

Android™ Release Notes

Contents

1 Release Description

The i.MX Android™ 08.1.0_1.1.0_8QM-PRC2 release is a PRC/Beta release for the Android 8.1 Oreo (O) platform on the i.MX 8QuadMax MEK board applications processors.

i.MX Android 08.1.0_1.1.0_8QM-PRC2 release includes all necessary code, documents, and tools to assist users in building and running the Android 8.1 platform on the i.MX 8QuadMax MEK board from scratch. Pre-built images are also included for a quick trial on the following platforms:

- i.MX 8QuadMax MEK Board and Platform

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 of 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 8QuadMax MEK Board and Platform

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3 Release Package Contents

The O8.1.0_1.1.0_8QM-PRC2 release package includes the following software and documents.

Table 1. Release package contents

| | |
|--|---|
| i.MX Android proprietary source code package | <ul style="list-style-type: none"> imx-o8.1.0_1.1.0_8qm-prc2.tar.gz: i.MX Android proprietary source code package to enable the Android platform on i.MX boards. |
| Documents | <p>The following documents are included in android_O8.1.0_1.1.0_8QM-PRC2_docs.tar.gz</p> <ul style="list-style-type: none"> <i>Android™ Quick Start Guide (AQSUG)</i>: A document that explains how to run the Android platform on an i.MX board using prebuilt images. <i>Android™ User's Guide (AUG)</i>: A document describing procedures for configuring and building this release package. <i>Android™ Release Notes (ARN)</i>: A document that introduces key updates and known issues in this release. <i>i.MX Android™ Extended Codec Release Notes (IMXACRN)</i>: A document that provides the extended codec information. <i>Android™ Frequently Asked Questions (FAQ)</i>: A document that contains the answers to the Frequently Asked Questions (FAQs). <i>i.MX Graphics User's Guide (IMXGRAPHICUG)</i>: A document that describes GPU 2D API, Tools, Memory, and Application programming guidelines. |
| Tools | <p>Tools in android_O8.1.0_1.1.0_8QM-PRC2_tools.tar.gz</p> <ul style="list-style-type: none"> VivanteVTK-v6.2.4.1.7.4.tgz: GPU tools for VeriSilicon GPU 6.2.4 driver. For more information about these tools, see <i>i.MX Graphics User's Guide (IMXGRAPHICUG)</i>. fsl-sdcard-partition.sh: tool to make partition and flash Android images. |
| Prebuilt images | <p>You can test the Android platform with a prebuilt image on i.MX reference board before building any code:</p> <ul style="list-style-type: none"> android_O8.1.0_1.1.0_8QM-PRC2_image_8qmmek.tar.gz: Prebuilt images with NXP extended features for the i.MX 8QuadMax MEK board. The extended features include more multimedia format support. <p>All prebuilt images are in a separate package. See the <i>Android™ Quick Start Guide (AQSUG)</i> and <i>Android™ User's Guide (AUG)</i> to choose the appropriate image.</p> |

4 Features

This section contains features in this package.

Table 2. Features

| Feature | i.MX 8QuadMax MEK | Remarks |
|----------------------------|-------------------|---|
| Google Oreo 8.1 release | Y | Based on android-8.1.0_r1 release. |
| Linux 4.9.69 kernel | Y | Based on Linux® OS BSP L4.9.51_imx8qm-beta release. |
| U-boot | Y | v2017.03 |
| Graphic-HW 3D acceleration | Y | OpenGL ES 3.2 through GC7000XSVX |
| Boot source | SD/eMMC | - |

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Table 2. Features (continued)

| Feature | i.MX 8QuadMax MEK | Remarks |
|--|-------------------|---|
| Splash Screen for LVDS | N | - |
| UI (input) | Y | - |
| UI (display) | HDMI display | Supports LVDS/MIPI to HDMI display. |
| UI (dual display, HDMI+HDMI, UI mirror displayed on second device) | Y | Supports dual-LVDS to HDMI display. |
| UI (brightness control) | N | - |
| Storage - External Media | Y | The USB 2.0 port supports udisk, but the USB 3.0 port does not support udisk. |
| Connectivity - Ethernet | Y | - |
| Connectivity - Bluetooth® wireless technology | Y | Qualcomm QCA6174A. Profiles: A2DP Source, AVRCP |
| Connectivity - Wi-Fi | Y | Qualcomm QCA6174A. Features: AP mode. |
| Connectivity - USB Tethering | Y | Supports Wi-Fi and Ethernet as upstream |
| Power - CPU Freq | Y | - |
| Power - Bus Freq | Y | - |
| Media - Music Play | Y | ESAI+CS42888 (no support for multichannel) |
| Media - Sound Record | Y | ESAI+CS42888 |
| Media - Video Play | Y | - |
| Media - Camera | Y | MAX9286 |
| Media - TVIN | N/A | PAL/NTSC |
| Media - Dual Camera | N | - |
| Media - Camcorder | N | - |
| Media - USB Camera | N | - |
| Media - USB Mic | Y | - |
| Media - HDMI audio output | N | - |
| Graphic - HW accelerated UI surface composition | Y | - |
| Misc - ADB over USB | Y | - |
| Misc - Fastboot utility | Y | - |
| Misc - SW update and factory reset | Y | - |
| Sensor - Magnetometer | Y | FXOS8700 |
| Sensor - Accelerometer | Y | FXOS8700 |
| Sensor - Gyroscope | Y | FXAS2100 |
| Sensor - Light | Y | ISL29023 |
| Sensor - Pressure | Y | MPL3115 |
| Sensor - Temperature | Y | MPL3115 |
| File Based Encryption | Y | - |
| USB Accessory | Y | Google AOA v2.0 |

Table continues on the next page...

Table 2. Features (continued)

| Feature | i.MX 8QuadMax MEK | Remarks |
|------------------|-------------------|---------|
| Screen Recording | Y | - |
| Ethernet APK | Y | - |
| webGL | Y | - |
| OTA for A/B | Y | - |

5 Multimedia Codecs

For multimedia codecs and features, see Section 5 in the [Android 8.0 Compatibility Definition Document\(CDD\)](#).

6 Extended Feature Packages

The release extends the default AOSP Android version with the following features. For more information about the features below, contact "L2manager-android@nxp.com". For detailed extended and additional features, see *i.MX Android™ Extended Codec Release Notes* (IMXACRN).

7 Change Log

Compared to the O8.0.0_1.1.0_8QM-PRC1 release, this release has the following major changes:

- Upgraded the Android code base from android-8.0.0_r25 to 8.1.0_r1.
- Upgraded the kernel from v4.9.56 to v4.9.69.
- Supports MIPI to HDMI display and physical HDMI display.

8 Known Issues and Limitations

The known issues about the hardware and hardware rework instructions are not included in this document. Read all hardware-related reference material and ensure the necessary hardware modifications have been made before using the software.

Table 3. 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 environment may display MTP and PTP windows even with only PTP enabled in the device. |
| There is silence in the first few seconds for HDMI output when connecting the board to some kinds of TV-sets. | This issue is related with TV-sets. Some TV-sets have no issue. Some TV-sets have issue. |

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Table 3. Known issues and limitations (continued)

| Issue description | Remarks |
|---|--|
| Bluetooth is not enabled in the default prebuilt image for i.MX 8QuadMax MEK. | To enable Bluetooth, request wcnss_filter binary from Qualcomm. |
| Physical HDMI output is unstable on the i.MX 8QuadMax MEK board. | It is a known IC hardware issue. HDMI output keeps showing penguin or black screen sometimes when booting Android with physical HDMI. |
| When booting up with dual displays and hot-plugging the secondary display cable, the system reboots at the primary display. | It is an Android native framework issue. |
| The screen trembles severely during UI operation or video playback at the primary display when booting up with dual displays. | It is a DRM display driver issue. |
| Multiple sensors may randomly not work after rebooting the device. | This issue is related with "can't detect FSL_SENSOR_HUB as an input device with several reboots", and thus the framework cannot get the sensor data. |

9 Revision History

Table 4. Revision history

| Revision number | Date | Substantive changes |
|-----------------------|---------|-----------------------------|
| O8.0.0_1.1.0_8QM-PRC1 | 12/2017 | Initial release |
| O8.1.0_1.1.0_8QM-PRC2 | 03/2018 | i.MX 8QuadMax Beta2 release |

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