Steps to Flash Firmware from SDCard

1. Initial Setup:

Open a serial connection to the serial port/Console port the device is connected to. Use the following settings

a. Port: Serial port where the device is attached
b. Baud rate: 115200
c. Data Bits: 8
d. Parity: None
e. Stop Bits: 1
f. Flow control: None

2. Flashing u-boot in the SD card

2. Create a bootable microSD card from U-Boot image
    a. Format SD card. Insert SD card into laptop using SD card adapter.
    b. Use below command in terminal
    sudo dd if=<path/filename.imx> of=/dev/<sdcard> bs=512 seek=2 oflag=sync

    Example:
    sudo dd if=<path/u-boot-ccimx6qsbc.imx> of=/dev/mcblk0 bs=512 seek=2 oflag=sync

3. Instructions for booting from the SD card

1. Power off the device
2. Insert the micro SD card into the micro SD card holder (bottom side of the board).
3. Change the boot source configuration to boot from the micro SD card. To do so, Keep Button Pressed during first 3 sec of power up.
4. Power on the device.
5. Ensure U-boot messages are visible on the console.

4. Update bootloader from microSD card to Flash:

1. Place the U-Boot binary , <boot-file>.boot.vfat , <recovery-file>.recovery.vfat , <rootfs-file>.rootfs.ext4 inside the FAT formatted **u-boot image installed** sdcard.
2. Insert the micro Sdcard in the board.
3. Run the following command to update U-Boot into the eMMC.

    =>update uboot mmc 1 fat <u-boot-filename>.imx

4. Power-cycle the board. The target now boots from the eMMC

5. Update Yocto Kernel firmware from micro SD :

The microSD card must be FAT formatted.

To program Yocto from the microSD card:

- Power off the device.
- Get the Yocto firmware images on SD Card:
    a. <boot-file>.boot.vfat
    b. <recovery-file>.recovery.vfat
    c. <rootfs-file>.rootfs.ext4
- Place the images in the root of the FAT formatted microSD card.
- Connect the board to your host computer
- Open Console terminal
- Reset the device (press the Reset button on the board) and immediately press a key in the serial terminal to stop the auto-boot process. You will be stopped at the U-Boot bootloader prompt.
- Configure the partition table of eMMC to hold Yocto images. To do so, execute these commands:
    ⇨ setenv mmcdev 0
    ⇨ env default -a -f
    ⇨ run partition_mmc_linux
    ⇨ saveenv
    powercycle
- Update the boot image by executing this command:
    ⇨ update linux mmc 1 fat <boot-file>. boot. vfat
- Wait until the process ends, then update the root file system image by issuing this command
    ⇨ update rootfs mmc 1 fat <rootfs-file>. rootfs. ext4
- Wait until the process ends, then update the recovery image by executing this command:
    ⇨ update recovery mmc 1 fat <recovery-file>. recovery. vfat
- Change the default boot command in U-Boot to boot from the eMMC by issuing these commands:
    ⇨ setenv bootcmd dboot linux mmc
    ⇨ saveenv
- boot the device with the firmware you have just programmed by issuing the command => boot

6. Update Application from micro SD :

The microSD card must be FAT formatted.

- Power ON the unit wait until system boots up
- Login as “root”
- Send below command on console terminal

  mkdir /mnt/sdc
  mount -t vfat /dev/mmcblk1p1 /mnt/sdc
  cd /mnt/sdc/
  chmod 777 Setup.sh
  ./Setup.sh

- Check for below Messages, should not get any error messages in between

  Mounting SD Card
  Configuring Wi-Fi
  Configuring Web Server
  Copying Application
  Starting DHCP
  Setting Serial number

  - ⇨ Enter 16 character Serial Number, where last 8 characters are numeric and unique to each part
  - ⇨ Terminal Displays the “Passphrase” configured for this unit

  Setting root Password

  - ⇨ Set Password as “Allergen_lock”
  - ⇨ Reenter Password as “Allergen_lock”

- Send below command

  reboot

- Check All LED’s are displayed after bootup
- Check if you are able to connect to Wifi with below credentials

  SSID: Allergen_<Serial Number>
  Passphrase: < Passphrase >