RN00201

Android Release Notes

Rev. android-15.0.0_1.2.0 — 11 April 2025 **Release notes**

Document information

Information	Content
Keywords	Android, i.MX, android-15.0.0_1.2.0
Abstract	i.MX android-15.0.0_1.2.0 is a release for Android 15 on the i.MX 8M Mini, i.MX 8M Nano, i.MX 8M Plus, i.MX 8M Quad, i.MX 8ULP, i.MX 8QuadMax, i.MX 8QuadXPlus, and i.MX 95 applications processors of NXP.

1 Release Description

i.MX android-15.0.0_1.2.0 is a release for Android 15 on the i.MX 8M Mini, i.MX 8M Nano, i.MX 8M Plus, i.MX 8M Quad, i.MX 8ULP, i.MX 8QuadMax, i.MX 8QuadXPlus, and i.MX 95 applications processors of NXP.

i.MX android-15.0.0_1.2.0 release includes all necessary code, documents, and tools to assist users in building and running Android 15 on the i.MX 8M Mini EVK, i.MX 8M Nano EVK, i.MX 8M Plus EVK, i.MX 8M Quad WEVK/EVK, i.MX 8ULP EVK i.MX 8QuadMax MEK, i.MX 8QuadXPlus MEK, i.MX 95 EVK, i.MX 95 15x15 EVK, and i.MX 95 Verdin EVK boards. The corresponding release quality for each board is listed in the following table.

Table 1. Release description

Platform name	Release quality
i.MX 8M Mini EVK	GA
i.MX 8M Nano EVK	GA
i.MX 8M Plus EVK	GA
i.MX 8M Quad WEVK/EVK	GA
i.MX 8ULP (A2 9x9) EVK	GA
i.MX 8ULP (A2) EVK	GA
i.MX 8QuadMax	GA
i.MX 8QuadXPlus	GA
i.MX 95 (A1 19x19) EVK	Beta
i.MX 95 (A1 15x15) EVK	Beta
i.MX 95 (A1 19x19) Verdin EVK	Beta

The prebuilt images are also included for a quick trial on NXP i.MX 8M Mini EVK, i.MX 8M Nano EVK, i.MX 8M Plus EVK, i.MX 8M Quad WEVK/EVK, i.MX 8ULP EVK, i.MX 8QuadMax MEK, i.MX 8QuadXPlus MEK, i.MX 95 EVK, i.MX 95 15x15 EVK, and i.MX 95 Verdin EVK Boards and Platforms.

This release includes all porting and enhancements based on the Android open source code.

Most of the deliveries in this release are provided in source code with the exception for some proprietary modules/libraries from third parties.

2 Supported Hardware SoC/Boards

The supported hardware system-on-chip (SoCs)/boards are listed as follows:

- i.MX 8M Mini EVK
  Supported daughter boards:
  – With DDR4 RAM, ROHM BD71847 PMIC chip
  – With LPDDR4 RAM, NXP PCA9450 PMIC chip, and NXP 88W8987 Wi-Fi/Bluetooth module.
  Supported mother board:
  – Rev. C mother board
- i.MX 8M Nano EVK
  Supported daughter boards:
  – With DDR4 RAM, ROHM BD71847 PMIC chip
  – With LPDDR4 RAM, NXP PCA9450 PMIC chip, and NXP 88W8987 Wi-Fi/Bluetooth module

Supported mother board:
  – Rev. C mother board
- i.MX 8M Plus (Silicon Revision A1) Rev. A EVK Board and Platform
- i.MX 8M Quad WEVK REV B and EVK Rev. A Board and Platform
- i.MX 8ULP (A2) EVK Board and Platform, i.MX 8ULP (A2) EVK 9x9 Board and Platform.
- i.MX 8QuadMax (Silicon Revision B0) MEK Board (Board Rev. B5, Rev. C2, and Rev. E) and Platform
- i.MX 8QuadXPlus (Silicon Revision B0 and C0) MEK Board and Platform
- i.MX 95 EVK Boards and Platforms.
  – i.MX 95 (Silicon Revision A1 19X19) EVK Board (Rev. A) and Platform.
  – i.MX 95 (Silicon Revision A1 15x15) EVK Board (Rev. A) and Platform.
  – i.MX 95 (Silicon Revision A1 19x19) Verdin EVK Board (v1.2) and Platform.

3 Release Package Contents

The android-15.0.0_1.2.0 release package includes the following software and documents.

Table 2. Release package contents

i.MX Android proprietary source code package	• `imx-android-15.0.0_1.2.0.tar.gz`: i.MX Android proprietary source code package to enable Android on i.MX boards. For example, Hardware Abstraction Layer implementation, hardware codec acceleration.
Documents	The following documents are included in `android-15.0.0_1.2.0_docs.zip`: • *Android Quick Start Guide* (UG10157): A document that explains how to run the Android platform on an i.MX board using prebuilt images. • *Android User's Guide* (UG10156): A document describing procedures for configuring and building this release package. • *Android Release Notes* (RN00201): A document that introduces key updates and known issues in this release. • *i.MX Android Extended Codec Release Notes* (RN00202): A document that provides the extended codec information. • *i.MX Android Security User's Guide* (UG10158): A document that describes how to do customization work on security features supported by i.MX Android software. • *i.MX Graphics User's Guide* (UG10159): A document that describes GPU 2D API, Tools, Memory, and Application programming guidelines.
Prebuilt images	You can test the Android platform with a prebuilt image on i.MX reference board before building any code: • `android-15.0.0_1.2.0_image_8mmevk.tar.gz`: Prebuilt images with NXP extended features for the i.MX 8M Mini EVK board. • `android-15.0.0_1.2.0_image_8mnevk.tar.gz`: Prebuilt images with NXP extended features for the i.MX 8M Nano EVK board. • `android-15.0.0_1.2.0_image_8mpevk.tar.gz`: Prebuilt images with NXP extended features for the i.MX 8M Plus EVK board. • `android-15.0.0_1.2.0_image_8mqevk.tar.gz`: Prebuilt images with NXP extended features for the i.MX 8M Quad WEVK/EVK board. • `android-15.0.0_1.2.0_image_8ulpevk.tar.gz`: Prebuilt images with NXP extended features for the i.MX 8ULP EVK board and i.MX 8ULP EVK 9x9 board. • `android-15.0.0_1.2.0_image_8qmek.tar.gz`: Prebuilt images with NXP extended features for the i.MX 8QuadMax MEK board and i.MX 8QuadXPlus MEK board. • `android-15.0.0_1.2.0_image_95evk.tar.gz`: Prebuilt images with NXP extended features for the i.MX 95 EVK, i.MX 95 15x15 EVK and i.MX 95 Verdin EVK board.

Table 2. Release package contents...*continued*

	All prebuilt images are in a separate package. See the *Android Quick Start Guide* (UG10157) and *Android User's Guide* (UG10156) to choose the appropriate image.

4 Features

This section contains features in this package.

Table 3. Features

Feature	i.MX 8M Mini EVK	i.MX 8M Nano EVK	i.MX 8M Plus EVK	i.MX 8M Quad WEVK/ EVK	i.MX 8ULP EVK	i.MX 8Quad Max MEK	i.MX 8 Quad XPlus MEK	i.MX 95 19x19 EVK/ 15x15 EVK/ Verdin EVK	Remarks
Google Android 15 release	Y	Y	Y	Y	Y	Y	Y	Y	Based on the AP4A android-15.0.0_r14 release.
Linux 6.6.58 kernel (merge with AOSP kernel)	Y	Y	Y	Y	Y	Y	Y	Y	Based on the Linux OS BSP lf-6.6.52-2.2.0 release.
Generic Kernel Image (6.6.58)	Y	Y	Y	Y	Y	Y	Y	Y	Based on AOSP android15-6.6-2025-01_r2.
U-Boot	Y	Y	Y	Y	Y	Y	Y	Y	v2024.04.
Trusty OS	Y	Y	Y	Y	Y	Y	Y	Y	-
Graphic-HW	Y	Y	Y	Y	Y	Y	Y	Y	VeriSilicon GC7000NanoUltra GPU with the 6.4.11.p3 driver for i.MX 8M Mini EVK. VeriSilicon GC7000UL GPU with 6.4.11.p3 driver for i.MX 8M Nano EVK and i.MX 8M Plus EVK. VeriSilicon GC7000L GPU with 6.4.11.p3 driver for i.MX 8M Quad EVK. VeriSilicon GCNANOULTRA31 GPU with 6.4.11.p3 driver for i.MX 8ULP EVK. VeriSilicon GC7000XSVX GPU with 6.4.11.p3 driver FOR i.MX 8Quad Max. VeriSilicon GC7000L GPU with 6.4.11.p3 driver for i.MX 8QuadXPlus. Mali-G310 GPU with r53p0-00eac0 driver for i.MX 95 EVK.
Graphic-HW 3D acceleration	Y	Y	Y	Y	Y	Y	Y	Y	OpenGL ES1.1/2.0 through GC7000NanoUltra for i.MX 8M Mini EVK. OpenGL ES1.1/2.0/3.1 through GC7000UL for i.MX 8M Nano EVK and i.MX 8M Plus EVK.

Table 3. Features*...continued*

Feature	i.MX 8M Mini EVK	i.MX 8M Nano EVK	i.MX 8M Plus EVK	i.MX 8M Quad WEVK/ EVK	i.MX 8ULP EVK	i.MX 8Quad Max MEK	i.MX 8 Quad XPlus MEK	i.MX 95 19x19 EVK/ 15x15 EVK/ Verdin EVK	Remarks
									OpenGL ES1.1/2.0/3.1 through GC7000L for i.MX 8M Quad EVK. OpenGL ES1.1/2.0/3.1 through GCNANOULTRA31 for i.MX 8ULP EVK. OpenGL ES 1.1/2.0/3.1/3.2 through GC7000 XSVX for i.MX 8Quad Max MEK. OpenGL ES 1.1/2.0/3.1 through GC7000L. Vulkan 1.3 via Mali-G310 for i.MX 95 EVK.
Android Neural Network API acceleration	N	Y	Y	Y	Y	Y	Y	N	Android Neural Network API 1.3 accelerated through GC7000UL for i.MX 8M Nano EVK. Android Neural Network API 1.3 accelerated through GC7000L for i.MX 8M Quad EVK. Android Neural Network API 1.3 accelerated through NPU for i.MX 8M Plus EVK. Android Neural Network API 1.3 accelerated through GCNANOULTRA31 for i.MX 8ULP EVK Android Neural Network API 1.3 accelerated through GC7000L for i.MX 8QuadXPlus. Android Neural Network API 1.3 accelerated through GC7000XSVX for i.MX 8QuadMax.
Graphic-HW accelerated UI surface composition	Y	Y	Y	Y	Y	Y	Y	Y	OpenGL ES2.0 through GC7000NanoUltra for i.MX 8M Mini EVK. OpenGL ES3.1 through GC7000UL for i.MX 8M Nano EVK and i.MX 8M Plus EVK. OpenGL ES3.1 through GC7000L for i.MX 8M Quad EVK. OpenGL ES3.1 through GCNANOULTRA31 for i.MX 8ULP EVK. OpenGL ES 3.2 through GC7000XSVX for i.MX 8Quad Max MEK. OpenGL ES 3.1 through GC7000L for i.MX 8 QuadXPlus MEK. Vulkan 1.3 via Mali-G310 for i.MX 95 EVK.
SCFW	N	N	N	N	N	Y	Y	N	Version 1.18.0
SECO firmware	N	N	N	N	N	Y	Y	N	Version 3.8.5.
Boot source	SD/ eMMC	SD/ eMMC	SD/ eMMC	SD/ eMMC	eMMC	SD/ eMMC	SD/ eMMC	SD/ eMMC	-
Splash Screen	Y	Y	Y	Y	Y	Y	Y	Y	-
UI (input)	Y	Y	Y	Y	Y	Y	Y	Y	USB Mouse and Multi-touch on the MIPI panel display.

Table 3. Features*...continued*

Feature	i.MX 8M Mini EVK	i.MX 8M Nano EVK	i.MX 8M Plus EVK	i.MX 8M Quad WEVK/ EVK	i.MX 8ULP EVK	i.MX 8Quad Max MEK	i.MX 8 Quad XPlus MEK	i.MX 95 19x19 EVK/ 15x15 EVK/ Verdin EVK	Remarks
UI (display)	MIPI-DSI-to-HDMI/ MIPI panel	MIPI-DSI-to-HDMI/ MIPI panel	HDMI/ MIPI-to-HDMI/ MIPI panel/ LVDS-to-HDMI/ LVDS panel/ dual channel LVDS to HDMI The physical HDMI supports HDMI-CEC	HDMI/ MIPI-DSI-to-HDMI/ MIPI panel The physical HDMI supports HDMI-CEC	HDMI/ MIPI/ EPDC	HDMI/ MIPI-to-HDMI/ MIPI-panel/ LVDS-to-HDMI Display The physical HDMI supports HDMI-CEC	LVDS-to-HDMI/ MIPI-to-HDMI Display	MIPI-to-HDMI4K/ MIPI-to-HDMI/ LVDS-to-HDMI/ MIPI Panel/ LVDS Panel/ BOE panel/10-inch panel	i.MX 8M Mini EVK maximum resolution: • MIPI-to-HDMI: 1920 x 1080 • MIPI Panel: 1080 x 1920 i.MX 8M Nano EVK maximum resolution: • MIPI-to-HDMI: 1920 x 1080 • MIPI Panel: 1080 x 1920 i.MX 8M Plus EVK maximum resolution: • Physical HDMI: 3840 x 2160 • MIPI-to-HDMI: 1920 x 1080 • LVDS-to-HDMI: 1280 x 720 • LVDS panel: 1920 x 1200 • MIPI panel: 1080 x 1920 • Dual-channel LVDS to HDMI: 1920 x 1080 i.MX 8M Quad EVK maximum resolution: • Physical HDMI: 3840 x 2160 • MIPI-to-HDMI: 1280 x 720 • MIPI panel: 1080 x 1920 i.MX 8ULP EVK maximum resolution: • HDMI: 720 x 480 • MIPI: 720 x 1280 • EPDC: 1024 x 758 i.MX 8Quad Max MEK maximum resolution: • physical HDMI: 3840 x 2160 • LVDS-to-HDMI/MIPI-to-HDMI: 1920 x 1080 • MIPI panel: 1080 x 1920 i.MX 8QuadXPlus MEK maximum resolution: • LVDS-to-HDMI/MIPI-to-HDMI: 1920 x 1080 i.MX 95 EVK maximum resolution: • MIPI-to-HDMI4K: 3840 x 2160 • MIPI-to-HDMI: 1920 x 1080 • LVDS-to-HDMI: 1920 x 1080 • MIPI Panel: 1080 x 2340 • LVDS Panel: 1920 x 1200 • BOE panel: 1280 x 800 • 10-inch panel: 1280 x 800
UI (multiple displays)	N	N	Y	Y	N	Y	Y	Y/N/N	i.MX 8M Plus EVK supports the combination of 2 to 3 of the following displays: • MIPI-to-HDMI • HDMI • LVDS-to-HDMI i.MX 8M Quad EVK supports MIPI-to-HDMI and HDMI displays.

Table 3. Features*...continued*

Feature	i.MX 8M Mini EVK	i.MX 8M Nano EVK	i.MX 8M Plus EVK	i.MX 8M Quad WEVK/ EVK	i.MX 8ULP EVK	i.MX 8Quad Max MEK	i.MX 8 Quad XPlus MEK	i.MX 95 19x19 EVK/ 15x15 EVK/ Verdin EVK	Remarks
									i.MX 8Quad Max MEK supports the combination of 2 to 4 of the following 4 displays: • HDMI_TX • LVDS0_CH0 • LVDS1_CH0 • MIPI_DSI1 and the combination of 2 to 4 of the following 4 displays: • LVDS0_CH0 • LVDS1_CH0 • MIPI_DSI0 • MIPI_DSI1 i.MX 8QuadXPlus MEK supports dual LVDS-to-HDMI displays. i.MX 95 EVK supports dual LVDS-to-HDMI displays, MIPI-to-HDMI, and LVDS-to-HDMI multiple displays.
UI (brightness control)	Y	Y	Y	Y	Y	Y	N	Y	With MIPI panel display for all boards. With LVDS panel display for i.MX 8M Plus EVK and i.MX 95 EVK.
UI-Low Power Display(LPD)	N	N	N		Y	N	N	N	Shares display with the RTD core.
Storage - External Media	Y	Y	Y	Y	Y	Y	Y	Y	i.MX 8M Mini EVK and i.MX 8M Nano EVK support U-disk on the USB 2.0 port. i.MX 8M Plus EVK and i.MX 8M Quad EVK support U-disk on the USB Type-A host port. i.MX 8ULP EVK supports U-disk on the USB 0 port and USB 1 port. i.MX 8Quad Max MEK, i.MX 8QuadXPlus MEK, and i.MX 95 EVK support U-disk on the USB 2.0 port.
Connectivity - Ethernet	Y	Y	Y	Y	Y	Y	Y	Y	For i.MX 8M Plus EVK, ENET1 port is the default Ethernet port.
Connectivity - Bluetooth wireless technology	Y	Y	Y	Y	Y	Y	Y	Y	Hardware: • NXP 88W8987 for i.MX 8M Mini EVK LPDDR4 board, i.MX 8M Nano EVK LPDDR4 board • NXP 88W8997 for i.MX 8M Plus EVK. • PCIE9098 (Murata LBEE5ZZ1XL) for i.MX 8M Quad EVK Rev. A board, i.MX 8Quad Max MEK and i.MX 8QuadXPlus MEK. • NXP IW416 (v2) for i.MX 8ULP EVK board.

Table 3. Features*...continued*

Feature	i.MX 8M Mini EVK	i.MX 8M Nano EVK	i.MX 8M Plus EVK	i.MX 8M Quad WEVK/ EVK	i.MX 8ULP EVK	i.MX 8Quad Max MEK	i.MX 8 Quad XPlus MEK	i.MX 95 19x19 EVK/ 15x15 EVK/ Verdin EVK	Remarks
									• PCIE9098/SDIW612 for i.MX 95 EVK. Profiles: • A2DP Source • AVRCP • BLE Host • HSP • HID Host • HID Device • PAN • OPP
Connectivity - Wi-Fi	Y	Y	Y	Y	Y	Y	Y	Y	Hardware: • NXP 88W8987 for i.MX 8M Mini EVK LPDDR4 board, i.MX 8M Nano EVK LPDDR4 board. • NXP 88W8997 for i.MX 8M Plus EVK board. • PCIE9098 (Murata LBEE5ZZ1XL) for i.MX 8MQuad EVK Rev. A board, i.MX 8Quad Max MEK and i.MX 8QuadXPlus MEK board. • NXP IW416 (v2) for i.MX 8ULP EVK board. • PCIE9098/SDIW612 for i.MX 95 EVK. Features: • STA mode • AP mode • Wi-Fi Direct • AP/STA Concurrency • MAC randomization
Connectivity - USB Tethering	Y	Y	Y	Y	Y	Y	Y	Y	Supports Wi-Fi and Ethernet as upstream.
Power - CPU Freq	Y	Y	Y	Y	N	Y	Y	Y	-
Power - Bus Freq	Y	Y	Y	Y	N	Y	Y	Y	-
ISP	N	N	Y	N	N	N	N	Y	VeriSilicon ISP8000NANO_V1802 with 4.2.2.p24.4 driver/server for i.MX 8M Plus EVK. Supports AWB/AGC/AEC for i.MX 95 EVK.
Media - Music Play	Y	Y	Y	Y	Y	Y	Y	Y	SSI+WM8524 for i.MX 8M Mini EVK, i.MX 8M Nano EVK, i.MX 8M Quad EVK, and i.MX 95 EVK. SSI+WM8960+PCM512 (for powersave image) for i.MX 8M Plus EVK. SSI+WM8960 for i.MX 8ULP EVK.

Table 3. Features*...continued*

Feature	i.MX 8M Mini EVK	i.MX 8M Nano EVK	i.MX 8M Plus EVK	i.MX 8M Quad WEVK/ EVK	i.MX 8ULP EVK	i.MX 8Quad Max MEK	i.MX 8 Quad XPlus MEK	i.MX 95 19x19 EVK/ 15x15 EVK/ Verdin EVK	Remarks
									WM8960+CS42888+HDMI for i.MX 8Quad Max MEK. WM8960+CS42888 for i.MX 8QuadXPlus MEK.
Media - Sound Record	Y	Y	Y	Y	Y	Y	Y	Y	PDM for i.MX 8M Mini EVK, i.MX 8M Nano EVK. AK5558 for i.MX 8M Quad EVK. SSI+WM8960+PDM for i.MX 8M Plus EVK. SSI+WM8960 for i.MX 8ULP EVK. ESAI+CS42888 for i.MX 8Quad Max MEK and i.MX 8QuadXPlus MEK. WM8962+PDM for i.MX 95 EVK.
Media-Compress Playback	N	N	Y	N	N	Y	Y	N	Compress MP3 playback through SOF (Sound Open Firmware)
Media - Video Play	Y	Y	Y	Y	Y	Y	Y	Y	For i.MX 8M Mini, i.MX 8M plus, i.MX 8M Quad, i.MX 8QuadMax, and i.MX 8Quad XPlus, which have VPU integrated, see the *i.MX Android Extended Codec Release Notes* (RN00202) to find the information about the supported format, resolution, frame rate, and bit rate. For i.MX 8M Nano and i.MX 8ULP, which do not have VPU integrated, the video playback is supported by Google software decoder. For i.MX 8QuadMax, if Trusty OS is used, see Section "Secure firmware Loader" in the *i.MX Android Security User's Guide* (UG10158) to flash the keys related to the firmwareloader manually so that the video can play back normally.
Media-HDR Video Play	N	N	N	Y	N	N	N	N	-
Media - Camera	Y	Y	Y	Y	Y	Y	Y	Y	OV5640 CSI MIPI camera for i.MX 8M Mini EVK, i.MX 8M Nano EVK, i.MX 8M Quad EVK, i.MX 8ULP EVK, i.MX 8Quad Max MEK, and i.MX 8QuadXPlus MEK. For i.MX 8M Plus EVK: • Two Basler cameras (maximum resolution 1920x1080) • Basler + OV5640 (Basler maximum resolution 3840 x 2160 depends on the boot parameter)

Table 3. Features*...continued*

Feature	i.MX 8M Mini EVK	i.MX 8M Nano EVK	i.MX 8M Plus EVK	i.MX 8M Quad WEVK/ EVK	i.MX 8ULP EVK	i.MX 8Quad Max MEK	i.MX 8 Quad XPlus MEK	i.MX 95 19x19 EVK/ 15x15 EVK/ Verdin EVK	Remarks
									• Single Basler (maximum resolution 3840 x 2160 depends on the boot parameter) • Single OV5640 • Two OS08A20 (maximum resolution 1920 x 1080) • Single OS08A20 (maximum OS08A20 resolution can reach 3840 x 2160, depending on the boot parameter) For i.MX 95 EVK: • OS08A20 or AP1302
Media - Camera DeviceAsWebcam	Y	Y	N	Y	Y	Y	Y	Y	Supports MJPEG 1080p and MJPEG 720p streams on I.MX 8M Mini EVK, I.MX 8M Nano EVK, I.MX 8M Plus EVK, I.MX 8M Quad EVK, i.MX 8Quad Max MEK, i.MX 8QuadXPlus MEK, i.MX 95 EVK. Supports MJPEG 480p stream on i.MX 8ULP EVK. For i.MX 8M Quad, it is only supported on the EVK board, not on the WEVK board.
Media HDMI RX	N	N	N	N	N	Y	N	N	-
Media - TVIN	N	N	N	N	N	N	N	N	-
Media - Dual Camera	Y	Y	Y	Y	Y	Y	Y	Y	For i.MX 95 EVK • OS08A20 or AP1302 + USB camera
Media - Camcorder	Y	Y	Y	Y	Y	Y	Y	Y	-
Media - USB Camera	Y	Y	Y	Y	Y	Y	Y	Y	USB camera supports C920, C930, and C270 for i.MX 8M Mini EVK, i.MX 8M Nano EVK, i.MX 8M Quad EVK, i.MX 8M Plus EVK, i.MX 8Quad Max MEK, i.MX 8QuadXPlus MEK, and i.MX 95 EVK. USB camera supports C270 for i.MX 8ULP EVK. It can only work with the Camera2 Basic application.
Media - USB Mic	Y	Y	Y	Y	Y	Y	Y	Y	-
Media - HDMI audio output	N	N	Y	Y	Y	Y	N	N	-

Table 3. Features*...continued*

Feature	i.MX 8M Mini EVK	i.MX 8M Nano EVK	i.MX 8M Plus EVK	i.MX 8M Quad WEVK/ EVK	i.MX 8ULP EVK	i.MX 8Quad Max MEK	i.MX 8 Quad XPlus MEK	i.MX 95 19x19 EVK/ 15x15 EVK/ Verdin EVK	Remarks
Media-DSD Playback	Y	N	N	Y	N	N	N	Y	DSD playback on Audio Expansion Board.
Media-PlayReady DRM	N	N	N	N	N	N	N	N	-
Media-WideVine DRM	Y	N	Y	Y	N	Y	Y	Y	Supports WideVine DRM Level 3 for i.MX 8M Mini EVK with GMS package. Widevine CDM version 19 and OPK version 18.3. Supports WideVine DRM Level 1 and Level 3 for i.MX 8M Plus EVK, i.MX 8M Quad EVK, i.MX 8Quad Max MEK, i.MX 8QuadXPlus MEK, and i.MX 95 EVK. Widevine CDM version 19 and OPK version 19.3.
Media-MCU Playback	Y	N	Y	N	Y	N	N	Y/N/N	Audio playback based on: • FreeRTOS on the Cortex-M4 core for i.MX 8M Mini EVK and i.MX 95 EVK. • FreeRTOS on the Cortex-M7 core for i.MX 8M Nano EVK. • FreeRTOS on Cortex-M33 core for i.MX 8ULP EVK and i.MX 95 19x19 EVK.
Media-Audio HAT	N	N	N	N	N	N	N	N/Y/N	-
Media-MQS audio output	N	N	N	N	N	N	N	N/Y/N	-
Media-Hi-Res audio output	Y	N	N	Y	N	Y	Y	Y	High-resolution audio output from Audio. Expansion Board for i.MX 8M Mini EVK, i.MX 8M Quad EVK, and i.MX 95 EVK: • 2-channel: 384000, 768000 sampling rate • 4-channel: 48000, 96000, 192000, 384000, 768000 sampling rate • 6-channel: 48000, 96000, 192000, 384000 sampling rate • 8-channel: 48000, 96000, 192000, 384000, 768000 sampling rate For i.MX 8Quad Max MEK and i.MX 8Quad XPlus MEK: • 4/6/8-channel: 48000, 96000, 192000 sampling rate
Media-Play	N	N	N	N	N	N	N	N	-

Table 3. Features*...continued*

Feature	i.MX 8M Mini EVK	i.MX 8M Nano EVK	i.MX 8M Plus EVK	i.MX 8M Quad WEVK/ EVK	i.MX 8ULP EVK	i.MX 8Quad Max MEK	i.MX 8 Quad XPlus MEK	i.MX 95 19x19 EVK/ 15x15 EVK/ Verdin EVK	Remarks
Ready DRM									
Media-WideVine DRM	N	N	N	N	N	N	N	Y	Supports WideVine DRM Level 1 and Level 3, Widevine CDM version 18.0 and OPK version 18.4.
Misc - ADB over USB	Y	Y	Y	Y	Y	Y	Y	Y	-
Misc - Fastboot utility	Y	Y	Y	Y	Y	Y	Y	Y	-
Misc - Factory reset	Y	Y	Y	Y	Y	Y	Y	Y	-
Misc-Recovery mode	Y	Y	Y	Y	Y	Y	Y	Y	Supports installing updates and wiping data.
Powerkey-Suspend & Resume	Y	Y	Y	Y	Y	Y	Y	Y	-
Battery-Charger mode	Y	Y	Y	Y	Y	Y	Y	Y	-
Sensor - Magnetometer	N	N	N	N	N	Y	Y	N	FXOS8700
Sensor - Accelerometer	N	N	N	N	N	Y	Y	N	FXOS8700
Sensor - Gyroscope	N	N	N	N	N	Y	Y	N	FXAS2100
Sensor - Light	N	N	N	N	N	Y	Y	N	ISL29023
Sensor - Pressure	N	N	N	N	N	Y	Y	N	MPL3115
Sensor - Temperature	N	N	N	N	N	Y	Y	N	MPL3115
Sensor - Pedometer	N	N	N	N	Y	N	N	N	-
File Based Encryption	Y	Y	Y	Y	Y	Y	Y	Y	-

Table 3. Features*...continued*

Feature	i.MX 8M Mini EVK	i.MX 8M Nano EVK	i.MX 8M Plus EVK	i.MX 8M Quad WEVK/ EVK	i.MX 8ULP EVK	i.MX 8Quad Max MEK	i.MX 8 Quad XPlus MEK	i.MX 95 19x19 EVK/ 15x15 EVK/ Verdin EVK	Remarks
USB Accessory	Y	Y	Y	Y	Y	Y	Y	Y	Google AOA v2.0
USB-MTP	Y	Y	Y	Y	Y	Y	Y	Y	-
USB-PTP	Y	Y	Y	Y	Y	Y	Y	Y	-
USB-MIDI	Y	Y	Y	Y	Y	Y	Y	Y	-
Real Time Clock (RTC)	Y	Y	Y	Y	Y	Y	Y	Y	-
Screen Recording	N	N	N	N	N	N	N	Y	
Ethernet APK	Y	Y	Y	Y	Y	Y	Y	N	-
imx-chip-tool APK	N	Y	N	N	N	N	N	N	Supports Matter devices control tool `imx-chip-tool apk`.
webGL	Y	Y	Y	Y	Y	Y	Y	Y	-
Vulkan	N	Y	Y	Y	Y	Y	Y	N	-
Neural Networks	N	N	N	N	N	N	N	N	
OTA for A/ B	Y	Y	Y	Y	Y	Y	Y	Y	Supports OTA with secure boot and encrypted boot.
USB Type-C PD	Y	Y	Y	Y	N	Y	Y	Y	Supports power role switch with devices that support USB power delivery.
DM Verity	Y	Y	Y	Y	Y	Y	Y	Y	-
TEE backed Keymint HAL	Y	Y	Y	Y	Y	Y	Y	Y	This is based on i.MX Trusty OS TEE firmware.
TEE backed AVB	Y	Y	Y	Y	Y	Y	Y	Y	This is based on i.MX Trusty OS TEE firmware and secure storage of eMMC chip. In this release, users need to initialize the RPMB part manually.
Neural Networks	N	Y	Y	Y	Y	Y	Y	N	-
Secure boot	Y	Y	Y	Y	Y	Y	Y	Y	Secure boot based on HABv4 for i.MX 8M Mini EVK, i.MX 8M Nano EVK, i.MX 8M Plus EVK, i.MX 8M Quad EVK, and i.MX 95 EVK.

Table 3. Features*...continued*

Feature	i.MX 8M Mini EVK	i.MX 8M Nano EVK	i.MX 8M Plus EVK	i.MX 8M Quad WEVK/ EVK	i.MX 8ULP EVK	i.MX 8Quad Max MEK	i.MX 8 Quad XPlus MEK	i.MX 95 19x19 EVK/ 15x15 EVK/ Verdin EVK	Remarks
									Secure boot based on AHAB for i.MX 8ULP EVK, i.MX 8Quad Max MEK, and i.MX 8QuadXPlus MEK.
Encrypted boot	Y	Y	Y	Y	Y	Y	Y		
Encrypted boot	N	N	N	N	N	N	N	N	-
TEE backed security	Y	Y	Y	Y	Y	Y	Y	Y	This is based on i.MX Trusty OS TEE firmware.
Software backed OEM unlock	Y	Y	Y	Y	Y	Y	Y	Y	Supports software backed OEM Lock AIDL and store the `oem unlocking` flag to the `fbmisc` partition.
Virtualization Android	N	N	N	N	N	N	N	Y	Supports virtualization Android on i.MX 95 Xen.
EdgeLock Secure Enclave HAL	N	N	N	N	N	N	N	Y	Supports EdgeLock Secure Enclave (ELE) HAL.

5 Multimedia Codecs

For multimedia codecs and features, see the *i.MX Android Extended Codec Release Notes* (RN00202).

6 Extended Features

An enhanced multimedia experience is available for the Android platform.

This release delivers an error-resilient, feature-rich multimedia solution by extending the existing multimedia features of the Android platform and introduces additional features. Extended codec packages are provided on nxp.com with controlled access because they require additional licensing by a third party. Contact your sales representative for access.

For detailed extended and additional features, see the *i.MX Android Extended Codec Release Notes* (RN00202).

7 Change Logs

Compared to the android-15.0.0_1.0.0 release, android-15.0.0_1.2.0 release has the following major changes:

- Upgraded the Android code base from AP3A android-15.0.0_r4 to AP4A android-15.0.0_r14.
- Upgraded the i.MX kernel from v6.6.56 to v6.6.58.

- Upgraded the GKI kernel from android15-6.6-2024-11_r2 to android15-6.6-2025-01_r2.
- Wi-Fi/Bluetooth integrated with the WCS 25Q1 release.
- Upgraded the STS tool to 15_sts-r36.
- Upgraded the SCFW version from 1.17.0 to 1.18.0.
- Upgraded PRODUCT_SHIPPING_API_LEVEL to 35.
- Upgraded the VeriSilicon GPU driver from 6.4.11.p2 to 6.4.11.p3.
- Upgraded the Mali GPU driver from r50p0 to r53p0.
- Upgraded the G2D interface from 2.2 to 2.3.
- Supports Widevine DRM Level 1 and Level 3 on i.MX 8QuadXPlus MEK.
- Supports provision SRM for Widevine L1.

8 Known Issues and Limitations

The known issues about the hardware and hardware rework instructions are not included in this document. There may be hardware-related reference materials for some reference boards. Make sure to check the link i.MX Application Processors to see if it is applicable.

Table 4. Known issues and limitations

Issue description	Remarks
The Google USB driver must be installed multiple times for the MTP, PTP, MTP&ADB, PTP&ADB, and ADB function settings.	Some Windows XP environments may display MTP and PTP windows even with only PTP enabled in the device.
U-Boot hangs when erasing Kingston SD card.	U-Boot hangs when sending the erase command on some Kingston SD cards.
Manufacturing protection feature is not supported on i.MX 8ULP, so features that require the manufacturing protection public key like secure unlock and secure provisioning would not be supported.	-
The PCIE9098 (muRata LBEE5ZZ1XL) Wi-Fi&BT M.2 expansion card is at risk of Wi-Fi disconnection or system reboot after prolonged use due to a known issue in the Wi-Fi firmware/driver.	-
The PCIE9098 (muRata LBEE5ZZ1XL) and SDIW612 (muRata LBES5PL2EL) Wi-Fi&BT M.2 expansion cards are at risk of Wi-Fi disconnection when playing live streaming video over a Wi-Fi connection due to a known issue in the Wi-Fi driver.	-
For i.MX 95 EVK, the USB-Type C port vbus is connected to a 3.3v power source. Once it is connected to the host and successfully enumerated by the host, the gadget stage is changed to be configured, and the USB HAL acquires its wakelock. Disconnection from the host does not generate a disconnection interrupt. The gadget state keeps unchanged, and the USB HAL does not release its wakelock.	-
The MPPUBK is not ready on i.MX 95 EVK, so features requiring the MPPUBK like secure unlock and secure provisioning are not ready.	-
The i.MX 95 EVK sometimes cannot be powered on by the power switch or PDU due to the PMIC hardware issue.	-

Table 4. Known issues and limitations...*continued*

Issue description	Remarks
There is a timeout issue with `mxc-jpeg` encoding and decoding on i.MX 95 EVK due to the hardware issue.	-

The i.MX 8MQuad WEVK/EVK UDIO input feature is disabled by default because it does not have an audio input device.	To enable it with an audio board, set the following bootargs in U-Boot.
	`setenv append_bootargs androidboot.audio.tinyalsa.simulate_input=false`
	`saveenv`

If the USB camera is declared to be supported, the CTS test requires a USB camera to be connected.	To remove the limitation, export an enviroment variable with the command `export PERMISSION_EXTCAM=false` when building the image to not include `android.hardware.camera.external.xml` under `/vendor/etc/permissions`. For details, see section "Customized configuration" in the *Android User's Guide* (UG10156).

9 Revision History

Revision history

Document ID	Release date	Description
RN00201 v.android-15.0.0_1.2.0	11 April 2025	i.MX 8M Mini, i.MX 8M Nano, i.MX 8M Plus, i.MX 8M Quad, i.MX 8ULP, i.MX 8QuadMax, i.MX 8QuadXPlus GA release, and i.MX 95 Beta release.
RN00201 v.android-15.0.0_1.0.0	24 January 2025	i.MX 8M Mini, i.MX 8M Nano, i.MX 8M Plus, i.MX 8M Quad, i.MX 8ULP, i.MX 8QuadMax, i.MX 8QuadXPlus GA release, and i.MX 95 Beta release.
RN00201 v.android-14.0.0_2.2.0	18 October 2024	i.MX 8M Mini, i.MX 8M Nano, i.MX 8M Plus, i.MX 8M Quad, i.MX 8ULP, i.MX 8QuadMax, i.MX 8QuadXPlus GA release, i.MX 95 (A1 15x15) Alpha release, and i.MX 95 (A1 19x19) Beta release.
RN00201 v.android-14.0.0_2.0.0	9 August 2024	i.MX 8M Mini, i.MX 8M Nano, i.MX 8M Plus, i.MX 8M Quad, i.MX 8ULP, i.MX 8QuadMax, i.MX 8QuadXPlus GA release, and i.MX 95 Alpha release. Updated the document ID.
ARN v.android-14.0.0_1.2.0	19 April 2024	i.MX 8ULP EVK, i.MX 8M Mini, i.MX 8M Nano, i.MX 8M Plus, i.MX 8M Quad, i.MX 8QuadMax, and i.MX 8Quad XPlus GA release.
ARN v.android-14.0.0_1.0.0	6 Feburary 2024	i.MX 8ULP EVK, i.MX 8M Mini, i.MX 8M Nano, i.MX 8M Plus, i.MX 8M Quad, i.MX 8QuadMax, and i.MX 8Quad XPlus GA release.
ARN v.android-13.0.0_2.2.0	24 October 2023	i.MX 8ULP EVK, i.MX 8M Mini, i.MX 8M Nano, i.MX 8M Plus, i.MX 8M Quad, i.MX 8QuadMax, and i.MX 8Quad XPlus GA release.
ARN v.android-13.0.0_2.0.0	07/2023	i.MX 8ULP EVK Beta release, i.MX 8M Mini, i.MX 8M Nano, i.MX 8M Plus, i.MX 8M Quad, i.MX 8QuadMax, and i.MX 8 QuadXPlus GA release.
ARN v.android-13.0.0_1.2.0	03/2023	i.MX 8ULP EVK Beta release, i.MX 8M Mini, i.MX 8M Nano, i.MX 8M Plus, i.MX 8M Quad, i.MX 8QuadMax, and i.MX 8 QuadXPlus GA release.

Revision history...*continued*

Document ID	Release date	Description
ARN v.android-13.0.0_1.0.0	01/2023	i.MX 8ULP EVK Beta release, i.MX 8M Mini, i.MX 8M Nano, i.MX 8M Plus, i.MX 8M Quad, i.MX 8QuadMax, and i.MX 8 QuadXPlus GA release.
ARN v.android-12.1.0_1.0.0	10/2022	i.MX 8ULP EVK Beta release, i.MX 8M Mini, i.MX 8M Nano, i.MX 8M Plus, i.MX 8M Quad, i.MX 8QuadMax, and i.MX 8 QuadXPlus GA release.
ARN v.android-12.0.0_2.0.0	07/2022	i.MX 8ULP EVK Beta release, i.MX 8M Mini, i.MX 8M Nano, i.MX 8M Plus, and i.MX 8M Quad GA release.
ARN v.android-12.0.0_1.0.0	03/2022	i.MX 8ULP EVK Beta release, i.MX 8M Mini, i.MX 8M Nano, i.MX 8M Plus, and i.MX 8M Quad GA release.
ARN v.android-11.0.0_2.6.0	01/2022	i.MX 8ULP EVK Beta release, i.MX 8M Mini, i.MX 8M Nano, i.MX 8M Plus, and i.MX 8M Quad GA release.
ARN v.android-11.0.0_2.4.0	10/2021	i.MX 8ULP EVK Alpha release, i.MX 8M Mini, i.MX 8M Nano, i.MX 8M Plus, and i.MX 8M Quad GA release.
ARN v.android-11.0.0_2.2.0	07/2021	i.MX 8M Mini, i.MX 8M Nano, i.MX 8M Plus, and i.MX 8M Quad GA release.
ARN v.android-11.0.0_2.0.0	04/2021	i.MX 8M Mini, i.MX 8M Nano, i.MX 8M Plus, and i.MX 8M Quad GA release.
ARN v.android-11.0.0_1.0.0	12/2020	i.MX 8M Plus EVK Beta release, and all the other i.MX 8 GA release.
ARN v.android-10.0.0_2.3.0	07/2020	i.MX 8M Plus EVK Beta1 release, and all the other i.MX 8 GA release.
ARN v.android-10.0.0_2.0.0	05/2020	i.MX 8M Mini, i.MX 8M Nano, i.MX 8M Quad, i.MX 8Quad Max, and i.MX 8QuadXPlus GA release.
ARN v.android-10.0.0_2.1.0	04/2020	i.MX 8M Plus Alpha and i.MX 8QuadXPlus Beta release.
ARN v.android-10.0.0_1.0.0	03/2020	Deleted the Android 10 image.
ARN v.android-10.0.0_1.0.0	02/2020	i.MX 8M Mini, i.MX 8M Quad, i.MX 8QuadMax, and i.MX 8 QuadXPlus GA release.
ARN v.P9.0.0_2.0.0-ga	08/2019	Updated the location of the SCFW porting kit.
ARN v.P9.0.0_2.0.0-ga	04/2019	i.MX 8M, i.MX 8QuadMax, i.MX 8QuadXPlus GA release.
ARN v.P9.0.0_1.0.0-ga	01/2019	i.MX 8M, i.MX 8QuadMax, i.MX 8QuadXPlus GA release.
ARN v.P9.0.0_1.0.0-beta	11/2018	Initial release

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