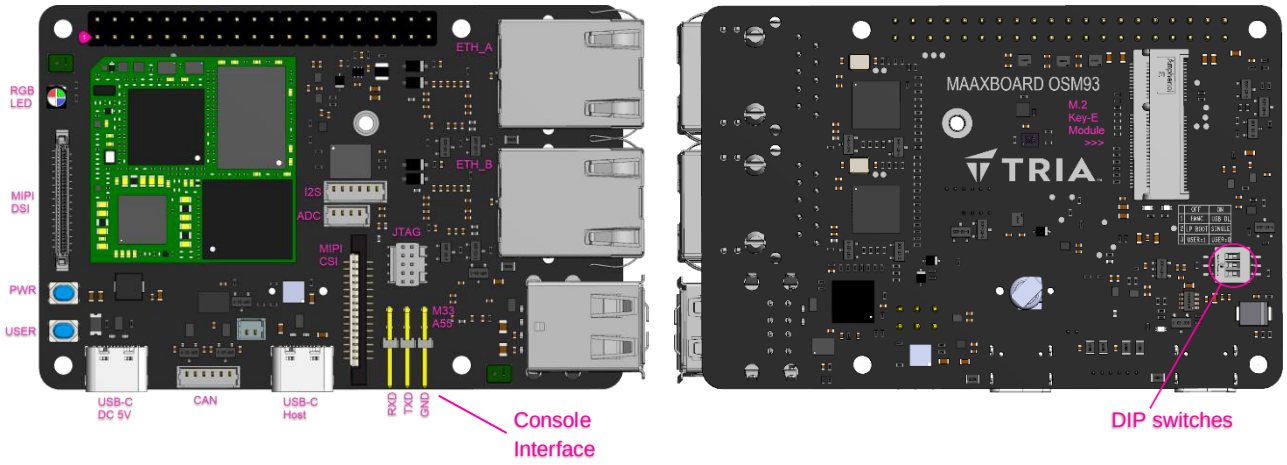
MAAXBOARD OSM93 Quick-Start Guide



A. Procedure for Out-of-Box Operation

1. With the board disconnected from 5V power, ensure **DIP SW1.1** is **OFF**, for boot from **EMMC** flash:

SW1.1	EMMC / USB DL	**OFF**	
SW1.2	LP BOOT / SINGLE BOOT	**OFF**	
SW1.3	USER ON / OFF	**OFF**	

2. Connect a **USB-to-serial cable** (any inexpensive aftermarket USB Serial cable can be used) from the debug header A55 (**lower-row**) pins, to a USB port on the development computer

3. Open a **serial console** (eg. Tera Term), select the COM port# for this cable and apply these settings:
   - Baud rate: 115200
   - Data bits: 8
   - Parity: None
   - Stop bits: 1

4. Connect an **Ethernet cable** from **ETH_A** (J5) or **ETH_B** (J2) to your network router (board should be on same sub-LAN as the development computer)

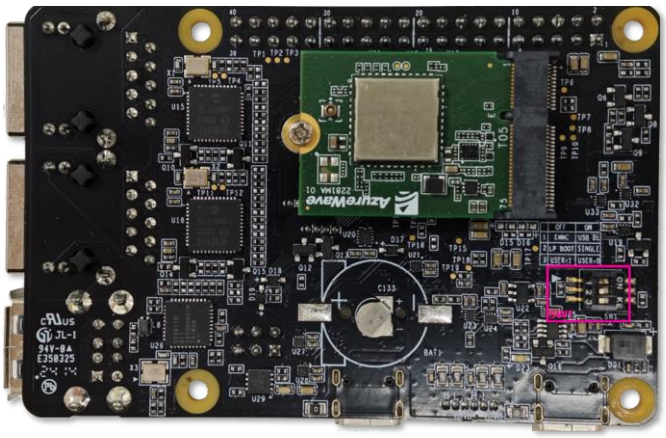
5. Connect a **5V 2A power** source to MaaXBoard OSM93 **DC 5V** power-input USB-C connecter (J11), to power-up and boot the board (there is no need to press the PWR button).

6. The RGB LED will illuminate RED and uboot and Linux boot log messages will display on the serial console while the board boots-up.

7. Enter **root** to login, when the Linux login prompt appears in the console window.

8. Enter **uname -a** at commandline prompt to check the installed Linux OS version, then check the product page website to see if this the latest version of the Linux BSP. Links to latest prebuilt images are located under "**Reference Designs**" tab, in the "**Technical Documents**" area of avnet.me/maaxboard-osm93 product page. If the reported kernel version is earlier than these latest image files, then consider upgrading to the latest version, using the re-flashing procedure on the next page.

9. Make sure to re-visit frequently this avnet.me/maaxboard-osm93 for latest technical documents, reference designs, links to FAQs, blogs and training material.



B. Procedure to re-flash the board with a pre-built BSP image *(optional)*

1) Download the following files into a staging folder on your development computer:
   - from https://github.com/nxp-imx/mfgtools/releases
   - from https://avnet.me/maaxboard-osm93 (under "*Reference Designs*" tab)

Description	Example File Name
NXP uuu update utility	**uuu.exe** (Windows) / **uuu** (Ubuntu) / …
u-boot image	u-boot-maaxboard-osm93.imx
Linux system image	avnet-image-full-maaxboard-osm93.rootfs-20241122034816.wic

2) With the board disconnected from 5V power, set **DIP SW1.1 to ON,** for **USB DL** mode:

SW1.1	EMMC / USB DL		**ON**
SW1.2	LP BOOT / SINGLE BOOT	**OFF**	
SW1.3	USER ON / OFF	**OFF**	

3) **Note**! In this case, the board needs to receive USB data connection ***and*** 5V power from the host computer. Connect a USB-C cable from (J11) **USB-C** connector, to a USB port on the host computer.

4) From command line on this host PC, **cd** into the staging directory, then run appropriate commands:

   Windows:

   `uuu -b emmc_all <u-boot image> <Linux image>`

   e.g.

   `uuu -b emmc_all u-boot-maaxboard-osm93.imx avnet-image-full-maaxboard-osm93.rootfs-20241122034816.wic`

   Ubuntu:

   `./uuu -b emmc_all <u-boot image> <Linux image>`

   e.g.

   `./uuu -b emmc_all u-boot-maaxboard-osm93.imx avnet-image-full-maaxboard-osm93.rootfs-20241122034816.wic xxx`

5) After flashing of the board is completed, powerdown the board, then remove the **USB-C cable** from the type-C **USB_B** connector and set DIP **SW1.1** back to the **EMMC boot** setting.

SW1.1	EMMC / USB DL	**OFF**	

6) Power-up to boot the board now from the new images in eMMC flash memory...
   After login, follow the procedure on next page, to **increase the partition size** in eMMC flash memory

C. Procedure to Increase the Partition Size

If an updated image has been programmed, this is smaller than the available eMMC flash storage and the programmed partition is not properly expanded. To avoid running-out of eMMC space when installing additional applications and other files, perform the following steps to expand the rootfs partition.

Check the Partition Size using this command: **`df -h`**

```
root@maaxboardosm93:~# df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/root       4.9G  2.9G  1.8G  63% /
devtmpfs        196M  4.0K  196M   1% /dev
tmpfs           454M     0  454M   0% /dev/shm
tmpfs           182M  9.3M  173M   6% /run
tmpfs           4.0M     0  4.0M   0% /sys/fs/cgroup
tmpfs           454M  8.0K  454M   1% /tmp
tmpfs           454M  196K  454M   1% /var/volatile
/dev/mmcblk0p1   84M   34M   50M  41% /run/media/boot-mmcblk0p1
tmpfs            91M  4.0K   91M   1% /run/user/0
```

Expand the Partition using this command: **`expand_rootfs`**

```
root@maaxboardosm93:~# expand_rootfs
[ 8554.839080] EXT4-fs (mmcblk0p2): resizing filesystem from 1340871 to 3803136 blocks
[ 8554.914794] EXT4-fs (mmcblk0p2): resized filesystem to 3803136
Expand rootfs size successfully, it will be enlarged upon the next reboot.
```

Re-check the Partition Size using this command: **`df -h`**

```
root@maaxboardosm93:~# df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/root        14G  2.9G   11G  22% /
devtmpfs        196M  4.0K  196M   1% /dev
tmpfs           454M     0  454M   0% /dev/shm
tmpfs           182M  9.3M  173M   6% /run
tmpfs           4.0M     0  4.0M   0% /sys/fs/cgroup
tmpfs           454M  8.0K  454M   1% /tmp
tmpfs           454M  196K  454M   1% /var/volatile
/dev/mmcblk0p1   84M   34M   50M  41% /run/media/boot-mmcblk0p1
tmpfs            91M  4.0K   91M   1% /run/user/0
```

D. How to Exercise the BSP and NXP GoPoint Examples

Please refer to the instructions provided, in latest MaaXBoard-OSM93-Yocto-UserManual document on the avnet.me/maaxboard-osm93 product page…