Document Number: ARN
Rev. O8.0.0_1.1.0_8QM-PRC1, 12/2017

Android™ Release Notes

Contents

1 Release Description

The i.MX Android™ O8.0.0_1.1.0_8QM-PRC1 release is a PRC release for the Android 8.0 Oreo (O) platform on the i.MX 8QuadMax Validation board applications processors.

i.MX Android O8.0.0_1.1.0_8QM-PRC1 release includes all necessary code, documents, and tools to assist users in building and running the Android 8.0 platform on the i.MX 8QuadMax Validation board from the scratch. Pre-built images are also included for a quick trial on the following platforms:

- i.MX 8QuadMax Validation 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 Validation Board and Platform

3 Release Package Contents

The O8.0.0_1.1.0_8QM-PRC1 release package includes the following software and documents.

Table 1. Release package contents

i.MX Android proprietary source code package	• imx-o8.0.0_1.1.0_8qm-prc1.tar.gz: i.MX Android proprietary source code package to enable the Android platform on i.MX boards.
Documents	The following documents are included in android_O8.0.0_1.1.0_8QM-PRC1_docs.tar.gz • *Android™ Quick Start Guide* (AQSUG): A document that explains how to run the Android platform on an i.MX board using prebuilt images. • *Android™ User's Guide* (AUG): A document describing procedures for configuring and building this release package. • *Android™ Release Notes* (ARN): A document that introduces key updates and known issues in this release. • *i.MX Android™ Extended Codec Release Notes* (IMXACRN): A document that provides the extended codec information. • *Android™ Frequently Asked Questions* (AFAQ): A document that contains the answers to the Frequently Asked Questions (FAQs). • *i.MX Graphics User's Guide* (IMXGRAPHICUG): A document that describes GPU 2D API, Tools, Memory, and Application programming guidelines.
Tools	Tools in android_O8.0.0_1.1.0_8QM-PRC1_tools.tar.gz • VivanteVTK-v6.2.4.1.7.4.tgz: GPU tools for Vivante GPU 6.2.4 driver. For more information about these tools, see *i.MX Graphics User's Guide* (IMXGRAPHICUG). • fsl-sdcard-partition.sh: tool to make partition and flash Android images.
Prebuilt images	You can test the Android platform with a prebuilt image on i.MX reference board before building any code: • android_O8.0.0_1.1.0_8QM-PRC1_image_8qmarm2.tar.gz: Prebuilt images with NXP extended features for the i.MX 8QuadMax Validation board. The extended features include more multimedia format support. All prebuilt images are in a separate package. See the *Android™ Quick Start Guide* (AQSUG) and *Android™ User's Guide* (AUG) to choose the appropriate image.

4 Features

This section contains features in this package.

Table 2. Features

Feature	i.MX 8QuadMax Validation	Remarks
Linux 4.9.56 kernel	Y	Based on Linux® OS BSP L4.9.51_imx8qm-beta1 release.
Google Oreo 8.0 release	Y	Based on android-8.0.0_r25
Boot source	External SD	-
Splash Screen for LVDS	N	-
UI (input)	Y	-

Table continues on the next page...

Table 2. Features (continued)

Feature	i.MX 8QuadMax Validation	Remarks
UI (display)	HDMI display	-
UI (dual display, LVDS+HDMI, UI mirror displayed on second device)	N	-
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	N	Hardware: • Broadcom BCM4359 Profiles: • A2DP Source • A2DP Sink • HID • OPP • PBAP • AVRCP • PAN • FTP • BLE Host
Connectivity - Wi-Fi	Y	Hardware: • Broadcom BCM4359 Features: • AP mode
Connectivity - USB Tethering	Y	-
Power - CPU Freq	Y	-
Power - Bus Freq	Y	-
Media - Music Play	Y	SAI + CS42888
Media - Sound Record	Y	-
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 3D acceleration	Y	OpenGL ES1.1/2.0/3.2 through GC7000
Graphic - HW accelerated UI surface composition	Y	-
Misc - ADB over USB	Y	-
Misc - Fastboot utility	Y	-

Table continues on the next page...

Table 2. Features (continued)

Feature	i.MX 8QuadMax Validation	Remarks
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
NTFS-3G File System	Y	For external storage
Data Partition Encryption	Y	-
USB Accessory	Y	Google AOA v2.0
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 Logs

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

- Upgraded the kernel from v4.9.52 to v4.9.56.
- Enabled A/B slot for the Android system.
- Upgraded the Android code base from android-8.0.0_r4 to android-8.0.0_r25.
- Upgraded the GPU driver from 6.2.3 to 6.2.4.
- Enable DRM-based gralloc and EGL.

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 to some reference boards. Make sure to check the link i.MX Application Pocessors to see if it is applicable.

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 may be random kernel panic on either soldered board or socket board.	This issue is due to hardware board unstability. The MEK board does not have this issue.
The display turns to black screen and cannot recover until reboot.	It is a hardware IC issue without software workaround. The MEK board does not have this issue.
Some setting options cannot be selected with a USB mouse.	It is an application issue on Android 8.0 platform. Google Pixel shows the same issue.
CtsSecurityTestCases and CtsMediaTestCases module test was uncompleted.	-
CTS Verifier:USB Accessory Test failed.	-

9 Revision History

Table 4. Revision history

Revision number	Date	Substantive changes
O8.0.0_1.1.0_8QM-EAR	10/2017	Initial release
O8.0.0_1.1.0_8QM-PRC1	12/2017	i.MX 8QuadMax PRC1 release

How to Reach Us:

Home Page:
nxp.com

Web Support:
nxp.com/support

Information in this document is provided solely to enable system and software implementers to use NXP products. There are no express or implied copyright licenses granted hereunder to design or fabricate any integrated circuits based on the information in this document. NXP reserves the right to make changes without further notice to any products herein.

NXP makes no warranty, representation, or guarantee regarding the suitability of its products for any particular purpose, nor does NXP assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. ìTypicalî parameters that may be provided in NXP data sheets and/or specifications can and do vary in different applications, and actual performance may vary over time. All operating parameters, including ìtypicals,î must be validated for each customer application by customerís technical experts. NXP does not convey any license under its patent rights nor the rights of others. NXP sells products pursuant to standard terms and conditions of sale, which can be found at the following address: nxp.com/SalesTermsandConditions.

Document Number: ARN
Rev. O8.0.0_1.1.0_8QM-PRC1
12/2017