How to upgrade the Firmware on the
STM32_DVM_USB V2 (Red) Board

This guide assumes you are Running a Pi_Star image and that you wish to upgrade firmware on a STM32_DVM_USB.

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:raspberry

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
`root@pi-star(rw):`	*reboot*	

Wait for the Pi to reboot.
Now you need to put the board in bootloader mode:

UNPLUG the USB cable from the Raspberry Pi to the DVM.
Insert JP1 jumper (Or short pins with tweezers or similar)
CONNECT the USB cable   ***NOTE: Jumper does NOT need to remain shorted after 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.

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/ttyUSB0*	*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
`root@pi-star(rw):`	*reboot*	