

CCAR Tech Rally Hotspots

March 2020



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Digital Radio Standards

- * D-Star
 - * Icom
 - * Kenwood
- * DMR
 - * Originally Motorola
 - * Many others
- * YSF (C4FM)
 - * Yaesu
- * NXDN
 - * Kenwood
- * P-25
 - * Many in Public Safety
 - * Few in Amateur Radio

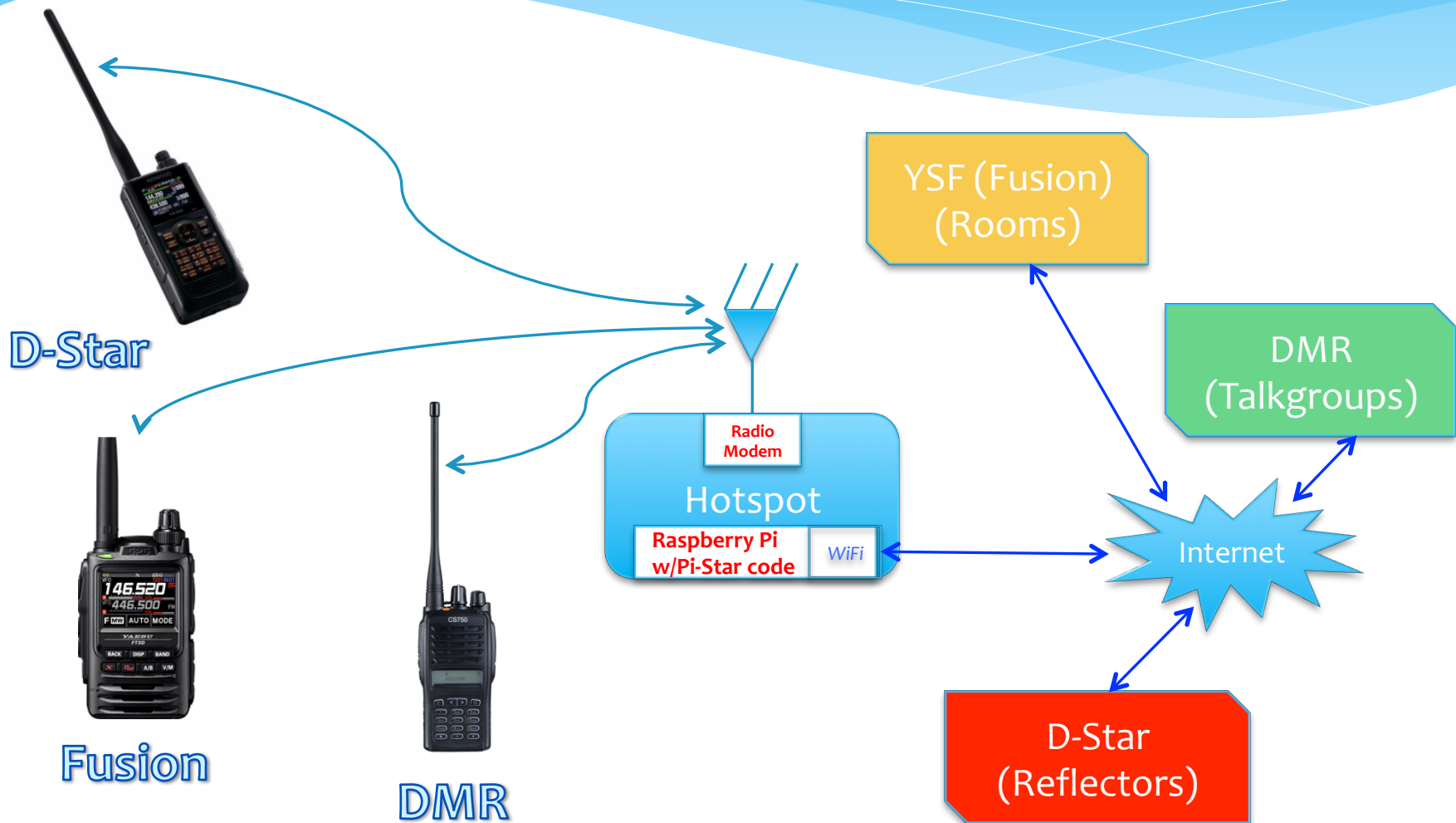
Amateur Digital Radios - Cost

- * D-Star
 - * Moderate to high moderate
- * DMR
 - * Cheap to moderate
- * C4FM (Fusion)
 - * Low moderate to moderate
- * NXDN
 - * Expensive
- * P-25
 - * Expensive

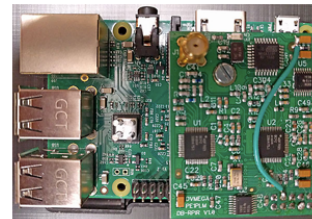
What is a hotspot?

A personal, low-power hotspot is a combination of hardware, firmware, and software that enables an amateur radio enthusiast with internet connectivity to link directly to digital voice (DV) systems around the world. Hotspots can link to DMR, P25, and NXDN talkgroups; D-STAR reflectors; YSF rooms; and so on.

Hotspots in Amateur Radio



Hotspots – So Many to Choose From












Most Common Hotspot

- * Based upon MMDVM modem board
- * Uses Raspberry Pi board
- * Runs Pi-Star firmware



See mmdvm hotspot

Sponsored ⓘ

								
MMDVM Hotspot WiFi Digital Voice Modem Kit wit...	Leoie MMDVM_HS_Di Duplex MMDVM Hotspot P25...	Uhf/vhf Mmdvm Hotspot Oled+ Antenna+ Case Support P25...	MMDVM Hotspot Board + Aluminium Case Support UHF...	SainSmart MMDVM Hotspot WiFi Digital Voice...	[Upgraded] MMDVM Hotspot Spot Radio Station...	1*Newest MMDVM_HS_Di Duplex MMDVM Hotspot P25...	UHF&V MMDVM hotspot with oled and case...	WiFi Super Kapak Antena
\$109.99	\$37.02	\$37.88	\$67.89	\$129.99	\$105.99	\$25.16	\$15.00	\$5
Radioddity Free shipping	Amazon.com Free shipping	eBay	Amazon.com Free shipping	Amazon.com Free shipping	Amazon.com Free shipping	Wish	AliExpress.com	Op Fr

Pi-Star

Hostname: pi-star Pi-Star:3.4.17 / Dashboard: 20191123

Pi-Star Digital Voice Dashboard for WA3NOA

Dashboard | Admin | Configuration

Modes Enabled	
D-Star	DMR
YSF	P25
YSF XMode	NXDN
DMR XMode	POCSAG

Gateway Activity									
Time (EST)	Mode	CallSign	Target	Src	Dur(s)	Loss	BER		
20:05:54 Feb 10th	D-Star	WA3NOA/INFO	CQCCQC		Net	2.5	0%	0.0%	
20:05:50 Feb 10th	D-Star	WA3NOA/JIM	U		RF	0.3	0%	0.0%	
20:05:50 Feb 10th	D-Star	G0FTR/ID51	CQCCQC via REF030 C		Net	0.3	0%	0.0%	
20:05:16 Feb 10th	D-Star	G7JRC/D74E	CQCCQC via REF030 C		Net	25.6	10%	0.0%	

Local RF Activity									
Time (EST)	Mode	CallSign	Target	Src	Dur(s)	BER	RSSI		
20:05:50 Feb 10th	D-Star	WA3NOA/JIM	U		RF	0.3	0.0%		

Network Status	
D-Star Net	DMR Net
YSF Net	P25 Net
YSF2DMR	NXDN Net
YSF2NXDN	YSF2P25
DMR2NXDN	DMR2YSF

Radio Info	
Trx	Listening
Tx	433.100000 MHz
Rx	433.100000 MHz
FW	HS_Hat:v1.4.17
TCX0	14.7456 MHz

D-Star Repeater	
RPT1	WA3NOA B
RPT2	WA3NOA G

D-Star Network	
APRS	noam.aprs2.net
IRC	rr.openquad.net not linked

DMR Repeater	
DMR ID	3142209
DMR CC	1
TS1	disabled
TS2	enabled
No TG/No Ref	
DMR Master	
BM United States ..	

Pi-Star / Pi-Star Dashboard, © Andy Taylor (MW0MWZ) 2014-2020.
icDOBGateway Dashboard by Hans-J. Barthen (DLSDI).
MW0MWZDash developed by Kim Hubel (DO9VH).
Need help? Click here for the Facebook Group
or Click here to join the Support Forum
Get your copy of Pi-Star from here.

- * Web page based
- * Configuration
- * Control
- * Status
- * Allows cross-standard links

Pi-Star Information

NOTE:

I will provide a link, via email, to download this entire presentation. No need to try and write any of this down

- * <https://amateurradionotes.com/pi-star.htm>
- * <https://www.pistar.uk>
- * <https://www.hamradio.com/detail.cfm?pid=H0-016491>
- * https://www.amazon.com/Digital-Voice-Modem-Hotspot-Station/dp/B07BTS738L/ref=sr_1_4?crid=N7WQGQoNXQ2Uo&keywords=mmdvm+hotspot&qid=1581385581&srefix=mmdvm%2Caps%2C143&sr=8-4
- * https://www.hamdigitaal.nl/download/algemene-informatie/ZumSpot_Pistar_KC6N_20180605.pdf



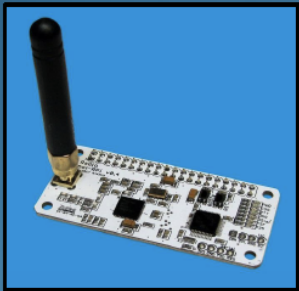
See
Next
Slide

KC6N Reference Document

ZUMspot/PiStar

ZUMspot/Pi-Star Bring-up and initialization
Updated for Pi-Star v4.3.15

David Hull, KC6N



Revised (06/05/2018)

Contents

- Preparing your ZUMspot for first use
 - Part I: Preparing a Pi-Star μ SD card
 - Part II: Setting up your WiFi
 - Part III: Configuring/Customizing Pi-Star
 - Part IV: Configuring your radios
- Appendices: (specific topics and issues)
 - Updating FW, Setting up Brandmeister, Access to special features, etc.

Live Demonstration Time



D-Star



MMDVM
Hotspot



Fusion



DMR