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.

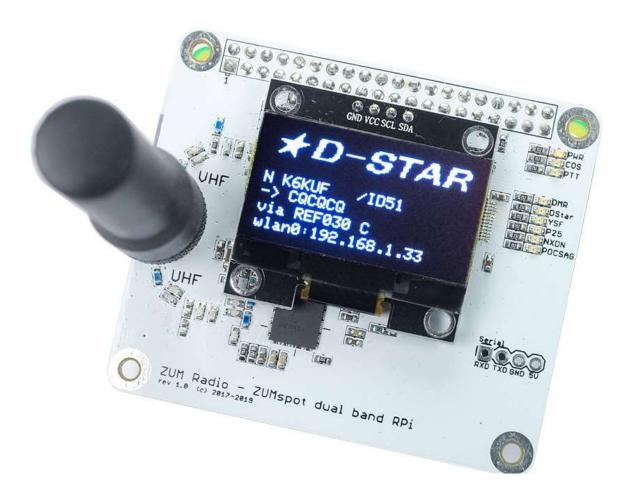


Table of Contents

Table of Contents
Board specifications
Setup3
Powering up4
Setup Pi-Star4
Wi-Fi
Configuration7
Enable DMR
Enable D-Star
Use with VHF11
Finishing setup12
Firmware update13
Building firmware on Pi-Star15
Support16

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

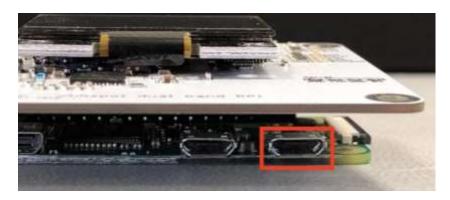
Setup

- 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: <u>http://pi-star</u> (for Windows, Linux and Android devices <u>http://pi-star.local</u> (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)

		Firewall Configuration
harrow and desired		and the state of t
heshboard Acces	s: OPrivate Pub	sile
rcDDBGateway R	esote: OPrivate Put	plic
SH Access:	OPrivate Put	elic
luto AP:	OGn Off	Note: Neboot Required if changed
I'MP1	O Qn 011	
		Apply Charges
		Wireless Configuration
Service Beart W	Transmission and the second second	Name and the second
Second Second W	100 million (100 m	
		niese Information and Blatistics
Interface Name	Interface Information	Wireless Information
Interface Status	I Interface is down	AP Mac Address :
IP Address 1		
Subnet Mask : Mac Address : bit	27 ab theb Leb9	Biltrata : Signal Level :
and the second second		
Received Packet	Interface Statistics	
Received Bytes :		
Transferred Pack		
Transferred Byte		
C	Informa	etion provided by ifcentig and incentig
		Remote Access Password
United North		Fattaurd
ri-star	Fassword:	Confire Password:
		changes the password for this admin page 40 the "pi-star" SSH account
	10.000	eth Uniting, 10 Annaly Targino (MARMANE) 2014 UNITS. Anna Margin Chink Hanna Kat Tara Sagarang Kalona Sari yana ang at Sari Sari Sana Kata
		The second s

religibility Remote: OPPtwee Public SM Access: OPPtwee Public On OFF Note: Remote Required if changed PMP: On OFF Apply Charges Wireless Configuration Califord Remote Access Password Califord Remote Access Password Direct Note: Remote Access Password Confirm Password: Confirm Password Remote Access Password Confirm Password: Confirm Password Remote Access Password for this admin page ACC the 'pt-star' Sub access to password for this admin page ACC the 'pt-star' Sub access to password	Isabbaard Access: OPrivate Public rcB06Gatewy Rewote: OPrivate Public SM Access: OPrivate Public Off Note: Reboot Required if changed FMP: Off Off Access: Wirefees Configuration CAttack Caustor hanware (III and) Add tamware Test intercomment Remote Access Password Caustor hanware (III and) Remote Access Password			1	Il Configuration
religibility Remote: OPPtwee Public SM Access: OPPtwee Public On OFF Note: Remote Required if changed PMP: On OFF Apply Charges Wireless Configuration Califord Remote Access Password Califord Remote Access Password Direct Note: Remote Access Password Confirm Password: Confirm Password Remote Access Password Confirm Password: Confirm Password Remote Access Password for this admin page ACC the 'pt-star' Sub access to password for this admin page ACC the 'pt-star' Sub access to password	red086ateway Kewate: OPrivate Public SM Access: Orrivate Public and AP: On Off Inter Rebuck Required if changed Apply Charges Inter Rebuck Required if changed Wireless Configuration Table Charges Inter I			Income and the second	- Withing
SH Access: wis AF: On Off Note: Reboot Required if changed PAPP On Off Note: Reboot Required if changed PAPP Charges Wireless Configuration Control Remove (11 and) Remove Access Password View Note: Note: Reboot Required if charges Remove Access Password Control Remove (11 and) Remove Access Password (11 and) Remove Access Password (11 and) Remove (11	SM Access: uts AP: On Off Note: Reboot Required IF changed MP1 On Off Note: Reboot Required IF changed Wirefees Configuration Chanter Remove (III and) Chanter Remove (III and) Remove Access Password Confirm Password Con	particular distance of the second s	and the second se		
NP Apply Charges Wireless Configuration Control tempory Mireless Configuration Control tempory Exact the tempory Exact th	Apply Charges Wirefees Configuration Wirefees Config			the second s	The second se
	Apple Charges Wireless Configuration			and the second se	Note: Nebout Anguired (r.changer
Wireless Configuration	Wireless Configuration Wireless Configuration Example Access Password User News Example Access Password Confirm Password Example Access Password Confirm Password Example Access Password	ST 107 1	Qui		
Example Access Password User None Example Access Password View None Confirm Password View None Confirm Password K-star Password RAMEING: This changes the password for this same page ACC the "pt-star" Sub accessit	East to Annual (11 and) Add themain Case internation Remain Access Password User Merei Confirm Factorial Add the "pic-star" Suit accessit				doly Charges
Example Access Password User None Example Access Password View None Confirm Password View None Confirm Password K-star Password RAMEING: This changes the password for this same page ACC the "pt-star" Sub accessit	East to Annual (11 and) Add themain Case internation Remain Access Password User Merei Confirm Factorial Add the "pic-star" Suit accessit			Wirele	es Configuration
Exact for hermonics (11) and 11 Remote Access Password View New State Faster Faste	Example Access Password Discretion Example Access Password Discretion Confirm Failsword Discretion Confirm Failsword Example Access Password Confirm Failsword Discretion Confirm Failsword BallEng: This changes the password for this admin page AKD the "pit-star" Sub accessity Confirm Failsword	Contraction of the		2010-0222	A CAMPAGE AND A CAMPAGE
Hamota Accass Password Star Star Password: Confirm Fassword: MAINING: This changes the password for this admin page AND the "pt-star" Son account	Hemotis Access Password Viers Line F-star Password: Confirm Fassword: Confirm Fassword: MAINING: This cranges the password for this admin page MAI the "pi-star" Sui account	46813052	100		
Hamota Accass Password Star Star Password: Confirm Fassword: MAINING: This changes the password for this admin page AND the "pt-star" Son account	Hemotis Access Password Viers Line F-star Password: Confirm Fassword: Confirm Fassword: MAINING: This cranges the password for this admin page MAI the "pi-star" Sui account	South the barrantee	ALL PROPERTY AND INCOME.	Taxa land company	
Uter None i-star Password: Coofirm Password RABNING: This changes the password for this admin page AND the "pr-star" Soil account	Uter None i-star Password: Confirm Password or this admin page AND the "pri-star" Soil account	SCAL OF BRIDES	ALL TANKS	NAME OF TAXABLE PARTY.	U 32
Uter None i-star Password: Coofirm Password RABNING: This changes the password for this admin page AND the "pr-star" Soil account	Uter None i-star Password: Confirm Password or this admin page AND the "pri-star" Soil account	and the tax and the	ing second	and the same card contract	
Uter Nove E-star Possword: Cooffre Password: RAINING: This changes the password for this admin page AND the "pt-star" Soil account	Uter New Continent E-star Password: Confirm Password or this admin page AND the "pt-star" Soil account				
Uter Nove E-star Possword: Cooffre Password: RAINING: This changes the password for this admin page AND the "pt-star" Soil account	Uter New Continent E-star Password: Confirm Password or this admin page AND the "pt-star" Soil account		and the second se		
Uter Nove E-star Possword: Cooffre Password: RAINING: This changes the password for this admin page AND the "pt-star" Soil account	Uter New Continent E-star Password: Confirm Password or this admin page AND the "pt-star" Soil account				
Uter None i-star Password: Coofirm Password RABNING: This changes the password for this admin page AND the "pr-star" Soil account	Uter None i-star Password: Confirm Password or this admin page AND the "pri-star" Soil account				
Uter None i-star Password: Coofirm Password RABNING: This changes the password for this admin page AND the "pr-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter None i-star Password: Coofirm Password RABNING: This changes the password for this admin page AND the "pr-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter None i-star Password: Coofirm Password RABNING: This changes the password for this admin page AND the "pr-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter None i-star Password: Coofirm Password RABNING: This changes the password for this admin page AND the "pr-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter Nove i-star Password: Coofirm Password of this admin page AND the "pt-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter None i-star Password: Coofirm Password RABNING: This changes the password for this admin page AND the "pr-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter None i-star Password: Coofirm Password RABNING: This changes the password for this admin page AND the "pr-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter None i-star Password: Coofirm Password RABNING: This changes the password for this admin page AND the "pr-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter None i-star Password: Coofirm Password RABNING: This changes the password for this admin page AND the "pr-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter None i-star Password: Coofirm Password RABNING: This changes the password for this admin page AND the "pr-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter None i-star Password: Coofirm Password RABNING: This changes the password for this admin page AND the "pr-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
Uter None i-star Password: Coofirm Password RABNING: This changes the password for this admin page AND the "pr-star" Soil account	Lister Password: Confirm Password: AND the "pri-star" Sum account				
E-star Possword: Coofirm Faisword: MARKING: This changes the password for this admin page AND the "pi-star" Son account	K-star Password: Confirm Faisword: Lineway MAINING: This changes the password for this admin page AND the "pi-star" San account			Bernste	Access Resourced
RAINING: This changes the passward for this admin page AND the "pi-star" Son account	MAINING: This changes the possword for this admin page AND the "pi-star" SSH account			Remote	
RAINING: This changes the passward for this admin page AND the "pi-star" Son account	MAINING: This changes the possword for this admin page AND the "pi-star" SSH account	Uler Nome		Ramota	
AKD the "pt-star" Son account	AND the "pi-star" Shi account		V	Remote	Password
AKD the "pt-star" Son account	AND the "pi-star" Shi account	Dier Noor	Pasawand (Remote	Password
AKD the "pt-star" Son account	AND the "pi-star" Shi account		and the second sec		Factored Confirm Factored
			and the second sec		Factored Confirm Factored
40. One and country. If Anity Young (PANDER)7 101-6 2020, Band Young Chick house for this Research Known (See Streep Review).	W. Ster and usering in Anto Name (2000) 2014 2010. Mark Lange Carls Into An Into Annual Annual Society of the Annual Society of th		and the second sec	Class: This changes	Confirm Paisword
and their material states and the states in the states of the states of the states of the state of the states o	40-Star and Config. In Ands. Name (MARINE) (2010) 2010. How (Sare) City (City Inter in Sarah Sarah City and Independent steps of Petidae State State.		and the second sec	Class: This changes	Confirm Paisword
40. One material part of Antice Version (IPANDINE)? (2014) 2010. Instant Annual: Carlos Instein for the Associated Annual Annual Carlos Carlos of Antice Association.	W. Steen and starting in a dealer in the second production of a list in dealer. In the second of the second rate was dealer and second the second		and the second sec	Class: This changes	Confirm Paisword
40-56ar made can Fig. 20. Addin Turino (PANDING 72.2014). Bitter Dark Dark Dark Dark Statuted Stream Link over 140-567. Disk Darken Statutes.	 Star and config. 20 Add Starter (MASHING) (2014) 4203. Band Varia (2014) house in the second diverse list year start of bilate bases house. 		and the second sec	Class: This changes	Confirm Paisword
Hannet budget Ellich have her tris Budgert Roman Ratt were tade of Public Associates	And your longs for the two is the assessed terms		and the second sec	KDMG: This changes AND the "p	Confirm Password:
and over data of the law many second second	Read proce capty of Picifian Name many		and the second sec	KDMG: This changes AND the "p	Confirm Password:
			and the second sec	KDMG: This changes AND the "p	Confirm Password:
			and the second sec	KDMG: This changes AND the "p	Confirm Password:
			and the second sec	KDMG: This changes AND the "p	Confirm Password:

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

Node Callsign:	MIABC	
Radio Frequency:	438.800,000 MHz	
Latitude:	60.00 degrees (posit	ive value for North, negative for South)
Longitude:	-3.00 degrees (posit	ive value for East, negative for West)
Town:	Town, LOCATOR	T.
Country:	Country	
URL:	http://www.mw0mwz.co.uk/pi-star/	Auto OManual
Radio/Modem Type:	-	0
Node Type:	OPrivate Public	1
System Time Zone:	America/Los_Angeles	
Dashboard Language:	engish us	

Setting		Yalue
Dashboard Access:	OPrivate OPublic	
ircDDBGateway Remote:	OPrivate Public	
SSH Access:	OPrivate Public	
Auto AP:	OOn Off	Note: Reboot Required if changed
uPNP :	OOn Off	

wifi Infa		Wireless Configu	ration	
Network 0	Objects \$\$10 - NETGEAR32 PSK			
Scan for Ne	Hworks (10 secs) Add Network Save Is	Etawrea Bre		
letworks fi				
Connect	SSID	Channel	Signal	Security
Select	ATTgTyj66a	2.4GHz Ch11	~29 d8m	WPA2-PSK (TKIP) with WPS
Select)	Humpty	2.4GHz Ch3	-45 dBm	WPA2-PSK (AES)
(leier)	NETGEAR32	2.4GHz Ch11	-46 d8m	WPA2-PSK (TKIP) with WPS
Select	ATTNn3C122	2.4GHz Ch11	~67 dBm	WPA2-PSK (TKIP) with WPS
Belect.)	PIXEL	Z.4GHz Chl	~83 dBm	WPA2-PSK (AES)
Belact	PIXEL_GUEST	2.4GHz Ch1	-85 dBm	WPA2-PSK (AES)
Select	WWwireless	2.4GHz Ch11	-87 d8m	WPA2-PSK (TKIP) with WP5
Select.	bbtest	Z.4GHz Ch6	-88 dBm	WPA2-PSK (AES)
Seinet	WGI	2.4GHz Ch6	~88 dBm	WPA2-PSK (TKIP) with WP5
Select	DIRECT-86-HP Officejet 5740	2.4GHz Ch6	-90 d8m	[WPAZ-PSK-COMP][WPS][ESS][P2P]
	ansor	2 ACU- Ch2		

- 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.

	Gateway H			tone Pactory Ke
		ardware Information	AND A CONTRACTOR	
al. 4144 A		Flatform	OTE Lood	DU Temp
pr-star 4	.19.66+ Pi Zero I	# Rev 1.1 (512MB)	0.8 / 0.69 / 0.28	0.6°C / 185.1°
	Con	trol Software		
Setting		Value		
Controller Softwure:	OStarRepeater OMEN	Most (DV-Mega Minimur	Firmmare 3.07 Require	0
Controller Mode:	Simplex Node Suplex	x Repeater (or Holf-Da	plax on Hotspots)	
	A	oply Changes		
	Canar	al Configuration		
Setting	wener	al Configuration	e	
Rostnow:	pi-star Do not add	suffixes such as .loc	ol	
Node Callsign:	KM62.JK		····	
Radio Frequency:	458800200 912			
Lutitude:	50.00 degrees (po	sitive value for North	h, negotive for South)	
Longitude:		sitive value for East		
Town:	Tawn, LOC4758			
Country:	Cauntry			
URL:	http://www.mwGmwt.ck.uk/pi-s	net in the	Auto OMar	wet
Radio/Nodes Type:	ZUMspet - Dual Band Raspber	a state of the sta	8	Contract in the second s
Node Type:	OPrivate Public			
APRS Bost:	eurs.apra2.net			
System Time Zone:	Americaltos, Angeles	6		
Doshboord Longuage:	english_us			
Setting	Firewa	eply Changes all Configuration Volue		
Deshboord Access:	Ofrivate Public			
irc008Gotewoy Remote:	OPrivate Public			
SSH Access:	OPrivate Public	Barrow R.	hand Barrison of Stationer	10
Auto AP: uPNP:	Oth Off	Note: Re	boot Required if change	9 .3
	Ogn Off	oply Changes		

- 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 Pactory Re
		Gateway Hardware Information
Hostnanp	Kernel	Platform ON Load OV Temp
pi-star	4.19.66+	Pi Zero W Rev 1.1 (512MB) 1.92 / 1.9 / 1.35 48.2°C / 118.8
		Control Software
Setting		Vatur
Controller Software:	and the second sec	Repeater OMMDVMHost (DV-Mega Minimum Firmware 3.07 Required)
Controller Mode:	OSimple	
		Apply Changes
		MMDVMHost Configuration
Setting	1	Value
DMR Mode:		RF Hangtime: 20 Net Hangtime: 20
D-Star Mode:		RF Hangtime: 20 Net Hangtime: 20
YSF Mode:	- 10 J.	RF Hangtime: 20 Net Hangtime: 20
P25 Mode:	0.7	RF Hongtime: 20 Net Hongtime: 20
NXON Mode:		RF Hungtime: 20 Net Hungtime: 20
YSF20MR :	9	
YSF2NXDN:	100	
YSF2P25:	9.3	
DMR2YSF:	10.7	Uses 7 prefix on DMRGateway
DMR2N00N1	0.0	Uses 7 prefix on DMRGateway
POCSAG:	0.0	POCSAG Paging Features
MMOVM Display Type:	OLED	Port: Moden DiNextion Layout: ON/LDSL3
		Apply Changes
		General Configuration
Setting		Value Value
Nostname:	pi-star	Do not add suffixes such as .local
Node Callsign:	KM6Z/X	
Radio Frequency:	434.400.00	do Mitz
Lotitude:	80.00	degrees (positive value for North, negative for South)
Longitude:	-3.00	degrees (positive value for East, negative for West)
Town:	Town, LOC	4TOR
Country:	Country	
URL:	http://www	www.mwdmwz.es.uk/pi-star/ Auto OMonuel
Radio/Modem Type:	ZUMipot	- Dual Band Raspberry Pi Hat (GPIO)
Node Type:	OPrivat	te Public
APRS Host:	euro.apra	2.net
System Time Zone:	America).	.os, Argeles
Dashboard Language:	english_u	

Aprily Chappen

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

Setting		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
DMR Mode:		AF Hungtime: 20 Net Hungtime: 30
D-Stor Mode:	0.0	85 Hungtime: 20 Net Hungtime: 20
TSF Mode:	0.1	89 Hangtime: 20 Net Hangtime: 20
P25 Mode:	0	RF Hungtime: 20 Net Hungtime: 20
NXDN Mode:	0	RF Hangtime: 20 Net Hangtime: 20
YSF2DMR1	0	
THE ENDS:	0	
YSF2P25:		
DMR2YSF:	0	Uses 7 prefix on DMRGateway
DHR2NXDN:	0.3	Uses 7 prefix un DMRGateway
POCSAG:	0.1	POCSAG Paging Features
MADVM Display Type:	0.40	Port: Modern Nextlan Layout: ON/LDSL3

Setting		and the second	Vanilet	
Nustriume:	pi-star	Do not add suffixes such as	.locul	
Node Collsign:	KMET/K	1.1		
CCS7/DML 10:	3130245			
Rodio Frequency:	834 800 20	Heiz		
Latitude:	50.00	degrees (positive value for	North, negative for South)	
Longitudei	-3.00	degrees (positive value for	East, negotive for Hest)	
Town:	Town, LOC4	1708		
Country:	Cinuritry			
ALT.	Tittp://www.	methnez.co.uk/pi-star/	Auto O Manual	
ladio/Moden Type:	ZuMant-	Duel Band Respirery Pi Hat (GPIO)	0	
kode Type:	OPrivate	e Ofunite	10.000	
APRS Host:	Exrop.orus	ten Linga ava		
System Time Zune:	AmericalLi	al, Angeles		
Dushboond Language:	english_us	0		

DNR Muster:	SM.United_States_3101
Nutspot Security:	
BrandMeister Network:	Repeater Information Edit Repeater (BrandWeister Selfcare)
DNR ESSID:	3138245 Hurre
DMR Color Code:	
DMR Embeddeut.COnly:	0.7
DWR DungTADota:	

• 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 I	Digital Voice - Conf	iguration	
		Deshboard Admin Expert Pr	wer Update Backup/A	lastore Fectory He
		Gateway Hardware Information	the second line and	
	Second	Platform	CPU Logal	CPU Temp
Hostowe				

Setting	······································					
Controller Software:	OStorRepeater OMMOVMHost (DV-Mega Minimum Firmware 3.87 Required)					
Controller Mode:	OSimplex Node Duplex Repeater (or Half-Duplex on Hatspots)					

		MMDVMHost Configuration	
Setting		Mine and a second s	
DMR Mode:	1.0	RF Hangtime: 20 Net Hangtime: 20	
D-Stor Mode:		RF Hangtime: 20 Net Hangtime: 20	1
YSF Mode:		RF Hongtime: 20 Net Hungtime: 20	
P25 Mode:	10.7	RF Hangtime: 20 Net Hangtime: 20	
NXDN Mode:	0	RF Hangtime: 20 Net Hangtime: 20	
YSF20MR:	(a)		
Y5F2NXON:	10.0		
Y5F2P25:	0.)		
DMR2YSF:	- (D) (1)	Uses 7 prefix on DMRGateway	
DMR2NXON:	0.0	Uses 7 prefix on DMRGateway	
POCSAG:	0.0	POCSAG Paging Features	
MMOVM Display Type:	OLED	Port: Madem R.Nextion Layout: ON7LDS L3	

Apply Changes

Setting	Volue
Hoistmane:	pi-star Do not add suffixes such as .local
Node Collsign:	KMEZIX
Radio Frequency:	#34.000.000 MHz
Lutitude:	to DD degrees (positive value for North, negative for South)
Longitude:	-3.00 degrees (positive value for East, negative for West)
Town:	Town, LOCATOR
Country:	Country
URLT	http://www.mwGmwz.co.uArpi-star/ Auto OManuel
Radio/Modem Type:	ZUMspot - Dual Band Raspberry Pi Hat (GPIO)
Node Type:	OPrivate Public
APRS Host:	euro-aursZinet
System Time Zone:	Americal as Angeles
Doshboard Language:	english.ue

• 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

		MMDVMHest Cor	ofiguratio	n		
Setting			- 10 C	Vallie		
DNR Mode:		RF Har	ngtime: 1	26	Net Hangtime: 20	
0-Star Node:		RF Hur	ngtime:	20 8	Net Hongtime: 20	1
YSF Mode:	0	RF Har	ngtime:	20	Net Hangtime: 20	
P25 Mode:	9.0	RF Har	ngtime:	26 8	Net Hangtime: 20	
NXON Mode:	0	RF Har	ngtime: i	20	Net Hangtime: 20	
YSF20MR:	(a)				and the second	
YSF2NON:	10					
TSF2P25:	0					
DMRZYSF:	0		Uses 7	prefix	on SMRGoteway	
DHR2NODN:	0.3		the second second		on DMRGateway	
POCSAG:	0.11				ng Features	
MNOVM Display Type:		PE: Nodem	and the second division of the second divisio	COLORADO DO DO	UE: ON7LDS L3	3
House around type.	OCLO OF	Apply Char		ton cayo	are on cost	
		Labor Cum	Aca .			
		General Confi	guration			
Setting				value		
Hostname:		not add suffixe	5 10CN 0	5 .10081	8	
Node Collsign:	KM52.0	-				
Radio Frequency:	145.815.000 MH	-				
Lotitude:				And a second line	negative for Sout	
Longitude:		prees (positive	value fo	r East,	negative for West)	
Town:	Toen, LOC470R					
Country;	Country					
URL:	http://www.mwOmw	and the second se			Auto 🔾	Manual
Radio/Modem Type:	Contract of the local division of the local	nd Raspberry Pi Hat.	GPIDI			
Node Type:	OPrivate Pu	blic				
APRS Most:	eurs.aprs2.net	8				
System Time Zone:	America/Los,Angel	es 🖯				
Dashboard Language:	english, us	-	-			
		Apply Chan	-ges			
		D-Star Config	uration			
Setting	and the second second second			Value		
RFT1 Collsign:	кибдая с					
RPT2 Collsign:	0462.1X G					
Remote Password:		11		_		
Default Reflector:	REFOOT C				OStartup	Monual
irc008Gateway Language:	English_(UK)	0				
Time Announcements:						
Use DPINs for XRF:	0				Note: Update Requi	ired if changed
		Apply Chan	iges .			
		Firewall Confi	ouration			
Setting		Chan Contra	Con a Consta	WHEN THE		
Dashboard Access:	OPrivate OPu	alic				

• 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. <u>https://amateurradionotes.com/images/1-Playing_with_Pi-Star.pdf</u>

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



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



- 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

		Det	hboard Ad	imin i Updal	te i Upprade i	Backup/Re	store Configuri
Quick Edit: DStarRepeater In:DDBG Pull Edit: OMR.GW Pistar-Ren							
		1000	- Pi-Star				
pi-star@pi-star-dualb(rw) pi-star@pi-star-dualb(rw) /ZUMspot Update/master/in	-S cur	1 -OL ht		aw.githu	busercont	ent.com	/veraabad
% Total % Received %			Speed	Time Total	Time Spent	Time	Current
100 460 100 460 0 pi-star@pi-star-dualb(rw) pi-star@pi-star-dualb(rw)		1859 o chmod	e +x inst	ill fw d	::	::-	- 1057
% Total % Received %			Speed	Time Total	Time Spent	Time	Current
100 51196 100 51196 0 stm32flash 0.5	θ	104k	0 -		**:**:**		- 105k
http://stm32flash.sourcef	orge.ne	t/					
Using Parser : Raw BINARY Interface serial_posix: 5 Version : 0x22 Option 1 : 0x00		1					
	2b rese	rved by	bootload	ter)			
- Flash : 128KiB (si - Option RAM : 16b - System RAM : 2KiB	ze Tirs	t sector	: 4x102/	÷)			
	0	lick here for I	Ullscreen St	SH client			

• 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 <u>https://git.code.sf.net/p/stm32flash/code</u> 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/