

# CipherLab User Guide

## RK25 OS Image Upgrade SOP from Android Nougat to Android Pie

Version 1.02



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Website: <http://www.CipherLab.com>

# RELEASE NOTES

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Version	Date	Notes
1.02	April 21 <sup>st</sup> , 2020	Add " <b>Important Notice</b> " to Section 1.1 " <b>Prerequisite</b> ". Add " <b>Driver Installation Failed</b> " to Section 1.2 " <b>USB Driver</b> ". Update the figures in Section 2.1 " <b>The Steps to Upgrade OS Image</b> ". Add " <b>Upfrade Failed</b> " to Section 2.1 " <b>The Steps to Upgrade OS Image</b> ".
1.01	March 10 <sup>th</sup> , 2020	Section 2.1 " <b>The Steps to upgrade OS Image</b> ": Add description about the pathname of the path to access RK25 OS image upgrade tool.
1.00	March 4 <sup>th</sup> , 2020	Initial release

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## PREREQUISITE

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This chapter guides you all the things need to be done before upgrading the OS image of your RK25 mobile computer.

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## 1.1 PREREQUISITE FOR UPGRADING OS IMAGE

The following items are demanded for upgrading your RK25 mobile computer OS image from Android Nougat to Android Pie:

► **PC:**

The operating system must be **Windows 10**.

**Note:** The image download tool is incompatible with Windows 7 and Windows 8.

► **Micro USB cable:**

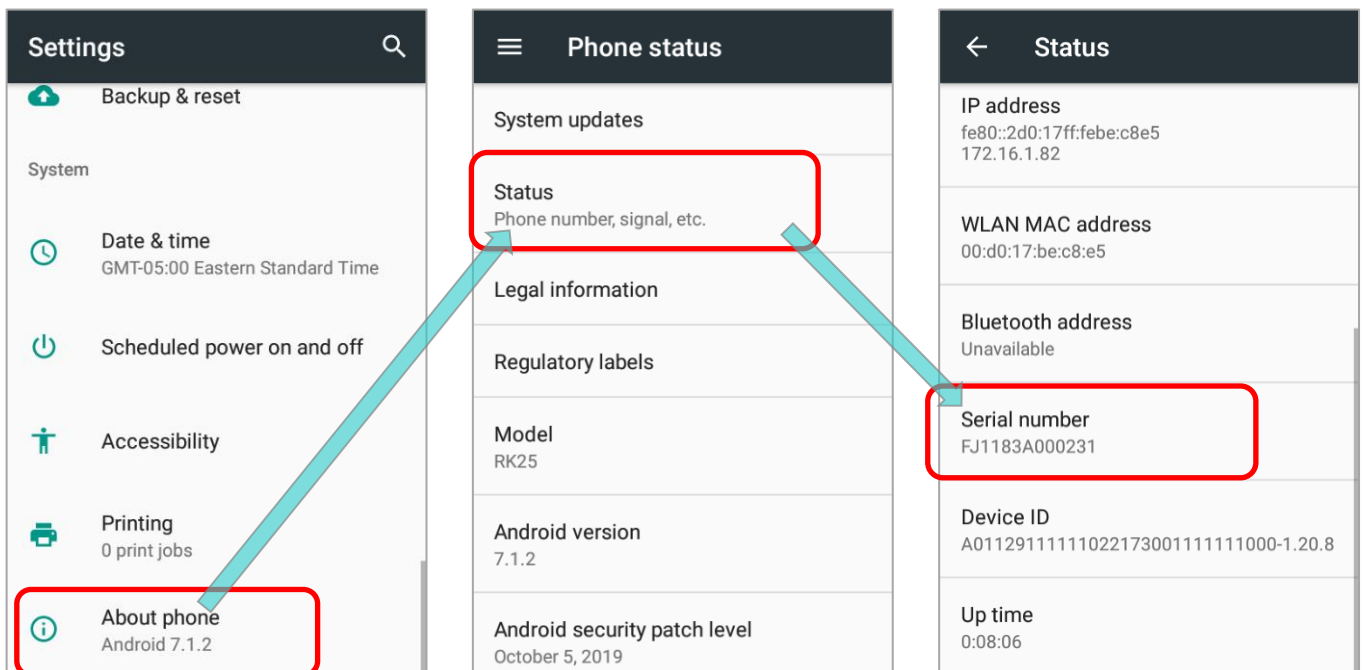
Use a micro USB cable to connect the PC with your device.

► **Activation Key:**

Please contact the sales representative and provide the representative with the **Software Part Number** and the device **Serial Number** of your RK25 mobile computer for acquiring the activation key.

i) **Serial Number**

To check the **Serial Number** of your device, please go to **App Drawer (All Applications) | Settings** | **About phone** | **Status**, and swipe to find **"Serial Number"**.



**ii) Software Part Number**

Please confirm the software part number of your RK25 mobile computer:

Model	Part Number
LTE GMS	A90W025GL0101
LTE Non-GMS	A90W025NL0101
Wi-Fi Only GMS	A90W025GW0101
Wi-Fi Only Non-GMS	A90W025NW0101
LTE RU	A90W025RL0101
Wi-Fi only RU	A90W025RW0101

► ***RK25 OS Image Upgrade Package:***

Once the information (device serial number, software part number, etc.) you provide is confirmed, you will get the upgrade package & the activation key from CipherLab.

The upgrade package contains the following:

- i) Image Download Tool**
- ii) Keybox Image**
- iii) RK25 OS Image (Android Pie)**
- iv) Repair Tool**

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**Important Notice:**

After successfully upgrading the OS from Android Nougat to Android Pie, the RK25 mobile computer will reset to the factory default which means all the app data, the apps installed by yourself, and the MDM (Mobile Device Management) data will be erased. Thus, make sure to back up your important information stored on your device before proceeding OS upgrade.

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## 1.2 USB DRIVERS

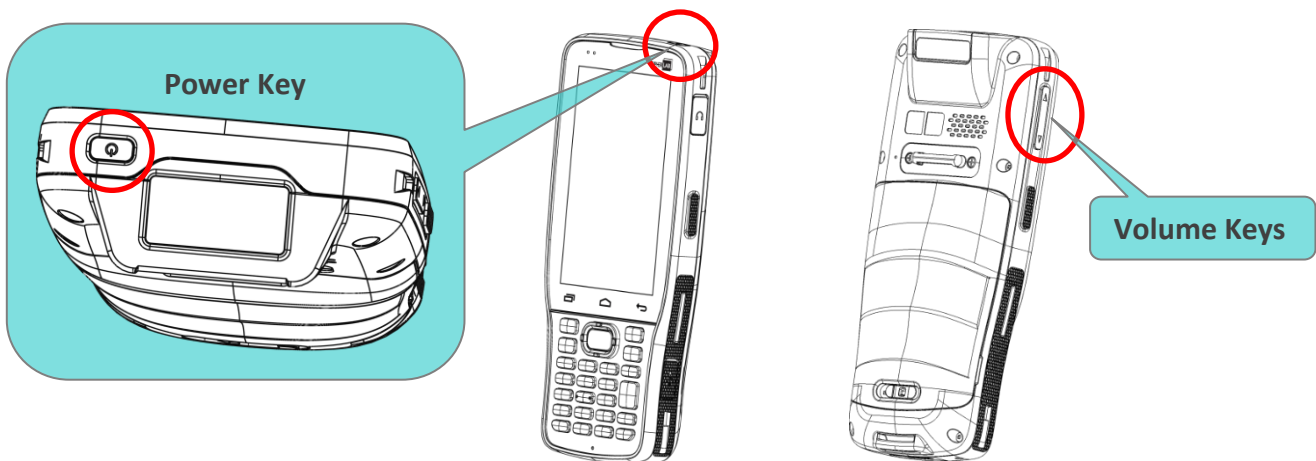
For successfully upgrading the OS image of your RK25 mobile computer, **USB Drivers** must be installed in your PC beforehand.

Depending on the operating system environment of your PC, the USB drivers may have been installed in your PC already.

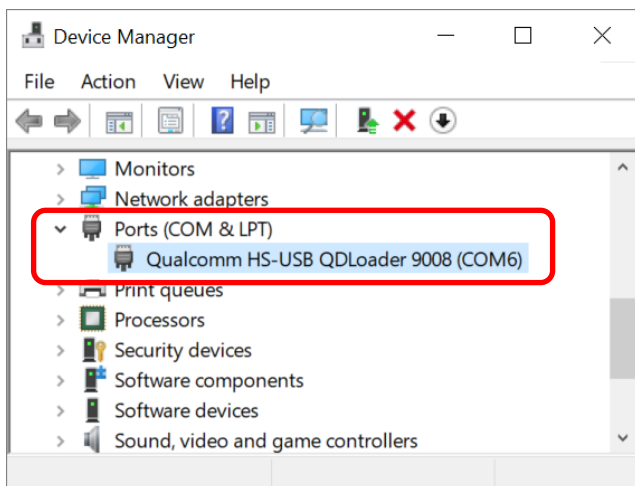
### 1.2.1 QUALCOMM USB DRIVER

#### CHECK WHETHER QUALCOMM USB DRIVER IS INSTALLED IN YOUR PC

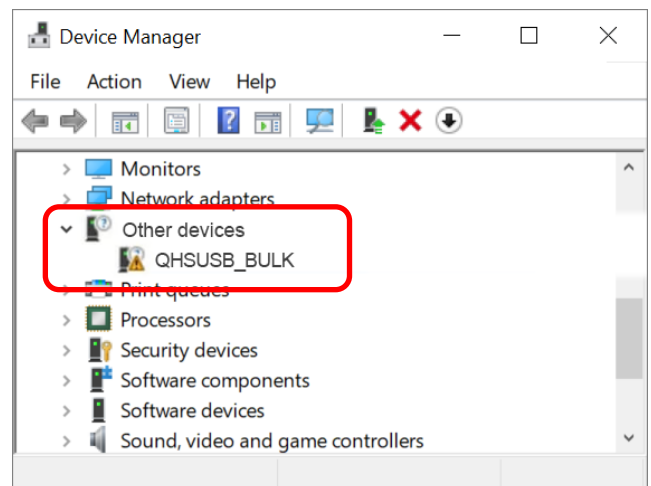
- 1) Shut down your RK25 mobile computer, and then press the **Volume Up Key**, **Volume Down Key** and **Power Key** of your RK25 mobile computer at the same time.



- 2) Connect the RK25 mobile computer with your PC by a micro USB cable.
- 3) Go to **"Control Panel" → "Device Manager"** in your PC to check whether it shows **"Qualcomm HS-USB QDLoader 9008"** under **"Ports"**.



Qualcomm USB driver is installed



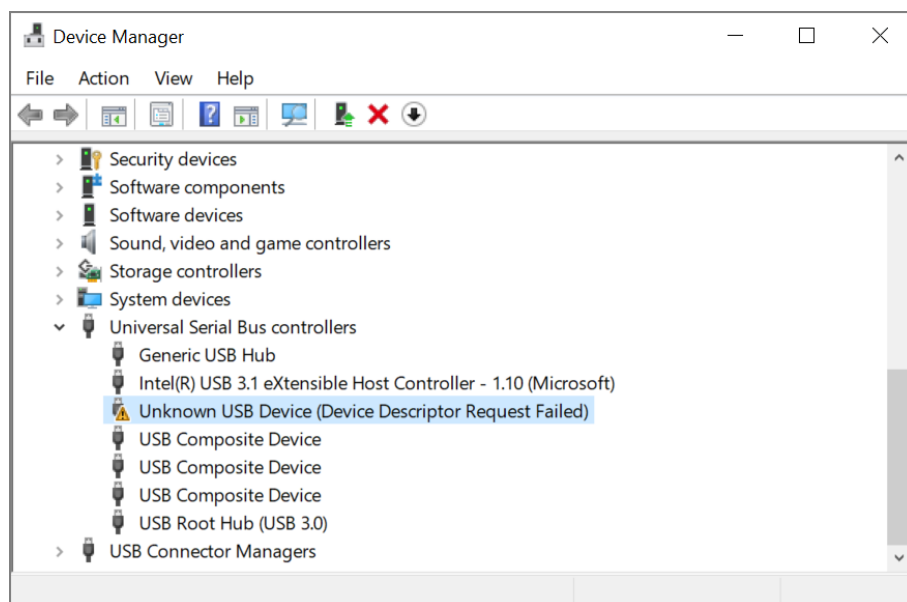
Qualcomm USB driver is NOT installed



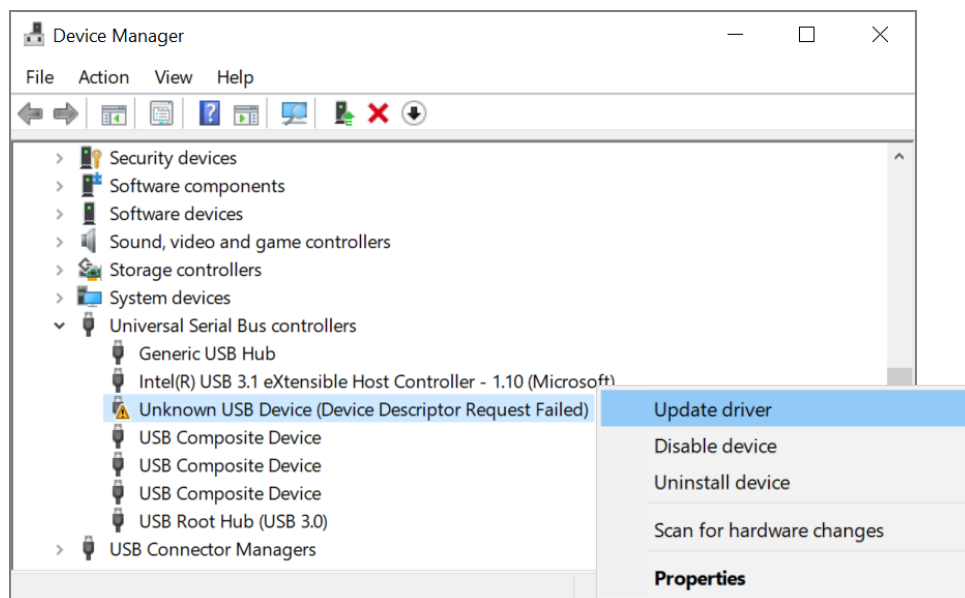
**Note:** The item shown on “Device Manager” may slightly different based on the operating system environment of your PC.

## HOW TO INSTALL QUALCOMM USB DRIVER

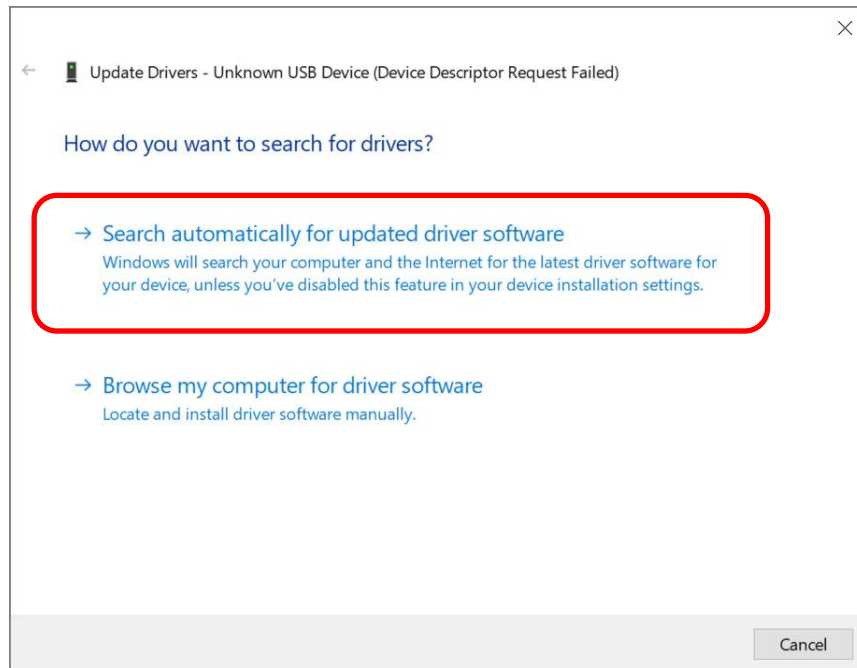
- 1) Power off your RK25 mobile computer, and press its **Volume Up Key**, **Volume Down Key** and **Power Key** at the same time. Then connect the RK25 mobile computer with your PC by a micro USB cable.
- 2) Go to “**Control Panel**” → “**Device Manager**” in your PC, and find the unknown device which is with a yellow exclamation mark in front of the name.



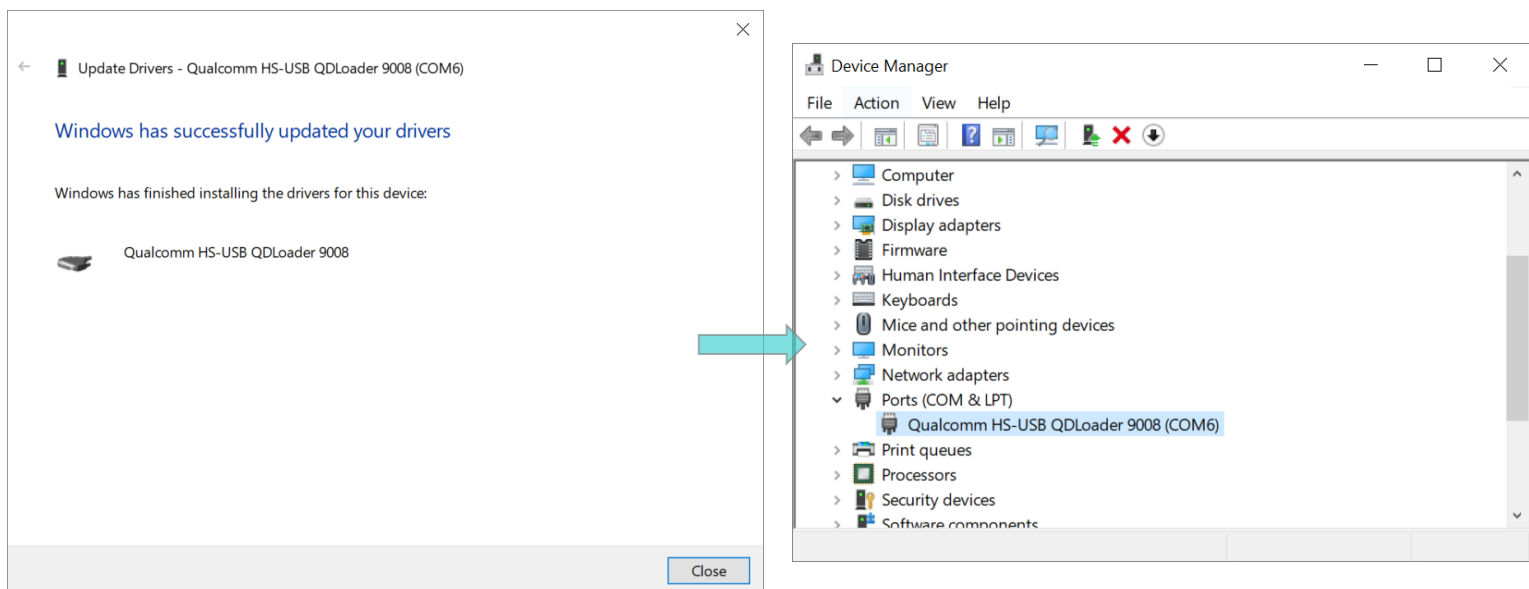
- 3) On **Device Manager**, click to open the setting menu and select “**Update driver**”.



- 4) Select "***Search automatically for updated driver software***" to complete the update.



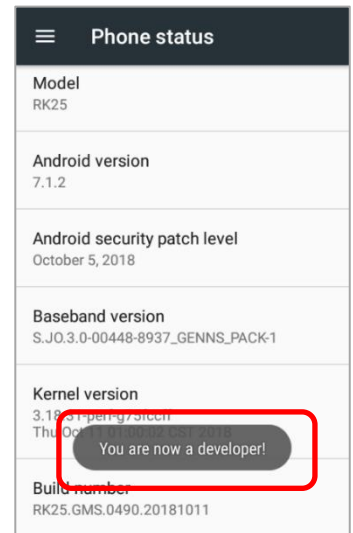
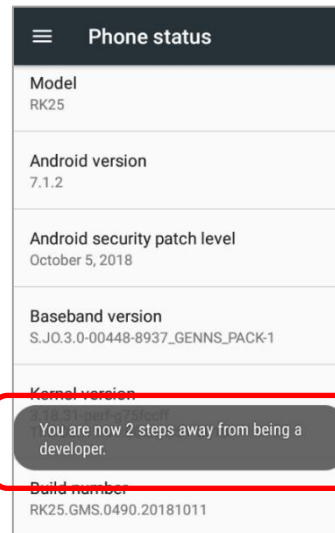
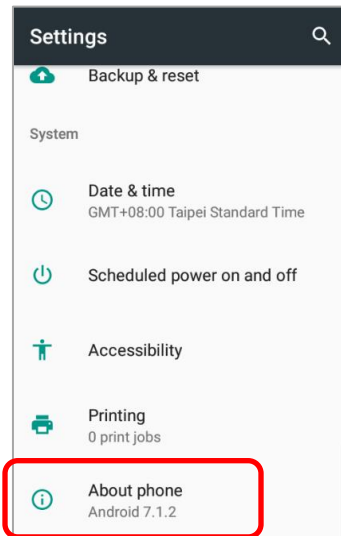
- 5) Once the driver is successfully installed, you will find your RK25 mobile computer is shown up as "***Qualcomm HS-USB QDLoader 9008***" under "***Ports***" on ***Device Manager***.



## 1.2.2 ADB DRIVER

### CHECK WHETHER ADB DRIVER IS INSTALLED IN YOUR PC

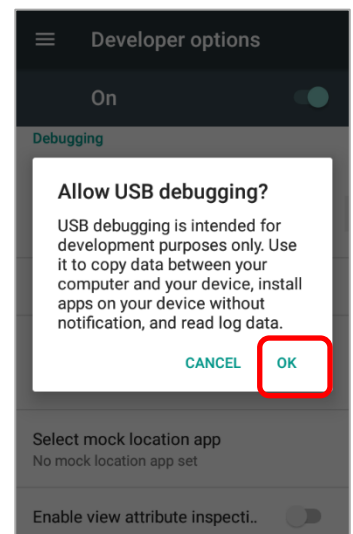
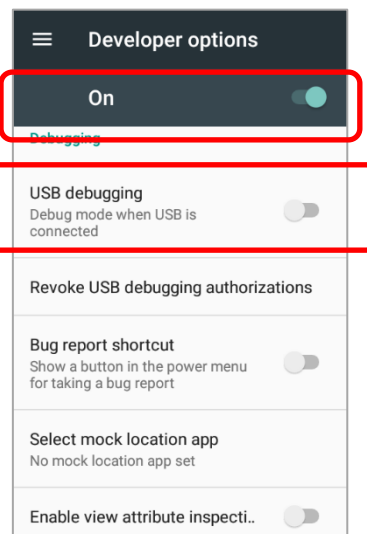
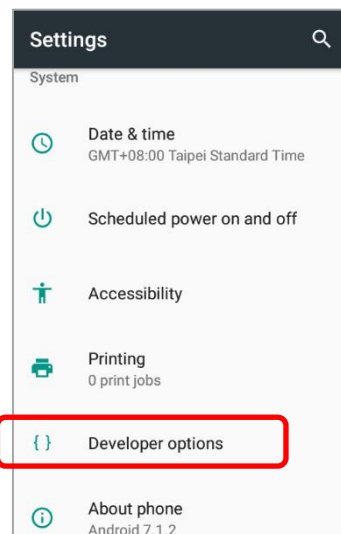
- 1) Power on your RK25 mobile computer, and connect it with your PC by a micro USB cable.
- 2) Enable debugging mode on your RK25 mobile computer as the steps below.



**Step 1:**  
Go to App Drawer (All Apps) |  
Settings | About phone   
| Build number.

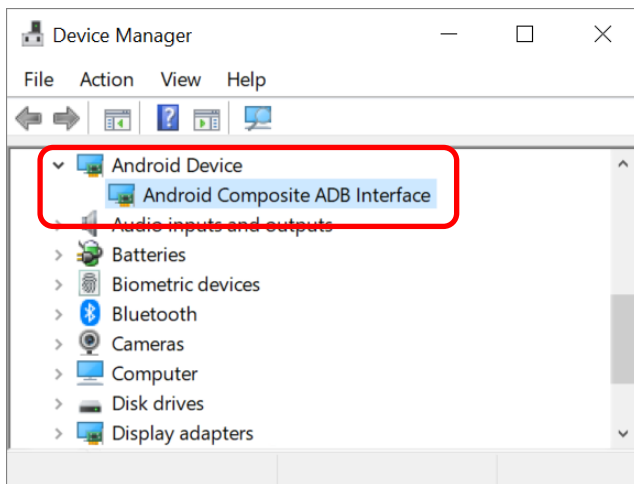
**Step 2:**  
Tap on Build number 7 times to enter  
Developer mode. During the process,  
you'll see a prompt with a countdown  
reading "You are now X steps away  
from being a developer."

**Step 3:**  
When you see "You are now a  
developer!" showing up, you  
have succeeded in entering  
developer mode.

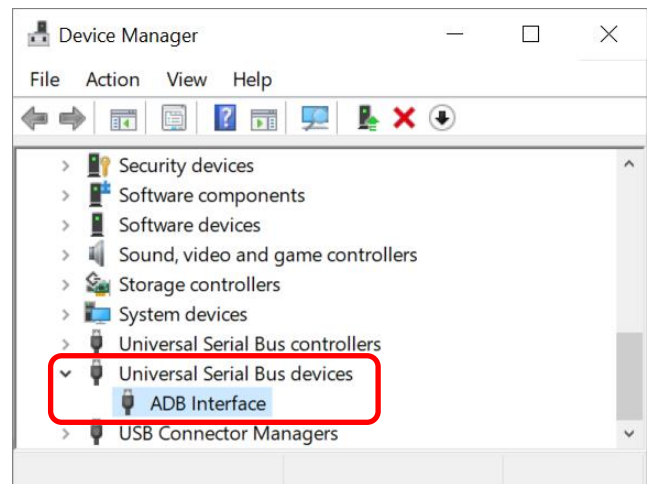


**Step 4:**  
Return to Settings and tap on " Developer options", switch both Developer options and USB debugging to  
"On", and tap on "OK" on the confirmation window.

- 3) Go to “**Control Panel**” → “**Device Manager**” in your PC to check whether **ADB Driver** has been installed in your PC.



**ADB driver is installed**



**ADB driver is NOT installed**

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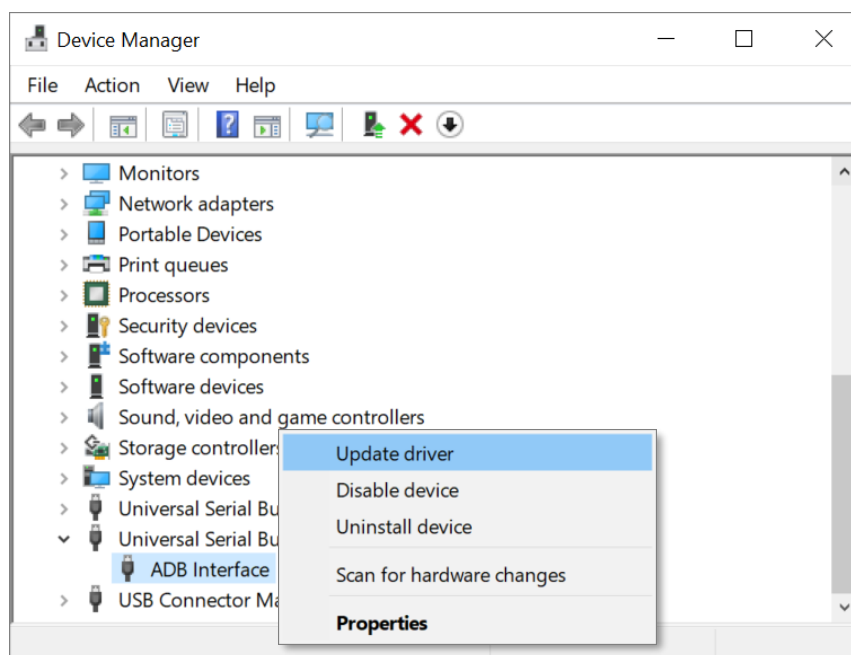
**Note:** The item shown on “Device Manager” may slightly different based on the operating system environment of your PC.

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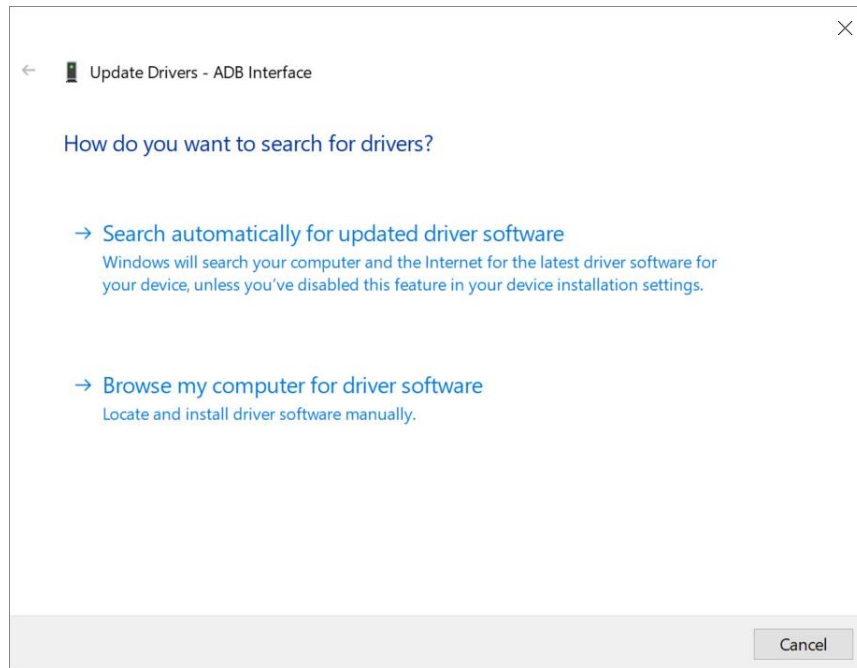
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## HOW TO INSTALL ADB DRIVER

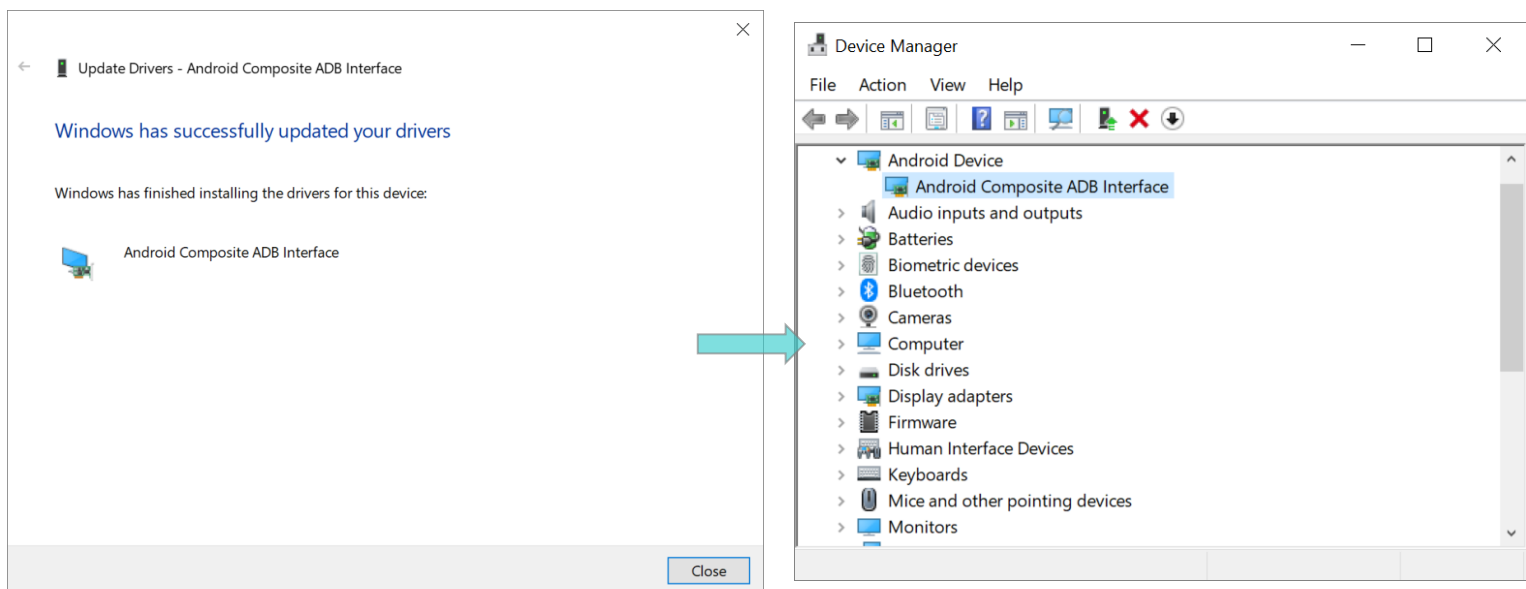
- 1) Continued from the steps above, find **ADB Interface** on **Device Manager**, and click to open its setting menu to select “**Update driver**”.



2) Select "***Search automatically for updated driver software***" to complete the update.



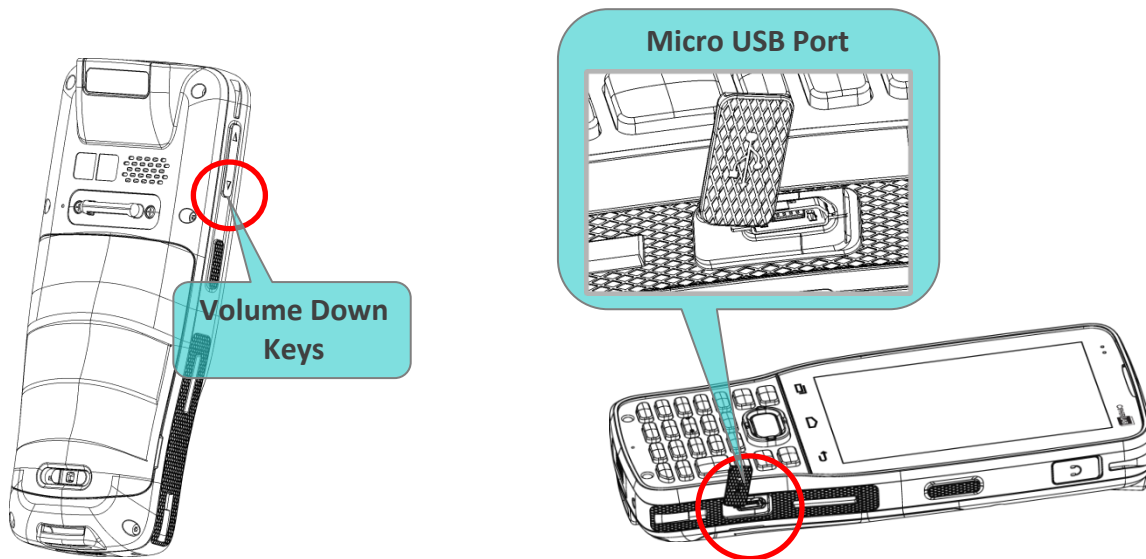
3) After successfully installing the driver, the RK25 mobile computer is shown up as "***Android Composite ADB Interface***" on ***Device Manager***.



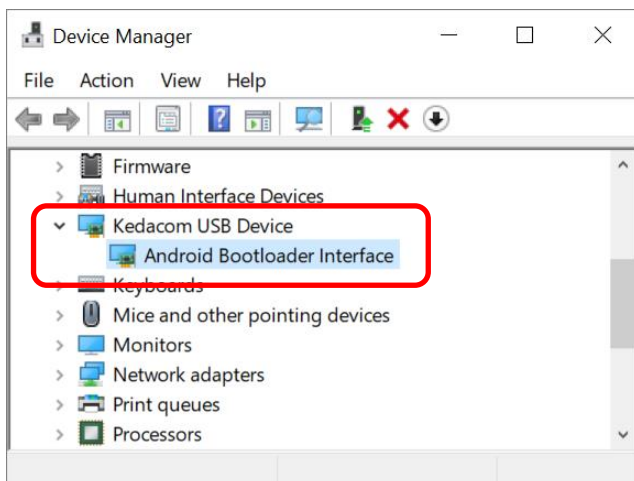
### 1.2.3 FASTBOOT DRIVER

#### CHECK WHETHER FASTBOOT DRIVER IS INSTALLED IN YOUR PC

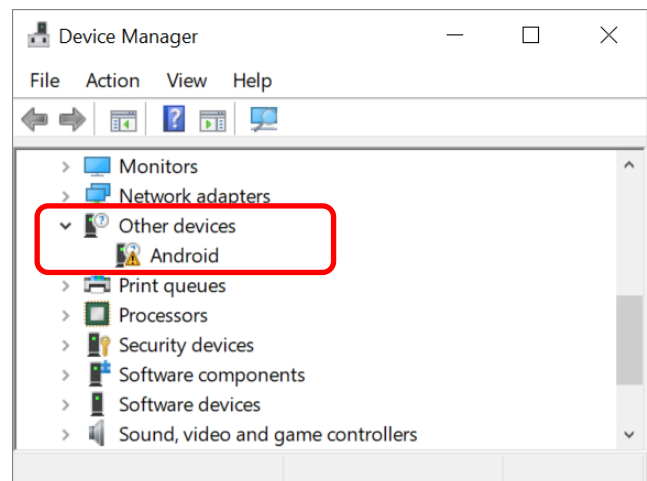
- 1) Insert the micro USB cable to the USB port of your PC.
- 2) Keep pressing the **Volume Down Key** on the RK25 mobile computer
- 3) Insert the supplied micro USB cable to the micro USB port of your RK25 mobile computer.



- 4) Go to “**Control Panel**” → “**Device Manager**” in your PC to check whether **Android Bootloader Interface Driver** has been installed in your PC.



**Fastboot driver is installed**

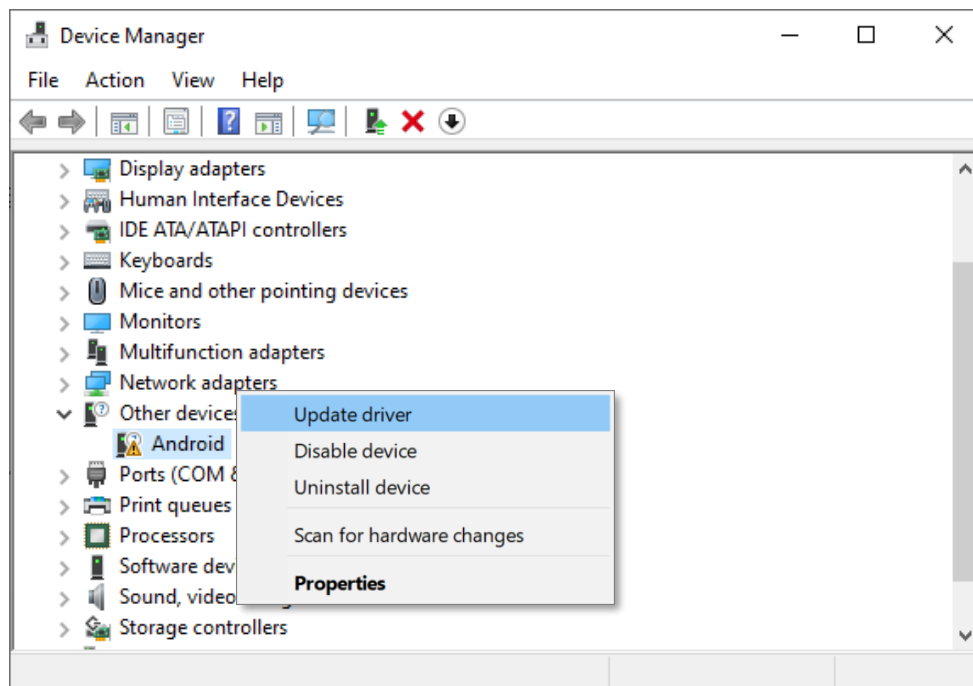


**Fastboot driver is NOT installed**

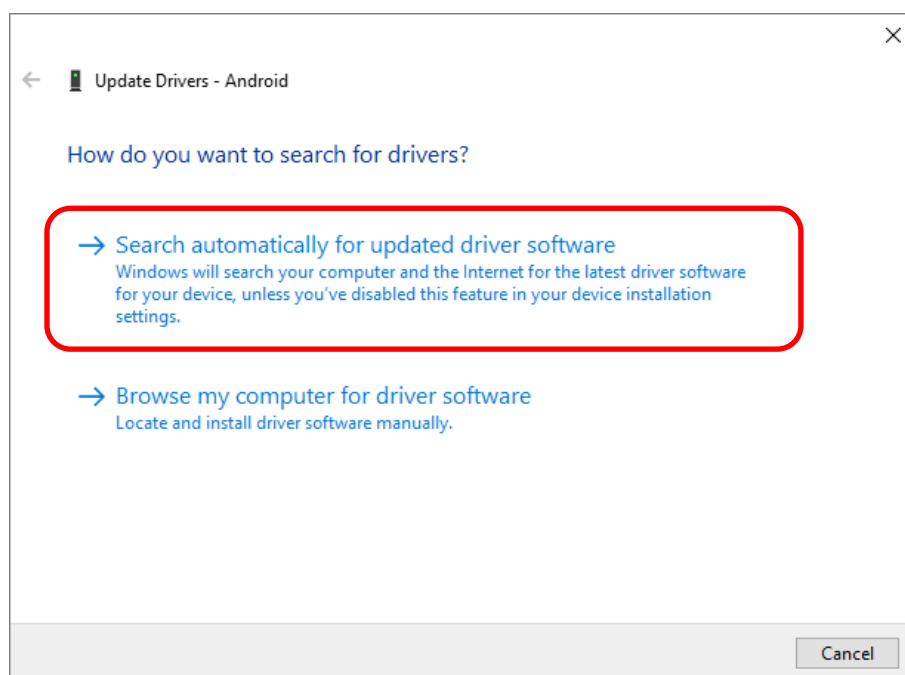
**Note:** The item shown on “Device Manager” may slightly different based on the operating system environment of your PC.

## HOW TO INSTALL FASTBOOT DRIVER

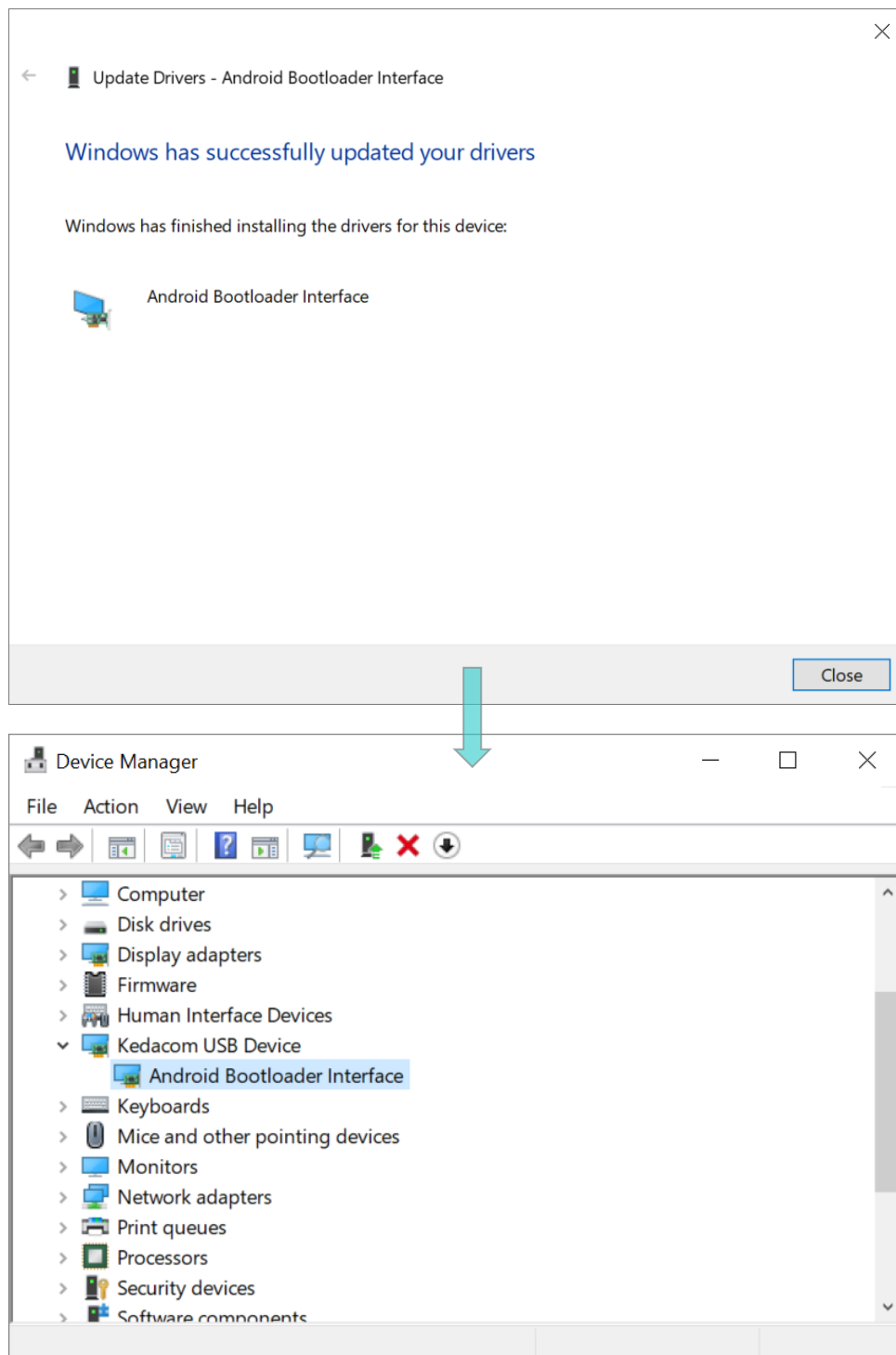
- 1) Continued from the steps above, click on the unknown device to open its setting menu, and then select "**Update driver**".



- 2) Select "**Search automatically for updated driver software**" to complete the update.



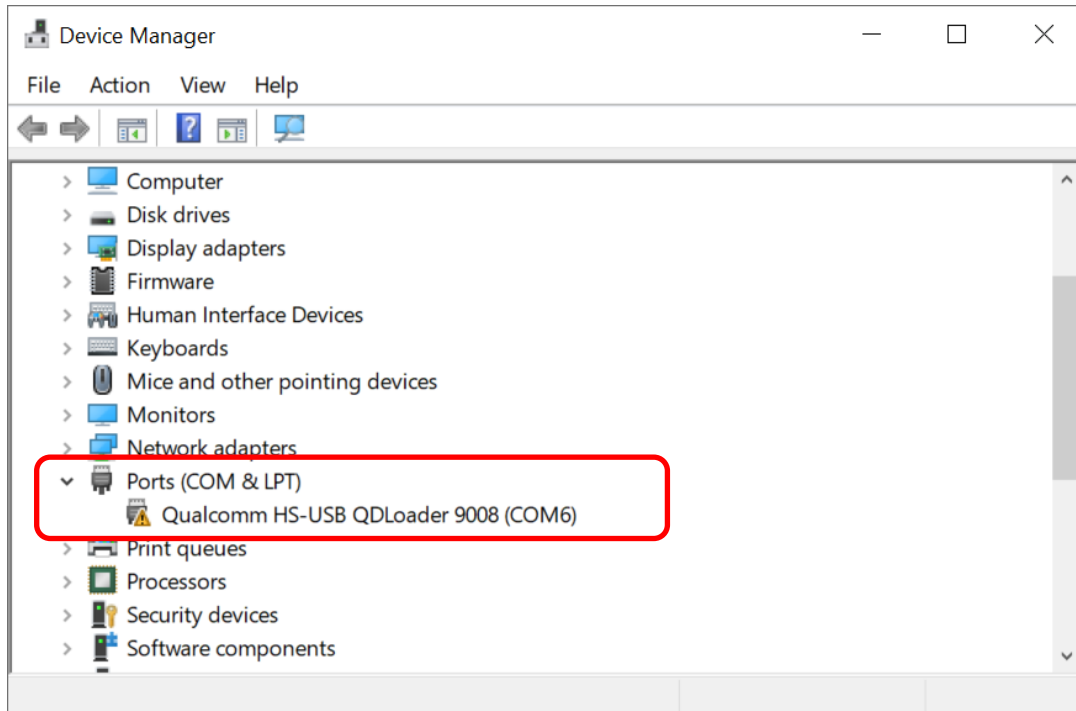
- 3) You will find "**Android Bootloader Interface**" on **Device Manager** after successfully installing the driver.



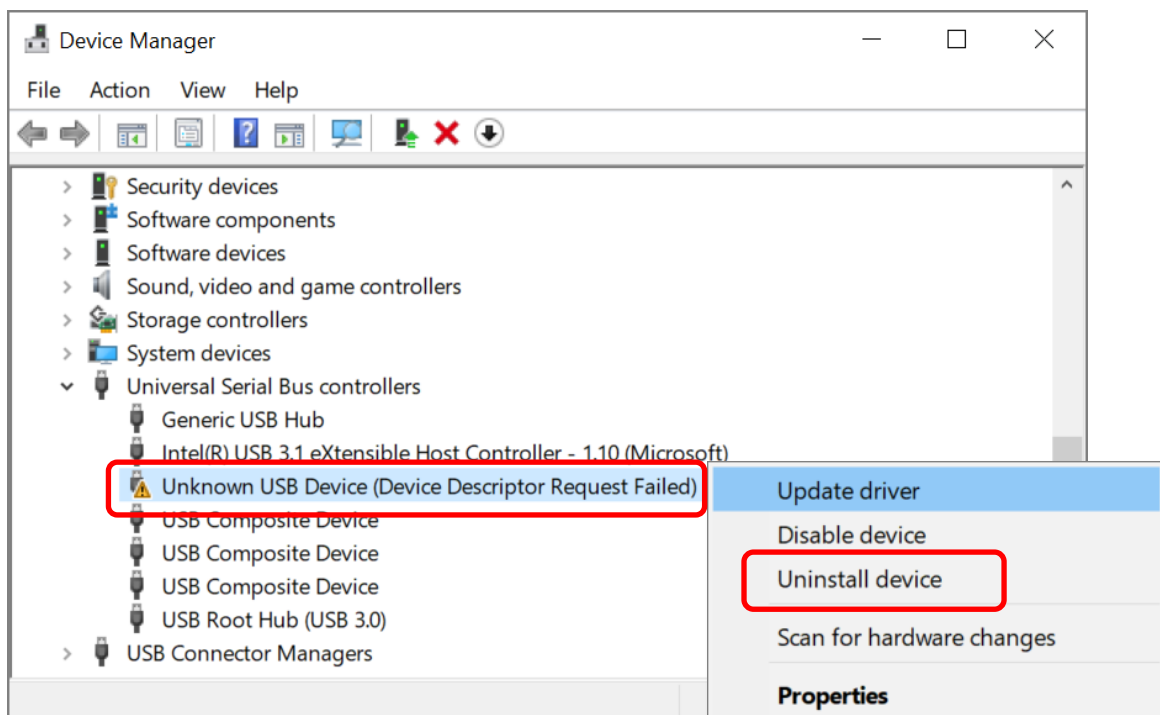


## 1.2.4 DRIVER INSTALLATION FAILED

If driver installation is failed, the item shown on **Device Manager** is with a yellow exclamation mark in front of the name.



Please click to open the setting menu and select “**Uninstall device**” to remove it, and then reinstall the driver(s) as the steps of [Qualcomm USB Driver](#), [ADB Driver](#), and [Fastboot Driver](#) describe.



## OS IMAGE UPGRADE

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This chapter will walk you through the steps of upgrading the OS image, and how to restore your RK25 mobile computer by Image Download Repair Tool.

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## 2.1 THE STEPS TO UPGRADE OS IMAGE

Before proceeding OS upgrade, please check and confirm the followings:

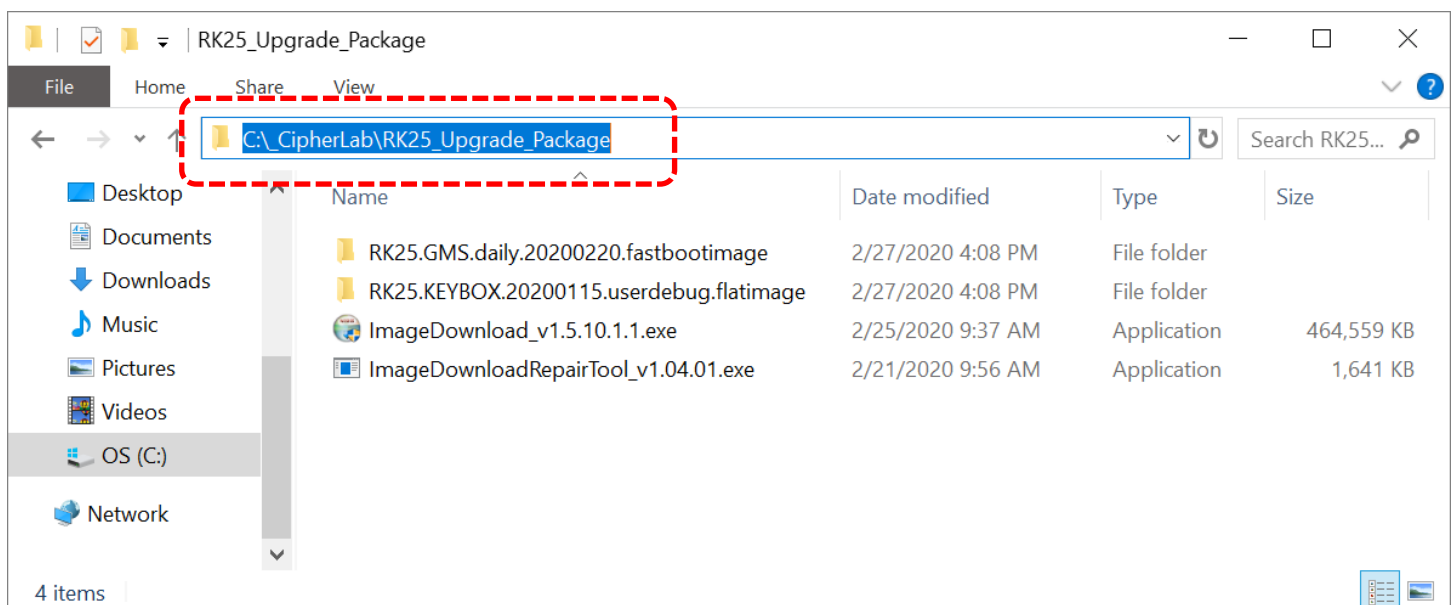
- ▶ The main battery power of the RK25 mobile computer is more than **50%**.
- ▶ All the required drivers are installed in your PC.
- ▶ Back up the user data and the app data & settings of your RK25 mobile computer.

**Note:** All the user data and app data & settings in your RK25 will be cleared after OS upgrade. Be sure to have the aforesaid items backed up in order to restore the settings on your device.

### UPGRADE OS IMAGE

Please follow the steps below to upgrade the OS image of your RK25 mobile computer from **Android 7 Nougat** to **Android 9 Pie**:

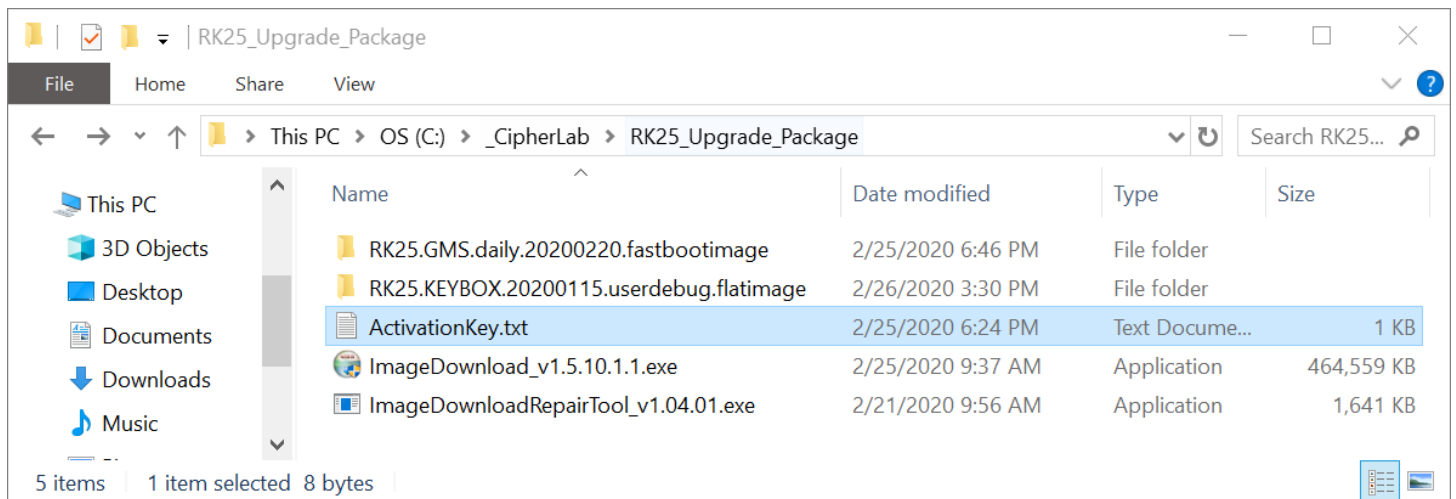
- 1) Uncompress the zip files.
- 2) Make sure that the RK25 OS image upgrade tool is in the folder (and all its parent folders) is without any space in the folder name.



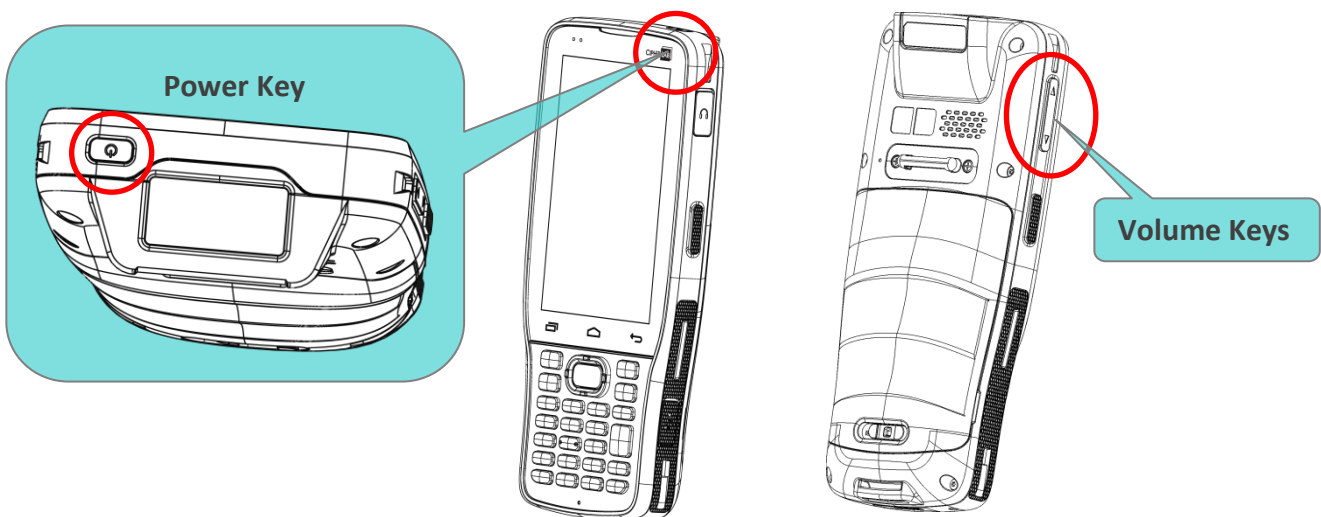
**Note:**

**Executing OS upgrade fails if there's space in the pathname of the path to access the OS image file.**

- 3) Put the “**Activation Key**” acquired from CipherLab into the folder where the Image Download Tool is located.



- 4) Power off your RK25 mobile computer, and then put it into “**Download Mode**” by pressing the **Volume Up Key**, the **Volume Down Key** and the **Power Key** at the same time.

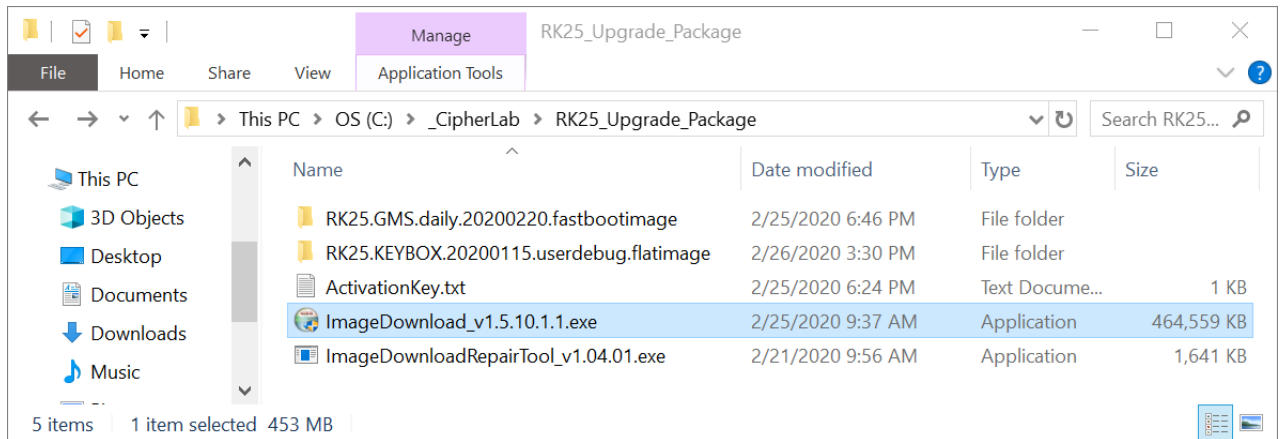


- 5) Connect the RK25 mobile computer with your PC by a micro USB cable.

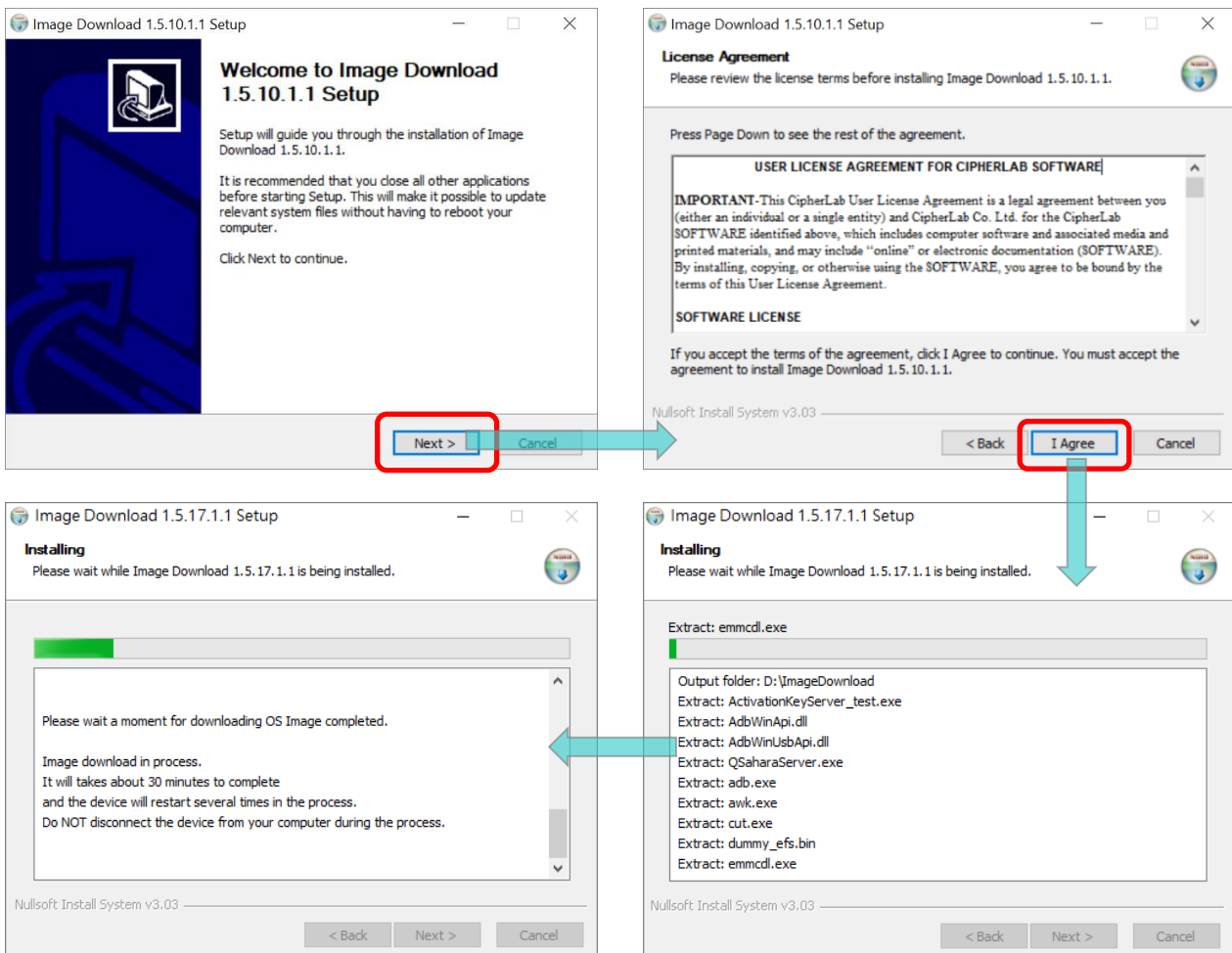
**Note:**

It allows to upgrade only one device at a time.

6) Double-click on **"ImageDownload"** to run the executable file.

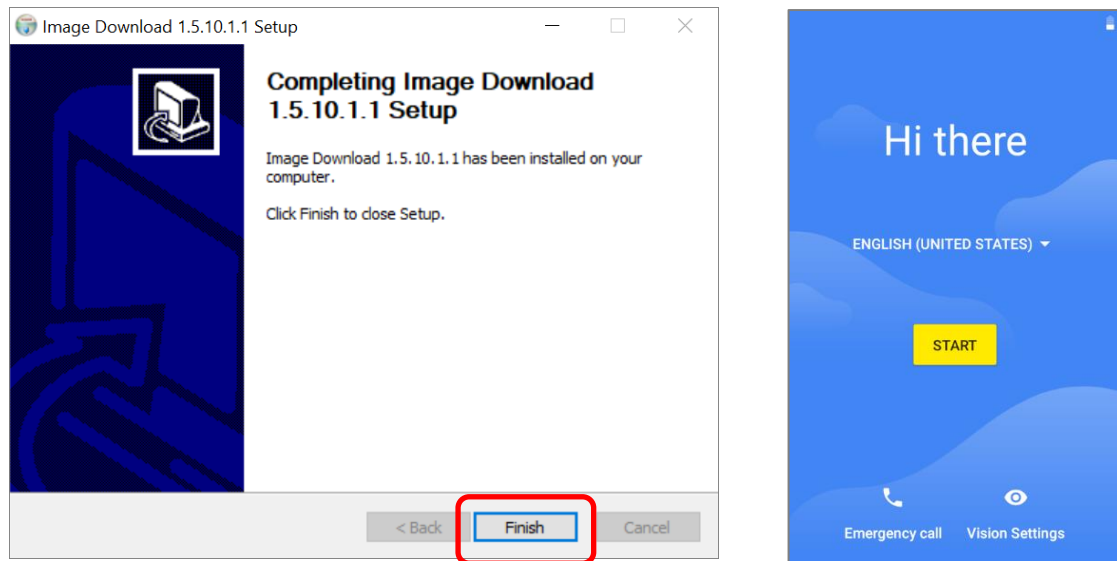


7) Follow the on-screen instructions to start the OS image upgrade progress, and it will take about 15 minutes to complete.

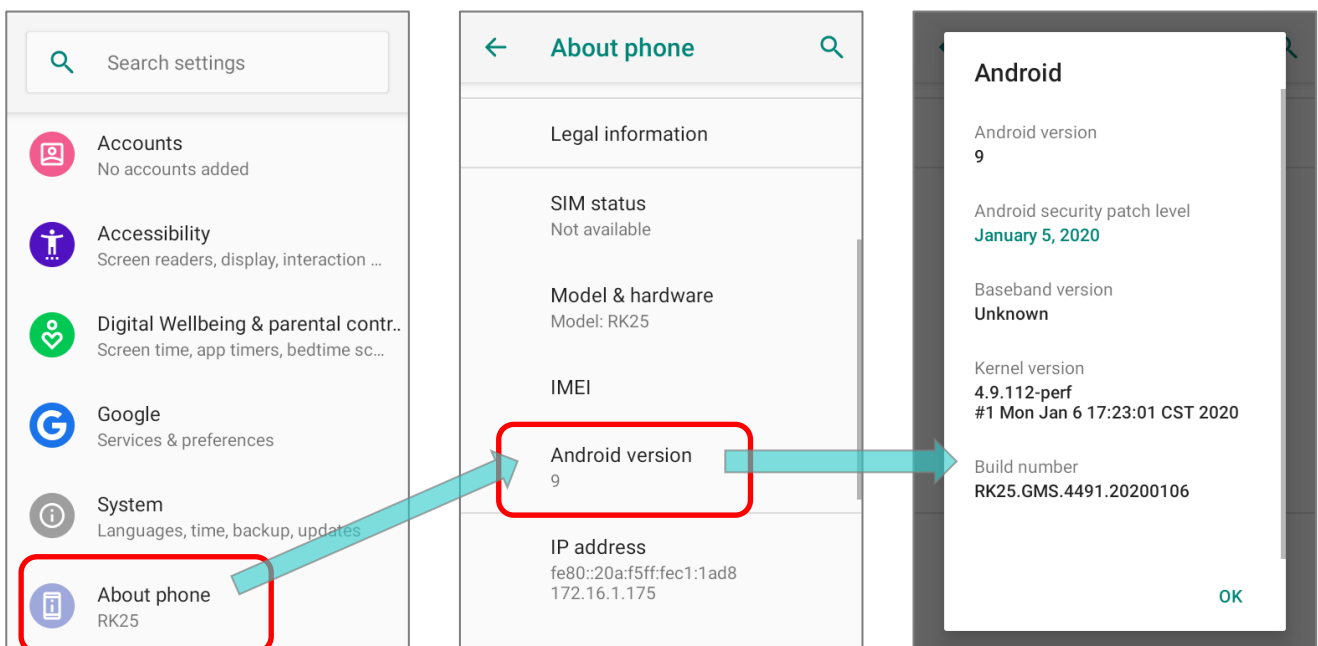


**Note:** During the upgrade period, RK25 mobile computer screen gets into the splash screen to have the keybox to be written. Please **DO NOT** disconnect the RK25 mobile computer from your PC or press any button on your RK25 mobile computer till [Step 8](#).

- 8) Once it shows "**Completing Image Download**", the OS image upgrade is done. Click on "**Finish**" to close the window. The RK25 mobile computer will automatically reboot and "**Welcome Wizard**" shows up to run you through setting up your device.

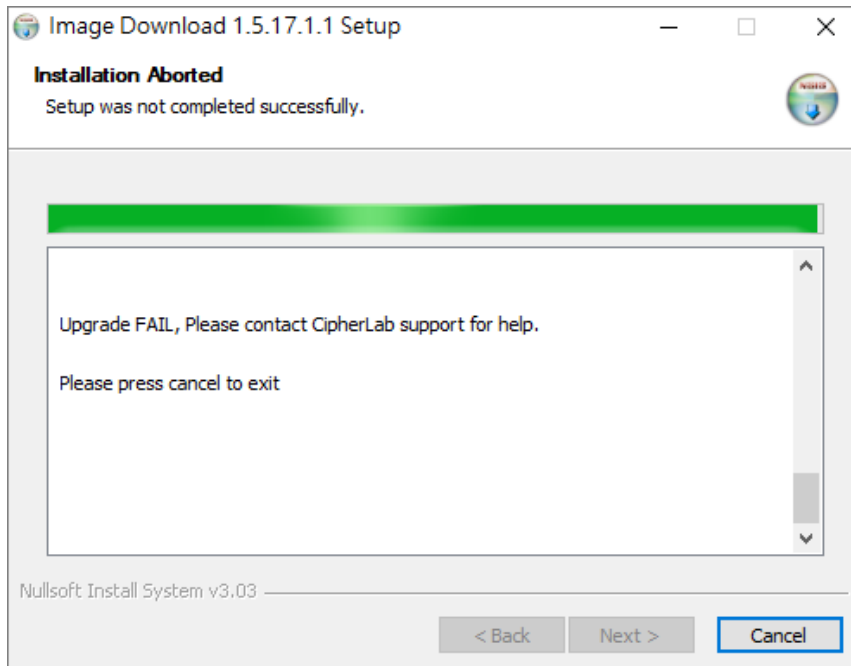


- 9) Now the OS image of RK25 mobile computer becomes Android 9 Pie. You can check it from **App Drawer (All Apps) | Settings**  | **About Phone**  | **Android version**.



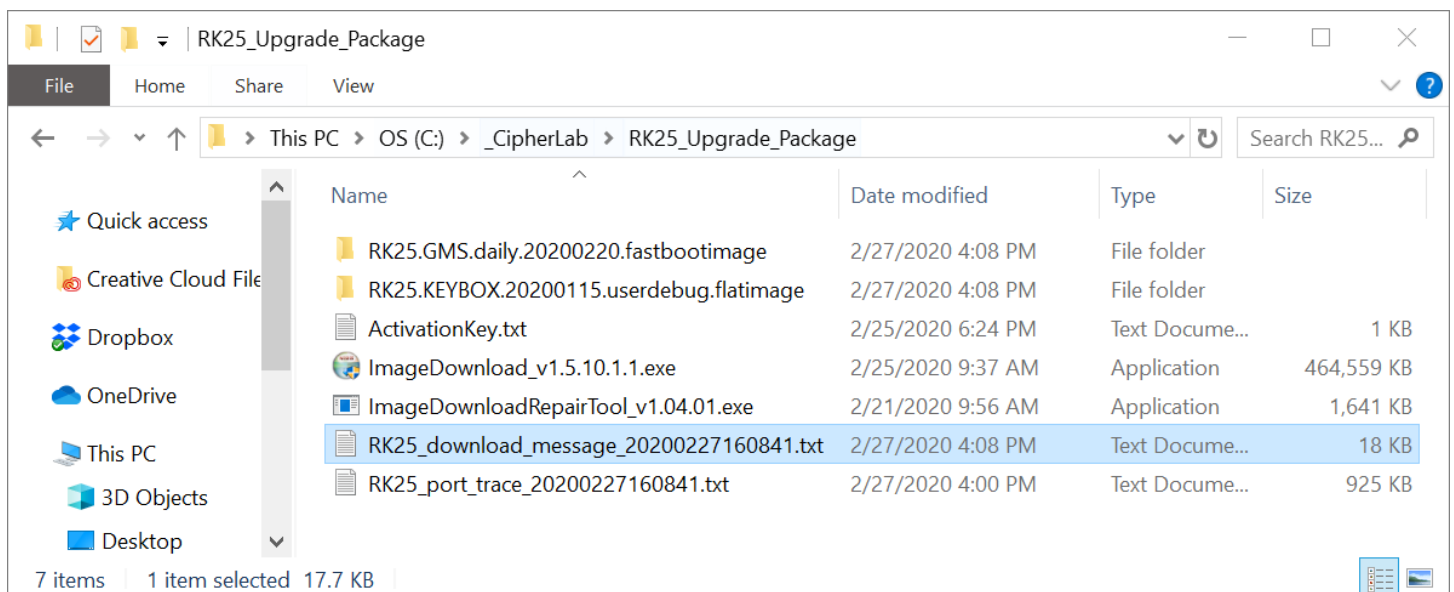
## UPGRADE FAILED

If it is failed to upgrade the OS image, please check whether the required [USB drivers](#) are properly installed and contact with [support@cipherlab.com.tw](mailto:support@cipherlab.com.tw) for help.



## LOG

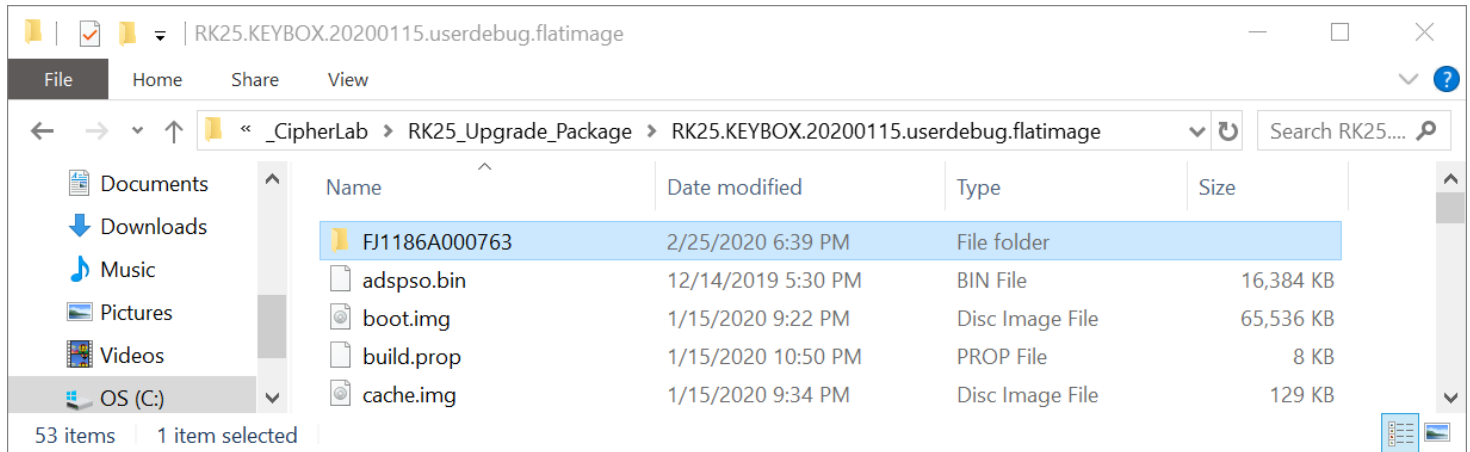
The upgrade log will be saved in the folder where the Image Download Tool is located. The log will be saved as a .txt file whose file name is the upgrade date and time.



## BACKUP SYSTEM DATA

The system data of your original RK25 mobile computer with Android Nougat is automatically backed up after proceeding OS upgrade, and the backup system data is saved in the folder (whose folder name is the same with the device serial number) located under **"RK25.KEYBOX.20200115.userdebug.flatimage"**.

It is suggested that keep this backup system data and its folder in case you need to restore the data by ["Image Download Repair Tool"](#).





## 2.2 IMAGE DOWNLOAD REPAIR TOOL

If the upgrade fails and the system data of your RK25 mobile computer (such as serial number, IMEI, MAC address, and so forth) is successfully backed up, you can use "**Image Download Repair Tool**" to restore your RK25 mobile computer.

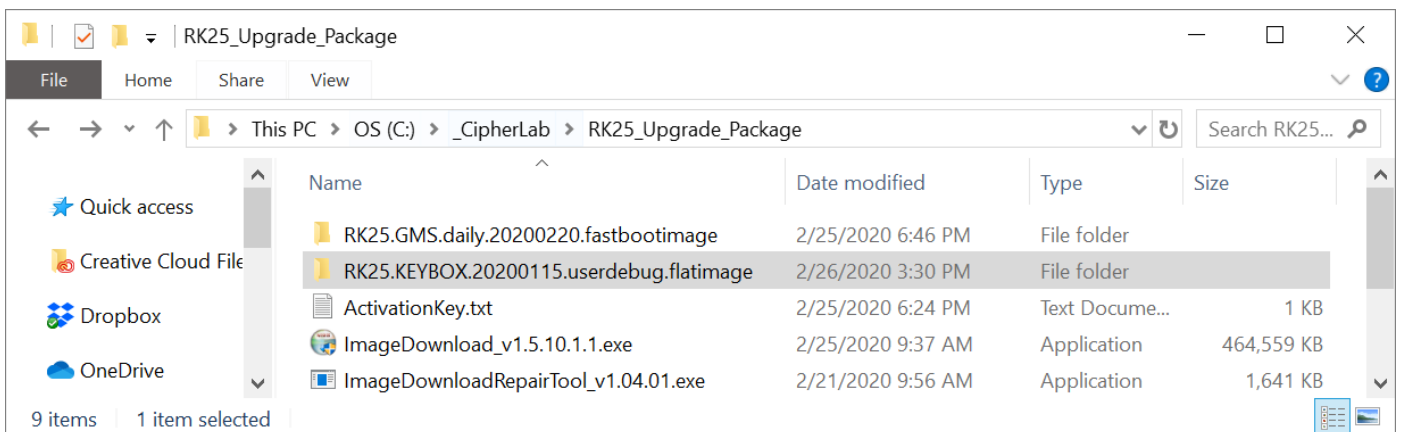
### 2.2.1 PREREQUISITE

The followings need to be checked before restoring your RK25 mobile computer:

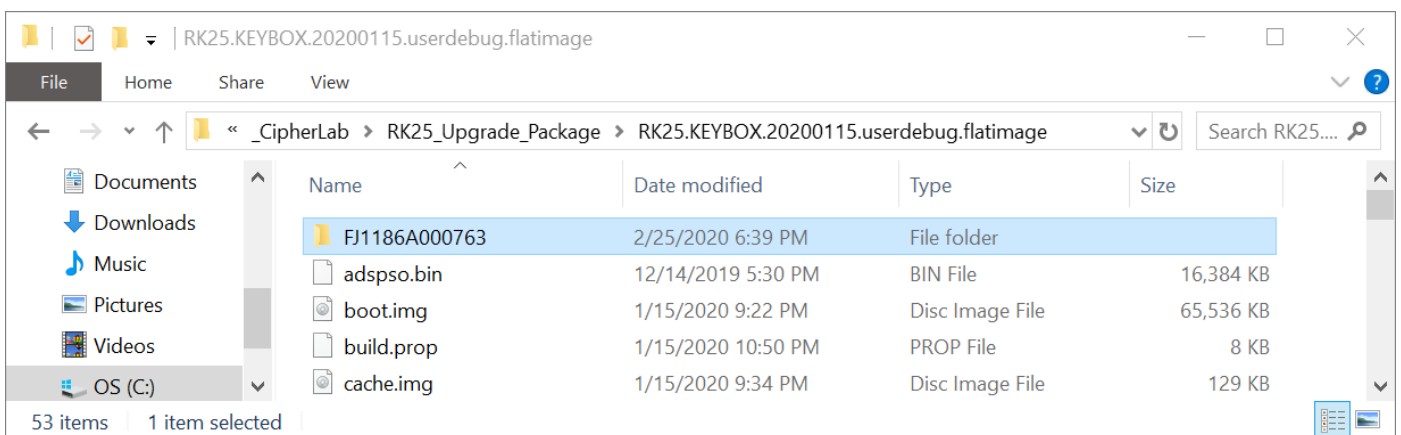
#### BACKUP FILES

To check whether the system data is successfully backed up:

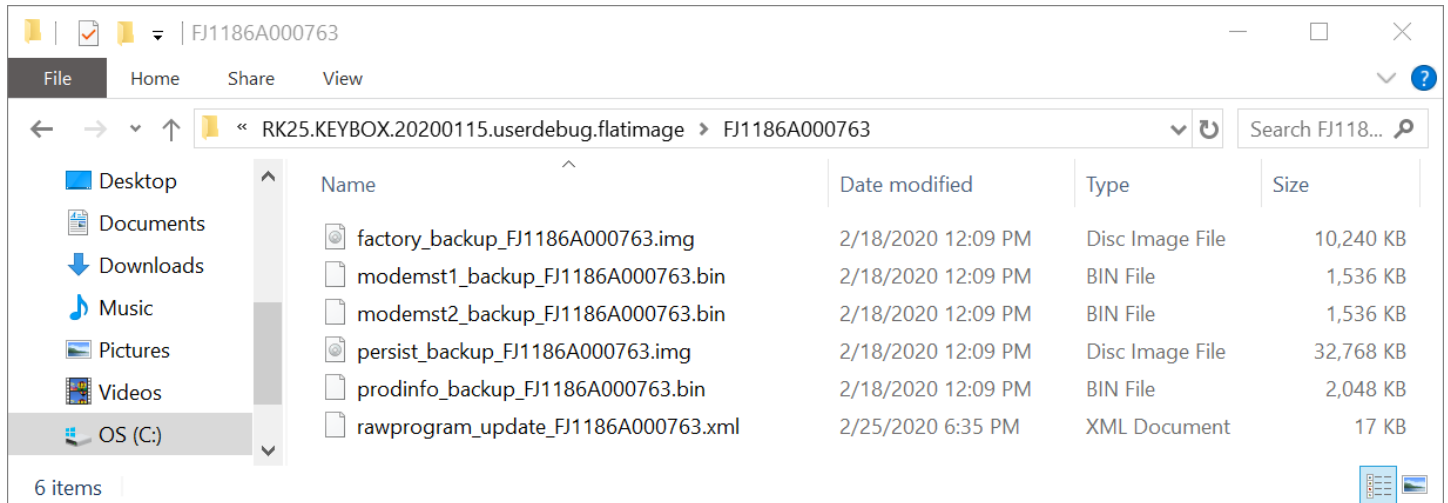
- 1) Open the folder "**RK25.KEYBOX.20200115.userdebug.flatimage**".



- 2) Find the the folder whose folder name is the serial number of your RK25 mobile computer.



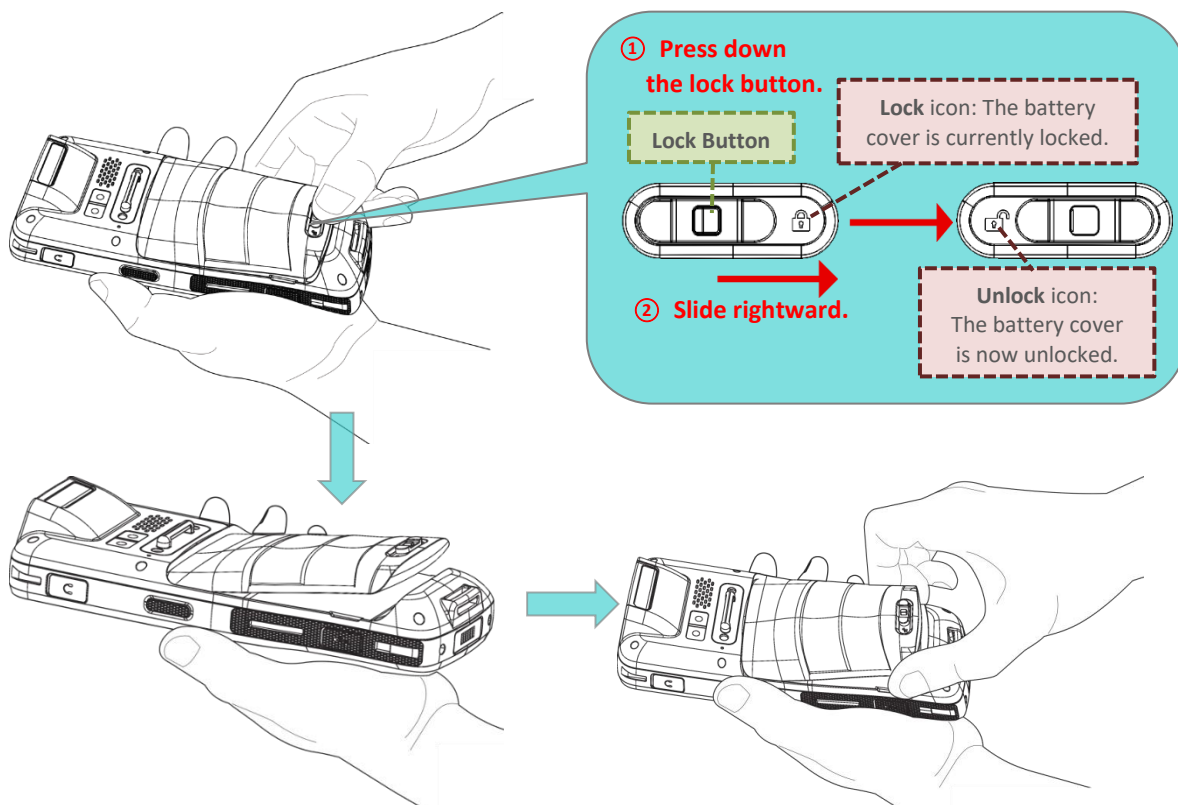
- 3) Enter this folder to check if there's any files in it. Empty folder means auto-backup is failed.



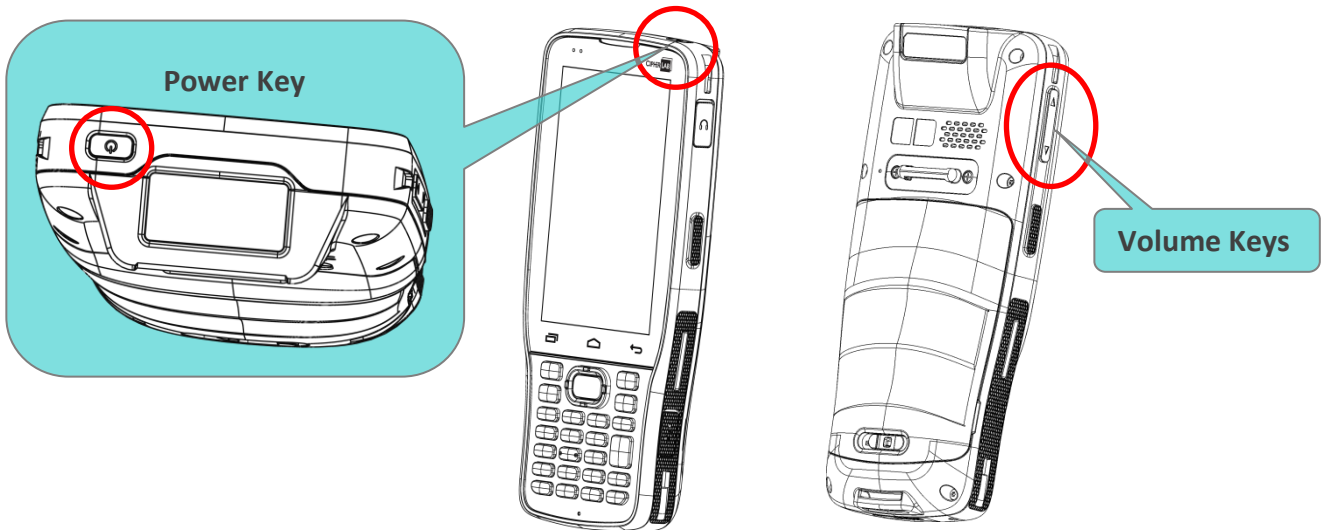
### ENTER DOWNLOAD MODE

To enter "**Download Mode**" after failing to upgrade OS image:

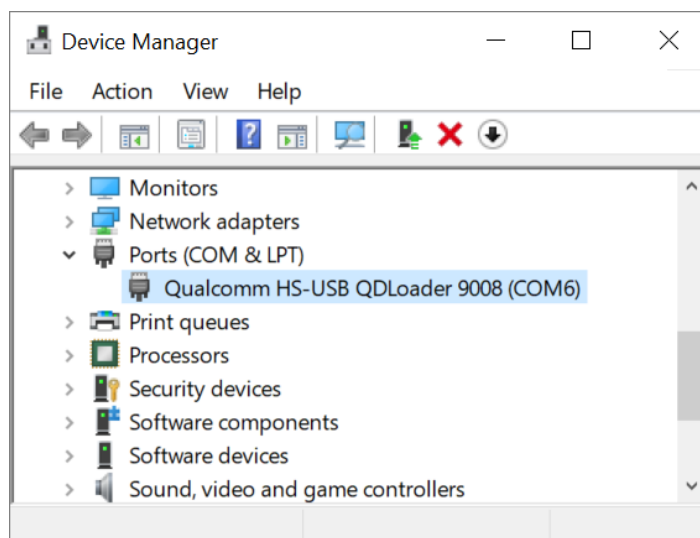
- 1) Remove the main battery from the RK25 mobile computer for at least **5 minutes**, and then install the main battery.



- 2) Press the **Volume Up Key**, the **Volume Down Key** and the **Power Key** at the same time to enter "**Download Mode**".

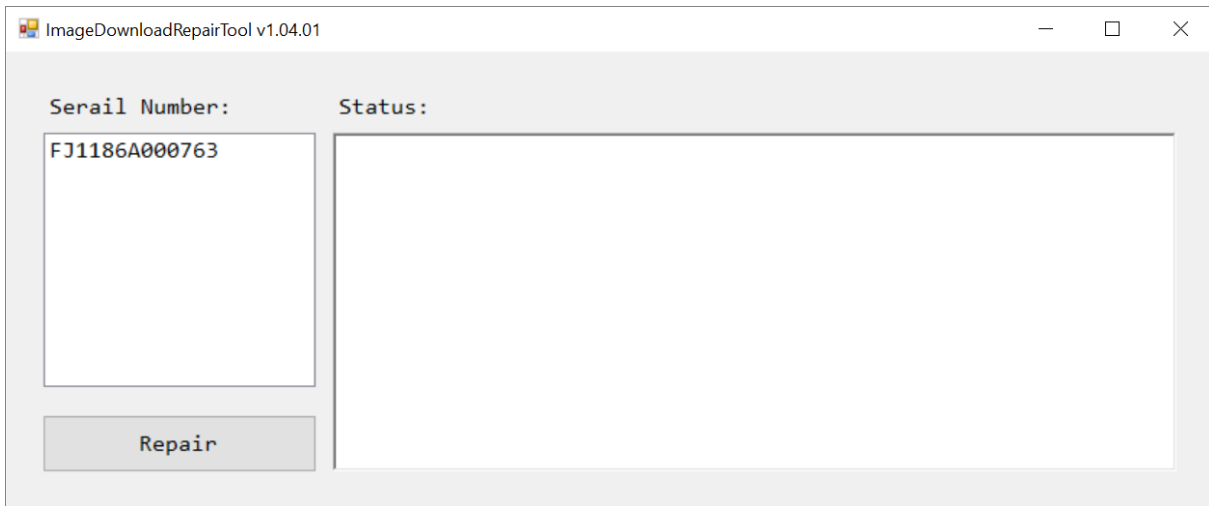


- 3) Connect the RK25 mobile computer with your PC by a micro USB cable.
- 4) Go to "**Control Panel**" → "**Device Manager**" in your PC, and make sure it shows "**Qualcomm HS-USB QDLoader 9008**" under "**Ports**".

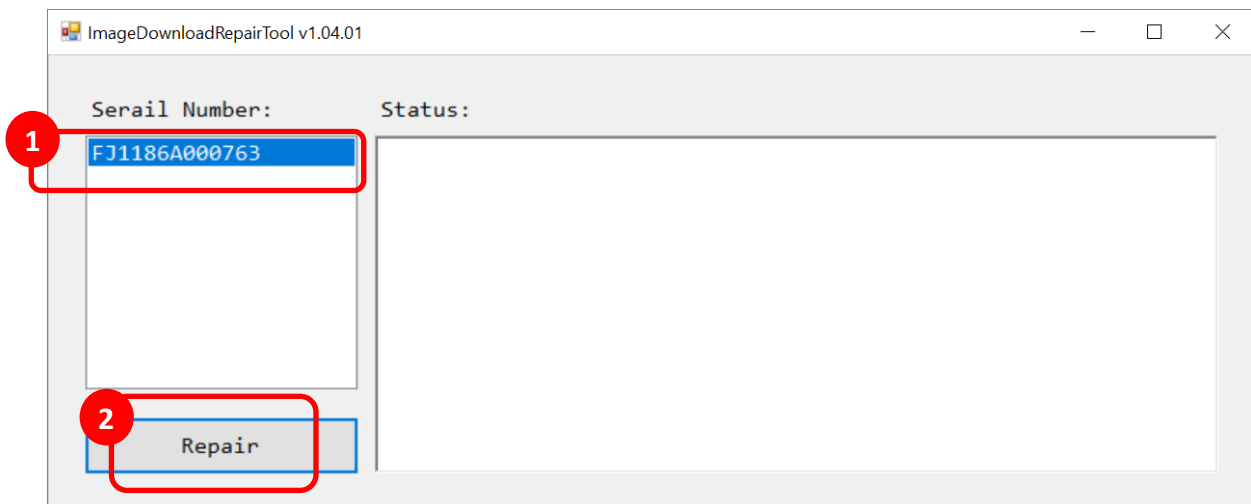


## 2.2.2 RESTORE YOUR RK25 BY IMAGE DOWNLOAD REPAIR TOOL

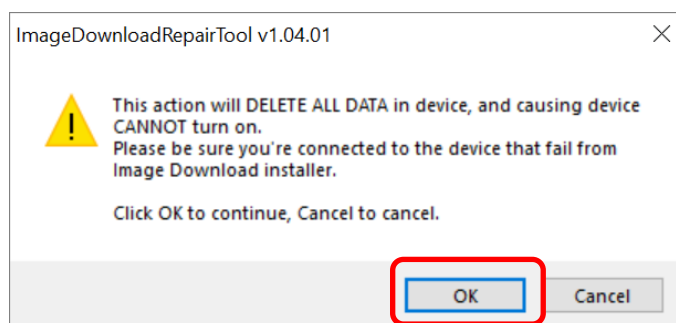
1) Run the executable file "**ImageDownloadRepairTool**".



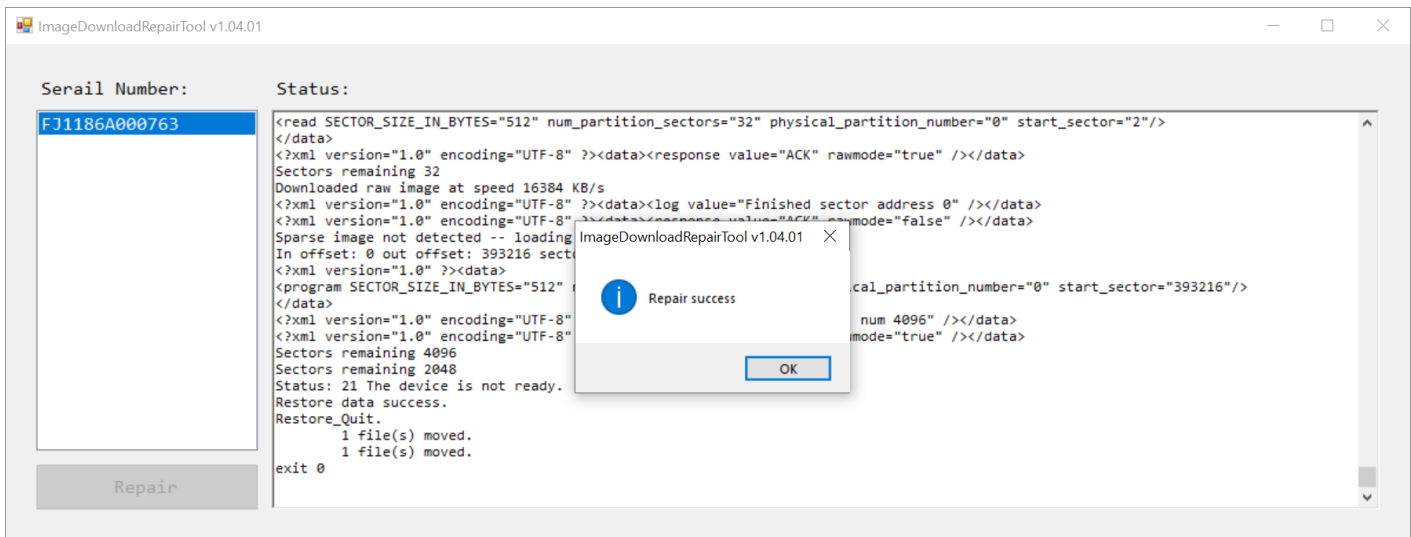
2) Click on the serial number of your RK25 mobile computer, and then "**Repair**".



3) A warning popup appears. Click on "**OK**" to proceed.



4) Within few minutes, the RK25 mobile computer is successfully restored.



## OS IMAGE UPGRADE AFTER REPAIR

To upgrade the OS image after your RK25 is restored by Image Download Repair Tool:

- 1) Remove the main battery from the RK25 mobile computer for at least **5 minutes**, and then install the main battery.
- 2) Press the **Volume Up Key**, the **Volume Down Key** and the **Power Key** at the same time to enter "**Download Mode**".
- 3) Connect the RK25 mobile computer with your PC by a micro USB cable, and then check "**Control Panel**" → "**Device Manager**" in your PC. Ensure that it shows "**Qualcomm HS-USB QDLoader 9008**" under "**Ports**".
- 4) Proceed the OS image upgrade steps as [Section 2.1](#) describes.