

Digital Mobile Radio DMR MMDVM Hotspot Jumbo Spot

Talk and listen to Hams around the world at home using a small handheld radio! I just got started in DMR and have found it pretty easy and inexpensive. With an Internet connection and the [Ailunce HD1](#) combined with the MMDVM hotspot ([Jumbo Spot](#)) it is possible to talk to Hams around the world. So is this Ham Radio or is it (VOIP) Internet? I see it as Ham Radio and using the Internet as a tool. What are your thoughts?



How it Works

Using a handheld digital transceiver like the [Ailunce HD1](#) we can communicate around the world from home. It doesn't matter if you have local DMR digital repeater or not. I do not in my area, so I use the [Jumbo Spot](#) (MMDVM hotspot).

If you have a local digital DMR repeater you won't need a MMDVM hotspot, but that's for another article.

DMR stands for Digital Mobile Radio.

The [Jumbo Spot](#) allows Hams to operate on one or more digital

modes without the use of a repeater. The [Jumbo Spot](#) basically becomes your private repeater. Here we are using DMR mode.

The handheld connects to the [Jumbo Spot](#) in your home and it connects to talkgroups on Internet servers around the world using your Internet connection.

You need a digital transceiver like the [Ailunce HD1](#) and a MMDVM hotspot like the [Jumbo Spot](#). There are other more expensive alternatives. Of course you'll also need Internet access from your home. I have cable service and the cable service provides me with a cable modem and WIFI router.

The nice thing about the [Ailunce HD1](#) handheld is that it also communicates with our local analog repeaters. I consider it my dual purpose (analog/digital) VHF/UHF transceiver.



DMR MMDVM Hotspot – Jumbo Spot

The terms MMDVM hotspot and Jumbo Spot are used interchangeably. MMDVM stands for Multi Mode Digital Voice Modem. There are alternatives on the market and some run as much as \$200, but [the Jumbo Spot I found costs \\$85 shipped from California](#). This is a good E-Bay seller and I have had numerous contacts with her. When the SD card went out after two days she reimbursed me for it, no questions asked.

This device is a [Raspberry Pi zero W \(WiFi\) with a Jumbo Spot RTQ MMDVM Hotspot expansion board](#). **It's the least expensive of the alternatives that I researched and a reliable solution!**

You can build these if you want, but I chose to buy it assembled and with the software ready to go (almost).

What does RTQ stand for? Ready To QSO!

[You can find it here – Assembled MMDVM Hotspot Support P25 DMR YSF + Raspberry pi + OLED +ANT +Case US](#)

Preparation

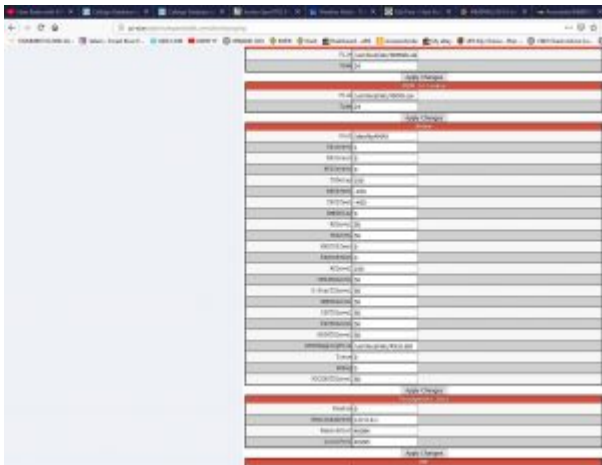
You will need a DMR ID to setup the hotspot, so if you don't have one go to [RadioID](#) and register for an ID. You will also need power for the hotspot. I use a phone charging cable and a USB port.

Here are the steps:

1. The installed TF card (micro SD card) will need your WiFi SSID and password. Remove it from the hotspot and insert into your computer. I used an adapter. (TF stands for T-Flash. It was a SanDisk term.)
2. Go to the [WiFi Builder configuration utility here](#) and use it. Then download the wpa_supplicant.conf and save to the TF card root directory.
3. Insert the TF card into the hotspot and power it on. It will load after about 3 minutes and should be on your home network.
4. In your web browser url field type in, http://pi-star, when prompted the username is: pi-star. The password is: raspberry. That will take you to the hotspot configuration page below.



Wifi Builder



Expert>MMDVMHost



Configuration Pg. 1



Configuration Pg. 2

Configuring Pi-Star for Digital Voice (DMR)

It's pretty straight forward and I'll show you my configuration in the video and also a little trick to keep the bit error rate (BER) down.

The video below shows a good example of transferring the TF card back and forth between the Jumbo Spot and computer. Have a look at the beginning.

Software Updates

The software and firmware of the Jumbo Spot is easily updated using the pi-star software.

Thank you

Are you on DMR? What are you thoughts on it?

If you have any questions, please ask them here. I prefer the

comment section here or in YouTube over e-mail because your comments and questions will help others as well.

Thank you for subscribing to this website. I appreciate the comments, questions and suggestions. You can follow me on [Twitter](#), [Facebook](#), [Instagram](#) and [YouTube](#) if you have those.

Please stay in touch and best 73,

Rich, K0PIR

Sources:

[RadioID](#)

[Ailunce HD1](#)

[Assembled MMDVM Hotspot – Buy on E-bay](#)

[WiFi Builder Configuration Utility](#)

[PiStar Digital Voice Software – PiStar.uk](#)

[AmateurRadio.digital](#)

My New Ailunce HD1

I don't do much with VHF/UHF, but I had an [Ailunce HD1](#) sent to me to do a review. It is a solid little handheld transceiver and I have enjoyed using it. I especially have enjoyed listening to DMR talkgroups around the world. The [Ailunce HD1](#) is a dual band FM DMR VHF/UHF analog and digital handheld transceiver. The things I like most are the build quality, the speaker and color LCD. Also, the long lasting battery.





Ailunce HD1 Specs

Frequency (dual band)	136-174 & 400-480MHz & 76-107.95MHz (Receive only)
Channels	3000
Battery Capacity	3200mAh
Contacts	100,000
Power	10w VHF, 8w UHF (3 power levels)
IP67	Waterproof and dustproof
Antenna	SMA, 50Ω

Included	1 x Ailunce HD1 two way radio 1 x Battery 1 x Antenna 1 x Adapter (110V) 1 x Charger 1 x User's manual 1 x Belt clip 1 x Sling 1x programming cable
----------	---

*There is a GPS version of this radio, but it doesn't look to be very helpful and does not have APRS capability built in.

Ailunce HD1 Build Quality

This is a solid, well built handheld and has a very good feel to it. The HD1 has some weight and the speaker is loud. The speaker on this radio produces great sounding audio. I don't have any problem hearing stations in a noisy environment, such as riding in a vehicle.

The color LCD is nice and can be customized to show both bands (channels/frequencies) or one band and a clock. On the downside, the LCD gets washed out in direct sun like most other radios.

The Ailunce HD1 has a long lasting 3200mAh battery. I have not run this down since having it.

A Little Comparison to my Baofeng

It may not be fair to compare the two, but this is interesting.

The Ailunce HD1 is more expensive than the Baofeng because the HD1 is an analog and digital DMR transceiver and without question is a better built radio.

Because the HD1 is so much more money you may find this interesting: my Baofeng, with stock antenna, appears to have better reception on analog frequencies on our local VHF repeaters. I noticed inside my home that the Baofeng picks up the local analog repeater better than the Ailunce HD1 with stock antenna. I also just noticed this again outside of town during Winter Field Day. Some Hams say it is just due to the HD1 being direct conversion.

Another thing I find interesting: the [Ailunce HD1](#) probably won't work good when other Hams are transmitting close-by as in an emergency drill. The HD1 receiver becomes desensitised. This is true with other direct conversion DMR radios too. However, for normal amateur radio use the HD1 is a good choice.

I was a little disappointed Chirp and Repeaterbook can't be used to load repeater frequencies into the HD1 like with the Baofeng and other radios. I was not able to import a .csv file easily from Repeaterbook either. It required too much editing in my opinion. It's easier to enter the settings manually in the HD1 software.

Using the HD1 I get good audio reports whether transmitting DMR through my hotspot or transmitting FM through the local repeater.

The HD1 seems easier to program from the front than the

Baofeng. Also, while using the HD1, the menu can be accessed, unlike other handhelds.

A Little About DMR

This is my first experience with DMR and it was exciting to setup. The [Ailunce HD1](#) software was a little tricky at first, but I think I got it now. Code plugs are a new thing to me.

I found an inexpensive hotspot (in the US) for a good price on E-bay and when the micro SD card (TF card) went bad after only a few days, the E-bay seller reimbursed me without hesitation. I would buy from this seller again.

[Assembled MMDVM Hotspot Support P25 DMR YSF + Raspberry pi + OLED +ANT +Case US**](#)**



Conclusion

I'll have a YouTube video coming and I hope to have a demo comparing the Ailunce HD1 and my Baofeng on the local analog

repeater.

I carry the [Ailunce HD1](#) with me now and my Baofeng stays at home. The Baofeng has become a backup.

Would it be worth paying the extra money? Yes, for me I am sold on DMR and it works good enough for me on the local repeaters. ☐

Thank you

Do you use DMR? What talkgroup?

I prefer the comment section here or in YouTube over e-mail because your comments and questions will undoubtedly help others here as well.

Thank you for subscribing to this website. I appreciate the comments, questions and suggestions. You can follow me on [Twitter](#), [Facebook](#), [Instagram](#) and [YouTube](#) if you have those.

Please stay in touch and best 73,

Rich, K0PIR

For Reference: