



# DSTAR Review

NCRC Meeting Sept 11 2017



# What is DSTAR?

- **D**igital **S**mart **T**echnologies for **A**mateur **R**adio
- Developed by Japan Amateur Radio League in late 1990s specifically for Amateur use
  - 3600 BPS Voice Channel
  - 1200 BPS Data Channel (Simultaneous)
- Adopted by Icom with first hardware released in 2004
- Most popular amateur digital service (but DMR is growing)
  - 632 Registered Icom Repeaters
  - Thousands of non Icom gateways
  - Tens of thousands of users
- UHF/VHF/HF hardware from multiple vendors (Icom/Kenwood/Flex)

# Why DSTAR?

- Easy to link multiple repeaters into a single network via Reflectors
- Ability to leverage digital infrastructure
- Home-based local Hotspots and other DSTAR devices
- Simultaneous Voice & Data (DPRS while you are chatting)

# Why NOT DSTAR

- Heavy reliance on Internet infrastructure for advanced features
- There are some competing new standards (DMR, Fusion) reducing DSTAR growth rate.
- Costs

## Costs?

Used Gear \$150-\$300 (IC-80AD, ID-880H)

New Mobile \$400-\$500 (ID-4100, ID-5100A)

New Handhelds \$450-\$600 (ID-51A, TH-D74A)

**BEWARE:** Older first generation gear is difficult to use. Current gear with build-in GPS is as simple as picking the repeater closest to you

## Area DSTAR Machines

Rhode Island - W1AAD (145.300MHz -0.6)

Rhode Island - W1HDN (147.045MHz +0.6)

Fall River MA - K1RFI (145.420MHz -0.6)

# Reflectors

**Think of a Reflector as a conference call.** Many repeaters or individual hams can join a reflector at the same time. Our repeater is usually linked to REF069C.

## Popular Reflectors

- REF030 - Georgia
- REF050 - Eastern MA
- **REF069 - CT/RI/Western MA**

# Popular Nets

Raspberry Pi Technical Net - REF038C Monday 10 PM

New England DSTAR Net (W1AAD) - REF069C Tuesday 8 PM

SoCal DSTAR Technical Net - REF012A Tuesday 11 PM

Ham Radio Nation after show - REF014C Wednesday 10 PM



# DVAP, DV3K, DVMega, DVWhat??

**These are internet connected DSTAR devices:**

**DVAP** - Digital Voice Access Point. This is a single band DSTAR RF to Computer Interface. Requires a laptop or desktop to work. \$250

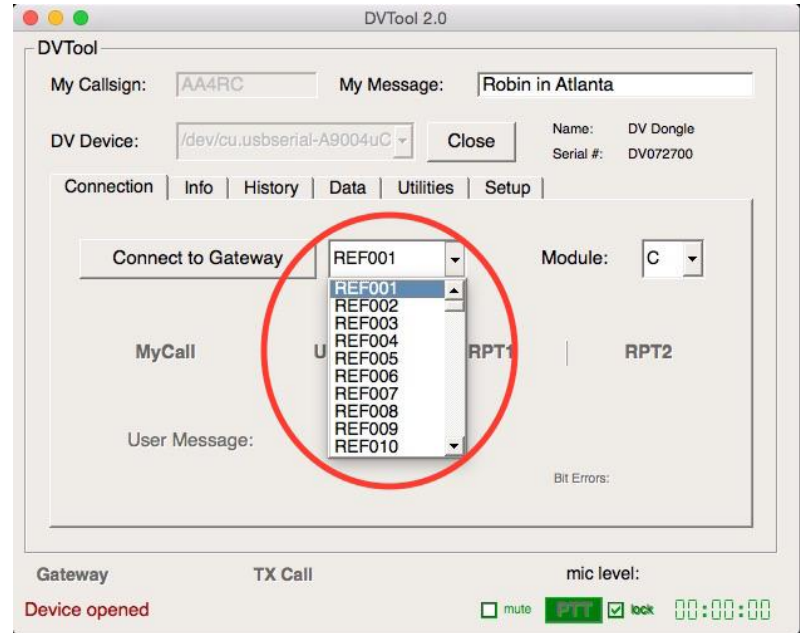
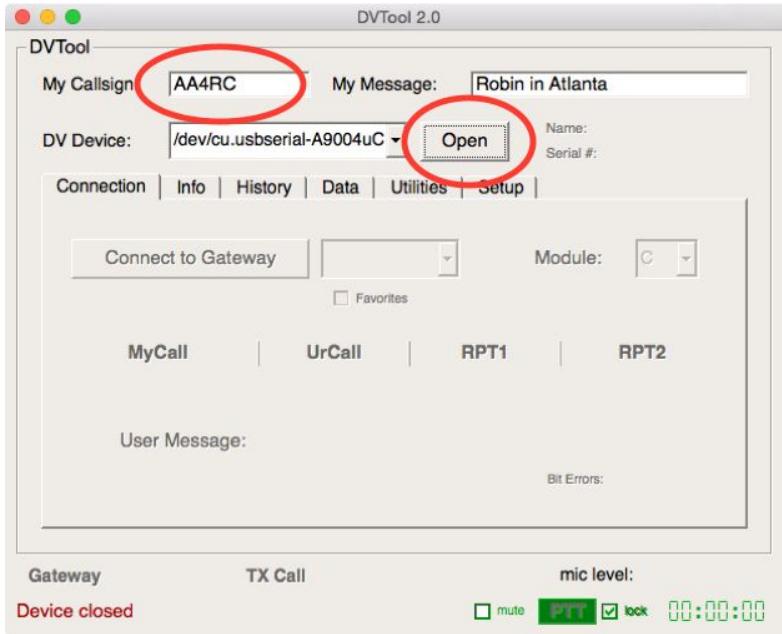
**DV3K** -- This is a USB device that attaches to a computer and uses its speakers and microphone to connect to DSTAR Reflectors via the Internet. \$150

**DVMega** -- Self-contained (built-in computer) Internet Appliance with DSTAR RF Link. \$260 dual band, \$225 single band.

# DV3K Dongle



- Least expensive \$150
- Uses Computer Speakers and Microphone (No RF involved)
- Software tool DVTool included
- Simple setup (Win/Mac/Linux) -- Enter your call, pick a reflector
- Lots of useful information/history



1. Enter Your Callsign
2. Click "Open" to startup the DV Dongle
3. Pick a Reflector

# DVMega



- Hotspot - simplex repeater for home use. Used with a DSTAR HT
- Self Contained (Built in computer Raspberry Pi 3)
- Very low power -- necessary for a 24/7 device
- Requires Internet Connection, Display/Keyboard/Mouse
- Setup is not trivial (Good RPi and DSTAR experience needed)
- Single band \$225 or dual band \$260