



Inforce 6701™

Android Software Release Note V1.1

003618 Rev A

March, 27 2020

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Revision History

| Revision | Date | Description | Author |
|----------|---------------|-----------------|--------|
| A | 27/March/2020 | Initial Release | PH |

Approval Record

| Function | Name | Date |
|-------------|--------|---------------|
| Reviewed By | AP/MSS | 27/March/2020 |
| Approved By | DR | 27/March/2020 |

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1. INTRODUCTION

This document describes the feature set supported on Android BSP Software Release Version 1.1 running Pie 9.0 on Inforce 6701 development platform. The Inforce 6701 is a micro SoM, based on Qualcomm's 64-bit Snapdragon™ 845 processor (SDA845 SoC). The development kit is comprised of the Inforce 6701 micro SoM which is mounted onto a carrier board.

Test Configuration used for Validation

- Micro SOM – IFC6701-00-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 4.9.112
- Android Pie – Version 9.0

Memory Platform Information

The following has been validated in this release:

- 64GB UFS
- 4GB 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 6701 development platform. This document supersedes previous versions. This document should be read along with:

- Inforce 6701 Hardware Reference Manual (PN 003504, Rev A, July 4, 2019)
- Inforce 6701 Development kit User Guide (PN 003445, Rev A, July 11, 2019)

3. SOFTWARE RELEASE INFORMATION

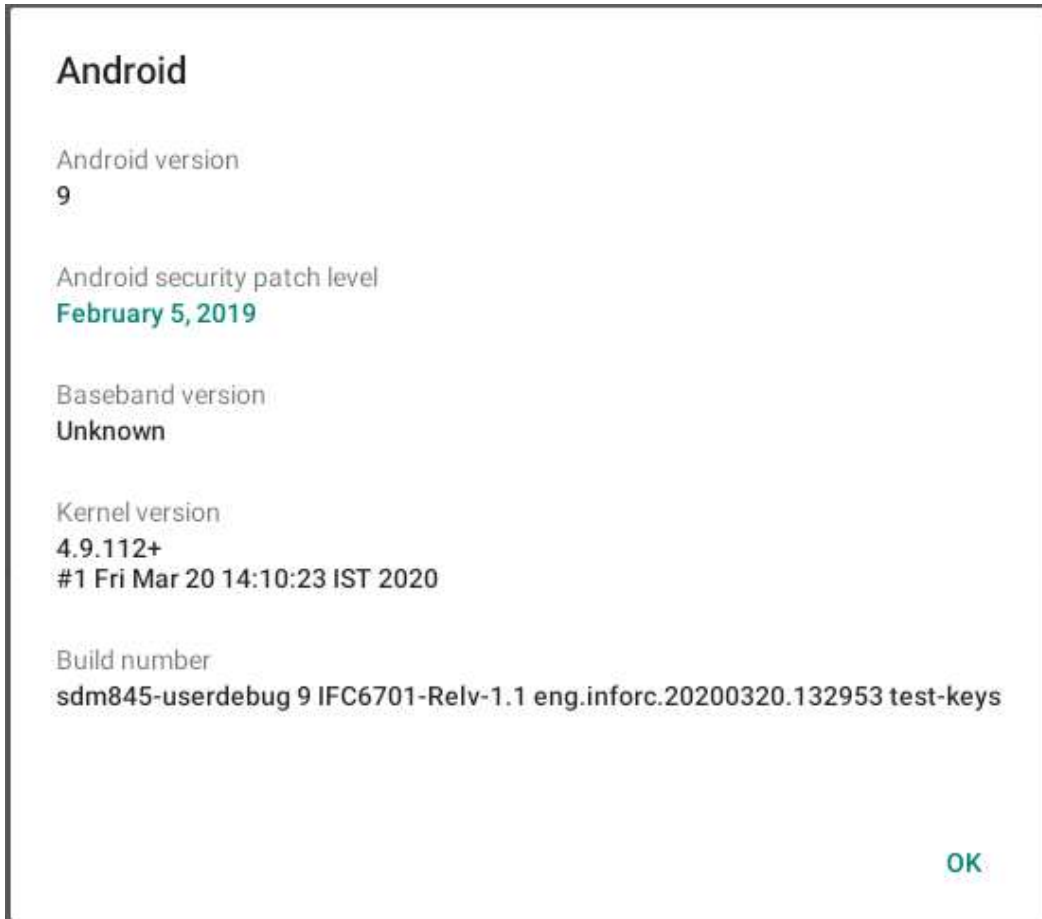
3.1 SOFTWARE RELEASE PACKAGE

This software release package consists of the following items:

- **Binaries** – Pre-built binary files that can be flashed directly to the Inforce 6701 platform.
- **Meta binaries** – Meta binaries for IFC6701 platform.
- **Inforce Computing Patches** – These are adaptations and customizations done by Inforce Computing to ensure that the software works on the Inforce 6701 platform.
- **README.txt** – Instructions for building and flashing the Android Images and MAC address programming.
- **MAC Programming Files** – Support files required for Bluetooth and Wi-Fi MAC Address programming.
 - `bt_mac.pst`
 - `wlan_mac.bin`
- **Application_Apk** – Chrome browser application.
 - `chrome-71-0-3578-99.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 1.1 is based on Pie 9.0 for use with the Inforce 6701 (CAF tag LA.UM.7.3.r1-07400-sdm845.0.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 Pie 9.0:** This release is based on Android Pie 9.0
2. **Frequency:**
 - **CPU Frequency:** CPU core frequency of 2.8GHz (4 cores) and 1.77GHz (4 cores).
 - **GPU Frequency:** GPU frequency up to 710 MHZ
3. **USB :** This release supports the following USB features
 - **USB Type-C:** USB-based input devices (Mouse and Keyboard).
 - **USB 3.1:** 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 3.1 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
5. **Wi-Fi:** Wi-Fi 2.4 GHz and 5 GHz client functionality. MAC address is pre-programmed and comes printed on the board in the form of a QR code.



NOTE

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. MAC address is pre-programmed and comes printed on the board in the form of a QR code.
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 and Audio Header PINOUT 1, 3, 5, 7, 9 and 13 are validated using tinymix commands 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. SNPE SDK:** This release enables the use of SNPE SDK.
- 14. Network Configuration:** Bluetooth and Wi-Fi MAC address programming is maintained in persist partition.



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

- 15. Miracast:** This feature is supported on the MIPI-DSI display interface only.



Mira-cast on USB-C Display Port is not supported.

- 16. 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
```

3.4 NEW FEATURES/BUG FIXES OF THIS RELEASE

This release resolves the listed bugs below from our previous release (V1.0).

1. Header MIC input not validated in this release.
2. Headphone connected/detection status symbol is not showing.
3. Type C USB (Type C USB OTG) storage device is not auto mounting /listing have to use third-party file-explorer.
4. Display on ACC-1B50 panel doesn't resume from sleep state. Need to reboot the device to get back the UI.

5. For A2DP Profile mode, audio not switching back to Bluetooth headset after headphone is plugged-in and plugged out.
6. I2C enabled on expansion header.
7. Setting boot voltage at 3.3V.
8. For Camera default Picture resolution set to 8MP instead of 21MP.
9. Front Camera orientation is reversed.
10. Fix for display orientation to landscape mode.

In addition to the bug resolutions, this release includes performance improvements. The improvements are tabulated in the table below.

| Benchmark | Release V 1.0 Score | Release V 1.1 Score |
|-----------------|---------------------|---------------------|
| Octane 2.0 | 12696 | 16379 |
| Speedometer 2.0 | 32.7 Runs/Minute | 45.2 Runs/Minute |
| Speedometer 1.0 | 63.7 Runs/Minute | 84.9 Runs/Minute |
| JetStream 2 | 33.575 | 43.350 |
| JetStream 1.1 | 62.554 | 79.731 |
| MotionMarks 1.1 | 28.46 | 101.18 |
| MotionMarks 1.0 | 45.87 | 108.66 |
| Antutu | 236488 | 241827 |

3.5 LIMITATIONS/BUGS

1. GPS is not supported in this release.
2. SPI interface is not validated in this release.
3. For all Camera resolutions, the Image/preview Quality is not good. The image/preview/recorded content is slightly blurred.
4. Battery Header is not validated in this release.
5. There is a slight delay in the Default camera application while switching from preview mode to encoding mode & switching the two camera modules.
6. 5 GHz Wi-Fi signal strength reception is low.
7. "Com.android.bluetooth keeps stopping" pop up message is displayed while turning off the Bluetooth. BT functionality is not affected by this message.
8. Camera's touch to focus/auto focus is not supported in this release.
9. Camera app closes with an error message as "open camera error id =0 "for the sequence below.
 - o Open the camera and click on the recording.
 - o Now pause recording.
 - o Then click again on the record button

4. CONTACT INFORMATION

 **USA (Corporate Headquarters)**

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