

Inforce 6502™

Android Software Release Note V1.0

003446 Rev A

March 29, 2019

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Revision History

Revision	Date	Description	Author
A	29/March/2019	Initial Release	PH

Approval Record

Function	Name	Date
Reviewed By	AP/MSS	29/March/2019
Approved By	DPS	29/March/2019

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1. INTRODUCTION

This document describes the feature set supported on Android BSP Software Release Version 1.0 running Oreo 8.1 on Inforce 6502 development platform. The Inforce 6502 is a micro SoM, based on Qualcomm's 64-bit Snapdragon™ 660 processor (SDA660 SoC). The development kit is comprised of the Inforce 6502 micro SoM which is mounted onto a carrier board.

Test Configuration used for Validation

- Micro SOM – IFC6502-00-P1
- Carrier Board – ACC-1C20-P1
- Display – ACC-1B50
- Camera Modules – ACC-1H70-00-P1

Software Platform Version

This release is based on the following software platforms:

- Linux Kernel – Version 4.4.78
- Android Oreo – Version 8.1

Memory Platform Information

The following has been validated in this release:

- 32GB eMMC
- 3GB LPDDR4

Instructions to build this software is available on the following link:

<https://source.android.com/source/requirements.html>

2. REFERENCES

This section lists any parent and/or supplementary documents for the Inforce 6502 development platform. This document supersedes previous versions. This document should be read along with:

- Inforce 6502 Hardware Reference Manual (PN 003393, Rev A, 07 February 2019)

3. SOFTWARE RELEASE INFORMATION

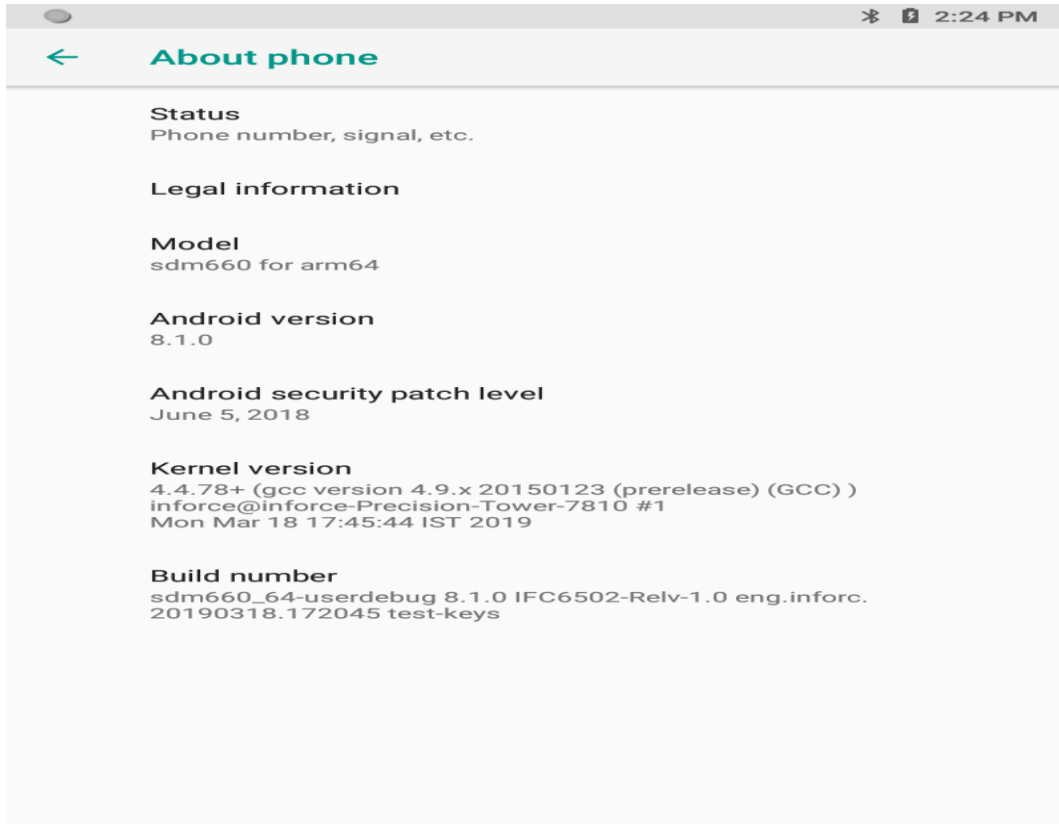
3.1 SOFTWARE RELEASE PACKAGE

This software release package consists of the following items:

- **Binaries** – Pre-built binary files that can be flashed directly to the Inforce 6502 platform.
- **Meta binaries** – Meta binaries for IFC6502 platform.
- **Inforce Computing Patches** – These are adaptations and customizations done by Inforce Computing to ensure that the software works on the Inforce 6502 platform.
- **README.txt** – Instructions for building and flashing the Android Images and MAC address programming.
- **MAC Programming Files** – Support files required for Bluetooth MAC Address programming.
- **Application_Apk** – Chrome browser and GPS test applications.
 - chrome-71-0-3578-99.apk
 - gpstest.apk
- **Release Note** – This document describes the software capabilities and features, and any known issues/limitations in the release.

3.2 SOFTWARE RELEASE IDENTIFICATION

This Software Release Version 1.0 is based on Oreo 8.1 for use with the Inforce 6502 (CAF tag LA.UM.6.2.r1-10500-sdm660.0.xml release) with adaptations and customizations from Inforce Computing.



3.3 FEATURES SUPPORTED IN THIS RELEASE

The following features are validated in this release:

1. **Android Oreo 8.1:** This release is based on Android Oreo 8.1
2. **Frequency:**
 - **CPU Frequency:** CPU core frequency of 1.843GHz (4 cores) and 2.2GHz (4 cores).
 - **GPU Frequency:** GPU frequency up to 647 MHZ
3. **USB :** This release supports the following USB features
 - **USB Type-C:** USB-based input devices (Mouse and Keyboard).
 - **USB 2.0:** USB-based input devices (Mouse and Keyboard).
 - **USB Mass Storage:** USB mass storage auto mount.
 - **OTG Port:** USB type-C OTG port functionality by using an input device.
 - **USB Camera:** 1080p image capture and preview using the Microsoft LifeCam HD 5000 on the USB 2.0 port.
 - **MTP Device:** This release is validated for MTP device support.
4. **Display**
 - **Display Port:** DP output resolutions up to 4K@60 fps along with audio on USB type-C.
 - **MIPI-DSI Display:** This release is validated for 1280X800 @60 fps resolution output using the ACC-1B50 7" display accessory from Inforce



NOTE

Both displays can render simultaneously. The USB-C DP connector should be connected post-boot since the interface is also PD capable. DP fails to render if the display is connected pre-boot.

5. **Wi-Fi:** Wi-Fi 2.4 GHz and 5 GHz client functionality.



NOTE

As there is no default browser available, install the Chrome browser provided along with the software package for browsing. Use the following commands for installing the apk:

```
adb root
adb remount
adb install <location where apk is stored>/
chrome-71-0-3578-99.apk
```

6. **Micro SD Card Interface:** Access to micro SD card interface (up to 64GB) has been validated.
7. **Serial UART:** This release supports serial UART at a baud rate of 115200.
8. **Bluetooth:** Bluetooth 5.0 and Bluetooth low-energy host functionalities.
9. **MIPI CSI:** This release is validated for MIPI CSI camera interface on CAM1 and CAM2 ports using ACC-1H70 accessory for recording at 4K-DCI@24fps resolution.

- **Dual camera support:** Dual camera support using two ACC-1H70 accessories on CAM1 and CAM2 ports has been validated in this release. Simultaneous preview/capture from both cameras is not enabled.

10. Audio: This release supports the input/output combo jack. Audio jack detection is validated in this release.



Both CTIA/North American and European/OMTP compatible audio jacks are supported

11. Android Recovery: Recovery mode operation is verified with adb access in this release

12. Hexagon SDK: Hexagon SDK 3.4.3 package.

13. FastCV SDK: Fast CV SDK 1.7 package.

14. SNPE SDK: This release enables the use of SNPE SDK.

15. Network Configuration: Bluetooth and Wi-Fi MAC address programming is maintained in persist partition and its value will be retained even after re-flashing the board.



*For Bluetooth and Wi-Fi MAC address programming, please refer to the **README.txt** provided as part of this release package.*

16. GPS: GPS feature with an external active antenna.



GPS feature is verified using the `gpstest` application provided within this release package. Follow the below commands to install the apk:

```
adb root
adb remount
adb install gpstest.apk
```

17. Miracast: This feature supported on MIPI-DSI displays only.



Mira-cast on Display Port is not supported.

18. Android verified boot (dm-verity): Android Verified Boot is enabled by default in this release.



To allow 'adb remount' to succeed, verified boot has to be disabled. Use the commands listed below to disable verified boot.

```
adb root
adb disable-verity
adb reboot
```

- 19. Battery:** The battery header is validated in this release. A 3.7 volts Lithium ION battery was used to connect to this header and the system was found to be operational without DC power connected.

3.4 LIMITATIONS/BUGS

1. 5 GHz Wi-Fi Receiving signal strength is very low. (-78dBm).
2. Boot-animation logo visible only on first boot.
3. Headphone connected/detection status symbol is not showing.
4. Type C USB (Type C USB OTG) storage device is not auto mounting /listing have to use third-party file-explorer
5. Battery percentage always show 100% charging.

4. CONTACT INFORMATION

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