



Ed Woodrick WA4YIH

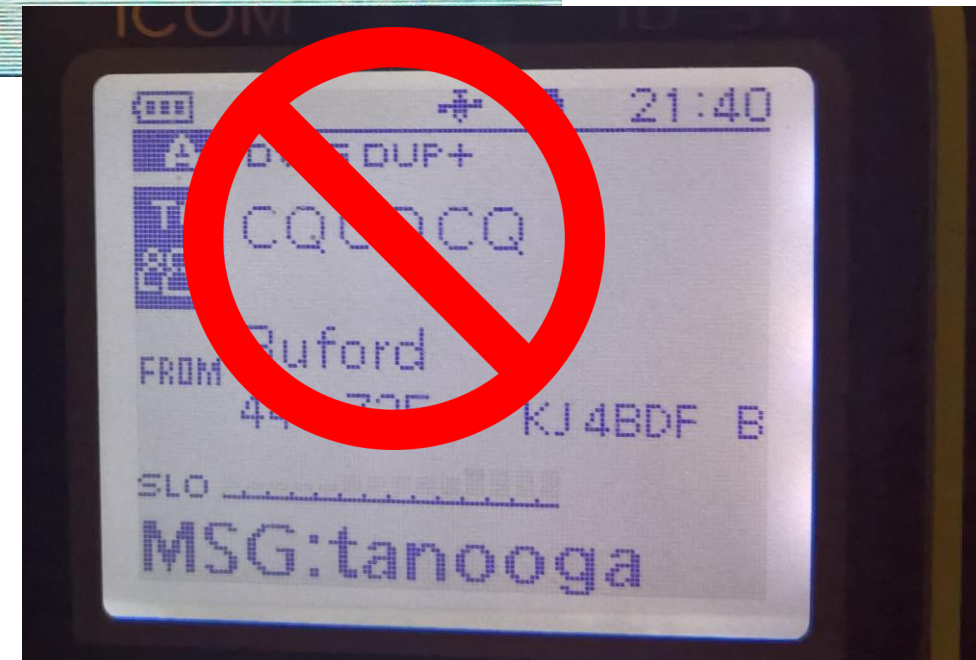
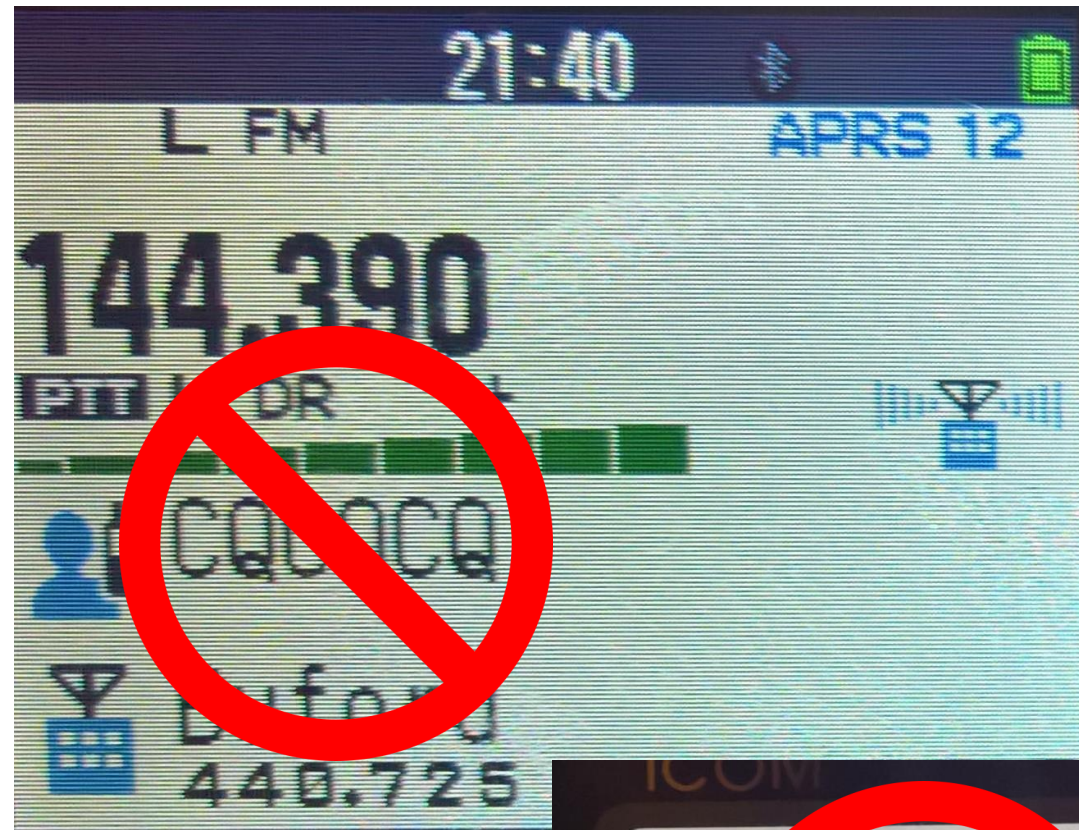


# DR Mode – USE IT!!!!

- Digital Repeater Mode
- Radios have a database of Repeaters and Destinations
- Easy to Use
  - Pick Source Repeater
    - Updateable List
    - Nearest Repeater
  - Pick Destination / Function
- Automatic Programming of Radio

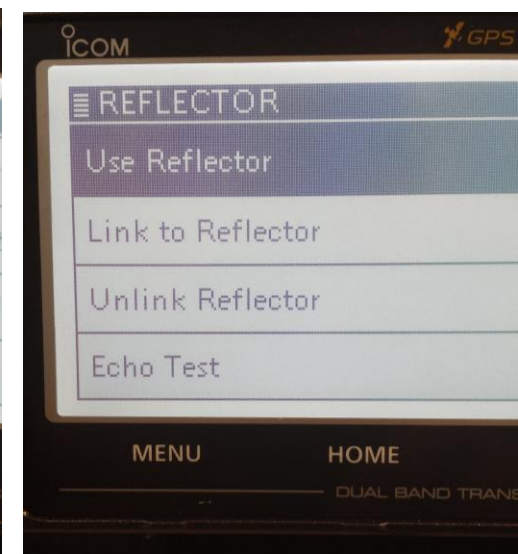
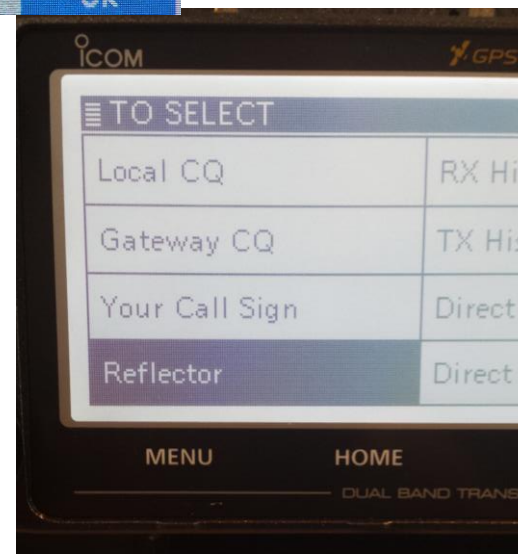
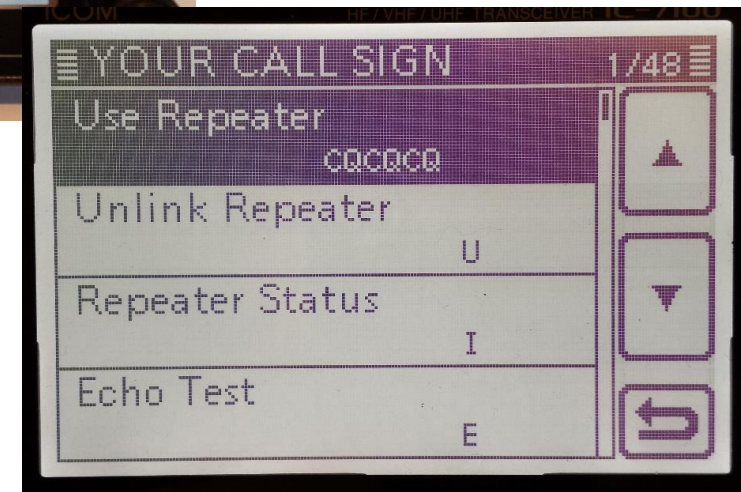
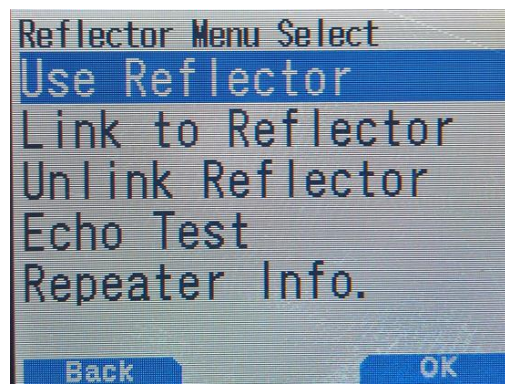
# Using DR Mode

- Default is incorrect
- **Don't use CQCQCQ !**



# Which CQ?

- Select TO on screen
- **DO NOT USE Local CQ**
  - Shows as CQCQCQ
- 3<sup>rd</sup> Generation (ID-31, ID-51, ID-7100)
  - Select “Your Call Sign”
  - Select “Use Repeater” to talk
- 3<sup>rd</sup> + Generation (ID-51+, ID-5100) and TH-D74
  - Select (“Reflector”)
  - Select (“Use Reflector”) to talk



# Registration

- You do NOT have to be registered to talk
- Registration allows
  - Linking a repeater
  - Access D-STAR network from Internet (i.e. DVDongle or DVAP)

Get on the air and start talking, then go through the registration process. [www.DSTARGateway.org](http://www.DSTARGateway.org)

Buy a radio and talk on D-STAR TODAY!!!



# Setting Up & Programming Your Radio

# Setting Up Your Radio – Icom



## D-STAR Info ID-31, 51, 5100 Quick-Start Guide

### Initial Setup

#### Enabling the Internal GPS

For the Nearest Repeater function to work, the internal GPS must be enabled.

Select  (Menu)

Select D-pad  (Up/RX->CS) or  (Down/DR) until you get to **GPS**

Then press  (Enter)

Select **GPS Set**  (Enter)

Select **GPS Select**  (Enter)

Select **Internal GPS**  (Enter)

Select  (Menu) to return to the main screen

It may take a few minutes to acquire a valid signal. You should locate the radio so that it has a clear view of the sky. While we are waiting, let's set your call sign.

### Set Call Sign

Select  (Menu)



Then select D-pad  (Up/RX->CS) or  (Down/DR) until you get to **My Station**

Select **My Call Sign**  (Enter)



Select **Call Sign Slot 1**

Select  (Quick Menu)

Select **Edit**  (Enter)

Using D-pad  (Up/RX->CS) or  (Down/DR) to select the character

(You can also use the [DIAL] on top of the radio)

and D-pad  (Left/CD) or  (Right/CS) to select the position,

Enter your call sign.

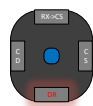
Select  (Enter)

Select  (Menu) to return to the main screen

# Setting Up Your Radio - Icom

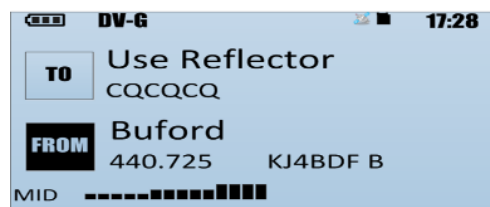
## Selecting Nearby Repeaters

The ID-31 and ID-51 both have a database of repeaters and their locations. With the integrated GPS, the radios are now able to find the closest repeaters to you.



Press and Hold the *(Down/DR)* for 2 sec.


The radio display should look similar to this



On this screen, the left hand side is highlighted in black to denote which field that you are changing, the TO or FROM field. The display above indicates that we are changing the FROM field.

## Selecting FROM Repeater:



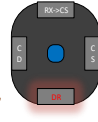
Hit D-pad *(Up/RX->CS)* or  *(Down/DR)* to select the FROM field.

Select **Near Repeater**  (Enter)

Select desired repeater  (Enter)

## Selecting TO: Function



Select D-pad *(Up/RX->CS)* or  *(Down/DR)* to select FROM.

Select **Your Call Sign**  (Enter)

Select **Use Repeater**  (Enter)

Then listen before you talk!





# Setting Up Your Radio – Kenwood

- First Time Setup Only:
  - Set your callsign
  - Press Menu 610
  - Press the ENT button and set your callsign
- Choosing the Repeater
  - When in the VFO (not memory) change the MODE until you get into DR Mode.
  - The display for that band should switch to a dual line mode.
  - Press and hold the up arrow for a second and will hear a beep and be on the Destination Select Menu.
  - Select Reflector – Use Reflector
  - You should now be back to the main screen.
  - Press and hold the down arrow for a second and will hear a beep and be on the Repeater Select Menu.
  - Choose Nearby Repeaters and select the repeater that you want to talk on.
- Listen before you talk!

# Updating Your Radio

- Updated using Icom or Kenwood Software
- Updated information from [www.DSTARInfo.com](http://www.DSTARInfo.com)
  - Can import into Icom/Kenwood software and program radio
  - Can write to SD card and import into radio
- Updated using RT Systems software

[www.rtsystemsinc.com](http://www.rtsystemsinc.com)



# Icom RS-RP3C “G3”

- Update to G2 Gateway Software
- Supports new CentOS versions
  - CentOS5 2017-03-31
  - CentOS6 2020-11-30
  - CentOS7 2024-06-30
  - Supports 64 bit
- Application package supplied as RPM distribution
  - Security Updates
- Middleware can be updated
  - Apache
  - Tomcat
  - OpenSSL
  - Postgres SQL
- Additional Ports required
- Significantly faster install
- Automated installation script (by NJ6N)
  - Backup Existing Gateway
  - Restore to updated software
- Supports features of ID-51A PLUS2
- ***Currently in limited release***
- Waiting on some standard utilities to be updated
  - DPlusReport
  - Monlink

ID-51Plus2

# ID-51A PLUS2

- New Features
  - Terminal Mode
  - Access Point Mode
- To utilize new Modes
  - RS-MS3W Software
  - Create New Terminal
    - On a G3 Gateway
    - Create a new Terminal – Access Point
    - Wait for replication
  - Supports Call Sign Routing Only

**“Plus Two” New Modes For Extended D-STAR Coverage and Fun!**

The new Terminal mode and Access point mode enable you to make D-STAR calls through the Internet, even from areas where no D-STAR repeater is accessible.

**Terminal Mode**

Connect the ID-51A/E PLUS2 to the Internet through a PC or Android® device, and send your voice and/or data through the Internet gateway to a destination repeater.

**Access Point Mode**

Use an ID-51A/E PLUS2 radio connected to the Internet through a PC or Android® device, as an Access point. You can use another D-STAR radio to send your voice and/or data through the Access point radio, and communicate with D-STAR stations all over the world.



Kenwood TH-D74

# Kenwood TH-D74

- Kenwood's Latest Radio
- Multi-Function Radio
  - D-STAR
  - APRS
  - FM
  - 144/220/440 Tribander
  - HF Receive
- Color TFT display
- Bluetooth
- Micro USB Data port

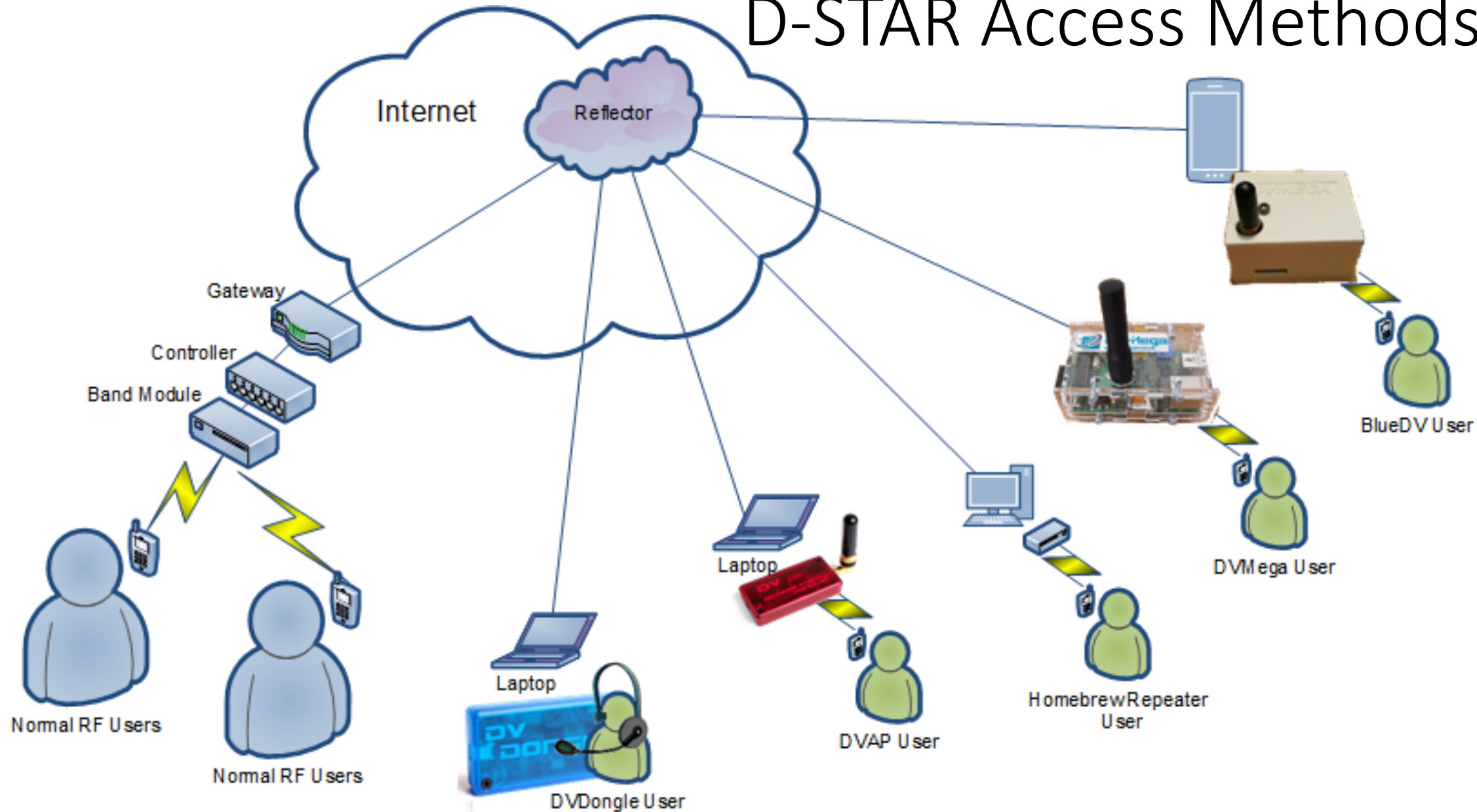




# D-STAR Devices



# D-STAR Access Methods



# DV Dongles

- Different styles available from Internet Labs (DV Dongle), NW Digital (Thumb DV) and MoenComm (Star\*DV)
- Attaches to USB port on PC
- Accesses D-STAR network using sound card in PC connected to Internet



# DVAPs



- DV Access Point is low power hotspot providing radio access to D-STAR network through PC
- Developed by Internet Labs (Robin Cutshaw, AA4RC)
- Connects to PC, Raspberry Pi by USB
- 10mW RF power for 100m range
- D-STAR radio uses standard commands for linking
- Software on PC, Pi (DVAPtool or DVAPnode)
- Internet access on PC, Pi to network

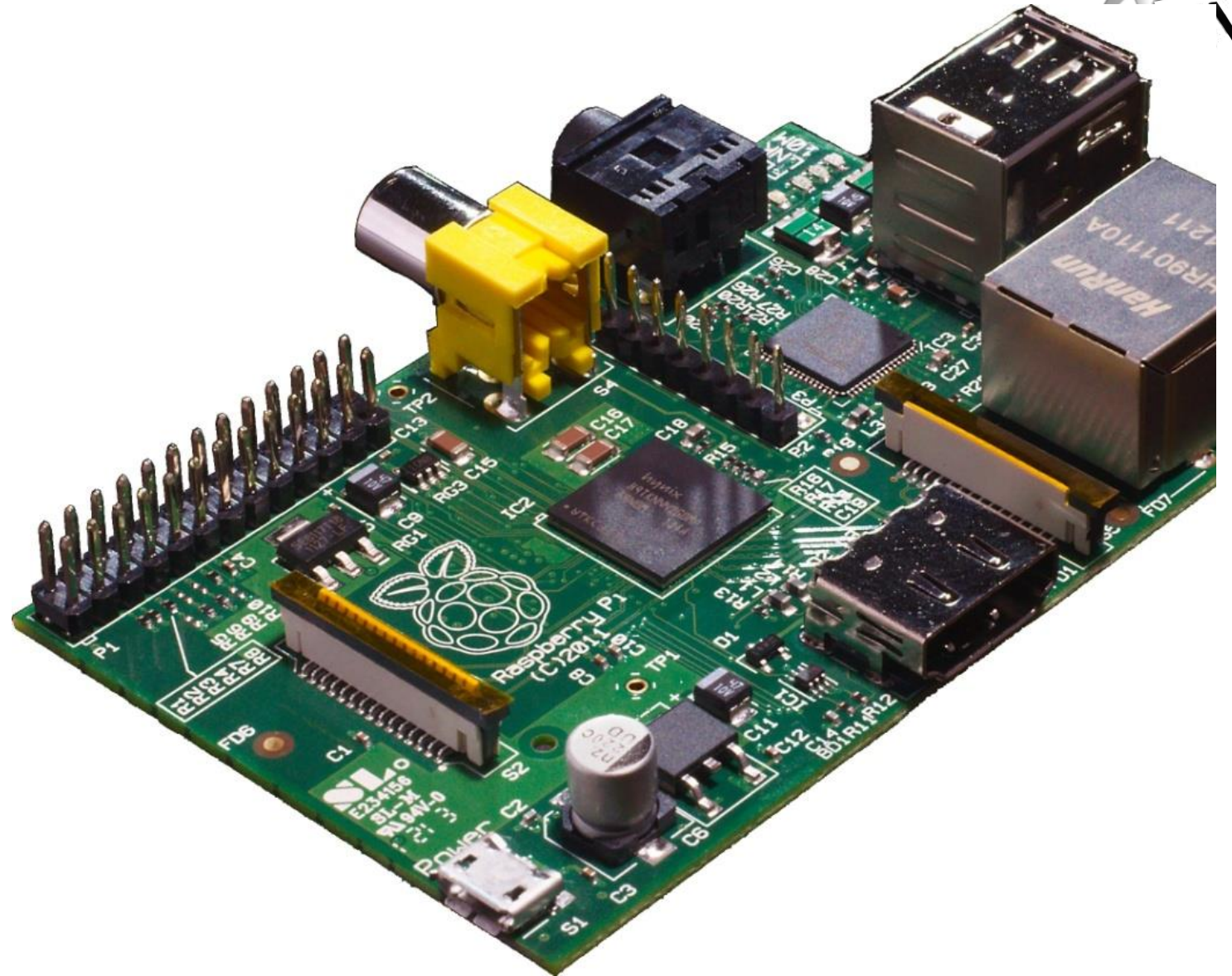
# Using a DVAP

- Normal connection to DVAP is a PC, Laptop or Netbook (bulky) with Internet connection



# Add a Raspberry Pi?

- Credit card sized Linux computer with SD Card slot, 2 USB, Ethernet and HDMI ports powered by 5VDC micro-USB adapter



# Homebrew DVAP Package



# DHAP Mini Mega

- Two versions available for DVAP or DV Mega
- Commercially available from Hardened Power Systems

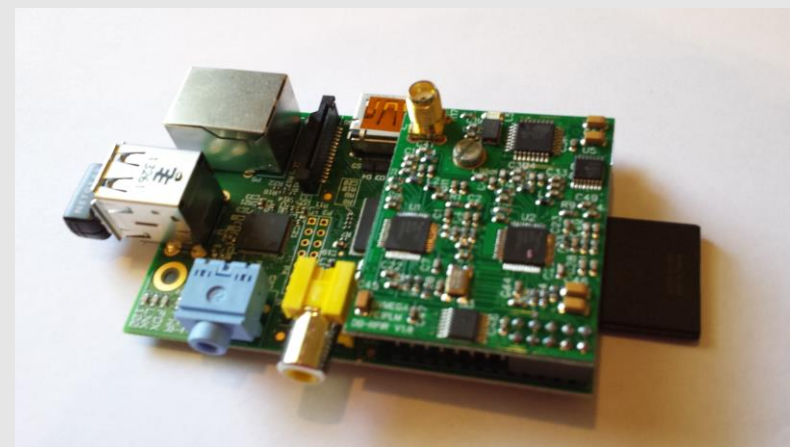
<http://www.portableuniversalpower.com/DHAP.htm>

- Includes case, battery, Raspberry Pi
- User supplies DVAP or DV Mega



# DV Mega

- Low power hotspot similar to DVAP (single or dual band versions)
- Attaches to Raspberry Pi GPIO connector (Pi Model B, B+, Pi 2) or Arduino
- SD card with OS and ircDDBgateway software
- New DVmega BlueSpot supports multi-mode (D-STAR, DMR)
- <http://www.dvmega.auria.nl/>





# BlueDV

- DV Mega attaches to BlueDV board for self contained hotspot
- Bluetooth to smartphone for Internet connectivity
- D-STAR, DMR, Fusion, P-25
- Available at <http://www.pa7lim.nl/bluedv/>



# OpenSpot

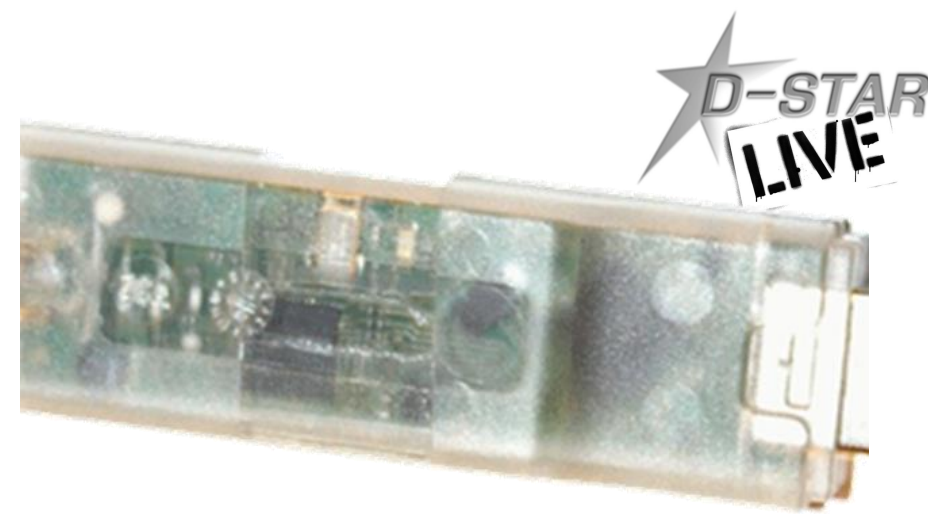
- Standalone
- DMR, D-STAR, Fusion
- Cross Modem (Fusion Radio on DMR channels)
- Web Interface



# Multi-mode Devices DV4mini

- DVAP type device on USB stick
- SMA RF connection to antenna
- 100 mw transmitter
- Compatible with D-STAR, DMR and Fusion
- Available from Wireless Holdings

<http://wirelesshold.com/>



DV4mini Control Panel (Stick ID: F4-CE-5A V201.64 @ 127.0.0.1)

CPU 2 cores: 2 %

Personal Settings

DMR/CCS7 ID: 3113044

Hotspot Callsign WB4QDX B

Location (City)

QTH Locator: JO55AA

Internet Data Quality:

DV4mini Settings

D-Star  C4FM

DMR+  P25

DPMR (experimental)

Power: 0 12mW 12

RX-QRG: 441 MHz

TX-QRG: 441 MHz

SIMPLEX

D-Star

REF000

REF001

REF002

REF003

REF004

REF005

REF006

REF007

DCS  XRF  REF

**CONNECT** **DISC.**

S-Meter:

```
01:25:45,784 (0001): C4FM ... Disconnected from C4FM/P25 Reflector
01:25:45,784 (0000): DMR ... Set Dongle ID:#3113044/WB4QDX
01:25:45,784 (0000): DMR ... DMR scanner: OFF
01:25:47,065 (1281): DV4mini ... WB4QDX B 3113044 D 441000000 441000000 qth:JO55
01:25:47,066 (0001): ADF ... set RX / TX qrg: 441000000 / 441000000
01:25:47,066 (0000): DV4mini ... set mode: D-Star
01:25:47,067 (0001): DMR ... Set Dongle ID:#3113044/WB4QDX
01:25:48,058 (0991): DMR ... DMR scanner: OFF
01:25:49,058 (1000): ADF ... set RX / TX qrg: 441000000 / 441000000
```

disconnected CCS7 DSTAR mode