

D-STAR 101 – Basic Setup & Operation

Talking to somebody on simplex or on a VHF/UHF repeater with your VHF/UHF radio is very simple, you just need to know the frequency, offset and PL tone if any. However, if you have not been able to get on the D-STAR system with your D-STAR radio, read on because I have finally figured out how simple it really is. It took me a while though, because there is a LOT of information out there, but most of it is either too fragmented or too much about the repeater itself. So, just put everything you were told about D-STAR aside and follow along.

Actually, D-STAR is very much like using a regular repeater, and quite simple once you know the 4 basic terms. D-STAR compatible radios have a DV mode, just like the good old FM mode. The D-STAR configuration, aka DV setup, consists of entering call signs in 4 fields – MYCALL, URCALL, RPT1 and RPT2.

MYCALL - You normally enter your own callsign in MYCALL and never have to change it as long as you use the radio.

URCALL – This is simply the station you want to call. Or, to call anyone you enter CQCQCQ

RPT1 – This is the callsign of your local repeater that is within your radio's reach. If you move to a different city then change this to the local repeater you can access over there.

RPT2 – Is used open a gateway to contact people beyond your local area or beyond your band.

A few examples will help illustrate their usage using WW6BAY D-STAR repeater on 444.075 MHz, +5MHz offset, and no PL.

(a) SIMPLEX OPERATION

MYCALL = K6VUG (my callsign)

URCALL = CQCQCQ or KI6CJD (callsign being called)

RPT1 = blank

RPT2 = blank

Select a simplex FM frequency, switch the radio mode to DV, make sure no one is using the frequency, and press PTT and give out your call sign. If anyone is within range and want to respond they will. That's it!

(b) BASIC REPEATER OPERATION

MYCALL = K6VUG (my callsign)

URCALL = CQCQCQ or KI6CJD (callsign being called)

RPT1 = WW6BAY B (callsign of repeater on 440 MHz band)

RPT2 = blank

Tune the radio to the repeater's frequency and offset just like you would do for any repeater, press PTT and announce your call sign. In this example, stations listening to the repeater on the same (UHF) band will hear the call.

(c) CROSS BAND REPEATER OPERATION

MYCALL = K6VUG (my callsign)

URCALL = CQCQCQ or KI6CJD (callsign being called)

RPT1 = WW6BAY B (callsign of repeater on 440 MHz band)

RPT2 = WW6BAY C (callsign of repeater on 144 MHz band)

Note: D-STAR repeaters can be setup to operate on several bands simultaneously. So, in this example, stations listening to the repeater on the both the 440 MHz band as well as the 144 MHz band will hear the call.

(d) CALLING ON REMOTE REPEATERS VIA GATEWAY

MYCALL = K6VUG (my callsign)

URCALL = CQCQCQ or KI6CJD (callsign being called)

RPT1 = WW6BAY B (callsign of repeater on 440 MHz band)

RPT2 = WW6BAY G (callsign of gateway)

In this example, a general CQ call can be heard by stations listening to any of the linked repeaters on any of the bands supported by their repeaters. A call to a specific callsign will prompt the system to route your call to the repeater and band where the callsign was last heard.

(e) ECHO TESTING ON THE LOCAL REPEATER

MYCALL = K6VUG (my callsign)

URCALL = CQCQCQ (general call)

RPT1 = WW6BAY B (callsign of repeater on 440 MHz band)

RPT2 = WW6BAY E (callsign used for the echo function)

When you press PTT and say something like "<callsign> echo test", the repeater will echo back the voice it heard. Most D-STAR repeaters offer this convenient test feature that helps to confirm radio settings and voice quality. These examples should make it easy to understand the configuration of the D-STAR radios. Also, observe that some cases shown above illustrate some convenient features not generally possible on regular repeaters. These are, in fact, some of the biggest feature change when using D-STAR system.

That's all there is to it. Remember only four entries – MYCALL, URCALL, RPT1 and RPT2 control everything. MYCALL and RPT1 remain unchanged if you remain in the same area, URCALL is simply the destination you are trying to call and RTP2 is based on the feature being used.

Lastly, to use the gateway and other features, your call sign has to be registered in the D-STAR system, once. Search the internet or navigate to www.dstarusers.org and identify the local D-STAR repeater in your area, and navigate to the repeater website (WW6BAY website is www.bay-net.org) and sign up your call sign on their web site. Once confirmed, you can use the entire D-STAR system to make some really interesting contacts in distant countries.

After successfully mastering these modes, you will be well on your way to enjoy the more advanced features of this new exciting area of amateur radio. Congratulate yourself, you deserve it!

73,
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