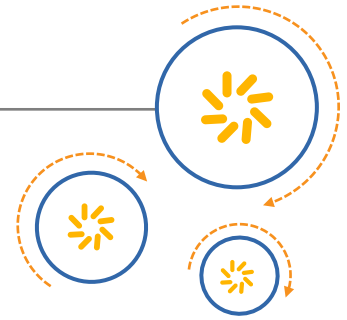




Qualcomm Technologies, Inc.



DragonBoard™ 410c based on Qualcomm® Snapdragon™ 410E processor

Android Release Notes

November 2016

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Questions or comments: <https://www.96boards.org/DragonBoard410c/forum>

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LM80-P0436-12 Rev H

Revision history

Revision	Date	Description
H	November 2016	Updated to Android M release.
G	September 2016	Updated to 'E' part.
F	January 4, 2016	New feature details for latest Android release <ul style="list-style-type: none">▪ See Section 1.1: Proprietary▪ See Section 3.1: New features▪ See Section 4.1: Limitations/Known issues, added one for displays/monitors/TVs
E	September 1, 2015	Fixed Tag/Build ID in Table 4-1
D	June 18, 2015	Release information updates
C	June 17, 2015	Changed text at beginning of chapter 4
B	June 17, 2015	Added reference to document
A	June 16, 2015	Initial release

Contents

1 Introduction	4
1.1 Purpose	4
1.2 Conventions	4
1.3 Acronyms, abbreviations, and terms	4
2 Supported ASICs	6
2.1 Software platform version	6
2.2 Android (M) platform information.....	6
3 Features	7
3.1 Features.....	7
3.2 Important notes.....	7
4 Bugs, Limitation/Known Issues	8
4.1 Limitations/Known issues.....	8
4.2 Android build information	8
4.3 Compilation/Build procedures	9
A Apache License	10
B OZPLA License	11
C OKL4 Software	13

Tables

Table 1-1 Acronyms, abbreviations, and terms	5
Table 2-1 Supported ASICs	6
Table 4-1 Android build information as per release on https://www.codeaurora.org/xwiki/bin/QAEP/release	8

1 Introduction

1.1 Purpose

These release notes cover software packages from:

- Code Aurora Forum:
- <https://www.codeaurora.org/cgit/quic/la/platform/manifest/tag/?id=LA.BR.1.2.7-01010-8x16.0>
- proprietary_LA.BR.1.2.7-01010-8x16.0_410C_May.tgz, part of Linux Android Board support package from Qualcomm Developer Network
https://developer.qualcomm.com/download/db410c/android_board_support_package_vla.br.1.2.7-01010-8x16.0-4.zip

NOTE: The above software package versions were validated for this release. You may find a different build loaded on your device, or other versions available from software package suppliers, www.codeaurora.org, for older software packages from <https://developer.qualcomm.com/hardware/dragonboard-410c/tools> please refer to the README included in the zip files below:

https://developer.qualcomm.com/download/db410c/android_board_support_package_vla.br.1.2.4-01810-8x16.0-3.zip

https://developer.qualcomm.com/download/db410c/android_board_support_package_vla.br.1.2.4-01810-8x16.0-2.zip

<https://developer.qualcomm.com/download/db410c/android-board-support-package-vla.br.1.2.4-00310-8x16-1.zip>

1.2 Conventions

Function declarations, function names, type declarations, attributes, and code samples appear in a different font, for example, `#include`.

1.3 Acronyms, abbreviations, and terms

Table 1-1 provides definitions for the acronyms, abbreviations, and terms used in this document.

Table 1-1 Acronyms, abbreviations, and terms

Term	Definition
ASIC	Application Specific Integrated Circuit
BT	Bluetooth
CS	Commercial Sample
CSI	Channel State Information
ERTOS	Embedded, Real-Time and Operating Systems Program
GPS	Global Positioning System
GUI	Graphical User Interface
HDMI	High Definition Multimedia Interface
ICT	Information and Communications Technology
LPDDR	Low Power Double Data Rate
MIPI	Mobile Industry Processor Interface
MSM	Mobile Station Modem
NICTA	National Information and Communications Technology Australia
OZPLA	Australian Public License A
PC	Personal Computer
USB	Universal Serial Bus

2 Supported ASICs

This is a source code release of software that supports APQ8016E.

Table 2-1 Supported ASICs

ASIC hardware	ASIC hardware ID	P code	RR code	Part code	Note
APQ8016E	0x0 0706 0E1	-	-	CS	-

CS = Commercial Sample

2.1 Software platform version

The following software platforms are supported in this release:

- Linux kernel – Ver 3.10
- Android MarshMallow release version – 6.0

2.2 Android (M) platform information

The following memory platform is supported in this release:

- 1 GB LPDDR3

3 Features

3.1 Features

The following software features have been validated in this release on DragonBoard™ 410c. Refer to Section 4 for more information.

- Audio over HDMI
- Audio over Stereo connectors, needs stereo connector soldered to J7 and mixer settings changed in SW
- WiFi/BT
- Gallery playback for A/V H264/MP4 content up to 1080p
- GPS
- Miracast
- USB Mouse/Keyboard
- SD card
- USB to Ethernet adapter works by default with this release
- USB Mass storage works out of the box and mounts /sdcard/usb0tg for pendrive
- OpenDSP Hexagon SDK support added to offload certain functions to DSP, developers need to download Hexagon SDK and use the test samples.
- USB Audio playback and record via USB headset validated
- spidev support validated on spi0
- Lilliput USB touch HDMI display support added to work out of the box
- WLAN/BT functionality
- HSUART support added on /dev/ttyHS4

New features in this May 2016 release:

- Android M update

3.2 Important notes

- DragonBoard 410c can work either in USB host mode (2 full USB ports) or Device mode (micro USB port).

If the micro USB cable is connected, it will work only in device mode (for adb, fastboot).

4 Bugs, Limitation/Known Issues

This chapter lists the bugs and limitations reported for this product line.

4.1 Limitations/Known issues

The limitations/known issues in this release include:

- The release has been validated only with 1080p capable displays/monitors/TVs.
- Since micro USB device mode prevents host mode operation, adb (device mode) takes priority and works by default even if you have a USB mouse/keyboard connected. For a USB mouse/keyboard to work, the micro USB to PC needs to be disconnected. This assumes switch S6 is set to 0000. For more information on switches, refer to the *Dragonboard 410c User Guide* located at: <http://www.96boards.org/db410c-getting-started/>
- Sometimes the GUI screen may rotate due to portrait applications. Since the platform does not have sensors by default, a device reboot or screen rotation application may be required to return to landscape orientation.
- Occasionally, the Miracast Wi-Fi Display connection may disconnect when running computationally intensive applications. For more information on how to establish and reset the connection, refer to the *DragonBoard™ 410c based on Qualcomm® Snapdragon™ 410E processor Miracast® Wi-Fi Display Application Note* <https://developer.qualcomm.com/download/db410c/miracast-wi-fi-display-application-note.pdf>
- When re-flashing Android Images, the initial boot will take up to 3 minutes as Android initializes user space databases and files. This boot time will reduce to less than a minute on subsequent boots.
- The current DragonBoard 410c Android release does not support MIPI-CSI camera.

For additional information, visit: <https://developer.qualcomm.com/hardware/dragonboard-410c/tools>

4.2 Android build information

Table 4-1 shows the Android build information for this release. A link to the Code Aurora Forum website is also provided.

Table 4-1 Android build information as per release on
<https://www.codeaurora.org/xwiki/bin/QAEP/release>

Date	Tag / Build ID	Chipset	Manifest	Android Version
Feb 29, 2016	LA.BR.1.2.7-01010-8x16.0	MSM8916_64	LA.BR.1.2.7-01010-8x16.0.xml	6.0.0

Code Aurora Foundation links at:

<https://www.codeaurora.org/cgit/quic/la/platform/manifest/tag/?id=LA.BR.1.2.7-01010-8x16.0>

4.3 Compilation/Build procedures

Refer to the *DragonBoard™ 410c based on Qualcomm® Snapdragon™ 410E processor Software Build and Installation Guide, Linux Android*.

<https://developer.qualcomm.com/download/db410c/linux-android-software-build-and-installation-guide.pdf>

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