

AMBE Server board ver. 0.3 - Quick Start Guide

The ZUM AMBE3000 server is a standalone board gives USB, Wi-Fi and Ethernet connectivity to do DSTAR/DMR/FUSION/P25/NXDN audio compression/decompression. It is supported by a number of apps and programs such as BlueDV, DummyRepeater, Buster and Peanut.

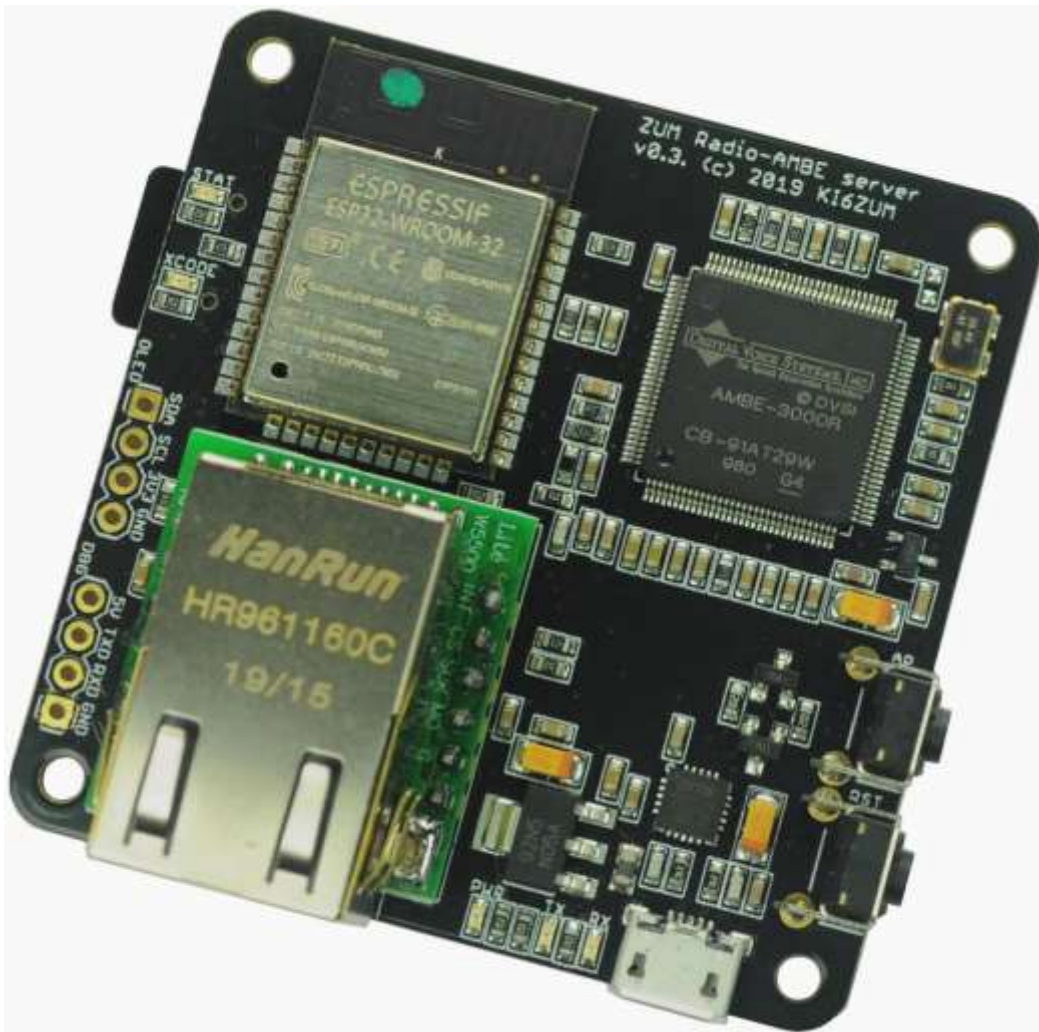


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Board specifications

The ZUM AMBE board uses an authentic AMBE3000R chip sourced directly from DVS1. This chip allows for audio transcoding for DSTAR, DMR, Fusion, P25 and NXDN.

Connection types

- Wi-Fi (2.4Ghz B/G/N)
- Serial (460800 baud)
- Ethernet (100Mbit/full duplex)

The board can be used with the following software.

- BlueDV - <http://www.pa7lim.nl/bluedv-windows/>
- MMDVM (DummyRepeater) - <https://github.com/g4klx/DummyRepeater>
- Peanut - <http://www.pa7lim.nl/peanut/>
- Buster - <https://apps.apple.com/us/app/buster/id1060175273?mt=12>

Configuration

- The configuration is stored on an SD card

Screen

- A 1.3" OLED screen can be attached to the board

Board power

The AMBE server board is powered by the micro USB port.



When using Wi-Fi or Ethernet mode, it is recommended to use a 5V USB power supply with at least 1A current rating. When using USB UART mode, it is recommended to use a powered USB hub. After applying power, the STAT and XCODE LEDs will flash up two times.



Board configuration

All the configuration information for the board is contained in the root folder of the micro SD card in the file named zum.ini. The card must be formatted with a FAT32 partition.

To make setup easy there is an online tool which has a GUI to create the zum.ini file. The tool can be access at:

<http://ambeboard.zumradio.com/configurator/>

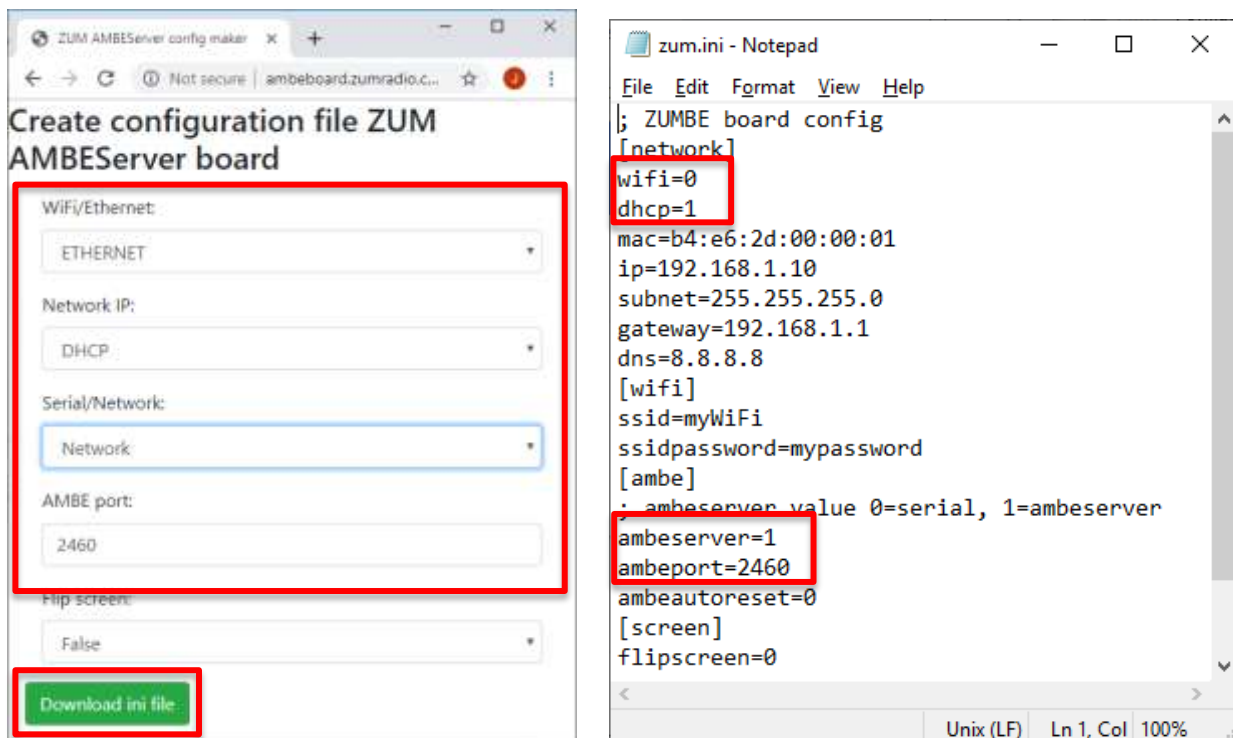
Ethernet (DHCP):

To use the Ethernet port, select ETHERNET for “WiFi/Ethernet”. Also select Network for “Serial/Network”. In this example the “Network/IP” is set for DHCP and the “AMBE port” is 2460.

Finally click on “Download ini file” and save the file on the micro SD card and put it into the AMBE Server board.

In the zum.ini file, those settings are specified as follows:

- wifi=0 (0=Ethernet, 1=wifi)
- dhcp=1 (0=static IP, 1=dhcp)
- ambeserver=1 (0=usb serial, 1=network)
- ambeport=2460 (number is the IP port used)



The image shows two side-by-side screenshots. The left screenshot is a web browser displaying the 'ZUM AMBEServer config maker' interface. It has a title 'Create configuration file ZUM AMBEServer board'. There are four main sections: 'WiFi/Ethernet' with a dropdown set to 'ETHERNET'; 'Network IP' with a dropdown set to 'DHCP'; 'Serial/Network' with a dropdown set to 'Network'; and 'AMBE port' with a text input set to '2460'. At the bottom, there is a 'Flip screen' dropdown set to 'False' and a green 'Download ini file' button. The right screenshot is a Notepad window titled 'zum.ini - Notepad'. It contains the following text:

```
; ZUMBE board config
[network]
wifi=0
dhcp=1
mac=b4:e6:2d:00:00:01
ip=192.168.1.10
subnet=255.255.255.0
gateway=192.168.1.1
dns=8.8.8.8
[wifi]
ssid=myWiFi
ssidpassword=mypassword
[ambe]
; ambeserver value 0=serial, 1=ambeserver
ambeserver=1
ambeport=2460
ambeautoreset=0
[screen]
flipscreen=0
```

 Red boxes highlight the 'wifi=0' and 'dhcp=1' lines in the [network] section, and the 'ambeserver=1' and 'ambeport=2460' lines in the [ambe] section.

Ethernet (Static IP):

To use the Ethernet port, select ETHERNET for “WiFi/Ethernet”. Also select Network for “Serial/Network”. In this example the “Network/IP” is set for STATIC and the “AMBE port” is 2460.

Finally click on “Download ini file” and save the file on the micro SD card and put it into the AMBE Server board.

In the zum.ini file, those settings are specified as follows:

- wifi=0 (0=Ethernet, 1=wifi)
- dhcp=1 (0=static IP, 1=dhcp)
- ambeserver=1 (0=usb serial, 1=network)
- ambeport=2460 (number is the IP port used)
- ip=192.168.1.10
- subnet=255.255.255.0
- gateway=192.168.1.1

ZUM AMBEServer config maker

Create configuration file ZUM AMBEServer board

WiFi/Ethernet:
ETHERNET

Network IP:
STATIC

IP Address
192 168 1 10

Subnet mask
255 255 255 0

Gateway
192 168 1 1

Serial/Network:
Network

AMBE port:
2460

Flip screen:
False

Download ini file

zum.ini - Notepad

```
File Edit Format View Help
; ZUMBE board config
[network]
wifi=0
dhcp=0
mac=04:e6:2d:00:00:01
ip=192.168.1.10
subnet=255.255.255.0
gateway=192.168.1.1
dns=8.8.8.8
[wifi]
ssid=myWiFi
ssidpassword=mypassword
[ambe]
ambeserver value 0=serial, 1=ambeserver
ambeserver=1
ambeport=2460
ambeautoreset=0
[screen]
flipscreen=0
```

Wi-Fi (DHCP):

To use the Ethernet port, select WIFI for “WiFi/Ethernet”. Also select Network for “Serial/Network”. In this example the “Network/IP” is set for DHCP and the “AMBE port” is 2460. Also enter the SSID of your network router as well as the password for your router.

Finally click on “Download ini file” and save the file on the micro SD card and put it into the AMBE Server.

In the zum.ini file, those settings are specified as follows:

- wifi=1 (0=Ethernet, 1=wifi)
- dhcp=1 (0=static IP, 1=dhcp)
- ssid=myWiFi
- ssidpassword=mypassword
- ambeserver=1 (0=usb serial, 1=network)
- ambeport=2460 (number is the IP port used)

The screenshot shows the 'Create configuration file ZUM AMBEServer board' web form. The form has several sections, each highlighted with a red box. The first section, 'WiFi/Ethernet:', has a dropdown menu set to 'WIFI'. The second section, 'WiFi SSID:', has a text input field containing 'myWiFi'. The third section, 'WiFi password:', has a text input field containing 'mypassword'. The fourth section, 'Network IP:', has a dropdown menu set to 'DHCP'. The fifth section, 'Serial/Network:', has a dropdown menu set to 'Network'. The sixth section, 'AMBE port:', has a text input field containing '2460'. The seventh section, 'Flip screen:', has a dropdown menu set to 'False'. At the bottom of the form is a green button labeled 'Download ini file'.

The screenshot shows the 'zum.ini' file in Notepad. The file contains the following configuration:

```
; ZUMBE board config
[network]
wifi=1
dhcp=1
mac=b4:e6:2d:00:00:01
ip=192.168.1.10
subnet=255.255.255.0
gateway=192.168.1.1
dns=8.8.8.8
[wifi]
ssid=myWiFi
ssidpassword=mypassword
[ambe]
; ambeserver value 0=serial, 1=ambeserver
ambeserver=1
ambeport=2460
ambeautoreset=0
[screen]
flipscreen=0
```

The values 'wifi=1', 'dhcp=1', 'ssid=myWiFi', 'ssidpassword=mypassword', 'ambeserver=1', and 'ambeport=2460' are highlighted with red boxes, corresponding to the settings in the web form.

Wi-Fi (Static IP):

To use the Ethernet port, select ETHERNET for “WiFi/Ethernet”. Also select Network for “Serial/Network”. In this example the “Network/IP” is set for STATIC and the “AMBE port” is 2460.

Finally click on “Download ini file” and save the file on the micro SD card and put it into the AMBE Server.

In the zum.ini file, those settings are specified as follows:

- wifi=0 (0=Ethernet, 1=wifi)
- dhcp=1 (0=static IP, 1=dhcp)
- ssid=myWiFi / ssidpassword=mypassword
- ambeserver=1 (0=usb serial, 1=network)
- ambeport=2460 (number is the IP port used)
- ip=192.168.1.10
- subnet=255.255.255.0
- gateway=192.168.1.1

WIFI/Ethernet: WIFI

Wifi SSID: myWiFi

Wifi password: mypassword

Network IP: STATIC

IP Address: 192 168 1 10

Subnet mask: 255 255 255 0

Gateway: 192 168 1 1

Serial/Network: Network

AMBE port: 2460

Flip screen: False

Download ini file

```
zum.ini - Notepad
File Edit Format View Help
; ZUMBE board config
[network]
wifi=1
dhcp=0
mac=b4:c6:2d:00:00:01
ip=192.168.1.10
subnet=255.255.255.0
gateway=192.168.1.1
dns=0.0.0.0
[wifi]
ssid=myWiFi
ssidpassword=mypassword
[ambe]
: ambeserver value 0=serial, 1=ambeserver
ambeserver=1
ambeport=2460
ambeautosect=0
[screen]
flipscreen=0
Unix (LF) Ln 1, Col 100%
```

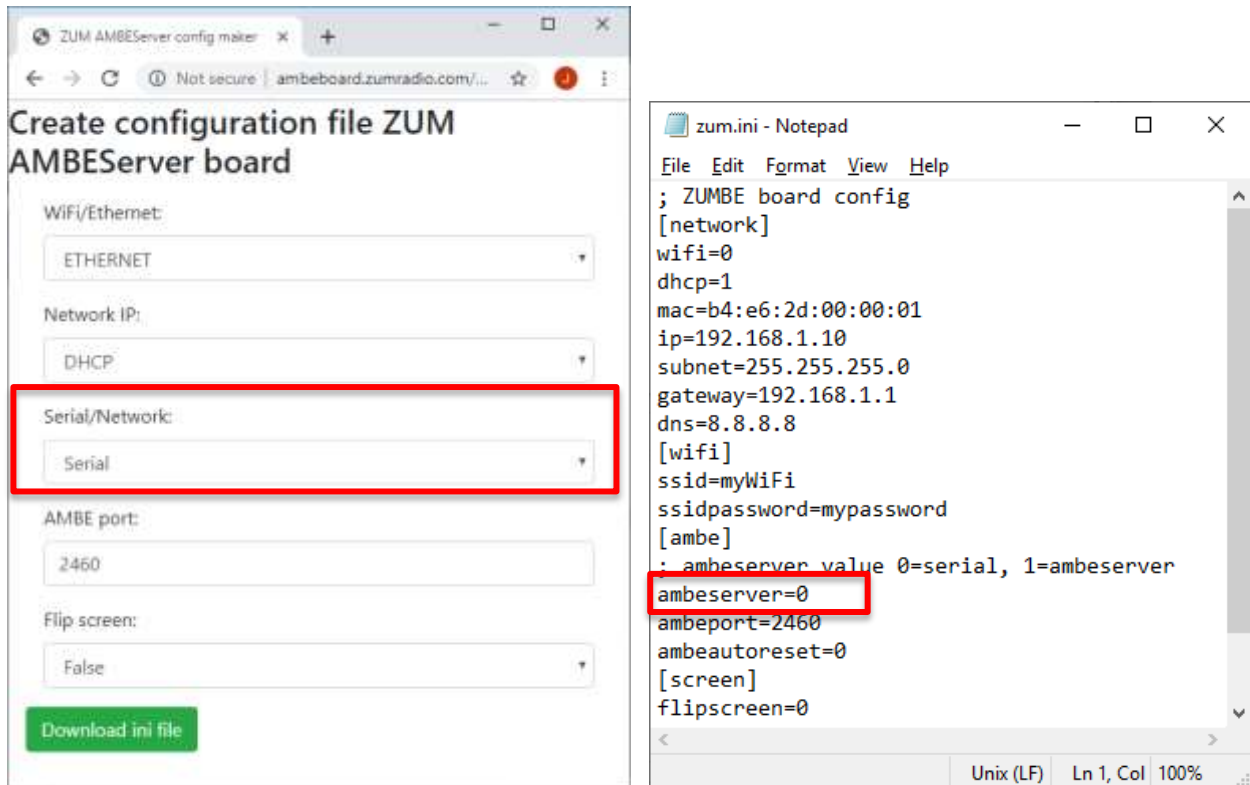
USB UART

To use the USB UART port, select Serial for “Serial/Network”. In this example the network related settings are not used.

Click on “Download ini file” and save the file on the micro SD card and put it into the AMBE Server board.

In the zum.ini file, those settings are specified as follows:

- ambeserver=0 (0=usb serial, 1=network)



The image shows two side-by-side screenshots. The left screenshot is a web browser window titled "ZUM AMBEServer config maker" with the URL "ambeboard.zumradio.com/...". The page is titled "Create configuration file ZUM AMBEServer board". It has several form fields: "WiFi/Ethernet:" with a dropdown menu set to "ETHERNET"; "Network IP:" with a dropdown menu set to "DHCP"; "Serial/Network:" with a dropdown menu set to "Serial" (this field is highlighted with a red rectangle); "AMBE port:" with a text input field containing "2460"; and "Flip screen:" with a dropdown menu set to "False". At the bottom is a green button labeled "Download ini file". The right screenshot is a Notepad window titled "zum.ini - Notepad" showing the contents of the generated configuration file. The text in the Notepad is as follows:

```
; ZUMBE board config
[network]
wifi=0
dhcp=1
mac=b4:e6:2d:00:00:01
ip=192.168.1.10
subnet=255.255.255.0
gateway=192.168.1.1
dns=8.8.8.8
[wifi]
ssid=myWiFi
ssidpassword=mypassword
[ambe]
: ambeserver value 0=serial, 1=ambeserver
ambeserver=0
ambeport=2460
ambeautoreset=0
[screen]
flipscreen=0
```

The line "ambeserver=0" is highlighted with a red rectangle. The status bar at the bottom of the Notepad window shows "Unix (LF)", "Ln 1, Col", and "100%".

Software configuration

The ZUM AMBE board is supported by a number of software products. Below are some quick start instructions to getting the software configured for use.

BlueDV for Windows

BlueDV is a Windows application that can be used to access to D-STAR, DMR and Fusion networks without needing a radio.

Download and install the app from:

<http://www.pa7lim.nl/bluedv-windows/>

Make sure that "Serial" is not turned on. Next, select "Menu", and then "Setup". Enter "Your Call", select "Use AMBE" and select "Use AMBE Server". Next enter the "Host/IP" address and "Port" number of the ZUM AMBE board. Finally, select "Save".

BlueDV for Windows

General

Your Call: **KI6ZUM**

Serial Port Radio: COM1

Save QSO Log: ☐

RX/TX Colors: ☐ Invert RXTX screen: ☐

Frequency: 434300000

Mode Timer: 10 Seconds

Radio TX power:

Latitude: + 52.0570 in decimals

Longitude: + 005.0739 in decimals

Always on top: ☐

Language: English (Active after restart)

DSTAR

DSTAR Module: B

APRS: ☐

Enable at start: ☒

Default reflector: REF012A (Empty is not connect)

DMR

DMR ID hotspot: 2040000

DMR ID simple: 2040000

QRG: -100 -50 0

Enable at start: ☐

DMR type: BM

No inband data: ☐

Brandmeister

DMR Master: 2042 NL

Master Password: passwOrd

DMR+

Master: DL-NORD

FUSION

QTH Location: JO22MB

Enable at start: ☐

Default reflector: ☐ YSF ☒ FCS

YSF: SC Scotland

FCS: FCS004 01

AMBE

Use AMBE: ☒ ThumbDV/DVStick3X

Model AMBE: AMBE3000

Serial Port: COM1

DMR ID: 460800

Baud rate: 460800

Use AMBEServer: ☒

Host/IP: 192.168.1.10

Port: 2460

Start/Stop Beep: ☒

Kill timer (min): 5

DSTAR text: BlueDV by PA7LIM

PTT keying

Enable: ☐

Serial port: COM1

RX Indicator: ☒ Enable

☒ RTS ☐ DTR

☒ High ☐ Low

PTT Button: ☒ CTS ☐ DSR

☒ High ☐ Low

Save Cancel

Now click on “AMBE” and select the preferred Microphone and Speakers for your machine.



To start using BlueDV, select “Serial”. This will connect to the AMBE Server. Now select “DSTAR” which will enable DStar mode. Now you can select the reflector and module. You use the “Link” and “Unlink” buttons to connect to the reflector.



Once you are connected to your Reflector or Talk Group, you can transmit by clicking on the “AMBE3000” button. To stop transmitting, click on the button again.



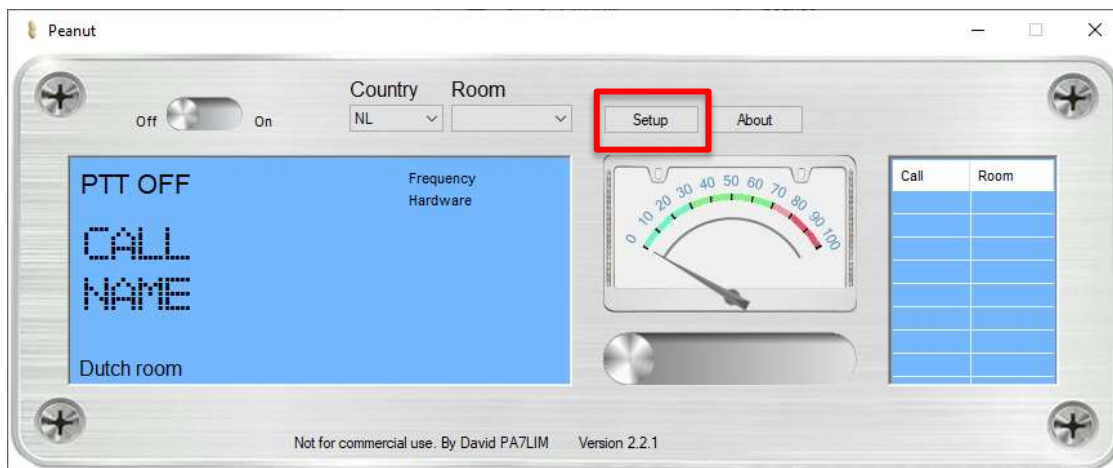
Peanut

On the Peanut you can talk with HAM amateurs around the world via an Android device or network radio. Some of the ROOMS are connected to DSTAR reflectors (XRF076B, XRF076F, XRF070C etc.) or DMR reflectors/talkgroups. You only need the Windows app or an Android device to use DSTAR or DMR.

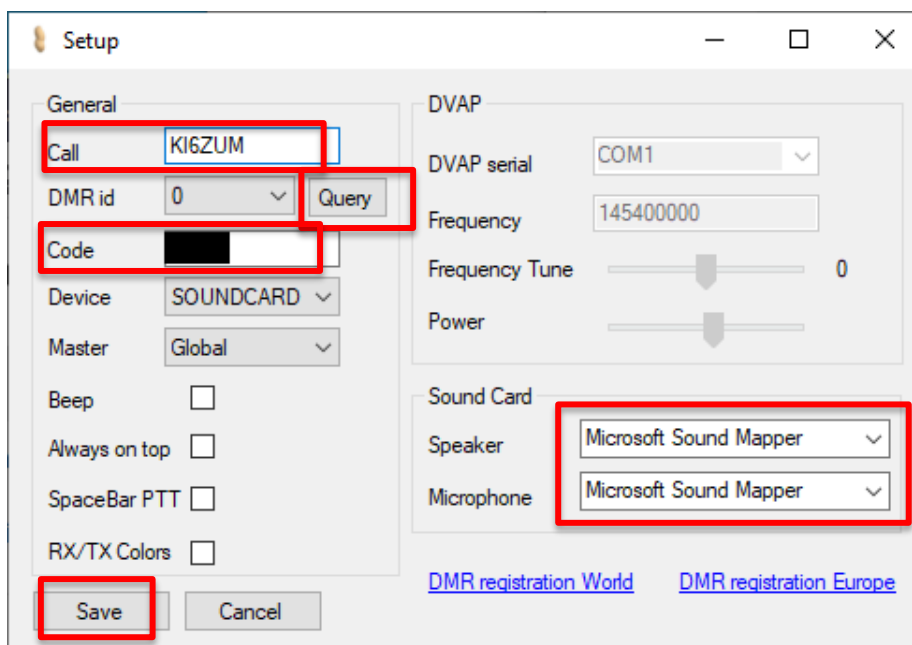
The software for Windows is available for download from: <http://www.pa7lim.nl/peanut/>

If you don't already have a "Peanut ID", request one from: <http://www.pa7lim.nl/peanut-request/>

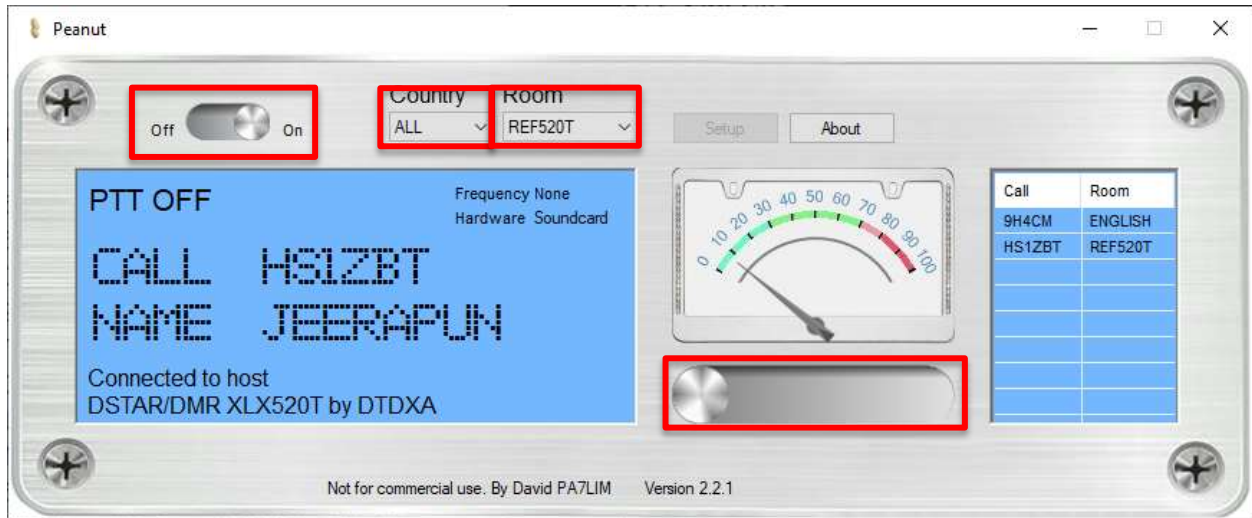
Install then launch the app and click on "Setup".



Enter your call sign in the "Call" field. Next, click on "Query" so the app can determine your DMR ID. Next, enter in the "Code" field the "Peanut ID" you were given from the link above. Next, select your preferred Speaker and Microphone. Lastly click on "Save".



Select the host “Country” of the talk room or reflector you want to connect. Next select the “Room”. Clicking on the “Off/On” switch will connect and disconnect from the “Room. Clicking on the slider will turn on transmit – speak clearly into your microphone. Clicking again on the slider will turn off transmit.



Once you are connected, you can also look at the Peanut Dashboard to see who else is connected to the system.

<http://peanut.pa7lim.nl/>

To set up your own XLX DSTAR reflector or DMR plus reflector, follow these instructions:

<http://www.pa7lim.nl/ambeserver/>

Once the server has been setup, you can have it added to the Peanut network by sending the details to David PA7LIM.

Buster

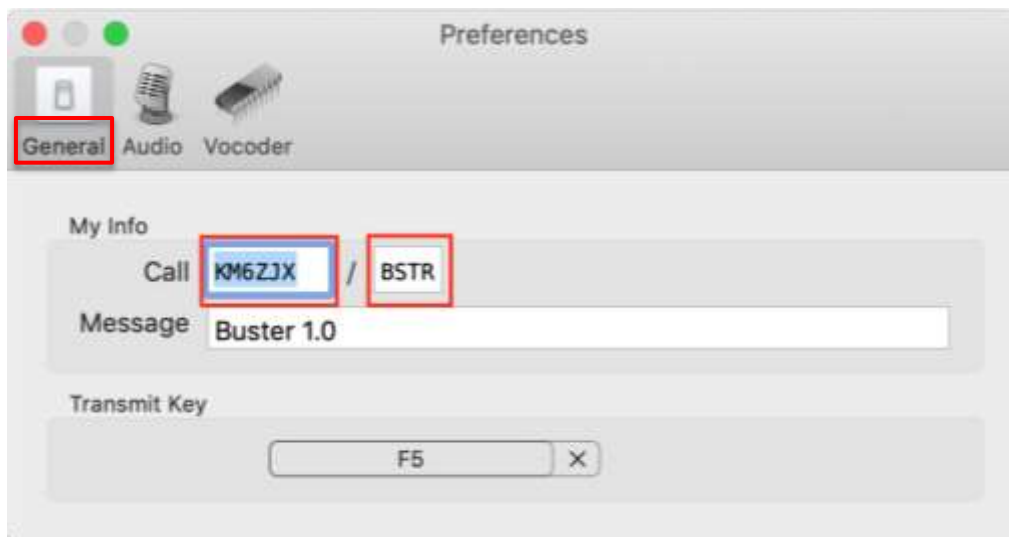
Buster is a Mac OSX application that allows you to connect to DSTAR reflectors, then listen and talk to people on the reflector. The application connects to the ZUM AMBE server over the local network to do the audio compression and decompression.

The app can be downloaded from the Apple App Store:

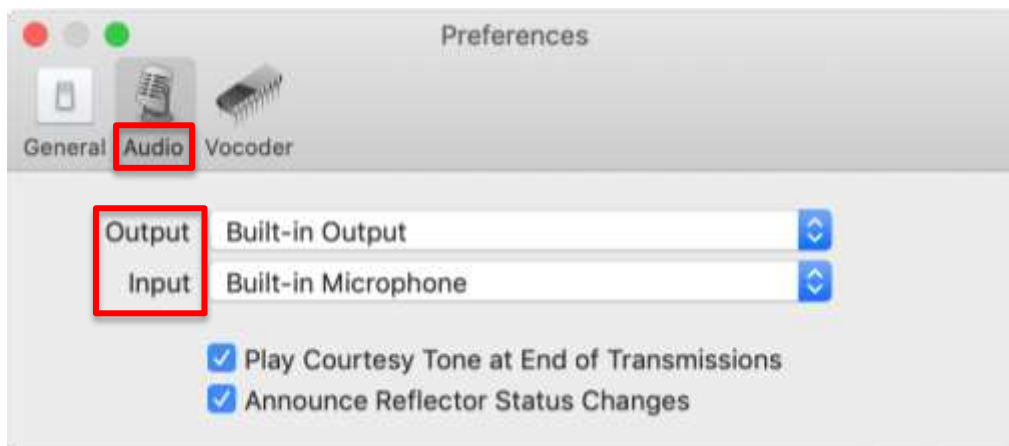
<https://apps.apple.com/us/app/buster/id1060175273?mt=12>

Once installed, several settings need to be configured.

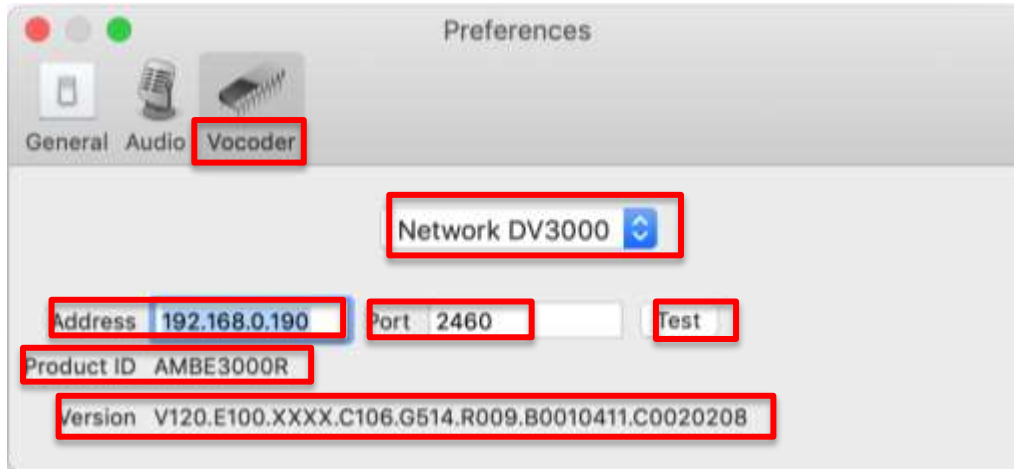
Click on the “General” button to get to the user settings. Here, enter your call sign and 4 character message. The “BSTR” message shows you are connecting with Buster.



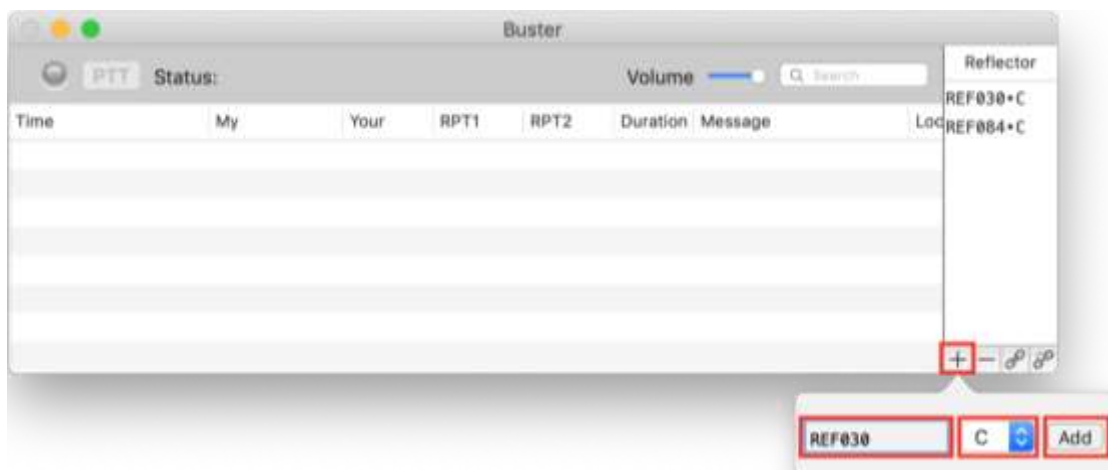
Click on the “Audio” button to get to the microphone and speaker/headphone settings. Here, set the “Output” and “Input” values to the preferred microphone and speaker/headphone devices on your computer.



Click on the “Vocoder” button to get to the AMBE device configuration. Select “Network DV3000” from the pulldown menu. Next enter the IP “Address” and “Port” number for the ZUM AMBE3000 board. Finally press “Test”. The software should display the “Product ID AMBE3000R and the “Version” number of the board.



Click on the “+” sign in the bottom right corner to add a reflector. Next, enter the name of the reflector and set the module letter of the reflector. For example “REF030” and “C” specifies Reflector 30C. Finally click “Add”.



To link to a reflector, select the preferred one from the “Reflector” list and click on the “Link” button. You will hear the audio when there is traffic on the reflector. To unlink, click on the “Unlink” button.



To talk on the reflector, wait and listen until you hear a gap between people talking. Next click on the “PTT” button and speak clearly into your selected microphone. When done talking, press the “PTT” button again.



MMDVM (DummyRepeater)

The source code to build the Linux and Mac versions can be downloaded from G4KLX Jonathan's Github:

<https://github.com/g4klx/ircDDBGateway>

<https://github.com/g4klx/DummyRepeater>

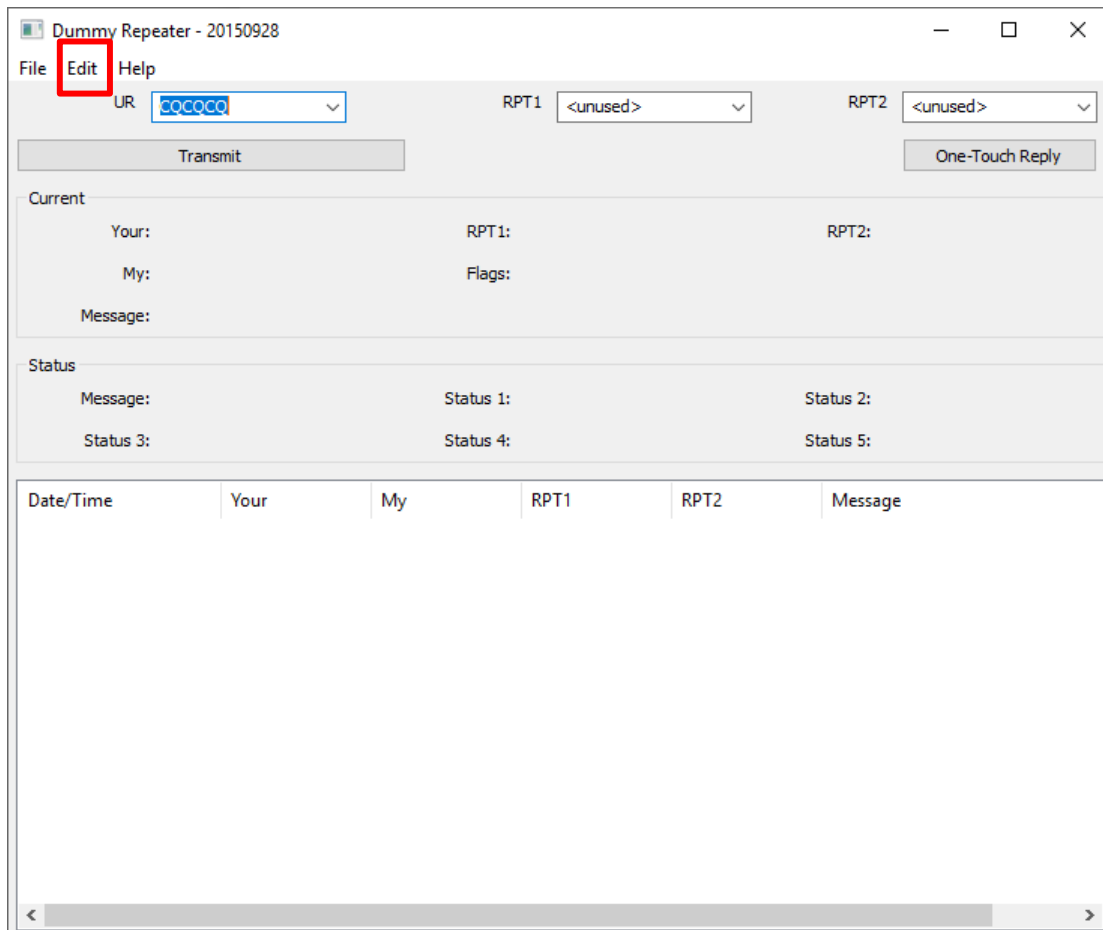
The Windows versions of ircDDBGateway and DummyRepeater can be downloaded from the Yahoo groups:

<https://xa.yimg.com/df/ircDDBGateway/ircDDBGateway64-20180719.exe>

<https://xa.yimg.com/df/pcrepeatercontroller/DummyRepeater64-20180510.exe>

Configure DummyRepeater

After launching DummyRepeater, select "Edit->Preferences" to open the configuration window.



On the “Callsign” tab, enter your callsign and 4 character D-STAR note.

The screenshot shows the 'Dummy Repeater Preferences' dialog box with the 'Callsign' tab selected. The 'Callsign' field contains 'KI6ZUM' and the 'D-STAR Note' field contains 'DMYR'. Both fields are highlighted with red boxes. The 'OK' and 'Cancel' buttons are at the bottom right.

On the “Sound Card” tab, select your microphone (“Input”) and speaker (“Output”) sound devices.

The screenshot shows the 'Dummy Repeater Preferences' dialog box with the 'Sound Card' tab selected. The 'Input' dropdown menu is set to 'Microphone (2- C-Media USB Headphone Set)' and the 'Output' dropdown menu is set to 'Speakers (2- C-Media USB Headphone Set)'. Both dropdown menus are highlighted with red boxes. The 'OK' and 'Cancel' buttons are at the bottom right.

On the “Dongle” tab, select “DV3000 Network” for the “Type”. For the “Address”, enter the IP address of the AMBE Server. For the “Port”, enter the port number of the AMBE Server.

The screenshot shows the 'Dummy Repeater Preferences' dialog box with the 'Dongle' tab selected. The 'Type' dropdown menu is set to 'DV3000 Network', the 'Device' dropdown menu is set to '<none>', the 'Speed' dropdown menu is set to '230400 Baud', the 'Address' text field contains '192.168.1.25', and the 'Port' text field contains '2460'. The 'Type' dropdown menu is highlighted with a red box. The 'OK' and 'Cancel' buttons are at the bottom right.

On the “Network” tab, leave the default values.

The screenshot shows the 'Dummy Repeater Preferences' dialog box with the 'Network' tab selected. The 'Network' tab is highlighted with a red box. The dialog contains four input fields: 'Gateway Address' (127.0.0.1), 'Gateway Port' (20010), 'Local Address' (127.0.0.1), and 'Local Port' (20011). The 'OK' button is highlighted with a blue box.

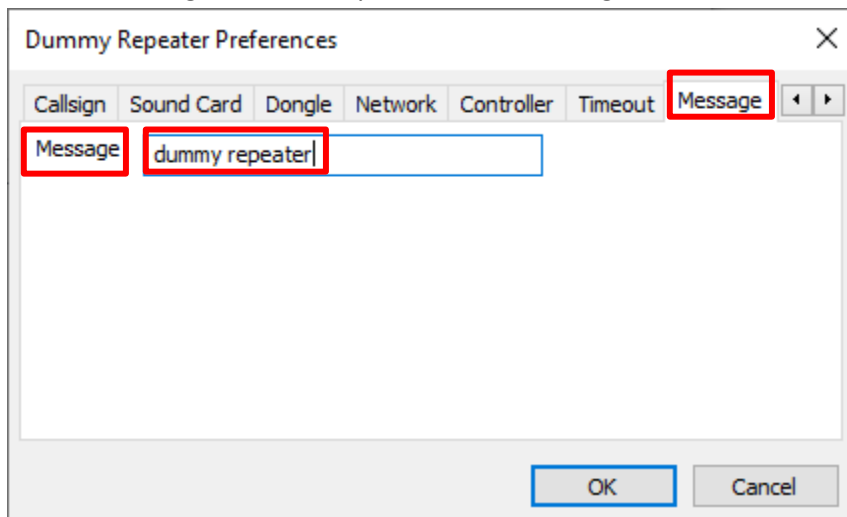
On the “Controller” tab, make sure the “Type” is set to “None”.

The screenshot shows the 'Dummy Repeater Preferences' dialog box with the 'Controller' tab selected. The 'Controller' tab is highlighted with a red box. The 'Type' dropdown menu is highlighted with a red box and set to 'None'. Other settings include 'Config' (1), 'PTT Inversion' (Off), and 'Squelch Inversion' (Off). The 'OK' button is highlighted with a blue box.

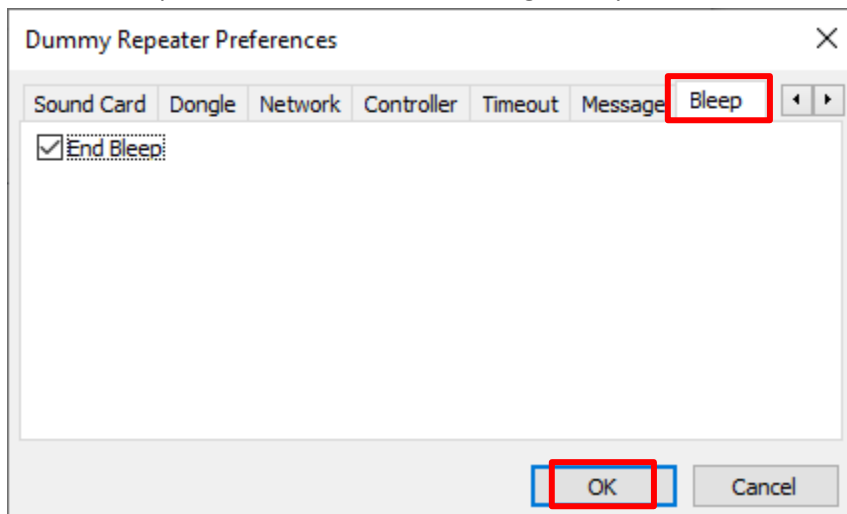
On the “Timeout” tab, leave the default value.

The screenshot shows the 'Dummy Repeater Preferences' dialog box with the 'Timeout' tab selected. The 'Timeout' tab is highlighted with a red box. The 'Timeout (secs)' slider is set to 0, with markers at 0, 180, and 240. The 'OK' button is highlighted with a blue box.

On the “Message” tab, enter your D-STAR “Message”.

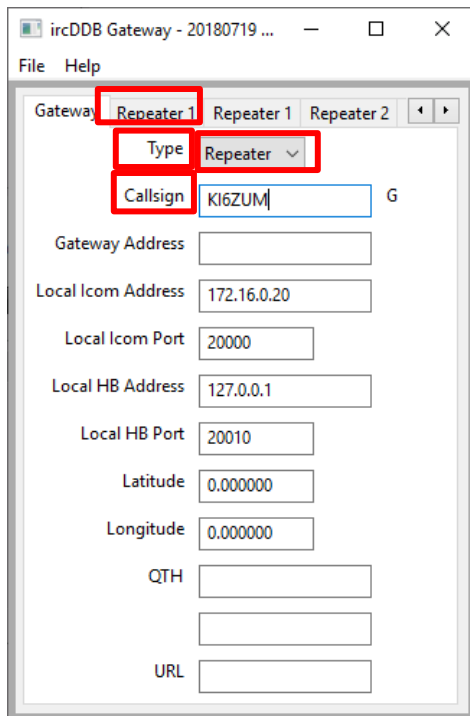


On the “Bleep” tab, leave the default setting. Finally click on “OK” to save the settings.

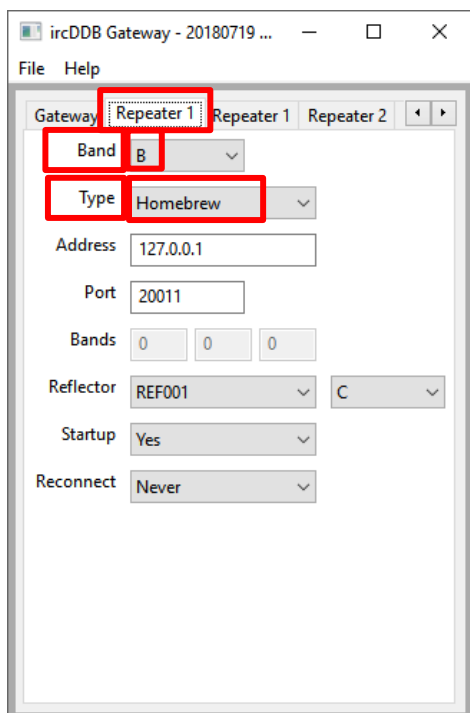


Configure ircDDBGateway

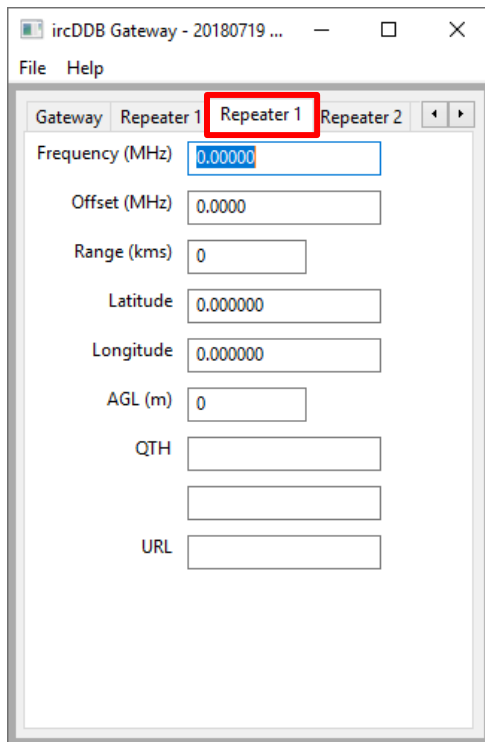
Next run ircDDBGatewayConfig. On the “Gateway” tab, set the “type” to “Repeater”. Enter your “Callsign”. Leave the rest of the values as defaults.



On the first “Repeater 1” tab, set the “Band” to your preferred D-STAR band, eg. “B”. Set “Type” to “Homebrew”.



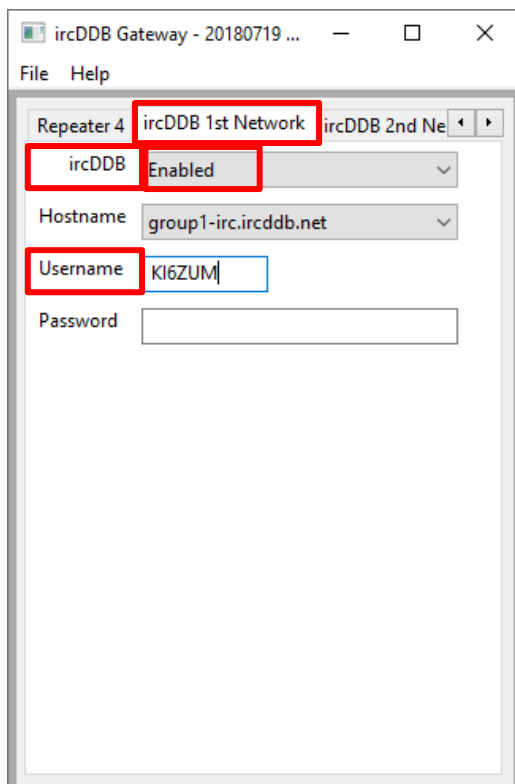
On the second “Repeater 1” tab, leave the default values.



The screenshot shows the 'ircDDB Gateway' window with the 'Repeater 1' tab selected. The 'Repeater 1' tab is highlighted with a red box. The fields are as follows:

Field	Value
Frequency (MHz)	0.00000
Offset (MHz)	0.0000
Range (kms)	0
Latitude	0.000000
Longitude	0.000000
AGL (m)	0
QTH	
URL	

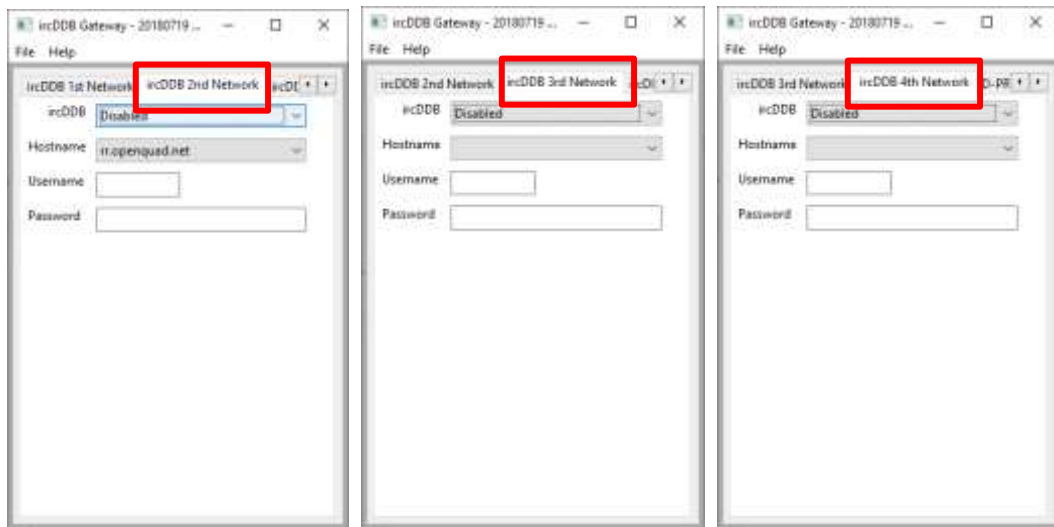
On the “ircDDB 1st Network” tab, make sure “ircDDB” is “Enabled” and enter your callsign in the “Username” field.



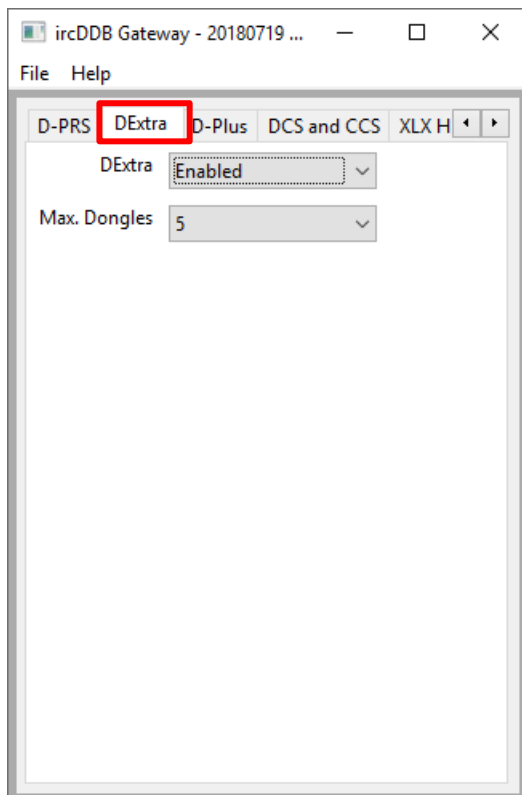
The screenshot shows the 'ircDDB Gateway' window with the 'ircDDB 1st Network' tab selected. The 'ircDDB 1st Network' tab is highlighted with a red box. The fields are as follows:

Field	Value
ircDDB	Enabled
Hostname	group1-irc.ircddb.net
Username	KI6ZUM
Password	

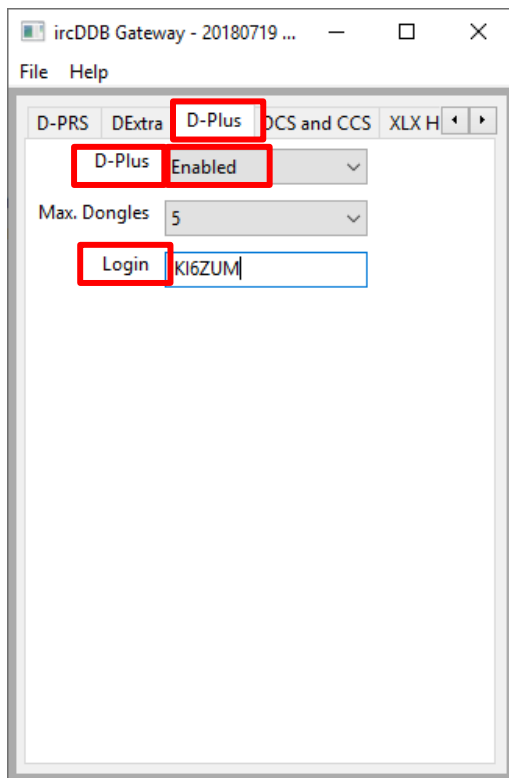
For the “ircDDB 2nd Network”, “ircDDB 3rd Network” and “ircDDB 4th Network” tabs, make sure “ircDDB” is set to “Disabled”.



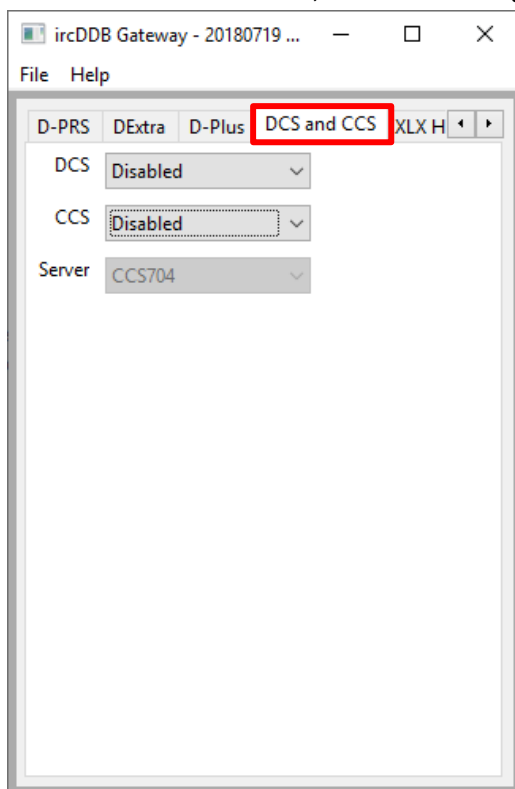
On the “DExtra” tab, set “DExtra” to “Enabled”.



On the “D-Plus” tab, set “D-Plus” to “Enabled”. Enter your callsign in the “Login” field.

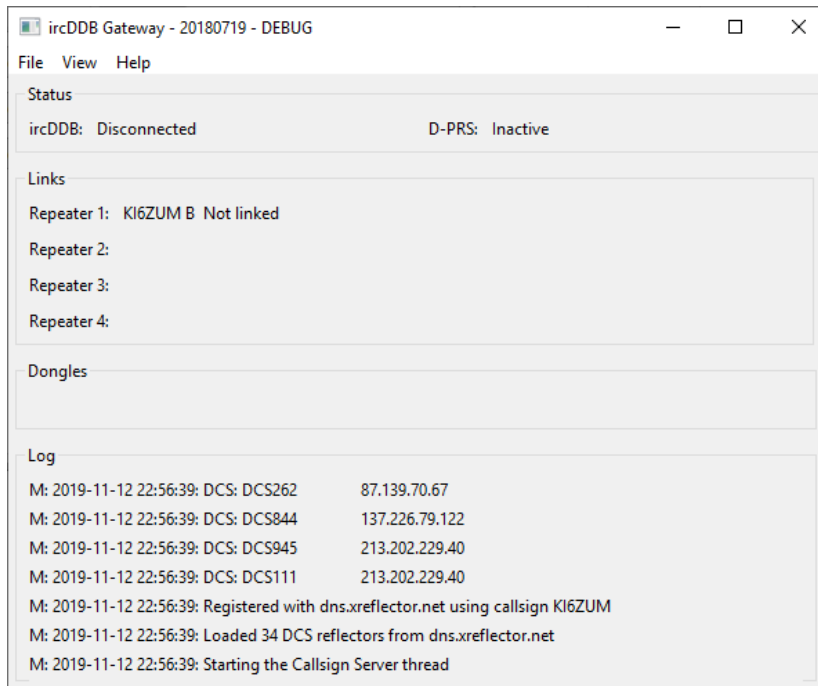


On the “DCS and CSS” tab, leave the settings default.

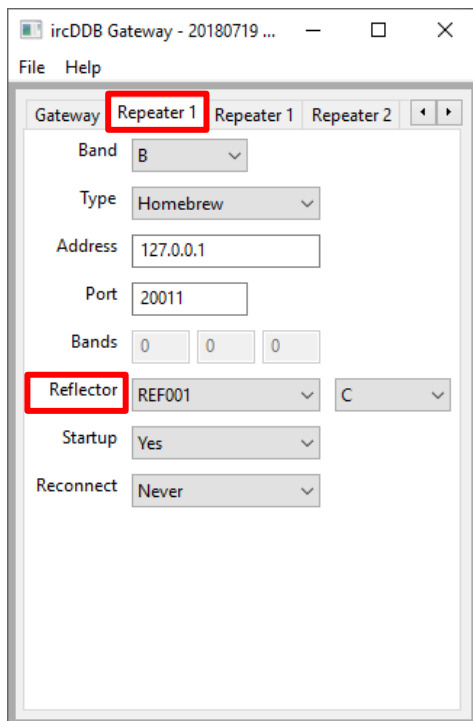


Skip the remaining tabs and leave their settings default. Select “File->Save” then “File->Exit”.

Start ircDDBGateway. It will download the server addresses. Once it is done, select “File->Exit”.

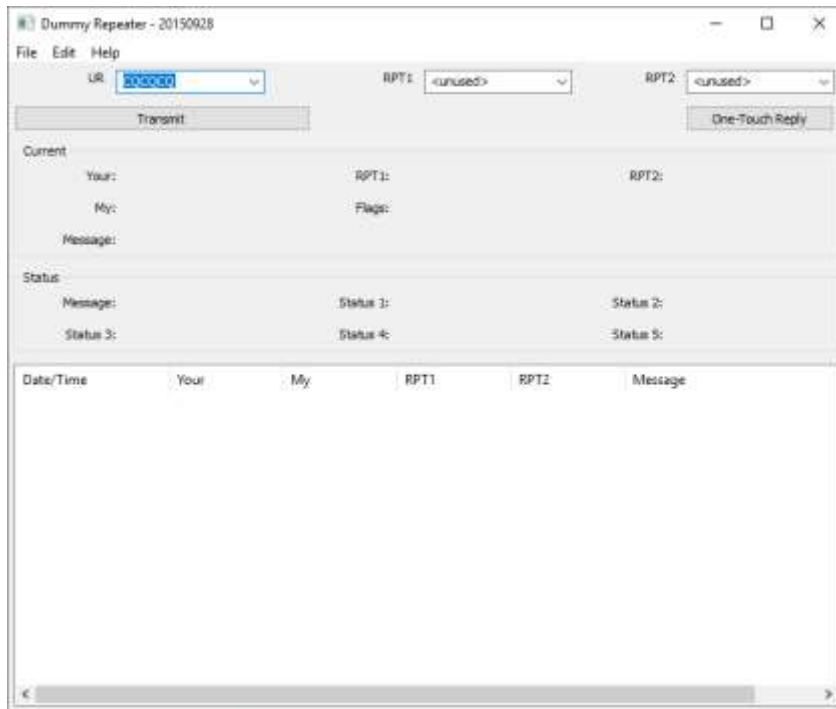


If you wish to have ircDDBGateway automatically connect to a reflector, run ircDDBGatewayConfig, go to the “Repeater 1” tab and select the “Reflector”. The drop down list should contain the newly downloaded names of all the servers. Finally select “File->Save” then “File->Exit”.

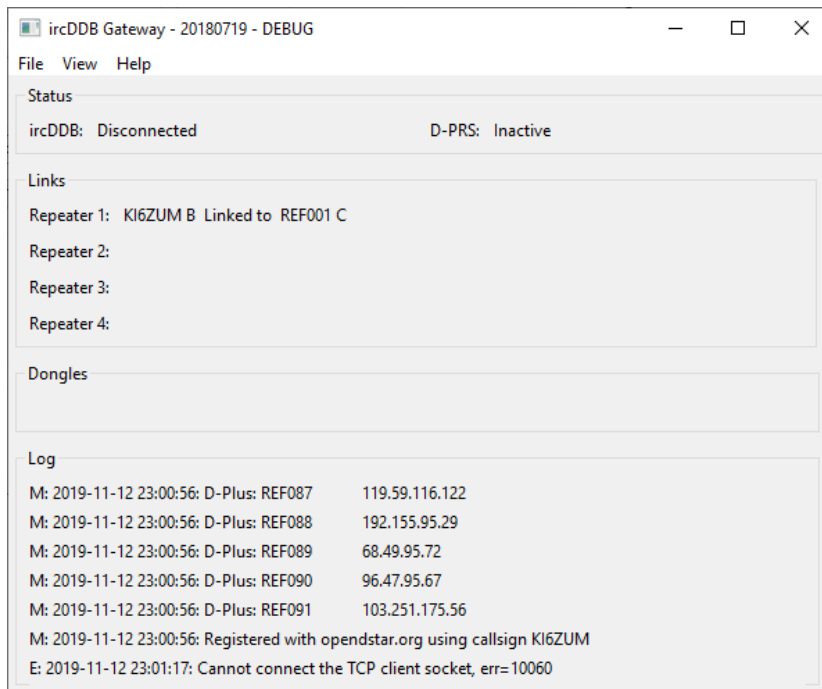


Running DummyRepeater

Start Dummy Repeater. Note Dummy Repeater needs to be started before ircDDBGateway.



Then start ircDDBGateway. It should automatically connect to the reflector if you configured it that way.



If you are connected to a reflector, you should now hear the audio when anyone else is talking.

The screenshot shows the 'Dummy Repeater - 20150928' window. It has a menu bar (File, Edit, Help) and a toolbar with 'Transmit' and 'One-Touch Reply' buttons. Below the toolbar are fields for 'UR' (set to 8000000), 'RPT1' (set to <unused>), and 'RPT2' (set to <unused>). The main area is divided into sections: 'Current' with 'Your:', 'My:', and 'Message:' fields; 'Status' with 'Message:' (set to 'Linked to REF001 C') and five status fields (Status 1: to Status 5:). At the bottom is a table with columns: Date/Time, Your, My, RPT1, RPT2, and Message.

Date/Time	Your	My	RPT1	RPT2	Message
2019-11-12 15:15:17	CQCQCQ	K6N /74A	K6ZUM G	K6ZUM B	
2019-11-12 15:14:35	CQCQCQ	M7ATE /COL	K6ZUM G	K6ZUM B	
2019-11-12 15:13:45	CQCQCQ	HL3BBD /IVAN	K6ZUM G	K6ZUM B	Ulsan KOREA
2019-11-12 15:13:21	CQCQCQ	HL3BBD /IVAN	K6ZUM G	K6ZUM B	Ulsan KOREA
2019-11-12 15:12:57	CQCQCQ	VE3IU /Rick	K6ZUM G	K6ZUM B	Pickering ON D74
2019-11-12 15:11:00	CQCQCQ	HL3BBD /IVAN	K6ZUM G	K6ZUM B	Ulsan KOREA
2019-11-12 15:09:30	CQCQCQ	VE3IU /Rick	K6ZUM G	K6ZUM B	Pickering ON D74
2019-11-12 15:07:47	CQCQCQ	HL3BBD /IVAN	K6ZUM G	K6ZUM B	Ulsan KOREA
2019-11-12 15:06:43	CQCQCQ	VE3IU /Rick	K6ZUM G	K6ZUM B	Pickering ON D74
2019-11-12 15:04:47	CQCQCQ	HL3BBD /IVAN	K6ZUM G	K6ZUM B	Ulsan KOREA
2019-11-12 15:04:10	CQCQCQ	VE3IU /Rick	K6ZUM G	K6ZUM B	Pickering ON D74
2019-11-12 15:03:41	CQCQCQ	HL3BBD /IVAN	K6ZUM G	K6ZUM B	Ulsan KOREA

Support for using DummyRepeater can be found on the pcrepeatercontroller Yahoo group:

<https://groups.yahoo.com/neo/groups/pcrepeatercontroller>

Support for using ircDDBGateway can be found on the ircddbgateway Yahoo group:

<https://groups.yahoo.com/neo/groups/ircddbgateway>

XLX Reflector

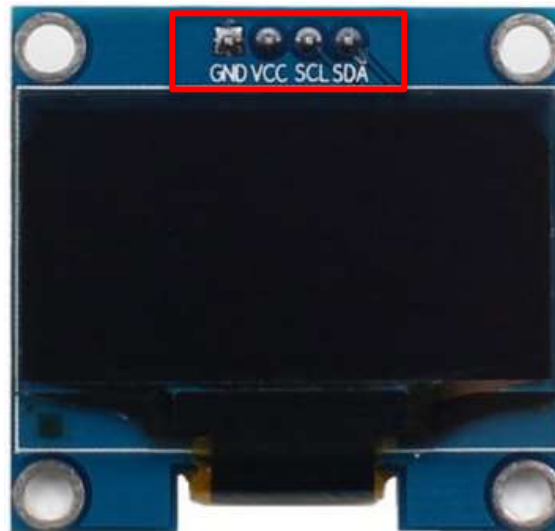
Modify the [DV3000] section of the DMR Analog Bridge configuration file to use the network connected AMBE board, as opposed to the USB device. Comment out the USB device and un-comment the AMBE server section and setting the IP address and rxPort as shown below:

```
[DV3000]
address = 192.168.1.243      ; IP address of AMBEServer
rxPort = 2460               ; Port of AMBEServer
;;address = /dev/ttyUSB0    ; Device of DV3000U on this machine, DMR is on /dev/ttyUSB0
;;baud = 460800             ; Baud rate of the dongle
;;serial = true             ; Use serial (DV3000U) or IP
```

OLED Screen

The ZUM AMBE board supports the 1.3" OLED screen. There are 4 wires that need to be connected from the board to the screen. The software on the board automatically uses the display when it is connected.

The most common displays look like this. There are 4 pins (GND, VCC, SCL and SDA).



The ZUM AMBE3000 board has an OLED port with 4 pins (GND, 3V3, SCL and SDA). A 4 pin header should be soldered to the board. The 4 pins should be connected together:

- GND to GND
- VCC to 3V3
- SCK to SCK
- SDA to SDA



Support

MMDVM Yahoo group:

<https://groups.yahoo.com/neo/groups/mmdvm/conversations/messages>

Pi-Star support forum:

<https://forum.pistar.uk/>

Pi-Star Facebook support group:

<https://www.facebook.com/groups/pistar/>

Pi-Star Wiki:

<http://wiki.pistar.uk>

ZUM Radio Facebook group:

<https://www.facebook.com/groups/249802742395450/>

ZUM Radio email:

support@zumradio.com