

# ***The Fusion Net***



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# Please read first.

These are Examples of what your Call sign should look like in the Yaesu radio's so You can take advantage of the entire Fusion Net experience.

## Examples of what will work:

**YOURCALL** (Always your best choice)

*Example:* **AC2AE**

**YOURCALL YOURNAME** (Space in between Call and Name)

*Example:* **AC2AE JOE**

**YOURCALLYOURNAME** (No Space in between Call and Name )

*Example:* **AC2AEJOE**

## Examples of what will NOT work:

**YOURCALL-YOURNAME** (NO Hyphen or Dashes)

*Example:* **AC2AE-JOE**

**YOURCALL/YOURNAME** (NO Forward/\ or back slashes)

*Example:* **AC2AE/JOE**

## Character that will NOT work:

! @ # \$ % ^ & \* ( ) \_ - + = { } [ ] | \ / : ; " ' < > , . ?

## The Fusion Net Guidelines

Operation and use of The Fusion Net and associated reflectors, simplex nodes, radio-less nodes, DMR, WIRES-X, D-STAR and any VoIP connection shall comply fully with the Amateur Radio Service (Part 97) regulations of the Federal Communications Private Radio Service.

Operators are required to pause a minimum of three seconds between transmissions to allow other stations to break in or let users disconnect from the reflectors. The only time a simplex node can disconnect by radio is when the system is idle.

At the beginning of each transmission, key your microphone two seconds before talking to let the system start. On a normal day you are keying several transmitters every time you push your microphone PTT button. Remember this is a linked system with many users.

There should be absolutely no communications containing obscene, indecent, or profane words, language, or meaning. Discussion of political, religious or potentially sensitive social issues should be avoided.

No one should cause or condone the malicious or intentional interference of anyone's communications on the system. In the spirit of Amateur Radio Service, users should respect and support each other in a courteous and positive manner.

Operators will not communicate with, or discuss the actions of, anyone who violates these rules. This is the responsibility of the The Fusion Net net control stations and they are required to terminate improper operation.

The Fusion Net reserves the right to forbid the use of any repeaters, links, remote bases or voice over internet protocol by anyone who repeatedly violates these rules, or anyone who facilitates or encourages others to do so.

Programming radios varies greatly among different DMR brands and models. Ensure that the following settings are correct on your radio for XLX DMR:

RX frequency set to match Pi-Star (for duplex RX on your radio should match TX on Pi-Star)

TX frequency set to match Pi-Star (for duplex TX on your radio should match RX on Pi-Star)

The talkgroup should be set to '6' group-call (a TG9 private-call will not work)  
Use an RX group that includes TG6.

The timeslot should be set to 'TS2' (for simplex and duplex hotpots).  
Color code should match Pi-Star (default is '1').

The DMR mode should be 'Simplex' for simplex hotspots and 'Repeater' for duplex hotspots.

# Wires-X

1. Open your Wires-X software as usual, and allow all node's/room's to populate.

+A.User ID	DTMF...	CallSign	City	State	Cou...	Freq(MHz)	SQL	Lat	Lon
--9Z4RG--	30199	9Z4RG	Port-of-Spain	Trinidad	Trin...	147.850M...	TSQ:131.8...	N:1...	W:06..
--ECHIGO-	12796	JR0ZFW	Kashiwazaki-city	Niigata	Japan	430.920M...	DG-ID:00-00		
-IWAKUNI-	15403	JH4VIZ	Iwakuni-city	Yamagu...	Japan	144.560M...	TSQ:118.8...		
-KT-TOJI-	39015	JR3VC	Kyoto-city	Kyoto	Japan	439.66MHz	TSQ: 88.5Hz	N:3...	E:135..
-KYOTO-	19414	JL3ZGV	Kyoto-city	Kyoto	Japan	430.820M...	DG-ID:00-20	N:3...	E:135..
-SHIKOCHU-	32732	JR5YFG	Shikokuchuo-ci...	Ehime	Japan	430.920M...	TSQ: 77.0Hz	N:3...	E:133..
09-JR0ZFI	13076	JR0ZFI	Azumino-city	Nagano	Japan			N:3...	E:137..
1ST-RIG-ND	12556	JH8IKV	Sapporo-city	Hokkaido	Japan	430.940M...	DG-ID:00-08	N:4...	E:141..
2E0BMP-ND	31980	2E0BMP	Shrewsbury	Shropshi...	UK	145.2125...	DG-ID:00-00	N:5...	W:00..
2E0DOB-ND2	57211	2E0DOB	crewe	Cheshire	UK			N:5...	W:00..
2E0EQT-ND2	56823	2E0EQT	Addlestone	Surrey	UK				

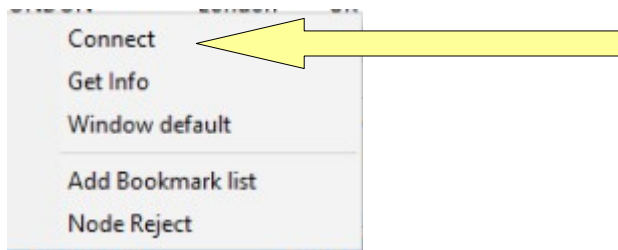
  

Room ID	-DTM...	Act	Room name	City	State	Cou...	Comment
K4IIA-ROOM	40836	000	K4IIA-ROOM 1	Okeechobee	Florida	USA	
ARGENTINA-LINK	40831	027	ARGENTINA LINK	Caba	Buenos ...	Arg...	CRUCE A YSF
VE4YSF-ROOM	40829	000	Falcon Lake	Falcon Lake	Manitoba	Can...	
FUSION-NET	40821	003	Fusion-Net		USA		XLX369A Fusio
PRINCETONKY	40806	009	KY Fusion Network	PRINCETON	Kentucky	USA	Home of the
VE6HG	40802	000	VE6HG Room	Cochrane	Alberta	Can...	
NORTHBREVAR	40798	000	NBARC ECOMM	Titusville	Florida	USA	N4TDX WIRES
KA1BZE-ROOM	40797	000		N Dartmouth	Massac...	USA	
N6PMI-ROOM	40796	000		Lincoln	California	USA	

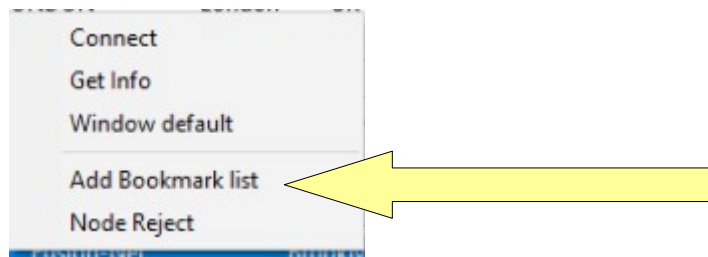
2. Select Fusion Net 40821.

FUSION-NET	40821	003	Fusion-Net	Brooklyn	New York	USA	XLX369A Fusio
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3. Right click on Fusion Net. On the drop down menu click connect.

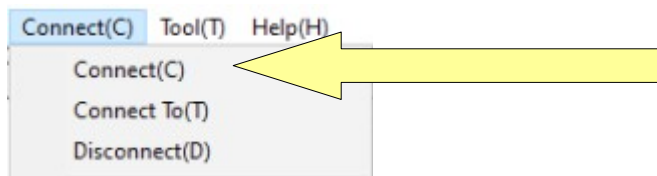


4. Don't forget to add us to your bookmark list as well.

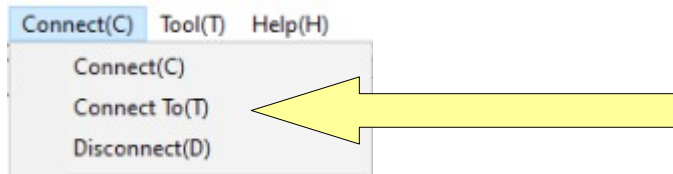


## **You can also use a more direct approach.**

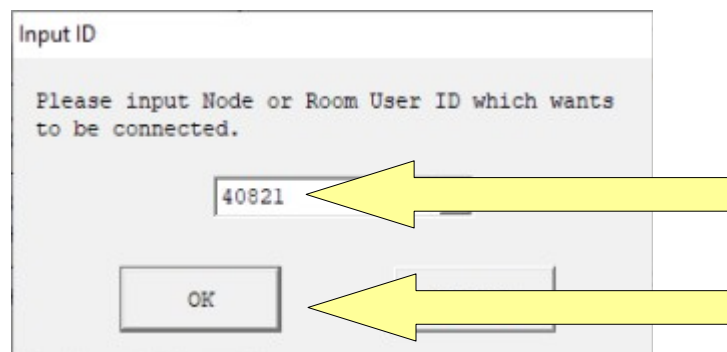
1. Go to the top right corner of your Wires-X software.
2. Click on Connect(C).



3. Click Connect to(T).



4. Then enter the Fusion Net node/room Id “40821” and click “OK”.



# Pi-Star:

**DMR:** *XLX*

**Talk Group 6 (TG6)** \*dont forget to program TG6 into your radio.

1. Turn on your Pi-Star device as usual and update it to the latest version
2. Go to “MMDVMHost Configuration” and select “ DMR Mode”

MMDVMHost Configuration			
Setting		Value	
DMR Mode:	<input checked="" type="radio"/>	Net Hangtime: 20	
D-Star Mode:	<input type="radio"/>	RF Hangtime: 20	Net Hangtime: 20
YSF Mode:	<input type="radio"/>	RF Hangtime: 20	Net Hangtime: 20
P25 Mode:	<input type="radio"/>	RF Hangtime: 20	Net Hangtime: 20
NXDN Mode:	<input type="radio"/>	RF Hangtime: 20	Net Hangtime: 20
YSF2DMR:	<input type="radio"/>		
YSF2NXDN:	<input type="radio"/>		
YSF2P25:	<input type="radio"/>		
DMR2YSF:	<input type="radio"/>	Uses 7 prefix on DMRGateway	
DMR2NXDN:	<input type="radio"/>	Uses 7 prefix on DMRGateway	
POCSAG:	<input type="radio"/>	POCSAG Paging Features	
MMDVM Display Type:	None ▼	Port: /dev/ttyAMA0 ▼	Nextion Layout: G4KLX ▼

Click “Apply Changes”.

Apply Changes



3 . Go to the DMR Configuration section, and change your DMR Master to “DMRGateway”.

DMR Configuration	
Setting	Value
DMR Master:	DMRGateway ▼
BrandMeister Master:	▼
BM Hotspot Security:	
BrandMeister Network ESSID:	None ▼
BrandMeister Network Enable:	<input type="checkbox"/>
BrandMeister Network:	<a href="#">Repeater Information</a>   <a href="#">Edit Repeater (BrandMeister Selfcare)</a>
DMR+ Master:	▼
DMR+ Network:	Options=
DMR+ Network ESSID:	None ▼
DMR+ Network Enable:	<input type="checkbox"/>
XLX Master:	XLX_369 ▼
XLX Startup Module:	A ▼
XLX Master Enable:	<input checked="" type="checkbox"/>
DMR Colour Code:	1 ▼
DMR EmbeddedLCOnly:	<input type="checkbox"/>
DMR DumpTAData:	<input type="checkbox"/>

[Apply Changes](#)

Click “Apply changes”

[Apply Changes](#)

4 . Go back to the DMR Configuration section and select the following:

5 . XLX Master : XLX 369

6 . XLX Startup Module : A

7 . XLX Master Enable : ON

8 . DMR Color Code : 1

Click “Apply changes” and you're done.

[Apply Changes](#)

\*dont forget to program TG6 into your radio.

# Pi-Star:

## **DMR:** *DMR+ IPSC2-Quadnet*

Some general information on DMR+ servers is very relevant to what will follow.

DMR+ IPSC2 servers are capable of connections from Motorola repeaters, Hytera repeaters, MMDVM repeaters and hostpots, and DMR+ dongles. In addition to the links to all of these, the various DMR+ servers all over the world are also linked to each other.

With a DMR+ hotspot, you can use a single configuration to connect to various talk groups (somewhat similarly to Brandmeister or TGIF). In your configuration, you can use dynamic TGs (keydown to connect with a 15 minute timeout), or static TGs. The Fusion Net TG is 369.

The server itself has two timeslots. All of the talkgroups are on TS1. (This will become very important later). [TS2 is used for DMR+ reflectors. DMR+ reflectors are a legacy feature that is likely to go away in the future, and is unimportant to this how-to].

Because the setup is very different for duplex vs. simplex hotspots, it is broken up into two sections.

## DMR+ Duplex Configuration

- 1 . Enable 'DMR mode' on the Pi-Star Configuration page.
- 2 . Select 'DMR+\_IPSC2-QUADNET' as your DMR Master.
- 3 . [Optional] Enter 'TS1\_1=369' into the options box to book TG369 as a static TG. This will make it so that your hotspot is always connected to TG369.
- 4 . If you have more than one hotspot, select a different ESSID for each hotspot.
- 5 . Apply Changes. You can check that you are connected at [dmr.openquad.net](http://dmr.openquad.net)

DMR Configuration	
Setting	Value
DMR Master:	DMR+_IPSC2-QUADNET
DMR+ Network:	Options= TS1_1=369
DMR ESSID:	None
DMR Color Code:	1
DMR EmbeddedLCOnly:	<input type="checkbox"/>
DMR DumpTADData:	<input checked="" type="checkbox"/>
Apply Changes	

- 6 . Set your radio to the correct RX and TX frequencies.
- 7 . Set the TG to 369.
- 8 . Make sure that TG369 is included in your RX list.
- 9 . Set the timeslot to TS1.

## DMR+ Simplex Configuration

- 1 . Enable 'DMR mode'
- 2 . Select 'DMRGateway' as your DMR Master and Apply Changes.
- 3 . Select 'DMR+\_IPSC2-QUADNET' as your DMR+ Master.
- 4 . [Optional] Enter 'TS1\_1=369' into the options box to book TG369 as a static TG. This will make it so that your hotpost is always connected to TG369.
- 5 . If you have more than one hotspot, select a different ESSID for each hotspot
- 6 . Select 'DMR+ Network Enable'

Click "Apply Changes" and you're done.

DMR Configuration	
Setting	Value
DMR Master:	DMR+_IPSC2-QUADNET
BrandMeister Master:	<input type="text"/>
BM Hotspot Security:	<input type="text"/>
BrandMeister Network ESSID:	<input type="text"/> 02
BrandMeister Network Enable:	<input type="checkbox"/>
BrandMeister Network:	<a href="#">Repeater Information</a>   <a href="#">Edit Repeater (BrandMeister Selfcare)</a>
DMR+ Master:	DMR+_IPSC2-QUADNET
DMR+ Network:	Options= TS1_1=369
DMR+ Network ESSID:	<input type="text"/> None
DMR+ Network Enable:	<input checked="" type="checkbox"/>
XLX Master:	<input type="text"/>
XLX Startup Module:	<input type="text"/>
XLX Master Enable:	<input type="checkbox"/>
DMR Color Code:	1
DMR EmbeddedLCOnly:	<input type="checkbox"/>
DMR DumpTADData:	<input checked="" type="checkbox"/>

As described above, the DMR+ talkgroups are all on TS1.  
However, a simplex Pi-Star hotspot only uses TS2, and TS1 is completely disabled.

As such, with a simplex hotspot we have to do something called a talkgroup rewrite.

The TGRewrite translates TS2 on Pi-Star to TS1 on the DMR+ server.  
This is accomplished by editing DMRGateway.ini.  
The following is a minimal change that will allow access to TG369, The Fusion Net

1. While on the Configuration screen, select 'Expert' from the menu at the top.
2. After the Expert screen loads, select 'DMR GW' under 'Full Edit', NOT 'Quick Edit'.
3. Scroll down until you reach '[DMR Network 2]'.

Plain text is that which is already there. Highlighted text is that which is to be added.

```
[DMR Network 2]
Enabled=1
Address=168.235.109.210
Port=55555
TGRewrite0=2,8,2,9,1
TGRewrite1=2,369,1,369,1
PCRewrite0=2,84000,2,4000,1001
Password="PASSWORD"
Debug=0
Id=YOUR_DMR_ID&ESSID
Name=DMR+_IPSC2-QUADNET
Options="TS1_1=369"
```

After adding that line, click 'Apply Changes' at the bottom.

On your radio:

1. Set RX and TX frequencies to match that of Pi-Star.
2. Set TG to 369.
3. Make sure that TG369 is in your RX list.
4. Set timeslot to TS2.
5. Set DMR mode to 'simplex'

If you did not book 369 as a static talkgroup, keying up TG369 will connect you to the Fusion Net. 15 minutes after your last transmission, the talkgroup will drop.

Here is a short explanation of the TGRewrite that we added to DMRGateway.ini.

The TGRewrite follows this form:

TGRewrite=fromTimeSlot,fromTalkGroup,toTimeSlot,toTalkGroup,range  
TGRewrite= 2, 369, 1, 369, 1

Setting the range means that the rule will apply to the talkgroup listed and a certain number above. So if the TG is '369' and the range is '1', only TG369 will be rewritten.


Here is another example:

TGRewrite=2,1,1,1,500

This rule will rewrite TGs 1-500 from TS2 to TS1. If you wish to use other DMR+ TGs on your simplex Pi-Star hotspot, use this rule instead of the more simple one we set above.

1 . Turn on your Pi-Star device as usual and update it to the latest version

2 . Go to “MMDVMHost Configuration” and select “ DMR Mode”

MMDVMHost Configuration				
Setting		Value		
DMR Mode:	<input checked="" type="checkbox"/>		Net Hangtime:	20
D-Star Mode:	<input type="checkbox"/>	RF Hangtime:	20	Net Hangtime: 20
YSF Mode:	<input type="checkbox"/>	RF Hangtime:	20	Net Hangtime: 20
P25 Mode:	<input type="checkbox"/>	RF Hangtime:	20	Net Hangtime: 20
NXDN Mode:	<input type="checkbox"/>	RF Hangtime:	20	Net Hangtime: 20
YSF2DMR:	<input type="checkbox"/>			
YSF2NXDN:	<input type="checkbox"/>			
YSF2P25:	<input type="checkbox"/>			
DMR2YSF:	<input type="checkbox"/>	Uses 7 prefix on DMRGateway		
DMR2NXDN:	<input type="checkbox"/>	Uses 7 prefix on DMRGateway		
POCSAG:	<input type="checkbox"/>	POCSAG Paging Features		
MMDVM Display Type:	None ▼	Port:	/dev/ttyAMA0 ▼	Nextion Layout: G4KLX ▼

3 . Click Apply changes

4 . Go to the DMR Configuration section, and change your DMR Master to “DMR+\_IPSC2-QUADNET”.

DMR Configuration	
Setting	Value
DMR Master:	DMR+_IPSC2-QUADNET
BrandMeister Master:	<input type="text"/>
BM Hotspot Security:	<input type="text"/>
BrandMeister Network ESSID:	<input type="text"/> 02
BrandMeister Network Enable:	<input type="checkbox"/>
BrandMeister Network:	<a href="#">Repeater Information</a>   <a href="#">Edit Repeater (BrandMeister Selfcare)</a>
DMR+ Master:	DMR+_IPSC2-QUADNET
DMR+ Network:	Options= TS1_1=369
DMR+ Network ESSID:	<input type="text"/> None
DMR+ Network Enable:	<input checked="" type="checkbox"/>
XLX Master:	<input type="text"/>
XLX Startup Module:	<input type="text"/>
XLX Master Enable:	<input type="checkbox"/>
DMR Color Code:	1
DMR EmbeddedLCOnly:	<input type="checkbox"/>
DMR DumpTADData:	<input checked="" type="checkbox"/>

5 . Select DMR+ Master : DMR+\_IPSC2-QUADNET

6 . Enable DMR+ Network

Click “Apply changes” and you're done.



\*Note:

When you Press the PTT on TG369, you will be connected to the talkgroup. TX on 369 to talk as well. It will timeout after 15 minutes; so if you want a static connection to TG369, enter the following in the 'Options' box:

TS1\_1=369

This makes 369 a static talkgroup on your hotspot, and it will be connected whenever the hotspot is on.

DMR Configuration	
Setting	Value
DMR Master:	DMRGateway ▾
BrandMeister Master:	▾
BM Hotspot Security:	
BrandMeister Network ESSID:	None ▾
BrandMeister Network Enable:	<input type="checkbox"/>
BrandMeister Network:	<a href="#">Repeater Information</a>   <a href="#">Edit Repeater (BrandMeister Selfcare)</a>
DMR+ Master:	DMR+_IPSC2-QUADNET ▾
DMR+ Network:	Options= TS1_1=369
DMR+ Network ESSID:	None ▾
DMR+ Network Enable:	<input checked="" type="checkbox"/>
XLX Master:	▾
XLX Startup Module:	▾
XLX Master Enable:	<input type="checkbox"/>
DMR Color Code:	1 ▾
DMR EmbeddedLOnly:	<input type="checkbox"/>
DMR DumpTADData:	<input type="checkbox"/>

Click “Apply changes”

Apply Changes

# Pi-Star:

**DMR:** *Prime TGIF*

## Talk Group 369 (TG369)

**Please make note\***

In the TGIF configuration setup, the changes need to be made for PRIME TGIF.

The default link in the current version of Pi-Star goes to the old TGIF.  
(This will change in the coming months).

The two changes which are necessary are both in MMDVM.ini:

The Address needs to be changed from 'tgif.network' to 'prime.tgif.network'

The password needs to be changed to the password associated with your  
DMR ID,  
found on the PRIME TGIF website.

1 . Go to “MMDVMHost Configuration” and select “ DMR Mode”

MMDVMHost Configuration			
Setting		Value	
DMR Mode:	<input checked="" type="radio"/>	Net Hangtime: 20	
D-Star Mode:	<input type="radio"/>	RF Hangtime: 20	Net Hangtime: 20
YSF Mode:	<input type="radio"/>	RF Hangtime: 20	Net Hangtime: 20
P25 Mode:	<input type="radio"/>	RF Hangtime: 20	Net Hangtime: 20
NXDN Mode:	<input type="radio"/>	RF Hangtime: 20	Net Hangtime: 20
YSF2DMR:	<input type="radio"/>		
YSF2NXDN:	<input type="radio"/>		
YSF2P25:	<input type="radio"/>		
DMR2YSF:	<input type="radio"/>	Uses 7 prefix on DMRGateway	
DMR2NXDN:	<input type="radio"/>	Uses 7 prefix on DMRGateway	
POCSAG:	<input type="radio"/>	POCSAG Paging Features	
MMDVM Display Type:	None ▼	Port: /dev/ttyAMA0 ▼	Nextion Layout: G4KLX ▼

2 . Click “Apply Changes”.

4 . Go to the DMR Configuration section, and change your DMR Master to:

“TGIF\_Network”

DMR Configuration	
Setting	Value
DMR Master:	TGIF_Network
DMR ESSID:	3136159 None ▾
DMR Color Code:	1 ▾
DMR EmbeddedLOnly:	<input type="checkbox"/>
DMR DumpTADData:	<input type="checkbox"/>

Apply Changes

5. Click “Apply changes” and you're done.

Apply Changes

**\*don't forget to program TG369 into your radio.**

# Pi-Star:

## D-Star:

1. Go to “MMDVMHost Configuration” and select “D-Star Mode:”

MMDVMHost Configuration			
Setting		Value	
DMR Mode:	<input type="checkbox"/>	RF Hangtime: 2	Net Hangtime: 2
D-Star Mode:	<input checked="" type="checkbox"/>	RF Hangtime: 2	Net Hangtime: 2
YSF Mode:	<input type="checkbox"/>	RF Hangtime: 2	Net Hangtime: 2
P25 Mode:	<input type="checkbox"/>	RF Hangtime: 20	Net Hangtime: 20
NXDN Mode:	<input type="checkbox"/>	RF Hangtime: 20	Net Hangtime: 20
YSF2DMR:	<input type="checkbox"/>		
YSF2NXDN:	<input type="checkbox"/>		
YSF2P25:	<input type="checkbox"/>		
DMR2YSF:	<input type="checkbox"/>	Uses 7 prefix on DMRGateway	
DMR2NXDN:	<input type="checkbox"/>	Uses 7 prefix on DMRGateway	
POCSAG:	<input type="checkbox"/>	POCSAG Paging Features	
MMDVM Display Type:	Nextion ▼	Port: modem ▼	Nextion Layout: G4KLX ▼

Apply Changes

2. Click “Apply changes”.

Apply Changes

3. Scroll down to the D-Star Configuration section and select the Default Reflector:  
Anyone of the following will work.

- DCS369 A
- REF369 A
- XRF369 A

D-Star Configuration	
Setting	Value
RPT1 Callsign:	<div><div></div> A ▼</div>
RPT2 Callsign:	<div><div></div> G</div>
Remote Password:	<div>.....</div>
Default Reflector:	DCS369 ▼ A ▼ <div>Startup <input type="radio"/> Manual <input type="radio"/></div>
ircDDBGateway Language:	English_(US) ▼
Time Announcements:	<input type="checkbox"/>
Use DPlus for XRF:	<input type="checkbox"/> Note: Update Required if changed

Apply Changes

D-Star Configuration	
Setting	Value
RPT1 Callsign:	<div><div></div> B ▼</div>
RPT2 Callsign:	<div><div></div> G</div>
Remote Password:	<div>.....</div>
Default Reflector:	REF369 ▼ A ▼ <div>Startup <input type="radio"/> Manual <input type="radio"/></div>
ircDDBGateway Language:	English_(US) ▼
Time Announcements:	<input type="checkbox"/>
Use DPlus for XRF:	<input type="checkbox"/> Note: Update Required if changed

Apply Changes

D-Star Configuration	
Setting	Value
RPT1 Callsign:	<div><div></div> B ▼</div>
RPT2 Callsign:	<div><div></div> G</div>
Remote Password:	<div>.....</div>
Default Reflector:	XRF369 ▼ A ▼ <div>Startup <input type="radio"/> Manual <input type="radio"/></div>
ircDDBGateway Language:	English_(US) ▼
Time Announcements:	<input type="checkbox"/>
Use DPlus for XRF:	<input type="checkbox"/> Note: Update Required if changed

Apply Changes

4 . Click “Apply changes” and you're done.

Apply Changes

# Pi-Star:

## YSF :

1 . Go to “MMDVMHost Configuration” and select “YSF”

MMDVMHost Configuration			
Setting		Value	
DMR Mode:	<input type="checkbox"/>	RF Hangtime: 20	Net Hangtime: 20
D-Star Mode:	<input type="checkbox"/>	RF Hangtime: 20	Net Hangtime: 20
YSF Mode:	<input checked="" type="checkbox"/>	RF Hangtime: 20	Net Hangtime: 20
P25 Mode:	<input type="checkbox"/>	RF Hangtime: 20	Net Hangtime: 20
NXDN Mode:	<input type="checkbox"/>	RF Hangtime: 20	Net Hangtime: 20
YSF2DMR:	<input type="checkbox"/>		
YSF2NXDN:	<input type="checkbox"/>		
YSF2P25:	<input type="checkbox"/>		
DMR2YSF:	<input type="checkbox"/>	Uses 7 prefix on DMRGateway	
DMR2NXDN:	<input type="checkbox"/>	Uses 7 prefix on DMRGateway	
POCSAG:	<input type="checkbox"/>	POCSAG Paging Features	
MMDVM Display Type:	None ▼	Port: /dev/ttyAMA0 ▼	Nextion Layout: G4KLX ▼

2 . Click “Apply changes”.

Apply Changes

3 . Scroll down to the YSF Configuration section and select the YSF Startup Host:

“YSF74839-XLX369-XLX reflector”.

Yaesu System Fusion Configuration	
Setting	Value
YSF Startup Host:	YSF74839 - XLX369 - XLX reflector
UPPERCASE Hostfiles:	<input type="checkbox"/> Note: Update Required if changed
WiresX Passthrough:	<input checked="" type="checkbox"/>

Apply Changes

4 . Click “Apply changes” and you're done.

Apply Changes

*Welcome to The Fusion Net.*





# OpenSPOT.

**DMR: XLX**

**Talk Group 6 (TG6)** *\*don't forget to program TG6 into your radio.*

1 . Turn on your **OpenSPOT** as usual and update it to the latest version.

openspot



**Login**

Password:

☐ Remember me

Login

192.168.1.181www.sharkrf.comAdvanced mode

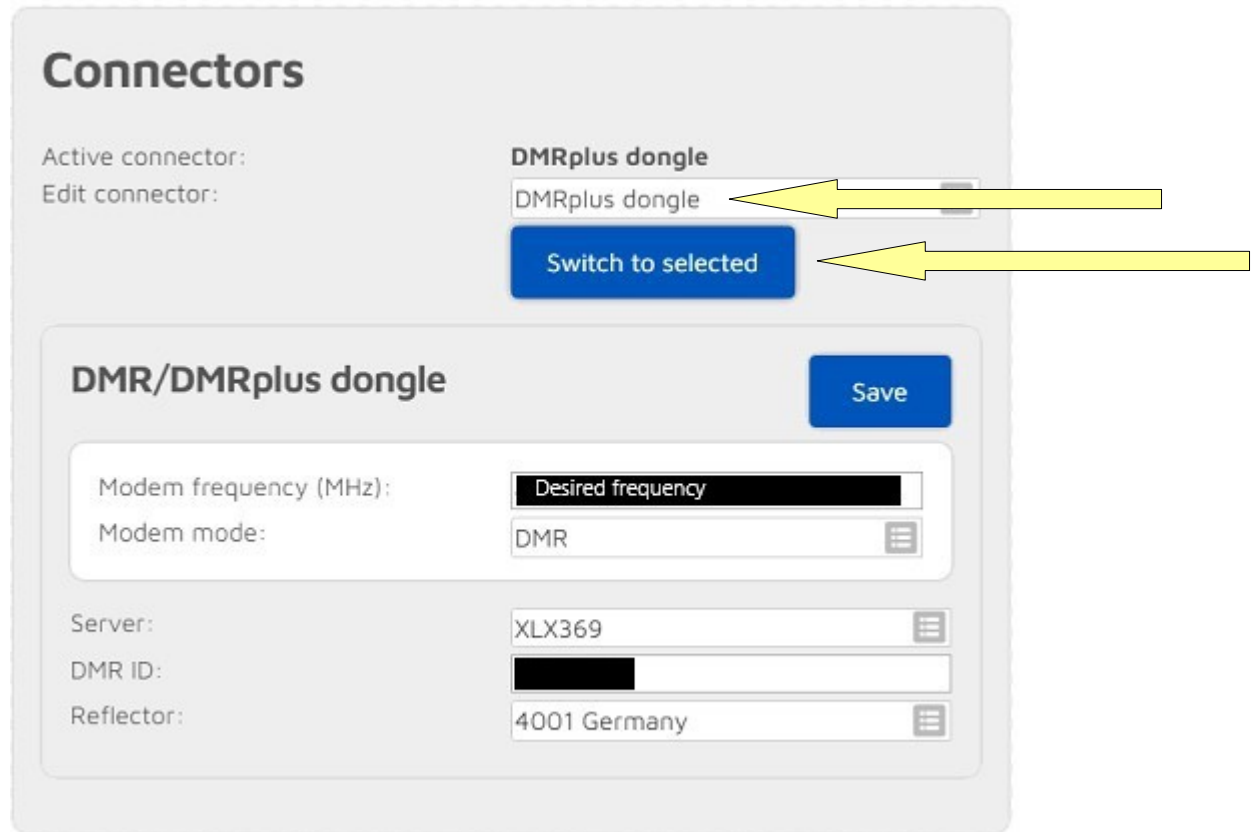


2 . Go to Modem setting and select: **DMR**

The screenshot shows the openSPOT2 web interface. The top navigation bar has tabs for Status, Connectors, and Modem. The Modem tab is selected. On the left, there are links for Quick setup, User manual, and SharkRF Link. On the right, there are links for POCSAG/DAPNET, DMR SMS chat, ID database lookup, and Upgrade. The main content area has three sections: Modem settings, Frequency, and CW ID. The Modem settings section has a 'Change' button and a dropdown menu showing 'DMR'. A yellow arrow points to the 'DMR' option. The Frequency section has a 'Save' button and a slider for Modem frequency (MHz) and Transmit power. The CW ID section has a 'Save' button and checkboxes for Enabled and Audible CW ID (enable modulation), along with input fields for ID to transmit, Speed (WPM), Interval (sec), and TX delay (sec).

3 . Click “Change” to activate.

4 . Go to Connectors



The screenshot shows a web interface titled "Connectors". It has two sections: "Active connector:" and "Edit connector:". In the "Edit connector:" section, there is a dropdown menu currently showing "DMRplus dongle". A yellow arrow points to this dropdown. Below the dropdown is a blue button labeled "Switch to selected", with another yellow arrow pointing to it. Below these is a section titled "DMR/DMRplus dongle" with a "Save" button. This section contains several input fields: "Modem frequency (MHz):" with a text input containing "Desired frequency"; "Modem mode:" with a dropdown menu showing "DMR"; "Server:" with a text input containing "XLX369"; "DMR ID:" with a text input containing a blacked-out value; and "Reflector:" with a text input containing "4001 Germany".

5 . Select “ **DMRplus dongle**”

6 . Then click “**Switch to selected**”

## 7 . Select server “**XLX369**”

**Connectors**

Active connector: **DMRplus dongle**  
Edit connector: DMRplus dongle  
**Switch to selected**

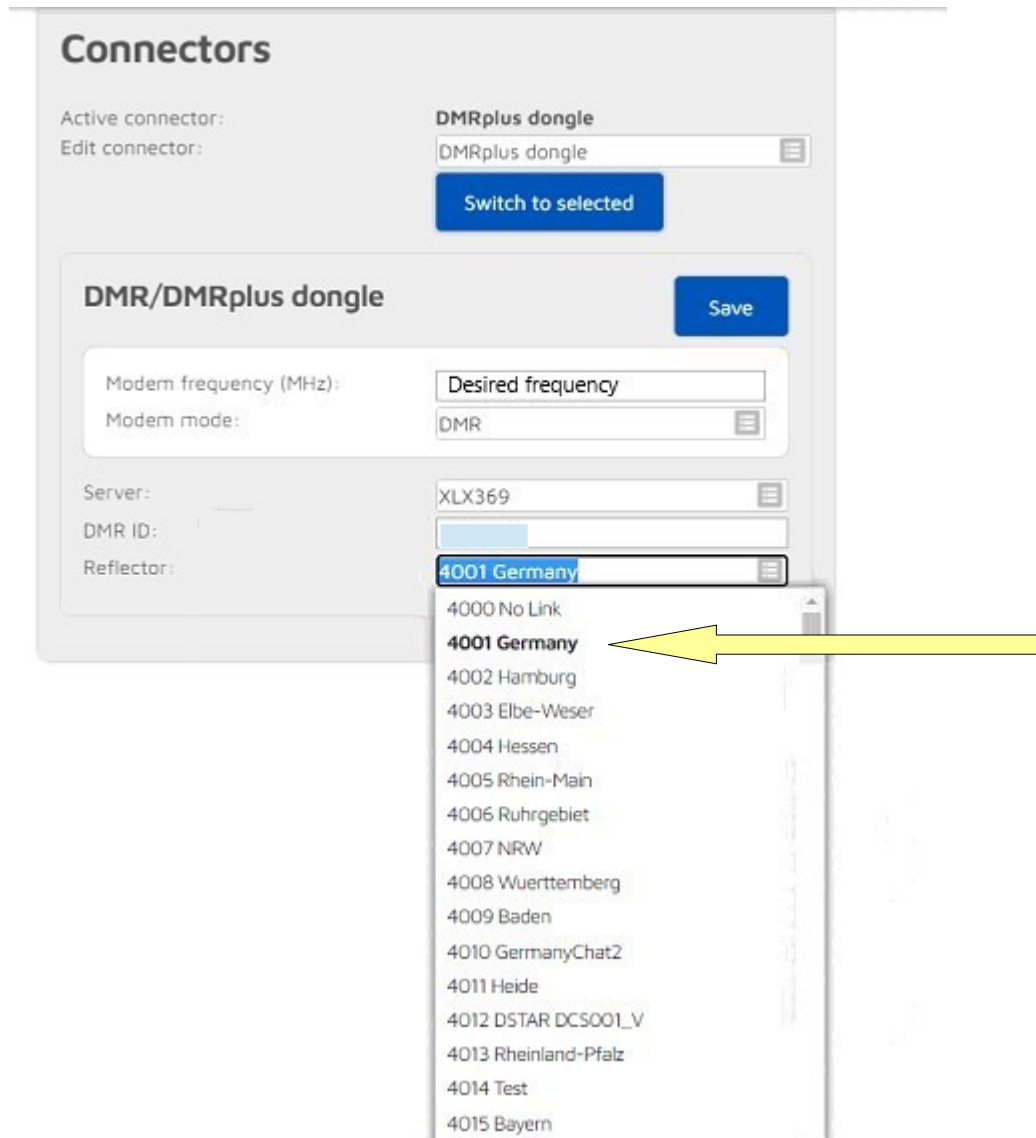
**DMR/DMRplus dongle** **Save**

Modem frequency (MHz): 432.650000  
Modem mode: DMR

Server: **XLX369**  
DMR ID:   
Reflector:

- XLX358
- XLX359
- XLX360
- XLX362
- XLX363
- XLX364
- XLX365
- XLX367
- XLX369**
- XLX370
- XLX371
- XLX373
- XLX374
- XLX375
- XLX376
- XLX379

## 8. Select Reflector: **“4001 Germany”**



**Connectors**

Active connector: DMRplus dongle  
Edit connector: DMRplus dongle  
**Switch to selected**

**DMR/DMRplus dongle** **Save**

Modem frequency (MHz): Desired frequency  
Modem mode: DMR

Server: XLX369  
DMR ID:   
Reflector: **4001 Germany**

- 4000 No Link
- 4001 Germany**
- 4002 Hamburg
- 4003 Elbe-Weser
- 4004 Hessen
- 4005 Rhein-Main
- 4006 Ruhrgebiet
- 4007 NRW
- 4008 Wuerttemberg
- 4009 Baden
- 4010 GermanyChat2
- 4011 Heide
- 4012 DSTAR DCS001\_V
- 4013 Rheinland-Pfalz
- 4014 Test
- 4015 Bayern

9. Click **“save”** and you're done.

# *OpenSPOT.*

***DMR: IPSC2\_QuadNet***

***Talk Group 369 (TG369) \*don't forget to program TG369 into your radio.***

***Coming Soon!***

# OpenSPOT

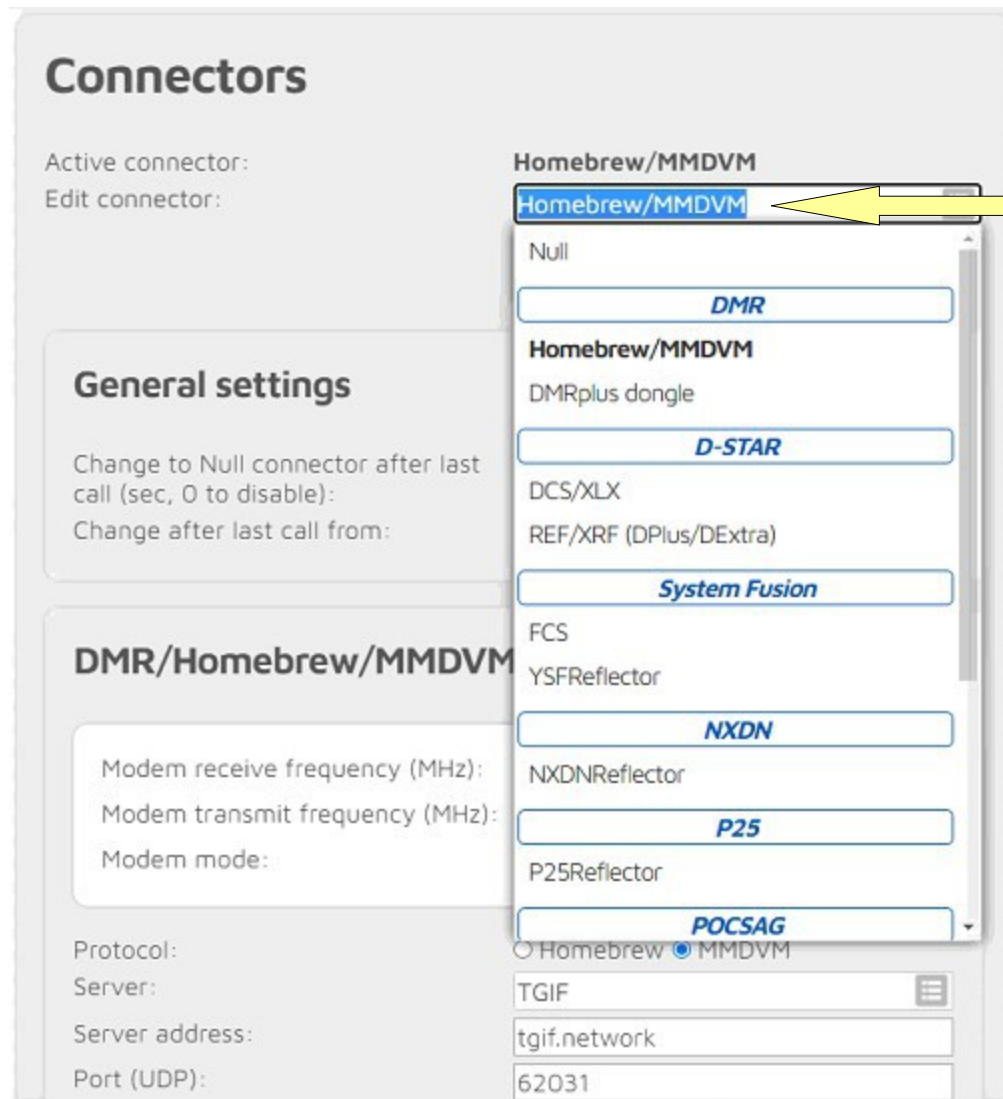
**DMR: TGIF**

**Talk Group 369 (TG369) *\*don't forget to program TG369 into your radio.***

1 . Go to Connectors.

The screenshot shows the OpenSPOT web interface. At the top, there's a blue header with the 'openSPOT-2' logo, 'Status', and 'Connectors' tabs. A yellow arrow points to the 'Connectors' tab. Below the header, on the left, are links for 'Quick setup', 'User manual', and 'SharkRF Link'. On the right, there are links for 'Quick call', 'POCSAG/DAPNET', 'DMR SMS chat', 'ID database lookup', and 'Upgrade'. The main content area is titled 'Connectors' and shows the 'Active connector' as 'Homebrew/MMDVM'. Below this, there's a 'Switch to selected' button. The 'General settings' section includes a 'Save' button and fields for 'Change to Null connector after last call (sec, 0 to disable):' (set to 0) and 'Change after last call from:' (radio buttons for 'Modem' and 'Modem or network', with 'Modem or network' selected). The 'DMR/Homebrew/MMDVM' section also has a 'Save' button and fields for 'Modem receive frequency (MHz):' (432.650000), 'Modem transmit frequency (MHz):' (432.650000), 'Modem mode:' (DMR), 'Protocol:' (radio buttons for 'Homebrew' and 'MMDVM', with 'MMDVM' selected), 'Server:' (TGIF), 'Server address:' (tgif.network), and 'Port (UDP):' (62031). At the bottom, there's a blue footer with 'Profile: 1 (K02LRX)', 'Connected', 'Advanced mode', and 'Quick setup'.

## 2 . Select “Homebrew/MMDVM”



The screenshot shows the 'Connectors' configuration page. On the left, there are sections for 'General settings' and 'DMR/Homebrew/MMDVM'. The 'General settings' section includes fields for 'Active connector:', 'Edit connector:', 'Change to Null connector after last call (sec, 0 to disable):', and 'Change after last call from:'. The 'DMR/Homebrew/MMDVM' section includes fields for 'Modem receive frequency (MHz):', 'Modem transmit frequency (MHz):', 'Modem mode:', 'Protocol:', 'Server:', 'Server address:', and 'Port (UDP):'. On the right, a dropdown menu is open, showing a list of connectors: 'Null', 'DMR', 'Homebrew/MMDVM', 'DMRplus dongle', 'D-STAR', 'DCS/XLX', 'REF/XRF (DPlus/DExtra)', 'System Fusion', 'FCS', 'YSFReflector', 'NXDN', 'NXDNReflector', 'P25', 'P25Reflector', and 'POCSAG'. A yellow arrow points to the 'Homebrew/MMDVM' option in the dropdown. Below the dropdown, there are radio buttons for 'Homebrew' and 'MMDVM', with 'MMDVM' selected. Below the radio buttons, there are input fields for 'TGIF', 'tgif.network', and '62031'.

**Connectors**

Active connector:  
Edit connector:

**General settings**

Change to Null connector after last call (sec, 0 to disable):  
Change after last call from:

**DMR/Homebrew/MMDVM**

Modem receive frequency (MHz):  
Modem transmit frequency (MHz):  
Modem mode:

Protocol:  
Server:  
Server address:  
Port (UDP):

**Homebrew/MMDVM**

Null  
DMR  
Homebrew/MMDVM  
DMRplus dongle  
D-STAR  
DCS/XLX  
REF/XRF (DPlus/DExtra)  
System Fusion  
FCS  
YSFReflector  
NXDN  
NXDNReflector  
P25  
P25Reflector  
POCSAG

☐ Homebrew ☒ MMDVM

TGIF  
tgif.network  
62031

3 . Then click **“Switch to selected”**

The screenshot shows the openSPOT2 web interface. The top navigation bar includes 'Status', 'Connectors', 'Modem', 'Settings', and 'Network'. The 'Connectors' tab is active. On the left, there are links for 'Quick setup', 'User manual', and 'SharkRF Link'. On the right, there are links for 'Quick call', 'POCSAG/DAPNET', 'ID database lookup', and 'Upgrade'. The main content area is titled 'Connectors' and shows the 'Active connector' as 'Homebrew/MMDVM'. Below this, there is a 'Switch to selected' button, which is highlighted by a yellow arrow. The 'General settings' section includes a 'Save' button, a field for 'Change to Null connector after last call (sec, 0 to disable):' set to '0', and a radio button selection for 'Change after last call from:' with 'Modem or network' selected. The 'DMR/Homebrew/MMDVM' section also has a 'Save' button and includes fields for 'Modem receive frequency (MHz)', 'Modem transmit frequency (MHz)', 'Modem mode' (set to 'DMR'), 'Protocol' (with 'MMDVM' selected), 'Server' (set to 'TGIF'), 'Server address' (set to 'tgif.network'), and 'Port (UDP)' (set to '62031'). At the bottom, there is a status bar showing 'Profile: 1 (K02LXR)', 'Connected', 'Advanced mode', and a 'Quick setup' button.



4 . Select server **“TGIF”**

**DMR/Homebrew/MMDVM** Save

Modem receive frequency (MHz): 432.650000  
Modem transmit frequency (MHz): 432.650000  
Modem mode: DMR

Protocol:  
Server: TGIF  
Server address:  
Port (UDP):

Call sign:  
DMR ID:  
URL:  
Server password: (show)

Backup server:  
Backup server address:  
Backup server port (UDP):  
Backup server password: (show)  
Backup server activate connect timeout (sec):

☐ Homebrew ☒ MMDVM

- TGIF
- IPSC2-Romania
- IPSC2-SWEDEN-(@)
- IPSC2-SWISS-DMO
- IPSC2-SWISS-RPT
- IPSC2-USA-MN2
- IPSC2-VKHOTSPOT
- XLX945
- TGIF
- XLX
- XLX000
- XLX001
- XLX002
- XLX004

5 . Click **“SAVE”** and you're done.

# *OpenSPOT*

## ***D-Star***

1 . Go to Modem setting and select: “**D-STAR**”

**Modem settings**

Active modem mode: D-STAR

Change to mode: D-STAR


Change

Modem modes not supported by the active connector are grayed out.

2 . Click “**Change**”

### 3 . Go to Connectors

## Connectors

Active connector: **DCS/XLX**  
Edit connector: DCS/XLX   

Switch to selected


### General settings



Save

Change to Null connector after last call (sec, 0 to disable):   
Change after last call from: ☐ Modem ☒ Modem or network

### D-STAR/DCS/XLX

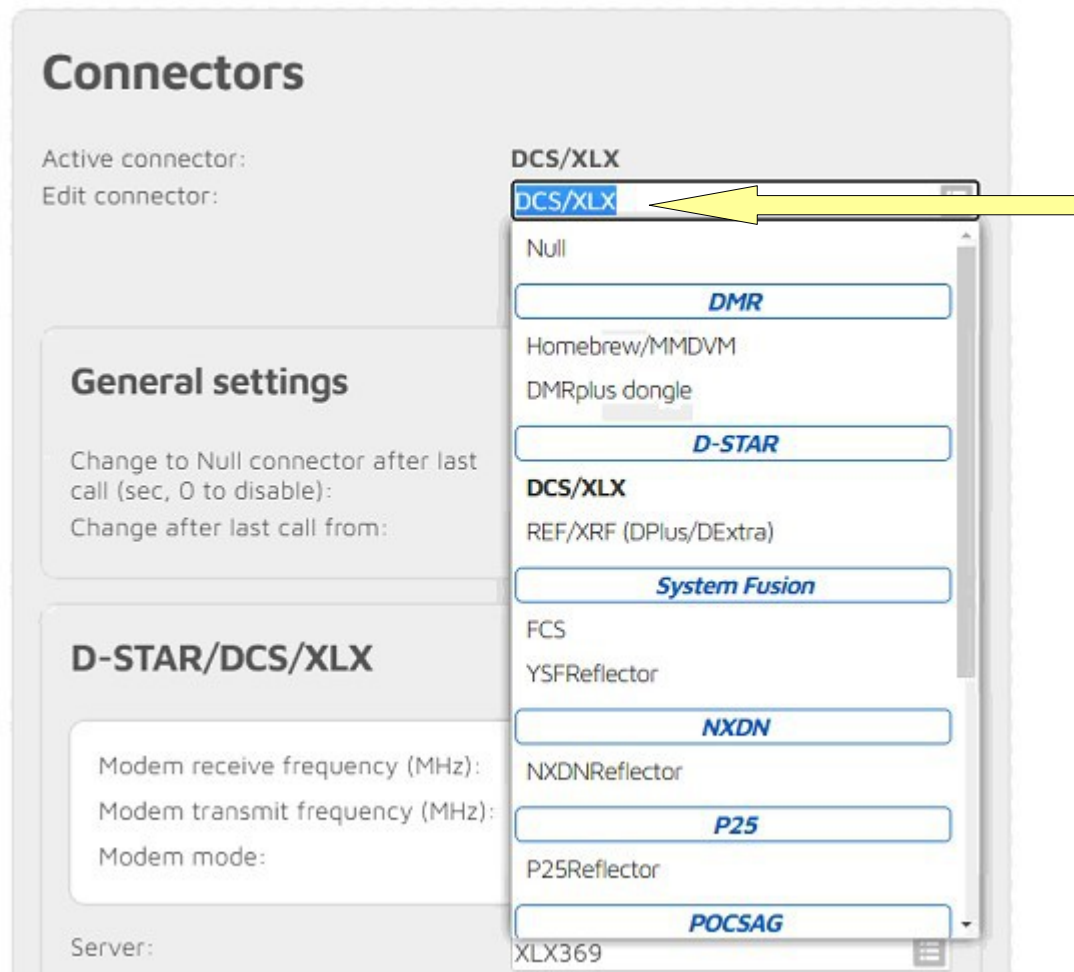
Save

Modem receive frequency (MHz):   
Modem transmit frequency (MHz):   
Modem mode:  

Server:    
Module:    
Server address:

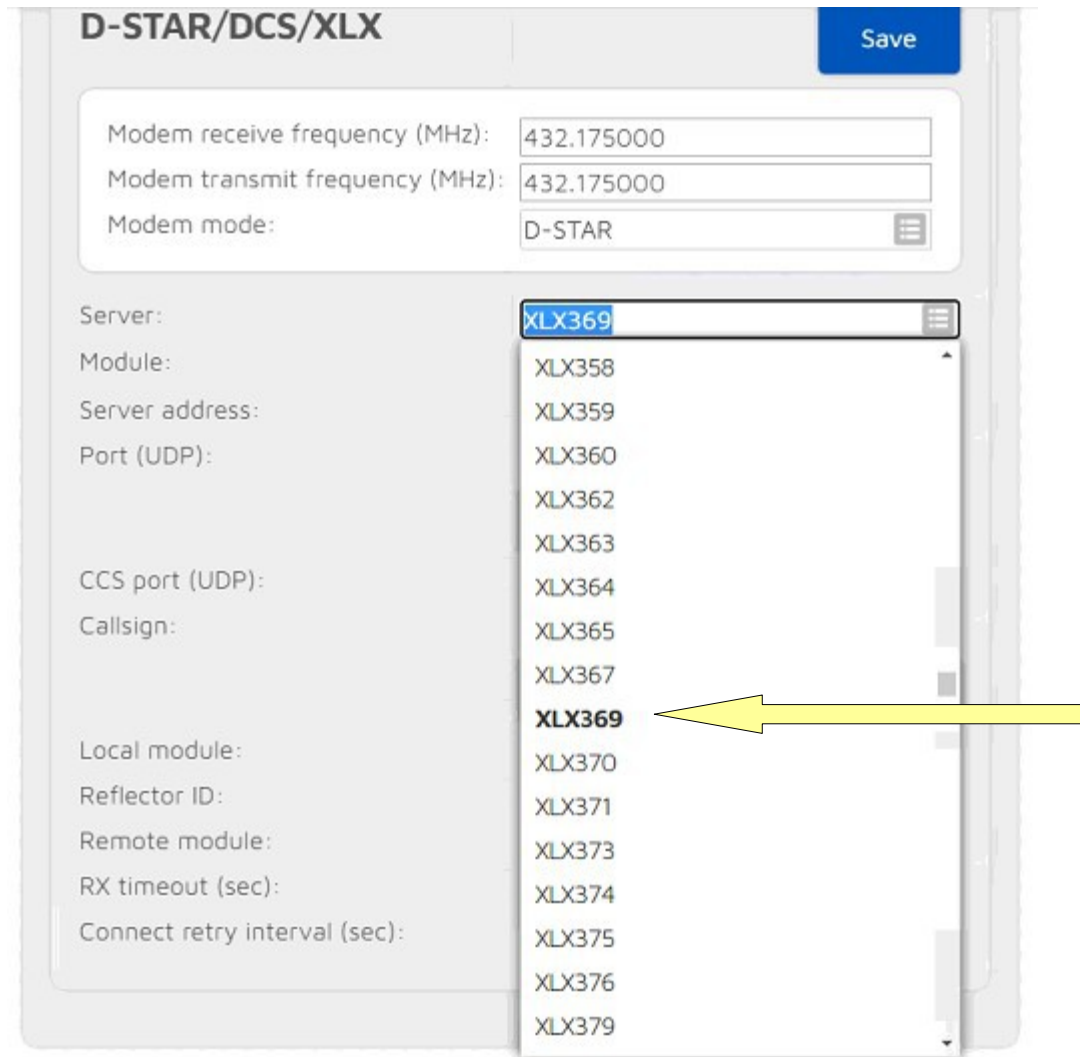
35

4 . Select “**DCS/XLX**”



5 . Click “**Change**”

## 6 . Select server “**XLX369**”



The screenshot displays the configuration interface for D-STAR/DCS/XLX. The interface includes a 'Save' button in the top right corner. The configuration fields are organized into two main sections. The top section contains fields for 'Modem receive frequency (MHz)', 'Modem transmit frequency (MHz)', and 'Modem mode'. The bottom section contains fields for 'Server', 'Module', 'Server address', 'Port (UDP)', 'CCS port (UDP)', 'Callsign', 'Local module', 'Reflector ID', 'Remote module', 'RX timeout (sec)', and 'Connect retry interval (sec)'. The 'Server' dropdown menu is open, showing a list of server options. A yellow arrow points to the 'XLX369' option in the list.

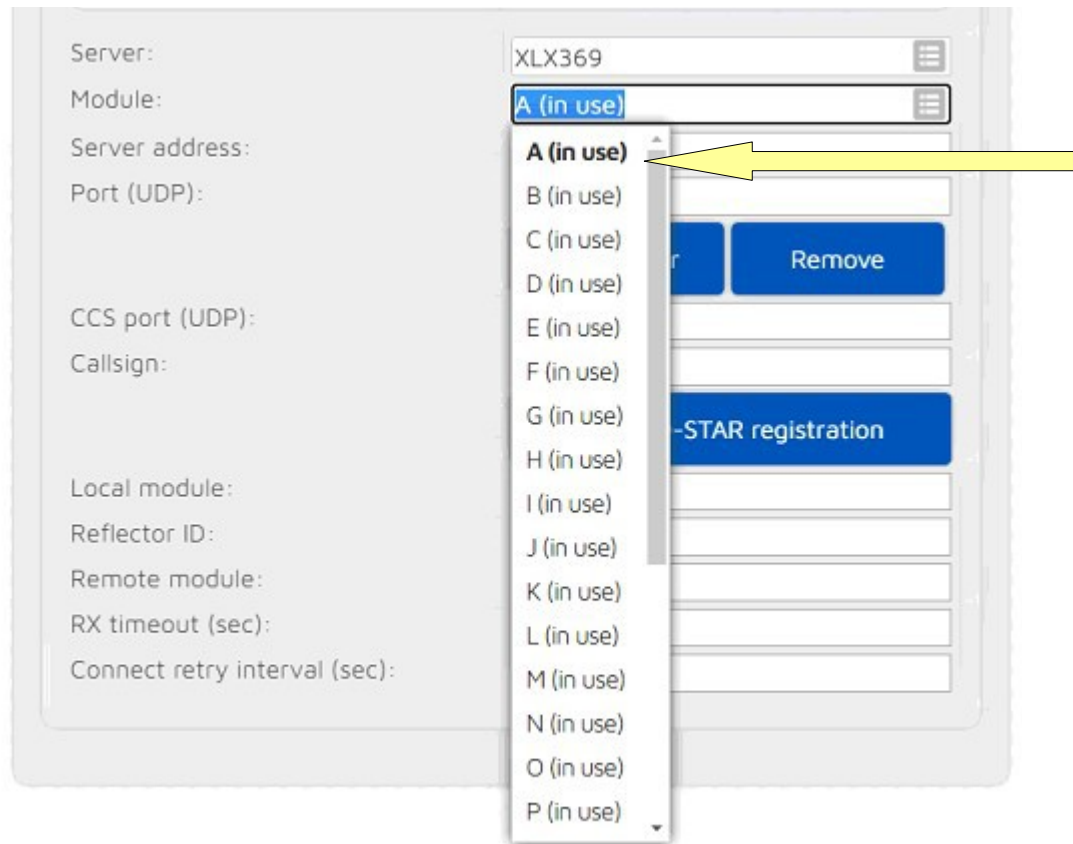
**D-STAR/DCS/XLX** Save

Modem receive frequency (MHz): 432.175000  
Modem transmit frequency (MHz): 432.175000  
Modem mode: D-STAR

Server: **XLX369**  
Module:  
Server address:  
Port (UDP):  
CCS port (UDP):  
Callsign:  
Local module:  
Reflector ID:  
Remote module:  
RX timeout (sec):  
Connect retry interval (sec):

XLX358  
XLX359  
XLX360  
XLX362  
XLX363  
XLX364  
XLX365  
XLX367  
**XLX369**  
XLX370  
XLX371  
XLX373  
XLX374  
XLX375  
XLX376  
XLX379

## 7 . Select Module “A”

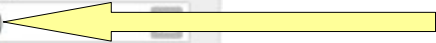


## 8 . Click “SAVE”

For those that want to use the REF or the XRF Reflectors

1 . Go to Connectors

**Connectors**

Active connector: **REF/XRF (DPlus/DExtra)**  
Edit connector: REF/XRF (DPlus/DExtra) 

**Switch to selected**

**General settings** **Save**

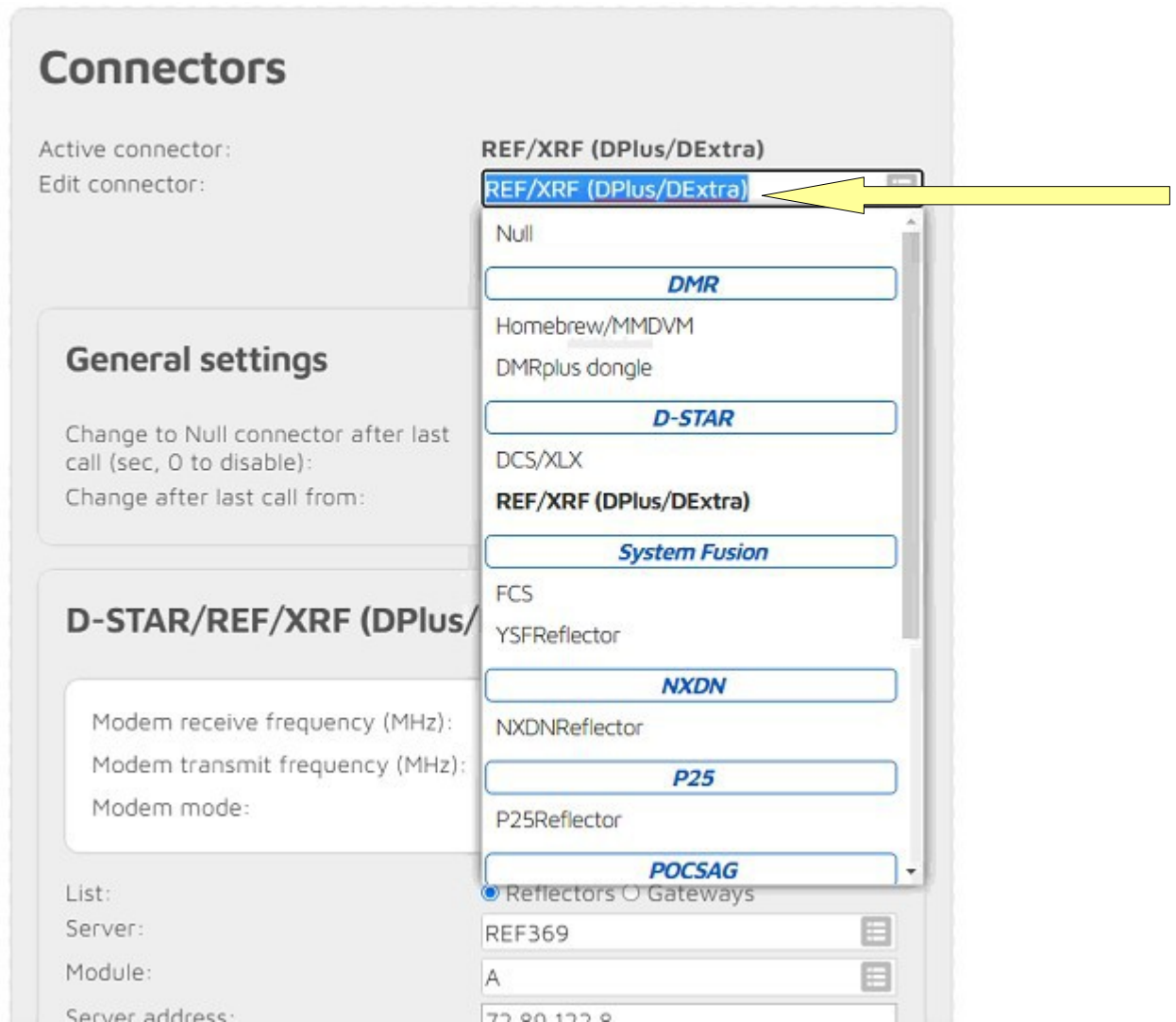
Change to Null connector after last call (sec, 0 to disable):   
Change after last call from: ☐ Modem ☒ Modem or network

**D-STAR/REF/XRF (DPlus/DExtra)** **Save**

Modem receive frequency (MHz):   
Modem transmit frequency (MHz):   
Modem mode:

List: ☒ Reflectors ☐ Gateways  
Server:   
Module:   
Server address:

## 2 . Select REF/XRF “(Dplus/DExtra)”



## 3 . Click “Switch to selected”



4 . Select server **“XRF369”**

**D-STAR/REF/XRF (DPlus/DExtra)** Save

Modem receive frequency (MHz): 433.900000  
Modem transmit frequency (MHz): 433.900000  
Modem mode: D-STAR

List:  
Server:  
Module:  
Server address:  
Port (UDP):  
CCS port (UDP):  
Callsign:  
Local module:  
Reflector/gateway ID:  
Remote module:  
RX timeout (sec):  
Connect retry interval (sec):

☒ Reflectors ☐ Gateways

**XRF369**

- XRF358
- XRF359
- XRF360
- XRF362
- XRF363
- XRF364
- XRF365
- XRF367
- XRF369**
- XRF370
- XRF371
- XRF373
- XRF374
- XRF375
- XRF376
- XRF379

5 . Click **“Save”**

**\*Don't forget to use Module A**

## 1 . Select REF/XRF “(Dplus/DExtra)”

The screenshot shows a web-based configuration interface for radio connectors. The main title is "Connectors". On the left, there are sections for "General settings" and "D-STAR/REF/XRF (DPlus/DExtra)". The "General settings" section includes fields for "Active connector:", "Edit connector:", "Change to Null connector after last call (sec, 0 to disable):", and "Change after last call from:". The "D-STAR/REF/XRF (DPlus/DExtra)" section includes fields for "Modem receive frequency (MHz):", "Modem transmit frequency (MHz):", "Modem mode:", "List:", "Server:", "Module:", and "Server address:". On the right, a dropdown menu is open, showing a list of connector options. The selected option is "REF/XRF (DPlus/DExtra)". Other options include "Null", "DMR", "Homebrew/MMDVM", "DMRplus dongle", "D-STAR", "DCS/XLX", "System Fusion", "FCS", "YSFReflector", "NXDN", "NXDNReflector", "P25", "P25Reflector", and "POCSAG". Below the dropdown, there are radio buttons for "Reflectors" (selected) and "Gateways". At the bottom, there are input fields for "REF369", "A", and "73 80 123 8".

**Connectors**

Active connector:  
Edit connector:

**General settings**

Change to Null connector after last call (sec, 0 to disable):  
Change after last call from:

**D-STAR/REF/XRF (DPlus/DExtra)**

Modem receive frequency (MHz):  
Modem transmit frequency (MHz):  
Modem mode:

List:  
Server:  
Module:  
Server address:

**REF/XRF (DPlus/DExtra)**

REF/XRF (DPlus/DExtra)

Null

**DMR**

Homebrew/MMDVM  
DMRplus dongle

**D-STAR**

DCS/XLX  
**REF/XRF (DPlus/DExtra)**

**System Fusion**

FCS  
YSFReflector

**NXDN**

NXDNReflector

**P25**

P25Reflector

**POCSAG**

☒ Reflectors ☐ Gateways

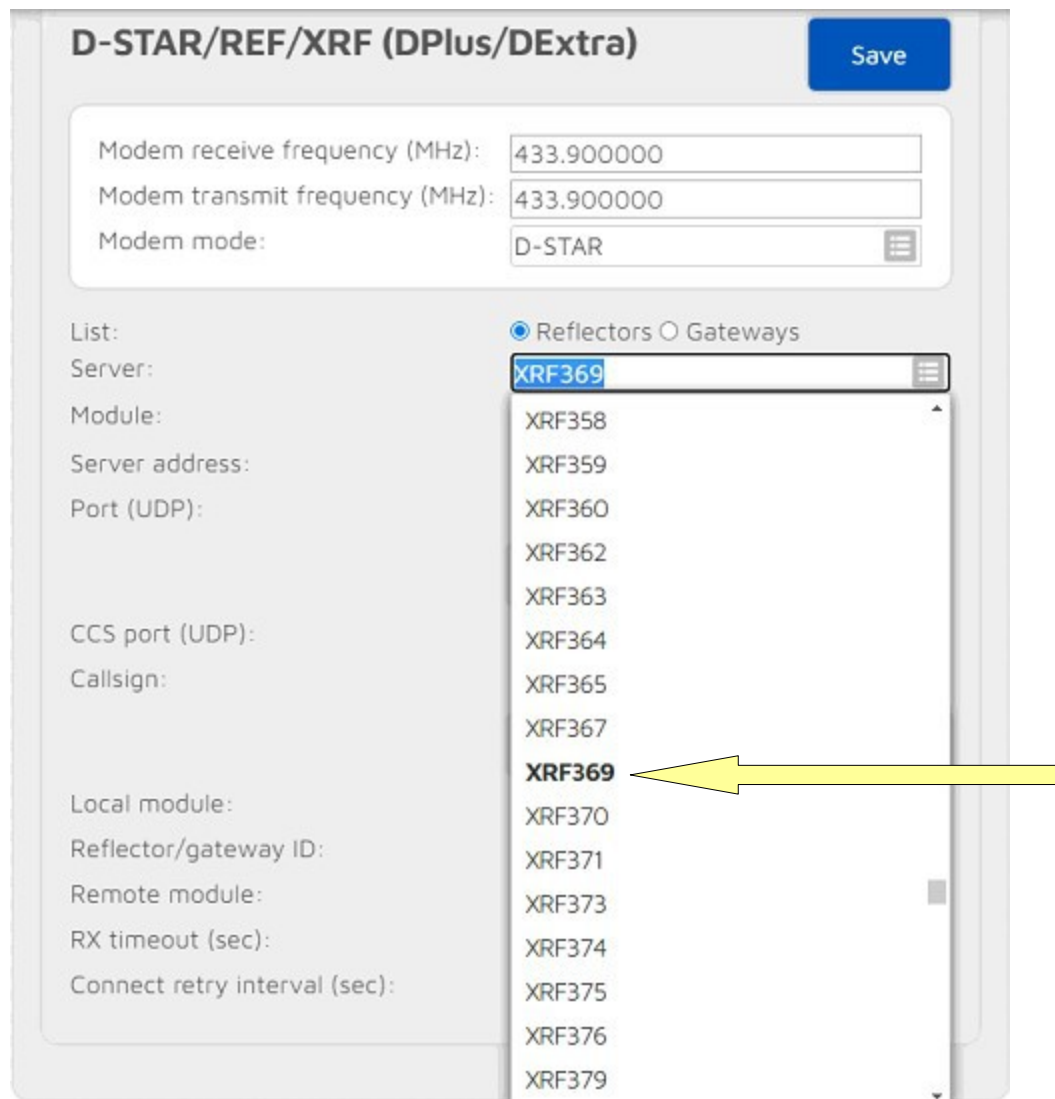
REF369

A

73 80 123 8

## 2 . Click “Switch to selected”

3 . Select server **“REF369”**



**D-STAR/REF/XRF (DPlus/DExtra)** Save

Modem receive frequency (MHz): 433.900000  
Modem transmit frequency (MHz): 433.900000  
Modem mode: D-STAR

List: ☒ Reflectors ☐ Gateways

Server: **XRF369**

Module:

Server address:

Port (UDP):

CCS port (UDP):

Callsign:

Local module:

Reflector/gateway ID:

Remote module:

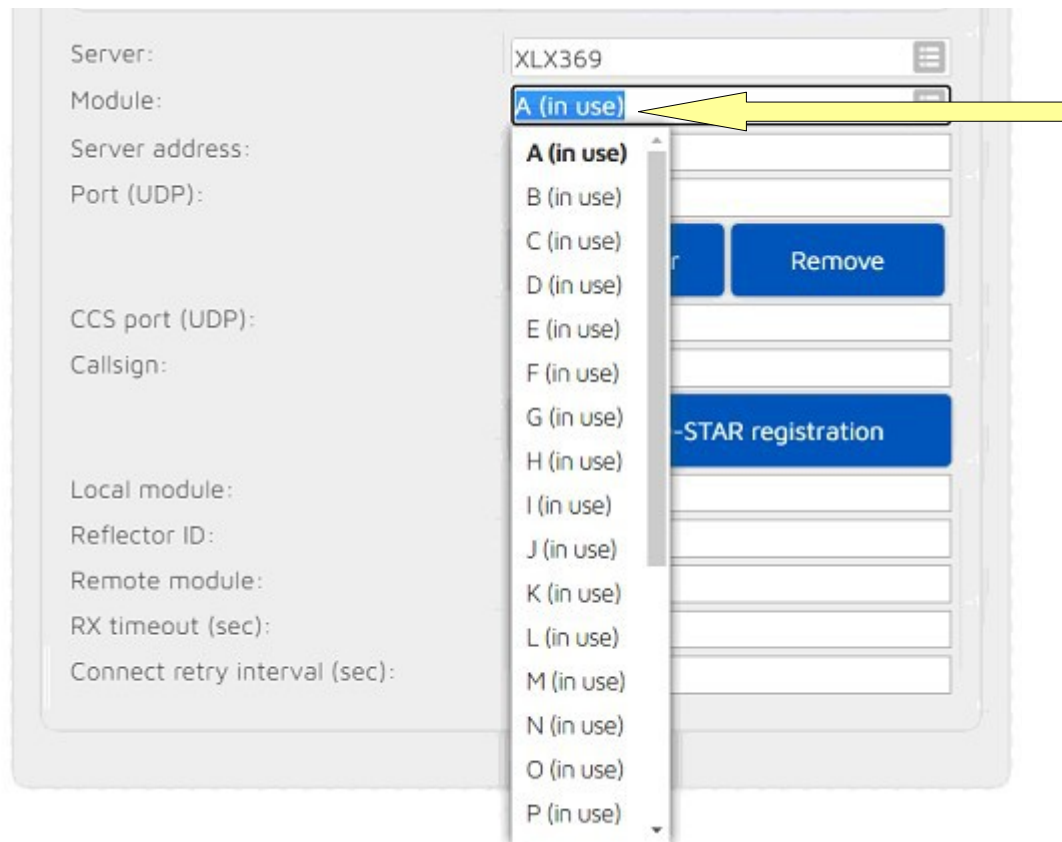
RX timeout (sec):

Connect retry interval (sec):

- XRF358
- XRF359
- XRF360
- XRF362
- XRF363
- XRF364
- XRF365
- XRF367
- XRF369**
- XRF370
- XRF371
- XRF373
- XRF374
- XRF375
- XRF376
- XRF379

4 . Click **“Save”** and you're done.

## 5 . Select Module “A”

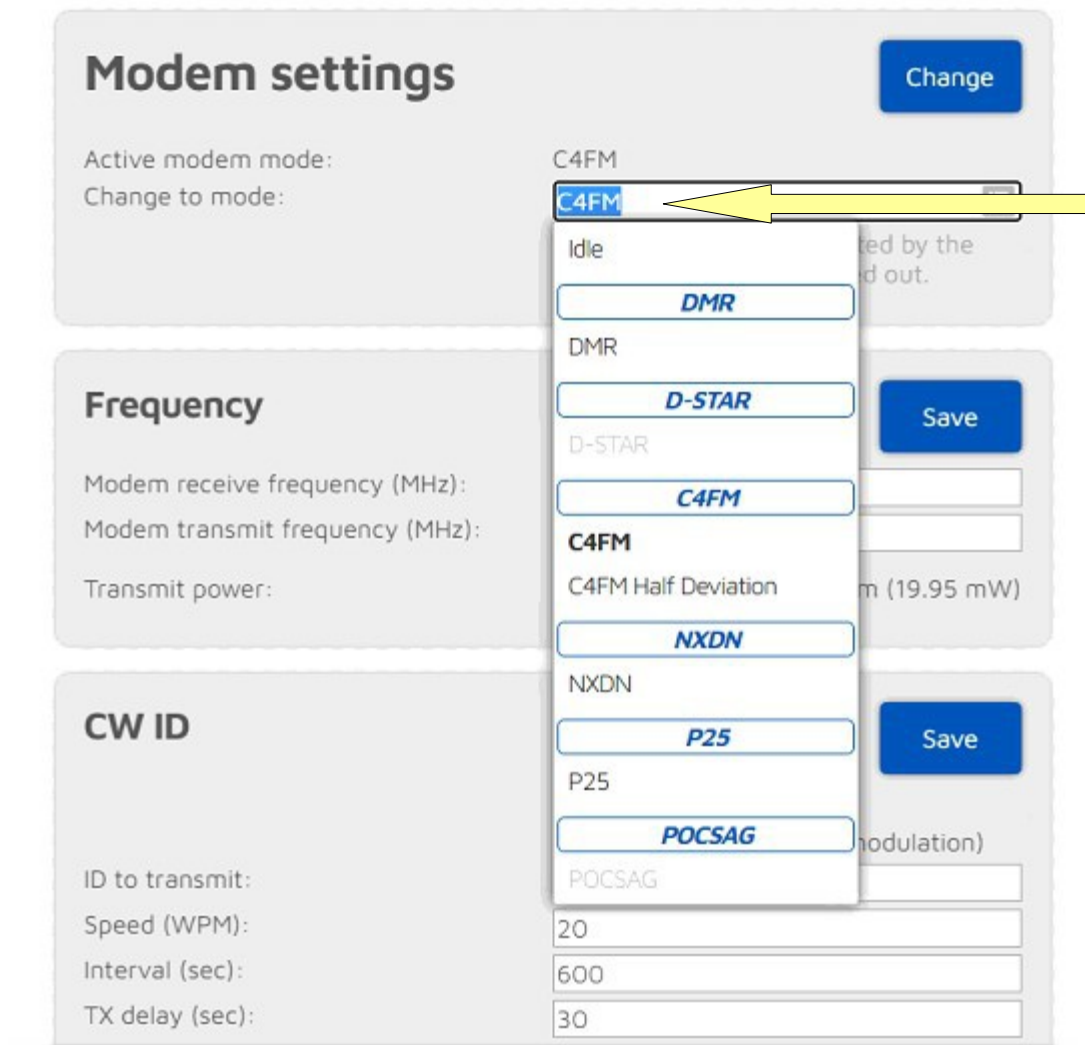


## 6 . Click “**SAVE**” and you're done.

# OpenSPOT

**YSF**

1 . Go to Modem setting and select: **“C4FM”**



The screenshot shows the OpenSPOT web interface with the 'Modem settings' section active. A dropdown menu is open for the 'Change to mode:' field, showing various options. A yellow arrow points to the 'C4FM' option in the dropdown. The background settings are partially visible and dimmed.

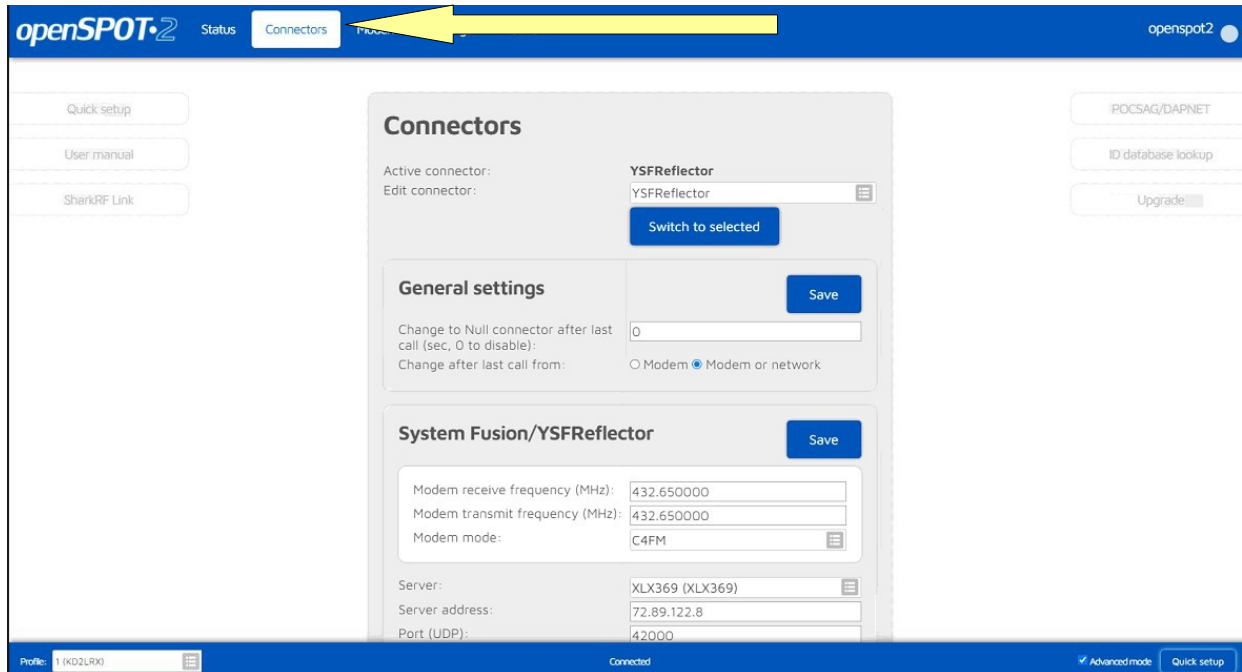
Section	Field	Value / Option
Modem settings	Active modem mode:	C4FM
	Change to mode:	C4FM (selected in dropdown)
Frequency	Modem receive frequency (MHz):	
	Modem transmit frequency (MHz):	
	Transmit power:	19.95 mW
CW ID	ID to transmit:	
	Speed (WPM):	20
	Interval (sec):	600
	TX delay (sec):	30

Dropdown menu options (from top to bottom):

- Idle
- DMR
- DMR
- D-STAR
- D-STAR
- C4FM
- C4FM** (highlighted)
- C4FM Half Deviation
- NXDN
- NXDN
- P25
- P25
- POCSAG
- POCSAG

2 . Click **“Change”**.

### 3. Go to Connections



The screenshot shows the openSPOT2 web interface. The top navigation bar is blue with the openSPOT2 logo on the left, 'Status' and 'Connectors' tabs in the center, and 'openspot2' on the right. A yellow arrow points to the 'Connectors' tab. On the left side, there are links for 'Quick setup', 'User manual', and 'SharkRF Link'. On the right side, there are links for 'POCSAG/DAPNET', 'ID database lookup', and 'Upgrade'. The main content area is titled 'Connectors' and contains three sections: 'Active connector' and 'Edit connector' both set to 'YSFReflector' with a 'Switch to selected' button; 'General settings' with a 'Save' button, a 'Change to Null connector after last call (sec, 0 to disable):' field set to '0', and a 'Change after last call from:' radio button group with 'Modem or network' selected; and 'System Fusion/YSFReflector' with a 'Save' button, fields for 'Modem receive frequency (MHz):' (432.650000), 'Modem transmit frequency (MHz):' (432.650000), 'Modem mode:' (C4FM), 'Server:' (XLX369 (XLX369)), 'Server address:' (72.89.122.8), and 'Port (UDP):' (42000). The bottom status bar shows 'Profile: 1 (KD2LRQ)', 'Connected', 'Advanced mode' (checked), and a 'Quick setup' button.

openSPOT2 Status **Connectors** openspot2

Quick setup  
User manual  
SharkRF Link

POCSAG/DAPNET  
ID database lookup  
Upgrade

### Connectors

Active connector: YSFReflector  
Edit connector: YSFReflector  
Switch to selected

#### General settings

Save

Change to Null connector after last call (sec, 0 to disable): 0  
Change after last call from: ☐ Modem ☒ Modem or network

#### System Fusion/YSFReflector

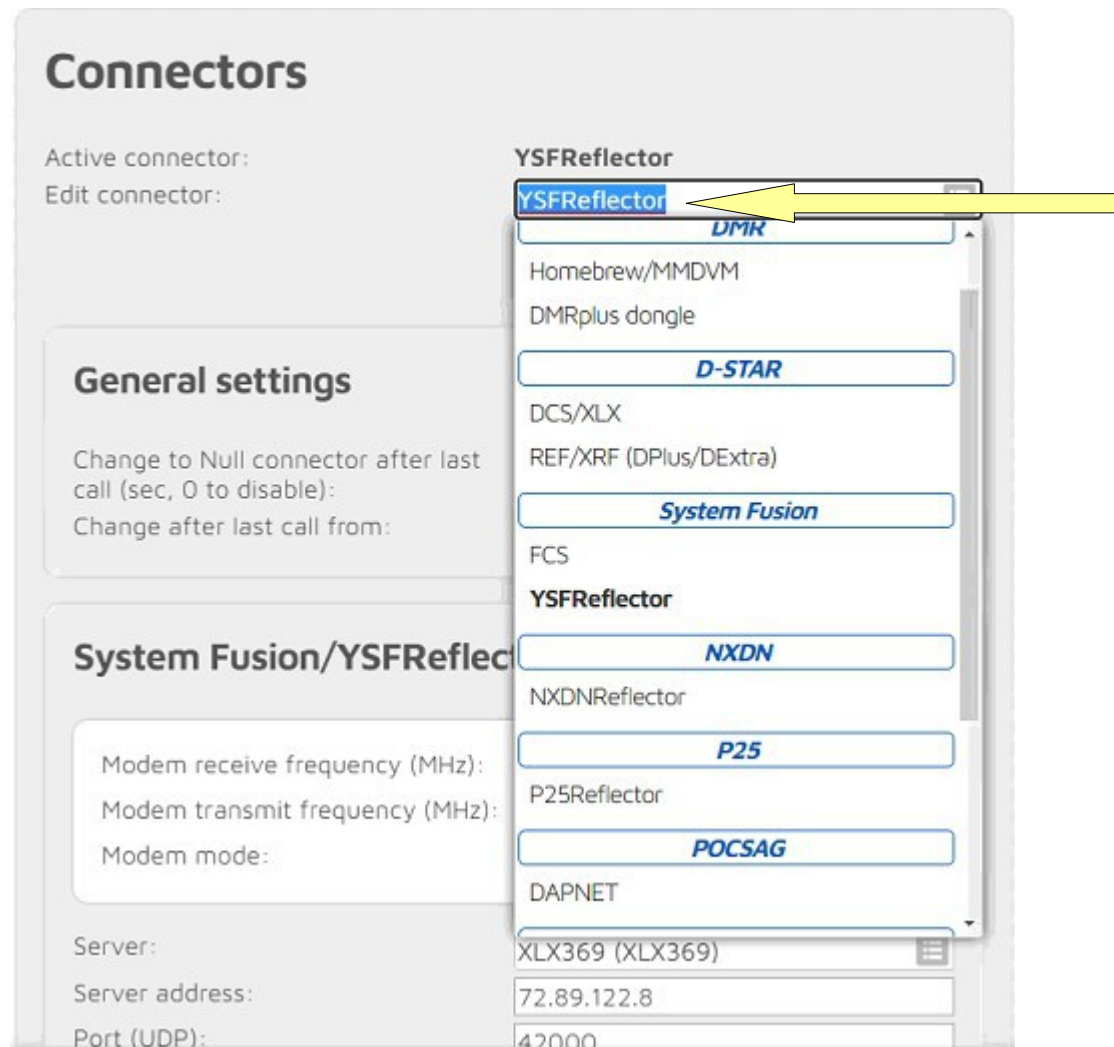
Save

Modem receive frequency (MHz): 432.650000  
Modem transmit frequency (MHz): 432.650000  
Modem mode: C4FM

Server: XLX369 (XLX369)  
Server address: 72.89.122.8  
Port (UDP): 42000

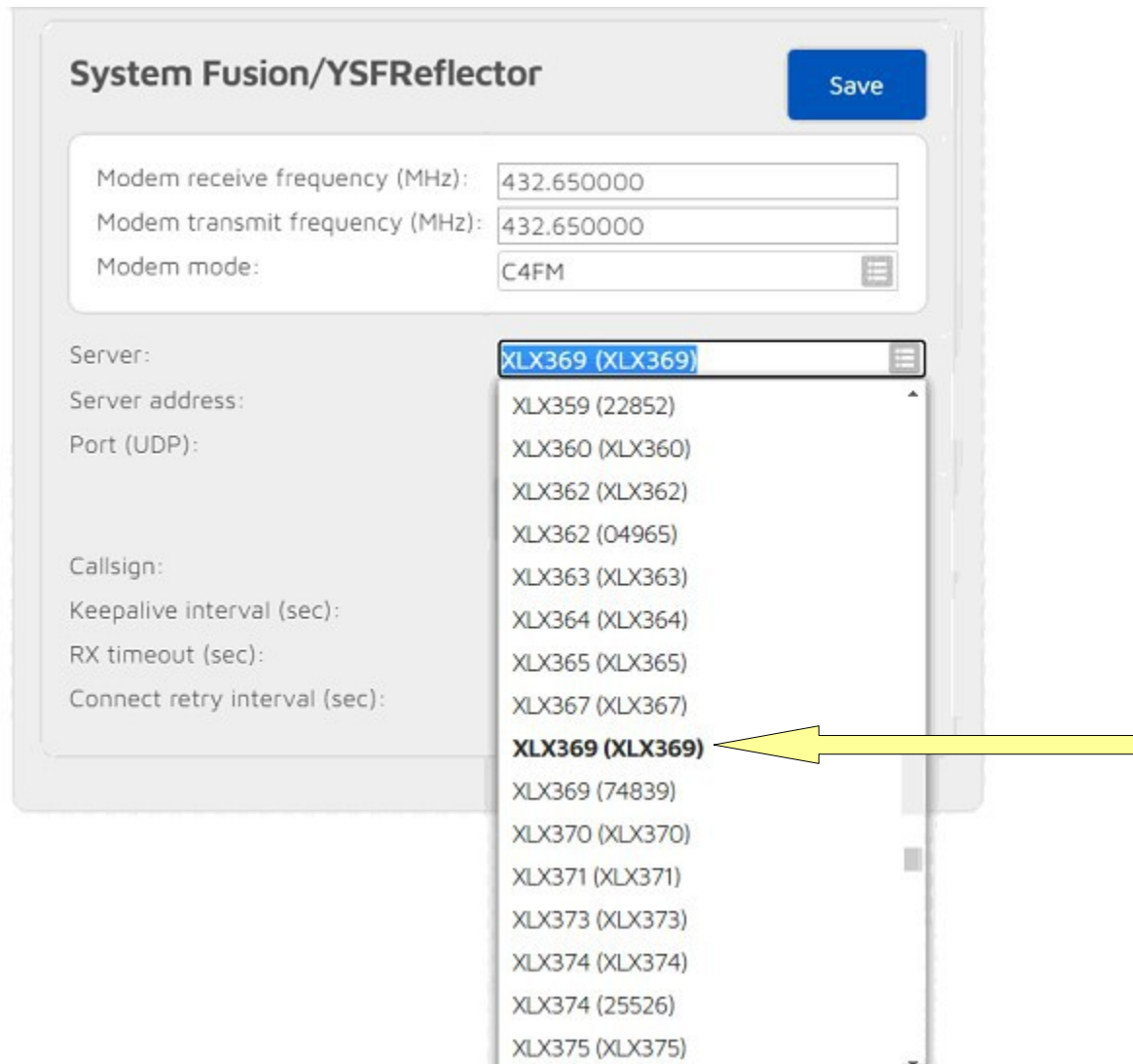
Profile: 1 (KD2LRQ) Connected ☒ Advanced mode Quick setup

#### 4 . Select “YSFReflector”



#### 5 . Click “Switch to select”

6 . Select server **“XLX369 (XLX369)”**



The screenshot shows the 'System Fusion/YSFReflector' configuration window. At the top right is a blue 'Save' button. Below the title bar, there are three input fields: 'Modem receive frequency (MHz):' with value '432.650000', 'Modem transmit frequency (MHz):' with value '432.650000', and 'Modem mode:' with value 'C4FM'. Below these, there is a 'Server:' dropdown menu. The dropdown is open, showing a list of servers. The first item, 'XLX369 (XLX369)', is highlighted in blue. A yellow arrow points to this item from the right. Other items in the list include 'XLX359 (22852)', 'XLX360 (XLX360)', 'XLX362 (XLX362)', 'XLX362 (04965)', 'XLX363 (XLX363)', 'XLX364 (XLX364)', 'XLX365 (XLX365)', 'XLX367 (XLX367)', 'XLX369 (74839)', 'XLX370 (XLX370)', 'XLX371 (XLX371)', 'XLX373 (XLX373)', 'XLX374 (XLX374)', 'XLX374 (25526)', and 'XLX375 (XLX375)'. To the left of the dropdown, there are labels for 'Server address:', 'Port (UDP):', 'Callsign:', 'Keepalive interval (sec):', 'RX timeout (sec):', and 'Connect retry interval (sec):', but their corresponding input fields are not visible.

Field	Value
Modem receive frequency (MHz):	432.650000
Modem transmit frequency (MHz):	432.650000
Modem mode:	C4FM
Server:	XLX369 (XLX369)
Server address:	
Port (UDP):	
Callsign:	
Keepalive interval (sec):	
RX timeout (sec):	
Connect retry interval (sec):	

7 . Click **“SAVE”** and you're done.



*Welcome to The Fusion Net*



*Enjoy and have fun !*

*Special Thanks*

to

Jay KD2LRX

&

Ryan W4EAE