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## Rockchip 定制开关机铃声和动画说明

### Rockchip\_Power\_On\_Off\_Animation\_and\_Tone\_Customization\_Instruction

(第二系统产品部)

(Technical Department, R & D Dept. II)

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v1.1	吴惊晨 Wu Jingchen	2019.11.16	Q 版本更新 Updated for Android Q	

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## 1 概述 Overview

本文档针对 Android 的开机铃声，关机铃声，开机动画，关机动画的定制方法做详细的说明。

This document mainly describes the customization methods for Android power on/off tones and animations.

快速使用只需参看 ---> 2 快速开启方法

Please refer to chapter 2 for quick usage.

## 2 快速开启方法 Quick start method

### 2.1 开启与关闭 Enable and disable

将 `device/rockchip/common/BoardConfig.mk` 文件的 `BOOT_SHUTDOWN_ANIMATION_RINGING := false` 改为 `BOOT_SHUTDOWN_ANIMATION_RINGING := true`，打开编译时将文件打包进固件的功能。

Modify `BOOT_SHUTDOWN_ANIMATION_RINGING := false` of `device/rockchip/common/BoardConfig.mk` file to `BOOT_SHUTDOWN_ANIMATION_RINGING := true`. Enable the function to package the files into the image during compiling.

### 2.2 文件放置位置 File location

自 Android 7.0 开始，动画与铃声合并。

Starting from Android 7.0, animation and tone are combined.

将开机的动画（及铃声）复制到 `device/rockchip/common/bootshutdown/bootanimation.zip` (PC 源码路径)。

Copy the power on animation (and tone) to `device/rockchip/common/bootshutdown/bootanimation.zip` (PC source code path).

将关机的动画（及铃声）复制到 `device/rockchip/common/bootshutdown/shutdownanimation.zip` (PC 源码路径)。

Copy the power off animation (and tone) to `device/rockchip/common/bootshutdown/shutdownanimation.zip` (PC source code path).

### 2.3 编译结果 Compiling result

铃声将会输出到 odm 分区 (`$OUT/odm/media/`)，增加后请确认烧写了 `odm.img` 来使其生效。

The tone will be output to odm partition (`$OUT/odm/media/`). Please confirm to flash `odm.img` to make it take effect.

## 3 文件说明 File instruction

开机铃声 **必须**是 wav 格式的音乐文件。

Power on tone **must** be the music file with wav format.

关机铃声 **必须**是 wav 或者 ogg 格式的音乐文件。

Power off tone **must** be the music file with wav or ogg format.

开机动画（铃音） 在设备上的存放的路径为/odm/media/bootanimation.zip

The path to save the power on animation (tone) on the device is /odm/media/bootanimation.zip.

关机动画（铃音） 在设备上的存放的路径为/odm/media/shutdownanimation.zip

The path to save the power off animation (tone) on the device is /odm/media/shutdownanimation.zip.

图片格式为 **png**，颜色位深度为 **8**，尺寸要**适合屏幕分辨率**。

The picture format is **png**, color bit depth is **8**, and the size should be **adaptive with panel resolution**.

### 3.1 开机动画 **bootanimation.zip** 的详细制作方法 Detailed method to make the power on animation bootanimation.zip

安卓的开机动画是由一系列的连续 PNG 图片作为帧组成的动画形式。不是合成为一张 GIF 图片，而是一个文件包，将各帧 PNG 图片以压缩方式保存。这个保存的文件名就是 bootanimation.zip，压缩方式要求是存储压缩。

Android power on animation is formed by using a series of continuous PNG pictures as frame elements. Use a file package to save each frame's PNG pictures in compressed way instead of integrating them into one GIF picture. The file name is saved as bootanimation.zip, and the compressed method is storage compression.

开机动画文件内容：

**Power on animation file content:**

1 . 动画属性描述文件：desc.txt-----this is a file saved as ANSI format, used to set

这是一个保存形式为 ANSI 格式，用于设置动画像素(大小)，帧数，闪烁次数，文件夹名称等；

Animation attribute description file: desc.txt-----this is a file saved as ANSI format, used to set animation pixel (size), frame number, flicking number, folder name and so on.

2. 第一阶段动画图片目录：part0-----存放每帧 PNG 图片文件夹；

The first stage animation picture directory: part0-----the folder to save each frame's PNG pictures.

3. 第二阶段动画图片目录：part1-----存放每帧 PNG 图片文件夹；

The second stage animation picture directory: part1-----the folder to save each frame's PNG pictures.

名称	大小	压缩后大小	类型	修改时间
..(上层目录)				
part0	1.35 MB	1.35 MB	文件夹	2010-04-21 18:57:...
part2	3.51 MB	3.51 MB	文件夹	2010-04-21 19:12:...
part1	4 MB	4 MB	文件夹	2010-04-21 19:09:...
desc.txt	1 KB	1 KB	文本文档	2010-01-22 02:47:...

desc.txt 文件分析:

desc.txt file analysis:

480 427 30

宽 高 帧数

width height frame number

p 1 0 part0

标志符 循环次数 阶段切换间隔时间 对应目录名

Marker Cycle times Time interval of stage switch Corresponding directory name

p 0 10 part1

标志符 循环次数 阶段切换间隔时间 对应目录名

Marker Cycle times Time interval of stage switch Corresponding directory name

标志符:

Marker:

必须是: p

Must be: p

循环次数:

Cycle times

0: 表示本阶段无限循环

0: represents endless cycle for this stage

阶段切换间隔时间:

Time interval of stage switch:

单位是一个帧的持续时间, 比如帧数是 30, 那么帧的持续时间就是  $1 \text{ 秒} / 30 = 33.3 \text{ 毫秒}$ 。阶段切换间隔时间期间开机动画进程进入休眠, 把 CPU 时间让给初始化系统使用。也就是间隔长启动会快, 但会影响动画效果。

It is the duration of one frame, for example, the frame number is 30, then the frame duration is  $1 \text{ second} / 30 = 33.3 \text{ ms}$ . During the stage switch interval, the power on animation process will enter standby mode, and CPU can be used to initialize the system. That is, the long interval will make boot faster, but it will affect the animation effect.

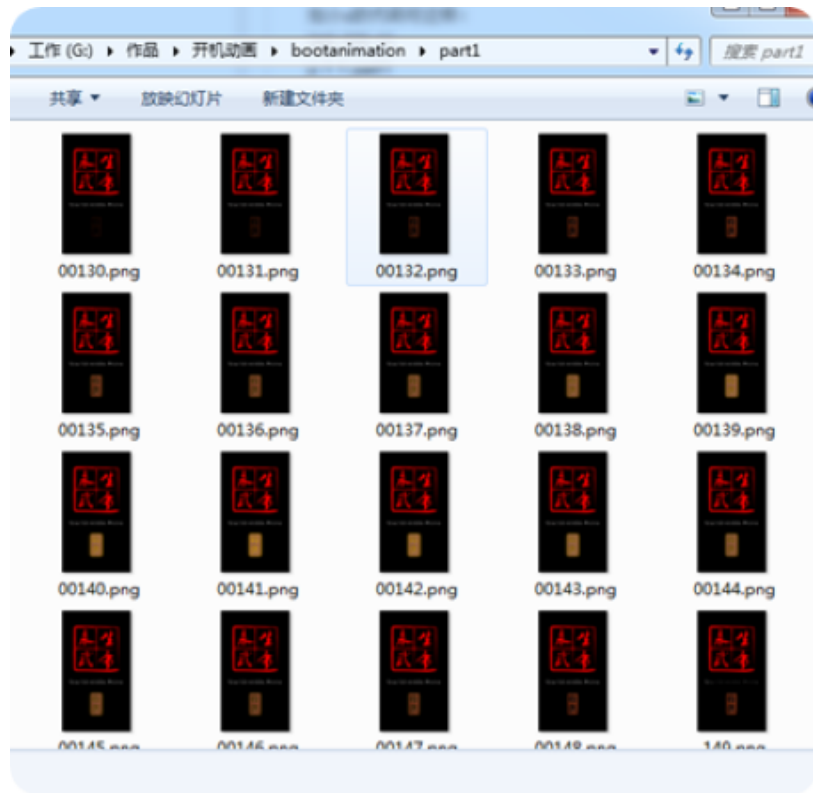
#### bootanimation.zip制作过程: bootanimation.zip build process:

1

找到一组连续的动画, 进行批量压缩处理, 把像素大小调到适合自己的手机即可, 输出格式为 png, 名称为一组连续数字比如 0000.png, 0001.png。然后分别放到 part0 和 part1, 根据实际情况修改 desc.txt。

Find a group of continuous animation to do the compression in batch, just adjust the pixel size to be adaptive with your phone, the output format is png, the name is a group of continuous numbers such as 0000.png, 0001.png. then put them into part0 and part1, and modify desc.txt according to the actual situation.





2

最后一步是压缩成名为 `bootanimation.zip` 的压缩文件，要注意：压缩格式必须是 `.zip`，还有最重要的是，压缩方式必须选择为“存储”，否则系统读不到。完成后即可替换原有开机动画。

注意：替换的时候不要忘记 `bootanimation.zip` 的权限为 755。

The last step is to compress and name the file `bootanimation.zip`. Need to notice that: the compression format must be `.zip`, and the most important thing is the compression method must be “storage”, otherwise it cannot be read by system. After completion successfully, you can replace the original power on animation.