

Using a Windows PC/laptop/tablet as a low-cost DMR/DSTAR Transceiver

Two free software packages are available that enable an internet-connected Windows computer to be a simple VHF/UHF DSTAR transceiver. One software package also provides DMR capability

Some background: Echolink software enables FM QSOs without a radio. It is free of charge to hams. Support is provided by volunteers.

- Like some other FM repeater systems, Puget Sound Repeater Group (<https://web.psr.org/>) offers three different ways for hams to access its WW7PSR FM repeater in addition to traditional FM radio transmissions.
- Two of the alternative PSRG repeater access methods have a very small footprint and do not require traditional ham radio gear.
 1. The first non-radio access method is Allstar (www.allstarlink.org) - it requires one to use a cell/home phone to access the FM repeater via touchtone dialing.
 2. The second method uses Echolink software (<http://echolink.org/>) running on a Windows or Android **internet-connected** personal computer/tablet/smartphone.

Echolink-like software is now available that enables digital voice (DSTAR, DMR) QSOs without a radio.

- The DSTAR networks (US-Trust, ircDDB) accept input via repeaters whose gateways are linked via internet-connected reflectors as well as from a variety of internet-connected devices.
- Likewise, the DMR networks (BrandMeister, DMR Plus, XLXDMR) accept inputs via repeaters, reflectors and a variety of internet-connected devices.
- Examples of Internet-connected devices:
 - **DVAP (Access Point)** & other solutions: <http://dstarinfo.com/applications.aspx>
 - **DV Dongle: DVSI AMBE** encoding/decoding of audio using the full duplex vocoder
 - E.g. ThumbDV by NW Digital Radio <http://nwdigitalradio.com/product/thumbdv/>
 - **DVMEGA** voice and data related kits and modules.

WinDV: Windows software that enables DSTAR QSO's without a radio

- **ThumbDV™**: A USB (2.0) “thumb” (dongle) device capable of “AMBE” encoding/decoding
- **WinDV** was written by Fred van Kempen, PA4YBR, several years ago.
 - It requires the user to have a ThumbDV installed and works only for DSTAR
 - It requires an internet-connected PC that has a USB port and audio/sound (microphone) capability.
 - A PCs’ Bluetooth feature can be helpful when locating the computer’s speaker and/or mic.
 - The current version of the WinDV software has not been updated for several years. There is no word about any additional/planned updates.
- **VIDEO Demo** (10.06): “ThumbDV using WinDV” by Budd Churchward
https://youtu.be/AMN_TQQYZDo
- **Install and Configure WinDV (DV Node for Windows)** by K6JIM:
<https://www.k6jm.com/hs-setupwindv.htm>
- Existing users provide each other free support at: <https://nw-digital-radio.groups.io/g/lambe>
- **Video** (6:44): **VO1UKZ THUMB DV Dstar access Dongle** - <https://youtu.be/Jh8NTxE0mWQ>
- More info available on youtube.com; also at <http://nwdigitalradio.com/windv-configuration/> and at <http://dutch-star.eu/>
- also at **DUTCH*Star WinDV/DV Node** <http://dutch-star.eu/> (scroll down to: **WINDOWS USERS**)
<http://nwdigitalradio.com/thumbdv-and-dv3000-resource-page/>

BlueDV for Windows - free DMR/DSTAR/Fusion hotspot software for your Windows PC.

- **David, PA7LIM**, introduced a (pre-) "beta" version of the software in 2017. It provides DMR, DSTAR, and soon, Fusion. It requires a ThumbDV and an internet-connected PC running Windows.
 - The developer is active on <https://nw-digital-radio.groups.io/g/ambe>
- **Download** a pre-beta copy here: <http://software.pa7lim.nl/BlueDV/BETA/Windows/>
- **Other Resources**
 - **Video Demo** (10:58): "How to use your PC as a DMR & DSTAR Transceiver using BlueDV and a ThumbDV / DV MEGA AMBE3000" <https://youtu.be/9boJDUyUSCl>
 - **Video Demo** (8:50): "How to Setup BlueDV with a ThumbDV or DVMEGA AMBE3000 dongle": <https://youtu.be/291k3VxJCV0>
 - **Video Demo** (4:22): "BlueDV for Windows DMR working VO1UKZ" <https://www.youtube.com/watch?v=D1wUKiQRnsY>
 - **Other videos are available on youtube.com**
 - **How to control the AMBE 3000 on DMR with BlueDV for Windows.** <http://www.pa7lim.nl/bluedv-windows-ambe/>
 - **FUTURE possibility - Video** (0:32): "Experimenting on ThumbDV on BlueDV Android: <https://youtu.be/FMTzkeXP4yG>

BlueDV setup screen - an example

General

Your Call:

Serial Port Radio:

Save QSO Log:

RX/TX Colors:

Frequency:

Mode Timer: Seconds

DVMEGA power:

Latitude: in decimals

Longitude: in decimals

Always on top:

Language: (Active after restart)

DSTAR

DSTAR Module:

APRS:

Enable at start:

Default reflector: (Empty is not connect)

DMR

DMR ID hotspot:

DMR ID simple:

QRG:

Enable at start:

DMR type:

No inband data:

Brandmeister:

DMR Master:

Master Password:

DMR- Master:

Default Reflector:

FUSION

QTH Location:

Enable at start:

Default reflector: YSF FCS

YSF:

FCS:

AMBE

Use AMBE: (ThumbDV/DV3000)

Serial Port:

DMR ID:

Baud rate:

Use AMBEServer:

Host/IP:

Port:

Start/Stop Beep:

Kill timer (min):

DSTARtext:

PTT keying

Enable:

Serial port:

RX Indicator:

PTT Button:

Selected D-STAR and DMR Nets

As of June 1, 2018

Pacific time	Day	Ref/TG	Mode	Comments
	Sat	BM TG 91	DMR	Worldwide Net, 1600 UTC, checkins from all over the world
10:00 AM	Sat	TG 31772	DMR	Outdoor Adventure net (verified 3/10/18)
5:00 PM	Sat	XRF757D	DSTAR	DSTAR Users Net, VE6DV net control, also linked to XLX049D, XLX626D
7:00 PM	Sat	Ref 29A	DSTAR	Sat Night Dstar Net http://ref029.dstargateway.org/status.html
5:00 PM	Sun	Ref 001C	DSTAR	Int'l DSTAR net, bkup ref is 02C
5:30 PM	Sun	TG 3119	DMR	Iowa DMR Users (Statewide) Net @ 19:30 local verified 4/8/18
6:00 PM	Sun	TG 31489	DMR	DMRTrack Net (verified 3/4/18)
7:00 PM	Sun	Ref 029 C	DSTAR	Logan Utah area + checkins by many others outside the area, DSTAR net
7:00 AM	M-Fri	Ref 029A	DSTAR	DRE Morning net
6:00 PM	Mon	Ref 026A	DSTAR	QCWA
6:00 PM	Mon	Ref 063C	DSTAR	Western Penn net (confirmed 180423)
6:15 PM	Mon	Ref 055A	DSTAR	El Paso DSTAR net, many in other areas checkin
7:00 PM	Mon	Ref 038 C	DSTAR	Raspberry Pi net, backup = Ref 26 A
8:00 PM	Mon	TG 3106	DMR	PAPA DMR Roundtable net - good discussion relating to DMR
5:00 PM	Tues	XRF 002 A	DSTAR	Power Sports & Gearheads Net, XRF310 A, XRF555 A, XLX212 A
5:00 PM	Tues	TG 3118	DMR	Indiana Statewide
7:30 PM	Tues	TG 31070	DMR	Venturea Cnty Digital Radio Club Net
8:00 PM	Tues	TG 31328	DMR	Sierra Nevada ARS DMR Net (Reno / Tahoe)
8:00 PM	Tues	Ref 012 A	DSTAR	PAPA System Tuesday nite Tech net, alternate is Ref 26A
5:00 PM	Wed	XRF 002 A	DSTAR	Truckers/Travelers/RV'ers: backup XRF310A/XRF555A, transcoded DMR
5:30 PM	Wed	TG 3139	DMR	OH Statewide net
6:00 PM	Wed	TG 31175	DMR	N. America Astronomy Net
7:00 PM	Wed	TG 31771	DMR	PNW New Users gathering (http://www.trbo.org/pnw/index.html)
7:00 PM	Wed	Ref 014 C	DSTAR	Ham Nation D-STAR After Show Net // info at 'HamNationDSTAR.net'
5:00 PM	Thurs	TG 3121	DMR	KY Net
5:00 PM	Thurs	TG 3154	DMR	West Virginia DMR & Service net
7:00 PM	Thurs	TG 31068	DMR	NorCal
7:00 PM	Thurs	Ref 055 A	DSTAR	New Mexico DSTAR net, backup is refl072
7:00 PM	Thurs	XRF 002 A	DSTAR	D-STAR Round Table net, transcoded to DM http://roundtable.tech
7:30 PM	Thurs	TG 31089	DMR	Hytera USA
8:00 PM	Thurs	XRF 012 A	DSTAR	PAPA System Thursday nite Tech net. May also be on DMR TG 31078
5:30 PM	Fri	TG 31665	DMR	TGIF/Global net, ham radio topics e.g., antennas, hot spots, etc
6:00 PM	Fri	XRF 021 B	DSTAR	CAN-net: DSTAR Canada Net http://www.va3uv.com/xrf021.htm
6:30 PM	Fri	Ref 67B	DSTAR	Memphis DSTAR/DRATS
6:00 PM	Fri	TG 3147	DMR	TN statewide