Development of Android-based Software for CM30/CM47/CM60

Revision History

Version	Description	Date
V1.0.0	Initial release.	March 11, 2020

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About This Document

Introduction

This document briefly introduces how to port the CM30/CM47/CM60 to a new Android platform. Software porting mainly includes three parts: driver porting, decoder library import and APK testing.

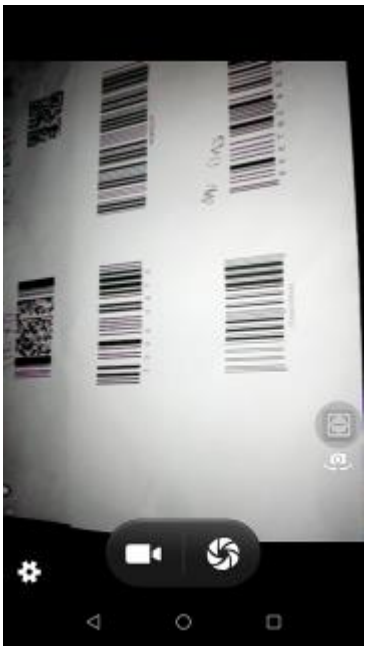
Chapter 1 Driver Porting

Camera Driver Porting

Merge the CM30/CM47/CM60 camera driver provided by our company into the kernel of the target Android platform. For more details, please see Android Camera Porting.

* Effect verification: Images captured by the CM30/CM47/CM60 can be previewed via the Android camera software. (During previewing the images, the supplementary light and aiming light will be on.)

*



* Tip: If the driver provided by our company can not be used after porting, please contact our engineers or refer to Modified Android Camera Driver Supports CM30/CM47/CM60.

I2C Device Node Setting

The supporting CM30/CM47/CM60 software library on the Android platform will communicate with the CM30/CM47/CM60 via the I2C bus to conduct command delivery and status acquisition. The kernel of the Android platform needs to be modified to provide the required I2C communication nodes. For more details, please see Android I2C DMA Settings.

Power Control and Related Node Settings

The Android platform needs to create a power control node file of the CM30/CM47/CM60. The supporting CM30/CM47/CM60 software library will control the power of the CM30/CM47/CM60 with these nodes. For more details, please see Android CM30/CM47/CM60 Node and Power Control.

* Effect verification: Successfully complete the test verification with the test tool.

Softd Driver Porting

The softd driver is used for data verification and processing and needs to be merged into the kernel of the target Android platform. For more details, please see Android Softd Porting.

* Effect verification: Generate softd device nodes in the /dev directory.

Chapter 2 Decoder Library Import

Put the CM30/CM47/CM60 decoding library provided by our company (including the Android-based native dynamic link library and configuration files) in the corresponding area of the Android file system. These dynamic libraries will act as the programming cornerstone for the Android App, providing programming interfaces for functions such as CM30/CM47/CM60 adjustment, triggering, and decoding. For more details, please see CM30/CM47/CM60 Decoding Library and APK.

Chapter 3 APK Testing

Use scanning settings and Test APP- NewLandScan provided by our company to conduct scanning test. The app is provided in source code and can be used as a reference for customer developing demo. For more details, please see CM30/CM47/CM60 Decoding Library and APK.

Chapter 4 CM30/CM47/CM60 Software Files

The CM30/CM47/CM60 software files include test APK, documents, decoding library and related drivers.

```
$ tree -L 1
.
├── APK
├── Doc
├── Driver
└── Library

4 directories, 1 file
```

APK Directory

The APK directory contains the source code project for the CM30/CM47/CM60 Test App-NewLandScan.zip. Import the file by using Android Studio (version 3.2.1 || gradle-4.4-all).

Doc Directory

```
Doc$ tree -L 2
.
├── CM30/CM47/CM60 software design summary (application layer).docx
├── develop
│   ├── android 8 camera porting.pdf
│   ├── android CM30/CM47/CM60 nodes and power control pdf
```

```
│   ├── android I2C DMA settings.pdf
│   └── android softd porting.pdf
├── NLS-CM30/CM47/CM60 Datasheet v1.00.pdf
└── NLS-CM30/CM47/CM60 Integration Guide V1.0.0_(20180910).doc

1 directory, 7 files
```

Doc directory mainly includes datasheet and technical documents.

Driver Directory

```
Driver$ tree -L 2
.
└── Mtk
    ├── Camera
    ├── I2C
    ├── Power
    └── Softd

5 directories, 0 files
```

Driver directory includes camera driver, I2C modification reference file, power driver modification reference file and softd driver.

Library Directory

```
tree -L 3
```

```
.
└── MT9081
    └── user
        ├── bin
        ├── db
        ├── lib
        ├── push32_user.bat
        └── xml

6 directories, 1 file
```

Library directory includes various files that need to be put in the Android file system.

* bin: command-line test tool

* db: configuration database

* lib: dynamic link library

* xml: configuration file

* push32_user.bat: automatically import script (for debugging)

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