

Elite 3.5 Color LCD ZUMspot

The Elite 3.5 Color LCD ZUMspot kit is a low power simplex digital mode hotspot. It supports D-Star, DMR, Fusion, NXDN, P25, M17 and POCSAG.



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ZUMspot board specifications:

- ZUMspot Board Fully Assembled And Tested
- High performance 32-bit ARM processor
- Supports DMR, P-25, D-Star, System Fusion, NXDN, M17 and POCSAG
- Onboard LEDs to show status (Tx, Rx, PTT, Mode)
- Up to 10mW RF power
- SMA antenna connector, UHF antenna included
- The firmware is pre-loaded and is easily upgraded via software

Kit includes:

- ZUMspot RPi UHF modem Board
- Raspberry Pi 4
- Custom case
- 3A power supply
- 3.5" LCD screen
- UHF Antenna
- Pre-Imaged MicroSD Card with WPSD Software
- 1 Year Warranty

Setup:

- Make sure the SD card is installed in the Raspberry Pi 4 board
- Install the antenna onto the SMA RF connector



Powering up:

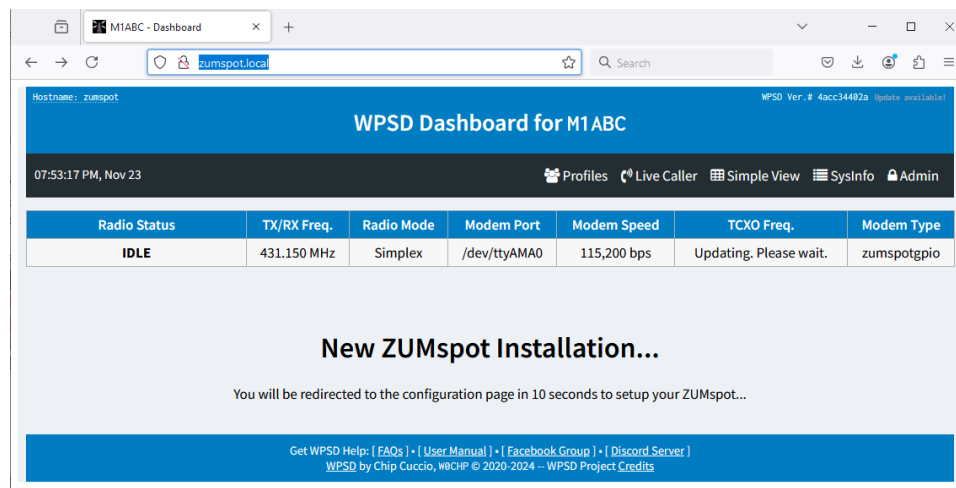
- Plug in the USB-C power cable to the Elite 3.5 Color LCD ZUMspot kit. Then plug the cable into the wall adapter and insert that into an AC outlet.
- If the Elite 3.5 Color LCD ZUMspot kit doesn't power up, then press the switch on the cable and it should power up now.



Setup WPSD:

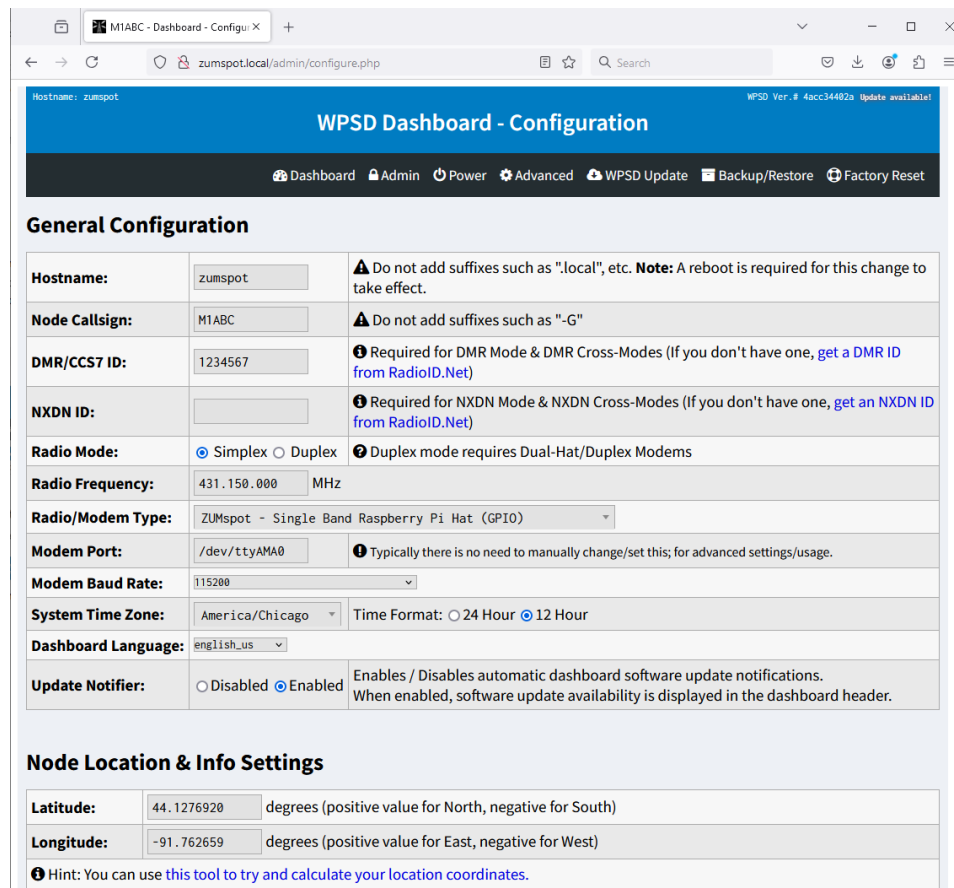
Wi-Fi:

- Power up the Elite 3.5 Color LCD ZUMspot kit.
- After 3 minutes, scan for Wi-Fi access points from the phone or laptop. One should appear with the name “**WPSD-Setup**”
- Connect to it. When asked for the Wi-Fi password type in: raspberry
- Next, go to the web browser (Chrome, Firefox, etc.) and connect to the WPSD Dashboard page.
For WPSD versions based on Bullseye (Debian 11) use these URLs:
<http://wpsd> (for Windows, Linux and Android devices)
<http://wpsd.local> (for OS X and iOS devices)
For WPSD versions based on Bookworm (Debian 12) use these URLs:
<http://zumspot> (for Windows, Linux and Android devices)
<http://zumspot.local> (for OS X and iOS devices)
- It should first go to the “New ZUMspot Installation” screen.



Radio Status	TX/RX Freq.	Radio Mode	Modem Port	Modem Speed	TCXO Freq.	Modem Type
IDLE	431.150 MHz	Simplex	/dev/ttyAMA0	115,200 bps	Updating. Please wait.	zumspotgpio

- It should switch automatically to the “WPSD Dashboard - Configuration” screen. If asked, enter the username which is “**pi-star**” and the password which is “**raspberry**”.



Hostname: zumspot WPSD Ver. # 4acc34492a Update available!

Dashboard Admin Power Advanced WPSD Update Backup/Restore Factory Reset

General Configuration

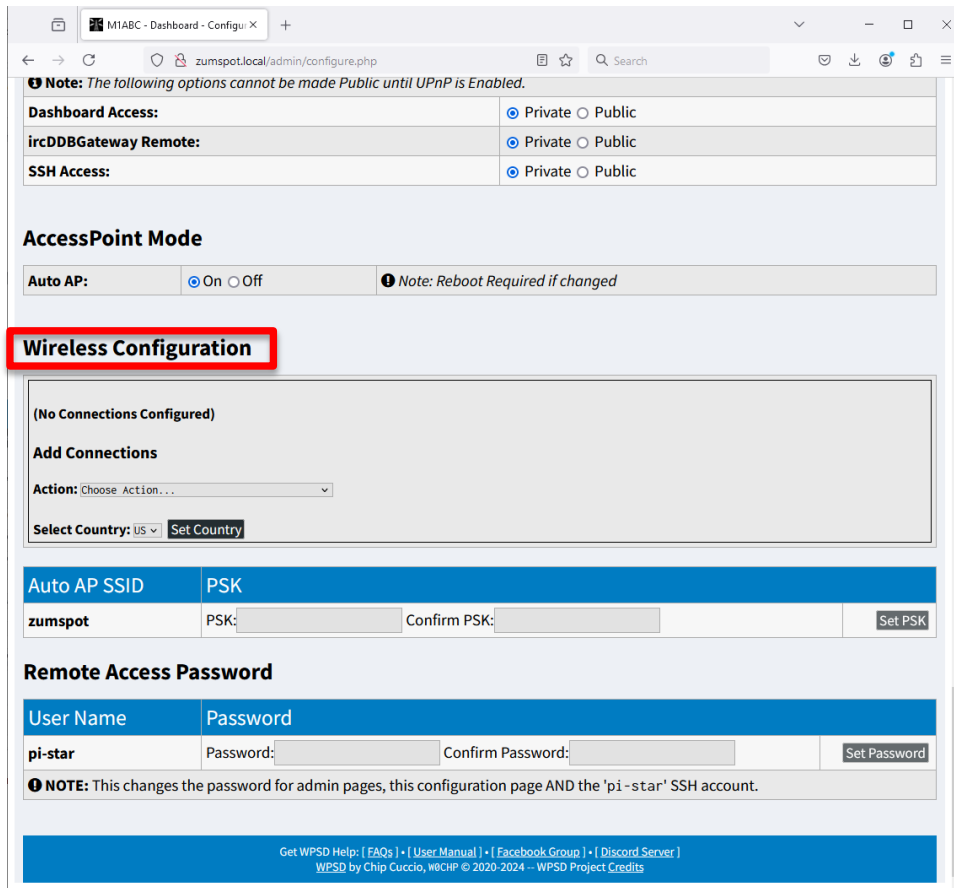
Hostname:	zumspot	⚠ Do not add suffixes such as ".local", etc. Note: A reboot is required for this change to take effect.
Node Callsign:	M1ABC	⚠ Do not add suffixes such as "-G"
DMR/CCS7 ID:	1234567	ℹ Required for DMR Mode & DMR Cross-Modes (if you don't have one, get a DMR ID from RadioID.Net)
NXDN ID:		ℹ Required for NXDN Mode & NXDN Cross-Modes (if you don't have one, get an NXDN ID from RadioID.Net)
Radio Mode:	<input checked="" type="radio"/> Simplex <input type="radio"/> Duplex	⚠ Duplex mode requires Dual-Hat/Duplex Modems
Radio Frequency:	431.150.000 MHz	
Radio/Modem Type:	ZUMspot - Single Band Raspberry Pi Hat (GPIO)	
Modem Port:	/dev/ttyAMA0	ℹ Typically there is no need to manually change/set this; for advanced settings/usage.
Modem Baud Rate:	115200	
System Time Zone:	America/Chicago	Time Format: <input type="radio"/> 24 Hour <input checked="" type="radio"/> 12 Hour
Dashboard Language:	english_us	
Update Notifier:	<input type="radio"/> Disabled <input checked="" type="radio"/> Enabled	Enables / Disables automatic dashboard software update notifications. When enabled, software update availability is displayed in the dashboard header.

Node Location & Info Settings

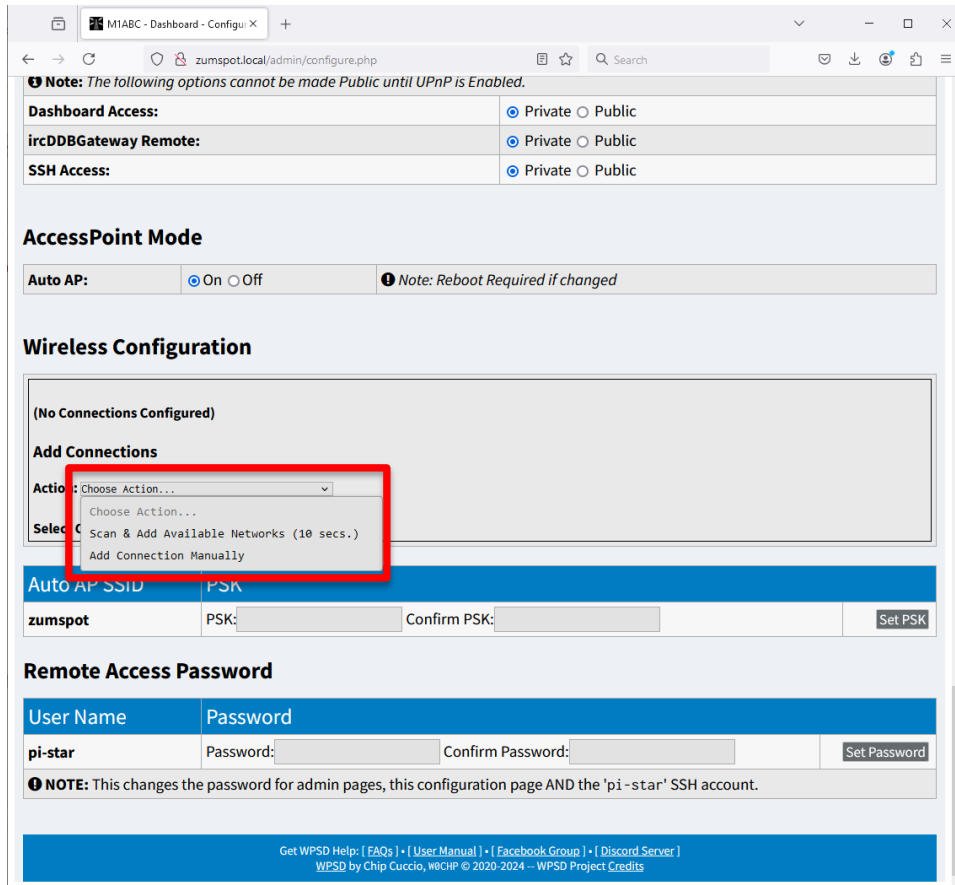
Latitude:	44.1276920	degrees (positive value for North, negative for South)
Longitude:	-91.762659	degrees (positive value for East, negative for West)

ℹ Hint: You can use [this tool to try and calculate your location coordinates.](#)

- Scroll down to the section called “Wireless Configuration”.



- Click on the “Choose Action” dropdown menu and select “Scan and add available networks”.



The screenshot shows the configuration page for a ZUMspot device. The browser address bar indicates the URL is `zumspot.local/admin/configure.php`. A note at the top states: "Note: The following options cannot be made Public until UPnP is Enabled." Below this, there are three rows of configuration options, each with radio buttons for "Private" (selected) and "Public":

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

The "AccessPoint Mode" section has an "Auto AP:" toggle set to "On" (with "Off" also visible) and a note: "Note: Reboot Required if changed".

The "Wireless Configuration" section contains a message "(No Connections Configured)" and an "Add Connections" button. A dropdown menu is open, showing the following options:

- Choose Action...
- Choose Action...
- Scan & Add Available Networks (10 secs.)
- Add Connection Manually

The "Auto AP SSID" section shows the SSID "zumspot" and a "PSK" field with a "Set PSK" button.

The "Remote Access Password" section has a table with "User Name" and "Password" columns. The "User Name" is "pi-star" and the "Password" field is empty. There is a "Set Password" button.

A note at the bottom of the password section states: "NOTE: This changes the password for admin pages, this configuration page AND the 'pi-star' SSH account."

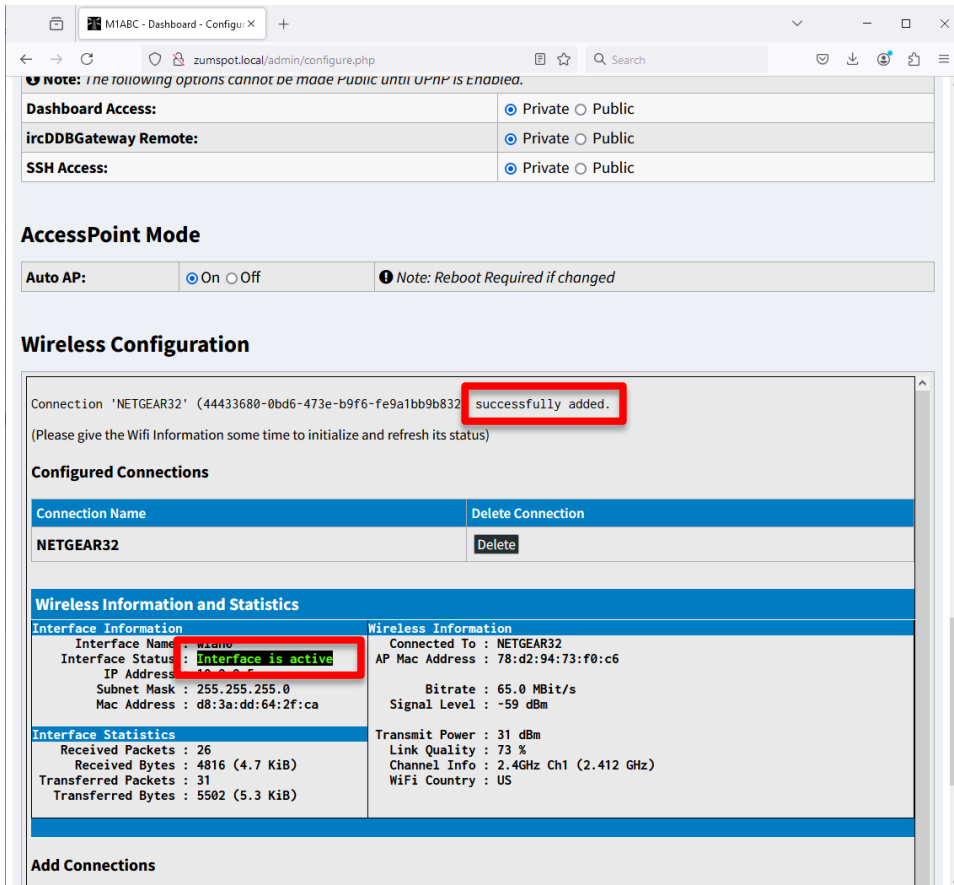
At the very bottom, there is a footer with links: "Get WPSD Help: [FAQs] • [User Manual] • [Facebook Group] • [Discord Server]" and "WPSD by Chip Cuccio, WCHP © 2020-2024 - WPSD Project Credits".

- Enter the “**Passphrase**” for the preferred Access Point (AP), and then click “**Add This Network**”.

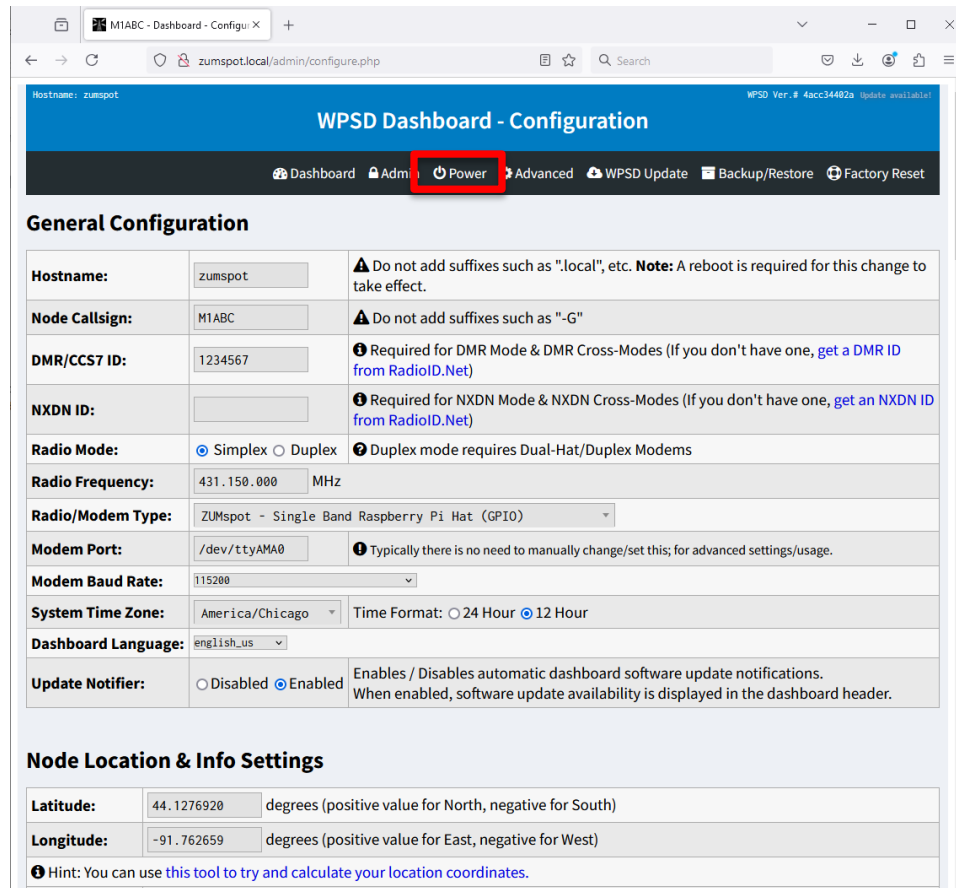
The screenshot shows the 'Configure' page of the ZUMspot dashboard. At the top, there are settings for 'Dashboard Access', 'ircDDBGateway Remote', and 'SSH Access', each with radio buttons for 'Private' (selected) and 'Public'. Below this is the 'AccessPoint Mode' section with an 'Auto AP' toggle set to 'On' and a note: 'Note: Reboot Required if changed'. The main section is 'Wireless Configuration', which contains a table of detected wireless networks. The table has columns for SSID, Signal Strength, Band, Channel, Security Type, Passphrase, and Add Connection. The 'NETGEAR32' row is highlighted with a red box around its 'Enter Passphrase' input field and its 'Add This Network' button. Below the table, there is a section for '(No Connections Configured)' and an 'Add Connections' section with an 'Action' dropdown menu.

SSID	Signal Strength	Band	Channel	Security Type	Passphrase	Add Connection
SMA1990032704	64%	2.4 GHz	1	WPA2	Enter Passphrase	Add This Network
NETGEAR32	54%	2.4 GHz	1	WPA2	Enter Passphrase	Add This Network
SuperHouse Guest	37%	2.4 GHz	1	WPA2	Enter Passphrase	Add This Network
CG3000DV208	37%	2.4 GHz	11	WPA2	Enter Passphrase	Add This Network
SuperHouse	34%	2.4 GHz	1	WPA2	Enter Passphrase	Add This Network
Ted490	32%	2.4 GHz	6	WPA3	Enter Passphrase	Add This Network
Eero-MasterBedroom	32%	2.4 GHz	6	WPA2	Enter Passphrase	Add This Network
PencilsXIV	25%	2.4 GHz	3	WPA2	Enter Passphrase	Add This Network
MauiWaii-guest	25%	2.4 GHz	11	WPA2	Enter Passphrase	Add This Network
MauiWaii	19%	2.4 GHz	11	WPA2	Enter Passphrase	Add This Network

- The message **“successfully added”** should be displayed, and Interface Status should show **“Interface is active”**.



- Scroll back to the top of the page and click on the “Power” button.



The screenshot shows the WPSD Dashboard - Configuration page. The top navigation bar includes buttons for Dashboard, Admin, Power (highlighted with a red box), Advanced, WPSD Update, Backup/Restore, and Factory Reset. The main content area is divided into two sections: General Configuration and Node Location & Info Settings.

General Configuration

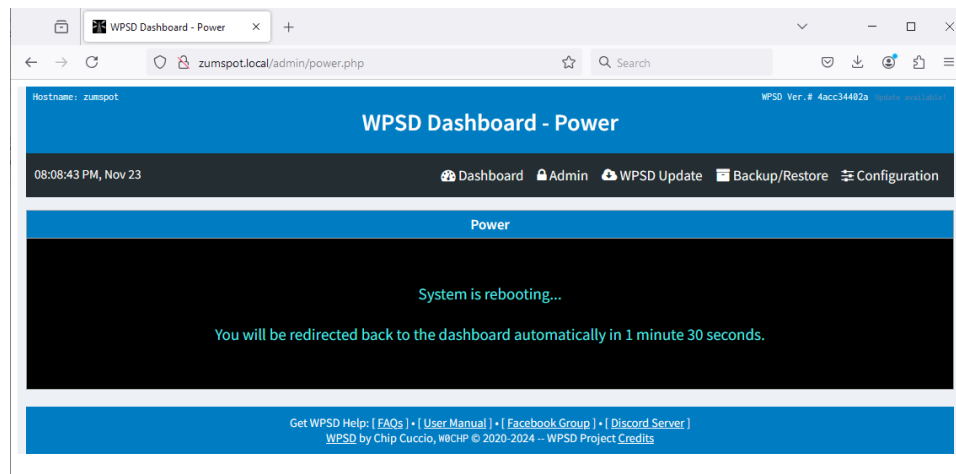
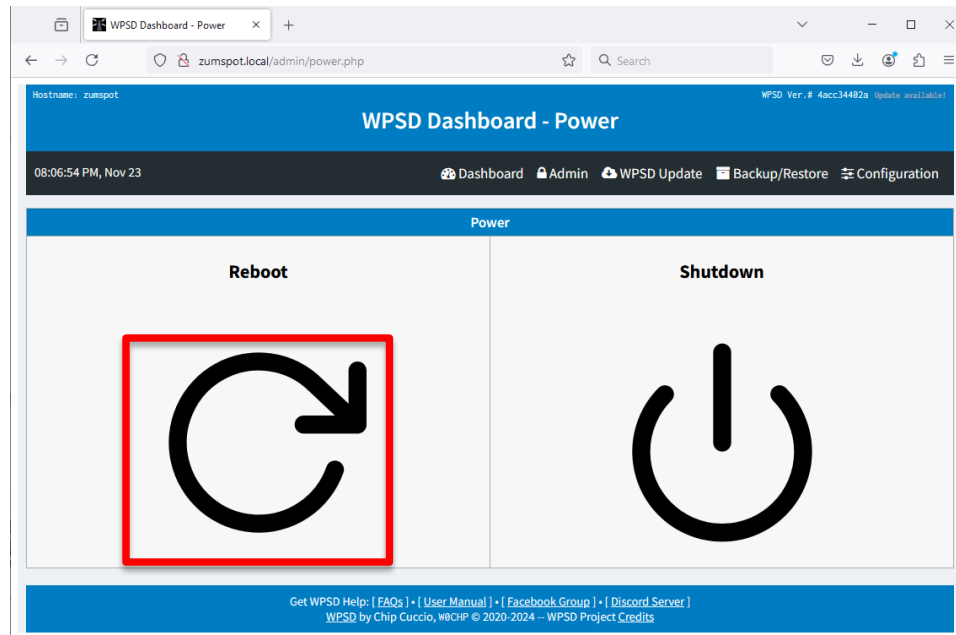
Hostname:	zumspot	⚠ Do not add suffixes such as ".local", etc. Note: A reboot is required for this change to take effect.
Node Callsign:	M1ABC	⚠ Do not add suffixes such as "-G"
DMR/CCS7 ID:	1234567	📌 Required for DMR Mode & DMR Cross-Modes (If you don't have one, get a DMR ID from RadioID.Net)
NXDN ID:		📌 Required for NXDN Mode & NXDN Cross-Modes (If you don't have one, get an NXDN ID from RadioID.Net)
Radio Mode:	<input checked="" type="radio"/> Simplex <input type="radio"/> Duplex	📌 Duplex mode requires Dual-Hat/Duplex Modems
Radio Frequency:	431.150.000 MHz	
Radio/Modem Type:	ZUMspot - Single Band Raspberry Pi Hat (GPIO)	
Modem Port:	/dev/ttyAMA0	📌 Typically there is no need to manually change/set this; for advanced settings/usage.
Modem Baud Rate:	115200	
System Time Zone:	America/Chicago	Time Format: <input type="radio"/> 24 Hour <input checked="" type="radio"/> 12 Hour
Dashboard Language:	english_us	
Update Notifier:	<input type="radio"/> Disabled <input checked="" type="radio"/> Enabled	Enables / Disables automatic dashboard software update notifications. When enabled, software update availability is displayed in the dashboard header.

Node Location & Info Settings

Latitude:	44.1276920	degrees (positive value for North, negative for South)
Longitude:	-91.762659	degrees (positive value for East, negative for West)

📌 Hint: You can use [this tool](#) to try and calculate your location coordinates.

- Click on the “Reboot” button and wait for the ZUMspot finish restarting.



- After 3 minutes, connect back to the local Access Point, and then connect to the WPSD configuration page.

For WPSD versions based on Bullseye (Debian 11) use these URLs:

<http://wpsd> (for Windows, Linux and Android devices)

<http://wpsd.local> (for OS X and iOS devices)

For WPSD versions based on Bookworm (Debian 12) use these URLs:

<http://zumspot> (for Windows, Linux and Android devices)

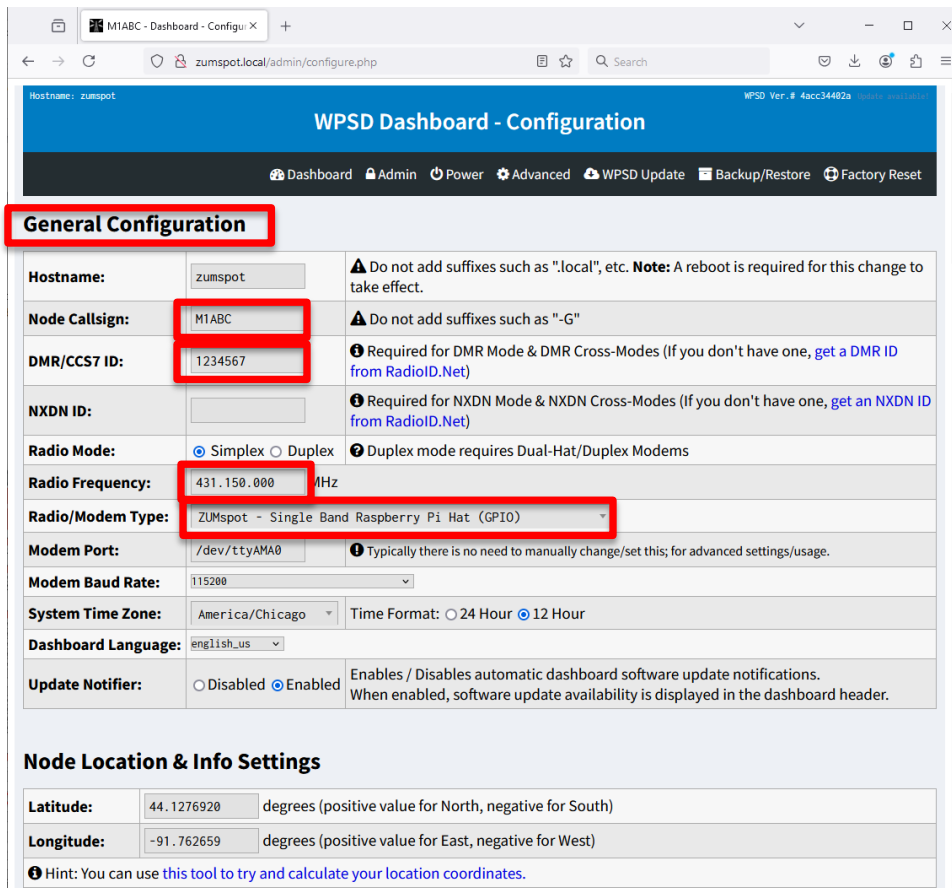
<http://zumspot.local> (for OS X and iOS devices)

Ethernet:

- The Elite 3.5 Color LCD ZUMspot supports using Ethernet. When the unit boots the first time, the IP address acquired via DHCP from the network over Ethernet will be displayed on the LCD screen.

WPSD configuration:

- Start by entering the information into the “**General Configuration**” section. At a minimum, enter the “**Node Callsign**”, and “**Radio Frequency**”. Use the local frequency coordinator rules to select a frequency that won’t interfere with local activity. Optionally enter the “**DMR/CCS7 ID**” and “**NXDN ID**”. Also make sure the “**Radio/Modem Type**” is set to “**ZUMspot – Single Band Raspberry Pi HAT (GPIO)**”.



WPSD Dashboard - Configuration

Dashboard Admin Power Advanced WPSD Update Backup/Restore Factory Reset

General Configuration

Hostname: zumspot WPSD Ver. # 4acc34402a

Node Callsign: M1ABC ⚠ Do not add suffixes such as ".local", etc. **Note:** A reboot is required for this change to take effect.

DMR/CCS7 ID: 1234567 ⚠ Do not add suffixes such as "-G"

NXDN ID: ℹ Required for DMR Mode & DMR Cross-Modes (If you don't have one, [get a DMR ID from RadioID.Net](#))

Radio Mode: Simplex Duplex ⚠ Duplex mode requires Dual-Hat/Duplex Modems

Radio Frequency: 431.150.000 MHz ℹ Required for NXDN Mode & NXDN Cross-Modes (If you don't have one, [get an NXDN ID from RadioID.Net](#))

Radio/Modem Type: ZUMspot - Single Band Raspberry Pi Hat (GPIO)

Modem Port: /dev/ttyAMA0 ℹ Typically there is no need to manually change/set this; for advanced settings/usage.

Modem Baud Rate: 115200

System Time Zone: America/Chicago Time Format: 24 Hour 12 Hour

Dashboard Language: english_us

Update Notifier: Disabled Enabled Enables / Disables automatic dashboard software update notifications. When enabled, software update availability is displayed in the dashboard header.

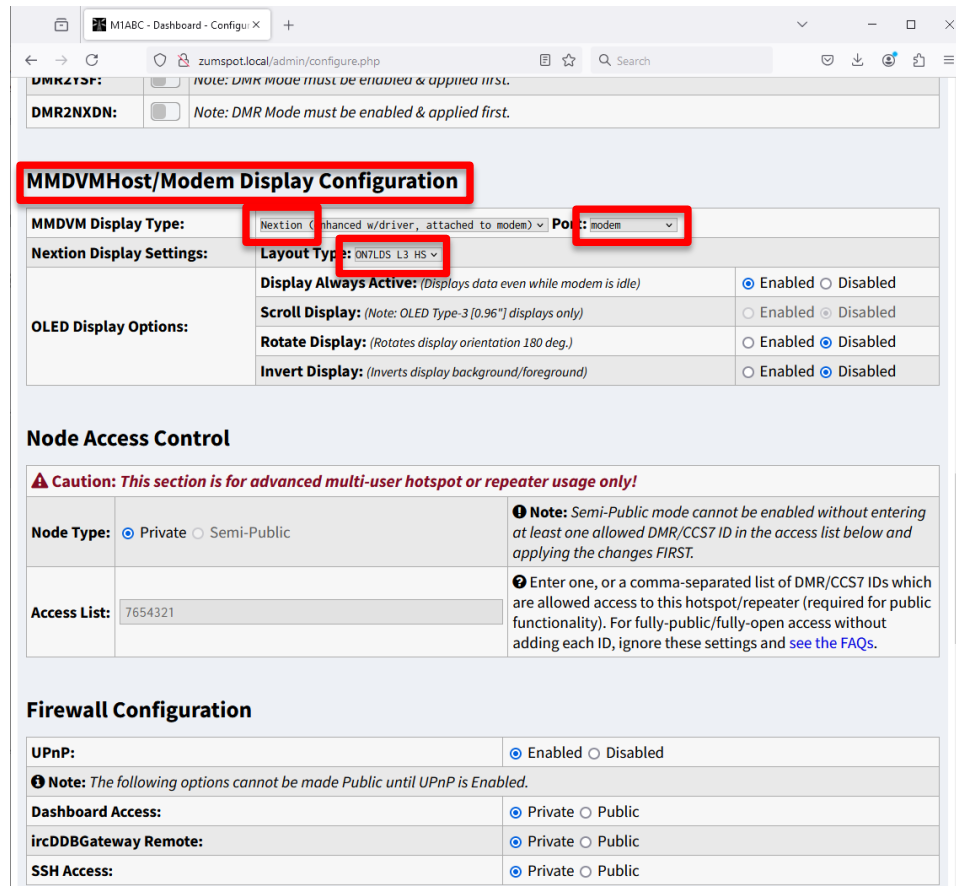
Node Location & Info Settings

Latitude: 44.1276920 degrees (positive value for North, negative for South)

Longitude: -91.762659 degrees (positive value for East, negative for West)

ℹ Hint: You can use [this tool](#) to try and calculate your location coordinates.

- Next, scroll down to the “MMDVMHost/Modem Display Configuration” section. Next, make sure “MMDVM display Type” is set to “Nextion”, “Port” is set to “Modem” and “Nextion Layout” is set to “ON7LDS L3”.



MMDVMHost/Modem Display Configuration

MMDVM Display Type: Nextion (enhanced w/driver, attached to modem) Port: modem

Nextion Display Settings: Layout Type: ON7LDS L3 HS

OLED Display Options:

Display Always Active: (Displays data even while modem is idle)	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled
Scroll Display: (Note: OLED Type-3 (0.96") displays only)	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled
Rotate Display: (Rotates display orientation 180 deg.)	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled
Invert Display: (Inverts display background/foreground)	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled

Node Access Control

Caution: This section is for advanced multi-user hotspot or repeater usage only!

Node Type: Private Semi-Public

Access List: 7654321

Note: Semi-Public mode cannot be enabled without entering at least one allowed DMR/CCS7 ID in the access list below and applying the changes FIRST.

Note: Enter one, or a comma-separated list of DMR/CCS7 IDs which are allowed access to this hotspot/repeater (required for public functionality). For fully-public/fully-open access without adding each ID, ignore these settings and see the FAQs.

Firewall Configuration

UPnP: Enabled Disabled

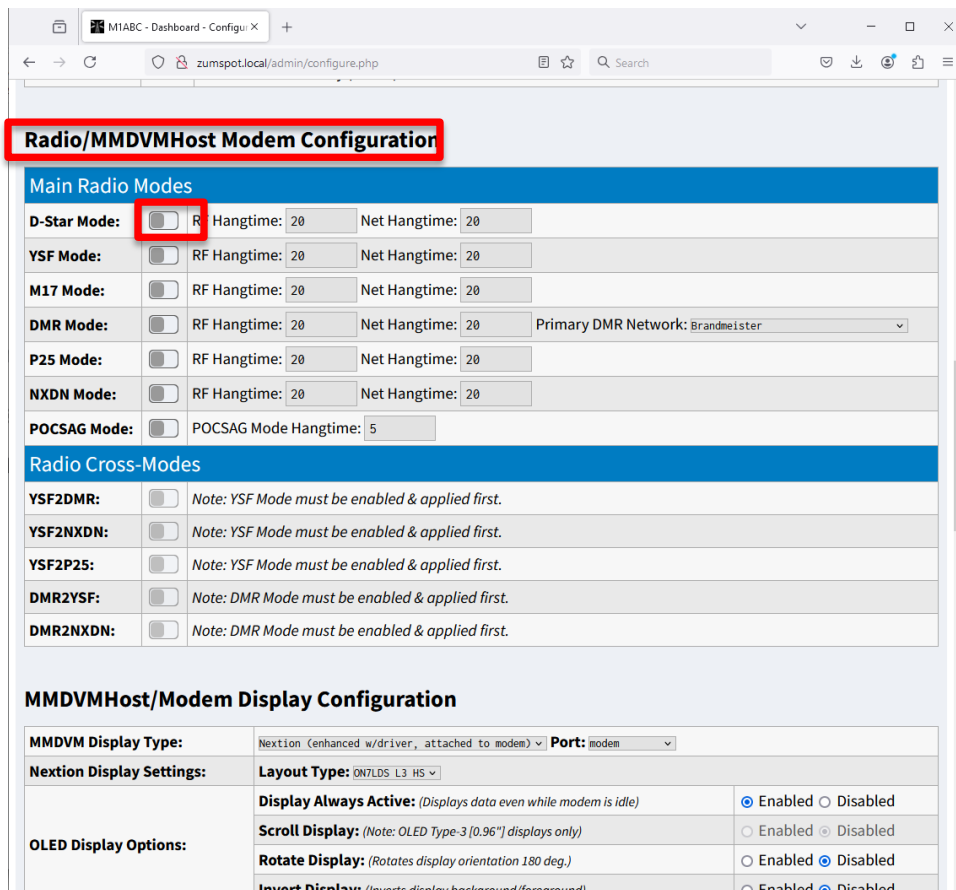
Note: The following options cannot be made Public until UPnP is Enabled.

Dashboard Access: Private Public

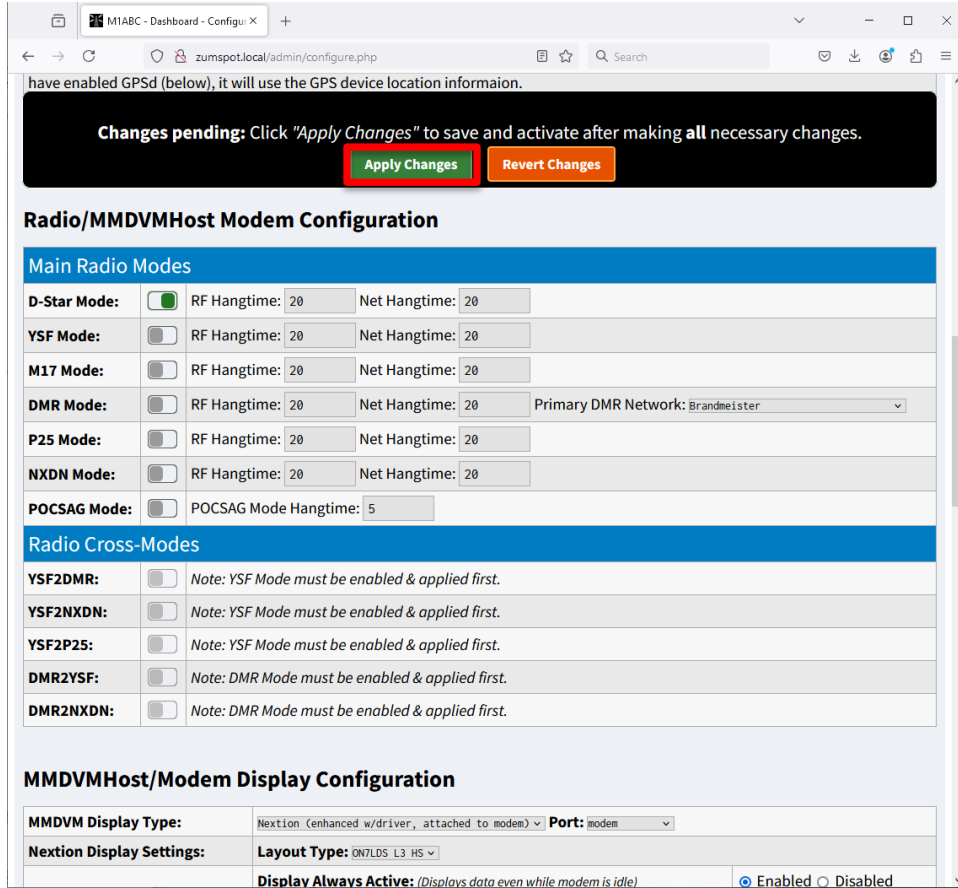
ircDDBGateway Remote: Private Public

SSH Access: Private Public

- Next, scroll down to the “Radio/Modem Configuration” section. Click on the mode to be enabled.

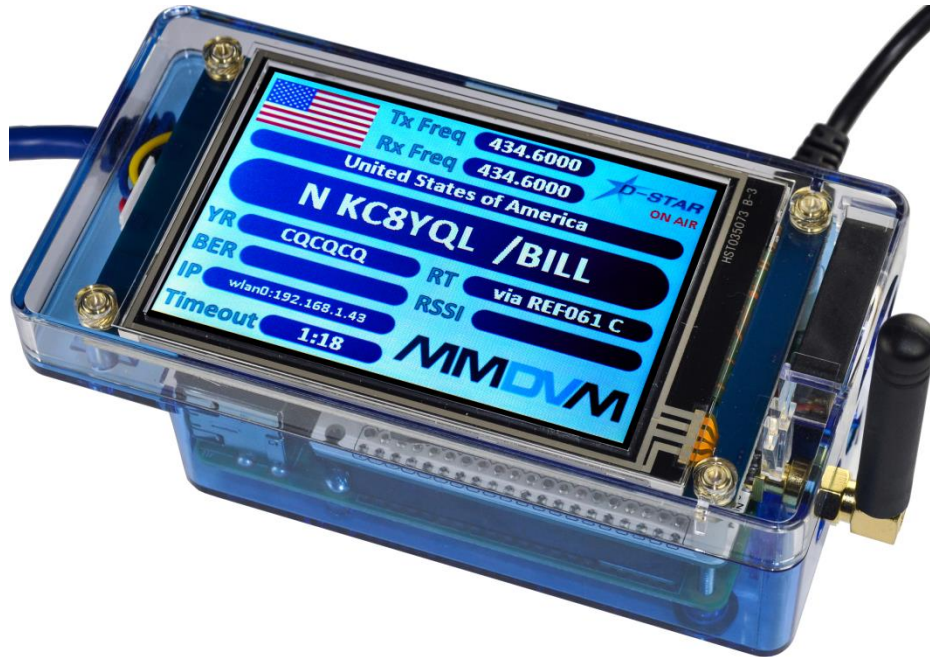


- Click “Apply Changes” when done



Finished:

After completing the WPSD configuration the Elite 3.5 Color LCD ZUMspot kit is ready to connect to DSTAR, DMR and other networks.



Support:

MMDVM groups.io group:

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

WPSD website:

<https://w0chp.radio/wpsd/>

WPSD User Manual:

<https://manual.wpsd.radio/>

ZUM Radio Facebook group:

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

There is more information on configuring and using MMDVM in this document:

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