

1. 进入 ssh
2. 输入 `cd ~`
3. 输入 `rpi-rw`
4. 输入 `git clone https://github.com/juribeparada/MMDVM\_HS`

```
pi-star@pi0-star(rw):~$ git clone https://github.com/juribeparada/MMDVM_HS
Cloning into 'MMDVM_HS'...
remote: Enumerating objects: 2228, done.
remote: Total 2228 (delta 0), reused 0 (delta 0), pack-reused 2228
Receiving objects: 100% (2228/2228), 593.46 KiB | 290.00 KiB/s, done.
Resolving deltas: 100% (1643/1643), done.
Checking connectivity... done.
pi-star@pi0-star(rw):~$
```

5. 输入 `ll MMDVM_HS/configs/`

```
pi-star@pi0-star(rw):~$ ll MMDVM_HS/configs/
total 52
-rw-r--r-- 1 pi-star pi-star 3117 Jan 15 19:20 generic_duplex_gpio.h
-rw-r--r-- 1 pi-star pi-star 3117 Jan 15 19:20 generic_gpio.h
-rw-r--r-- 1 pi-star pi-star 3134 Jan 15 19:20 MMDVM_HS_Dual_Hat-12mhz.h
-rw-r--r-- 1 pi-star pi-star 3134 Jan 15 19:20 MMDVM_HS_Dual_Hat.h
-rw-r--r-- 1 pi-star pi-star 3134 Jan 15 19:20 MMDVM_HS_Hat-12mhz.h
-rw-r--r-- 1 pi-star pi-star 3111 Jan 15 19:20 MMDVM_HS_Hat.h
-rw-r--r-- 1 pi-star pi-star 3097 Jan 15 19:20 NanoDV_NPI.h
-rw-r--r-- 1 pi-star pi-star 3094 Jan 15 19:20 NanoDV_USB.h
-rw-r--r-- 1 pi-star pi-star 3109 Jan 15 19:20 Nano_hotSPOT.h
-rw-r--r-- 1 pi-star pi-star 3114 Jan 15 19:20 ZUMspot_duplex.h
-rw-r--r-- 1 pi-star pi-star 3114 Jan 15 19:20 ZUMspot_Libre.h
-rw-r--r-- 1 pi-star pi-star 3114 Jan 15 19:20 ZUMspot_RPi.h
-rw-r--r-- 1 pi-star pi-star 3114 Jan 15 19:20 ZUMspot_USB.h
pi-star@pi0-star(rw):~$
```

6. 输入 `nano MMDVM_HS/configs/MMDVM_HS_Hat.h`
MMDVM_HS_Hat.h 是你的板子的配置文件，自己选择
7. 找到文件末尾处“`// #define DISABLE_FREQ_CHECK`”和“`// #define DISABLE_FREQ_BAND`”

```
// Disable frequency bands check
// #define DISABLE_FREQ_CHECK

// Disable frequency restrictions (satellite, ISS, etc)
// #define DISABLE_FREQ_BAND

#endif
```

将句首的“`//`”去掉

8. 按 `CTRL+X`, `Y`, 确认保存

```
// #define ADF7021_12_2880

Save modified buffer (ANSWERING "No" WILL DESTROY CHANGES) ?
Y Yes
N No      ^C Cancel
```

9. 输入 `sudo MMDVM_HS/scripts/install_buildtools.sh`

```
pi-star@pi0-star(rw):~$ sudo MMDVM_HS/scripts/install_buildtools.sh
Hit http://mirrordirector.raspbian.org jessie InRelease
Hit http://archive.raspberrypi.org jessie InRelease
Get:1 http://httpredir.debian.org jessie-backports InRelease [166 kB]
Hit http://mirrordirector.raspbian.org jessie/main armhf Packages
Hit http://archive.raspberrypi.org jessie/main armhf Packages
Hit http://archive.raspberrypi.org jessie/ui armhf Packages
Hit http://mirrordirector.raspbian.org jessie/contrib armhf Packages
Hit http://mirrordirector.raspbian.org jessie/non-free armhf Packages
Hit http://httpredir.debian.org jessie-backports/main armhf Packages
Hit http://mirrordirector.raspbian.org jessie/rpi armhf Packages
Hit http://httpredir.debian.org jessie-backports/contrib armhf Packages
Hit http://httpredir.debian.org jessie-backports/non-free armhf Packages
Hit http://httpredir.debian.org jessie-backports/main Translation-en
Hit http://httpredir.debian.org jessie-backports/contrib Translation-en
Hit http://httpredir.debian.org jessie-backports/non-free Translation-en
Ign http://archive.raspberrypi.org jessie/ui Translation-en
Ign http://archive.raspberrypi.org jessie/main Translation-en
Ign http://mirrordirector.raspbian.org jessie/contrib Translation-en
Ign http://mirrordirector.raspbian.org jessie/main Translation-en
Ign http://mirrordirector.raspbian.org jessie/non-free Translation-en
Ign http://mirrordirector.raspbian.org jessie/rpi Translation-en
Fetched 166 kB in 25s (6,392 B/s)
Reading package lists... Done
Reading package lists... Done
Building dependency tree
Reading state information... Done
gcc-arm-none-eabi is already the newest version.
gdb-arm-none-eabi is already the newest version.
libnewlib-arm-none-eabi is already the newest version.
libstdc++-arm-none-eabi-newlib is already the newest version.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
Cloning into 'stm32flash'...
remote: Enumerating objects: 1321, done.
remote: Counting objects: 100% (1321/1321), done.
remote: Compressing objects: 100% (646/646), done.
remote: Total 1321 (delta 888), reused 996 (delta 671)
```

10. 输入 `sudo MMDVM_HS/scripts/build_fw.sh`

```
pi-star@pi0-star(rw):~$ sudo MMDVM_HS/scripts/build_fw.sh
rm -f obj_f1/DMRDMOTX.o obj_f1/IOArduino.o obj_f1/SerialRB.o obj_f1/SerialArduino.o obj_f1/NXDNRX.o obj_f1/Utils.o obj_f1/ADF70
RX.o obj_f1/SerialPort.o obj_f1/DStarRX.o obj_f1/IO.o obj_f1/DMRRX.o obj_f1/CalDMR.o obj_f1/DMRSlotRX.o obj_f1/ADF70
CalRSSI.o obj_f1/DStarTX.o obj_f1/CWIdTX.o obj_f1/DMRIdleRX.o obj_f1/YSFTX.o obj_f1/P25RX.o obj_f1/MMDVM_HS.o obj_f1
stm32f10x_iwdg.o obj_f1/stm32f10x_gpio.o obj_f1/stm32f10x_exti.o obj_f1/system_stm32f10x.o obj_f1/startup_stm32f10x.o
obj_f1/usb.o obj_f1/usb_reg_map.o obj_f1/usb_regs.o obj_f1/usb_core.o obj_f4/DMRDMOTX.o obj_f4/IOArduino.o obj_f4/Serial
f4/POCSAGTX.o obj_f4/YSFRX.o obj_f4/SerialSTM.o obj_f4/DMRDMORX.o obj_f4/SerialPort.o obj_f4/DStarRX.o obj_f4/IO.o o
obj_f4/DMRTX.o obj_f4/NXDNTX.o obj_f4/DMRSlotType.o obj_f4/CalRSSI.o obj_f4/DStarTX.o obj_f4/CWIdTX.o obj_f4/DMRId
/DMRDMOTX.o obj_f7/IOArduino.o obj_f7/SerialRB.o obj_f7/SerialArduino.o obj_f7/NXDNRX.o obj_f7/Utils.o obj_f7/IOSTM
SerialPort.o obj_f7/DStarRX.o obj_f7/IO.o obj_f7/DMRRX.o obj_f7/CalDMR.o obj_f7/DMRSlotRX.o obj_f7/ADF7021.o obj_f7/
j_f7/DStarTX.o obj_f7/CWIdTX.o obj_f7/DMRIdleRX.o obj_f7/YSFTX.o obj_f7/P25RX.o obj_f7/MMDVM_HS.o obj_f7/P25TX.o
rm -f GitVersion.h
Already up-to-date.
echo "#define GITVERSION \"8d77ff3\"" > GitVersion.h
mkdir bin
mkdir obj_f1
arm-none-eabi-g++ -Os -fno-exceptions -ffunction-sections -fdata-sections -nostdlib -fno-rtti -DCUSTOM_NEW -DNO_EXCE
extra -I. -I./STM32F10X_Lib/CMSIS/ -I./STM32F10X_Lib/Device/ -I./STM32F10X_Lib/STM32F10X_StdPeriph_Driver/inc/ -I./S
-DVECT_TAB_OFFSET=0x2000 -DMADEBYMAKEFILE DMRDMOTX.cpp -o obj_f1/DMRDMOTX.o
```

11. 输入 `sudo pistar-mmdvmhshatflash-custom MMDVM_HS/bin/mmdvm_hs_hat_fw.bin`
刷固件。mmdvm_hs_hat_fw.bin 为刚才编译好的固件，自己选择刚才改好编译的