



## **USB Upgrade SOP**

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## REVISION HISTORY

Revision No.	Description	Date
0.1	<ul style="list-style-type: none"><li>Initial release</li></ul>	06/27/2019
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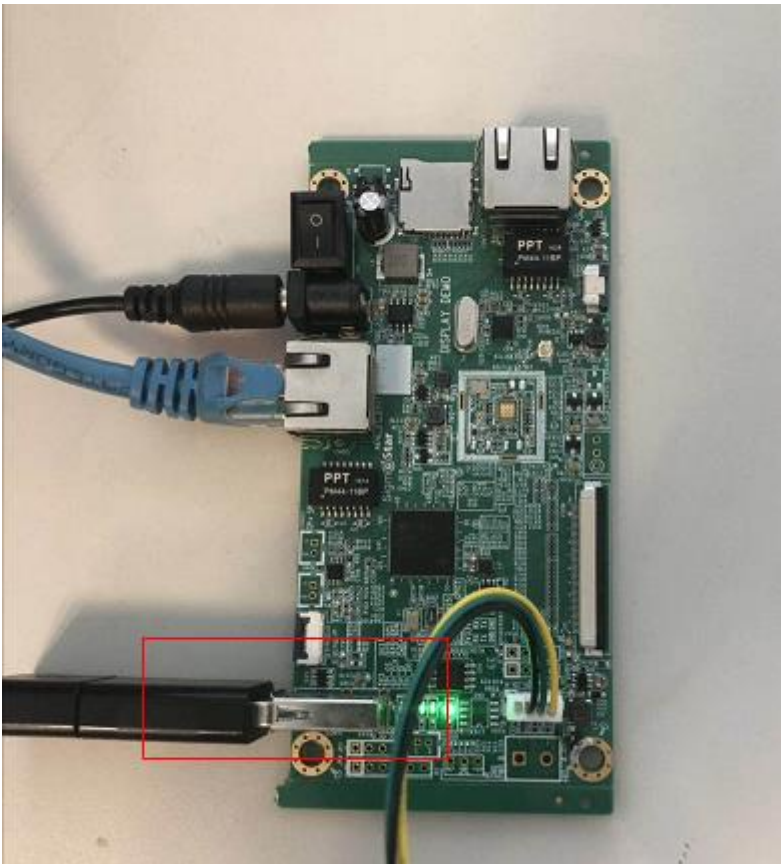


{SigmaStar Display}  
{Smart Display}  
{SSD201 + 1.0}

## 1. USB 板子硬件连接

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USB 连接板子示意图如下：



## 2. UBOOT 打开 USB CONFIG

USB 升级是在 uboot 里面做的，所以升级前必须打开 uboot 中 usb 的 config 使 uboot 能识别到 usb 设备。打开方法如下：

1. 进入到 uboot 目录，按照编译 boot 的方法执行以下命令：

Nand:

```
aaron.feng@sigmastar:~/Code/P2/Release_SDK/boot$ declare -x ARCH="arm"
aaron.feng@sigmastar:~/Code/P2/Release_SDK/boot$ declare -x CROSS_COMPILE="arm-linux-gnueabihf-"
aaron.feng@sigmastar:~/Code/P2/Release_SDK/boot$ make infinity2m_spinand_defconfig
#
# configuration written to .config
#
aaron.feng@sigmastar:~/Code/P2/Release_SDK/boot$ make menuconfig
```

Nor:

```
aaron.feng@sigmastar:~/Code/P2/Release_SDK/boot$ declare -x ARCH="arm"
You have new mail in /var/mail/aaron.feng
aaron.feng@sigmastar:~/Code/P2/Release_SDK/boot$ declare -x CROSS_COMPILE="arm-linux-gnueabihf-"
aaron.feng@sigmastar:~/Code/P2/Release_SDK/boot$ make infinity2m_defconfig
#
# configuration written to .config
#
aaron.feng@sigmastar:~/Code/P2/Release_SDK/boot$ make menuconfig
```

2. Make menuconfig 的 Device Drivers 配置中打开如下 config:

```
Device Drivers
enu. <Enter> selects submenus ---> (or empty submenus ----). Highlighted letters
izes features. Press <Esc><Esc> to exit, <?> for Help, </> for Search. Legend

[ ] Enable Driver Model
    NAND Device Support --->
[*] Enable watchdog
[*] Support for Host-side USB
    *** USB Host Controller Drivers ***
    [ ] xHCI HCD (USB 3.0) support (NEW)
    [ ] EHCI HCD (USB 2.0) support (NEW)
    [*] USB Mass Storage support
        Fastboot support ----
[*] MStar drivers --->
```

3. MStar drivers 配置中打开如下 config:

```
drivers
MStar drivers
e menu. <Enter> selects submenus ---> (or empty submenus ----). Highlighted letters
larizes features. Press <Esc><Esc> to exit, <?> for Help, </> for Search. Legend: [*

--- MStar drivers
[*] MSTAR ISP NOR FLASH
[ ] Save environment to ISP NOR FLASH
[ ] MTD device for ISP NOR FLASH
[*] Enable Mstar partition support
[*] MSTAR SDMMC
[ ] MSTAR eMMC
[*] MSTAR Gpio
[ ] MSTAR NAND
[ ] EYE
[*] MSTAR USB
[*] MSTAR EMAC
[*] Supply to internal PHY
[*] Enable 1st EHC
[*] Enable 2nd EHC
[*] Enable 3rd EHC (NEW)
[ ] Enable USB lan module (NEW)
[*] Enable AESDMA
[*] MSTAR SPINAND
    Read mode (Use Quad read) --->
+(+)
```

然后 save 保存，重新编译 uboot，编译完成后把 uboot bin 拷贝到 project 重新打包即可。

## 3. 制作 USB 升级包

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成功编译 project 后，切换到 project 目录执行如下命令制作 usb 升级包：  
执行脚本后，根据实际需要选择需要升级的分区

```
aaron.feng@sigmastar:~/Code/P2/project$ ./make  
makefile make_usb_upgrade_sigmastar.sh  
aaron.feng@sigmastar:~/Code/P2/project$ ./make_usb_upgrade_sigmastar.sh  
Upgrade [[ipl? (y/N)y  
Upgrade [[uboot? (y/N)y  
Upgrade [[kernel? (y/N)y  
Upgrade [[rootfs? (y/N)y  
Upgrade [[nvrservice? (y/N)y  
Upgrade [[customer? (y/N)y  
UpgradeImage Generating.....  
1+0 records in  
1+0 records out  
16 bytes copied, 0.000207025 s, 77.3 kB/s  
aaron.feng@sigmastar:~/Code/P2/project$ █
```

脚本执行后，会在 project\image\output\images 目录生成 SigmastarUpgrade.bin 升级包  
SD 卡和 EMMC 制作升级包的步骤跟 USB 一样，执行如下脚本即可：

SD:

```
./ make_sd_upgrade_sigmastar.sh  
生成 SigmastarUpgradeSD.bin
```

EMMC:

```
./ make_emmc_upgrade_sigmastar.sh  
生成 SigmastarUpgradeEMMC.bin
```

## 4. USB 升级步骤(针对 P2 DEMO 板)

1. 开机进入 uboot,设置 usb 升级 port 口为 1:

```
SigmaStar #  
SigmaStar #  
SigmaStar # setenv UpgradePort 1  
SigmaStar # save  
Saving Environment to SPI Flash...  
env_offset=0x4F000 env_size=0x1000  
Flash is detected (0x0709, 0xEF, 0x40, 0x18)  
SF: Detected nor0 with total size 16 MiB  
Erasing SPI flash..._spi_flash_erase: addr 0x4f000, len 0x1000 (cost 44 ms)  
Writing to SPI flash..._spi_flash_write to 0x4f000, len 0x1000 from 0x23b159a8 100%(cost 27 ms)  
done  
SigmaStar #
```

2. 执行 `usbstar`,即可完成 usb 升级,升级完成后会自动重启

```
SigmaStar #  
SigmaStar # usbstar  
(Re)start USB 1...  
Check USB port[1]:  
[USB] usb_lowlevel_init++  
[USB] USB EHCI LIB VER: 2018.01.12  
[USB] Port 1 is Enabled  
[USB] TV_usb_init (UTMI Init) ++  
[USB] UTMI Base 1f284a00  
[USB] UHC Base 1f285000  
[USB] USBC Base 1f284e00  
[USB] BC Base 1f284c00  
[USB] config miu select [70] [f8] [ef] ][ef]  
[USB] enable miu lower bound address subtraction  
[USB] init squelch level 0x2  
[USB] TV_usb_init--  
[USB] Usb_host_Init++  
[USB] Async base addr: 0x3f7ad80  
[USB] Reg 0x28: 0xad80 0x3f7  
[USB] disable run  
[USB] Host Speed:2  
[USB] enable aynch  
[USB] Usb_host_Init--  
[USB] usb_lowlevel_init--  
scanning bus for devices...  
[USB] interface[0] conf:1 value 8:  
1 USB Device(s) found
```

SD 卡和 EMMC 升级步骤跟 USB 类似,不需要设置升级对应的 port 口(SD 和 emmc 只有一个 port 口), 直接执行如下命令即可:

SD: `sdstar`

EMMC: `emmcstar`

## 5. 开机自动升级

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设置开机自动升级，只需要设置如下环境变量即可：

USB: `setenv usbautoupgrade 1;saveenv`

SD: `setenv sdautoupgrade 1;saveenv`

EMMC: `setenv emmcautoupgrade 1;saveenv`