

Using UUU to download the Android images to i.MX 8M Mini EVK

LPDDR4 Board and display on OLED screen

UUU is an evolution of MFGTools. The introduction of UUU detail you can see the [uuu.pdf](#) file.. Please download [uuu.exe](#) and follow the UUU introduction.

Here are some running examples. If you are not familiar with uuu, you can refer to them firstly.

Under Windows (should be as admin):

- For SD card:
 - Linux:
 - `.\uuu -b sd_all imx-boot-imx8mmevk-sd.bin-flash_evk fsl-image-validation-imx-imx8mmevk.sdcard`
- For EMMC:
 - Linux:
 - `.\uuu -b emmc_all imx-boot-imx8mmevk-sd.bin-flash_evk fsl-image-validation-imx-imx8mmevk.sdcard`
 - or
 - `.\uuu.exe uuu.auto`
 - Android:
 - `.\uuu_imx_android_flash.bat -f imx8mm -u trusty`

Under Linux:

- For EMMC
 - Linux:
 - `sudo .\uuu uuu.auto`

If you download BSP release from [nxp.com](#), you could find a file `uuu.auto` in the package. This is a preset script that can be executed directly (default for EMMC). You could change the script based on your requirement. Copy the `uuu.exe` under the release package, then execute the instructions.

For UUU tool the prebuilt image and document are here:

- <https://github.com/NXPmicro/mfgtools/releases>
- UUU.pdf is snapshot of [wiki](#)

Environment

PC: Window 10 64bit

Board: i.MX8MMLPDDR4 EVK

BSP: Q10.0.0_2.0.0 Demo images

Screen: MX8-DSI-OLED1

Downloading android images to i.MX 8M Mini EVK LPDDR4 via UUU Tool

1\Hardware Preparations

(1) Make the board enter serial download mode.

- For Rev. B boards, change the first two bits of board's sw1101 to 10 (from 1-2 bit) to enter serial download mode.

- For Rev. C boards, change the first four bits of board's sw1101 to 1010 (from 1-4 bit) to enter serial download mode.

(2) Connecting J901to PC USB by a USB OTG cable.

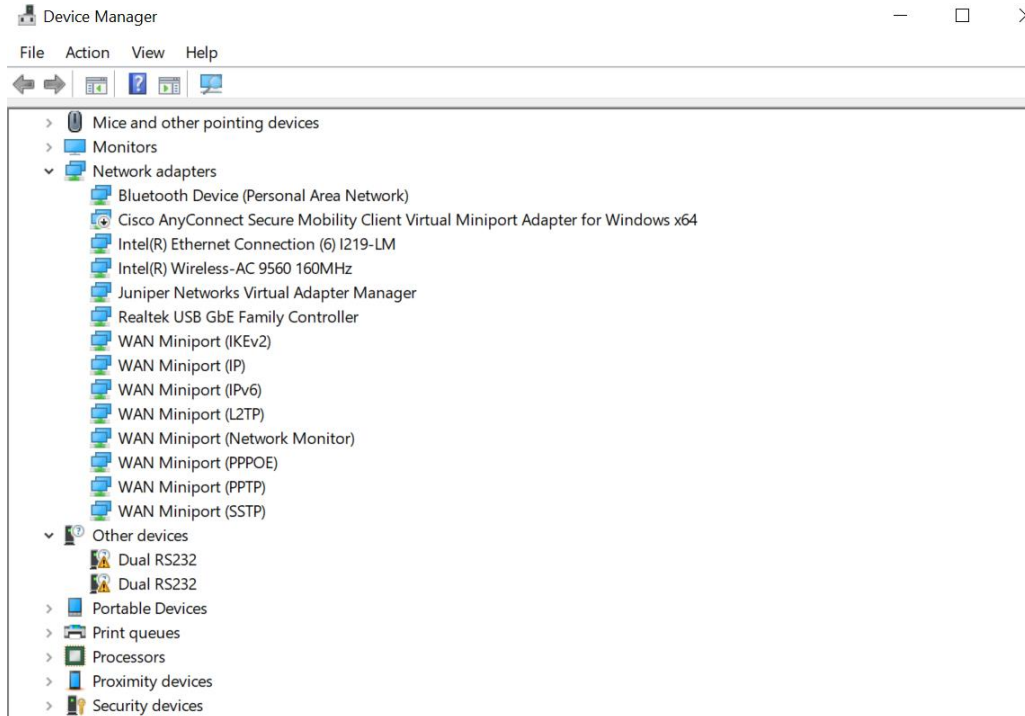
(3) Connecting J301(usb type c) to PC USB.

(4) Plugging adapter into Power Jack (J302)

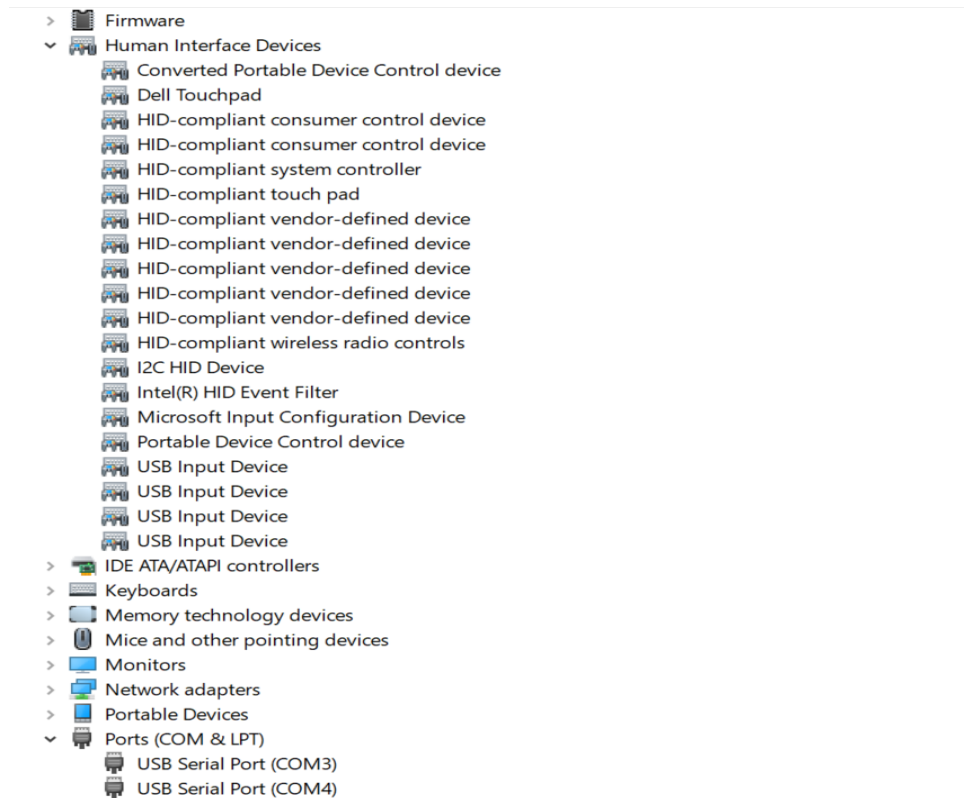
(5) Power on i.MX 8M Mini EVK LPDDR4 board via SW101 Switch



When first connect the board to PC, windows 10 64bit can't automatically install FT2232D driver from official website of manufacture, you need to Install the usb to uart driver manually:
<https://www.ftdichip.com/Drivers/D2XX.htm> Download the [setup executable](#) and then install it.

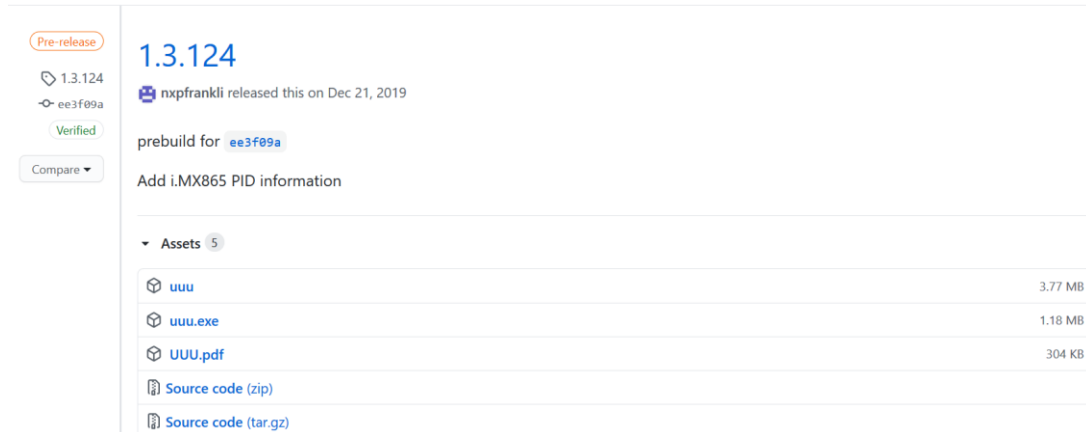


When installed success you can see the usb serial port can be used.



2\Downloading UUU Tool

For the UUU binary file, download it from github: [uuu release page on github](#).



1.3.124
Pre-release
nxpfrankli released this on Dec 21, 2019
prebuild for ee3f89a
Add i.MX865 PID information

Assets 5

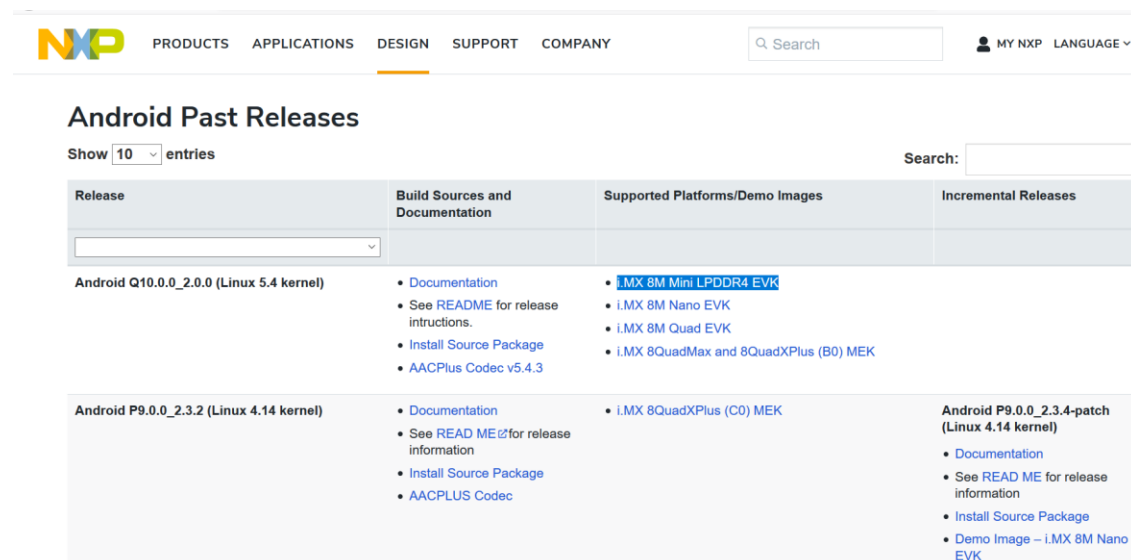
Asset	Size
uuu	3.77 MB
uuu.exe	1.18 MB
UUU.pdf	304 KB
Source code (zip)	
Source code (tar.gz)	

For the Q10.0.0_2.0.0 version use the UUU 1.3.124 version.

- For Linux OS, download the file named "uuu".
- For Windows OS, download the file named "uuu.exe".

Here I use win10 system, so I download the **uuu.exe** file.

3\Download the Q10.0.0_2.0.0 Demo images for i.MX8MM



NXP PRODUCTS APPLICATIONS DESIGN SUPPORT COMPANY

Android Past Releases

Show 10 entries Search:

Release	Build Sources and Documentation	Supported Platforms/Demo Images	Incremental Releases
Android Q10.0.0_2.0.0 (Linux 5.4 kernel)	<ul style="list-style-type: none">• Documentation• See README for release instructions.• Install Source Package• AACPlus Codec v5.4.3	<ul style="list-style-type: none">• i.MX 8M Mini LPDDR4 EVK• i.MX 8M Nano EVK• i.MX 8M Quad EVK• i.MX 8QuadMax and 8QuadXPlus (B0) MEK	
Android P9.0.0_2.3.2 (Linux 4.14 kernel)	<ul style="list-style-type: none">• Documentation• See README for release information• Install Source Package• AACPLUS Codec	<ul style="list-style-type: none">• i.MX 8QuadXPlus (C0) MEK	Android P9.0.0_2.3.4-patch (Linux 4.14 kernel) <ul style="list-style-type: none">• Documentation• See README for release information• Install Source Package• Demo Image – i.MX 8M Nano EVK

Now all the android os for i.MX products are here: [Android OS for i.MX Applications Processors](#).

Decompress release_package/android-10.0.0_2.0.0_image_8mmevk.tar.gz for LPDDR4 board.

The package contains the image files and uuu_imx_android_flash tool.

Copy **uuu.exe** to the directory of **Q10.0.0_2.0.0 Demo images**.

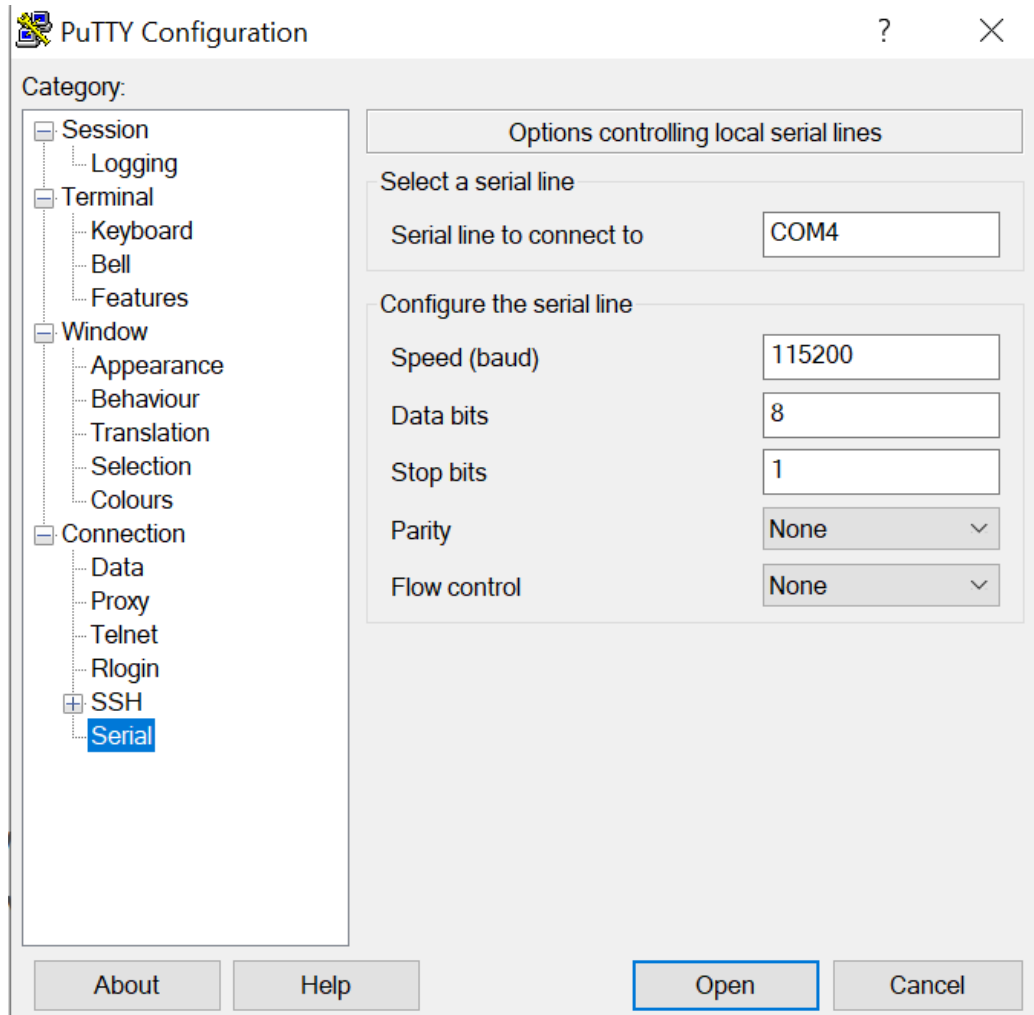
L66205 > OSDisk (C:) > Work > Products > Android BSP > New folder > Q10.0.0_2.0.0 Demo images > android-10.0.0_2.0.0_image_8mmevk

Name	Date modified	Type	Size
boot	2020/6/8 14:51	Disc Image File	65,536 KB
boot-debug	2020/6/8 14:51	Disc Image File	35,630 KB
bootloader-imx8mm-dual	2020/6/8 14:51	Disc Image File	727 KB
bootloader-imx8mm-trusty-dual	2020/6/8 14:51	Disc Image File	2,142 KB
dtbo-imx8mm	2020/6/8 14:51	Disc Image File	4,096 KB
dtbo-imx8mm-m4	2020/6/8 14:51	Disc Image File	4,096 KB
dtbo-imx8mm-mipi-panel	2020/6/8 14:51	Disc Image File	4,096 KB
EULA	2020/4/21 17:50	Text Document	37 KB
fastboot_imx_flashall	2020/6/8 14:51	Windows Batch File	28 KB
fastboot_imx_flashall	2020/6/8 14:51	SH File	26 KB
fsl-sdcard-partition	2020/6/8 14:51	SH File	17 KB
imx8mm_mcu_demo	2020/6/8 14:51	Disc Image File	40 KB
lpmake	2020/6/8 14:51	File	9,221 KB
lpmake	2020/6/8 14:51	Application	9,189 KB
NOTICE	2020/6/8 14:51	Text Document	1,598 KB
NOTICE_PRODUCT	2020/6/8 14:51	Text Document	45 KB
NOTICE_VENDOR	2020/6/8 14:51	Text Document	87 KB
partition-table	2020/6/8 14:51	Disc Image File	34 KB
partition-table-28GB	2020/6/8 14:51	Disc Image File	34 KB
partition-table-28GB-dual	2020/6/8 14:51	Disc Image File	34 KB
partition-table-dual	2020/6/8 14:51	Disc Image File	34 KB
product	2020/6/8 14:51	Disc Image File	326,281 KB
rpmb_key_test.bin	2020/6/8 14:51	BIN File	1 KB
SCR-android-10.0.0_2.0.0	2020/4/21 17:50	Text Document	37 KB
spl-imx8mm-dual.bin	2020/6/8 14:51	BIN File	175 KB
spl-imx8mm-trusty-dual.bin	2020/6/8 14:51	BIN File	211 KB
super	2020/7/29 14:02	Disc Image File	2,771,483 KB
system	2020/6/8 14:52	Disc Image File	893,089 KB
testkey_public_rsa4096.bin	2020/6/8 14:52	BIN File	2 KB
u-boot-imx8mm.imx	2020/6/8 14:52	IMX File	1,077 KB
u-boot-imx8mm-4g.imx	2020/6/8 14:52	IMX File	1,077 KB
u-boot-imx8mm-4g-evk-uuu.imx	2020/6/8 14:52	IMX File	1,099 KB
u-boot-imx8mm-evk-uuu.imx	2020/6/8 14:52	IMX File	1,099 KB
u-boot-imx8mm-trusty.imx	2020/6/8 14:52	IMX File	2,493 KB
u-boot-imx8mm-trusty-4g.imx	2020/6/8 14:52	IMX File	2,492 KB
u-boot-imx8mm-trusty-secure-unlock.imx	2020/6/8 14:52	IMX File	2,518 KB
uuu	2020/7/29 11:31	Application	1,212 KB
uuu_imx_android_flash	2020/6/8 14:52	Windows Batch File	42 KB
uuu_imx_android_flash	2020/6/8 14:52	SH File	38 KB
vbmeta-imx8mm	2020/6/8 14:52	Disc Image File	4 KB
vbmeta-imx8mm-m4	2020/6/8 14:52	Disc Image File	4 KB
vbmeta-imx8mm-mipi-panel	2020/6/8 14:52	Disc Image File	4 KB
vendor	2020/6/8 14:52	Disc Image File	172,993 KB

4) Execute the `uuu_imx_android_flash` to flash image

Power on the board.

Open the serial port terminal and setting as following:



Open a **command line window**.

For the use and the Options for `uuu_imx_android_flash` tool details can see the Table 2 in the `Android_Quick_Start_Guide`.

Here I use the OLED screen, to test MIPI panel output, need execute the tool with "`-d mipi-panel`".

So here I use the `.\uuu_imx_android_flash.bat -f imx8mm -e -d mipi-panel`.

When I use the download I meet the follow question:

```
C:\Work\Products\Android BSP\New folder\Q10.0.0_2.0.0 Demo images\android-10.0.0_2.0.0_image_8mmevk>.\uuu_imx_android_flash.bat -f imx8mm -e -d mipi-panel
```

This script is validated with uuu 1.3.124 version, it is recommended to align with this version.

dtbo is supported

dual slot is supported

dynamic partition is supported

You do not have sufficient privilege to perform this operation.

```
C:\Work\Products\Android BSP\New folder\Q10.0.0.2.0.0 Demo images\android-10.0.0.2.0.0_image_8mmevk>.uuu_imx_android_flash.bat -f imx8mm -a -e
This script is validated with uuu 1.3.124 version, it is recommended to align with this version.
dtbo is supported
dual slot is supported
dynamic partition is supported
You do not have sufficient privilege to perform this operation.
C:\Work\Products\Android BSP\New folder\Q10.0.0.2.0.0 Demo images\android-10.0.0.2.0.0_image_8mmevk>
```

So here can change to use the Windows PowerShell, it works well and finished download.

```
Administrator: Windows PowerShell
PS C:\Work\Products\Android BSP\New folder\Q10.0.0.2.0.0 Demo images\android-10.0.0.2.0.0_image_8mmevk>.uuu_imx_android_flash.bat -f imx8mm -e -d mipi-panel
This script is validated with uuu 1.3.124 version, it is recommended to align with this version.
dtbo is supported
dual slot is supported
dynamic partition is supported
generate lines to flash u-boot-imx8mm.img to the partition of bootloader0
generate lines to flash partition-table.img to the partition of gpt
generate lines to flash dtbo-imx8mm-mipi-panel.img to the partition of dtbo_a
generate lines to flash boot.img to the partition of boot_a
generate lines to flash vmeta-imx8mm-mipi-panel.img to the partition of vmeta_a
generate lines to flash dtbo-imx8mm-mipi-panel.img to the partition of dtbo_b
generate lines to flash boot.img to the partition of boot_b
generate lines to flash vmeta-imx8mm-mipi-panel.img to the partition of vmeta_b
ipmake.exe I 07-29 14:02:06 16444 20148 builder.cpp:937 [liblp]Partition system_a will resize from 0 bytes to 918179840 bytes
ipmake.exe I 07-29 14:02:06 16444 20148 builder.cpp:937 [liblp]Partition system_b will resize from 0 bytes to 918179840 bytes
ipmake.exe I 07-29 14:02:06 16444 20148 builder.cpp:937 [liblp]Partition vendor_a will resize from 0 bytes to 536870912 bytes
ipmake.exe I 07-29 14:02:06 16444 20148 builder.cpp:937 [liblp]Partition vendor_b will resize from 0 bytes to 536870912 bytes
ipmake.exe I 07-29 14:02:06 16444 20148 builder.cpp:937 [liblp]Partition product_a will resize from 0 bytes to 335319040 bytes
ipmake.exe I 07-29 14:02:06 16444 20148 builder.cpp:937 [liblp]Partition product_b will resize from 0 bytes to 335319040 bytes
generate lines to flash super.img to the partition of super
uuu script generated, start to invoke uuu with the generated uuu script
uuu (Universal Update Utility) for nxp imx chips -- lib1.3.124-0-gee3f09a
Success 1 Failure 0
PS C:\Work\Products\Android BSP\New folder\Q10.0.0.2.0.0 Demo images\android-10.0.0.2.0.0_image_8mmevk>
```

Power off the board.

5\Boot up the board from emmc

Set boot mode

For Rev. C boards:

- Change sw1101 to 0110110010 and change sw1102 to 0001101000 if you want to boot from SD card.
- Change sw1101 to 0110110001 and change sw1102 to 0001010100 if you want to boot from eMMC.

Set the U-Boot environment variables for the MIPI panel display

```
U-Boot > setenv bootargs console=ttyMXC1,115200 earlycon=ec_imx6q,0x30890000,115200
```

```
init=/init
```

```
androidboot.console=ttyMXC1 androidboot.hardware=freescale cma=800M@0x400M-0xb80M
```

```
androidboot.primary_display=imx-drm firmware_class.path=/vendor/firmware
```

```
transparent_hugepage=never androidboot.wificountrycode=CN androidboot.lcd_density=240
```

```
U-Boot > saveenv
```

Then use the boot to boot up and then display on OLED screen.