

# DVMEGA Raspberry PI Radio

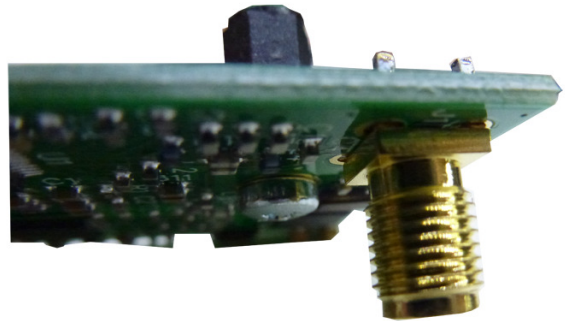
## Installation manual

The DVMEGA RPI radio is a modem that fits direct onto the Raspberry PI GPIO connector.

### ***A. Mounting the DVMEGA RPI radio onto the Raspberry PI.***

Step 1.

Place spacer on bottom of PCB. Place the 2 washers between spacer and PCB.

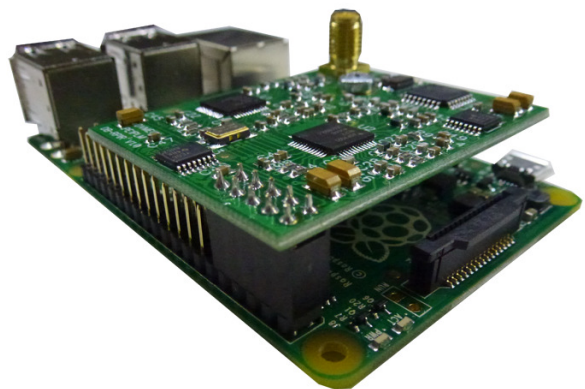


Step 2.

Place DVMEGA board on Raspberry PI.



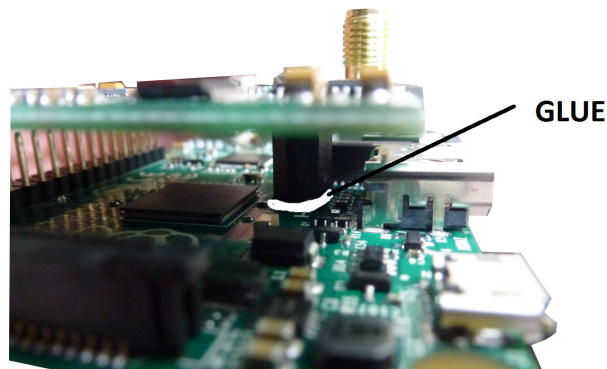
Singleband Radio



Dualband Radio

Step 3.

Raspberry B+ and later models do not have the hole to fix the DVMEGA on the Raspberry PCB, the spacer has to be fixed with some glue on the Raspberry PCB.



### ***B. Enable serial port.***

Next SD Card images have enabled the serialport by default. For these images you can skip Chapter B.

3Star (Dutch) : <http://wiki.nlreflector.nl/index.php?title=Kzu-distributie>

Western D-Star : <http://www.westerndstar.co.uk/html/downloads.html>

VK4TUX : [dvrptr.net/vk4tux/od\\_vk4tux\\_images/RPI2/tux\\_RPI2\\_KDE\\_FC21\\_ultix.img.zip](http://dvrptr.net/vk4tux/od_vk4tux_images/RPI2/tux_RPI2_KDE_FC21_ultix.img.zip)

Maryland : <http://maryland-dstar.org/html/raspiberry.html>

If your image is not in the above list you have to enable the serial port for your own use first. There are two files that need to be modified.

- First, disable the boot up and diagnostic output to the serial port.

`sudo nano /boot/cmdline.txt`

- and remove the two options referring to the serial port.

So, this:

```
dwc_otg.lpm_enable=0 console=ttyAMA0,115200 kgdboc=ttyAMA0,115200 console=tty1  
root=/dev/mmcblk0p2 rootfstype=ext4 elevator=deadline rootwait
```

becomes this:

```
dwc_otg.lpm_enable=0 console=tty1 root=/dev/mmcblk0p2 rootfstype=ext4  
elevator=deadline rootwait
```

- Press CTRL "X"

- Press "Y"

- Press enter

- Second, disable the login prompt.

`sudo nano /etc/inittab`

- find the line near the end.

```
T0:23:respawn:/sbin/getty -L ttyAMA0 115200 vt100
```

- and delete it or comment it out by putting a # at the start of the line.

```
#T0:23:respawn:/sbin/getty -L ttyAMA0 115200 vt100
```

- Press CTRL "X"

- Press "Y"

- Press enter

- Reboot Raspberry and the serial port will now be free for your exclusive use.

### ***C. Setting Ircddbgateway and D-Star repeater package***

#### Download Ircddbgateway and D-Star repeater image

Software packages are available as an SD card image for Raspberry PI. These are available from next locations :

3Star (Dutch) : <http://wiki.nlreflector.nl/index.php?title=Kzu-distributie>

Western D-Star : <http://www.westerndstar.co.uk/html/downloads.html>

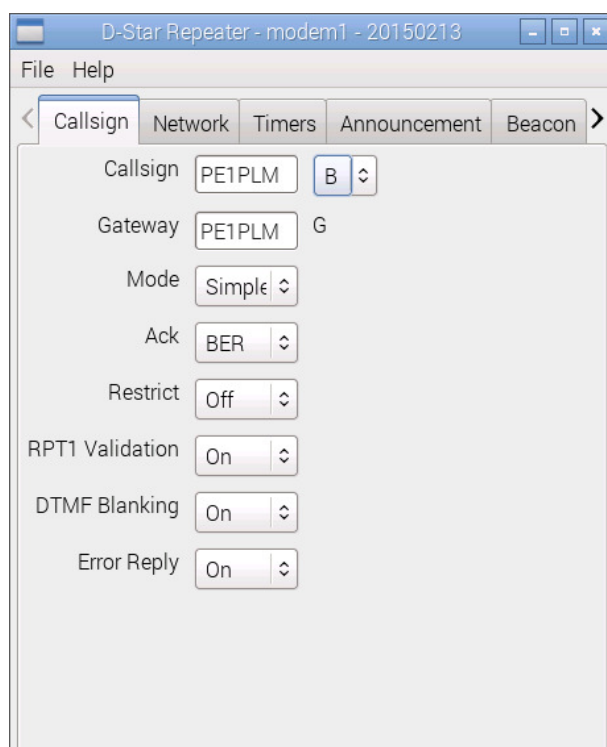
VK4TUX : [dvrptr.net/vk4tux/od\\_vk4tux\\_images/RPI2/tux\\_RPI2\\_KDE\\_FC21\\_ultix.img.zip](http://dvrptr.net/vk4tux/od_vk4tux_images/RPI2/tux_RPI2_KDE_FC21_ultix.img.zip)

Maryland : <http://maryland-dstar.org/html/raspiberry.html>

Use always the latest version and check documentation of particular image for how to update to latest version.

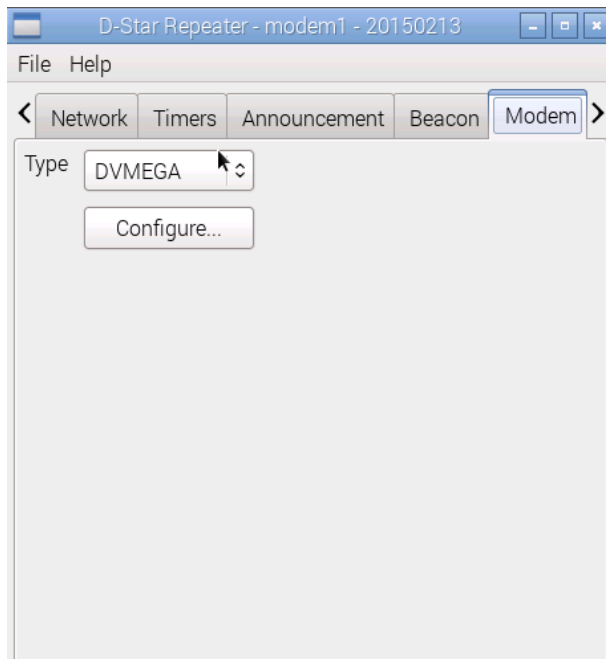
#### Configuration D-Star repeater software..

For proper operation, at least the Callsign and Modem Tab has to be set. The other settings can be done as desired.

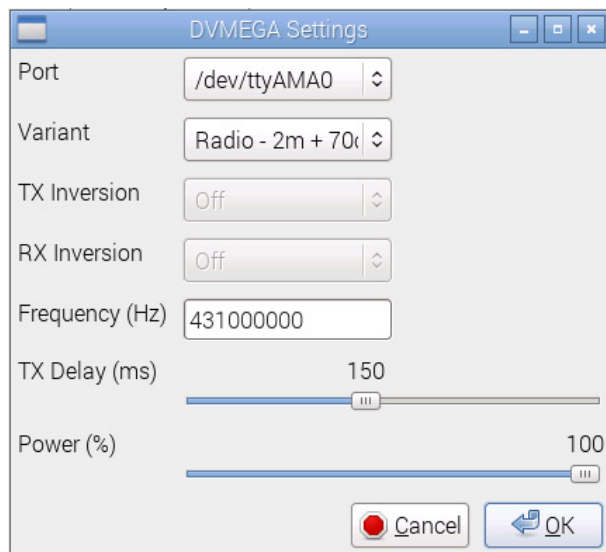


- Callsign and module (B) must be identical in D-Star repeater and ircDDBGateway. Module character depends on the frequency band in use.

- RPT1 Validation must be On.



- Select DVMEGA as modem.
- Click the Configure button.



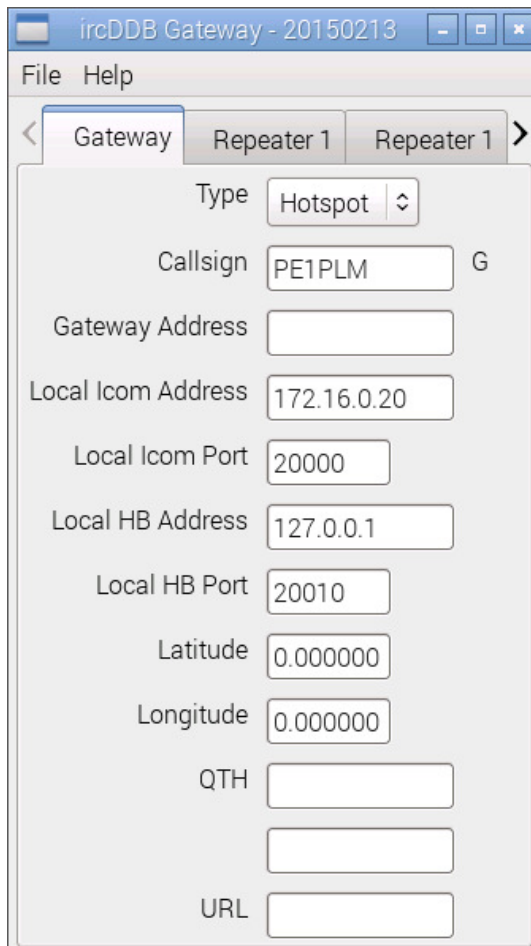
- Select comport AMA0. This is the comport available on the GPIO connector.
- Set Variant to Radio - 2m + 70cm.
- Set desired frequency, in the 2m or 70cm band. In case of a Singleband Radio 2m frequencies will be accepted but will not work since it is a UHF Radio only.
- Set TX delay to approx. 150 ms.

- Make sure that you save the changes before you close the configuration window.  
FILE -> SAVE -> click OK.

- Detailed information related to the other settings can be found at :  
<https://groups.yahoo.com/neo/groups/pcrepeatercontroller/files/Documentation/>

## Configuration ircDDBGateway software.

For proper operation, at least next tabs has to be set. The other settings can be done as desired.



The screenshot shows the 'ircDDB Gateway - 20150213' window with the 'Gateway' tab selected. The configuration fields are as follows:

Field	Value
Type	Hotspot
Callsign	PE1PLM G
Gateway Address	
Local Icom Address	172.16.0.20
Local Icom Port	20000
Local HB Address	127.0.0.1
Local HB Port	20010
Latitude	0.000000
Longitude	0.000000
QTH	
URL	

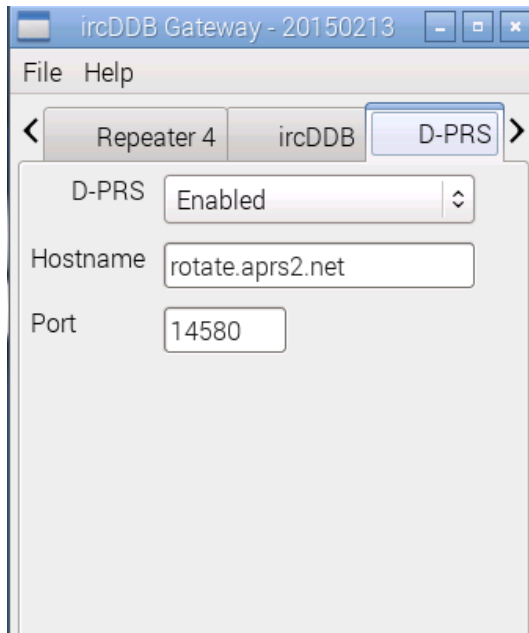
- At least Type and Callsign have to be set.



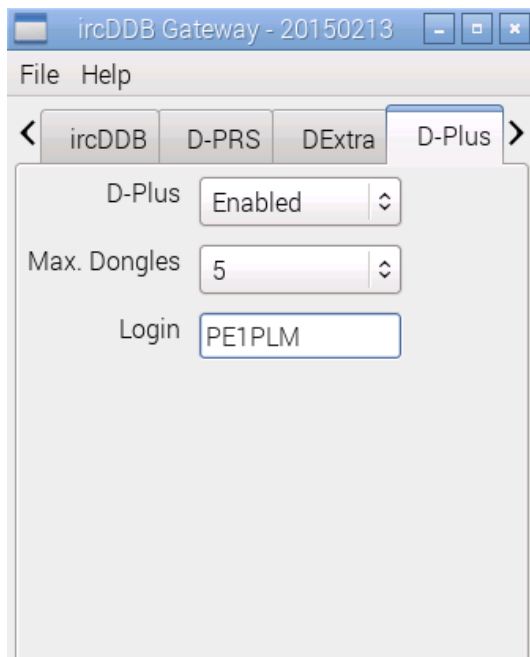
The screenshot shows the 'ircDDB Gateway - 20150213' window with the 'Repeater 1' tab selected. The configuration fields are as follows:

Field	Value
Band	B
Type	Homebrew
Address	127.0.0.1
Port	20011
Bands	0 0 0
Reflector	DCS007 B
Startup	Yes
Reconnect	Never

- Band must be set to the same modules as set in the D-Star repeater software.



- Enable D-PRS when you like to pass GPS data to [www.aprs.fi](http://www.aprs.fi)



- Enable D-Plus when you make use of REFXXX reflectors.
- Portforwarding of some ports is needed for proper functionality. You can find detailed info on : <http://www.k6jm.com/portforwarding.htm>

- Make sure that you save the changes before you close the configuration window.  
FILE -> SAVE -> click OK.

- Detailed information related to the other settings can be found at :  
<https://groups.yahoo.com/neo/groups/ircDDBGateway/files>

- Reboot the Raspberry.

- The hotspot is now ready to use.