

ZUMspot Dual Band Kit Quick Start Guide

The ZUMspot Dual Band Kit has all of the capabilities of the original ZUMspot, but it also allows you to communicate either via UHF or VHF frequencies between your ZUMspot Dual Band and HT. The ZUMspot Dual Band Kit has been specially designed to function under both RF bands thanks to its finely tuned dual-band RF filters, which block any harmonics from polluting the RF spectrum.



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Board specifications

The ZUMspot RPi Dual Band is an Advanced Radio Module Board which when aired with a Raspberry Pi and the MMDVM software becomes a small and efficient multi-mode digital hotspot.

ZUMspot Kit Features:

- High performance 32-bit ARM processor
- ZUMspot Board Fully Assembled And Tested
- Supports DMR, P-25, D-Star, System Fusion and NXDN
- Supports operation in both 2m and 70cm bands
- Onboard LEDs to show status (Tx, Rx, PTT, Mode)
- Up to 10mW RF power
- SMA antenna connector, dual band VHF/UHF antenna included
- Mounts cleanly on all current Raspberry Pi's including the Pi Zero WH
- Works on ODROID boards
- The open source firmware (MMDVM) is pre-loaded and is easily upgraded via software
- Built-in 1.3" OLED display
- Connection for Nextion LCD display
- 1 Year Warranty

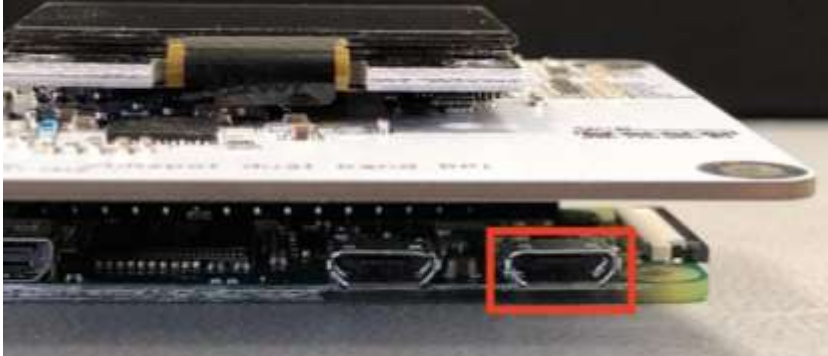
Setup

- The ZUMspot Dual Band Kit should come with the following:
 - ZUMspot Dual Band board
 - Raspberry Pi Zero
 - Pre-programmed SD card
 - 4 plastic screws
 - 4 plastic standoffs
 - 4 plastic nuts
 - 1 dual band antenna
- Make sure the SD card is inserted into the Raspberry Pi Zero
- Connect the antenna to the RF connector



Powering up

- Plug a USB micro power cable to your ZUMspot Dual Band Kit. The USB power port is the right most USB port on the Raspberry Pi Zero. The USB cable should also be connected to a USB power supply.



Setup Pi-Star

Wi-Fi

- Power up the ZUMspot Dual Band Kit.
- After 3 minutes, scan for Wi-Fi access points from your phone or laptop. One should appear with the name **Pi-Star-Setup**
- Connect to it. When asked for the Wi-Fi password type in: raspberry
- After 3 minutes, go to your web browser (Chrome, Firefox, etc.) and connect to the website:
<http://pi-star> (for Windows, Linux and Android devices)
<http://pi-star.local> (for macOS and iOS devices)
- You should see this page.



- Go to **Configuration**
 - You will be asked to put in the default username which is **pi-star** and the default password which is **raspberry**
 - Select **Configure Wi-Fi** and then click on **Scan for Networks (10 secs)**

The screenshot shows the Pi-Star configuration interface. At the top is the **Firewall Configuration** section with a table of settings:

Setting	Value
Dashboard Access:	<input checked="" type="radio"/> Private / <input type="radio"/> Public
irc00bGateway Remote:	<input checked="" type="radio"/> Private / <input type="radio"/> Public
SSH Access:	<input checked="" type="radio"/> Private / <input type="radio"/> Public
Auto AP:	<input checked="" type="radio"/> On / <input type="radio"/> Off Note: Reboot Required if changed
uFNP:	<input checked="" type="radio"/> On / <input type="radio"/> Off

Below this is the **Wireless Configuration** section. The **Configure Wi-Fi** button is highlighted with a red box. Underneath, the **Wireless Information and Statistics** section is visible, showing interface details for wlan0:

Interface Information	Wireless Information
Interface Name : wlan0	Connected To :
Interface Status : Interface is down	AP Mac Address :
IP Address :	Bitrate :
Subnet Mask :	Signal Level :
Mac Address : b8:27:eb:1b:b1:d9	
Interface Statistics	
Received Packets :	
Received Bytes :	
Transferred Packets :	
Transferred Bytes :	

At the bottom of this section is a **Remote Access Password** form with fields for User (pi-star), Password, and Confirm Password. A warning message states: "WARNING: This changes the password for this admin page AND the 'pi-star' SSH account."

This screenshot shows the same Pi-Star configuration interface as above, but with the **Scan for Networks (10 secs)** button in the **Wireless Configuration** section highlighted with a red box. The **Wireless Information and Statistics** section is now empty, indicating that the scan process has been initiated or is in progress.

- Select your Wi-Fi SSID and enter your password.
- Click on **Save (and connect)** to save the Wi-Fi configuration

Node Callsign:	M1ABC		
Radio Frequency:	438.800.000 MHz		
Latitude:	50.00 degrees (positive value for North, negative for South)		
Longitude:	-3.00 degrees (positive value for East, negative for West)		
Town:	Town, LOCATOR		
Country:	Country		
URL:	http://www.mw0mez.co.uk/pi-star/	<input type="radio"/> Auto <input checked="" type="radio"/> Manual	
Radio/Modem Type:	<input type="button" value="v"/>		
Node Type:	<input checked="" type="radio"/> Private <input type="radio"/> Public		
System Time Zone:	America/Los_Angeles <input type="button" value="v"/>		
Dashboard Language:	english_us <input type="button" value="v"/>		
<input type="button" value="Apply Changes"/>			

Firewall Configuration

Setting	Value
Dashboard Access:	<input checked="" type="radio"/> Private <input type="radio"/> Public
irc008Gateway Remote:	<input checked="" type="radio"/> Private <input type="radio"/> Public
SSH Access:	<input checked="" type="radio"/> Private <input type="radio"/> Public
Auto AP:	<input checked="" type="radio"/> On <input type="radio"/> Off Note: Reboot Required if changed
uPNP:	<input checked="" type="radio"/> On <input type="radio"/> Off

Wireless Configuration

WiFi Info:

Network ID

SSID: NETGEAR32

PSK: [REDACTED]

Connect	SSID	Channel	Signal	Security
<input type="button" value="Select"/>	ATTgTyj66a	2.4GHz Ch11	-29 dBm	WPA2-PSK (TKIP) with WPS
<input type="button" value="Select"/>	Humpty	2.4GHz Ch3	-45 dBm	WPA2-PSK (AES)
<input checked="" type="button" value="Select"/>	NETGEAR32	2.4GHz Ch11	-46 dBm	WPA2-PSK (TKIP) with WPS
<input type="button" value="Select"/>	ATTNnJCI2Z	2.4GHz Ch11	-67 dBm	WPA2-PSK (TKIP) with WPS
<input type="button" value="Select"/>	PIXEL	2.4GHz Ch1	-83 dBm	WPA2-PSK (AES)
<input type="button" value="Select"/>	PIXEL_GUEST	2.4GHz Ch1	-85 dBm	WPA2-PSK (AES)
<input type="button" value="Select"/>	MwWireless	2.4GHz Ch11	-87 dBm	WPA2-PSK (TKIP) with WPS
<input type="button" value="Select"/>	bbtest	2.4GHz Ch6	-88 dBm	WPA2-PSK (AES)
<input type="button" value="Select"/>	WGI	2.4GHz Ch6	-88 dBm	WPA2-PSK (TKIP) with WPS
<input type="button" value="Select"/>	DIRECT-B6-HP Officejet 5740	2.4GHz Ch6	-90 dBm	[WPA2-PSK-COMP] [WPS] [ESS] [P2P]

Remote Access Password

- Reboot your ZUMspot Dual Band Kit
- Now you can continue to the **Configuration** section below.

Configuration

- Change the Node Callsign to your own, set the **System Time Zone** to your time zone, and set the **Dashboard Language** to the language you prefer.

Pi-Star Digital Voice - Configuration
Dashboard | Admin | Expert | Power | Update | Backup/Restore | Factory Reset

Gateway Hardware Information

Hostname	Kernel	Platform	CPU Load	CPU Temp
pi-star	4.19.66+	Pi Zero B Rev 1.1 (512MB)	0.8 / 0.69 / 0.28	49.5% / 125.1°C

Control Software

Setting	Value
Controller Software:	<input type="radio"/> DStarRepeater <input checked="" type="radio"/> MMDVMHost (DV-Mega Minimal Firmware 3.87 Required)
Controller Mode:	<input checked="" type="radio"/> Simplex Mode <input type="radio"/> Duplex Repeater (on Half-Duplex on Hotspots)

Apply Changes

General Configuration

Setting	Value
Hostname:	pi-star Do not add suffixes such as .local
Node Callsign:	K3M2Z-W
Radio Frequency:	438.800000 MHz
Latitude:	50.00 degrees (positive value for North, negative for South)
Longitude:	-3.00 degrees (positive value for East, negative for West)
Town:	Town, LOCATOR
Country:	Country
URL:	http://www.m0met.co.uk/pi-star/ <input type="radio"/> Auto <input checked="" type="radio"/> Manual
Radio/Modem Type:	ZUMspot - Dual Band Raspberry Pi Hat (GPIO)
Node Type:	<input checked="" type="radio"/> Private <input type="radio"/> Public
APRS Host:	europa.sqr1.net
System Time Zone:	America/Los_Angeles
Dashboard Language:	english_us

Apply Changes

Firewall Configuration

Setting	Value
Dashboard Access:	<input checked="" type="radio"/> Private <input type="radio"/> Public
ircDDBGateway Remote:	<input checked="" type="radio"/> Private <input type="radio"/> Public
SSH Access:	<input checked="" type="radio"/> Private <input type="radio"/> Public
Auto AP:	<input checked="" type="radio"/> On <input type="radio"/> Off Note: Reboot Required if changed
uPNP:	<input checked="" type="radio"/> On <input type="radio"/> Off

Apply Changes

Wireless Configuration

Refresh Reset WiFi Adapter Configure WiFi

Wireless Information and Statistics

Interface Information	Wireless Information
Interface Name : wlan0	Connected To : NETGEAR32
Interface Status : Interface is up	AP Mac Address : 78:d2:94:73:f0:c6
IP Address : 192.168.1.28	Bitrate : 72.2 MBit/s
Subnet Mask : 255.255.255.0	

- Click **Apply Changes** when you are done
- When everything reloads, you will need to set the **Radio/Modem Type** to **ZUMspot - Dual Band Raspberry Pi Hat (GPIO)** and click **Apply Changes** again.

Enable DMR

Once you have completed the **Configuration** steps. You can finish setting up your ZUMspot Dual Band Kit with DMR

- Turn on **DMR** and then click **Apply Changes**

Pi-Star Digital Voice - Configuration
Dashboard | Admin | Expert | Power | Update | Backup/Restore | Factory Reset

Gateway Hardware Information

Hostname	Kernel	Platform	CPU Load	CPU Temp
pi-star	4.19.66+	Pi Zero W Rev 1.1 (512MB)	1.92 / 1.9 / 1.35	46.2°C / 118.8°F

Control Software

Setting	Value
Controller Software:	<input type="radio"/> DStarRepeater <input checked="" type="radio"/> MMDVMHost (DV-Mega Minimum Firmware 3.07 Required)
Controller Mode:	<input checked="" type="radio"/> Simplex Node <input type="radio"/> Duplex Repeater (or Half-Duplex on Hotspots)

Apply Changes

MMDVMHost Configuration

Setting	Value
DMR Mode:	<input checked="" type="checkbox"/> RF Hangtime: 20 Net Hangtime: 20
D-Star Mode:	<input type="checkbox"/> RF Hangtime: 20 Net Hangtime: 20
YSF Mode:	<input type="checkbox"/> RF Hangtime: 20 Net Hangtime: 20
P25 Mode:	<input type="checkbox"/> RF Hangtime: 20 Net Hangtime: 20
NXDN Mode:	<input type="checkbox"/> RF Hangtime: 20 Net Hangtime: 20
YSF2DMR:	<input type="checkbox"/>
YSF2NXDN:	<input type="checkbox"/>
YSF2P25:	<input type="checkbox"/>
DMR2YSF:	<input type="checkbox"/> Uses 7 prefix on DMRIGateway
DMR2NXDN:	<input type="checkbox"/> Uses 7 prefix on DMRIGateway
POCSAG:	<input type="checkbox"/> POCSAG Paging Features
MMDVM Display Type:	OLED <input type="checkbox"/> Port: Modem <input checked="" type="checkbox"/> Nextion Layout: ON7LDB L3 <input type="checkbox"/>

Apply Changes

General Configuration

Setting	Value
Hostname:	pi-star Do not add suffixes such as .local
Node Callsign:	KM6ZJX
Radio Frequency:	434.400.000 MHz
Latitude:	00.00 degrees (positive value for North, negative for South)
Longitude:	-3.00 degrees (positive value for East, negative for West)
Town:	Town_L0C4T0R
Country:	Country
URL:	http://www.mw0mez.co.uk/pi-star/ <input type="radio"/> Auto <input checked="" type="radio"/> Manual
Radio/Modem Type:	ZUMspot - Dual Band Raspberry Pi Hat (GPIO) <input type="checkbox"/>
Node Type:	<input checked="" type="radio"/> Private <input type="radio"/> Public
APRS Host:	euro.aprs2.net <input type="checkbox"/>
System Time Zone:	America/Los_Angeles <input type="checkbox"/>
Dashboard Language:	english_us <input type="checkbox"/>

Apply Changes

- Enter your **DMR ID**
- Choose your preferred **DMR master** server
- Click **Apply Changes** in order to save your settings

HMDVHost Configuration		
Setting	Value	
DMR Mode:	<input checked="" type="radio"/>	RF Hangtime: 20 Net Hangtime: 20
D-Star Mode:	<input type="radio"/>	RF Hangtime: 20 Net Hangtime: 20
TSP Mode:	<input type="radio"/>	RF Hangtime: 20 Net Hangtime: 20
F2S Mode:	<input type="radio"/>	RF Hangtime: 20 Net Hangtime: 20
XON Mode:	<input type="radio"/>	RF Hangtime: 20 Net Hangtime: 20
YSF2DMR:	<input type="radio"/>	
YSF2XON:	<input type="radio"/>	
YSF2P25:	<input type="radio"/>	
DMR2YSF:	<input type="radio"/>	Uses 7 prefix on DMRGateway
DMR2XON:	<input type="radio"/>	Uses 7 prefix on DMRGateway
POCSAG:	<input type="radio"/>	POCSAG Paging Features
HMDV Display Type:	OLED <input checked="" type="radio"/>	Port: Modem <input checked="" type="radio"/> Nextion Layout: ON/DS LB <input checked="" type="radio"/>
Apply Changes		
General Configuration		
Setting	Value	
Hostname:	pi-star Do not add suffixes such as .local	
Node Callsign:	FMEZ JX	
CCS7/DMR ID:	3130245	
Radio Frequency:	438.400.000 Mhz	
Latitude:	50.00 degrees (positive value for North, negative for South)	
Longitude:	-3.00 degrees (positive value for East, negative for West)	
Town:	Town, LOCATOR	
Country:	Country	
URL:	http://www.theDMR.co.uk/pi-star/ <input type="radio"/> Auto <input checked="" type="radio"/> Manual	
Radio/Modem Type:	ZUMspot - Dual Band Raspberry Pi Hat (GPIO) <input checked="" type="radio"/>	
Node Type:	<input checked="" type="radio"/> Private <input type="radio"/> Public	
APRS Host:	euro.aprs2.net <input checked="" type="radio"/>	
System Time Zone:	America/Los_Angeles <input checked="" type="radio"/>	
Dashboard Language:	english_us <input checked="" type="radio"/>	
Apply Changes		
DMR Configuration		
Setting	Value	
DMR Master:	DM_United_States_3101 <input checked="" type="radio"/>	
Hotspot Security:		
BrandMaster Network:	Repeater Information Edit Repeater (BrandMaster Selfcare)	
DMR ESSID:	3130245 tone <input checked="" type="radio"/>	
DMR Color Code:	1 <input checked="" type="radio"/>	
DMR EmbeddedOnly:	<input type="radio"/>	
DMR DumpTxDData:	<input checked="" type="radio"/>	
Apply Changes		

- You can now use DMR with your ZUMspot Dual Band Kit

Enable D-Star

Once you have completed the **Configuration** steps. You can finish setting up your ZUMspot Dual Band Kit to use with D-Star.

- Now you can turn on D-Star by selecting the **D-Star Mode** switch and clicking **Apply Changes**

Pi-Star Digital Voice - Configuration

Dashboard | Admin | Expert | Power | Update | Backup/Restore | Factory Reset

Gateway Hardware Information				
Hostname	Kernel	Platform	CPU Load	CPU Temp
pi-star	4.19.66+	PI Zero W Rev 1.1 (512MB)	2.38 / 1.15 / 1	47.1°C / 116.8°F

Control Software	
Setting	Value
Controller Software:	<input type="radio"/> DStarRepeater <input checked="" type="radio"/> MMDVMHost (DV-Mega Minimum Firmware 3.87 Required)
Controller Mode:	<input checked="" type="radio"/> Simplex Mode <input type="radio"/> Duplex Repeater (or Half-Duplex on Hotspots)

Apply Changes

MMDVMHost Configuration			
Setting		Value	
DMR Mode:	<input type="checkbox"/>	RF Hangtime: 20	Net Hangtime: 20
D-Star Mode:	<input checked="" type="checkbox"/>	RF Hangtime: 20	Net Hangtime: 20
YSF Mode:	<input type="checkbox"/>	RF Hangtime: 20	Net Hangtime: 20
P25 Mode:	<input type="checkbox"/>	RF Hangtime: 20	Net Hangtime: 20
NXDN Mode:	<input type="checkbox"/>	RF Hangtime: 20	Net Hangtime: 20
YSF2DMR:	<input type="checkbox"/>		
YSF2NXDN:	<input type="checkbox"/>		
YSF2P25:	<input type="checkbox"/>		
DMR2YSF:	<input type="checkbox"/>	Uses 7 prefix on DMRGateway	
DMR2NXDN:	<input type="checkbox"/>	Uses 7 prefix on DMRGateway	
POCSAG:	<input type="checkbox"/>	POCSAG Paging Features	
MMDVM Display Type:	OLED	Port: Modem	Nextion Layout: ON7LDS L3

Apply Changes

General Configuration	
Setting	Value
Hostname:	pi-star Do not add suffixes such as .local
Node Callsign:	KM6ZJX
Radio Frequency:	894.000.000 MHz
Latitude:	00.00 degrees (positive value for North, negative for South)
Longitude:	-3.00 degrees (positive value for East, negative for West)
Town:	Town, LOCATOR
Country:	Country
URL:	http://www.mw0mwz.co.uk/pi-star/ <input type="radio"/> Auto <input checked="" type="radio"/> Manual
Radio/Modem Type:	ZUMspot - Dual Band Raspberry Pi Hat (GPIO)
Mode Type:	<input checked="" type="radio"/> Private <input type="radio"/> Public
APRS Host:	europa.aprs2.net
System Time Zone:	America/Los_Angeles
Dashboard Language:	english_us

Apply Changes

- You can now use D-Star with your ZUMspot Dual Band Kit

Use with VHF

To use the ZUMspot Dual Band Kit under the VHF band, you must first complete either the **Enable D-Star** or the **Enable DMR** section above

- To use the ZUMspot Dual Band Kit under VHF, all that is needed is to set the **Radio Frequency** to a VHF frequency
- Change the **Radio Frequency** to the desired VHF frequency and then click **Apply Changes**

MMDVMHost Configuration	
Setting	Value
DMR Mode:	<input type="checkbox"/> RF Hangtime: 20 Net Hangtime: 20
D-Star Mode:	<input checked="" type="checkbox"/> RF Hangtime: 20 Net Hangtime: 20
YSF Mode:	<input type="checkbox"/> RF Hangtime: 20 Net Hangtime: 20
P25 Mode:	<input type="checkbox"/> RF Hangtime: 20 Net Hangtime: 20
NXDN Mode:	<input type="checkbox"/> RF Hangtime: 20 Net Hangtime: 20
YSF2DMR:	<input type="checkbox"/>
YSF2NXDN:	<input type="checkbox"/>
YSF2P25:	<input type="checkbox"/>
DMR2YSF:	<input type="checkbox"/> Uses 7 prefix on DMRGateway
DMR2NXDN:	<input type="checkbox"/> Uses 7 prefix on DMRGateway
POCSAG:	<input type="checkbox"/> POCSAG Paging Features
MMDVM Display Type:	OLED Port: Modem Nextion Layout: ON7.DG.L3
<input type="button" value="Apply Changes"/>	

General Configuration	
Setting	Value
Hostname:	pi-star Do not add suffixes such as .local
Node Collsign:	KMGZJX
Radio Frequency:	148.815.000 MHz
Latitude:	52.00 degrees (positive value for North, negative for South)
Longitude:	-3.00 degrees (positive value for East, negative for West)
Town:	Town, LOCATOR
Country:	Country
URL:	http://www.mw0mez.co.uk/pi-star/ <input type="radio"/> Auto <input checked="" type="radio"/> Manual
Radio/Modem Type:	ZUMspot - Dual Band Raspberry Pi Hat (GPIO)
Node Type:	<input checked="" type="radio"/> Private <input type="radio"/> Public
APRS Host:	europa.aprs2.net
System Time Zone:	America/Los_Angeles
Dashboard Language:	english_us
<input type="button" value="Apply Changes"/>	

D-Star Configuration	
Setting	Value
RPT1 Collsign:	KMGZJX C
RPT2 Collsign:	KMGZJX G
Remote Password:	*****
Default Reflector:	REF001 C <input checked="" type="radio"/> Startup <input type="radio"/> Manual
ircDDBGateway Language:	English_UK
Time Announcements:	<input checked="" type="checkbox"/>
Use DPlus for ARF:	<input type="checkbox"/> Note: Update Required if changed
<input type="button" value="Apply Changes"/>	

Firewall Configuration	
Setting	Value
Dashboard Access:	<input checked="" type="radio"/> Private <input type="radio"/> Public

- Now you are all set to use the ZUMspot Dual Band Kit under VHF

Finishing setup

Once you have completed the Pi-Star configuration you can start using the ZUMspot Dual Band Kit to connect to D-Star, DMR and other networks.

There is more information on configuring and using Pi-Star in this document.

https://amateurradionotes.com/images/1-Playing_with_Pi-Star.pdf

Firmware update

- The firmware can be updated directly from the Pi. A script needs to be download to flash the board.
- Go to Configuration->Expert->SSH Access
- Login to pi-star
- Run command
rpi-rw
- Run command:
curl -OL https://raw.githubusercontent.com/veraabad/ZUMspot_Update/master/install_fw_dualband.sh
- If you get an error saying “Could not resolve host”, it likely means that your network is setup for IPV6 and the Pi has not been able to acquire the IPV4 nameserver via DHCP. Try the following. Otherwise skip to the “sudo chmod” step
 - Run command
sudo vi /etc/resolv.conf
 - Move cursor to the end of the line that starts with “nameserver” and then press the “a” key on your keyboard in order to move the cursor over
 - Press Enter to start typing on a new line, and then type this in:
nameserver 8.8.8.8



```
Pi-Star Digital Voice - Expert Editors
Dashboard | Admin | Update | Upgrade | Backup/Restore | Configuration
Quick Edit: DTMF-Recorder | M3U80Stream | TrunkServer | M3U80Stream | DMX DM | DMX DM | PPS DM | RASDM DM | DMNET DM
Full Edit: DMX DM | PStar-Recorder | M3U | DM AP | DMNET AP | System Core | RAS DM | Tools: CDR Tool | SSH Access

SSH - Pi-Star
# Generated by resolvconf
nameserver fe8b::7ad2:9aff:fe73:f8c6seth6
nameserver 8.8.8.8
```

- Press the ESC key on your keyboard
- Then type the following:

:wq



```
Pi-Star Digital Voice - Expert Editors
Dashboard | Admin | Update | Upgrade | Backup/Restore | Configuration
Quick Edit: DTMF-Recorder | M3U80Stream | TrunkServer | M3U80Stream | DMX DM | DMX DM | PPS DM | RASDM DM | DMNET DM
Full Edit: DMX DM | PStar-Recorder | M3U | DM AP | DMNET AP | System Core | RAS DM | Tools: CDR Tool | SSH Access

SSH - Pi-Star
# Generated by resolvconf
nameserver fe8b::7ad2:9aff:fe73:f8c6seth6
nameserver 8.8.8.8
:wq
```

- Then press Enter
- You should now have exited the text editor. You can try the curl command again and it should work now
- Next type the command followed by the enter key
sudo chmod +x install_fw_dualband.sh
- Then type the command followed by the enter key
./install_fw_dualband.sh

Pi-Star v.1.13-RC4 / Dualband-201909

Pi-Star Digital Voice - Expert Editors

Dashboard | Admin | Update | Upgrade | Backup/Restore | Configuration

Quick Edit: DStarRepeater | InDOBGateway | TimeServer | MMDVMHost | DMR GW | YSF GW | P25 GW | NXDN GW | DAPNET GW
Full Edit: DMR GW | PiStar-Remote | WiFi | BM API | DAPNET API | System Cron | RSSI Dat. **Tools:** CSS Tool | SSH Access

SSH - Pi-Star

```

pi-star@pi-star-dualb(rw):~$ rpi-rw
pi-star@pi-star-dualb(rw):~$ curl -OL https://raw.githubusercontent.com/veraabad/ZUMspot_Update/master/install_fw_dualband.sh
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left   Speed
100  460  100   460    0     0    1059      0  --:--:-- --:--:-- --:--:--   1057
pi-star@pi-star-dualb(rw):~$ sudo chmod +x install_fw_dualband.sh
pi-star@pi-star-dualb(rw):~$ ./install_fw_dualband.sh
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left   Speed
100 51196  100 51196    0     0   104k      0  --:--:-- --:--:-- --:--:--   105k
stm32flash 0.5

http://stm32flash.sourceforge.net/

Using Parser : Raw BINARY
Interface serial_posix: 57600 8E1
Version      : 0x22
Option 1    : 0x00
Option 2    : 0x08
Device ID   : 0x0410 (STM32F10xxx Medium-density)
- RAM       : 20KiB (512b reserved by bootloader)
- Flash     : 128KiB (size first sector: 4x1024)
- Option RAM : 16b
- System RAM : 2KiB

```

[Click here for fullscreen SSH client](#)

Pi-Star web-config © Andy Taylor (M0RDM2) 2014-2019.
Need help? Click here for the Support Group.
Get your copy of Pi-Star from here.

- The flashing script will take care of the rest. Once the script is done it will reboot Pi-Star.

Building firmware on Pi-Star

- Go to *Configuration->Expert->SSH Access*
- Login to pi-star
- Run command *rpi-rw*
- Make sure the necessary software tools are installed by running these commands:
 `sudo apt-get install gcc-arm-none-eabi gdb-arm-none-eabi libstdc++-arm-none-eabi-newlib libnewlib-arm-none-eabi`
- Install updated stm32flash utility by running these commands:
 `cd ~`
 `git clone https://git.code.sf.net/p/stm32flash/code stm32flash`
 `cd stm32flash`
 `make`
 `sudo make install`
- Download the firmware sources by running these command:
 `cd ~`
 `git clone https://github.com/juribeparada/MMDVM_HS.git`
 `cd MMDVM_HS/`
 `git submodule init`
 `git submodule update`
 `cp configs/ZUMspot_dualband.h Config.h`
- Build the firmware by running this command:
 `make`
- Stop services by running these commands:
 `sudo pistar-watchdog.service stop`
 `sudo systemctl stop mmdvmhost.timer`
 `sudo systemctl stop mmdvmhost.service`
- Upload the firmware to ZUMspot RPi board:
 `sudo make zumspot-pi`

Support

MMDVM Yahoo group:

<https://groups.yahoo.com/neo/groups/mmdvm/conversations/messages>

Pi-Star support forum:

<https://forum.pistar.uk/>

Pi-Star Facebook support group:

<https://www.facebook.com/groups/pistar/>

Pi-Star Wiki:

<http://wiki.pistar.uk>

ZUM Radio Facebook group:

<https://www.facebook.com/groups/249802742395450/>