabilities or may support established security standards or specifications with known limitations. Customer is responsible for the design and operation of its applications and products throughout their lifecycles to reduce the effect of these vulnerabilities on customer's applications and products. Customer's responsibility also extends to other open and/or proprietary technologies supported by NXP products for use in customer's applications. NXP accepts no liability for any vulnerability. Customer should regularly check security updates from NXP and follow up appropriately.

Customer shall select products with security features that best meet rules, regulations, and standards of the intended application and make the ultimate design decisions regarding its products and is solely responsible for compliance with all legal, regulatory, and security related requirements concerning its products, regardless of any information or support that may be provided by NXP.

NXP has a Product Security Incident Response Team (PSIRT) (reachable at PSIRT@nxp.com) that manages the investigation, reporting, and solution release to security vulnerabilities of NXP products.

5.3　Trademarks

Notice: All referenced brands, product names, service names, and trademarks are the property of their respective owners.

NXP — wordmark and logo are trademarks of NXP B.V.

Bluetooth — the Bluetooth wordmark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by NXP Semiconductors is under license.

IMXWNR

Release notes

All information provided in this document is subject to legal disclaimers.

Rev. W1.3.0 — 20 December 2022

© 2022 NXP B.V. All rights reserved.

15 / 16

Contents