

Manual Flash Firmware Baud115200bps troubleshoot freezing

Prepare work.

Demo video in YouTube : https://youtu.be/VDdDw2W6GhI?si=dm_gh2b6JHz-6fmW

Enter webSSH mode , excute command. Support WPSD, Official Pi-Star. **Change wpsd, pi-star to your hotspot IP if can't visit.**

<http://wpsd:2222/> WPSD

<http://pi-star:2222> Official Pi-Star

<http://pi-star:4200> J-Star

or use Windows Powershell connect to ssh , not all Windows env support, you can also use other ssh mode, login Raspbian use port:22 ,ssh.

ssh pi-star@192.168.31.10 change the IP to your pi-star/wpsd IP address .

Start flash firmware

Setp 1th ,Enter flash mode

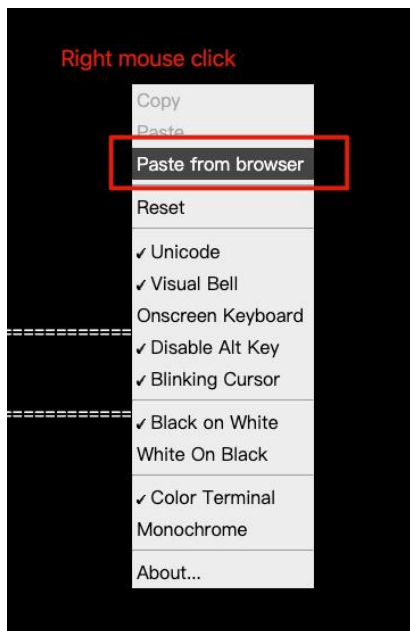
Copy this command,

```
sudo curl https://www.bi7jta.org/files/MMDVM_Firmware/repeater_HAT/reboot_flash/2.1.enter_flash_mode-not-need-poweroff.sh | sudo sh
```

Right click your mouse in webSSH,

Paste to command line ,

click Keyboard [Enter] to execute.

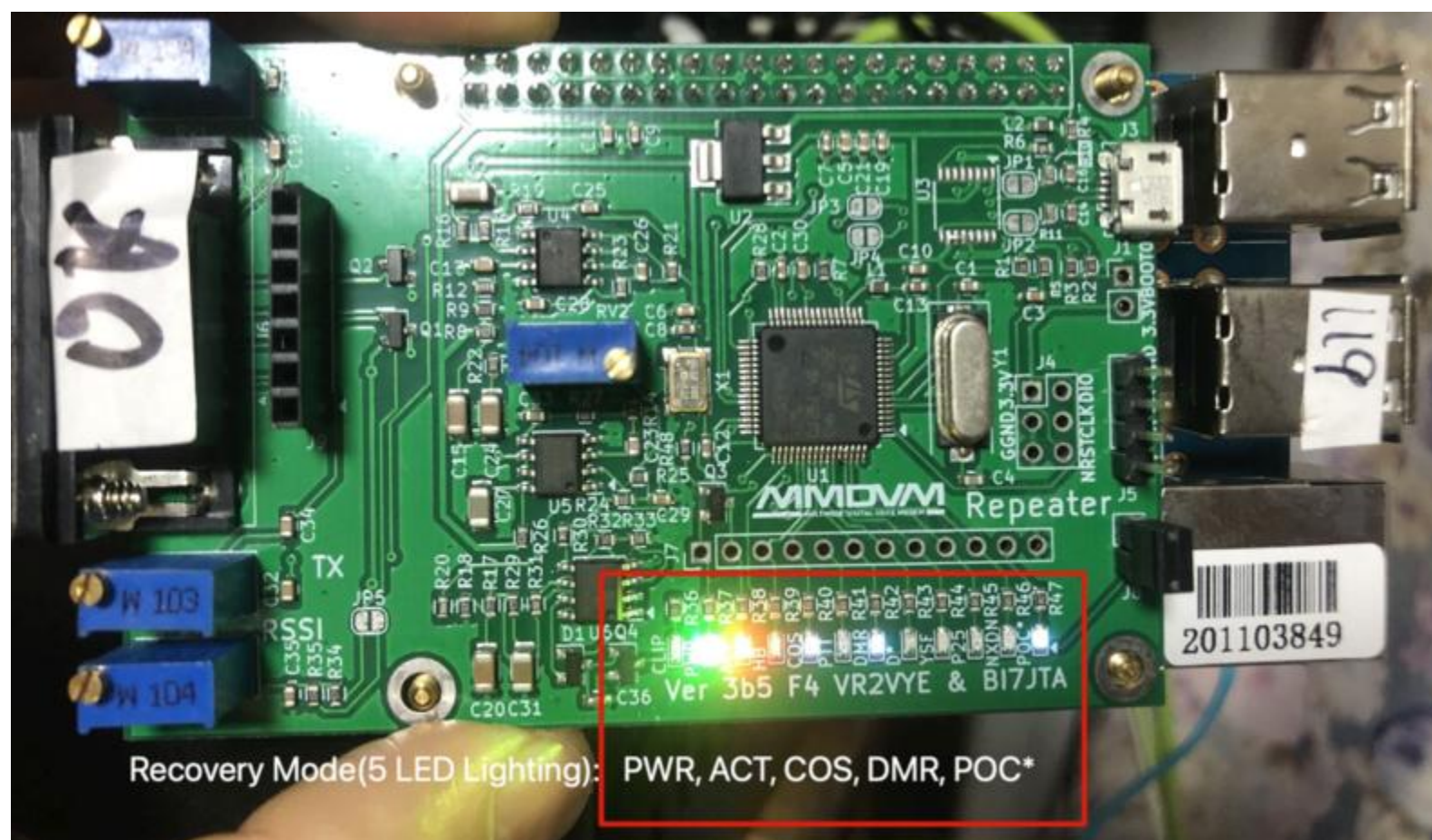


```

pin21: 533
pi-star@wpsd:~$ sudo curl https://www.bi7jta.org/files/MMDVM_Firmware/repeater_HAT/reboot_flash/2.1.enter_flash_mode-not-need-poweroff.sh | sudo sh
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           Dload  Upload   Total   Spent    Left   Speed
100 2443 100 2443    0     0  731      0  0:00:03  0:00:03 --:--:--  731
pin20: 532
pin21: 533
Stopping Pi-Star Services...
Killing any remaining MMDVMHost processes...
MMDVMHost: no process found
MMDVMHost_NoOLED: no process found
MMDVMHost_Adafruit: no process found
=====
===== Enter flash mode done, please plug the MMDVM HAT to Raspberry Pi (GPIO 40 PINS)=====
===== Check if your MMDVM HAT LED status same as =====
===== https://wiki.bi7jta.org/wiki/index.php?title=File:Enter_Recovery_mode_V3F4.png =====
===== Then run the flash script =====
=====

```

Ensure your MMDVM HAT enter **Flash/Recovery mode**, as follow.



If Yes, continue Step 2th, otherwise , **Very important!!!**

Pull out MMDVM from Raspberry Pi, connect MMDVM to Raspberry Pi again, let the HAT re-power on.

Normally it will enter **Flash/Recovery** mode.

Step 2th, flash to hardware.

Just when you have enter **Flash/Recovery** mode.

Copy this command,

`sudo curl https://www.bi7jta.org/files/MMDVM_Firmware/repeater_HAT/reboot_flash/2.booto_upgrade_repeater_Baud115200_troubleshoot_freezing-build20251022.sh | sudo sh`

Right click your mouse in webSSH,

Paste to command line ,

click Keyboard [Enter] to execute.

```
pi-star@wpsd:~$ sudo curl https://www.bi7jta.org/files/MMDVM_Firmware/repeater_HAT/reboot_flash/2.booto_upgrade_repeater_Baud115200_troubleshoot_freezing-build20251022.sh | sudo sh
=====
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           Dload  Upload  Total   Spent    Left     Speed
100 1753 100 1753    0     0  1450      0  0:00:01  0:00:01 --:--:-- 1452
hex file:mmdvm_f446_Baud115200bps_troubleshoot_v20250831-github.hex
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           Dload  Upload  Total   Spent    Left     Speed
100 845k 100 845k    0     0  236k      0  0:00:03  0:00:03 --:--:-- 236k
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           Dload  Upload  Total   Spent    Left     Speed
100 98392 100 98392    0     0  31872      0  0:00:03  0:00:03 --:--:-- 31893
Stopping Pi-Star Services...
Killing any remaining MMDVMHost processes...
MMDVMHost: no process found
MMDVMHost_NoOLED: no process found
MMDVMHost_Adafruit: no process found

=====WARNING: YOU MUST SHORT BOOT0 GND before flash !!!!!=====

Example: https://www.bi7jta.org/wiki/index.php?title=Main_Page#What_is_Recovery_Mode.3F

=====WARNING: YOU MUST SHORT BOOT0 GND before flash !!!!!=====

Starting Flashing...
stm32flash 0.5

http://stm32flash.sourceforge.net/

Using Parser : Intel HEX
Interface serial_posix: 57600 8E1
Version      : 0x31
Option 1    : 0x00
Option 2    : 0x00
Device ID   : 0x0421 (STM32F446xx)
- RAM       : 128KiB (12288b reserved by bootloader)
- Flash     : 512KiB (size first sector: 1x16384)
- Option RAM : 16b
- System RAM : 30KiB
Write to memory
Erasing memory
Wrote and verified address 0x0804b240 (100.00%) Done.

Resetting device... done.

Call sudo wpsd-modemreset
Resetting Modem: V3FR Repeater Board (BI7JTA) for Pi (GPIO)
```

Done when **show 100%**.

Verify the new firmware

`sudo wpsd-detectmodem; # (WPSD)`

```

pi-star@wpsd:~$ sudo wpsd-detectmodem
Detected MMDVM Port: /dev/ttyAMA0 (GPIO) Baud: 115200 Protocol: V2
Modem Data: MMDVM RB_STM32_DVM(446) 20240920 12.0000 MHz GitID #bf23a94
pi-star@wpsd:~$

```

sudo pistar-findmodem; #official pi-star, J-Star

After flash ,change your Modem BAUD to the the firmware set.

URL:	https://www.qrz.com/db/N0CALL	☒ Auto ☐ Manual
Radio/Modem Type:	STM32-DVM / MMDVM_HS - Raspberry Pi Hat (GPIO) Refer	
Modem Baud Rate:	✓ 115200 460800 57600 38400 10000	Reference: for Normal Modem [115200]; for FM Network
APRS Gateway Service:		Send APRS Data to Modes: [☐] (Note: Both APRS Gateway and

Get help: send screenshots to: bi7jta@gmail.com

Other method:

ST-LINK STM32 flash tools

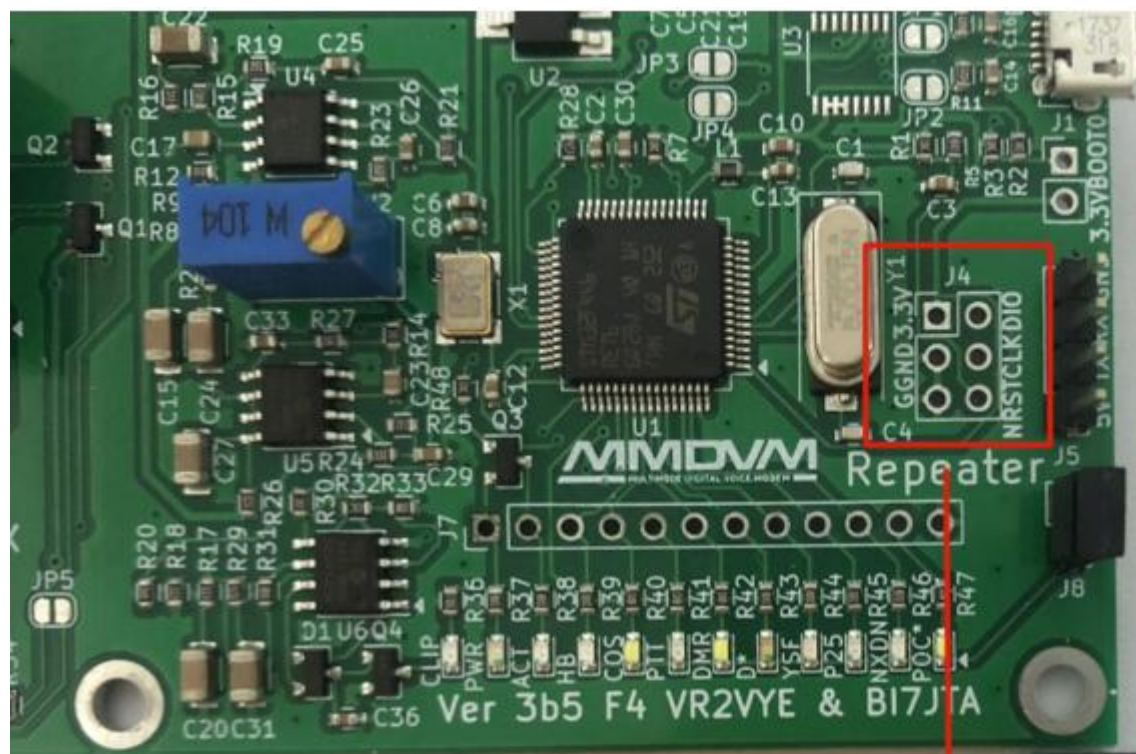
Risky operation note: Do not short circuit +5V, +3.3V, you need to be familiar with the use of ST-LINK.

Download ST-LINK tools <https://www.bi7jta.org/files/ST-LINK/>

Download MMDVM firmware:

https://www.bi7jta.org/files/MMDVM_Firmware/repeater_HAT/mmdvm_f446_Baud115200bps_troubleshoot_v20250831-github.hex

YouTube demo: https://youtu.be/f5Cx5350pWw?si=I-Ab9Uc_AG_wjVz1

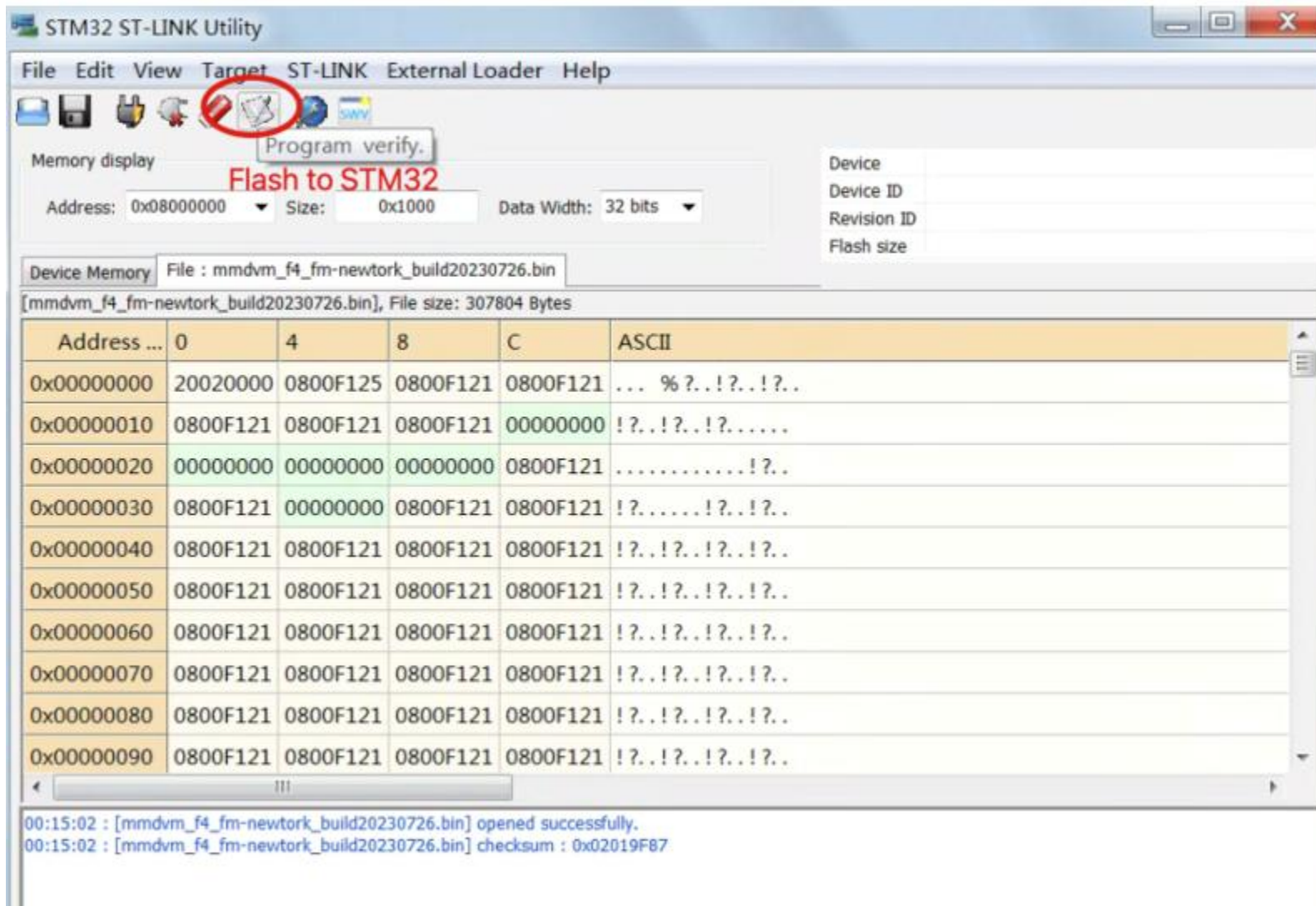


Disconnected GPIO from RPi



ST-LINK Windows Programming software

Be Care the
5.0V ⚠
3.3V ⚠
GND
Wrong connection will burn
your STM32 MCU
⚠



The End.

73 DE BI7JTA