

ZUMSPOT / D-Star Radio Configuration

by KD0EQH

Table of Contents

List of Figures.....	1
Version History	1
Prologue	1
ZumSpot Configuration	2
MMDVMHost Configuration	2
General Configuration	2
D-Star Configuration.....	3
Expert / Advanced	4
D-Star Registration	5
Icom D-Star Configuration.....	5
Memory Channels	5
Transmit Message	6
My Call Sign	6
Your Call Sign (URCALL)	6
D-Star Reflectors.....	6

List of Figures

Figure 1. Control Software	2
Figure 2. MMDVMHost Configuration	2
Figure 3. General Configuration	3
Figure 4. D-Star Configuration.....	4
Figure 5. Expert Configuration	4
Figure 6. Radio Memory Channels	5
Figure 7. Tx Message	6
Figure 8. My Call Sign	6
Figure 9. Your Call Sign(URCALL)	6

Version History		
Date	Version	Brief Description of Change
9/1/2019	1.0	Initial Release

Prologue

This document is designed to assist the user in setting up a ZumSpot hotspot/access point with a compatible D-Star radio. There are many great resources on the internet and just as many people who helped me get my first radio configured, I only hope I can be as helpful and patient. **Shout-out to W6GPS & N8LN.**

ZumSpot Configuration

Control Software

Controller software set to MMDVHost

Controller Mode set to Simplex Node.

NOTE: D-Star radio will be set to Duplex with -0 MHz Offset

Control Software	
Setting	Value
Controller Software:	☐ DStarRepeater ☒ MMDVHost (DV-Mega Minimum Firmware 3.07 Required)
Controller Mode:	☒ Simplex Node ☐ Duplex Repeater (or Half-Duplex on Hotspots)

Figure 1. Control Software

MMDVHost Configuration

D-Star Mode: Set to enable.

MMDVHost Configuration			
Setting	Value		
DMR Mode:	☐	RF Hangtime: 20	Net Hangtime: 20
D-Star Mode:	☒	RF Hangtime: 20	Net Hangtime: 20
YSF Mode:	☐	RF Hangtime: 20	Net Hangtime: 20
P25 Mode:	☐	RF Hangtime: 20	Net Hangtime: 20
NXDN Mode:	☐	RF Hangtime: 20	Net Hangtime: 20
YSF2DMR:	☐		
YSF2NXDN:	☐		
YSF2P25:	☐		
DMR2YSF:	☐	Uses 7 prefix on DMRGateway	
DMR2NXDN:	☐	Uses 7 prefix on DMRGateway	
POCSAG:	☐	POCSAG Paging Features	
MMDVM Display Type:	OLED ▼	Port: Modem ▼	Nextion Layout: ON7LDS L3 ▼

Figure 2. MMDVHost Configuration

General Configuration

Hostname: Can be left to the default or customized.

Node Callsign: Set to your FCC issued callsign.

Radio Frequency: Set in the 70cm band, but not between 435 to 438 MHz as this is reserved for amateur satellite use. Field will turn red if not in acceptable frequency range.

Latitude / Longitude / Town: Enter the Lat/Long and 6-digit Town Grid reference.

You can use this link (https://www.levinecentral.com/ham/grid_square.php) to lookup Lat/Long and town information.

Country: Enter country.

URL: Enter personal webpage or leave blank for QRZ lookup.

Radio/Model Type: Select "ZumSpot – Rasberry Pi Hat (GPIO)."

Node Type: Select Private.

APRS Host: Select rotate.aprs2.net.

System Time Zone: Select time zone where device is hosted from.

Dashboard Language: Select language preference.

General Configuration	
Setting	Value
Hostname:	jeremy-pi-star Do not add suffixes such as .local
Node Callsign:	KD0EQH
Radio Frequency:	432.100.000 MHz
Latitude:	38.486690 degrees (positive value for North, negative for South)
Longitude:	-107.8737 degrees (positive value for East, negative for West)
Town:	Montrose, DM68DL
Country:	USA
URL:	http://jeremyrousseau.me ☐ Auto ☒ Manual
Radio/Modem Type:	ZumSpot - Raspberry Pi Hat (GPIO)
Node Type:	☒ Private ☐ Public
APRS Host:	rotate.aprs2.net
System Time Zone:	America/Denver
Dashboard Language:	english_us

Figure 3. General Configuration

Apply Configuration and Reboot ZumSpot.

D-Star Configuration

RPT1 Callsign: Verify callsign is correct. Select B.

RPT2 Callsign: Verify callsign is correct.

Remote Password: Set password. This can be used to allow external devices to control the ZumSpot. This is not your ZumSpot logon password.

Default Reflector: Set your favorite reflector that will be used on ZumSpot startup.

ircDDBGateway Language: Select language preference.

Time Announcements: Enable if you want your ZumSpot to periodically announce the time.

D-Star Configuration		
Setting	Value	
RPT1 Callsign:	KD0EQH B ▼	
RPT2 Callsign:	KD0EQH G	
Remote Password:		
Default Reflector:	REF001 ▼ C ▼	☒ Startup ☐ Manual
ircDDBGateway Language:	English_(US) ▼	
Time Announcements:	☒	
Use DPlus for XRF:	☐	Note: Update Required if changed

Figure 4. D-Star Configuration

Apply Configuration and Reboot ZumSpot.

Expert / Advanced

[enable section]

enabled: Set to true.

[keeper section]

callsign: Enter your callsign.

[d-star section]

Uncomment (remove #) from: reboot, shutdown, 8Ball(think old school).

Apply Configuration.

Pi-Star:3.4.17 / Dashboard:20190709

Pi-Star Digital Voice - Expert Editors

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

Quick Edit: DStarRepeater | ircDDBGateway | 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

```

[banner]
# Pi-Star Remote config file
# This config file is designed for the Pi-Star Keeper remote control
# The remote control system is designed to give repeater keepers an
# RF KillSwitch for their repeaters.

[enable]
# Is the Pi-Star Remote Enabled? (true|false)
enabled=true

[keeper]
# Keepers Information
callsign=KD0EQH

[d-star]
# UR fields
svckill=SVCKILL
svcrestart=SVCRSTRT
reboot=REBOOTPI
shutdown=SHUTDOWN
8Ball=8BALL

```

Figure 5. Expert Configuration

D-Star Registration

First step is to make sure you are registered, it is important to have only registered at one site, and only one site. Use this LINK (<https://registration.dstargateway.org/Dstar.do>) to register and verify your registration.

Icom D-Star Configuration

Memory Channels

Enter the following channels:

Frequency: Same as used in ZumSpot configuration.

Duplex/Offset: +DUP, 0 offset.

Mode: DV(Digital Voice)

RPT1: Your Callsign + B in 8th position. Example: K D 0 E Q H _ B

RPT 2: Your Callsign + g in 8th position. Example: K D 0 E Q H _ G

Channel	Name	Your	Description
0	DVTalk	CQCQCQ	Talk channel, must have CQCQCQ to open reflector.
1	DVInfo	 I	Key radio to have ZumSpot provide reflector information. NOTE: 7 spaces followed by command.
2	DVEcho	 E	Key radio and announce echo, this will be repeated back. A quick way to test audio quality. NOTE: 7 spaces followed by command.
3	DVUNLNK	 U	Key radio to unlink current reflector. NOTE: 7 spaces followed by command.
4	REBOOTPI	REBOOTPI	Key radio to reboot Raspberry Pi.
5	SHUTDOWN	SHUTDOWN	Key radio to shutdown Raspberry Pi.
6	8BALL	8BALL	Key radio to get an old school 8 Ball quote.
7	REF001CL	REF001CL	Key radio to connect to named reflector. (L is the link command)

Memory CH																		
		Frequency							TONE/TSQ/DTCS					Digital		Call Sign		
CH	Sele	Freq	DUP	Offset Freq	TS	Mode	Name	Skip	Tone	Repeater Tone	TSQ Freq	DTCS	DTCS Polarity	DSQL	Code	Your	RPT1	RPT2
0		432.10000	+DUP	0.00000	25k	DV	DVTALK			88.5	88.5	023	BOTH N		00	CQCQCQ	KD0EQH B	KD0EQH G
1		432.10000	+DUP	0.00000	25k	DV	REF001CL			88.5	88.5	023	BOTH N		00	REF001CL	KD0EQH B	KD0EQH G
2		432.10000	+DUP	0.00000	25k	DV	REF004CL			88.5	88.5	023	BOTH N		00	REF004CL	KD0EQH B	KD0EQH G
3		432.10000	+DUP	0.00000	25k	DV	REF024BL			88.5	88.5	023	BOTH N		00	REF024BL	KD0EQH B	KD0EQH G
4		432.10000	+DUP	0.00000	25k	DV	REF030CL			88.5	88.5	023	BOTH N		00	REF030CL	KD0EQH B	KD0EQH G
5		432.10000	+DUP	0.00000	25k	DV	DVInfo			88.5	88.5	023	BOTH N		00	I	KD0EQH B	KD0EQH G
6		432.10000	+DUP	0.00000	25k	DV	DVUNLNK			88.5	88.5	023	BOTH N		00	U	KD0EQH B	KD0EQH G
7		432.10000	+DUP	0.00000	25k	DV	DVEcho			88.5	88.5	023	BOTH N		00	E	KD0EQH B	KD0EQH G
8		432.10000	+DUP	0.00000	25k	DV	REBOOTPI			88.5	88.5	023	BOTH N		00	REBOOTPI	KD0EQH B	KD0EQH G
9		432.10000	+DUP	0.00000	25k	DV	SHUTDOWN			88.5	88.5	023	BOTH N		00	SHUTDOWN	KD0EQH B	KD0EQH G
10		432.10000	+DUP	0.00000	25k	DV	8BALL			88.5	88.5	023	BOTH N		00	8BALL	KD0EQH B	KD0EQH G

Figure 6. Radio Memory Channels

Transmit Message

Enter Name City State. **NOTE:** Only 20 characters are permitted.

Tx Message		
No.	Select	Message
1	S	Jeremy Montrose CO
2		
3		
4		
5		
GPS	-	

Tx Message	
ON/OFF	ON

Figure 7. Tx Message

My Call Sign

Call Sign: Enter your callsign

/: Enter your radio model. **NOTE:** Only 4 characters are permitted.

My Call Sign			
No.	Select	Call Sign	/
M01	S	KD0EQH	92AD

Figure 8. My Call Sign

Your Call Sign (URCALL)

Set to CQCQCQ.

Your Call Sign	
No.	Call Sign
U01	CQCQCQ

Figure 9. Your Call Sign(URCALL)

D-Star Reflectors

A complete listing of reflectors can be found using this LINK <http://www.dstarinfo.com/reflectors.aspx>