

IAC-IMX6UL-Kit LINUX

Image Burning Manual

Ver: 1.0

QIYANG INTELLIGENTTECHNOLOGY Co., Ltd

Copyright Reserved



Catalogue

CATALOGUE0
PREFACE
TARGET READERSHIP
VERSION DESCRIPTION
REVISION RECORD
I. OVERVIEW
1.1 STARTUP MODE INTRODUCTION
BOOT MODE OF DIAL SWITCH
EMMC (BURNING)
EMMC (BOOTING)
II. USE EMMC BOOT METHOD TO BURN IMAGE4
2.1 PREPARATION
2.1.1 The Necessary Tool of Burning Image
2.1.2 The Necessary Image For Image Burning Use
2.1.3 Preparation
2.2 BURNING IMAGE THROUGH USB
2.2.1 Steps
Ш.FAQ
3.1 Overview
3.2 UNRECOGNIZED DEVICE
3.3 DOWNLOADING FAIL
3.4 NO PRINTED INFORMATION FROM THE TERMINAL
IV.BURNING UBOOT, DEVICE TREE AND KERNEL IMAGE BY USB11

Website: http://www.qiytech.com



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		日 王 美 授 向 批 方 向 社 态 为 1 支 日 一 大 志 为 1 大 同 社 态 为 1

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	Picture <u>1-1</u>
EMMC (Booting)	1	0	Picture <u>1-2</u>





Picture1-2

Picture 1-1

2 SW1: The Dial switch of back panel SW1:

Boot mode of Dial switch	1	2	3	4	Reference
EMMC	1	1	0	0	Picture <u>1-3</u>

Any question, please send E-mail :supports@qiyangtech.com

Sales E-mail :trade@qiyangtech.com_sales@qiyangtech.com

Website: http://www.qiytech.com





Picture 1-3

Any question, please send E-mail :<u>supports@qiyangtech.com</u> Sales E-mail :trade@qiyangtech.com<u>sales@qiyangtech.com</u> Website: http://www.qiytech.com



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*

Sales E-mail :trade@qiyangtech.com<u>sales@qiyangtech.com</u>

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:

18			Barturo.	-
算机 ▶ 本地磁盘 (D:) ▶ 《光盘 ▶ mfgtools ▶ Pro	files 🕨 Linux 🕨 OS	Firmware 🕨 files 🕨)	
名称	修改日期	类型	大小	
퉬 android	2016/9/23 10:27	文件夹		
8188eu.ko	2016/7/29 10:33	KO 文件	898 KB	
📄 imxбul-qiyang.dtb	2016/8/3 11:28	DTB 文件	34 KB	
💼 oneiric	2016/7/8 16:19	好压 TGZ 压缩文件	0 KB	
gspi-nor-macronix-mx25l51245g-con	2016/7/8 16:19	文件	5 KB	
gspi-nor-micron-n25q256a-config	2016/7/8 16:19	文件	5 KB	
gspi-nor-spansion-s25fl128s-config	2016/7/8 16:19	文件	6 KB	
💼 rootfs.tar	2016/9/19 9:42	好压 BZ2 压缩文件	208,902 KB	
u-boot.imx	2016/8/4 11:30	IMX 文件	355 KB	
zImage	2016/8/9 15:05	文件	6,394 KB	

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:

名称	修改日期	类型	大小
]] Document	2016/8/30 11:18	文件夹	
🐌 Drivers	2016/8/30 11:18	文件夹	
🐌 Profiles	2016/8/30 11:18	文件夹	
🐌 Utils	2016/8/30 11:18	文件夹	
gitignore	2016/8/30 10:49	GITIGNORE 文件	1 KB
🛍 cfg	2016/8/30 10:49	配置设置	1 KB
📄 cfg.ini.bak	2016/8/30 10:49	BAK 文件	1 KB
🗎 MfgTool	2016/9/18 19:07	文本文档	1 KB
HigTool2	2016/8/30 10:51	应用程序	1,703 KB
🚳 MfgToolLib.dll	2016/8/30 10:49	应用程序扩展	588 KB
🛍 UICfg	2016/8/30 10:49	配置设置	1 KB

Any question, please send E-mail :supports@qiyangtech.com

Sales E-mail :trade@qiyangtech.com_sales@qiyangtech.com

Website: http://www.qiytech.com



IAC-IMX6UL-KIT Firmware Burning Manual 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.

MfgTool_MultiPanel (Library: 2.5.1)		
Hub 1Port 6	Status Information	
Drive(s):	Successful Operations:	0
	Failed Operations:	0
HID-compliant device	Failure Rate:	0 %
	Start	Exit

Picture 2-2

nfgTool_MultiPanel (Library: 2.5.1)	□ X
Hub 1Port 6	Status Information	
Drive(s): H:	Successful Operations:	0
	Failed Operations:	0
Sending and writting rootfs	Failure Rate:	0 %
	Stop	Exit

Picture 2-3

ſ	➡ Microsoft Windows
	使用驱动器 H: 中的光盘之前需要将其格式化。
	是否要将其格式化?
	格式化磁盘取消

Picture 2-4

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

Any question, please send E-mail :<u>supports@qiyangtech.com</u> Sales E-mail :trade@qiyangtech.com<u>sales@qiyangtech.com</u>

MfgTool_MultiPanel (Lib	rary: 2.5.1)	23
Hub 1Port 6	Status Information	
Drive(s): H:	Successful Operations:	1
	Failed Operations:	0
Done	Failure Rate: 0	.00 %
	Stop	kit

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.

Starting kernel
Booting Linux on physical CPU 0x0 内核镜像史新时间 Linux version 4.1.15 (root@QiyangServer) (gccrversion 4.7.3 20121205 2.12)) #83 SMP PREEMPT Tue_Oct 11 10:25:13 CST 2016
Picture 2-6
<pre>Starting syslogd/klogd: done * Starting Avahi mDNS/DNS-SD Daemon: avahi-daemon done. Starting Telephony daemon Starting Linux NFC daemon Starting OProfileUI server Running local boot scripts (/etc/rc.local).</pre>
Poky (Yocto Project Reference Distro) 1.8 qy_mx6ul /dev/ttymxc0
qy_mx6ul login:

Picture 2-6

Any question, please send E-mail :supports@qiyangtech.com

Sales E-mail :trade@qiyangtech.com_sales@qiyangtech.com



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.

MfgTool_MultiPanel (Library: 2.5.1)		
Unassigned	Status Information	
Drive(s):	Successful Operations:	0
No Device Connected 识别不到device	^e Failed Operations:	0
	Failure Rate:	0 %
	Start	Exit

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.

MfgTool_MultiPanel (Library: 2.5.1)		• ×
Hub 1Port 6	Status Information	
Drive(s):	Successful Operations:	0
	Failed Operations:	2
No Device Connected	Failure Rate:	100.00 %
	Stop	Exit

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:

Sales E-mail :trade@qiyangtech.com_sales@qiyangtech.com



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.

名称	修改日期	类型	大小	
]] Document	2016/7/30 15:33	文件夹		
🐌 Drivers	2016/7/30 15:33	文件夹		
🐌 Profiles	2016/7/30 15:33	文件夹		
퉬 Utils	2016/7/30 15:33	文件夹		
📄 .gitignore	2016/7/8 16:19	GITIGNORE 文件	1 KB	
🗊 cfg	2016/8/9 15:06	配置设置	1 KB	
cfg.ini.bak	2016/7/8 16:19	BAK 文件	1 KB	
🗎 MfgTool	2016/9/22 19:03	文本文档	11 KB	
MfgTool2	2016/7/8 16:21	应用程序	1,703 KB	
🚳 MfgToolLib.dll	2016/7/8 16:19	应用程序扩展	588 KB	
避 UICfg	2016/7/8 16:19	配置设置	1 KB	

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