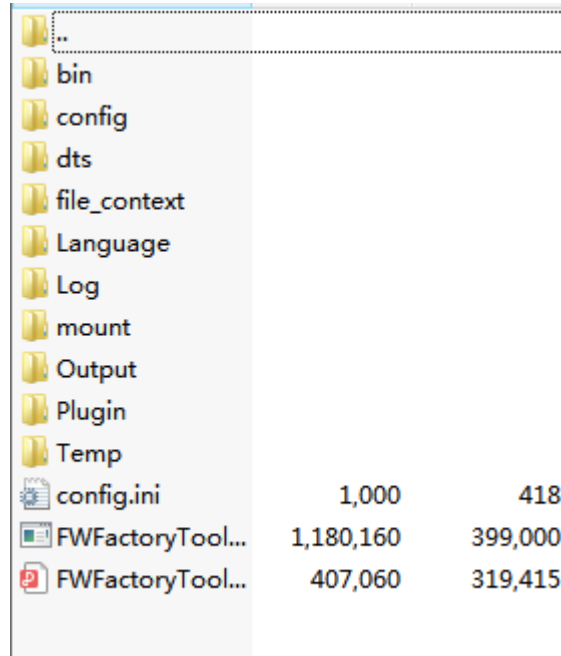


Android screen firmware modification tool instructions

1 Tool overview



The figure above shows the file structure of the FwFactoryTool root directory.

- Log folder: It saves the log file when the tool is running
- Temp folder: It holds the files after the tool unpacks the firmware update.img.

The subsequent operation of the tool is actually to edit the files in the Temp folder and then package them to generate the modified update.img file.

- config.ini file: This is the configuration file for the FwFactoryTool program.

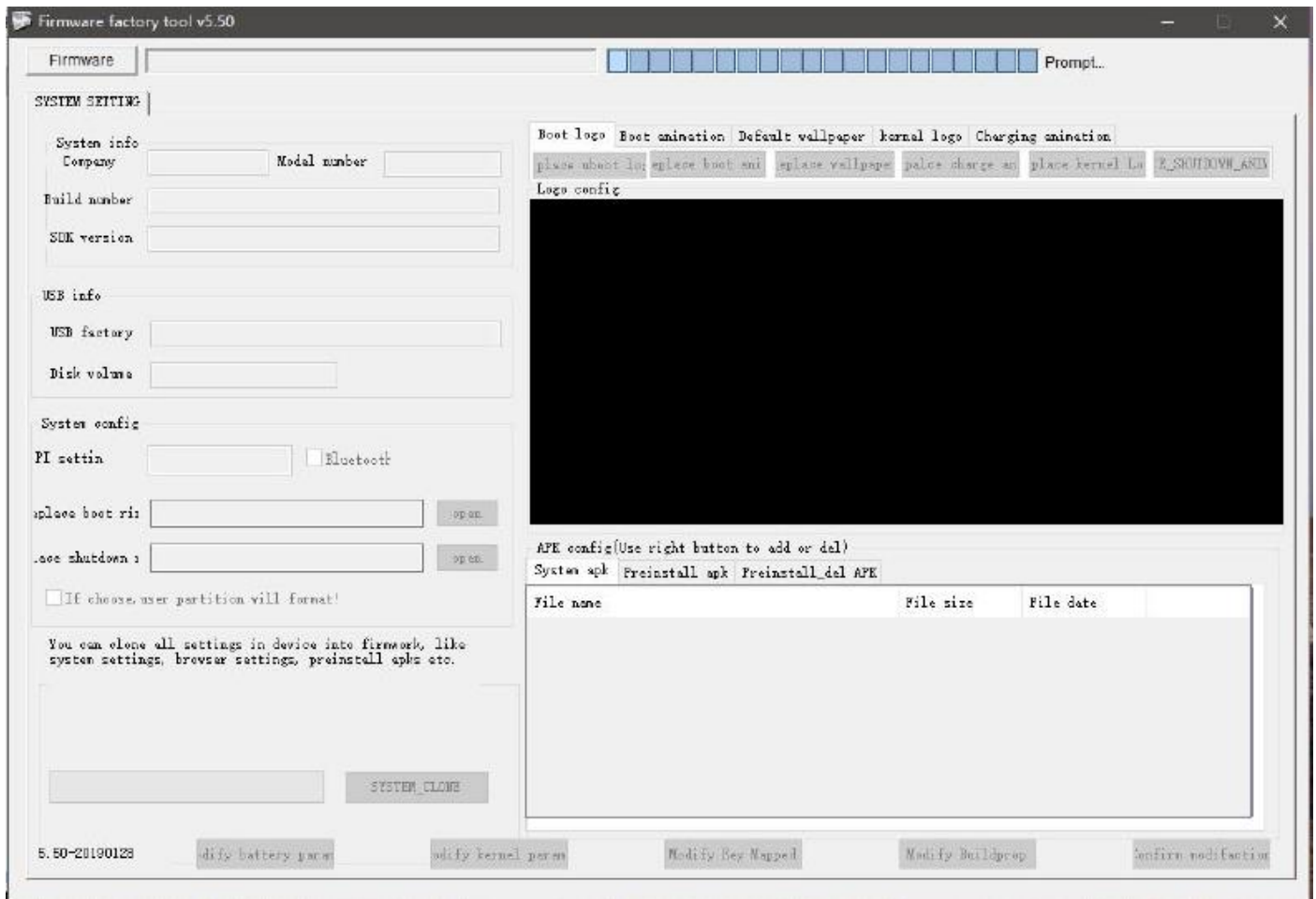
```
27 [Version]
28 #4.4 / 5.0 / 6.0 / 7.0 / 8.0
29 android=8.0
30
```

There is a parameter in the configuration file to choose according to the corresponding Android version, for example, Android8.1, Android8.0 both belong to android 8.0.

- FwFactoryTool.exe : This is the firmware modification tool application. It reads config.ini every time it is started. In other words, when you modify config.ini, you need to close FwFactoryTool, because config.ini modification is not loaded in real time, but only when the software is started.

2. Tool interface overview

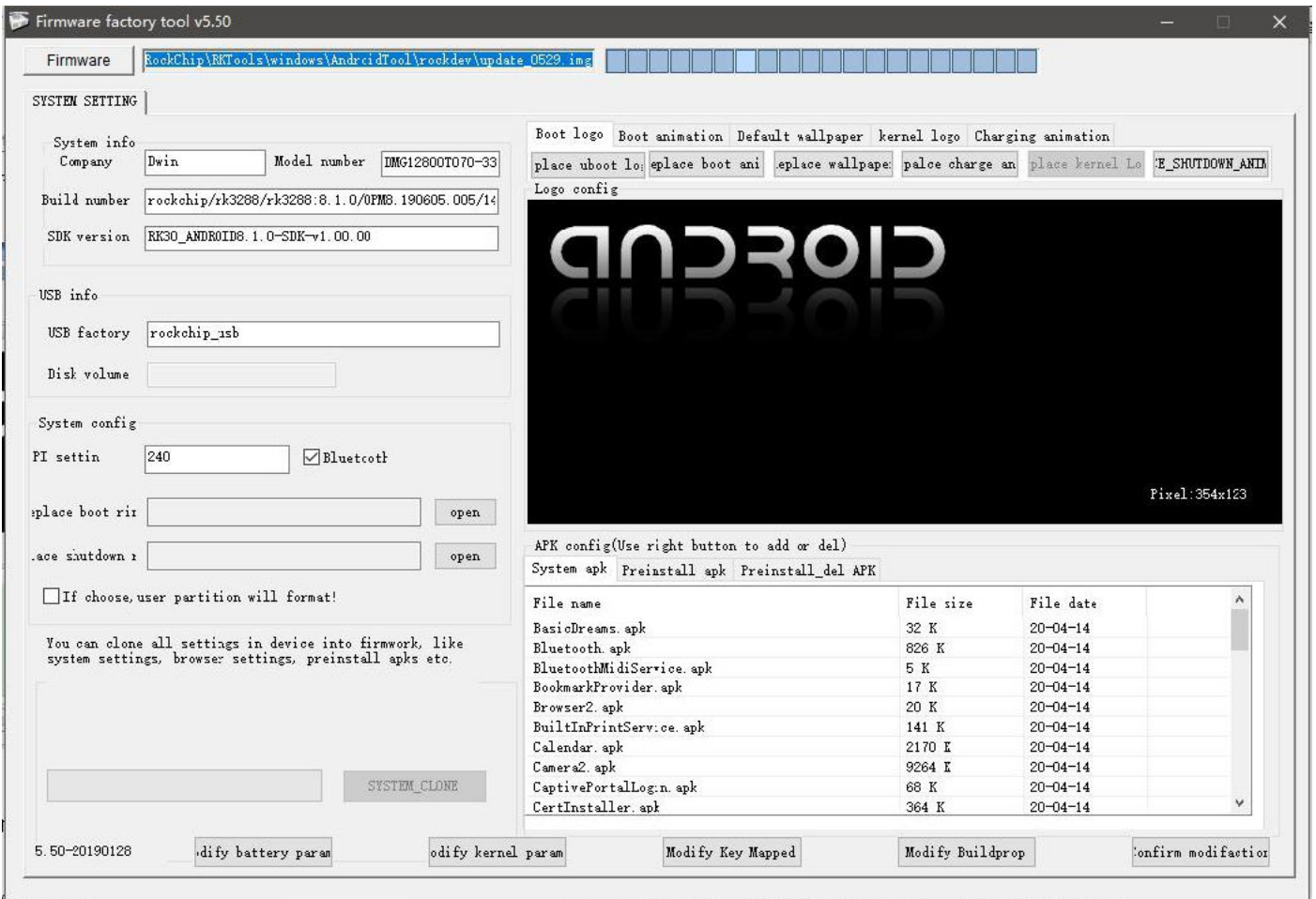
2.1 Startup interface



This is the startup interface of the tool, click [Firmware] in the upper left corner, i.e. update.img, which is the firmware used for Android screen burning, and users can modify this firmware.

- While loading, the tool starts the unpacking operation of the firmware, and extracts the corresponding image to the Temp folder in the root directory.
- Depending on the size of the firmware and the configuration of the PC, the decompression time varies. Usually this process takes about 5 minutes.
- Note that some third-party programs do not support the special symbols in the directory due to the large number of third-party programs called by the tool. It is recommended to put the whole firmware tool in a simple directory (e.g.D:\FWFactoryTool\) and then run the firmware modification tool program).

2.2 Successful firmware loading interface



- Above is the interface after successfully decompressing update.img.
- After that, you can see the contents of the firmware in the Temp folder of the tool root directory.
- At this point, you can operate the tool and make the corresponding changes.
- When you finish the modification, click the [Save] button at the bottom right corner. Depending on the size of the firmware and the performance of PC, the time required varies. It takes 5 to 10 minutes to generate a new modified firmware.
- Download the new modified firmware and perform the related tests.

3. Custom firmware

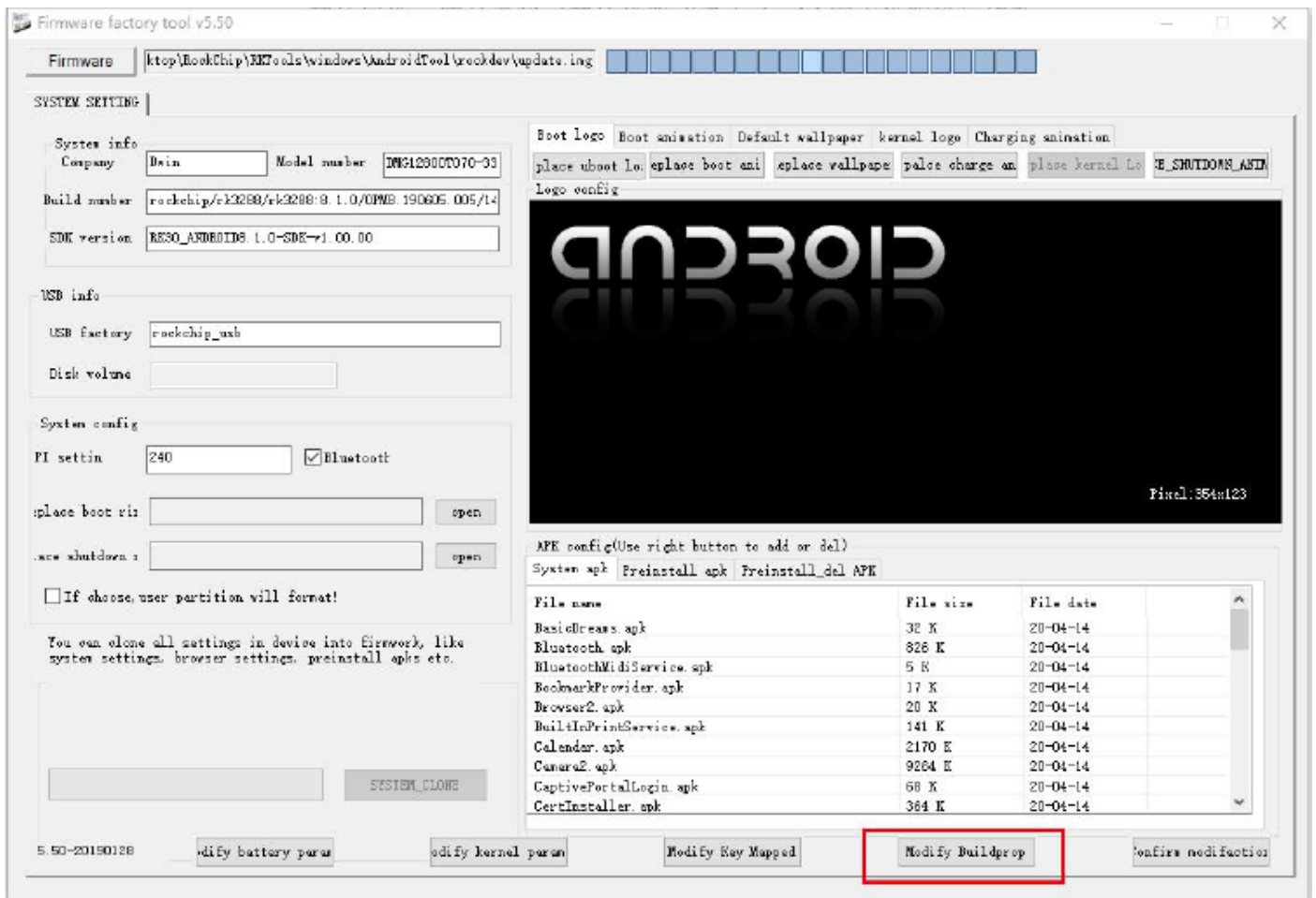
3.1 Modify the default value of system properties

Click [Modify Buildpro], find the property parameter and modify it.

Click [close] after modification.

E.g., If you want to modify the default direction of boot, modify both persist.sys.rotation and ro.sf.hwrotation to 0, 90, 180 or 270.

For other properties, please refer to our other instructions or Android official instructions.



Firmware factory tool v5.50

Firmware: ktop\RockChip\RKTools\windows\AndroidTool\rockdev\update.img

SYSTEM SETTING

System info
Company: Dwin
Build number: rockchip/rk3288
SIE version: RK30_ANDROID

USB info
USB factory: rockchip_usb
Disk volume:

System config
PT settin: 240

replace boot rit:
force shutdown:

If choose, user partition

You can clone all settings
system settings, browser s

SYSTEM_CLONE

5.50-20190129

Modify battery param Modify kernel param Modify Key Mapped **Modify Buildprop** Confirm modification

System config

```

ro.vendor.build.date=Sun Apr 26 14:09:34 CST 2020
ro.vendor.build.date.utc=-1587881374
ro.vendor.build.fingerprint=rockchip/rk3288/rk3288:8.1.0/OPM8.190505.005/140934:userdebug/test-keys
# begin build properties
# autogenerated by vendor_buildinfo.sh
ro.product.board=rk3288
ro.board.platform=rk3288
ro.vendor.product.manufacturer=Dwin
ro.vendor.product.model=DMG12800T070-33WTC
ro.vendor.product.brand=rockchip
ro.vendor.product.name=rk3288
ro.vendor.product.device=rk3288
# end build properties
#
# ADDITIONAL_VENDOR_BUILD_PROPERTIES
#
dalvik.vm.heapstartsize=16m
dalvik.vm.heapgrowthlimit=192m
dalvik.vm.heapsize=512m
dalvik.vm.heaptargetutilization=0.75
dalvik.vm.heapminfree=512k
dalvik.vm.heapmaxfree=8m
ro.tba.storage=rkss
ro.ril.ecidst=112,911
ro.opengles.version=198610
wifi.interface=wlan0
rld.libpath=/system/lib/libilrk29-dateonly.so
rld.libargs=-d
/dev/ttyACM0

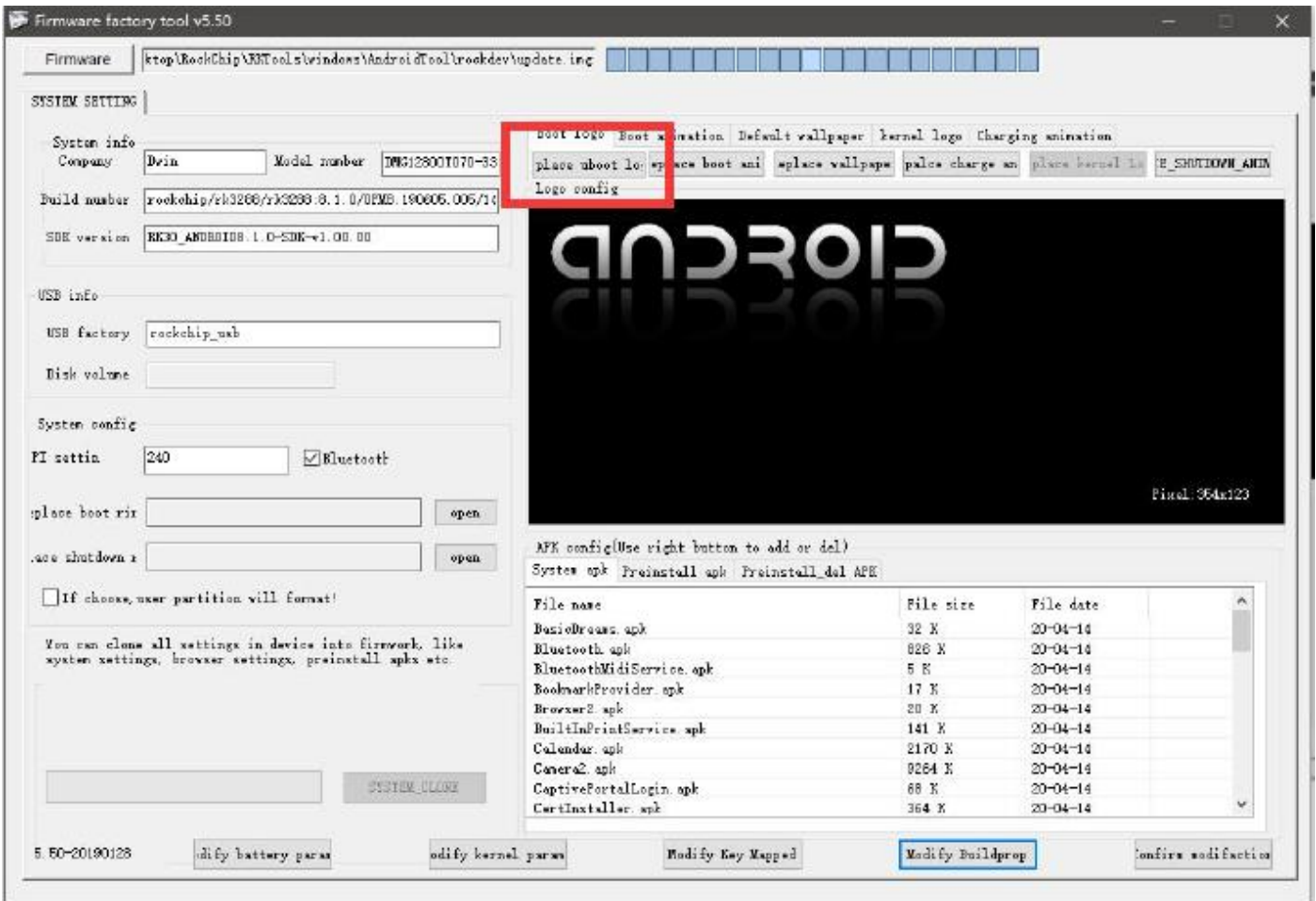
```

Line:1

Close

General.apk	9264 K	20-03-14
CaptivePortalLogin.apk	66 K	20-04-14
CertInstaller.apk	364 K	20-04-14

3.2 Modify the boot logo and animation



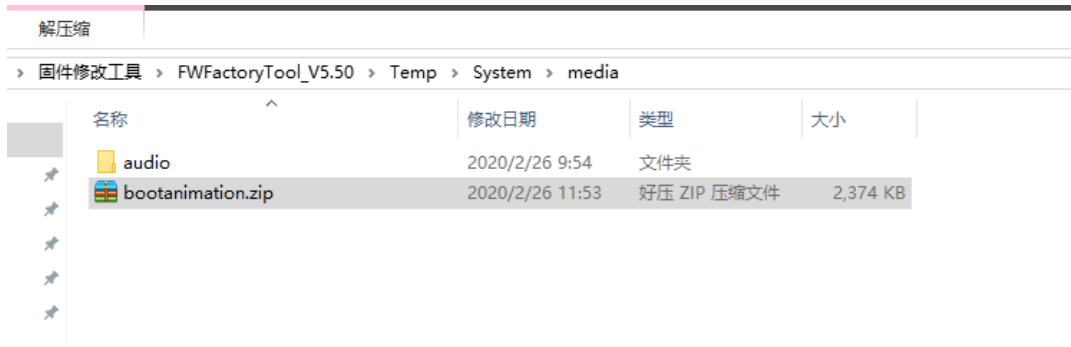
To modify the first boot image, please click [Modify ubootlogo], then select your logo image.

Note: Please use 8bit bmp images.

The conversion can be done at <https://online-converting.com/image/convert2bmp/>

To modify the subsequent dynamic boot animation, please do not directly click [Replace Boot Animation] in the tool.

Instead, place the finished boot animation package bootanimation.zip in the
 FWFactoryTool_V5.50\Temp\System\media\



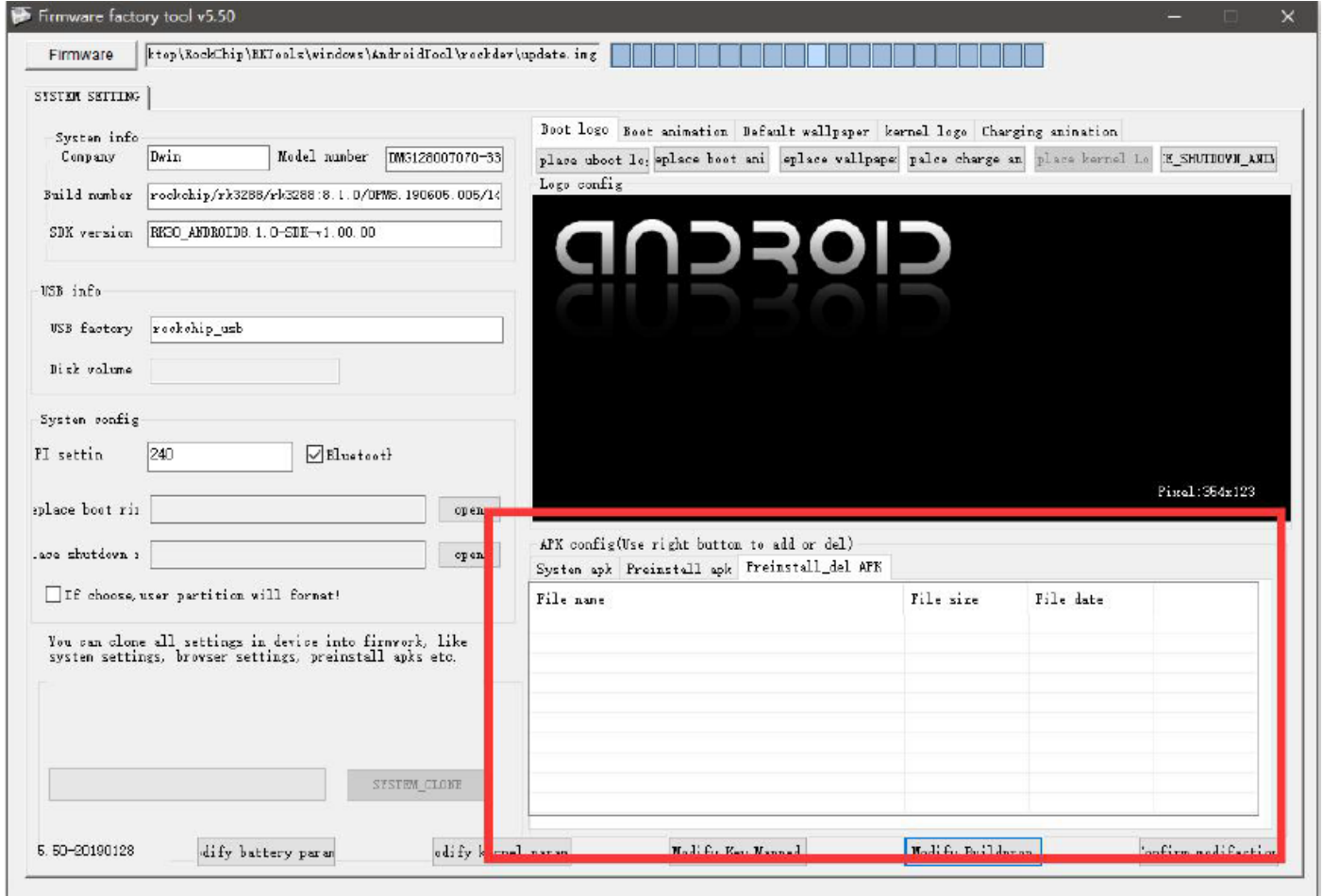
bootanimation.zip is the standard boot animation package for Android, please refer to the official Android related materials.

3.3 Add pre-installed apk files

Click on the lower right area.

Click on pre-installed apk or pre-installed uninstallable apk.

Right click in the lower area to add or remove.



3.4 Modify other properties

Some of the system-level firmware modifications cannot be listed, so users can modify them according to their needs by opening the Temp folder to freely add, delete and customize the firmware, and finally save the firmware to take effect.

4.3. FAQ

1. If an update.img is occupied by other tools, it will report unpacking firmware error when using this tool to unpack the firmware.

2. Android 7.1 RK3288 pre-installed apk in vendor partition, Android 8.0/8.1 pre-installed apk in oem partition to ensure that the parameter.txt of the corresponding partition is large enough, otherwise the oem or vendor may fail to load in insufficient space during download.

3. If the update.img of the production package reports an error during download, you can update the burning tool to a newer version.

4. Language switch: Open config.ini file, and then you can change language to English.

```
#Choose software language:Selected=1(Chinese);Selected=2(English)
[Language]
Kinds=2
Selected=1
LangPath=Language\
```