

# UUU 使用指南

## 烧写准备:

### 1 安装 windows usb 驱动

如果是首次使用 uuu tools, 请参考本文最后一节安装 usb 驱动。

### 2 拷贝镜像

烧写 Linux 镜像 (放在 uuu\_tools\_1.2.91\linux\_img):

u-boot.imx

EM-MC-SBC-IMX8M-Yocto-Image-SDcard-V1.0.2b03.img

说明: EMMC 与 SD 卡烧写相同的镜像

烧写 Android 镜像 (放在 uuu\_tools\_1.2.91\android\_img):

u-boot-imx8mq.imx

boot.img

dtbo-imx8mq.img (for SD) 或 dtbo-imx8mq-emmc.img (for EMMC)

partition-table-7GB.img

system.img

vmeta-imx8mq.img (for SD) 或 vmeta-imx8mq-emmc.img (for EMMC)

vendor.img

说明: EMMC 与 SD 卡烧写的镜像不同, 注意拷贝需要的版本

## 烧写步骤:

### 1. 使用双头 USB Type A 线连接 USB Port 0 (imx8m 板子底下一个 USB 口) 到 PC, (可选: 连接 debug UART 到 PC 上, 可以查看更多的烧录信息)

### 2. 打开 imx8m 板子电源

### 3. 在 PC 上按照如下步骤执行:

打开 windows 命令行, 进入到 UUU tools 目录, 如下图

```
管理员: C:\Windows\system32\cmd.exe
Microsoft Windows [版本 6.1.7601]
版权所有 (c) 2009 Microsoft Corporation。保留所有权利。

C:\Users\bin.cheng>d:

D:\>cd D:\Work\inx8\uuu_tools_1.2.91

D:\Work\inx8\uuu_tools_1.2.91>
D:\Work\inx8\uuu_tools_1.2.91>dir
驱动器 D 中的卷没有标签。
卷的序列号是 7C2C-8408

D:\Work\inx8\uuu_tools_1.2.91 的目录
2019/05/08 15:09 <DIR> .
2019/05/08 15:09 <DIR> ..
2019/05/08 14:42 <DIR> android_img
2019/05/08 14:32 <DIR> linux_img
2019/03/11 09:40 299,650 UUU.pdf
2019/05/08 15:09 188,416 UUU_Tools_User's_Guide.docx
                2 个文件          488,066 字节
                4 个目录 254,784,901,120 可用字节

D:\Work\inx8\uuu_tools_1.2.91>
D:\Work\inx8\uuu_tools_1.2.91>
```

如果是烧写 Linux 镜像，进入到 linux\_img 目录中，根据 imx8m 板子存储介质选择相应的 lst 文件

EMMC uuu\_linux-emmc.lst

SDcard uuu\_linux-sd.lst

```
管理员: C:\Windows\system32\cmd.exe

D:\Work\inx8\uuu_tools_1.2.91\linux_img>
D:\Work\inx8\uuu_tools_1.2.91\linux_img>uuu uuu_linux-emmc.lst
uuu <Universal Update Utility> for nxp imx chips -- libuuu_1.2.91-0-g3799f4d

Your console don't support UT mode, fail back to verbose mode
Build in config:
=====
Pctl  Chip      Vid  Pid  BcdVersion
=====
SDPS:  MX8QXP    0x1fc9 0x012f [0x0002..0xffff]
SDPS:  MX8QM    0x1fc9 0x0129 [0x0002..0xffff]
SDP:   MX7D    0x15a2 0x0076
SDP:   MX6Q    0x15a2 0x0054
SDP:   MX6D    0x15a2 0x0061
SDP:   MX6SL   0x15a2 0x0063
SDP:   MX6SX   0x15a2 0x0071
SDP:   MX6UL   0x15a2 0x007d
SDP:   MX6ULL  0x15a2 0x0080
SDP:   MX6SLL  0x1fc9 0x0128
SDP:   MX7ULP  0x1fc9 0x0126
SDP:   MXRT106X 0x1fc9 0x0135
SDP:   MX8MM   0x1fc9 0x0134
SDP:   MX8MQ   0x1fc9 0x012b
SDPU:  SPL     0x0525 0xb4a4 [0x0000..0x04ff]
SDPU:  SPL1    0x0525 0xb4a4 [0x0500..0x9998]
SDPU:  SPL     0x0525 0xb4a4 [0x9999..0x9999]
FBK:   0x066f 0x9afe
FBK:   0x066f 0x9bfb
FB:    0x0525 0xa4a5
```

如上图烧写到 EMMC，执行命令“uuu uuu\_linux-emmc.lst”即可。

```
管理员: C:\Windows\system32\cmd.exe - uu uuu linux-emmc.lst

SDP:    MX7ULP      0x1fc9  0x0126
SDP:    MXRT106X   0x1fc9  0x0135
SDP:    MX8MM      0x1fc9  0x0134
SDP:    MX8MQ      0x1fc9  0x012b
SDPU:    SPL       0x0525  0xb4a4  [0x0000..0x04ff]
SDPU:    SPL1      0x0525  0xb4a4  [0x0500..0x9998]
SDPU:    SPL       0x0525  0xb4a4  [0x9999..0x9999]
FBK:     0x066f    0x9afe
FBK:     0x066f    0x9hff
FB:      0x0525    0xa4a5
FB:      0x18d1    0x0d02

Wait for Known USB Device Appear...
New USB Device Attached at 3:10
3:10>Start Cmd:FB: ucmd printenv
3:10>Okay
3:10>Start Cmd:FB: ucmd mmc dev
3:10>Okay
3:10>Start Cmd:FB: ucmd setenv fastboot_dev mmc
3:10>Okay
3:10>Start Cmd:FB: ucmd setenv mmcdev ${emmc_dev}
3:10>Okay
3:10>Start Cmd:FB: ucmd mmc dev ${emmc_dev}
3:10>Okay
3:10>Start Cmd:FB: ucmd mmc erase 0x2000 0x8
3:10>Okay
3:10>Start Cmd:FB: flash -raw2sparse all EM-MC-SBC-IMX8M-Yocto-Image-SDcard-U1.0
.2b03.img
16x00000000x200
```

烧写较大的文件时候，会显示烧写进度的百分比

```
管理员: C:\Windows\system32\cmd.exe

Wait for Known USB Device Appear...
New USB Device Attached at 3:10
3:10>Start Cmd:FB: ucmd printenv
3:10>Okay
3:10>Start Cmd:FB: ucmd mmc dev
3:10>Okay
3:10>Start Cmd:FB: ucmd setenv fastboot_dev mmc
3:10>Okay
3:10>Start Cmd:FB: ucmd setenv mmcdev ${emmc_dev}
3:10>Okay
3:10>Start Cmd:FB: ucmd mmc dev ${emmc_dev}
3:10>Okay
3:10>Start Cmd:FB: ucmd mmc erase 0x2000 0x8
3:10>Okay
3:10>Start Cmd:FB: flash -raw2sparse all EM-MC-SBC-IMX8M-Yocto-Image-SDcard-U1.0
.2b03.img
100%3:10>Okay00
3:10>Start Cmd:FB: flash bootloader u-boot.imx
0x40000000x2003:10>Okay
3:10>Start Cmd:FB: ucmd mmc partconf ${emmc_dev} 0 1 0
3:10>Okay
3:10>Start Cmd:FB: done
3:10>Okay
←[?25h

D:\Work\imx8\uuu_tools_1.2.91\linux_img>
```

烧写完成。

4. 断开 imx8m 板子电源，拔掉 USB 连接线，连接 HDMI 显示器
5. 重新上电启动 imx8m 板子，调试 串口就会打印 uboot 信息如下

```

Training PASS
DRAM PHY training for 2400MTS
check ddr4_pmu_train_imem code
check ddr4_pmu_train_imem code pass
check ddr4_pmu_train_dmem code
check ddr4_pmu_train_dmem code pass
Training PASS
DDRINFO:ddrphy calibration done
DDRINFO: ddrmix config done
Normal Boot
Trying to boot from MMC1

U-Boot 2018.03-gd682860eee-dirty (Apr 28 2019 - 01:51:59 +0000)

CPU:   Freescale i.MX8MQ rev2.0 1300 MHz (running at 800 MHz)
CPU:   Industrial temperature grade (-40C to 105C) at 59C
Reset cause: POR
Model: Freescale i.MX8MQ EVK
DRAM:  2 GiB
MMC:    FSL_SDHC: 0, FSL_SDHC: 1
Loading Environment from MMC... *** Warning - bad CRC, using default environment

Failed (-5)
No panel detected: default to HDMI
Display: HDMI (1280x720)
In:     serial
Out:    serial
Err:    serial

BuildInfo:
- ATF d6451cc
- U-Boot 2018.03-gd682860eee-dirty

```

可以登录进入系统，同时 HDMI 显示也正常。

```

[ OK ] Started Serial Getty on ttymxc0.
[ OK ] Started Getty on tty1.
[ OK ] Reached target Login Prompts.
[ OK ] Started Weston Wayland Compositor (on tty7).
[ OK ] Started Kernel Logging Service.
[ OK ] Started WPA supplicant.
[ OK ] Started Hostname Service.
[ OK ] Reached target Multi-User System.
       Starting Update UTMP about System Runlevel Changes...
[ OK ] Created slice User Slice of root.
       Starting User Manager for UID 0...
[  9.673977] audit: type=1006 audit(1551666149.983:2): pid=3463 uid=0
295 auid=0 tty=(none) old-ses=4294967295 ses=1 res=1
[ OK ] Started Session c1 of user root.
[ OK ] Started Update UTMP about System Runlevel Changes.
[ OK ] Started User Manager for UID 0.
[  9.986704] i.mx8-hdp 32c00000.hdmi: 0,ff,ff,ff,ff,ff,ff,ff,0

NXP i.MX Release Distro 4.14-sumo imx8mqevk ttymxc0

imx8mqevk login:
NXP i.MX Release Distro 4.14-sumo imx8mqevk ttymxc0

imx8mqevk login: root
Last login: Mon Mar  4 02:22:29 UTC 2019 on tty7
root@imx8mqevk:~#
root@imx8mqevk:~# ls
4ktest.mp4          audio_sample.wav    uart_test
CamereDisplay_FB0_Video1 bluetooth_start.sh  wifi_sta_connect.sh
UsbCamera           check.sh
root@imx8mqevk:~# █

```

### ● 烧写 android 镜像

如果是烧写 Android 镜像，进入到 android\_img 目录中，根据 imx8m 板子存储介质选择相应的 lst 文件

```

EMMC    uuu_android_imx8m_emmc.lst
SDcard  uuu_android_imx8m_sd.lst

```

```
管理员: C:\Windows\system32\cmd.exe
D:\Work\imx8\uuu_tools_1.2.91\android_img>uuu uuu_android_imx8m_emmc.lst
uuu <Universal Update Utility> for nxp imx chips -- libuuu_1.2.91-0-g3799f4d

Your console don't support UT mode, fail back to verbose mode
Build in config:
=====
Pctl  Chip      Uid      Pid      BcdVersion
=====
SDPS:  MX8QXP    0x1fc9   0x012f   [0x0002..0xffff]
SDPS:  MX8QM    0x1fc9   0x0129   [0x0002..0xffff]
SDP:    MX7D    0x15a2   0x0076
SDP:    MX6Q    0x15a2   0x0054
SDP:    MX6D    0x15a2   0x0061
SDP:    MX6SL   0x15a2   0x0063
SDP:    MX6SX   0x15a2   0x0071
SDP:    MX6UL   0x15a2   0x007d
SDP:    MX6ULL   0x15a2   0x0080
SDP:    MX6SLL  0x1fc9   0x0128
SDP:    MX7ULP  0x1fc9   0x0126
SDP:    MXRT106X 0x1fc9   0x0135
SDP:    MX8MM    0x1fc9   0x0134
SDP:    MX8MQ    0x1fc9   0x012b
SDPU:   SPL     0x0525   0xb4a4   [0x0000..0x04ff]
SDPU:   SPL     0x0525   0xb4a4   [0x0500..0x9998]
SDPU:   SPL     0x0525   0xb4a4   [0x9999..0x9999]
FBK:    0x066f   0x9afe
FBK:    0x066f   0x9bff
FB:     0x0525   0xa4a5
FB:     0x18d1   0x0d02

Wait for Known USB Device Appear...
New USB Device Attached at 3:10
```

如上图烧写到 EMMC，执行命令“uuu uuu\_android\_imx8m\_emmc.lst”即可。

```
管理员: C:\Windows\system32\cmd.exe - uuu uuu_android_imx8m_emmc.lst
New USB Device Attached at 3:10
3:10>Start Cmd:SDPU: delay 1000
3:10>okay
3:10>Start Cmd:SDPU: write -f u-boot.imx -offset 0x57c00
100%3:10>okay
3:10>Start Cmd:SDPU: jump
6400%3:10>okay
New USB Device Attached at 3:10
3:10>Start Cmd:FB: ucmd setenv fastboot_dev mmc
3:10>okay
3:10>Start Cmd:FB: ucmd setenv mmcdev 0
3:10>okay
3:10>Start Cmd:FB: ucmd mmc dev 0
3:10>okay
3:10>Start Cmd:FB: flash bootloader u-boot-imx8mq.imx
0x400000000x2003:10>okay
3:10>Start Cmd:FB[-t 600000]: flash gpt partition-table-7GB.img
0x400000000x2003:10>okay
3:10>Start Cmd:FB: ucmd mmc dev 0
3:10>okay
3:10>Start Cmd:FB: ucmd mmc erase 0x2000 8
3:10>okay
3:10>Start Cmd:FB: ucmd mmc partconf 0 0 1 0
3:10>okay
3:10>Start Cmd:FB: flash boot_a boot.img
0x400000000x2003:10>okay
3:10>Start Cmd:FB: flash boot_b boot.img
0x400000000x2003:10>okay
3:10>Start Cmd:FB[-t 100000]: flash system_a system.img
37%00000000x200
```

烧写 android 的逐个镜像

```
管理员: C:\Windows\system32\cmd.exe
199%3:10>Okay00
3:10>Start Cmd:FB[-t 100000]: flash system_b system.img
199%3:10>Okay00
3:10>Start Cmd:FB: flash vbmeta_a vbmeta-imx8mq.img
0x400000000x2003:10>Okay
3:10>Start Cmd:FB: flash vbmeta_b vbmeta-imx8mq.img
0x400000000x2003:10>Okay
3:10>Start Cmd:FB: flash vendor_a vendor.img
199%3:10>Okay00
3:10>Start Cmd:FB: flash vendor_b vendor.img
199%3:10>Okay00
3:10>Start Cmd:FB: flash dtbo_a dtbo-imx8mq.img
0x400000000x2003:10>Okay
3:10>Start Cmd:FB: flash dtbo_b dtbo-imx8mq.img
0x400000000x2003:10>Okay
3:10>Start Cmd:FB[-t 600000]: ERASE userdata
3:10>Okay
3:10>Start Cmd:FB: ERASE misc
3:10>Okay
3:10>Start Cmd:FB[-t 100000]: ERASE persistdata
3:10>Okay
3:10>Start Cmd:FB[-t 100000]: ERASE fbmisc
3:10>Okay
3:10>Start Cmd:FB: done
3:10>Okay
+[-?25h
D:\Work\imx8\uuu_tools_1.2.91\android_img>
```

烧写完成。

其他问题:

- 1 如果烧写时出现以下错误，很有可能是电脑上缺少 USB 驱动

```
3:10>Start Cmd:SDPU: jump
6400x3:10>Okay
New USB Device Attached at 3:10
3:10>Fail Failure open usb device
<[?25h
```

查看设备管理器，缺少 usb download gadget 驱动



解决方法：使用 zadig-2.4.exe 安装驱动即可（从 <https://zadig.akeo.ie/> 下载）。

- 2 如果烧写的 Linux 镜像有更新，不是 EM-MC-SBC-IMX8M-Yocto-Image-SDcard-V1.0.2b03.img 可以用文本工具打开 lst 文件，修改相应行

FB: flash -raw2sparse all EM-MC-SBC-IMX8M-Yocto-Image-SDcard-V1.0.2b03.img

为

FB: flash -raw2sparse all your\_new\_vesrion.img

其中 your\_new\_vesrion.img 是要烧写的镜像文件名。

- 3 如果使用的 Android 镜像 7G 的完整镜像，直接烧写整个 EMMC，参考烧写步骤进入到 uuu\_tools\_1.2.91\android\_img\_bulky 目录，执行命令“uuu uuu\_android-im8m-all-emmc.lst”等待烧写完成即可。