



How to upgrade the Firmware on the STM32_DVM_PiHat V2 (Red) Board

This guide assumes you are Running a Pi_Star image and that you wish to upgrade firmware on a STM32_DVM_PiHat .

Log into Pi-Star’s HTML configuration page, or connect to its IP address via SSH using a application such as PuTTY.

Login Defaults -> usr:pi-star -- pwd:raspberrypi

If using SSH, proceed as below. If connecting via the HTML configurator, go to Admin->Expert->SSH Access then login.

```

pi-star@pi-star(rw) :~$ sudo -s                                *gives ROOT permissions
root@pi-star(rw) : rpi-rw                                     *makes file system read/write
root@pi-star(rw) : mv /etc/mmdvmhost /etc/mmdvmhost.save      *rename mmdvmhost so it won't auto
                                                                start and interrupt us while upgrading
root@pi-star(rw) : cd /home/pi-star                           *go to pi-star directory
root@pi-star(rw) : wget -N http://dvswitch.org/files/HAM/MMDVM/stm32flash *get flash utility
root@pi-star(rw) : wget -N http://dvswitch.org/files/HAM/MMDVM/Version_2_Firmware/mmdvm.hex *get Firmware
root@pi-star(rw) : chmod +x stm32flash                       *make flash utility executable

```

Shutdown the Raspberry Pi
Disconnect power to Raspberry Pi

Now you need to put the board in bootloader mode:

Insert JP1 (Or short pins with tweezers or similar)

Power ON the Raspberry Pi *** NOTE: Jumper does NOT need to remain shorted once processor is in boot mode.

PWR, ACT and DMR should be lit solid, NOT flashing.

*** If the LEDs are NOT in this configuration, STOP!! Re-do the short/power-on procedure described above until they are.

Wait for the Pi to reboot, log into the Raspberry Pi via SSH or via web SSH access as above; then:

```

pi-star@pi-star(rw) :~$ sudo -s
root@pi-star(rw) : rpi-rw
root@pi-star(rw) : cd /home/pi-star                            *go to pi-star directory
root@pi-star(rw) : ./stm32flash -v -w mmdvm.hex -R /dev/ttyAMA0 *Do the actual flash programming

```

The response to the above command should be:

```

stm32flash 0.5
http://stm32flash.sourceforge.net/
Interface serial_posix: 57600 8E1
Version : 0x22
Option 1 : 0x00
Option 2 : 0x00
Device ID : 0x0418 (STM32F105xx/F107xx)
- RAM : 64KiB (4096b reserved by bootloader)
- Flash : 256KiB (size first sector: 2x2048)
- Option RAM : 16b
- System RAM : 18KiB
Write to memory
Erasing memory
Wrote and verified address 0x0800fec8 (100.00%) Done.

```

Once writing is successful, do some clean up:

```

root@pi-star(rw) : mv /etc/mmdvmhost.save /etc/mmdvmhost      *"re-enable" mmdvmhost

```

***Insure JP1 is no longer shorted

```

root@pi-star(rw) : reboot

```