

MStar TVOS
Release Notes
G_HQ_638_ASEAN

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1. INTRODUCTION

1.1. Purpose

TVOS Monet ASEAN model alpha Release, the the version is TVOS-04.10.050.02.00.**DTMB-HK**.Monet, TVOS-04.10.050.02.00.**ES-ASIA**.Monet and TVOS-04.10.050.02.00.**TW**.Monet. The purpose is for FAE to create customer projects using the chip “Monet”. And the reference board is **MST082B-10AJQ**.

In this solution, the code base is Android **5.1**, the broadcast type is **DVBT,DVBT2, DVBC and DVBS** the DRAM size is 1GB, and the eMMC size is 8GB.

1.2. Installation & Upgrade

All Examples are building for emmc.

1.2.1. ARM Toolchain

Set the ARM toolchain path in the build server:

```
PATH=/tools/arm/arm-2012.09/bin/:/tools/arm_eabi-2011.03/bin:$PATH
```

Kernel tool chain 已經換了

```
PATH=/tools/arm/Linaro/gcc-linaro-aarch64-linux-gnu-4.9-2014.09_linux/bin:$PATH;
```

Kernel 需要 merge **CL1188964**

And the toolchain gcc version is **4.7.2**

1.2.2. MBoot

Build Code Flow

- *For normal source code*

Step 1: Enter **MBoot/sboot**

Step 2: Please check your board use eMMC

```
cp ./configs/monet/.config.monet.android.082b.rom_emmc.tee.ursa6 .config [DDR 2133MHz]
```

```
cp ./configs/monet/.config.monet.android.082b.rom_emmc.tee.ursa6.ldr1866 .config [DDR 1866MHz]
```

```
cp ./configs/monet/.config.monet.android.082b.rom_emmc.tee.ldr1866 .config [No Send U6 Command]
```

Step 3: **make menuconfig**

Step 4: Exit and Save

Step 5: **make clean;make**

Step 6: Get mboot.bin in **MBoot/sboot/out**

Note: 每一次烧录 **image** 之前都要先烧 **mboot.bin & rom_emmc_boot.bin**。a5 之前的版本升级到 a5 或者以后的版本，需要在烧录 **image** 之前都要先烧 **mboot.bin & rom_emmc_boot.bin**，然后 **reset**，然后再升级整包 **image**，因为 a3~a5 版本之间对 **MPOOL** 中 **secureinfo** 结构体里的成员顺序做了调整，否则可能无法开机。a5 之后的版本再升级无需做这个动作。

- For binary release code

Step 1: Enter **release/sboot/**

Step 2: **make**

Step 3: Get mboot.bin in **release/sboot/out**

1.2.3. Supernova

(编译前放入 **hashkey** 及 **hdckey**)

Hdcp key path: Supernova\target\europa_dtv.monet\config\certificate

Hash key path: Supernova\projects\customerinfo\inc

将 **tvos copy** 到 Supernova/projects/目录下

Build Code Flow

Step 1: Enter **Supernova/projects/** (**sn.tar.gz** 和 **tvos.tar.gz** 必须解压缩放在 **DAILEO** 目录下)

Step 3: **Check which script to use:**

[**ES-ASIA**]

./buildsettings/build_Monet_082B_ROM_EMMC_TVOS_ES_ASIA_URSA6_CMA_TEE.sh

[**TW**]

./buildsettings/build_Monet_082B_ROM_EMMC_TVOS_ES_ASIA_NTSC_ATV_URSA6_CMA_TEE.sh

[**DTMB-HK**]

./buildsettings/build_Monet_082B_ROM_EMMC_TVOS_DTMB_HK_URSA6_CMA_TEE.sh

Step 4: Execute the script by the "**source**" command, for example:

source ./buildsettings/build_Monet_082B_ROM_EMMC_TVOS_ES_ASIA_URSA6_CMA_TEE.sh

Step 5: **make rebuild_all && make image_all**

Step 6: Get images in folder

Supernova/target/dvb.monet/images/ext4/

注 1: **HK model** 須改 code

Supernova/MStarSDK/src/middleware/mheg5/mapi_mheg5.h

將 #define MHEG5_HK_FONT_DIR "/OAD/kai-pc.ttf" => #define MHEG5_HK_FONT_DIR
"/data/hkfont.ttf"

並將 hkfont.ttf 放入板子中的 data 路徑，此 ttf 於 image path 中 hkfont.rar

1.2.4. Android

Git path: **L-638-release-asean**

Build Code Flow

Step 1: export JAVA_HOME=/usr/lib/jvm/java-7-openjdk-amd64

Step 2: export JAVADOC_HOME=/usr/lib/jvm/java-7-openjdk-amd64

Step 3: mkdir L-638-release-asean

Step 4: cd L-638-release-asean

Step 5: repo init -u ssh://<Down_code_account>@119.145.230.210:26918/platform/manifest -b

L-638-release-asean

Step 6: repo sync

Step 7: repo forall -c "git config core.filemode false"
Step 8: source build/envsetup.sh
Step 9: lunch **aosp_arbutus-userdebug**
Step 10: mcheckout.sh "MONET_AN_LABEL" (plz check)
Step 11: make -j32
Step 12: releaseimage.sh
Step 13: Get images in ../images/lollipop/arbutus/

1.2.5. Linux Kernel

- Build Code Flow

Step 1: export PATH=/tools/arm/MStar/linaro-aarch64_linux-2014.09_843419-patched/bin:\$PATH
Step 2: Enter kernel/3.10.40/
Step 3: cp .config.monet.SMP.**arm64**.android.emmc.nandflash .config
Step 4: ./genlink.sh
Step 5: make menuconfig
Step 6: make clean && make
Step 7: Get Image in kernel/3.10.40/arch/**arm64**/boot/Image

1.2.6. PM

Build Code Flow

Step1: Enter pm/Zenonia/Project/Mstar/Monet
Step2: Open project PM51_Monet.Uv2
Step3: Rebuild all project.
Step4: Get Image in pm/Zenonia/Project/Mstar/Monet/ PM51_Monet.bin

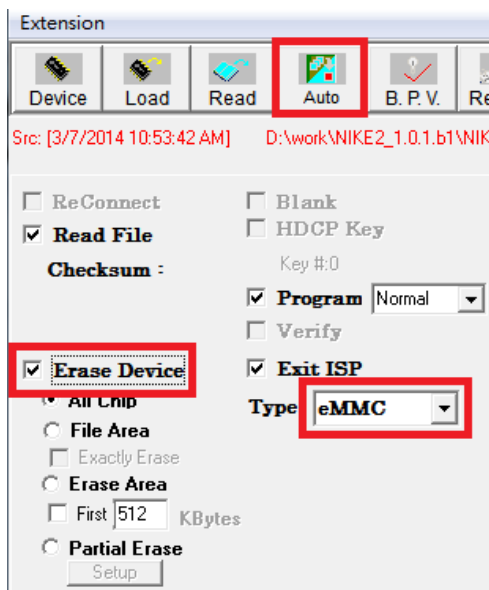
注 1：如需打开 PM 里 STR 功能，要修改 cus_config.h（Zenonia/Project/Mstar/Source）里面 kernel_debug 和 ENABLE_STR，

```
#define kernel_debug 0 ==> #define kernel_debug 1  
#define ENABLE_STR DISABLE ==> #define ENABLE_STR ENABLE
```

1.2.7. How to Update the MBoot by ISP tool

The ISP tool versions must use **v4.7.3**.

- Select the **eMMC** in Type field and check the check box **Erase Device** in the **Auto** page



b. Connect the Device

Press the button **Read**

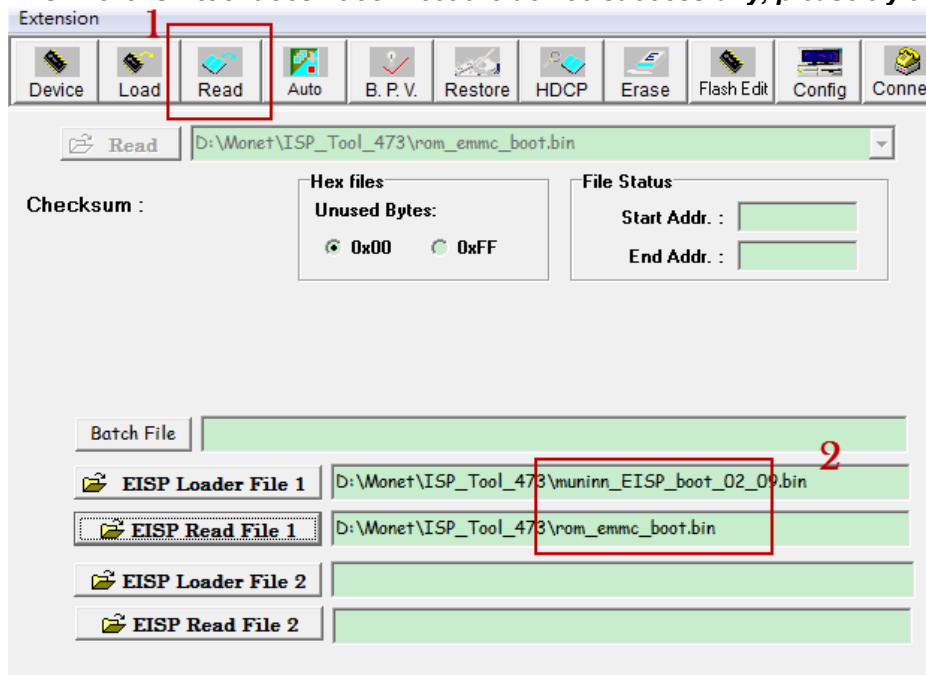
2.1 Select the room mboot files

2.1.1 EISP Loader File 1 → muninn_EISP_boot_xx_xx.bin

2.1.2 EISP Read File 1 → rom_emmc_boot.bin

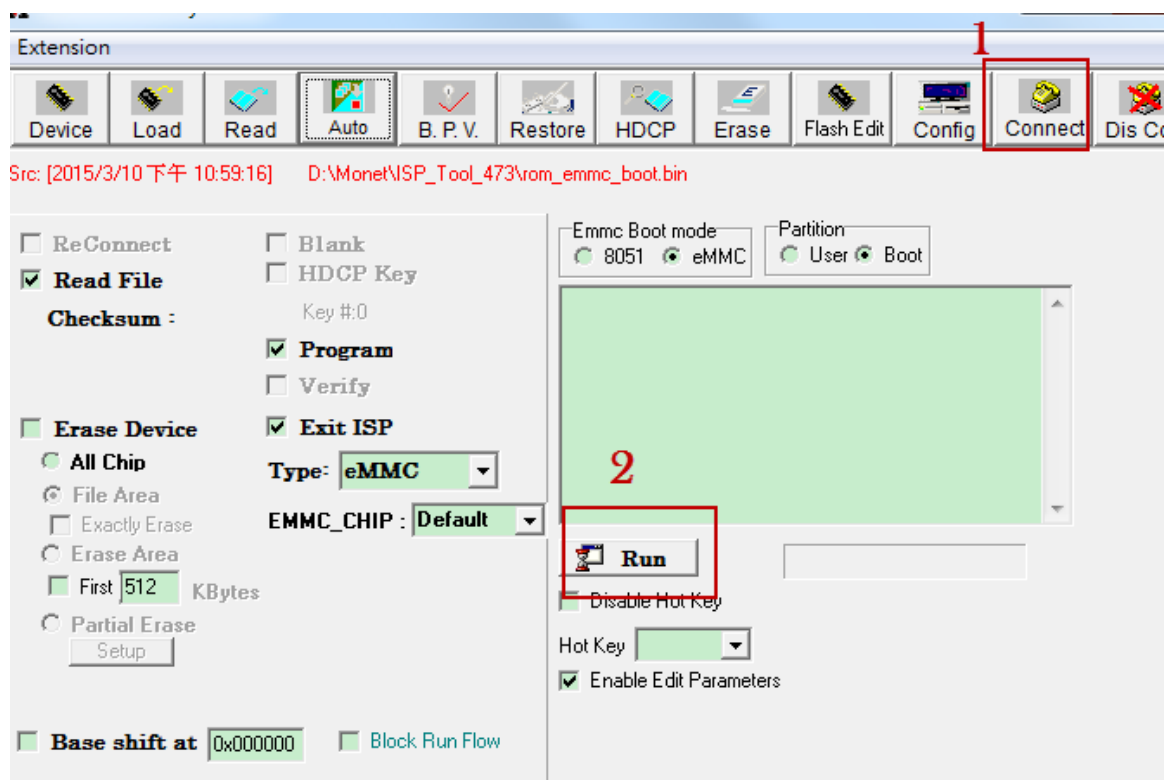
2.2 Power on the device and Press the button **Connect** immediately

PS. If the ISP tool doesn't connect the device successfully, please try the step 2.3 again.

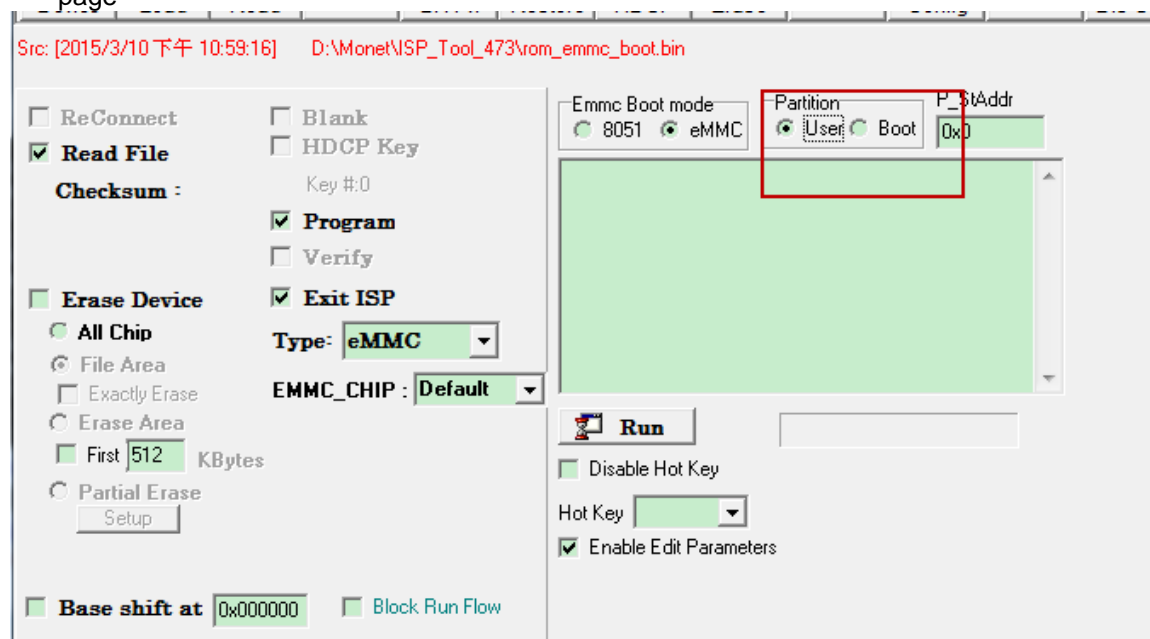


c. When the ISP tool connected the device

Press the button **Run** in the **Auto** page.



- d. Wait the progress done, and the ISP tool will show the **Pass** if the rom mboot upgrade is successfully.
- e. Select the **eMMC** in Type field ,check the check box **Erase Device** and select Partition **User** in the **Auto** page

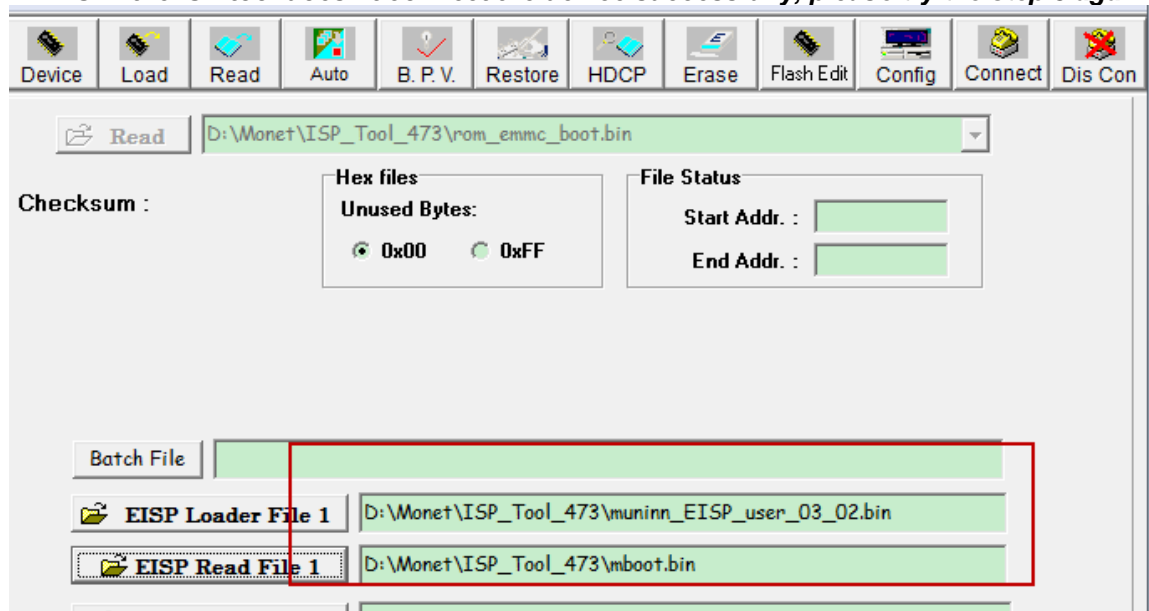


- f. **Connect the Device**
 - a. Press the button **Read**
 - b. Select the room mboot files
 - i. **EISP Loader File 1** → **muninn_EISP_user_xx_xx.bin**

ii. EISP Read File 1 → mboot.bin

c. Power on the device and Press the button **Connect** immediately

PS. If the ISP tool doesn't connect the device successfully, please try the step 3.again.



g. When the ISP tool connected the device

Press the button **Run** in the **Auto** page.

h. Wait the progress done, and the ISP tool will show the **Pass** if the rom mboot upgrade is successfully.

1.2.8. How to Update the MBoot by TFTP

Put the mboot files in the folder **mboot**, and use the following command on mboot console:

```
mstar scripts/[[mboot
```

1.2.9. How to Update Images by TFTP

Set the Mboot env variable

a. Set the MAC address (for example, your MAC address is 00:11:22:33:44:55:66):

```
setenv ethaddr 00:11:22:33:44:55:66
setenv macaddr 00:11:22:33:44:55:66
```

b. Auquire the IP address:

```
estar
dhcp
```

or set the IP address manually (for example, set the value 192.168.1.2):

```
setenv ipaddr 192.168.1.2
```

- c. Set the TFTP Server IP (for example, the server ip is 192.168.1.1)

```
setenv serverip 192.168.1.1
```

- d. Save env variable settings

```
saveenv
```

Update Images by TFTP

- a. Update Whole Image: (after setup IP and MAC address in mboot)

"正确 clean update 作法"

1. mstar [[mboot
2. 斷電/上電
3. mstar auto_update.txt

- b. Update TVOS(SN) Image: (use these commands if you only want to update TVOS partially)

```
mstar scripts/[[tvservice
mstar scripts/[[tvcustomer
mstar scripts/[[tvdatabase
mstar scripts/[[tvconfig
```

1.2.10. How to Upgarde Images by USB

把suprenova中的Img文件拷贝到android放Img的目录中也就是把suprenova的Img放到
images/lollipop/arbutus下

- a. 在 android 目录下执行 **development/scripts**
- b. 在 android 目录下执行 **./make_usb_upgrade.sh**, 依据需要升级的方档选择相应的选项。

```
-----
Please notice the three setps
1. execute the script in ANDROID_BUILD_TOP
2. all updated image files in ANDROID_BUILD_TOP/./images
3. you can change crc by 欲樣xport PATH欲? default in ANDROID_BUILD_TOP/prebuilts/tools/linux-x86/crc
-----

Android ver? 1)ics; 2)jb_4.2; 3)jb_4.2.2; 4)jb_4.3 ;5)kitkat :5
Android : kitkat
Chip? 1)amber3; 2)eagle; 3)edison; 4)kaiser; 5)nike; 6)einstein; 7)napoli; 8)madison :8
CHIP: madison
DEVICE: mango
Enable secureboot? (y/n)n
ENABLE_SECUREBOOT=0
Storage? 1)EMMC; 2)NAND :1
FS_FORMAT: EXT4
Upgrade all? (y/n)y
----- User configure -----
Android : kitkat
CHIP: madison
DEVICE: mango
ENABLE_SECUREBOOT=0
FS_FORMAT: EXT4
-----
```

- c. 在 **images/lollipop/arbutus** 下会得到 **MstarUpgrade.bin** 文件
- d. U 盘 copy 完后在 mboot 控制台下执行 **custar** 即可进行升级

2. DELIVERABLES

2.1. List of Packages

| Component | Software Package |
|--|---|
| Related tools such as TV_Tool | ISP_Tool.exe |
| Build system (build script, gcc version and other tools to build the whole system) | SN Build script: build_Monet_082B_ROM_EMMC_TVOS_ES_ASIA_URSA6_CMA_TEE.sh AN Build device: aosp_arbutus-userdebug ARM Toolchain: arm-2012.09 GCC version: 4.7.2 |
| Source codes | ===== TVOS-04.10.050.02.00.ES-ASIA.Monet ===== AN: LMR1_MONET_5.0.8 SN : SN__-04.11.24.a1 MBoot: MBOT-1106.0.44.MONET Kernel: KERN-3.10.40.1355433.Monet.config.Monet.SMP.arm64.andr oid.emmc.nandflash Utopia: UTPA2-500.3.12.Monet.a1 RT_PM: RTPM-205.0.1.Monet PM: PM-205.0.6.Monet TVOS: SN__-04.11.24.a1 TVAPK: TV_1.2.62 MM: MMAPP2_1.4.2 |

3. OTHERS

3.1. Build Process Change

N/A

3.2. Associated Tools Changes

N/A

3.3. Other Changes

1. Remount 方法有变

```
Mount -o remount rw /tvconfig/  
改为  
Mount -o remount,rw /tvconfig
```

2. Hashkey 结构有变，增加

```
/// the low byte of chip ID (Example:000B = 0x000B)  
#define INPUT_DOLBY_VER_LOW_BYTE    0x00  
/// the high byte of chip ID (Example:000B = 0x000B)  
#define INPUT_DOLBY_VER_HIGH_BYTE    0x00
```

请注意整合 hashkey