CASTLES TECHNOLOGY

SATURN Series EFT-POS Terminal

Getting Started

Castles Technology

Confidential

Version 1.2

Apr. 2019

Castles Technology Co., Ltd.

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Revision History

Version	***Date***	***Descriptions***
1.0	May. 25. 2018	Initial creation.
1.1	Sep. 21. 2018	Modify the title and content for Saturn 7000
1.2	Apr. 26. 2019	Modify Android Studio version

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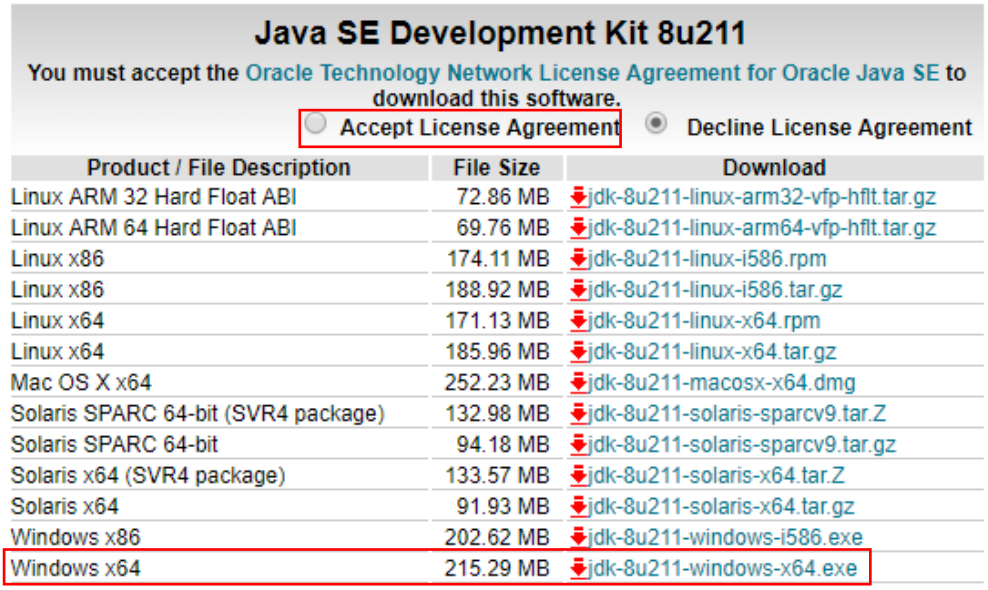
1. Installation

Step1. Download and Install Java SE Development Kit (JDK).

Please download JDK from below website. Select the latest one and fit for your Windows OS.

http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html



Java SE Development Kit 8u211

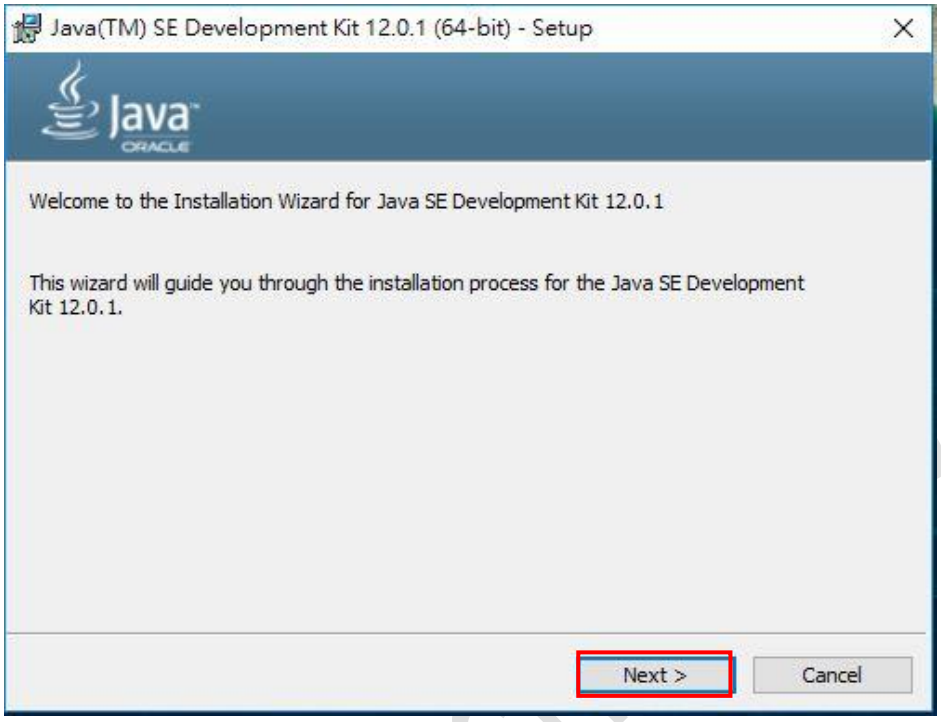
You must accept the Oracle Technology Network License Agreement for Oracle Java SE to download this software.

○ Accept License Agreement ◉ Decline License Agreement

Product / File Description	File Size	Download
Linux ARM 32 Hard Float ABI	72.86 MB	jdk-8u211-linux-arm32-vfp-hflt.tar.gz
Linux ARM 64 Hard Float ABI	69.76 MB	jdk-8u211-linux-arm64-vfp-hflt.tar.gz
Linux x86	174.11 MB	jdk-8u211-linux-i586.rpm
Linux x86	188.92 MB	jdk-8u211-linux-i586.tar.gz
Linux x64	171.13 MB	jdk-8u211-linux-x64.rpm
Linux x64	185.96 MB	jdk-8u211-linux-x64.tar.gz
Mac OS X x64	252.23 MB	jdk-8u211-macosx-x64.dmg
Solaris SPARC 64-bit (SVR4 package)	132.98 MB	jdk-8u211-solaris-sparcv9.tar.Z
Solaris SPARC 64-bit	94.18 MB	jdk-8u211-solaris-sparcv9.tar.gz
Solaris x64 (SVR4 package)	133.57 MB	jdk-8u211-solaris-x64.tar.Z
Solaris x64	91.93 MB	jdk-8u211-solaris-x64.tar.gz
Windows x86	202.62 MB	jdk-8u211-windows-i586.exe
Windows x64	215.29 MB	jdk-8u211-windows-x64.exe

Note: Since the JDK will be continuously updated. Therefore, the content of this document might be somewhat inconsistent with the website.

Execute the “jdk-xxxxx-windows-x64.exe”. Keep pressing “Next” until the JDK install finished.

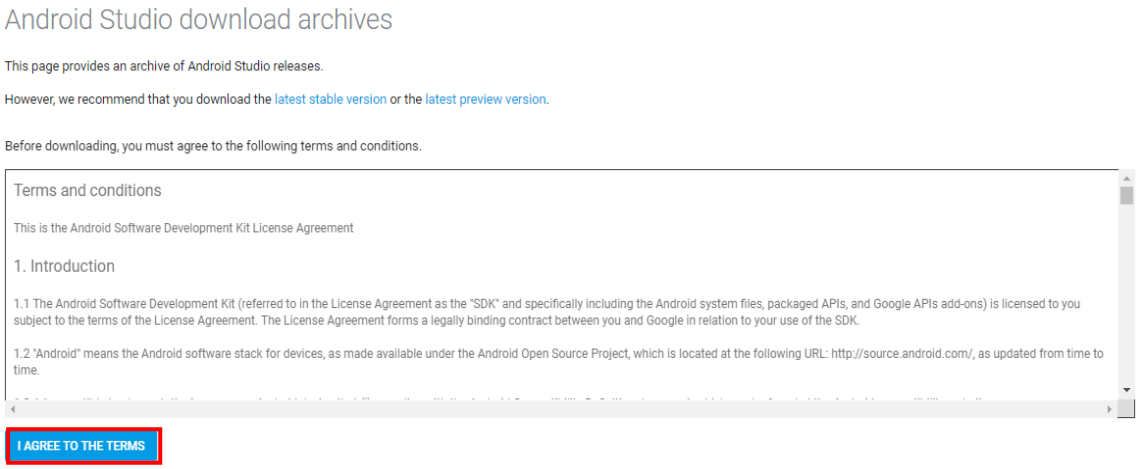


Step2. Download and Install Android Studio.

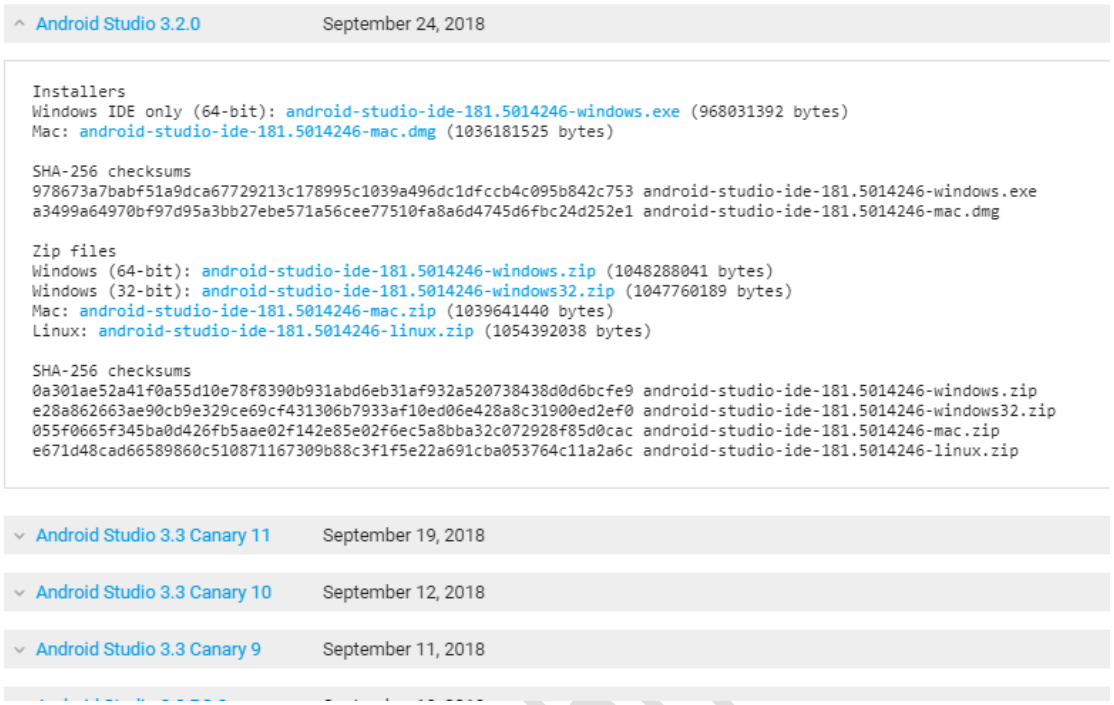
Download Android Studio from below website.

https://developer.android.com/studio/archive

Press “I ACCEPT TO THE TERMS”



Download Android Studio 3.2.0



Android Studio 3.2.0 September 24, 2018

Installers
Windows IDE only (64-bit): android-studio-ide-181.5014246-windows.exe (968031392 bytes)
Mac: android-studio-ide-181.5014246-mac.dmg (1036181525 bytes)

SHA-256 checksums
978673a7babf51a9dca67729213c178995c1039a496dc1dfccb4c095b842c753 android-studio-ide-181.5014246-windows.exe
a3499a64970bf97d95a3bb27ebe571a56cee77510fa8a6d4745d6fbc24d252e1 android-studio-ide-181.5014246-mac.dmg

Zip files
Windows (64-bit): android-studio-ide-181.5014246-windows.zip (1048288041 bytes)
Windows (32-bit): android-studio-ide-181.5014246-windows32.zip (1047760189 bytes)
Mac: android-studio-ide-181.5014246-mac.zip (1039641440 bytes)
Linux: android-studio-ide-181.5014246-linux.zip (1054392038 bytes)

SHA-256 checksums
0a301ae52a41f0a55d10e78f8390b931abd6eb31af932a520738438d0d6bcfe9 android-studio-ide-181.5014246-windows.zip
e28a862663ae90cb9e329ce69cf431306b7933af10ed06e428a8c31900ed2ef0 android-studio-ide-181.5014246-windows32.zip
055f0665f345ba0d426fb5aae02f142e85e02f6ec5a8bba32c072928f85d0cac android-studio-ide-181.5014246-mac.zip
e671d48cad66589860c510871167309b88c3f1f5e22a691cba053764c11a2a6c android-studio-ide-181.5014246-linux.zip

Android Studio 3.3 Canary 11 September 19, 2018

Android Studio 3.3 Canary 10 September 12, 2018

Android Studio 3.3 Canary 9 September 11, 2018

Note: Since the Android Studio will be continuously updated. Currently, our SDK only support Android Studio 3.2.
Please do not update Android Studio to the latest version.

Execute the installation file “android-studio-ide-xxx.xxxxxxx-windows.exe” to start to install the Android Studio. Keep clicking “Next” until the Android Studio installs finished.

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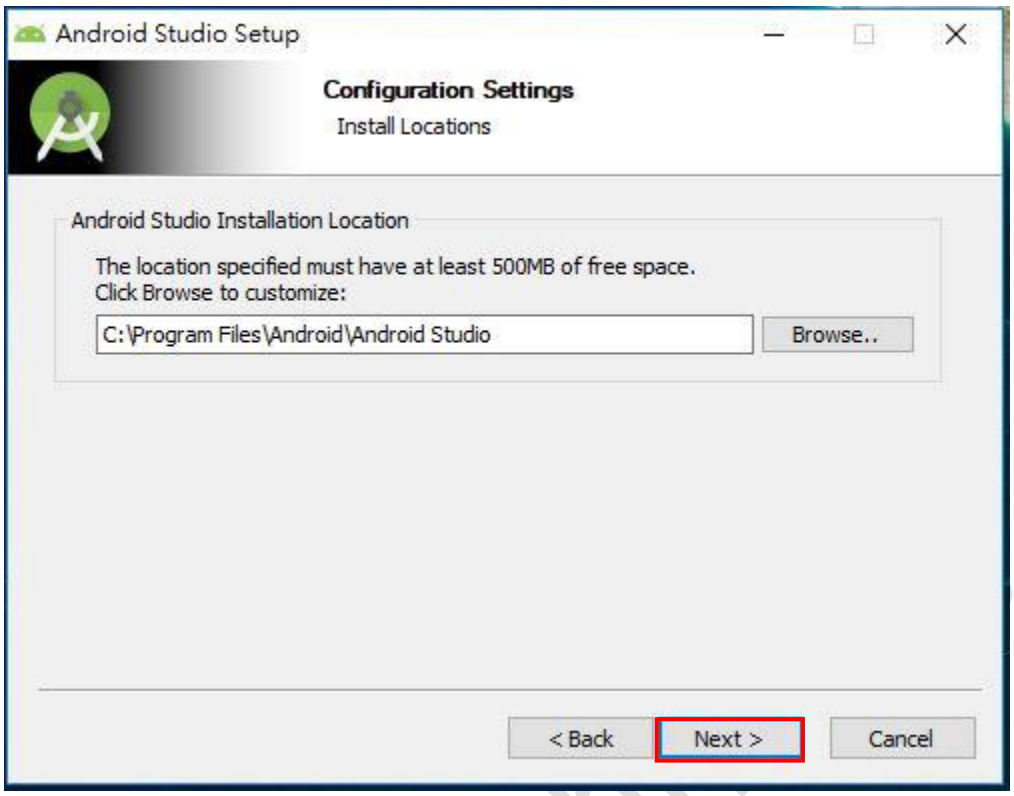
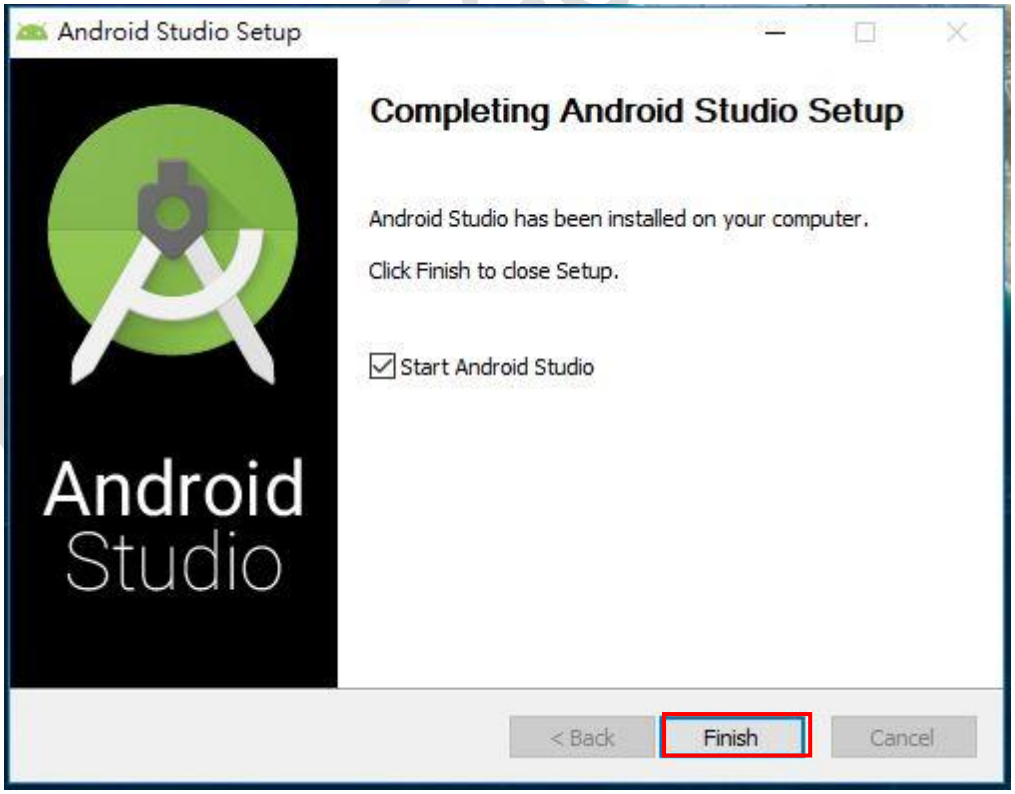
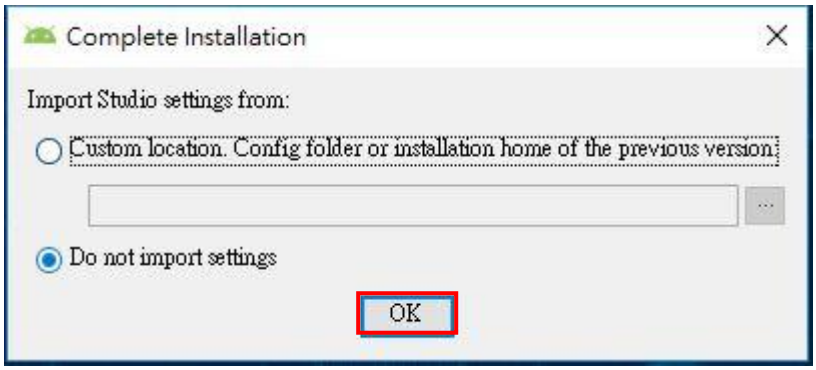


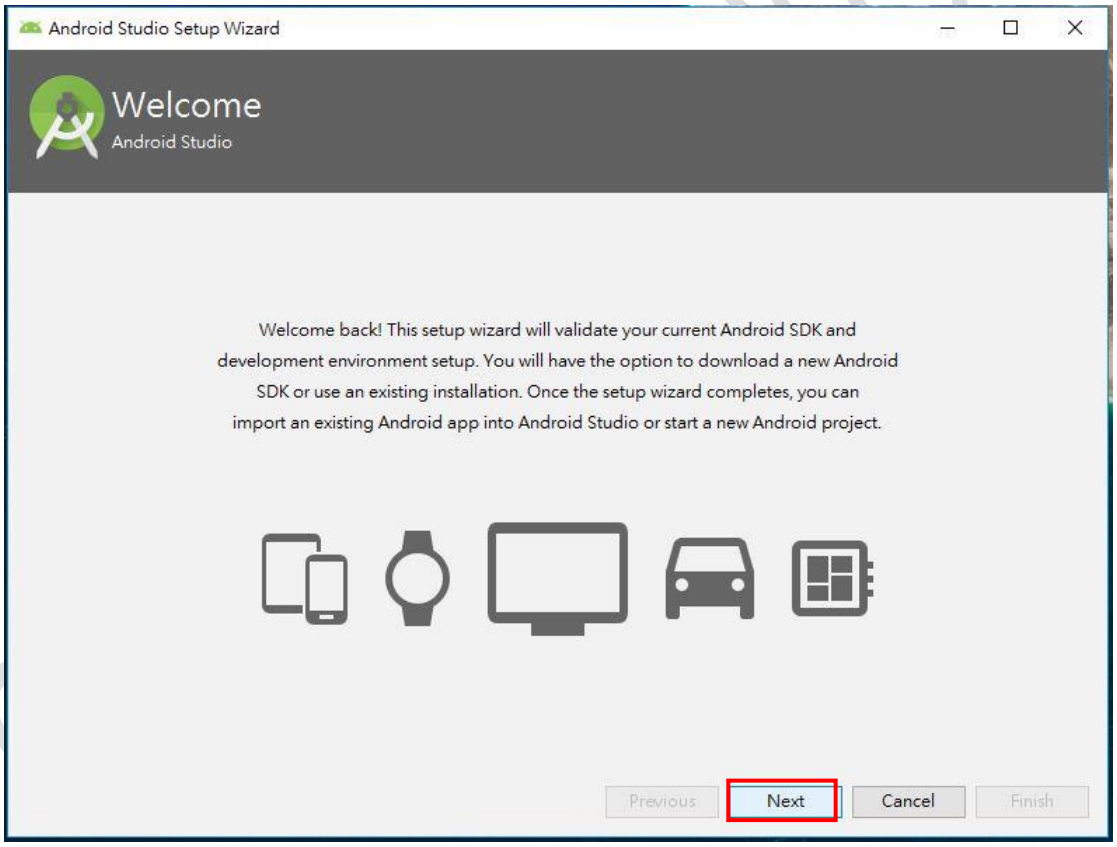
Press finish starting Android Studio.



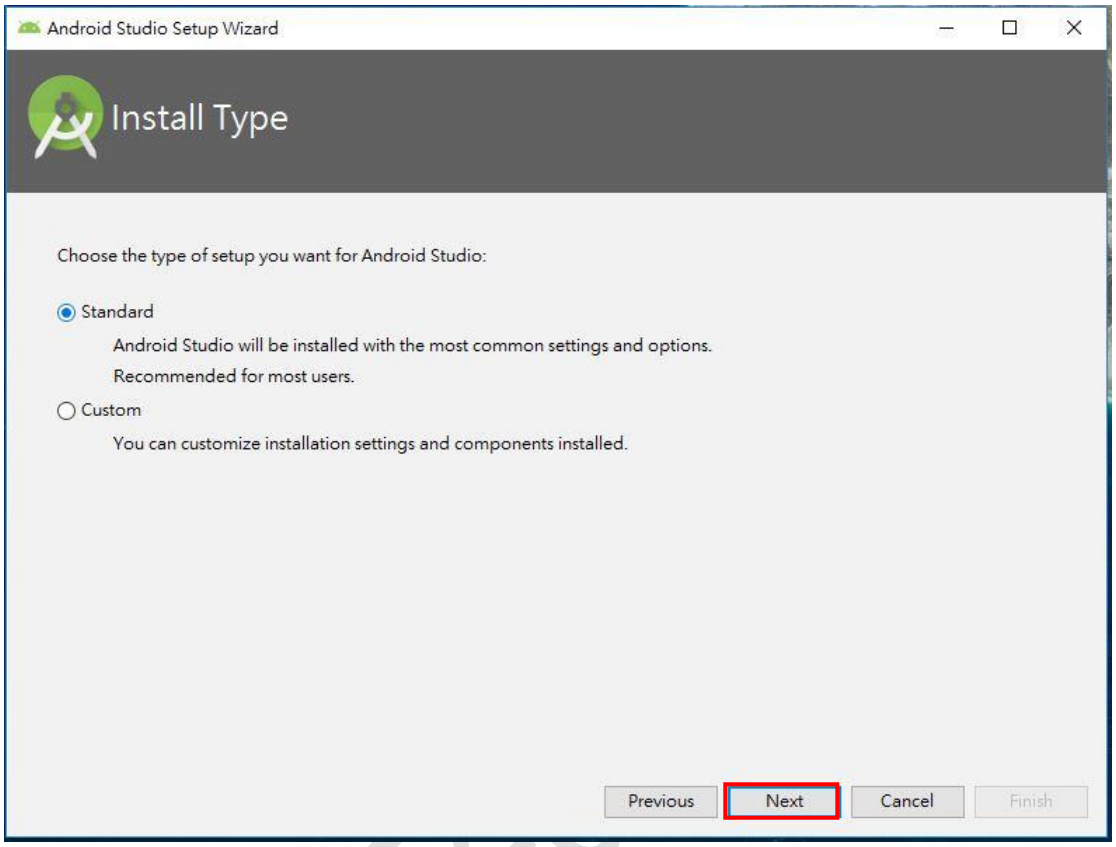
Select the option as below if this is your first Android Studio installation.



Press Next.



Choose Standard.



Then the Setup Wizard will download the related Android SDK online.

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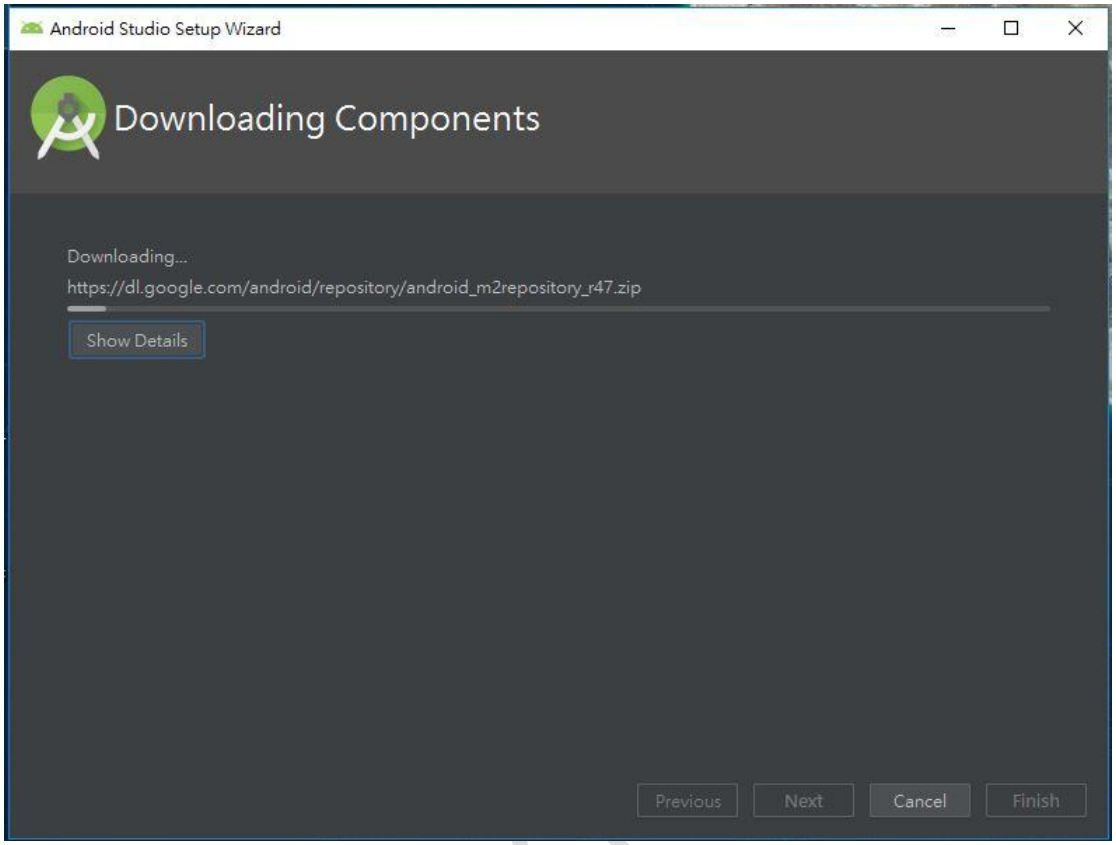
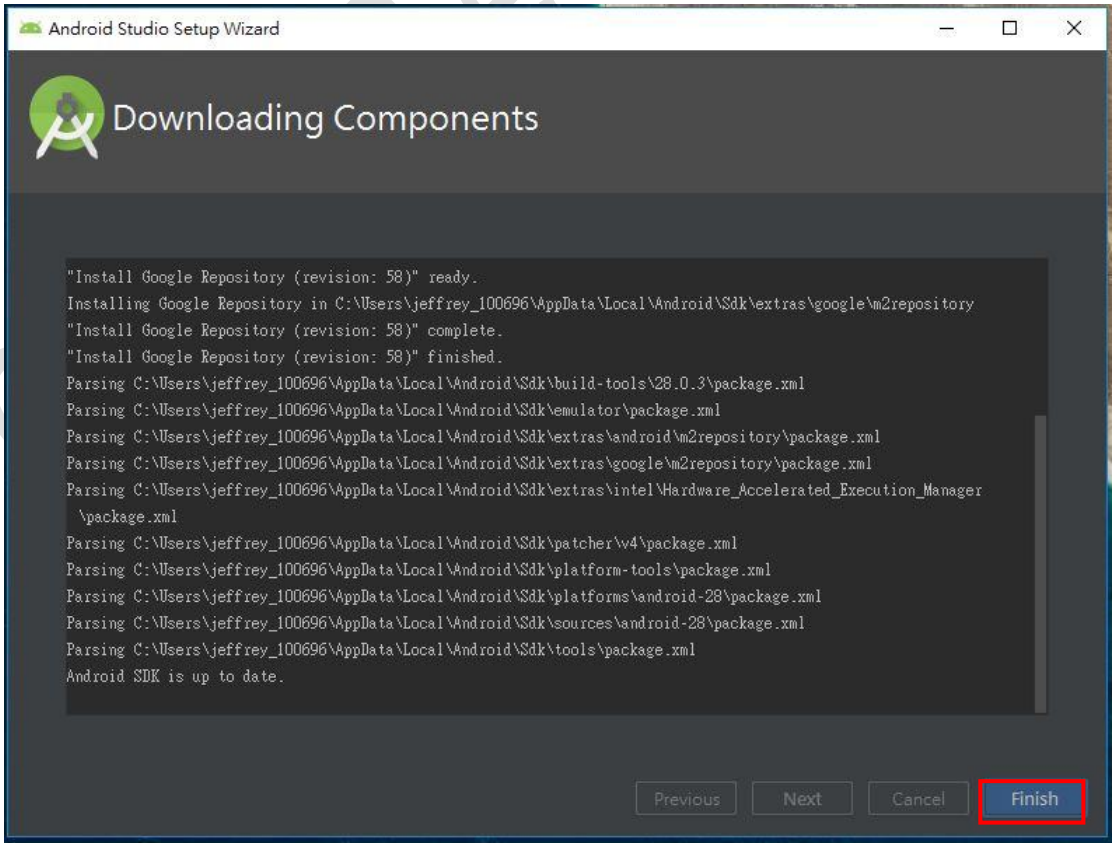
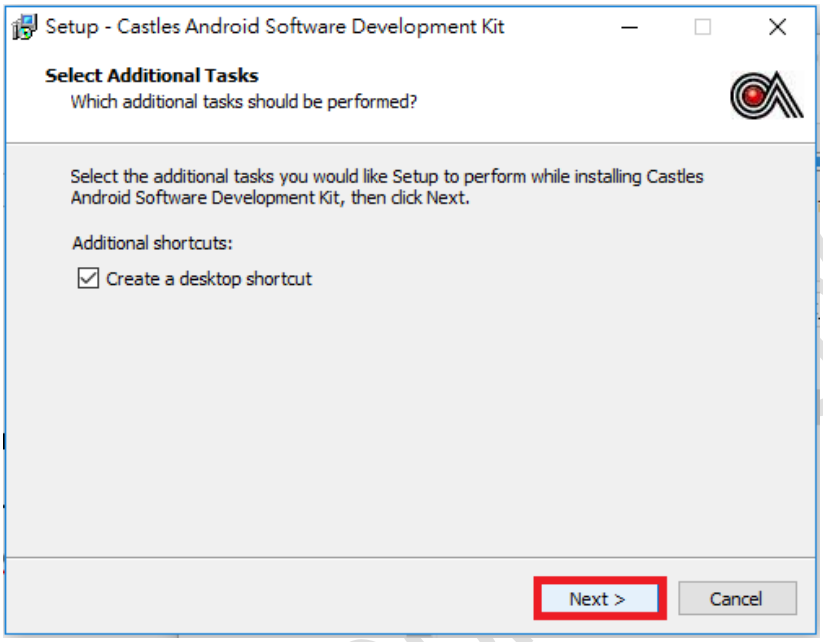


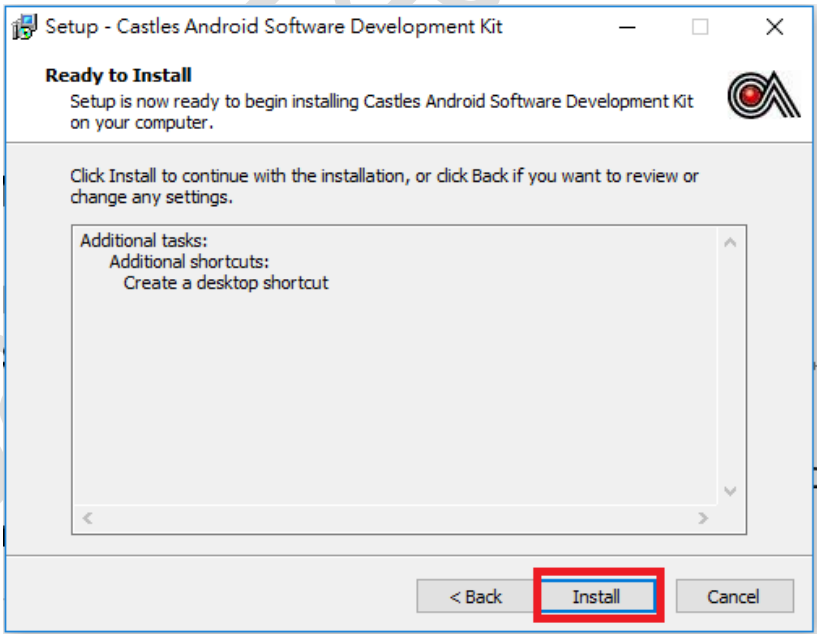
Press “Finish” while download finished.

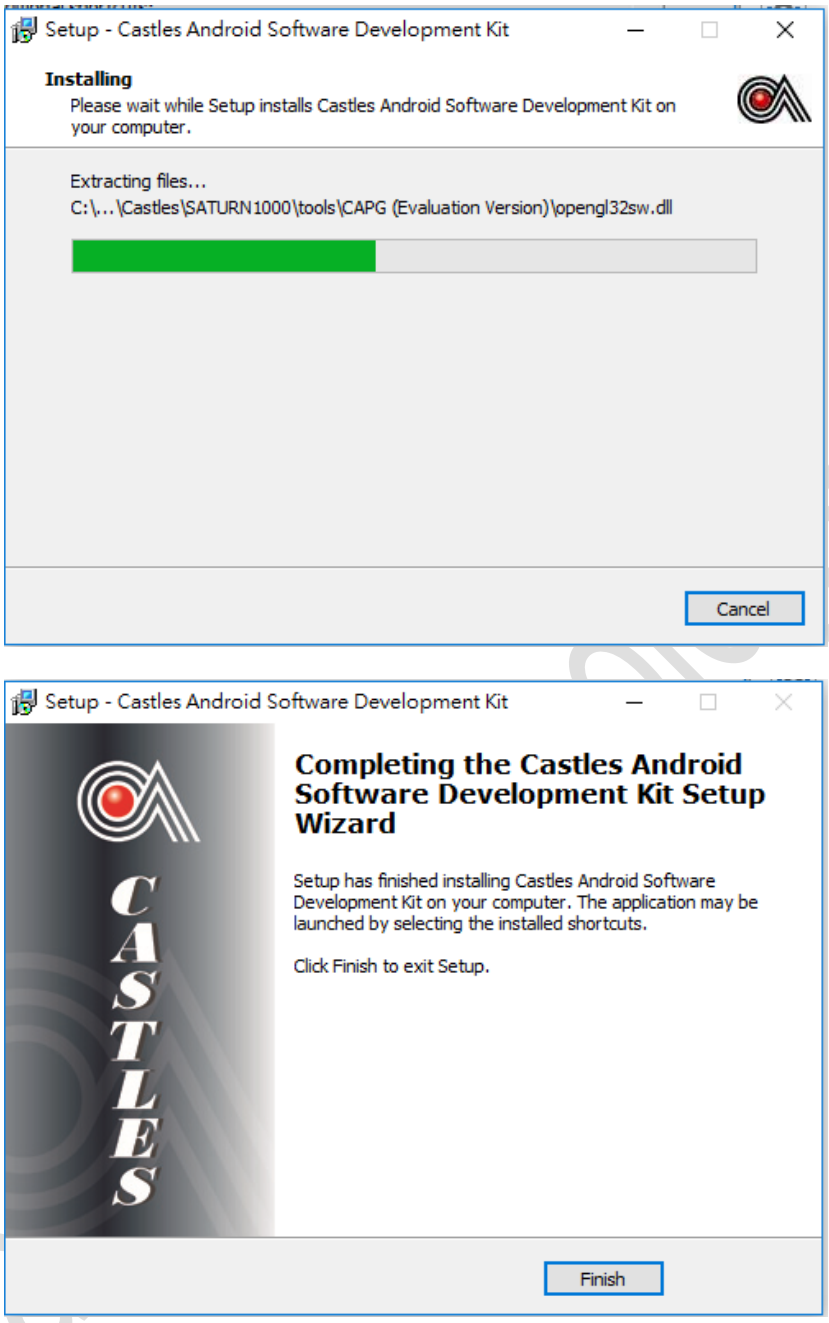


Step3. Install Castles Android SDK

After Android Studio installation finished. Execute CTAndroidSDK 1.0.x.x.exe, just follow the instruction below to install the CTAndroidSDK.







Note: The CTAndroidSDK will install .jar files in the following directory.

For SATURN1000

“C:\Program Files\Android\Android Studio\plugins\android\lib\templates\activities\SATURN1000Activity\root\libs\”

And Install the examples and tools in the following directory.

“C:\Program Files (x86)\Castles\SATURN1000\”

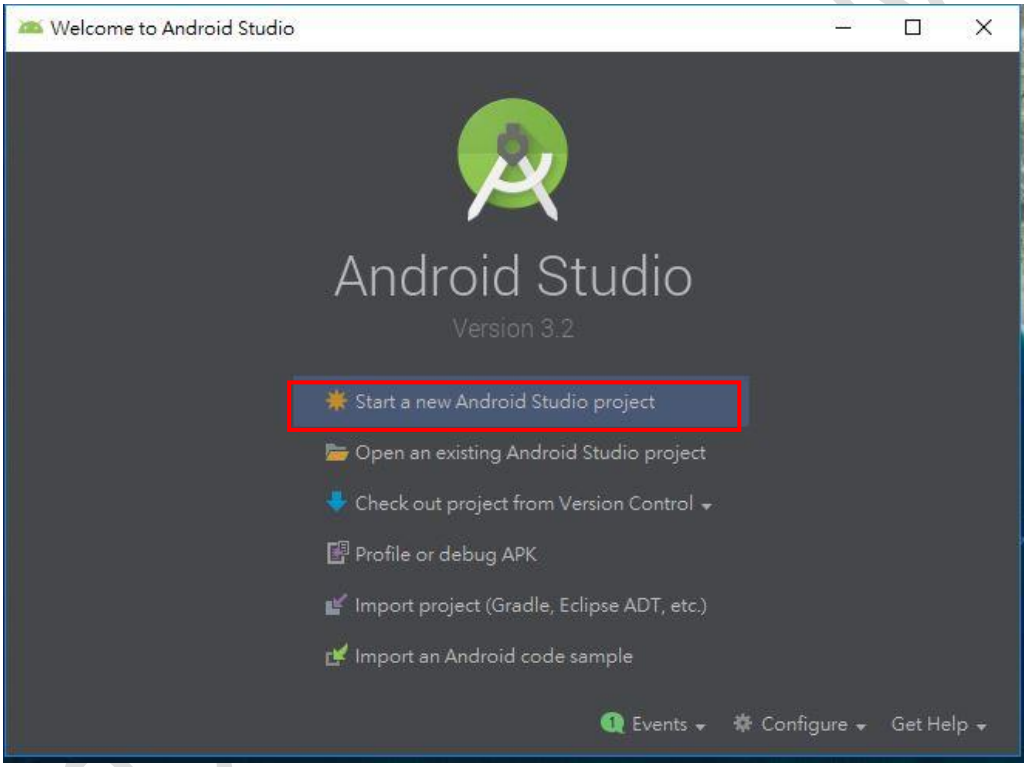
For SATURN7000

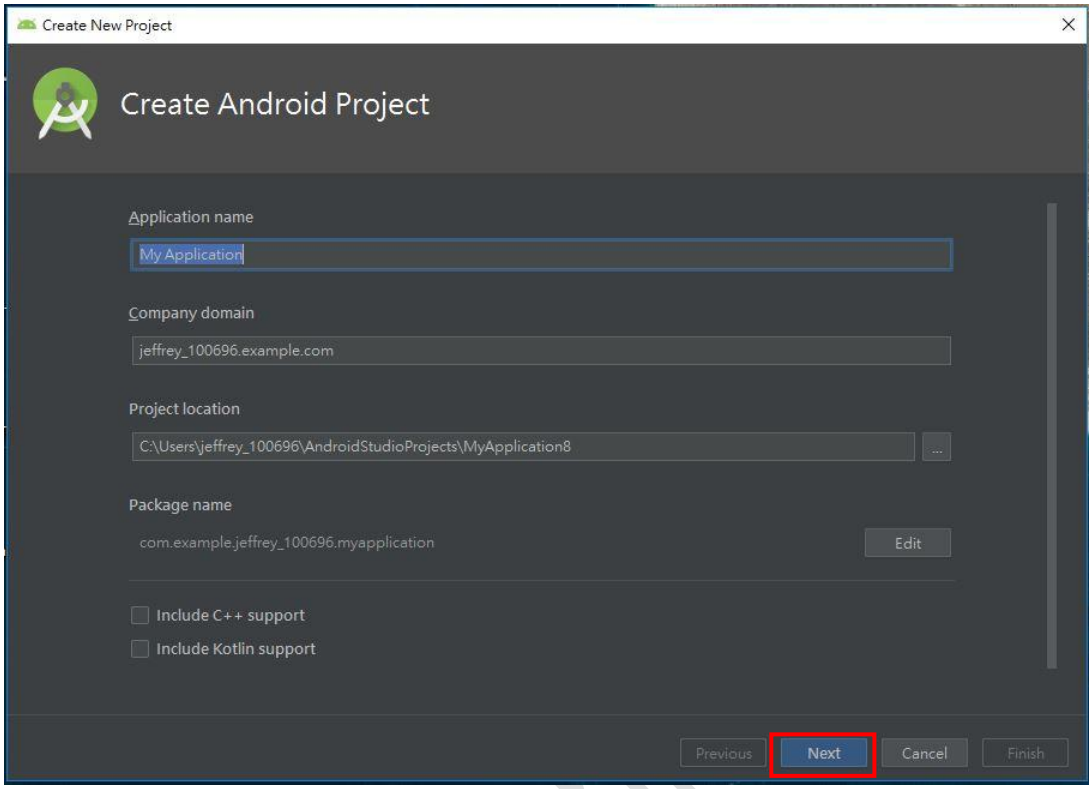
“C:\Program Files\Android\Android Studio\plugins\android\lib\templates\activities\SATURN7000Activity\root\libs\”

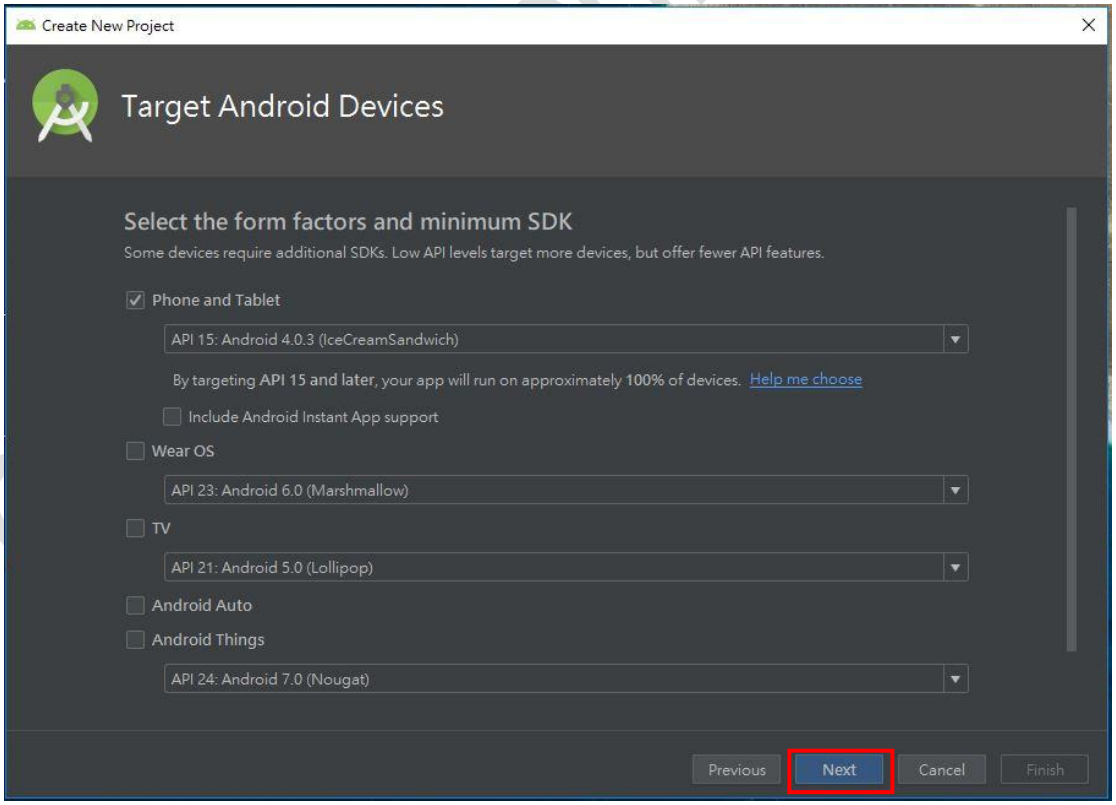
And Install the examples and tools in the following directory.
“C:\Program Files (x86)\Castles\SATURN7000\”

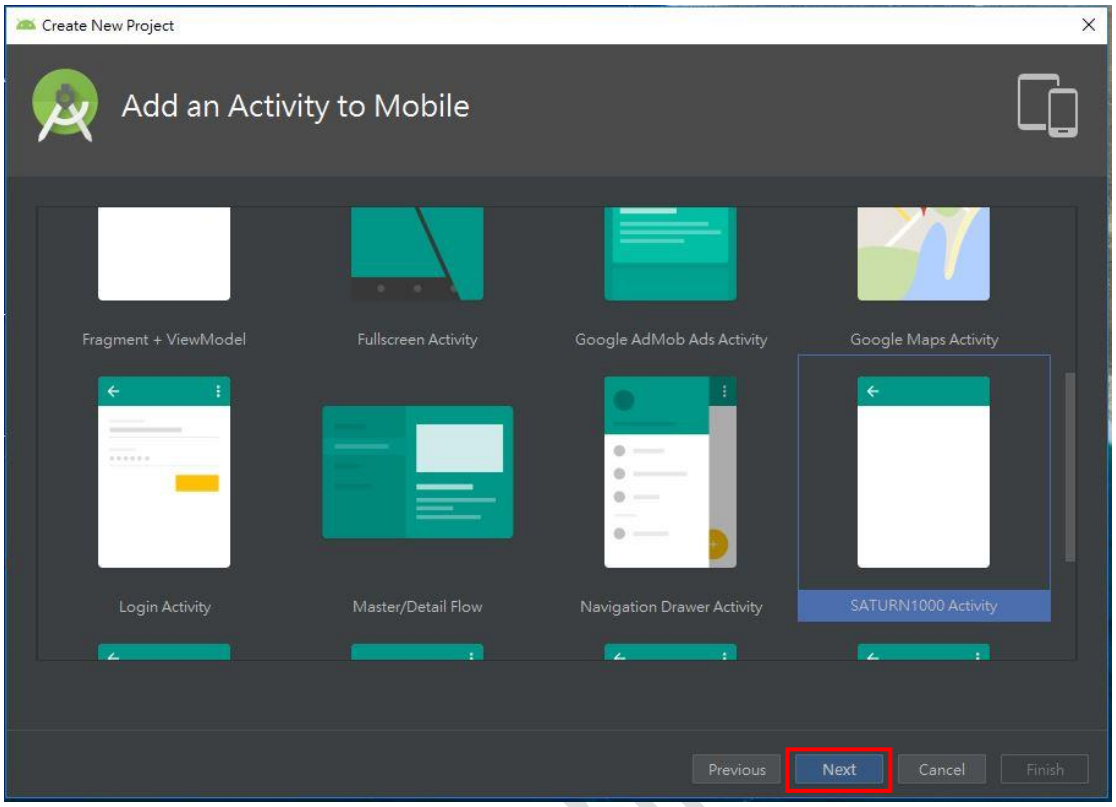
Step4. Open a new SATURN Series project

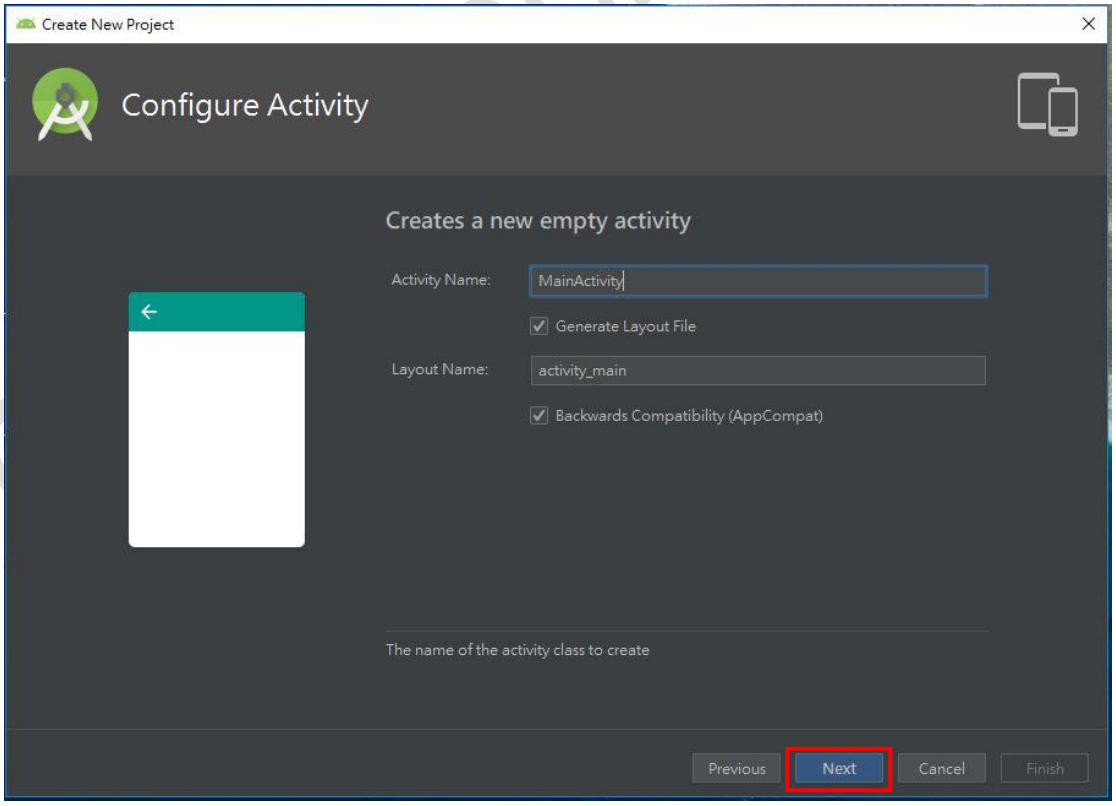
Open Android Studio, follow below steps to open a new project.



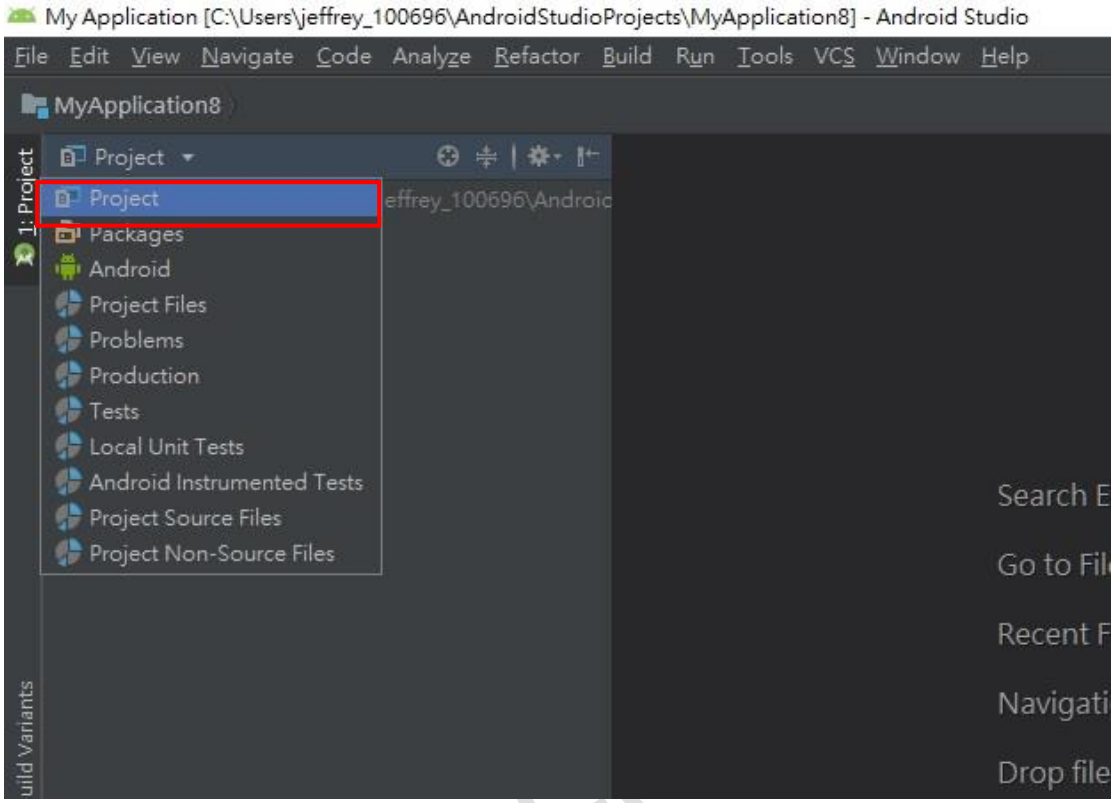

Create New Project
Create Android Project
Application name
My Application
Company domain
jeffrey_100696.example.com
Project location
C:\Users\jeffrey_100696\AndroidStudioProjects\MyApplication8
...
Package name
com.example.jeffrey_100696.myapplication
Edit
Include C++ support
Include Kotlin support
Previous
Next
Cancel
Finish


Create New Project
Target Android Devices
Select the form factors and minimum SDK
Some devices require additional SDKs. Low API levels target more devices, but offer fewer API features.
Phone and Tablet
API 15: Android 4.0.3 (IceCreamSandwich)
By targeting API 15 and later, your app will run on approximately 100% of devices. Help me choose
Include Android Instant App support
Wear OS
API 23: Android 6.0 (Marshmallow)
TV
API 21: Android 5.0 (Lollipop)
Android Auto
Android Things
API 24: Android 7.0 (Nougat)
Previous
Next
Cancel
Finish

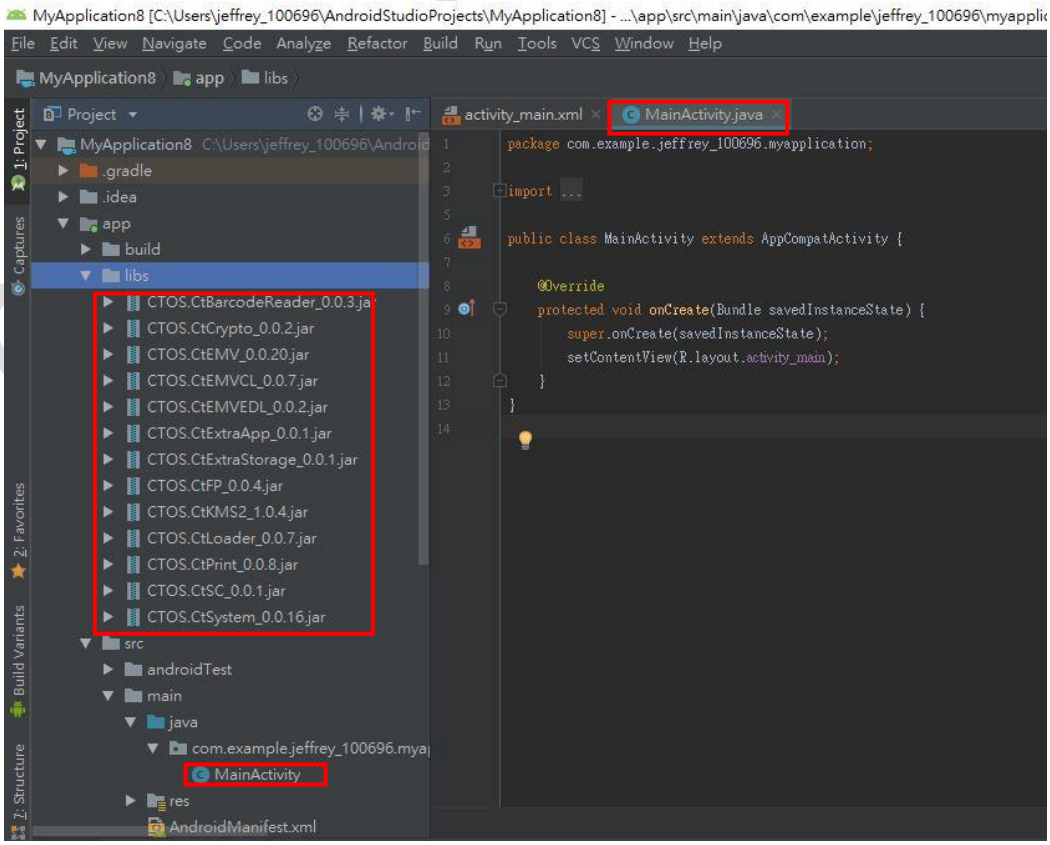




After AP project opens successfully, click project item to check whether the castles lib is inside.

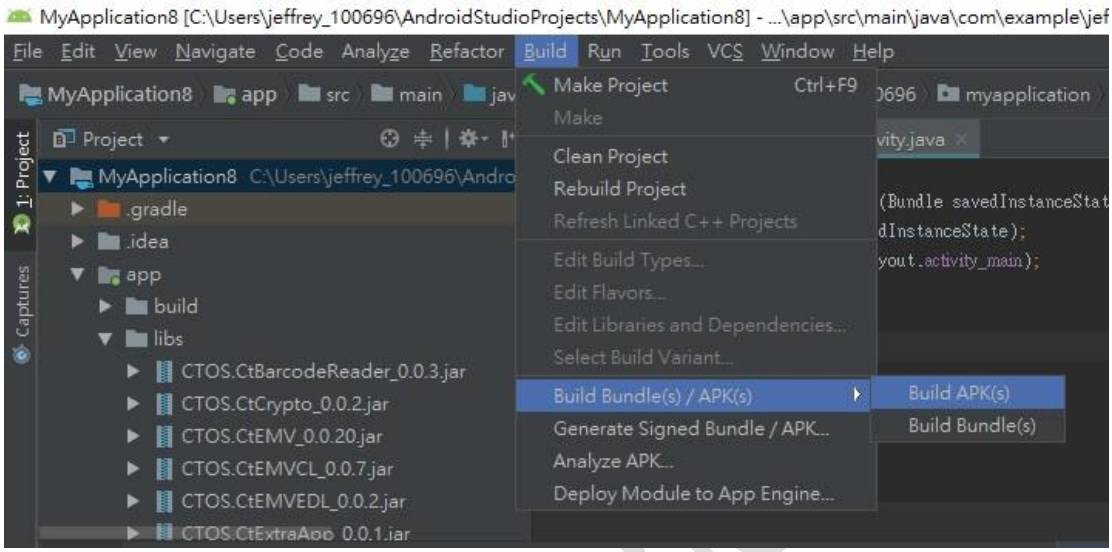


Castles Library is shown as below image.



2. Download application program

Step1. Build an APK



The APK file will be under
“ [YourApplicationname]\APP\app\build\outputs\apk\debug ”

Step2. Signing APK and Generate the CAP File

The APK file is required to be signed before downloading to the terminal. This is to ensure the application data and codes confidential and integrity. The output file will be “CAP” file which format is defined by Castles.

Castles Technology provided a tool named “CAP Generator” to perform this task. The CAP Generator is located at below directory:

..\tools\CAPG (Evaluation Version)\CAPGen.exe

Please execute the CAPGen.exe

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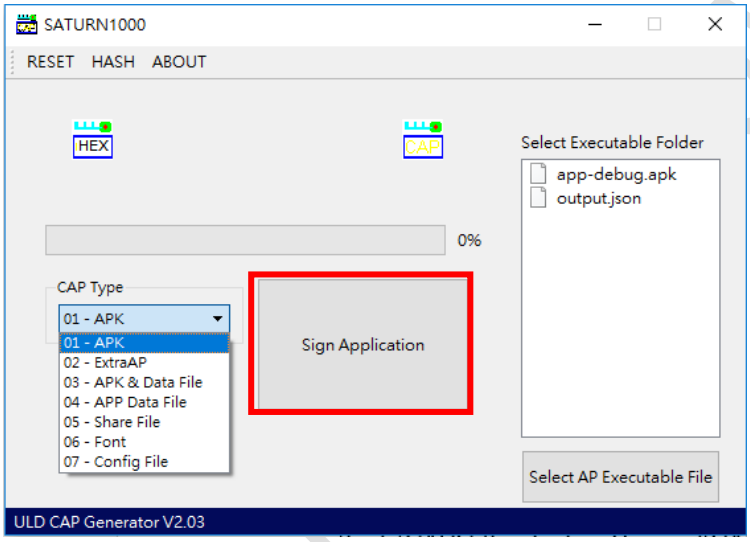
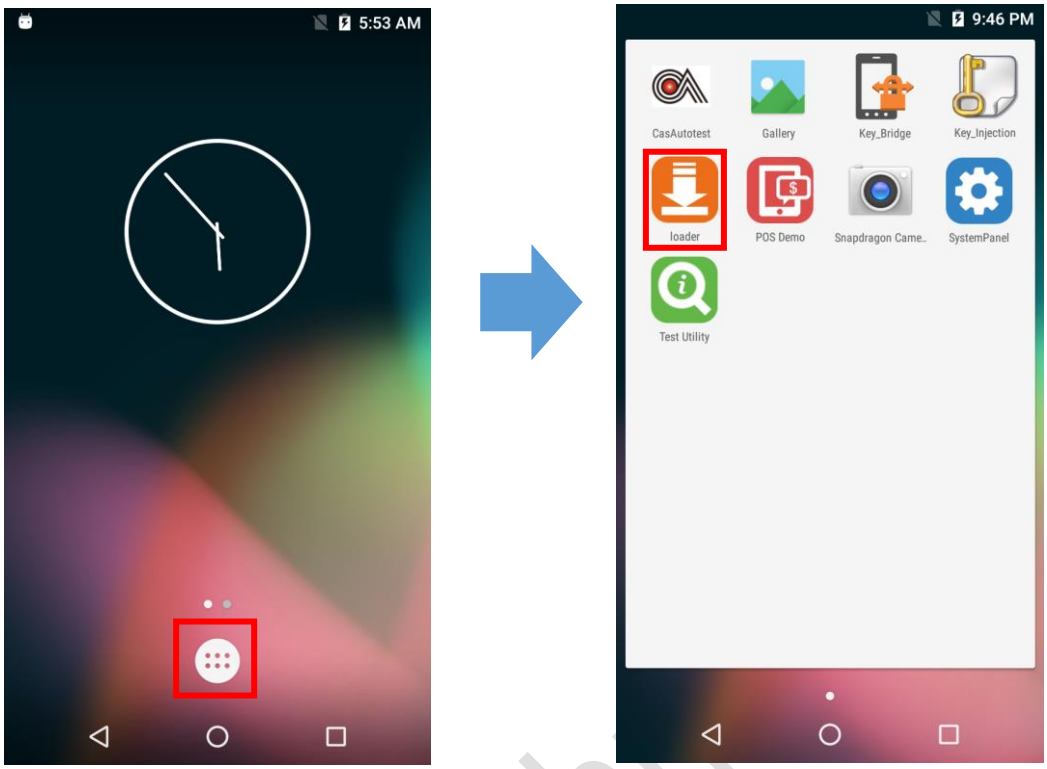
Press “Enter & Sign Application” button for browsing the APK file and generate the CAP files.

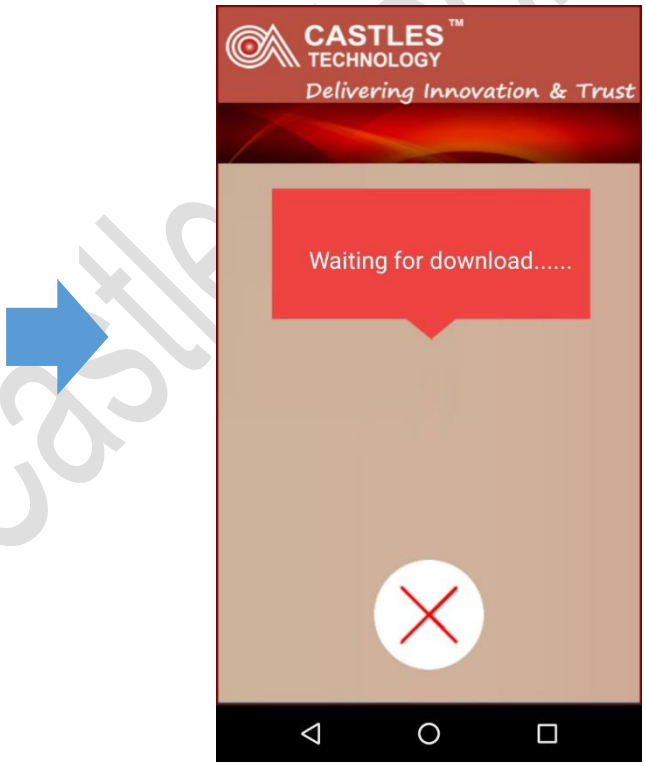


The output file will be in a set that includes a “mci” file with one or more “CAP” files. The CAP file contains the signed file binaries, and the MCI file contains the list of CAP files.

Step3. Power on and connect the USB cable between PC and SATURN Series
Step4. Execute the loader AP on SATURN Series for waiting to download.

Click icon “loader” to execute the loader on SATURN Series





Then, the screen will display “Waiting for download……..”.

Step5. Check the device is recognized by the PC.

Check COM Port number of SATURN Series in Device Manager.

Reminder, you will need to use this COM port on Loader.exe on step6.

Step6. Download the AP CAP from PC to SATURN Series

Execute the Loader on PC as below directory: ..\Loader\Loader.exe

Select “COM Port“, and browse for the mci file directory.

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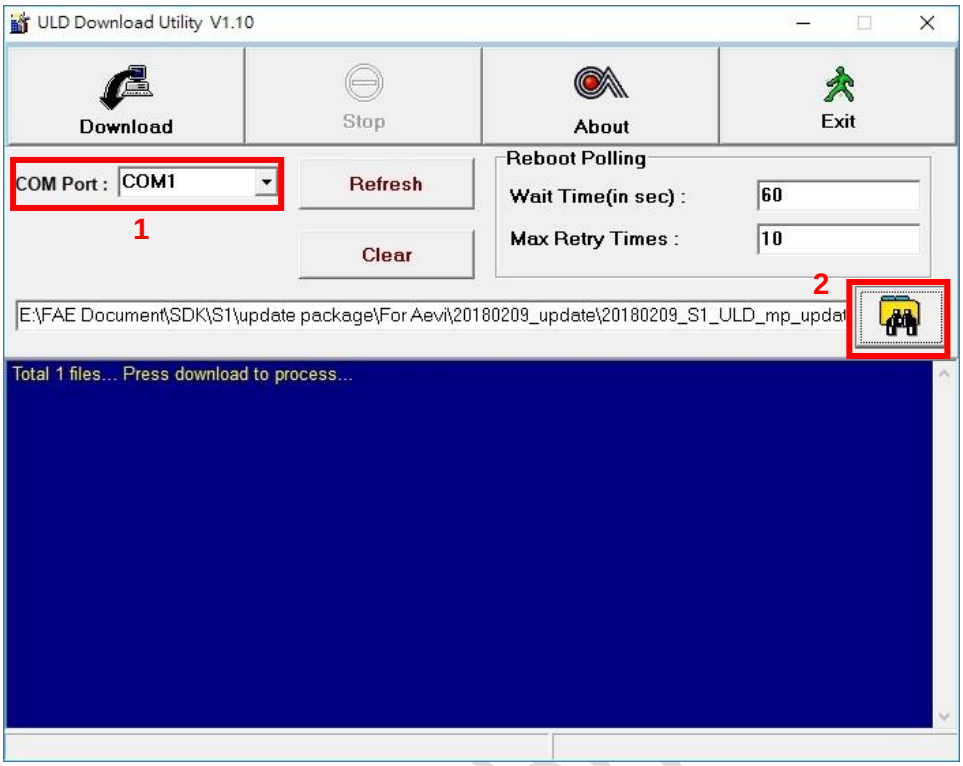
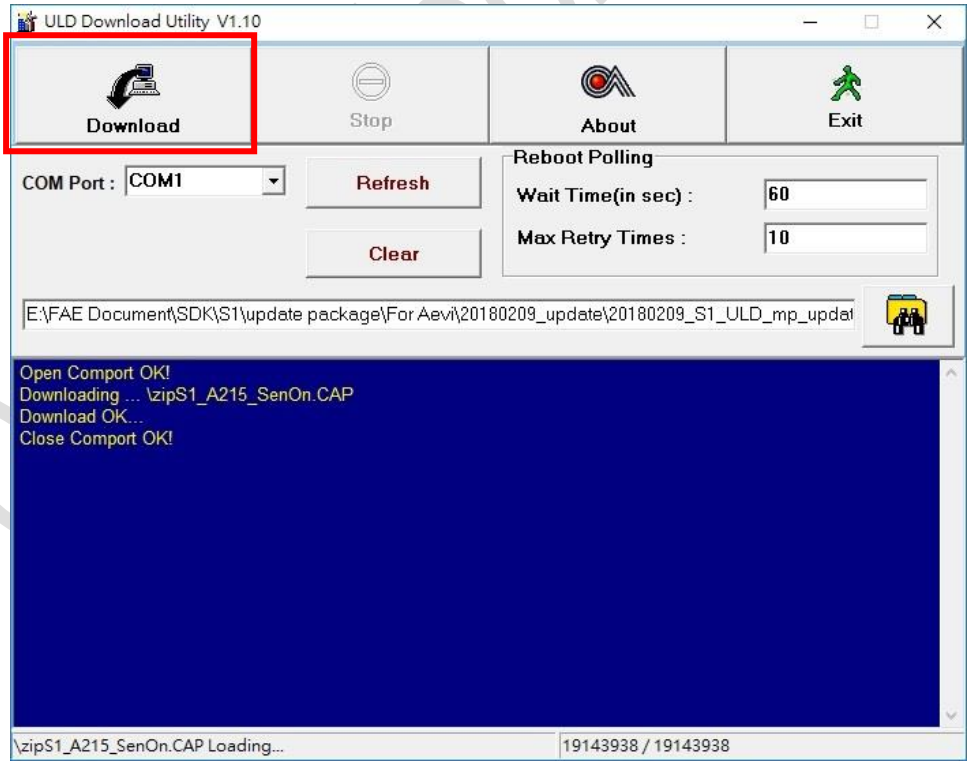
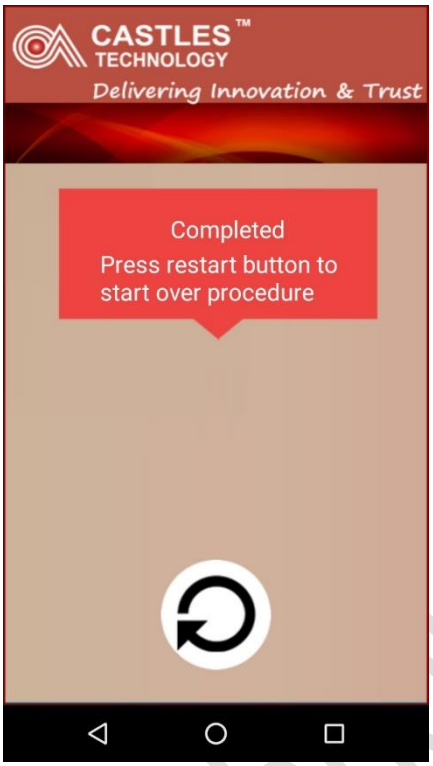


Click on “Download” Button in the left upper corner.



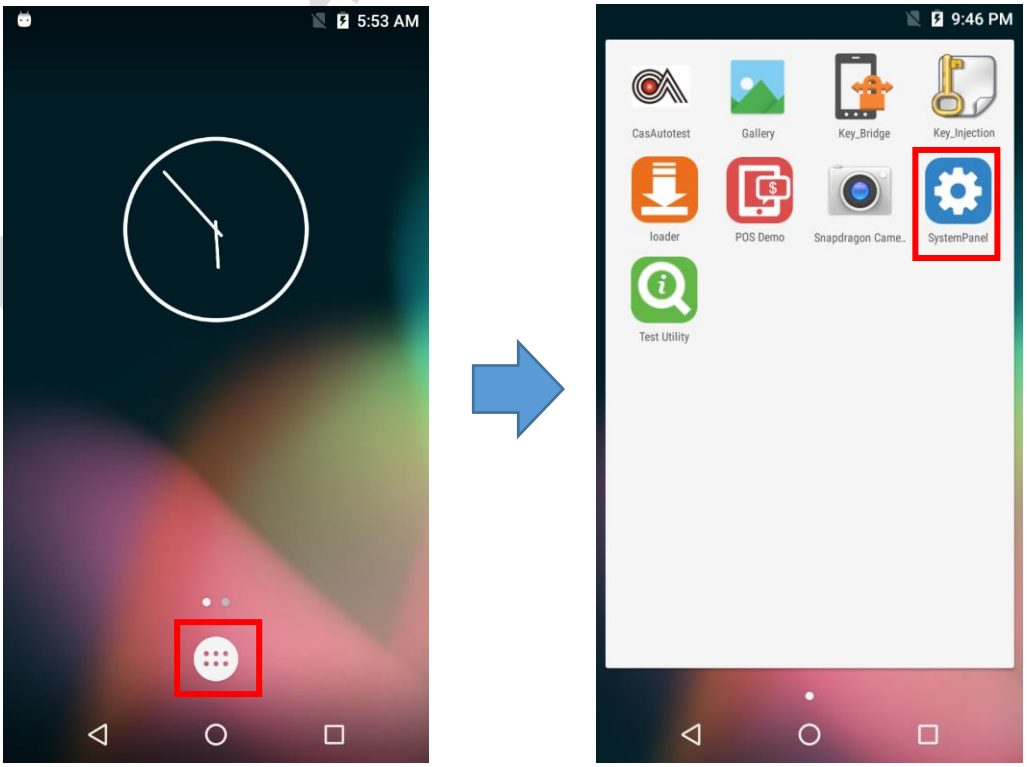
Once the AP download successfully. The “Loader” on SATURN Series will display the message as below:

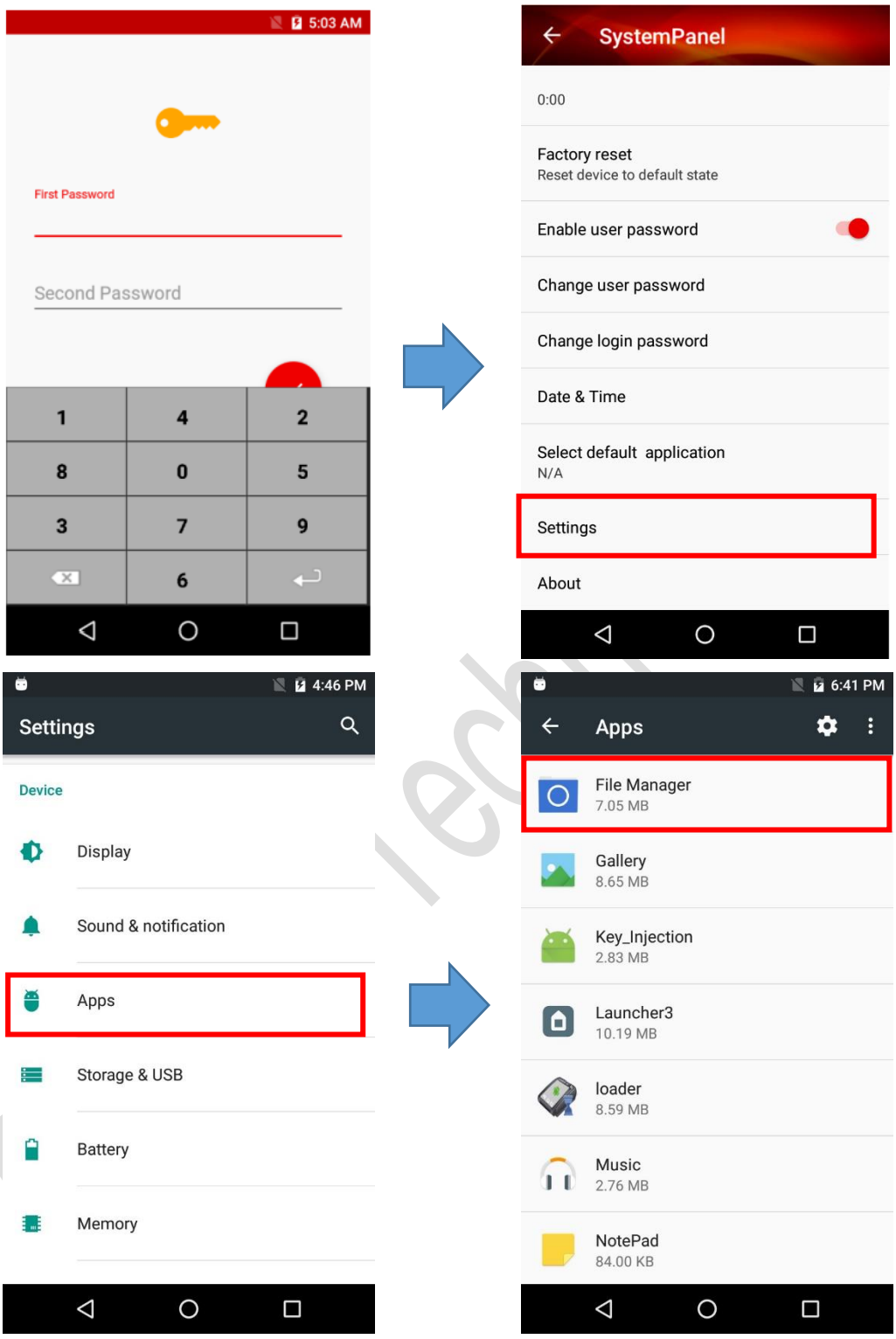


Step7. Uninstall AP on SATURN Series

Please follow the steps below to uninstall AP.

For example, uninstall “File Manager”: Settings-> Apps-> “File Manager”-> uninstall.

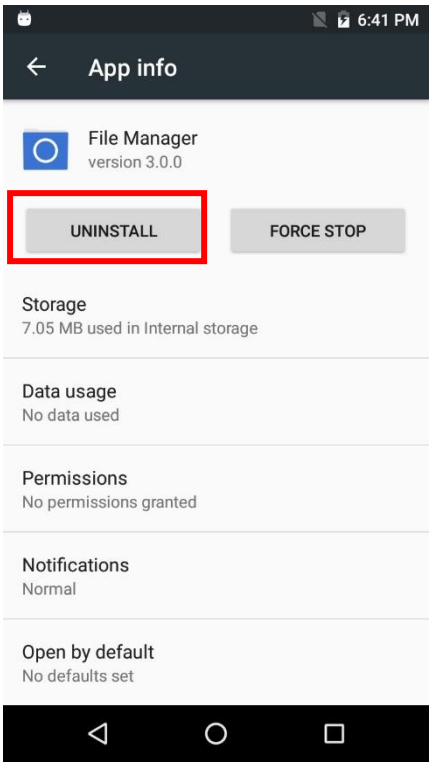




Note:

Default first password is “00000000”.

Default second password is “00000000”.



3. Firmware update

Step1. Power on the SATURN Series Press the power button of SATURN device to turn on the terminal. Connect the device to the Windows PC via USB cable.

Step2. Check the device is recognized by the PC.
Check Com Port number of SATURN device in Device Manager.

Step3. Execute the loader AP on the SATURN Series
Click the icon “loader” to execute the loader on the device, the screen will display “Waiting for download……..”.

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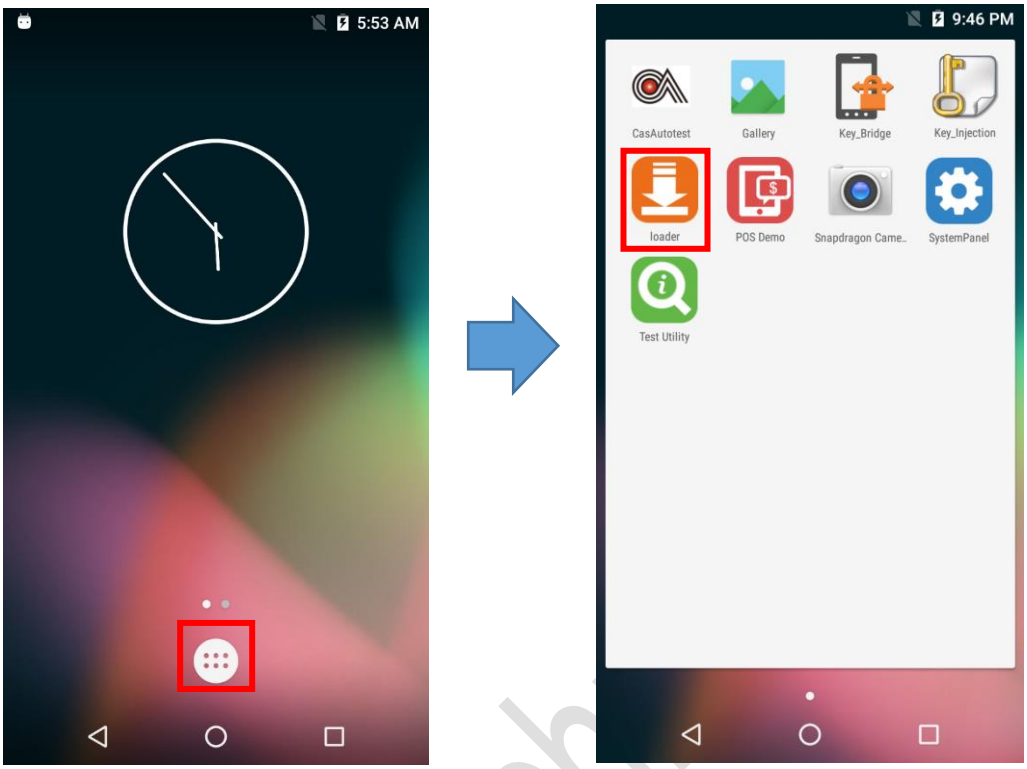
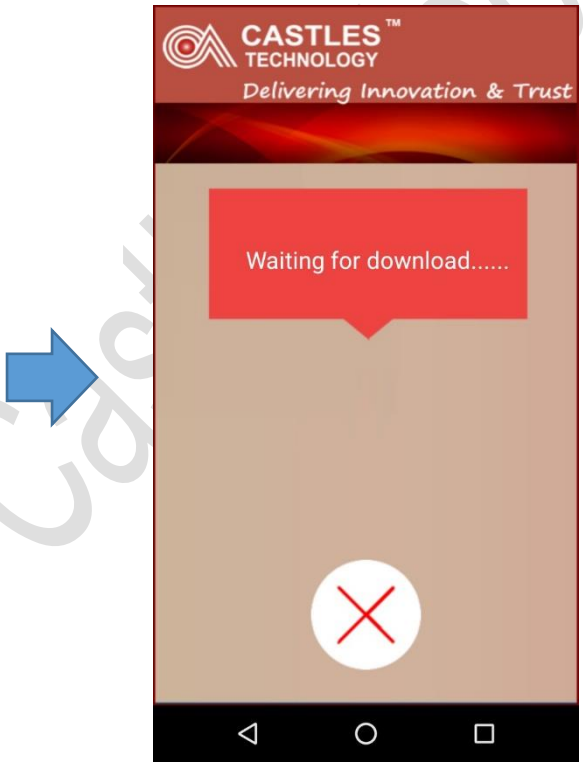

5:53 AM
9:46 PM
CasAutotest
Gallery
Key_Bridge
Key_Injection
loader
POS Demo
Snapdragon Came..
SystemPanel
Test Utility

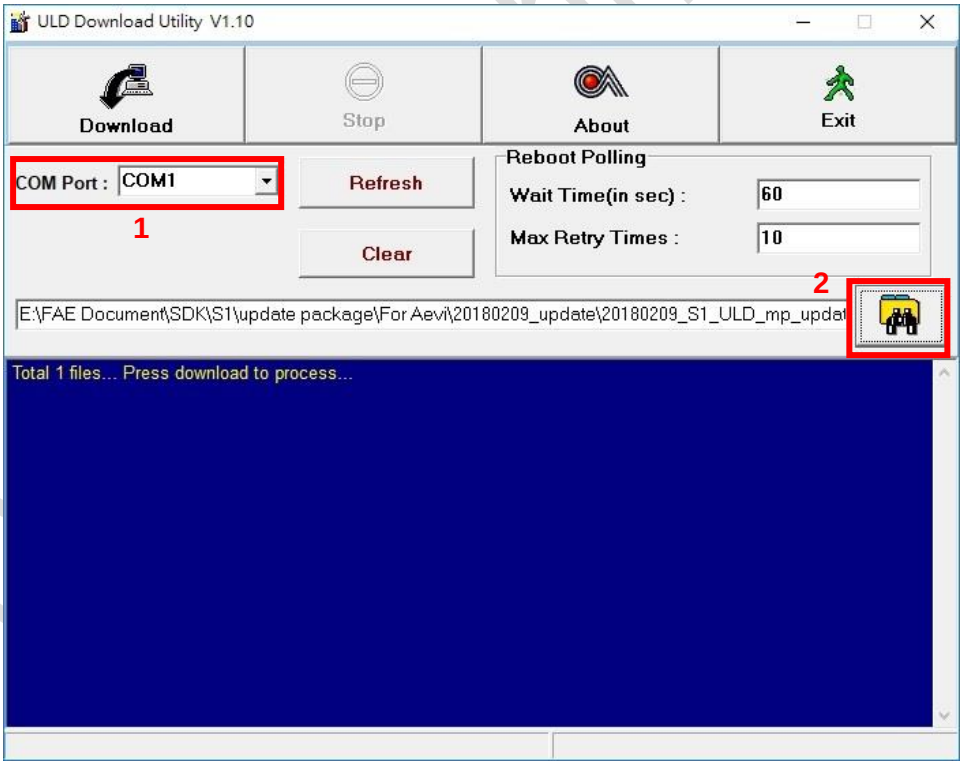

CASTLES™
TECHNOLOGY
Delivering Innovation & Trust
Waiting for download.....

Step4. Download the FW from PC to Terminal

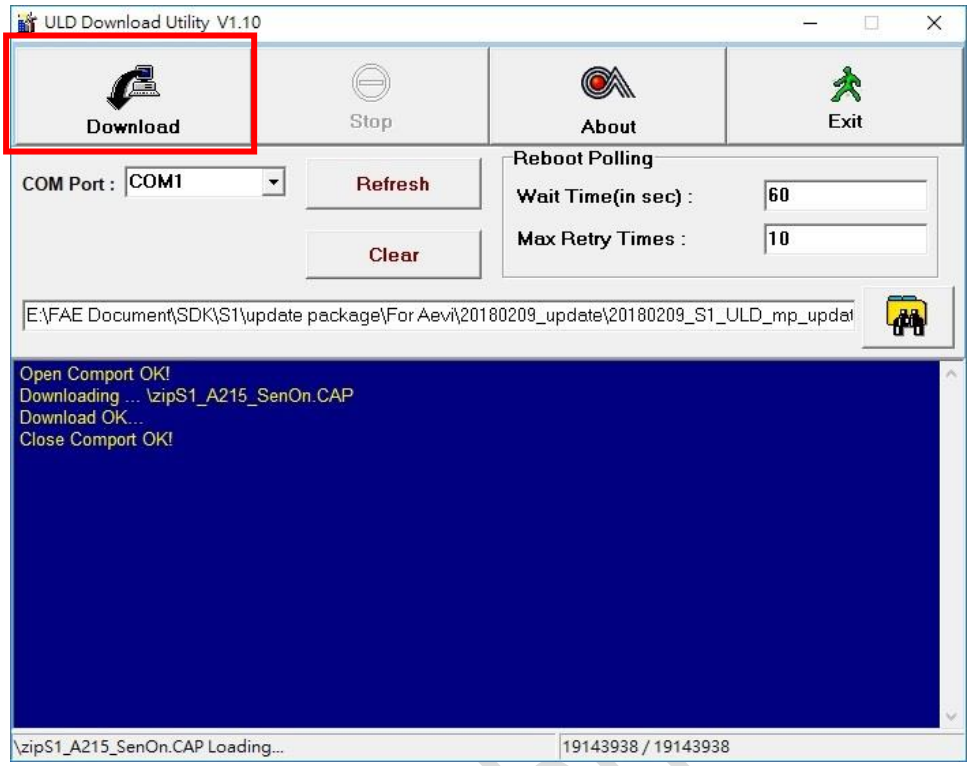
Execute the Loader on PC as below

directory: ..\Loader\Loader.exe.

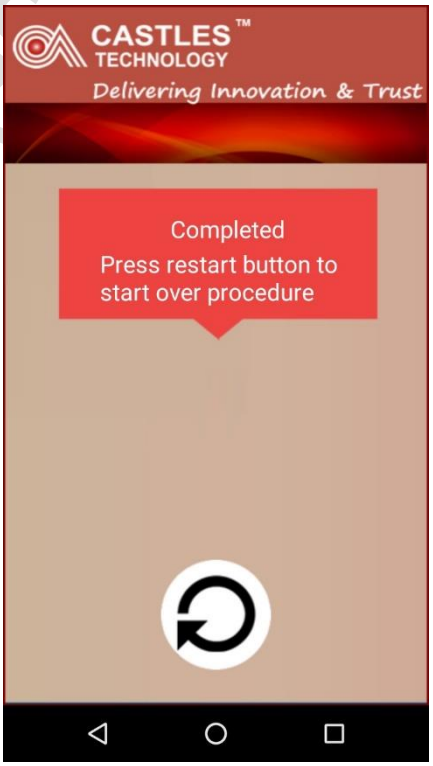
Select the “COM Port“, and browse for the mci file directory.



Click on “Download” Button in the left upper corner.



Once the AP download successfully. The “Loader” on SATURN Series will show the message as below:



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Note:

1. Please always download the FW of secure module first.
2. SATURN Series will auto reboot once the FW download finished.

End

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