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.
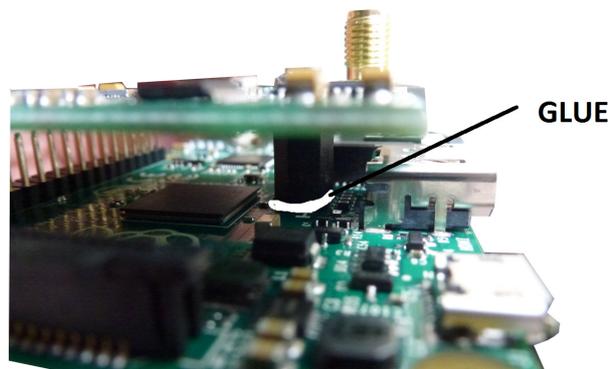
Singleband Radio   Dualband Radio

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
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
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.
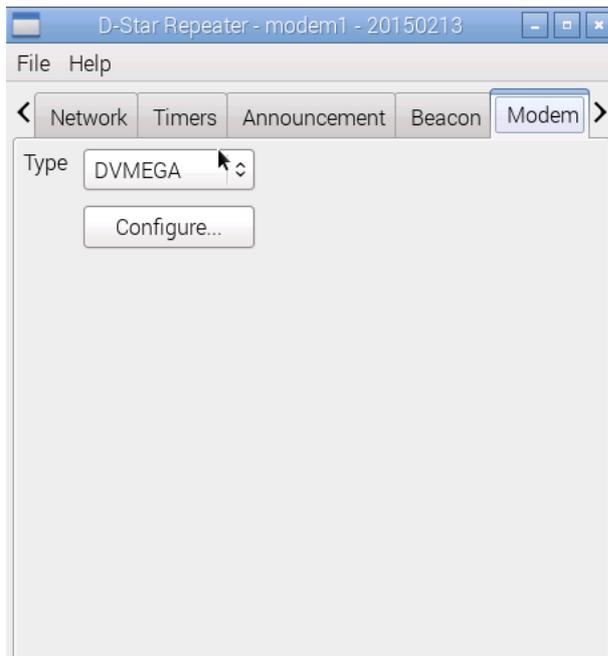
Configuration D-Star repeater software..

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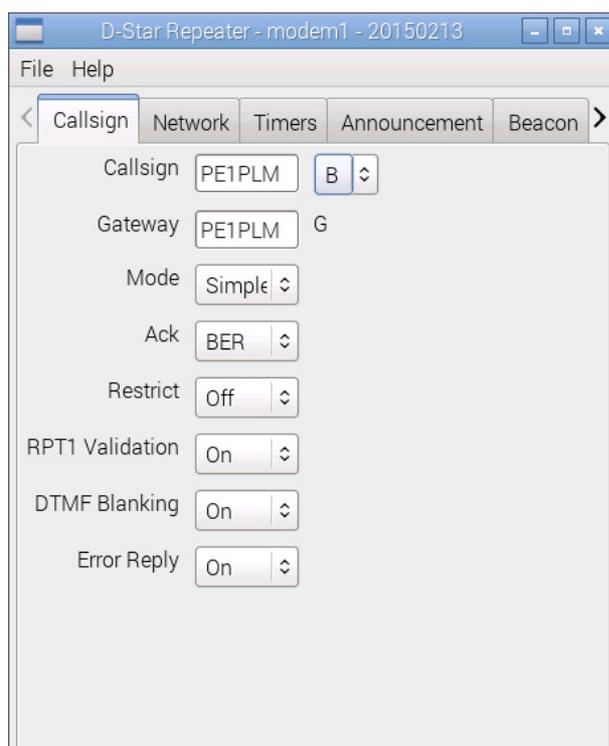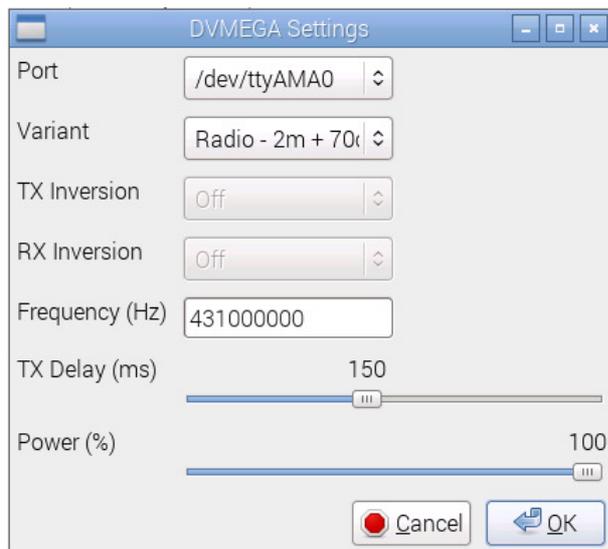

- Callsign and module (B) must be identical
 in D-Star repeater and ircDDBGateway.
 Module character depends on the
 frequency band in use.

- RPT1 Validation must be On.

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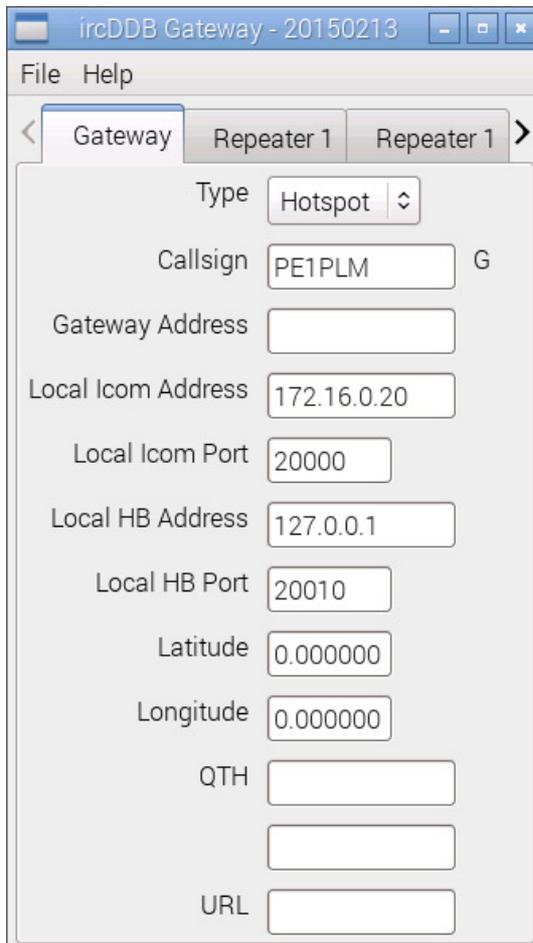
- Click the Configure button.

- 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 configurationwindow.
  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.

- At least Type and Callsign have to be set.

- Band must be set to the same modules as set in the D-Star repeater software.
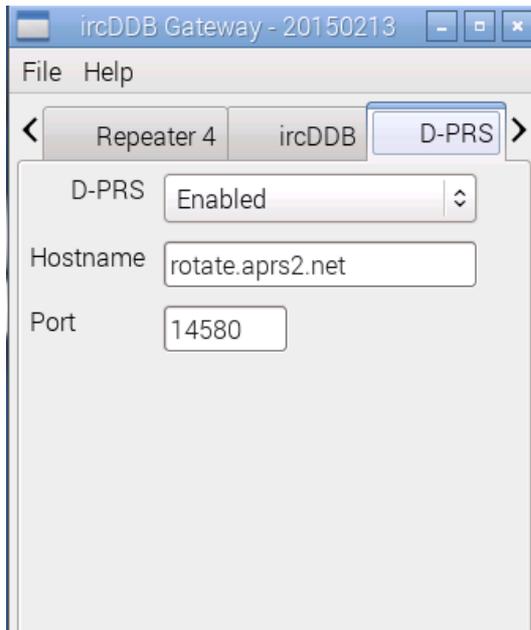
- Enable D-PRS when you like to pass GPS
  data to www.aprs.fi
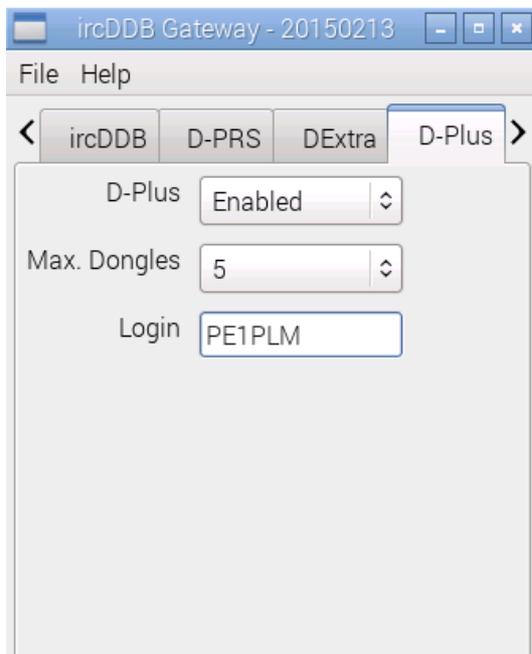
- Enable D-Plus when you make use of
  REFXXX reflectors.

- Portforewarding of some ports i needed
  for propper functionality. You can find
  detailed info on :
  http://www.k6jm.com/portforwarding.htm

- Make sure that you save the changes before you close the configurationwindow.
  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.

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