

# DVMEGA BlueSpot for D-Star and DMR

## Installation manual

The DVMEGA BlueSpot is DMR/DSTAR hotspot software for Android 4.x and higher. Firmware on your new DVMEGA is already installed. New firmware for your existing DVMEGA can be loaded with X-Loader.

### ***DVMEGA firmware upgrade.***

#### *DVMEGA Arduino Dualband Radio :*

Start X-loader, choose the correct hex file, select Device UNO or MEGA and set the COM port to the port number that is assigned to the ARDUINO. The baud rate defaults to 115200. Then press Upload to load the firmware. If the firmware is loaded correctly a message will appear below in the bar of the Xloader screen.

#### *DVMEGA Raspberry PI Singleband Radio :*

To load new firmware a programming adaptor is required. This adaptor is available from the shop. Before you can load new firmware a wire has to be soldered on the DVMEGA board, see Fig. 1. This wire is to activate the bootloader when X-loader start.

*Firmware for DVMEGA Raspberry PI Singleband radio is the same as DVMEGA Arduino UNO Dualband radio. So you can use a Arduino UNO to load the firmware in the microcontroller of the DVMEGA Raspberry PI Singleband radio. Just lift the microcontroller from the DVMEGA Raspberry PI Singleband radio and place in the socket on the Arduino UNO. After you have load the firmware place the microcontroller back on the DVMEGA Raspberry PI Singleband radio.*

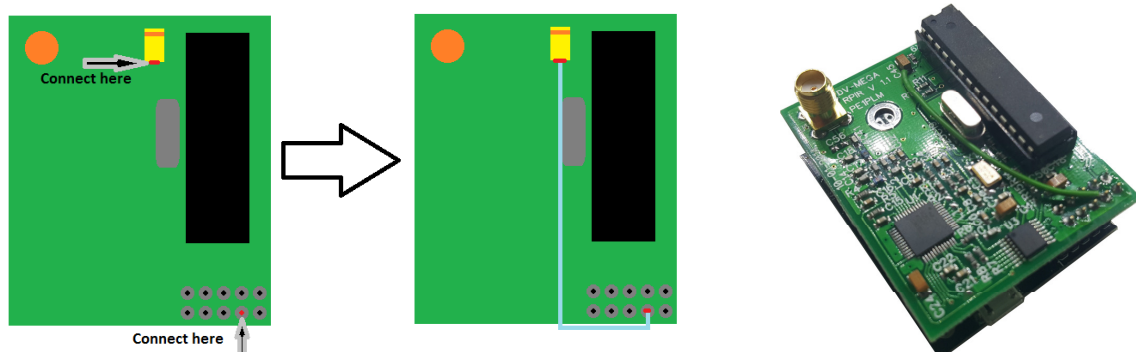


Fig. 1

Start X-loader, choose the correct hex file, select Device UNO and set the COM port to the port number that is assigned to the ARDUINO. The baud rate defaults to 115200. Then press Upload to load the firmware. If the firmware is loaded correctly a message will appear below in the bar of the Xloader screen.

## DVMEGA Raspberry PI Dualband Radio :

To load new firmware a programming adaptor is required. This adaptor is available from the shop. Before you can load new firmware a wire has to be soldered on the DVMEGA board, see Fig. 2. This wire is to activate the bootloader when X-loader start.

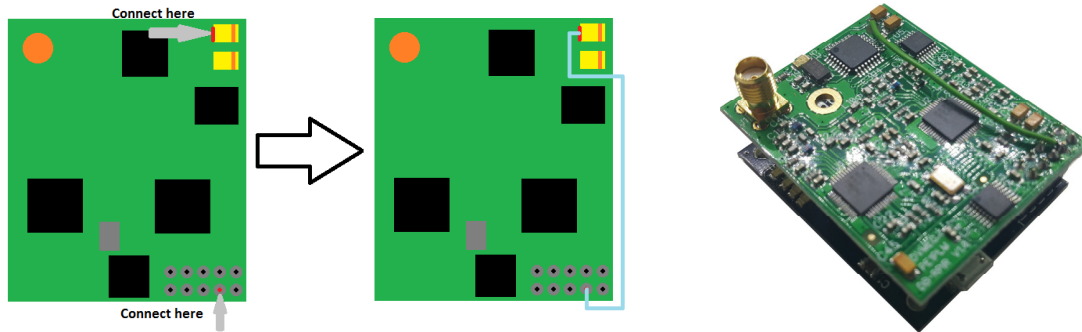


Fig. 2

Start X-loader, choose the correct hex file, select Device UNO and set the COM port to the port number that is assigned to the ARDUINO. The baud rate defaults to 115200. Then press Upload to load the firmware. If the firmware is loaded correctly a message will appear below in the bar of the Xloader screen.

### ***BlueSpot Android application.***

Install the Android BlueSpot app from the Play Store. Search for the app BlueSpot written by PA7LIM.

Setup next items :

Ham call	: Your call
DMR id	: Your DMR id or CCS7 id
Your info	: Message text for D-Star
Enable APRS	: Yes / No
DSTAR freq	: Your DSTAR RX/TX frequency
DMR freq	: Your DMR RX/TX frequency
DMR QRG	: DMR QRG correction (will be explained separate)
Enable ser2net	: Off = Bluetooth, On = Ser2net
ser2net IP	: IP adress of ser2net device

For detailed explanation and video's please vissent : <http://www.pa7lim.nl/bluespot/>

## ***Connect DVMEGA to BlueSpot Android application.***

There are 2 way's to connect the DVMEGA to the BlueSpot application.

- Bluetooth
- Ser2net

### Bluetooth

A Bluetooth/program board is available from Ruud PE1MSZ  
[http://www.combitronics.nl/index.php?route=product/product&product\\_id=61](http://www.combitronics.nl/index.php?route=product/product&product_id=61)

- Set Enable ser2net in setup tab of BlueSpot app to OFF.
- Powerup the BlueStack DVMEGA stack.
- Search for BlueStack device on your Android device.
- Connect BlueStach device.

Start BlueSpot Android app, HOTSPOT status will be BT CONNECTED.

### ser2net

First you have to prepare your Raspberry PI to run ser2net. Make sure that no other application claim or use the serialport your DVMEGA is connected to. Install ser2net using the next procedure :

- sudo apt-get install ser2net
- sudo nano /etc/ser2net.conf
- add next line at the botton :  
2000:raw:600:/dev/ttyAMA0:115200 8DATABITS NONE 1STOPBIT  
note : if you run a DVMEGA Arduino dualband shield, AMA0 must be ACM0
- Press CRL-x
- Press y
- press enter
- Restart your Raspberry PI, Ser2net is now running.

Start BlueSpot Android app, HOTSPOT status will be NET CONNECTED.

### ***QRG correction***

In almost all cases the QRG has to be corrected for DMR. A simple check is build in and informs you when you have to correct the QRG. When QRG has to be corrected the info field in the main windows show "PLEASE CHANGE QRG!" A good way to find the right setting is to search the upper and lower threshold and set the average. Every time you change the QRG you have to disconnect and reconnect to DMR. QRG update is only done by connect to radio mode.