

DMR and DMR2YSF on the Brandmeister system.

This will be a 4-part series explaining what you need to get onto DMR and DMR2YSF on the Brandmeister network.

Part 1: DMR equipment, registration (DMR node ID, Brandmeister registration) and software requirements.

Part 2: DMR Hotspot Setup.

Part 3: DMR radio transceiver configuration.

Part 4: DMR2YSF setup and how to use the cross mode DMR2YSF (DMR to C4FM).

OK, this is the last part of the series, remember it is written by a Ham for Hams and is my interpretation of the DMR, Yaesu and Brandmeister network systems, that works for me. Use this as a guide to help you on your DMR and YSF journey.

REMEMBER: Before changing any software settings make a backup copy of what is already on your DMR radio and Hot Spot.

Part 4.

Let's get our system up and running on DMR2YSF.

In this part we will do the changes required to get the DMR2YSF working harmoniously with DMR, we need to make changes to both the WPSD software and the transceiver COE Plug. I will use the same process as in the previous parts showing you how to setup your hotspot and transceiver, with screenshots of the most relevant info required to get the system running.

Note: These changes will be followed by an explanation of how to use , DMR and DMR2YSF so that neither will interfere with the other, when either DMR or DMR2YSF (C4FM) is the chosen mode you want to work on.

Ok let's tackle the WPSD software first, nice and easy one to start with.

Turn your hotspot on, open the WPSD software and log in as the administrator, then go to the Configuration page and change the following.

Radio Cross Modes:

DMR2YSF: (switch on - green), then click **APPLY Changes**, you need to do this so the next screen will appear in the configuration menu, **Yaesu System Fusion Configuration**.

Radio Cross-Modes		
YSF2DMR:	☐	Note: YSF Mode must be enabled & applied first.
YSF2NXDN:	☐	Note: YSF Mode must be enabled & applied first.
YSF2P25:	☐	Note: YSF Mode must be enabled & applied first.
DMR2YSF:	☒	ⓘ Uses "7" talkgroup prefix in DMR. Note: Cannot be enabled in conjunction with DMR2NXDN.
DMR2NXDN:	☐	Note: Cannot be enabled in conjunction with DMR2YSF.

Yaesu System Fusion Configuration.

YSF Startup Host: (none)

UPPERCASE Hostfiles: (switch on – green)

FCS Network: (switch on – green)

WiresX Passthrough: (switch on – green)

Click **APPLY Changes**, and we are done with the WPSD configuration.

Yaesu System Fusion Configuration	
YSF Startup Host:	None
UPPERCASE Hostfiles:	☒
FCS Network:	☒
WiresX Passthrough:	☒

The updated Dashboard should now look like this, all green, the **DMR Masters** box should now have (*BM 501 Australia*) and (*DMR2YSF Cross-Mode*) in it and have the **YSF Status** (*Not Linked*).

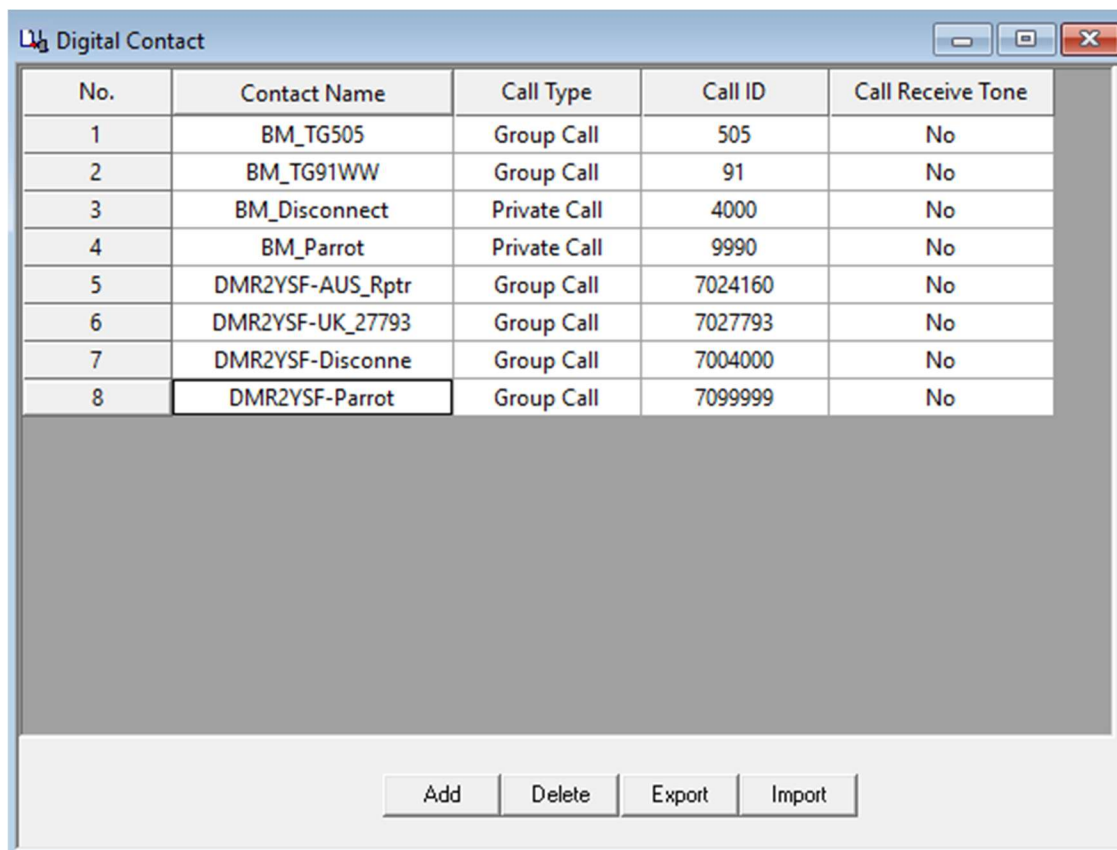
Mode Status	
D-Star	DMR
YSF	P25
M17	NXDN
DMR X-Mode	YSF X-Mode
POCSAG	
Network Status	
D-Star Net	DMR Net
YSF Net	P25 Net
M17 Net	NXDN Net
DMR2NXDN	DMR2YSF
YSF2DMR	YSF2NXDN
YSF2P25	APRS Net
POCSAG Net	
DMR Status	
TS2	Enabled
DMR ID	5051696
DMR CC	1
DMR Masters	
BM 5051 Australia	
DMR2YSF Cross-Mode	
YSF Status	
Not Linked	

I hope your dashboard looks the same, if not just check your configuration settings, it's easy to get one step wrong.

The next thing to tackle is the Transceiver COE Plug. We need to create four new digital contacts for the DMR2YSF (C4FM), two reflectors and the usual disconnect and parrot channels, remember we will need to create channels for all of these new contacts, we will also add a new **Zone Information** (DMR2YSF) and **Digital RX Group Call** (DMR2YSF), let's get straight into it.

Turn your transceiver and computer on and open the transceiver CPS software, connect the usb cable from the transceiver to the computer and read the existing file on the transceiver.

Let's add the new contacts for the DMR2YSF (C4FM) network, lets add a couple of reflectors and the customary important Disconnect command and Parrot facility. I will fill out the Contact List, just amend your Contact List to look the same as the pic below.



No.	Contact Name	Call Type	Call ID	Call Receive Tone
1	BM_TG505	Group Call	505	No
2	BM_TG91WW	Group Call	91	No
3	BM_Disconnect	Private Call	4000	No
4	BM_Parrot	Private Call	9990	No
5	DMR2YSF-AUS_Rptr	Group Call	7024160	No
6	DMR2YSF-UK_27793	Group Call	7027793	No
7	DMR2YSF-Disconne	Group Call	7004000	No
8	DMR2YSF-Parrot	Group Call	7099999	No

Remember every contact needs a channel.

Righto, off you go you will need to create channels for the four new digital contacts.

Remember how to do it, just in case, right click the **Channel Information** folder and click add, this adds a channel 1 to the list, next right click BM_TG505 channel and click COPY , next right click channel 1 and click paste, this copies all the information from BM_TG505 to the current channel 1, you then only need to rename it, **Channel Name:** (DMR2YSF-AUS_Rptr) and change the **Contact Name:** from BM_TG505 to (DMR2YSF-AUS_Rptr), **Group List:** (DMR2YSF) done , repeat.

Note: Like last time let's create the **Digital RX Group Call:** (DMR2YSF) for the new digital channels, go to the folder in the tree list, right click and say ADD then rename the existing List1 as described, just so it's available when you are creating the channels. You could create the **Zone Information:** (DMR2YSF) at this stage too.

Your first new digital channel should look like this.

The 'Channel Information' dialog box is shown with the following settings:

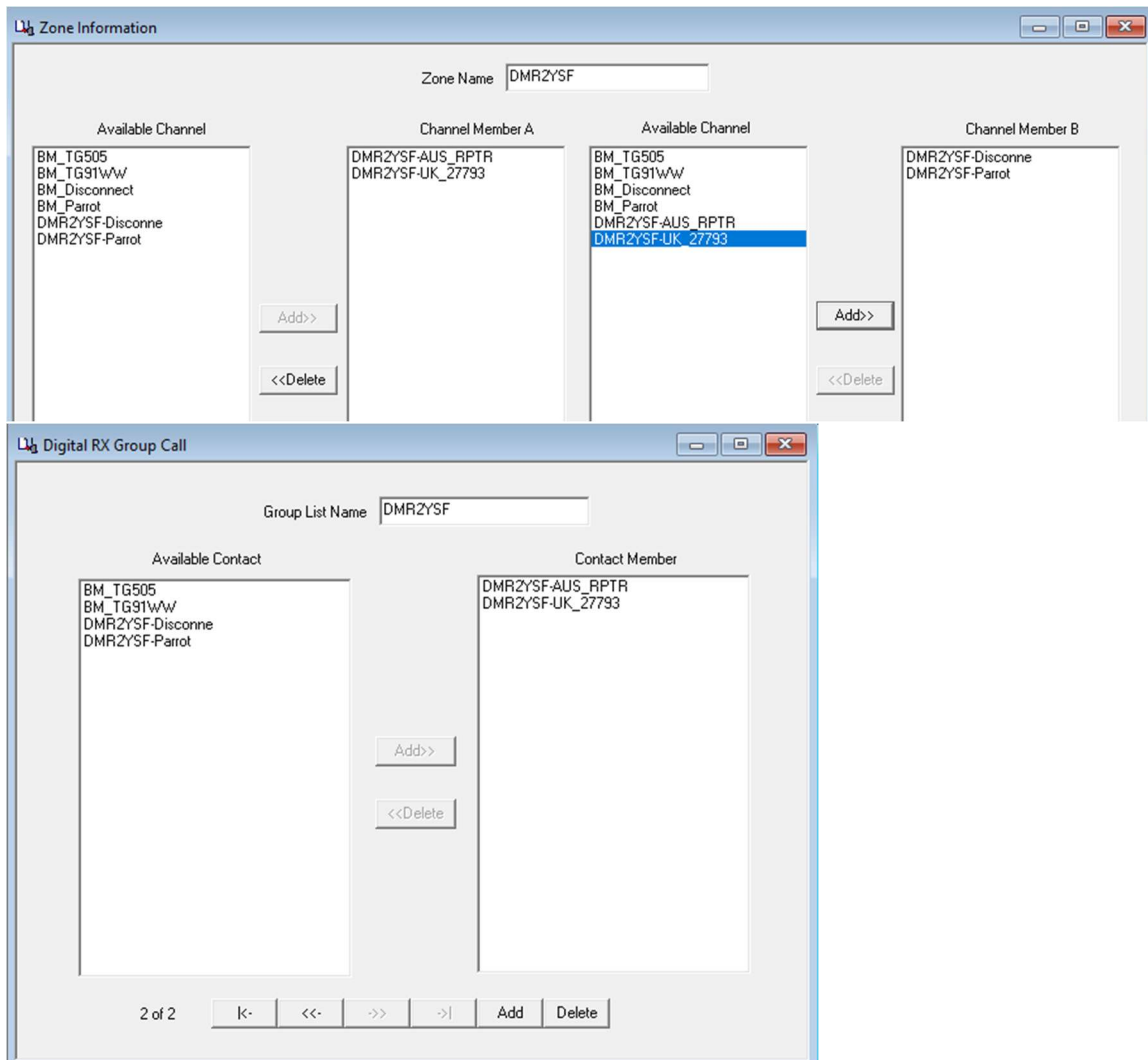
- Digital/Analog Data:**
 - Channel Mode: Digital
 - Channel Name: DMR2YSF-AUS_Rptr
 - Band Width: 12.5kHz
 - RX Frequency(MHz): 439.12500
 - Scan List: None
 - TX Frequency(MHz): 439.12500
 - Squelch: 1
 - Admit Criteria: Always
 - RX Ref Frequency: Low
 - TX Ref Frequency: Low
 - TOT[s]: 480
 - TOT Rekey Delay[s]: 0
 - Power: Low
 - Auto Scan: ☐
 - Rx Only: ☐
 - Lone Worker: ☐
 - Vox: ☐
 - Allow Talkaround: ☐
- Digital Data:**
 - Private Call Confirmed: ☐
 - Emergency Alarm Ack: ☐
 - Data Call Confirmed: ☐
 - Allow Interrupt: ☐
 - DCDM Switch: ☐
 - Leader/MS: MS
 - Emergency System: None
 - Contact Name: DMR2YSF-AUS_Rptr
 - Group List: DMR2YSF
 - Color Code: 1
 - Repeater Slot: 2
 - In Call Criteria: Always
 - Privacy: None
 - Privacy No.: 1

Repeat and then you should now have a **Channel Information** list like this, (bottom left of pic below).

The screenshot shows the CPS MD-UV380 software interface. On the left, a tree view lists various settings, including 'Channel Information'. The 'Channel Information' dialog box is open, showing the same settings as the previous screenshot. The 'Channel Name' is 'DMR2YSF-AUS_RPTR'. The 'Band Width' is '12.5kHz'. The 'Scan List' is 'None'. The 'TX Frequency(MHz)' is '439.12500'. The 'Squelch' is '1'. The 'Admit Criteria' is 'Always'. The 'RX Ref Frequency' is 'Low'. The 'TX Ref Frequency' is 'Low'. The 'TOT[s]' is '480'. The 'TOT Rekey Delay[s]' is '0'. The 'Power' is 'Low'. The 'Auto Scan' checkbox is unchecked. The 'Rx Only' checkbox is unchecked. The 'Lone Worker' checkbox is unchecked. The 'Vox' checkbox is unchecked. The 'Allow Talkaround' checkbox is unchecked. The 'Digital Data' section shows 'Private Call Confirmed' unchecked, 'Emergency Alarm Ack' unchecked, 'Data Call Confirmed' unchecked, 'Allow Interrupt' unchecked, 'DCDM Switch' unchecked, 'Leader/MS' set to 'MS', 'Emergency System' set to 'None', 'Contact Name' set to 'DMR2YSF-AUS_RPTR', 'Group List' set to 'DMR2YSF', 'Color Code' set to '1', 'Repeater Slot' set to '2', 'In Call Criteria' set to 'Always', 'Privacy' set to 'None', and 'Privacy No.' set to '1'.

Next, I will show you my **Zone Information** (DMR2YSF) and **Digital RX Group Call** (DMR2YSF) windows for this update, make yours look the same.

Open **Zone Information** (DMR2YSF) and **Digital RX Group Call** (DMR2YSF).



Save the settings and write them to the transceiver.

Phew, that's all the hard stuff done, all that's left to do now is for me to explain the new Zones **Brandmeister** and **DMR2YSF** and how to use them, I shall try and make this explanation as short as possible, but I don't make any promises.

HOW TO USE - DMR and DMR2YSF

In this section, we will be looking at.

- Brandmeister Dashboard
- WPSD software

First, I need to explain DYNAMIC, AUTOSTATIC and STATIC talk groups.

A **DYNAMIC** talk group is a user activated talk group channel (BM_TG505) for example and is activated by selecting the channel on your HH and keying up the PTT for about 4 seconds. Once activated the talk group will remain active for approximately 15 minutes from when the last channel activity is heard, yes it automatically disconnects.

You can have multiple dynamic talk groups active, but only one can transmit at a time per timeslot. Multiple active dynamic talk groups enable monitoring of several channels without the need to change the channel on your HH.

A **DYNAMIC** talk group can be disconnected by sending a disconnect (BM_Disconnect) from your HH.

Note: Brandmeister will create **automatically**, an **autostatic** talk group for one of these dynamic talk groups if multiple talk groups are active, you will need to manually disconnect it from the network by sending a (BM_Disconnect) from your HH.

An **AUTOSTATIC** talk group is an automatically generated static talk group created by the Brandmeister system of the last active dynamic talk group.

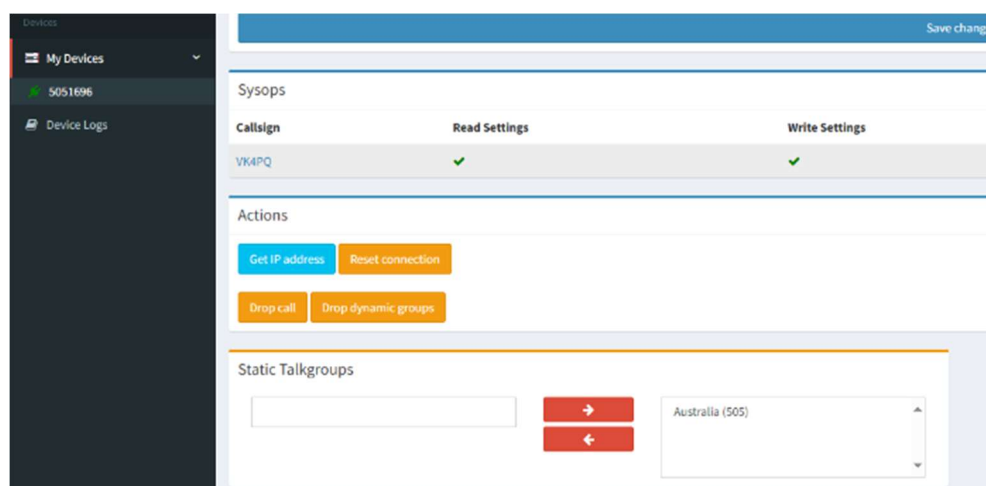
This type of talk group will remain active until you send a disconnect (BM_Disconnect) from your HH.

NOTE: This type of talk group can be disconnected by sending a disconnect (BM_Disconnect) from your HH.

A **STATIC** talk group is one that is created by the user and is added in the Brandmeister My Devices page, in the **Static Talkgroups** box. You will need to login to Brandmeister to create this talk group.

This type of talk group is always on and traffic from that talk group is automatically routed to your hotspot.

NOTE: This type of talk group **can not** be disconnected by a disconnect command from your HH, you need to log in and remove it from the Brandmeister My Devices node number page. The pic below shows a Static Talkgroup channel, Australia (505), this can be removed by highlighting it and clicking the left arrow.



Now let’s have a quick look at the Brandmeister Dashboard and see where to look and see what type of connections you have.

First let’s activate BM_TG505 on our hotspot.

Select channel (BM_TG505) on your HH and press the PTT for 4 seconds and then release the PTT, this activates the talk group on your hotspot. Your dashboard should now look like the following pic.

Radio Status		TX/RX Freq.		Radio Mode		Modem Port		Modem Speed		TCXO Freq.	
IDLE		439.125 MHz		Simplex		/dev/ttyAMA0		115,200 bps		14.7456 MHz	

Mode Status

D-Star

DMR

YSF

P25

M17

NXDN

DMR X-Mode

YSF X-Mode

POCSAG

Current / Last Caller Details

Callsign	Country	Name	Location	Mode	Target
VK4PQ		Peter Harrex	Kelso, Queensland, Australia	DMR TS2	TG 505 (BM: Australia)

Gateway Activity

Display TG Names

☒

Callers

☐

Time (AEST)	Callsign	Country	Mode	Target	Src
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Local RF Activity

Time (AEST)	Callsign	Mode	Target	Dur(s)	BER
11:35:47 AM Jul 14	VK4PQ	DMR TS2	TG 505 (BM: Australia)	0.4s (10 mins ago)	---

Network Status

D-Star Net

DMR Net

YSF Net

P25 Net

M17 Net

NXDN Net

DMR2NXDN

DMR2YSF

YSF2DMR

YSF2NXDN

YSF2P25

APRS Net

POCSAG Net

DMR Status

TS2

Enabled

DMR ID

5051696

DMR CC

1

DMR Masters

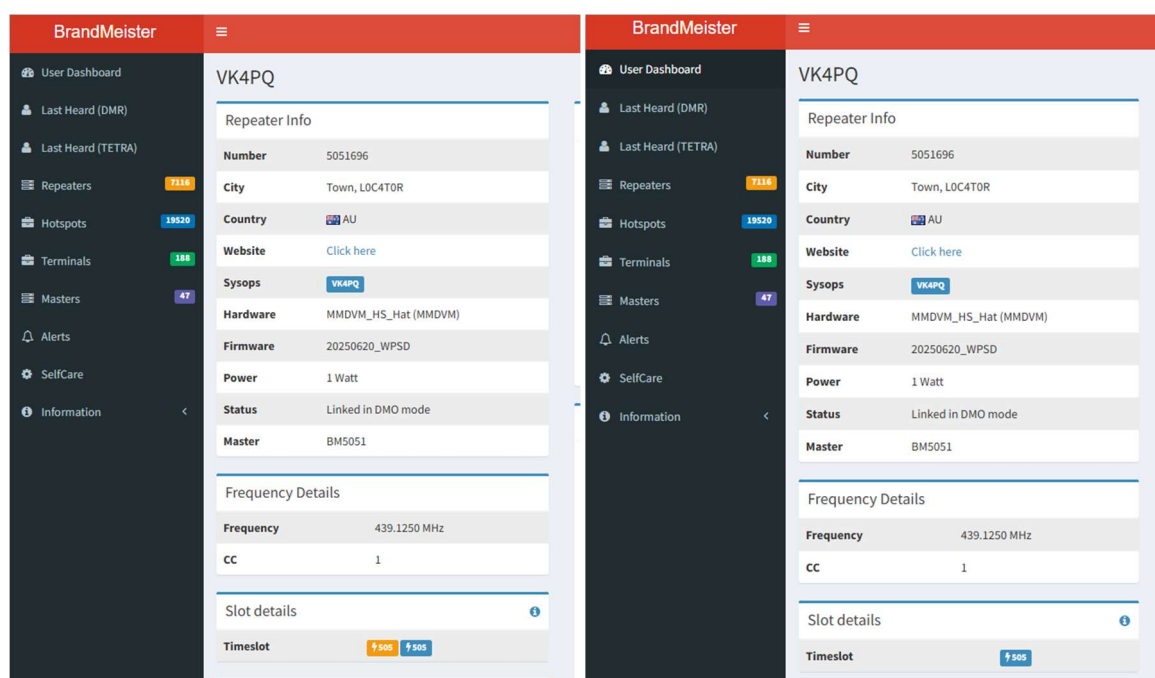
BM 5051 Australia

DMR2YSF Cross-Mode

YSF Status

Not Linked

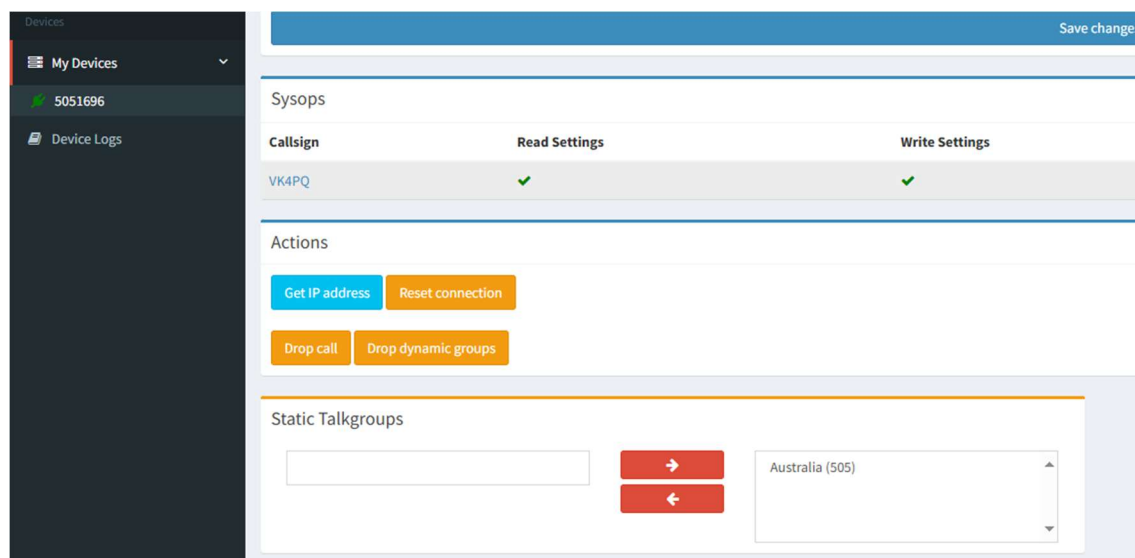
Now open a new web browser and surf to Brandmeister Dashboard, click on HOTSPOTS on the left hand side of the page and when a new window opens you will see at the top right a search box, type in your callsign and when it appears in the main body of this window click on your callsign and the left hand side of next window will look like this.



Notice in this left window we are connected to the Brandmeister network and in the timeslot we see that talk group 505 has an orange icon, this means it's a dynamic talk group and will be active for approximately 15 minutes, also in the left hand window notice that the Brandmeister Network has created a talk group 505 blue icon, this is the automatically created **AUTOSTATIC** talk group mentioned earlier and will remain active until it is manually disconnected, remember you can do this on your HH by selecting the channel BM_Disconnect and key the PTT for about 4 seconds to send the disconnect command to the Brandmeister Network. *In the right-hand window see 505 its still active after 20 minutes and will remain active until it is manually disconnected.*

Ok I think this part is clear enough now, so let's log into the Brandmeister Network and explain a few things in the My Devices screen.

So, if you are still on the Brandmeister dashboard web page log in and then on the left-hand side of the new window you will see **My Devices** on the bottom left, click it and then click on your id number, this opens the following screen, let's have a look at the left-hand side of this page.



Bottom right of the above pic we can see the AUTOSTATIC (Australia (505)) has been added to your **Static Talkgroups** box, as previously explained you can disconnect this by using the channel (BM_Disconnect) on you HH by keying up the PTT for about 4 seconds and the releasing the PTT.

Note: If you send a disconnect from your HH and this talk group does not disappear, it may be a user configured static talk group and can be removed by highlighting it and then click the left arrow of this window.

Now some of you may have been in here and created static talk groups so that you didn't need to activate your favourite talk groups every time you started your hotspot, that is fine if you just want to use DMR and not DMR2YSF.

If you are going to use DMR and DMR2YSF these static talk groups will need to be removed. Why you ask, well we do not want a static talk group becoming active when we are using DMR2YSF as you will be working away chatting to someone on the channel (DMR2YSF-AUS_Rptr) reflector and suddenly you will find yourself back on Talk Group 505 for example, it can be very confusing when this happens.

So, now we get to the nuts and bolts of using either DMR OR DMR2YSF, two simple rules apply.

1. **DMR** – to use a DMR talk group without interference from DMR2YSF, use the channel (DMR2YSF-Disconnect) to drop any connected reflectors on your hotspot.

To do this change your Zone to DMR2YSF and select the channel DMR2YSF-Disconne, press the PTT for 4 seconds release the PTT and then you will see the YSF Status box should say – (Not Linked). See below pic.

Your WPSD Network should be like this. (YSF Status – Not Linked)

Mode Status	
D-Star	DMR
YSF	P25
M17	NXDN
DMR X-Mode	YSF X-Mode
POCSAG	
Network Status	
D-Star Net	DMR Net
YSF Net	P25 Net
M17 Net	NXDN Net
DMR2NXDN	DMR2YSF
YSF2DMR	YSF2NXDN
YSF2P25	APRS Net
POCSAG Net	
DMR Status	
TS2	Enabled
DMR ID	5051696
DMR CC	1
DMR Masters	
BM 5051 Australia	
DMR2YSF Cross-Mode	
YSF Status	
Not Linked	

Once this is done you can then change the Zone back to Brandmeister and dial up any **DMR** dynamic talk group you wish to work on and chat away.

2. **DMR2YSF** – to use DMR2YSF without interference from DMR, use the channel (BM_Disconnect) to remove all DYNAMIC and AUTOSTATIC talk groups, also check the Brandmeister dashboard to make sure that you do not have any active STATIC talk groups in your **Static Talkgroups** box, if you do then Login and remove these.

To check if you have any static talk groups active just browse to the Brandmeister dashboard, click hotspots on the left of the page, when the new window opens up search your callsign top right of the window and when your callsign comes up in the body of the window click it and then you get this window, check the **Timeslot** box and if no static talk groups are active it will be blank as in the below picture.

The screenshot shows the BrandMeister dashboard for the VK4PQ repeater. The sidebar on the left contains various navigation links. The main content area is divided into sections: Repeater Info, Frequency Details, and Slot details. The Repeater Info section lists details such as Number (5051696), City (Town, LOC4TOR), Country (AU), Website (Click here), Sysops (VK4PQ), Hardware (MMDVM_HS_Hat (MMDVM)), Firmware (20250712_WPSD), Power (1 Watt), Status (Linked in DMO mode), and Master (BMS051). The Frequency Details section shows Frequency (439.1250 MHz) and CC (1). The Slot details section is currently blank, indicating no active static talk groups.

Repeater Info	
Number	5051696
City	Town, LOC4TOR
Country	AU
Website	Click here
Sysops	VK4PQ
Hardware	MMDVM_HS_Hat (MMDVM)
Firmware	20250712_WPSD
Power	1 Watt
Status	Linked in DMO mode
Master	BMS051

Frequency Details	
Frequency	439.1250 MHz
CC	1

Slot details	
Timeslot	

If all is clear, then you can dial up the channel (DMR2YSF-AUS_Rptr) and chat away. *To do this change the Zone from Brandmeister to DMR2YSF select the channel (DMR2YSF-AUS_Rptr), press the PTT for 4 seconds then release the PTT and the AUS-Repeater reflector should be active as shown in the YSF Status of the below pic.*

Note: Only one reflector can be active at any one time.

Mode Status	
D-Star	DMR
YSF	P25
NXDN	POCSAG
DMR X-Mode	YSF X-Mode
Network Status	
D-Star Net	DMR Net
YSF Net	P25 Net
NXDN Net	POCSAG Net
DMR2NXDN	DMR2YSF
YSF2DMR	YSF2NXDN
YSF2P25	APRS Net
DMR Status	
TS2	Enabled
DMR ID	5051696
DMR CC	1
DMR Masters	
BM 5051 Australia	
DMR2YSF Cross-Mode	
YSF Status [Linked]	
AU-AUS REPEATER (YSF24160)	

Well, that's it , hopefully this all makes sense and gets you up and running on both DMR and DMR2YSF without any cross talk between either mode.

If you have any questions, bring them along to a Tech on The Air Net which runs on the 5th Tuesday of the month from 7:30pm local Townsville time (09:30 UTC) on the local VHF 2m Repeater, Allstar Node 49806 and Echolink VK4PQ-R.

Cheers De VK4PQ Peter @ Kelso.