IAC-IMX6UL-Kit LINUX

Image Burning Manual

Ver: 1.0

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Catalogue

Preface

Welcome to use IAC-I.MX6UL-KIT from Zhejiang Qiyang Intelligent Technology Co.,Ltd. This manual mainly introduces how to burn the system image to our development board.

Please read ***IAC-IMX6UL-KIT User Manual.PDF*** carefully!

Target Readership

This manual is suitable for the following engineers:

- Technical Support Engineer
- Testing Engineer
- Software Engineer

Version Description

This manual is suitable for the following version:

Product Name	Version
IAC-IMX6UL-Kit	V1.0

Revision Record

Revision Record has accumulated the revised documentations description. The latest version

Revision Date	Version	Revision Description
2016/10/10	V1.0	Launched

Ⅰ. Overview

1.1 Startup Mode Introduction

IAC-IMX6UL-KIT support SD card and EMMC boot, details as following:

- SD card Boot: CPU has obtained the Mirror image from SD card and start.
- EMMC Boot: Start by the onboard EMMC directly.

This manual is only to introduce the EMMC Boot .Here are some introductions, it is easy for user to do development.

Dial switch Status	**1**	**0**
Introduction	Dial the switch to ON side	Dial the switch to the Number side
Reference		

The different Boot modes are controlled by the Dial switch.

1、The dial switch of Core board SW1.

Boot mode of Dial switch	**1**	**2**	**Reference**
EMMC (Burning)	0	1	Picture1-1
EMMC (Booting)	1	0	Picture1-2

Picture 1-1   Picture1-2

2、SW1：The Dial switch of back panel SW1:

Boot mode of Dial switch	**1**	**2**	**3**	**4**	**Reference**
EMMC	1	1	0	0	Picture1-3

Picture 1-3

Ⅱ. Use EMMC Boot Method To Burn Image.

2.1 Preparation

2.1.1 The Necessary Tool of Burning Image

- Burning tool: Mfgtool, which saved in the [\Mytool] of CD directory. It can support windows 7、windows xp、windows 10 operation system.

- Virtual terminal software: Xshell, which saved in the [\Mytool] of CD directory. It support windows operation system.

- Debugging cable of Serial port

- Cross serial port cable

- Downloading cable of Mini USB OTG

2.1.2 The Necessary Image For Image Burning Use

- Boot Image File: [uboot.imx];

  Compiled uboot image saved in [CD\];If need recompile and download, please check the Uboot compiling part from *IAC-IMX6UL-KIT user manual.PDF*

- Kernel image file: zImage；

  Compiled kernel image saved in CD\;

  If need recompiling and downloading, please check the kernel compiling part of *IAC-IMX6UL-KIT user manual.PDF*

- Device tree file: Imx6ul-qiyang.dtb[①]

  Compiled device tree image saved in CD\;

  If need recompiling and downloading, please check the kernel compiling part of *IAC-IMX6UL-KIT user manual.PDF*

- File system: rootfs.tar.bz2；

  Finished file system is saved in [CD\];

  If need recompiling and downloading, please check the adding file system part of *IAC-IMX6UL-KIT user manual.PDF*

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①[imx6ul-qiyang.dtb] is in the kernel source code directory arch/arm/boot/dts/.

2.1.3 Preparation

（1）Connect the PC and development board by the debugging cable of serial port.

（2）Connect the J6 of development board and USB connector of PC by the Mini USB OTG cable.

（3） Dial the switch of core board as the picture 1-1, Dial the switch of back panel as the picture 1-3.

（4）Save all files needed to burn into the directory of [MfgTool\Profiles\Linux\OS Firmware\files]. The default image has been saved in this directory, as shown:
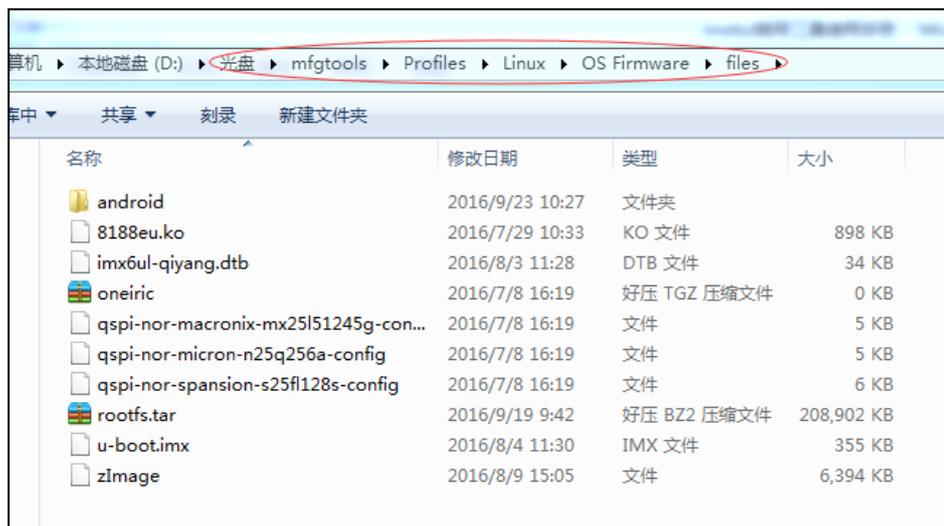

2.2 Burning Image Through USB

2.2.1 Steps

（1）Enter into [Mfgtool] directory, power on ,open [Mfgtool], then run [MfgTool2.exe] to execute,as the picture 2-1 shown:
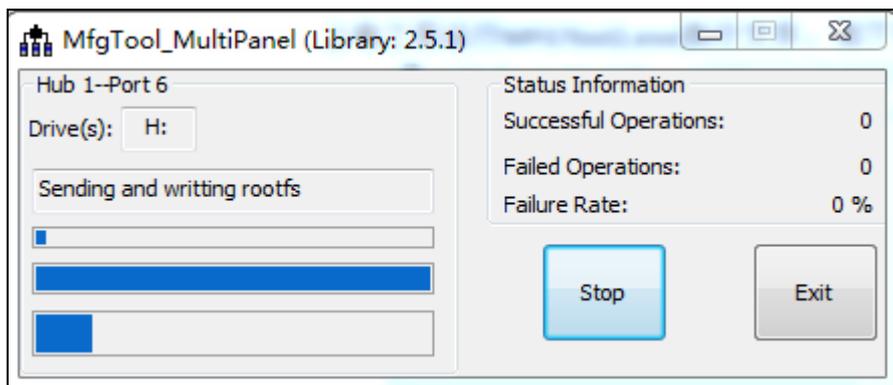
Picture 2-1

（2）Click <start>, MfgTool will show the status of image downloading status, as Picture 2-3 shown. If it hints formatting, as Picture 2-4 shown , click [Cancel] button. The downloading need some minutes, please wait patiently.
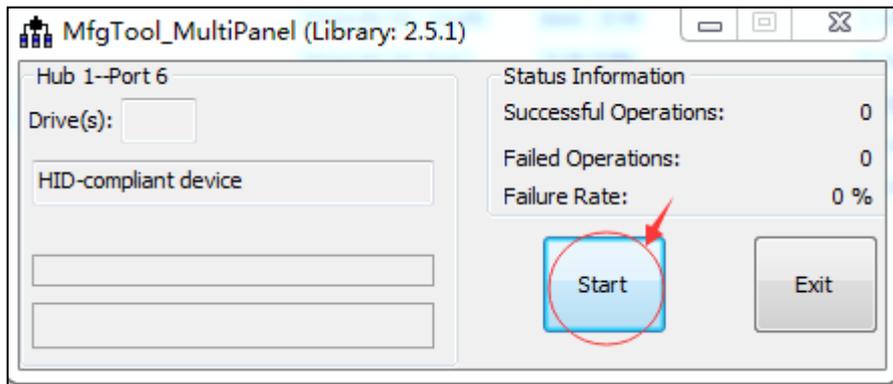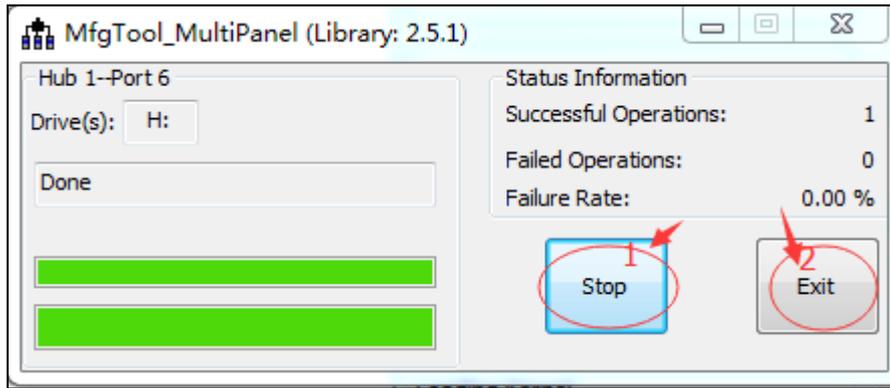

Picture 2-2

Picture 2-3

Picture 2-4

After downloading, it shows as Picture 2-5, click <stop>,then click<Exit>. Burning is finished.
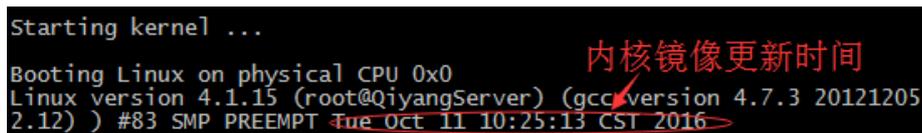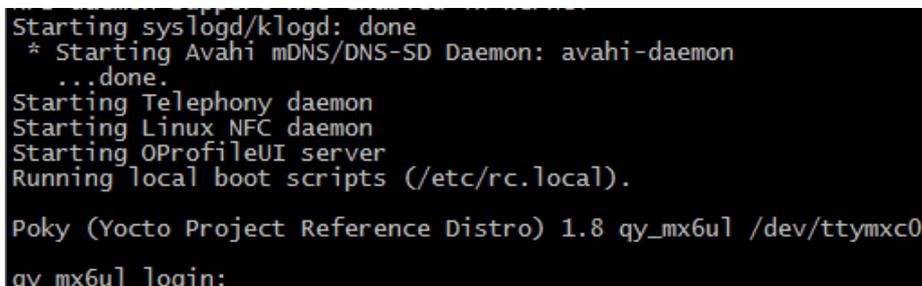
Picture 2-5

Dial the SW1 of core board to [1、0] status as Picture 1-2 shown, power off , then restart. Here ,you will see the printed information from the serial debugging software.

As the picture 2-6 shown, if the Image Update Time is same as the Actual Update time, the kernel update is successful.

As the picture 2-7 shown, it means the image has been burning successfully and the board has been started.

Picture 2-6

Picture 2-6

Ⅲ.FAQ

3.1 Overview

This chapter aims to introduce some problems that users may encounter in the burning process, and gives the corresponding solution.

3.2 Unrecognized device

1.If as the Picture 3-1 shown, it means that it can't recognize the device.

Picture 3-1

2.Solution:

(1)Please check whether the Dial switch of core board is same as the picture 1-1 shown.

(2)Please check whether the dial switch of back panel is same as picture 1-3 shown.

(3)If the dial switch is correct, but it still can't be recognized, please check whether the core board is normal, judge by the following way:

a. Whether the power indicator of core board is normally on, if it is on which means the power part is normal.

b. Whether the light of core board is normally on, if it is not on , the core board is abnormal.

c. If the above conditions are normal, then dial the core board switch as picture 1-2. Start the development board, if the heart light twinkle, and printing the information as picture 2-7, it means core board is normal. Otherwise, the core board is not normal.

If you have finished the above steps, but it still can't recognize the device, please
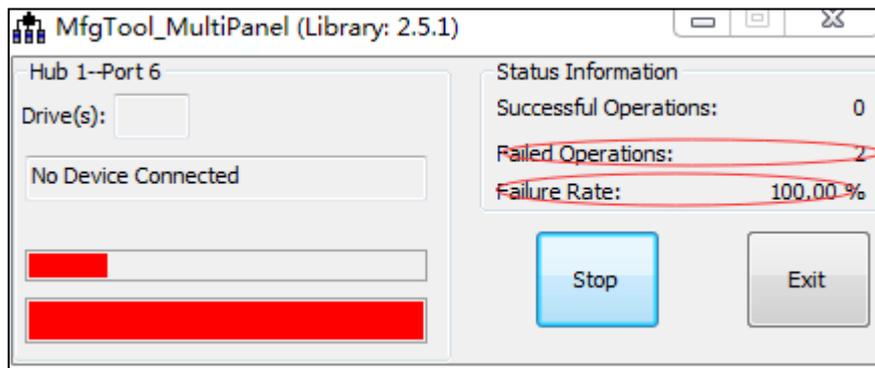
contact the technical support from Zhejiang Qiyang

1.Check whether the USB OTG cable is normal, if not , to change a new cable to recognize device.

2.Choose another PC to recognize the device, in case the downloading tool is not compatible with previous computer.

3.Change another Operation system and check whether it can recognize the device, in case the download tool is not compatible with previous OS.

If you have finished the above steps, but it still can't recognize the device, please contact the technical support from Zhejiang Qiyang

3.3 Downloading Fail

1. If it shows as Picture 3-2, it means the image be download unsuccessfully.

Picture 3-2

2. Solution

Turn off the downloading tool, power on and then restart ,open the downloading tool, operate the chapter 2.2.1 again.

Repeat 3 times, if it still can't download successful, please contact the technical support from Zhejiang Qiyang.

3.4 No Printed Information From The Terminal

If open the virtual terminal, but with issues as shown:

Picture 3-3

2. Solution:

(1) Please check whether the Dial switch of back panel is same as the Picture 1-3.

(2) Please check whether the Dial switch of core board is same as the picture 1-2.

(3) Whether the power indicator of core board and back panel is normally on, if yes, the development board is normal.

(4)

Whether the light of core board is twinkle, if yes, the development board is normal.

(5) Please check whether the cross serial cable connected well with PC.

(6) Please check whether the cross serial cable and debugging cable connected well.

(7) Please check the RX and TX of serial debugging cable be connected exactly.

If finish the above steps but still not solve, please contact the technical support from Zhejiang Qiyang.

Ⅳ.Burning Uboot、 Device tree and kernel image By USB

1.Find out the burning tool files, and [cfg.ini] file , then open it.

2.Modify as the following picture and save. Then burning as the chapter 2.2.1.

```
[profiles]
chip = Linux

[platform]
board = SabreSD

[LIST]
#name = eMMC
name = eMMC- kernel
[variable]
board = sabresd
mmc = 1
sxuboot=17x17arm2
sxdtb=sdb
7duboot=sabresd
7ddtb=sdb
6uluboot=14x14ddr3arm2
6uldtb=14x14- ddr3- arm2
ldo=
plus=
initramfs=fsl- image- mfgtool- initramfs- imx_mfgtools.cpio.gz.u- boot
seek = 1
sxnor=qspi2
7dnor=qspi1
6ulnor=qspi1
nor_part=0
part=1
```