

Nextion Kit User Guide

The Nextion Kit has all of the capabilities of the ZUMspot all packaged up in a clear case with a Nextion display on top.



Specifications:

- High performance 32-bit ARM processor
- ZUMspot Board Fully Assembled And Tested
- Supports DMR, P-25, D-Star, System Fusion, NXDN and POCSAG
- Onboard LEDs to show status (Tx, Rx, PTT, Mode)
- Up to 10mW RF power
- SMA antenna connector, UHF antenna included
- Mounted on Raspberry Pi Zero WH
- The firmware is pre-loaded and is easily upgraded via software.
- Built-in 3.5" Nextion display
- 2.4A power supply
- 1 Year Warranty
- Open source firmware (MMDVM) and board design

The ZUMspot RPi Nextion 3.5 Kit Package Includes:

- ZUMspot RPi UHF Board
- Raspberry Pi Zero WH
- Custom case
- 2.4A power supply
- 3.5" Nextion Enhanced display
- UHF Antenna
- Pre-Imaged 16 GB MicroSD Card with Pi-Star Software

Setup:

- Make sure the SD card is installed in the Raspberry Pi Zero WH
- Install the antenna into the RF connector. There is an opening on the side which is where the antenna is connected.



Powering up:

- Plug in the USB micro power cable to your Nextion Kit. Then plug the cable into the wall adapter and insert that into an AC outlet.
- If the Nextion Kit doesn't power up, then press the switch on the cable and it should power up now.



Setup Pi-Star:

Configure display type:

- In the “MMDVMHost Configuration” section
- Make sure “MMDVM display Type” is set to “Nextion”
- Make sure “Port” is set to “Modem”
- Make sure “Nextion Layout” is set to “ON7LDS L3”

192.168.1.34

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	4.9.35-v7+	Pi 3 Model B (1GB) - Stadium	0.17 / 0.13 / 0.08	43.5°C / 110.3°F

Control Software

Setting	Value
Controller Software:	<input type="checkbox"/> DStarRepeater <input checked="" type="radio"/> MMDVMHost (DV-Mega Minimum Firmware 3.07 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"/>
DMRZYSF:	<input type="checkbox"/> Uses 7 prefix on DMRGateway
DMRZNXDN:	<input type="checkbox"/> Uses 7 prefix on DMRGateway
POCSAG:	<input type="checkbox"/> POCSAG Paging Features
MMDVM Display Type:	<input checked="" type="radio"/> Nextion <input type="radio"/> Port: Modem <input checked="" type="radio"/> Nextion Layout: ON7LDS L3

Apply Changes

General Configuration

Setting	Value
Hostname:	pi-star Do not add suffixes such as .local
Node Callsign:	K6ZUM
Radio Frequency:	434.800000 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.m0mwz.co.uk/pi-star/ <input type="radio"/> Auto <input checked="" type="radio"/> Manual
Radio/Modem Type:	ZumSpot - Raspberry Pi Hat (GPIO)
Node Type:	<input checked="" type="radio"/> Private <input type="radio"/> Public
System Time Zone:	America/Los_Angeles
Dashboard Language:	english_us

Wi-Fi:

- Power up the Nextion 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 OS X 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 pfSense configuration interface. The 'Wireless Configuration' section is active, and the 'Configure Wi-Fi' button is highlighted with a red box. Below this, the 'Wireless Information and Statistics' section is visible, showing details for the 'wlan0' interface. The 'Remote Access Password' section is also visible at the bottom.

The screenshot shows the pfSense configuration interface. The 'Wireless Configuration' section is active, and the 'Scan for Networks (10 secs)' button is highlighted with a red box. Below this, the 'Wireless Information and Statistics' section is visible, showing details for the 'wlan0' interface. The 'Remote Access Password' section is also visible at the bottom.

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

The screenshot shows the pi-star.local configuration web interface. It includes sections for general settings, firewall configuration, and wireless configuration.

General Settings:

- 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, LOC4TOR
- Country: Country
- URL: http://www.mw0mhz.co.uk/pi-star/
- Radio/Modem Type: --
- Node Type: ☒ Private ☐ Public
- System Time Zone: America/Los_Angeles
- Dashboard Language: english_us

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
uPNP:	<input checked="" type="radio"/> On <input type="radio"/> Off

Wireless Configuration:

WiFi Info

Network ID:

SSID: NETGEAR32

PSK:

Networks found:

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"/>	ATTNnJC122	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"/>	WWireless	2.4GHz Ch11	-87 dBm	WPA2-PSK (TKIP) with WPS
<input type="button" value="Select"/>	abtest	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 Nextion Kit

Configuration:

- Change the Node Callsign to your own, set the **“Radio Frequency”** to match your radio and make sure the **“Radio/Modem Type”** is set to **“ZUMspot - Raspberry Pi Hat (GPIO)”**, 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

Hardware	Kernel	Platform	DNI Logo	DNI Time
pi-star	4.9.81-v7s	PI 3 Model B (1GB)	Stadium	0.89 / 0.18 / 0.89

Cardinal Software

Setting: ☐ Setting ☒ Active

Controller Software: ☐ DStarRepeater ☒ QRM/Whist (D-Star Minimum Firmware 3.87 Required)

Controller Mode: ☒ Simplex Mode ☐ Duplex Repeater (or Re14-Duplex on NetSpot3)

Apply Changes

General Configuration

Setting: ☐ Setting ☒ Active

Hostname: (do not add suffixes such as .local)

Node Callsign:

Radio Frequency: MHz

Latitude: Degrees (positive value for North, negative for South)

Longitude: Degrees (positive value for East, negative for West)

Town:

Country:

URL:

Radio/Modem Type: ☐ D-Star ☒ ZUMspot - Raspberry Pi Hat (GPIO)

Mode Type: ☐ D-Star ☒ ZUMspot - Raspberry Pi Hat (GPIO)

System Time Zone:

Dashboard Language:

Apply Changes

Firewall Configuration

Setting: ☐ Setting ☒ Active

Dashboard Access: ☒ Private ☐ Public

TrunkGateway Repeat: ☒ Private ☐ Public

SSN Access: ☒ Private ☐ Public

Auto AP: ☒ On ☐ Off (Note: Reboot Required if changed)

uPnP: ☒ On ☐ Off

Apply Changes

Wireless Configuration

Setting: ☐ Setting ☒ Active

Interface Information

Interface Name	Interface Status	IP Address	Subnet Mask
wlan0	Interface is down		

Wireless Information

Connected To	AP Mac Address	BRate
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- Click **“Apply Changes”** when you are done

Configuration (example to enable D-Star):

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

192.168.1.34

Pi-Star 3.8.1.7 / Software: 20191118

Pi-Star Digital Voice - Configuration

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Gateway Hardware Information

Hostname	Kernel	Platform	CPU Load	CPU Temp
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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:	Nextion <input checked="" type="radio"/> Part: Modem <input type="radio"/> Nextion Layout: OM7LOS LB <input type="radio"/>

Apply Changes

General Configuration

Setting	Value
Hostname:	pi-star Do not add suffixes such as .local
Node Callsign:	K1BZUM
Radio Frequency:	434.500.000 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.m0mwz.co.uk/pi-star/ <input type="radio"/> Auto <input checked="" type="radio"/> Manual
Radio/Modem Type:	ZumSpot - Raspberry Pi Hat (GPIO) <input type="radio"/>
Mode Type:	<input checked="" type="radio"/> Private <input type="radio"/> Public
System Time Zone:	America/Los_Angeles <input type="radio"/>
Dashboard Language:	english_us <input type="radio"/>

Finished:

Once you have completed the Pi-Star configuration you can start using the Nextion Kit to connect to DSTAR, 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

Support:

MMDVM groups.io group:

<https://groups.io/g/OpenDV>

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/>