

# THE BRISTOL 70cms REPEATER GROUP

## GB3BS & GB7BS NEWSLETTER 2022

*RU68 - 430.850MHz - TONE J: 118.8Hz.*

*DVU13 - 439.6126MHz - Colour Code 3.*

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## Welcome

To this "Post pandemic" Bristol 70cms Repeater Group newsletter,

Okay, Covid is still out there in the wild and is still a thing, but I hope we find you safe and well and up to date with your jabs, or coping well without the jab (covering both bases there!)

This year has been odd for Mark and I.

We have not been able to spend anywhere near our usual time on site this year due to me having a lovely M.S. relapse which took me out of circulation for what feels like a lifetime between the end of April and the start of July, and then the lovely Covid mid October which also took me out for another 3 weeks. And between that was our heat wave. So a number of the planned projects such as completing the sites doorframe re-construction then waving a loaded paint brush at it to complete the job. Also cleaning out the soak away drains that drain the water away from the roof downpipes just to name just a couple of the delights waiting us in 2023.

That aside both Mark and I have also been working flat out on a DMR project, this project has involved long drives late into the night, multiple conference calls, multi-years of research and for me a crash course into the world of Linux. Again more details later in this newsletter.

But overall we hope you enjoy this newsletter and feel up to date with the repeaters and group activity. I say this as it's hard to deduce what items interest you or what items are not covered, as we get little feedback, or very short "Thanks for..." emails.

As you are a valued supporter of the Repeater Group and the Repeaters we operate, we would really like to hear from you. Hopefully we are doing things right, and provide services you can use and enjoy. If there are things you would like us to consider then let us know, you can contact us either via the

"Contact us" part of the website:

<https://www.gb3bs.co.uk/>

Or via an email to:

[Info@gb3bs.co.uk](mailto:Info@gb3bs.co.uk)

For now – enjoy the newsletter.

73' Mat  
G7FBD//KG7FBD

# GET IN TOUCH



## Technical Reports by Mark – G4SDR

As 2022 is fast coming to an end it's hard to look back over the year and remember all that has been done and what is still outstanding.

With the Covid-19 pandemic behind us we have been busy in trying to catch up with things at the repeater site that were omitted during 2020 & 2021, which seem like an age ago now. Turns out that various jobs had to be delayed and we are only now just catching up or turning our minds to them.

Most of this work can be classed as “House Keeping”, keeping the building up together and in order, all the non radio type jobs that is really just DIY.

In between all this we have spent a lot of time designing, building and testing the new South West Cluster network and server, but more on this later.

### GB3BS

The repeater has been ticking away this past year with almost no intervention or faults worthy of a mention. As we mentioned last year, in July 2021 we changed out one of our Arcom RC210 controllers for a new updated processor. This has been working faultlessly for over a year now without any of the old software glitches or reboots that used to bug us from time to time! This controller is now “Future Proof”, this is not a saying I like to use too often, but it does mean that any Firmware updates that Arcom release we can safely accommodate.

Our standby controller is currently being updated by Mat – G7FBD, this involves removing the old surface mount microprocessor, which has become End Of Life, and replacing it with the new and improved version.

Mat is also using the standby unit for some development work which involves writing software that could, at some point, replace that of Arcom's firmware, thus giving us even more flexibility.

As part of the annual maintenance, the standby battery was tested and found to be in good condition. This battery provides supply to the repeater and logic during a power fail and the on site generator coming on-line. Should the generator fail to start for any reason then this battery will support GB3BS for around 6-8 hours depending on repeater use.

We currently plan to do a full maintenance to the repeater and the aerial combining network, which GB7BS is part of, during the summer of 2023. As GB3BS and GB7BS share the same antenna on the tower there will be an outage of GB3BS & GB7BS while this is being carried out.

### Timeout Reminder.

Timeout on both repeaters is still 4 minutes. This is still catching a few regulars out. The timeout timer on GB3BS only resets when two pips are sent by the repeater. If anyone breaks in, to join a QSO, for example, then you should wait until two pips are heard.

If the repeater does go into Timeout then re-access is not possible for 20 seconds. And this timer is reset every time anyone tries to access during the Timeout period.



## **GB7BS**

Like GB3BS the repeater has been working away without incident, supporting the South West Cluster and all the associated repeaters connected to it.

The standby battery was checked and found to be in good condition. Just like GB3BS this battery is used to support the repeater during a mains fail



and the generator coming on-line. This battery is capable of supporting the repeater for around 6-8 hours should the generator fail to start.

During this past year we have been planning for changes to GB7BS as part of the South West Cluster (SWC) expansion project. This involved some network changes on site and preparing to move from the dedicated Motorola site connect system to running a brand new network, the centre of which is a Hewlett Packard computer server. More on this later.

Again, during the summer of 2023 we will be carrying out a full maintenance to the repeater and all of the aerial combining hardware. This will mean that there will be an outage to both repeaters during the time this work is carried out.

### **South West Cluster Repeater List** (as of December 20<sup>th</sup> 2022)

<b>Repeater</b>	<b>Location</b>	<b>QRA</b>	<b>Channel</b>	<b>Output Freq</b>	<b>Input Freq</b>	<b>Colour code</b>
<b>GB7AA</b>	Thornbury, Bristol	IO81RO	DVU54	439.6750	430.6750	1
<b>GB7BS</b>	Bristol/Bath	IO81TK	DVU13	439.1625	430.1625	3
<b>GB7EW</b>	Exeter	IO80FR	DVU42	439.5250	430.5250	3
<b>GB3JB</b>	Mere	IO81VC	RV63	145.7875	145.1875	5
<b>GB7JB</b>	Wincanton	IO81TB	DVU37	439.4625	430.4625	1
<b>GB7KT</b>	Andover	IO91GE	DVU40	439.5000	430.5000	1
<b>GB7MJ</b>	Romsey	IO91GA	DVU51	439.6375	430.6375	5
<b>GB7PF</b>	Princetown	IO80AN	DVU51	439.6375	430.6375	3
<b>GB7RD</b>	Yelverton	IO70XL	DVU55	439.6875	430.6875	3
<b>GB7SD</b>	Weymouth	IO80SQ	DVU33	439.4125	430.4125	1
<b>GB7SP</b>	Salisbury	IO91CB	DVU60	439.7500	430.7500	3
<b>GB7YD</b>	Yeovil	IO80PW	DVU55	439.6875	430.6875	5

Talk Group List	TG9 – Slot 1	Local/DoD.	Note:DoD inactivity timer – 10 Mins
	TG950 – Slot 2	The South West Cluster	Note: Time out timer - 4 Minutes
			Note:All active TG timeout timer - 4 Min

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# South West Cluster Network.

## Some History.

Since the conception of the South West Cluster Network back in 2016 we have been constrained by several things that have hindered its future and expansion. These were:

- We could only use Motorola repeaters.
- The maximum number of repeaters we could ever handle was 15 including one Master, GB7BS.
- We could not easily provide world-wide or UK wide talk groups.
- Support other technology such as hot spots was not possible



During the early years of the SWC we had a variety of repeaters joining us. Some were happy with our concept of only having two Talk Groups and with no connection beyond that of the SWC. Some repeater groups did not like this restriction and so left the SWC. As part of our philosophy we have always preferred repeaters to freely join us, or leave us.

Over the years a hard core of around six repeaters were connected and formed the basis of the SWC. However, over the last two years, or so, more repeaters showed an interest in joining us and so we realised that we could soon run out of current network capacity.

During this time Mat – G7FBD and I looked to how we could expand the SWC network, make it more flexible and accommodate hardware other than Motorola.

After looking at several options it became clear that we were going to go down a central Server based path, one of which would cost money for the purchase of a software license each year and any support, if needed, was in the USA. This we were not keen on as there were again limitations with equipment it could handle and the ongoing cost.



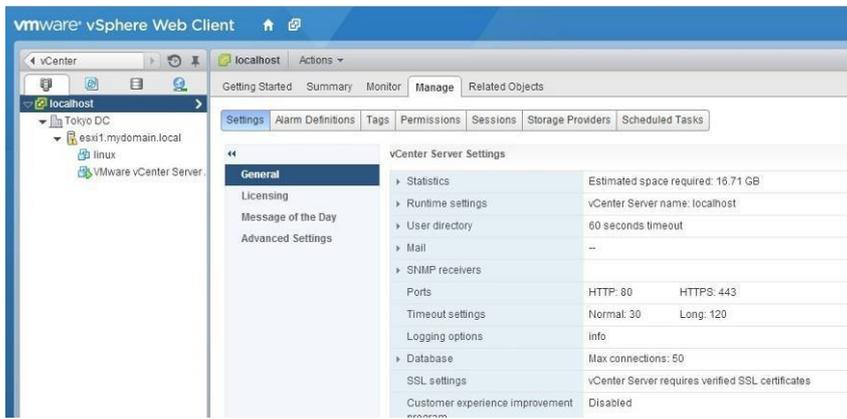
Around two years ago we reached out and entered into discussions with the FreeDMR UK Team. It soon became clear that this system could offer us everything we had been looking for, and the software to run the system was Open Source and thus free.

## 2022 SWC Expansion

Further discussions cleared the way for us to run our own FreeDMR Sever with customised software running on a Linux operating platform.

This would allow for our existing repeater members to connect easily and would facilitate many more repeaters as and when they came along, and they **did not** have to be Motorola!

In addition, the system would be much more flexible, bringing the ability to connect onwards to other FreeDMR Servers and Networks around the world. This in its self would bring Dial On Demand Talk Groups, or DoD for short. This would allow users to talk to other Networks either UK wide or internationally for the first time and would better utilise each repeater and time slots. Yet allow the SWC to remain isolated, providing its primary function of covering the Southwest from a single Talk Group (TG).



After building a virtual server and installing the Custom FreeDMR software we hit a number of technical issues. I was pretty sure it was bugs in the server that had been specially written for the Southwest cluster, the programmers blamed the virtual server on which their software was running. But to save arguments and to aid the project moving forward I started looking for a real physical server to remove the “Virtual”

speaking. In December 2021 we managed to purchase a Hewlett Packard DL380 (Gen7) server, with full redundant CPU, Power supplies and hard drive Raid technology storage for less than the cost of a half tank of petrol. The type of hardware you would find in a large data centre for example. The only issue was it was in Southampton. So on a cold December night armed with Facemasks, disinfectant and gloves, Mark and I set out for the seaside.

Mat had spent most of the Covid-19 years (2021 and 2022) working away virtually and then physically on a real server. Building the servers



& installing the Linux operating system several times over. After that, it was on to the FreeDMR software which would form the heart of the new South West Cluster network. Mat beavered away getting this up and running and at the same time pushing his Linux skills to the max. I myself had to bring my meagre Linux skills, such as they were, out of retirement with great trepidation, I got to say!

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# along with this program; if not, write to the Free Software Foundation,
# Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
#####

version: '2.4'
services:
  freedmr:
    container_name: freedmr
    cpu_shares: 1024
    mem_reservation: 600m
    volumes:
      - '/etc/freedmr/freedmr.cfg:/opt/freedmr/freedmr.cfg'
      - '/var/log/freedmr:/opt/freedmr/log/'
      - '/etc/freedmr/rules.py:/opt/freedmr/rules.py'
      #Write JSON files outside of container
      - '/etc/freedmr/json:/opt/freedmr/json/'
      - '/etc/freedmr/ambe/swc.ambe:/opt/freedmr/Audio/en_GB/freedmr.ambe'
    ports:
      - '62031:62031/udp'
      #Change the below to include ports used for your OBP(s)
      - '62040:62040/udp'
      - '62056:62056/udp'
    image: 'gitlab.hacknix.net:5050/hacknix/freedmr:development-latest'
    restart: 'unless-stopped'
    networks:
      app_net:
        ipv4_address: '-----'
    #Control parameters inside container
    environment:
      #IPV6 support
      - FDP_PROXY_IPV6=0
      #Display connection stats in log
      - FDP_PROXY_STATS=1
      #Display connecting client info in log
      - FDP_PROXY_CLIENTINFO=1
      #Debug HBP session in log (lots of data!!)
      - FDP_PROXY_DEBUG=0
      #Override proxy external port
      #- FDP_PROXY_LISTENPORT=62031
    read_only: 'true'

```

Around May/June of this year we were starting to test and configure the new SWC network. Fortunately we had a spare DR3000 repeater at my QTH which would link to the FreeDMR server located at Mat’s QTH. There was a second Repeater, a DR3000, also located at Mat’s QTH which was on loan to us with the help of Dave G3ZXX. This setup provided us with a test network so that we could learn about the software and make it run and feel like the existing SWC.

In September, after months of testing, the Server was finally moved to our Repeater site where it was installed in the main rack and connected to the main site UPS and generator back supplies. The server was allowed to run a while. We finalised testing with our DR3000 test bed. And with more help from Dave G3ZXX we were able to connect a third test repeater to the system so that he could test the DoD service. It also gave us time to check that the new Dashboards were properly integrated into our web site GB7BS.COM. Tony G4CJZ also assisted us by providing a SLR5500 repeater to prove that the server would support other Motorola types. The first of October was decided as the “Go Live” date where the current SWC Repeaters could, in their own time; switch over to the new SWC Network. GB7BS was remotely switched over to the new network at a few minutes past mid-night, leaving behind the now ‘old’ SWC.

The months of October & November saw the addition of the repeaters GB3JB in Mere, our first VHF 2M repeater, and GB7PF located in Princetown. Also, finally making an appearance, was GB7MJ in Romsey. In December, just a few weeks ago, GB7YD in Yeovil joined us. With a few more repeaters set to come on-line with us in the future, it seems that things are taking off for the South West Cluster and activity along with it. To date, all our outages & problems have been due to Internet Broad Band providers and so these kinds of faults are out of our , unfortunately, hands, so please be patient while these faults are sorted by the relevant Repeater Keeper.



The Bristol 70cms Repeater Group are looking for a person to join the group and get involved in the up keep and maintenance of our repeaters and associated equipment at our Lansdown site.

We are looking for a person who has a good technical background not necessarily in radio but this would be an advantage. Any knowledge of Linux, python or java would also be a useful skill.

Being able to take advice, and offer input as part of a team is one friendly requirement but having your own transport is sadly an important must.

If you think you fit this bill then please contact us at [info@gb3bs.co.uk](mailto:info@gb3bs.co.uk) to arrange an informal chat.

The Dial On Demand facility is slowly growing in popularity, albeit slower than anticipated. This is probably down to the way FreeDMR do things, which is different to other networks. With our FreeDMR network there is no need to constantly change Talk Groups and Rig Code Plugs, let FreeDMR do it all for you!

Please see the next page for a graphical display of using the Dial on demand (DoD).

A radio with a keypad and a display make using DoD so much easier, but with some programming of your codeplug it is possible to set up static DoD groups on a radio not fitted with these features.



Snapshot of active Southwest Cluster repeaters  
December 20<sup>th</sup> 2022

<b>GB7BS</b>	<b>Online</b>	<b>235106</b>
<b>GB3JB</b>	<b>Online</b>	<b>234041</b>
<b>GB7AA</b>	<b>Online</b>	<b>235107</b>
<b>GB7EW</b>	<b>Online</b>	<b>234103</b>
<b>GB7JB</b>	<b>Online</b>	<b>234299</b>
<b>GB7KT</b>	<b>Online</b>	<b>235298</b>
<b>GB7MJ</b>	<b>Online</b>	<b>234042</b>
<b>GB7PF</b>	<b>Online</b>	<b>234046</b>
<b>GB7RD</b>	<b>Online</b>	<b>235241</b>
<b>GB7SD</b>	<b>Online</b>	<b>235150</b>
<b>GB7SP</b>	<b>Online</b>	<b>235254</b>
<b>GB7YD</b>	<b>Online</b>	<b>234059</b>



# THE SOUTHWEST CLUSTER

Network expansion project.

## Dial on demand Talk Groups



### TO CONNECT TO A DIAL ON DEMAND TALK GROUP

1. Make sure your radio is tuned to Timeslot 1 talk Group 9.
2. Go to the menu system and select 'CONTACTS'.
3. Select the menu option for 'MANUAL DIAL' Then 'PRIVATE CALL'
4. Enter the Talk Group number you wish to call and then press 'TRANSMIT' (PTT) for about a second to ensure the radio transmitted.  
Most radios will make an audible sound, or you will see the TX LED light, then release the PTT.
5. If successful your radio will announce "Connected to xxxx" where xxxx is the talk group you dialled.

1 **Contacts > Manual dial > Private call > xxxx**

### TO DIAL A TALKGROUP

UK Wide Talk Groups			
FreeDMR TG	FreeDMR Names	Phoenix TG	Phoenix Name
2350	UK Central	295	UK Call -QSY
2351	Chat 1	80	UK WIDE 1
2352	Chat 2	81	UK WIDE 2
2353	Chat 3	82	UK WIDE 3
2354	Chat 4	83	UK WIDE 4
2355	Chat 5	84	UK WIDE 5
2356	Chat 6		

3 **Linked to xxxx**



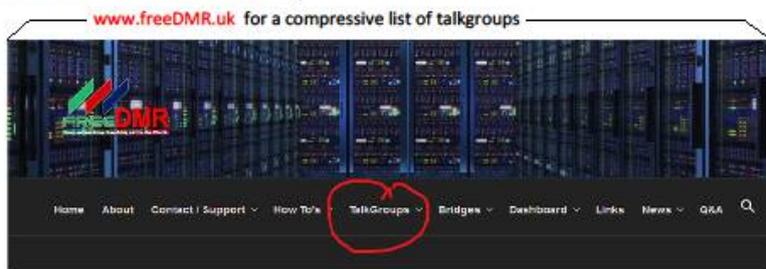
### DISCONNECT A TALK GROUP



1 **Contacts > Manual dial > Private call > 4000**

2 **PTT**

3 **Not linked**



### WHAT TALKGROUP IS CONNECTED?

1 **Contacts > Manual dial > Private call > 5000**

3 **Linked to xxxx**



**It is always good operator practice to disconnect from the Dialed Talk Group when you complete your QSO.**

## Using the new Network

Before I finish this section, it is worth mentioning a few simple tips that will help everyone to get the most out of the SWC.

- (1) Obvious, but make sure your rig is correctly programmed for what you want to do.
- (2) When making a general call (CQ), include your call-sign of course but also give out which repeater you are calling in on. This helps people to know roughly where you are located.
- (3) If your QSO is using the SWC Network and you are using the same Repeater, consider moving to Slot 1 Talk Group 9. This will free up the SWC for others.
- (4) Leave plenty of gaps between over's, this will help potential other stations to join the QSO. Refrain from quick fire over's. This prevents doubling and also allows the system to properly handle users over's across repeaters. Slow everything down, DMR is not like FM.
- (5) When using Dial On Demand (DoD) take time to check that the repeater you are going to use is free of traffic.
- (6) When you have finished using DoD please make sure wherever possible that you close the Talk Group you have been using by sending a Private Call to 4000. (See the DoD Guide above).

## The Future

So where do we go from here?

If the SWC continues to grow then we think everyone will be happy with that. It is hoped that along with additional repeaters joining we will be able to support other hardware such as Hot Spots and MMDVM units along with APRS.

The good news is that now we are running our own Server the future is what we make it.

If things go to plan our next step may be to run the FreeDMR Server software from within a rented bit of a Data Centre. This would put the responsibility onto a third party company that would provide virtual Server space, resilient systems support and Backup and the all important cost of electricity, all for a monthly fee, which may work out cheaper in the long run for us. How this is funded is still being planned and may have to include support from other repeater groups. Although initial investigations do confirm that if the 'Repeater network' continues to grow then some virtual rack space in a data centre becomes the more cost effective solution.

## SITE MAINTENANCE.

The past year has seen the usual maintenance carried out. With the roof being repainted last year, all that was necessary was to clear away all the dead leaves and branches, check that the drains were not clogged and water could drain away. The drains suffer a lot from getting blocked by leaves and moss, so checking this several times a year is needed.



The main comms room that houses all the equipment can see temperatures range from 4C in winter to +35C in the summer. As the room has very little air movement we have now installed an extractor fan that should at least provide a throughput of air during those hot days we now seem to be getting more and more.

The extractor is set to only come on during hot days and warm nights, in the hope that it will just keep the rooms air circulating and push some of the hot air outside. During the very hot sunny days the building warms up like a storage heater and then dumps that heat out into the rooms during the late evenings and overnight. Time will tell if this works.

## Going Green.

In a move to save on electricity we have made a few changes to some of our underused PSU's, Computers and room lighting.

We have better utilised one of the sites 12v DC PSU's. Moving devices over to use one common PSU has freed up a complete PSU and thus reduce electricity consumption. We have also combined the use of two PC's into only needing one, another saving.



Although not a great user of electricity on site is the room lighting. This obviously is only on where we are on site. It is surprising how much running 4 x 5 foot fluorescent tubes can cost over time. So was moving to LED replacements the way? After doing a bit of digging around various web sites we found that replacements were looking favourable and compatible with existing equipment.

We took the decision to swap out existing tubes for LED and at £6 a tube it was worth a go as our existing tubes were getting a bit old and had started flickering along with not always striking.

The replacement LED Tubes turned out to be a great success. Excellent light output, good colour temperature and instant start-up, not to mention much less pennies being burnt! If anyone is considering changing their old fluorescent tubes for LED, then go for it, you will not regret it. With energy prices as they are now they will soon pay for themselves.

Hopefully all these changes will save the pennies. However, with the recent addition of the FreeDMR South West Cluster server and its dual power supplies, I guess any savings overall will not be that great. This is one of the driving forces for moving to a virtual server in a data-centre if the SWC continues to grow.

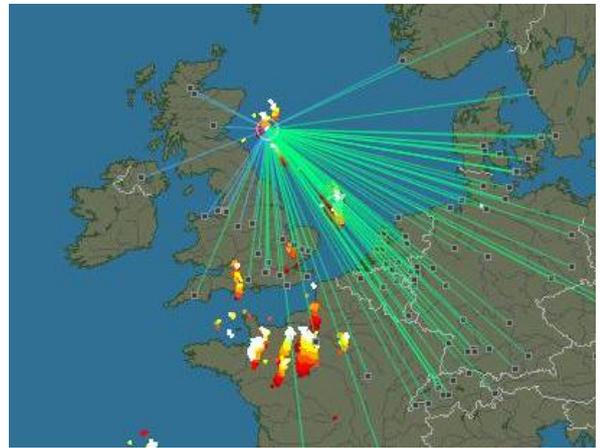
# BLITZORTUNG

Ok, some of you out there will be saying, "What the hell is Blitzortung" ?

For the uninitiated it is a world wide Lightning Detection system that uses VLF receivers located all over the world to detect and use Time Of Arrival data to triangulate a lightning strike.

Located at the BS Repeater site is one such receiver system and sends data back to servers that work out where current

lightening storms are and where they are heading. Unfortunately during October it had failed to report back any data and later the web interface stopped responding, so we guessed that something had failed.



It was about the middle of November before we could do a planned visit to site and investigated the problem. Quick inspection pointed us to the small mains type plug in PSU was showing low volts. Initial tests on the circuit board did not show any shorts or regulator issue, phew! After fitting a nice new PSU all was back to normal and the receiver unit started reporting back its usual data.

If anyone is interested in this system, then there is plenty on various web sites, such as:-

<https://www.blitzortung.org>

<https://www.lightningmaps.org/>

A good web page to start off looking at is <https://map.blitzortung.org/#5.64/52.686/-3.889>

Our station can be seen, its number is **2834**.

Double clicking on this station (or any others) will open up a complete page of stats which can be fascinating to see.

## MB7VV and MB7UVV

Both MB7VV and MB7UVV performed without error though out this year. However at the start of November I carried out the usual modem reset, this is done to prevent the system locking up and crashing due to a documented bug in the system's logs. As yet there is no software revision to resolve this issue, but a simple reboot is a work around. Also at the start of December I successfully renewed the Notice of Variation (NOV) for both boxes.

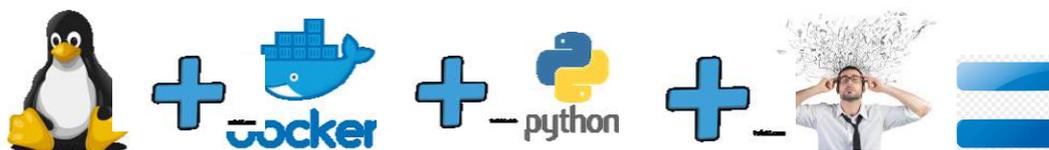
I am not sure if it's my moaning and rejection of NON-RSGB emails requesting what is classified as GDPR sensitive information. But for the last two years the invite requests have been arriving from valid RSGB email addresses and not ".yahoo.co.uk" addresses!

Working with sensitive information day in day out makes me, I guess a bit of a stickler at this, but I am sure you would not want to send private banking information to a private email address that you could not confirm was a person acting on behalf of your Bank!

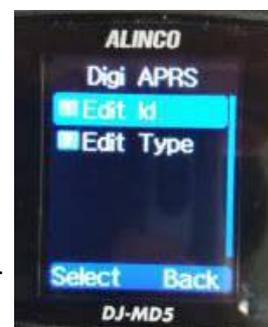
The APRS network does vary in its usage, but interest seems to be on the up. With this in mind and as touched on by Mark, I am looking at providing D-APRS. This is dependent on me getting my virgin Linux head around the FreeDMR sever software, Python and a thing called "Docker" to install the function ability onto GB7BS and the wider South West Cluster.

**IF** we were running non-custom software the task would be so much easier as there are guides a plenty. But I am reliant on the software guys (who are busy at the best of times with their day jobs) and learning to code and learning more about Linux and Dockers (heck, to date I have learned they are Linux virtual machines).

Hopefully I'll get it sorted before the next Newsletter!



Oh I hope I can learn Linux, Docker and pyhon, and get my head around it to make D-APRS work..



## **Bristol 70cms Repeater Group - MEMBERSHIP**

Repeater Group membership over 2022 has remained fairly constant in the high end 40's. This is slightly down on the last few years which peaked at 55 members.

As always, we have seen members come and go. And sadly a few that are now silent key.

The most frustrating thing is where persistent users of either GB3BS & GB7BS refrain from giving any such support or help to their up keep or running costs. There seems to be an assumption, by some, that it does not cost a thing or it's financed by the RSGB. Of course it is, isn't it?

Getting new users to help support what they use is getting more & more difficult, and I suppose this is no surprise really. Our membership fee has remained at £8 for well over 10 years now and was just enough to keep everything going over that time, with a little in the bank for contingencies.

Mat and I have been carefully looking at our recent cash flow status and feel that we now need to increase subscriptions as everything is now costing a lot more, especially over the last 2 years, but we all individually know this with our household energy bills.

So, our plan, reluctantly, is to increase our membership fee from **£8 to £10** a year in the hope that this small increase will just about help buffer us from the storm. This increase will come into effect as from the 1<sup>st</sup> April 2023.

### **Payment Methods:**

Currently we have several ways in which we collect membership payments. PayPal & PayPal.Me are the most popular, followed by Bank Credit Transfer, Cheque and finally good old cash!

Unfortunately, when a payment is received using PayPal, we loose 6.6% on every transaction, from PayPal taking their slice. It's not much, but it all adds up over time. We would much prefer that 100% of your money goes towards the upkeep of the Repeaters & their Facilities.

So with this in mind, going forward, we would prefer payments are made by Bank Credit Transfer, this way we get 100% of your payment. To do this, simply use our Bank details as follows:-

Bank Account number: **20201316**

Sort Code: **20-13-34**

Account Name (if required): **Bristol Seventy Centimetres Repeater Group.**

Please note, if paying by this method, ensure you enter your name and/or your callsign as part of the transfer, if possible. Some banks allow you to do this. If this is not possible then please send us an email so that we can look out for your transaction arriving at our bank.

Of course you can still send us a Cheque. Please make any Cheques payable to Bristol Seventy Centimetres Repeater Group. *Please contact us for address details if sending via the postal system.*

The option to pay via PayPal is of course still open to anyone.

**As a side note, both the MB7VV and the Blitzortung systems are privately funded and therefore do not use any Repeater Groups funds.**

**Current membership list – snapshot taken 20/12/2022 @ 18:17**

<b>2E0EOL</b>	<b>2E0IFG</b>	<b>2E0JWJ</b>	<b>2W0CGM</b>	<b>G0FAJ</b>
<b>G0GZW</b>	<b>G0IUE</b>	<b>G0IWT</b>	<b>G0XAY</b>	<b>G1ZKJ</b>
<b>G3XED</b>	<b>G3XOU</b>	<b>G4EJH</b>	<b>G4FUA</b>	<b>G4GUG</b>
<b>G4KAM</b>	<b>G4KUQ</b>	<b>G4MCQ</b>	<b>G4SDR</b>	<b>G4TAH</b>
<b>G4UGV</b>	<b>G4WOD</b>	<b>G4XCB</b>	<b>G6MRJ</b>	<b>G6YCG</b>
<b>G6YNL</b>	<b>G7BYN</b>	<b>G7FBD</b>	<b>G7KNA</b>	<b>G7MJV</b>
<b>G8NQO</b>	<b>G8YMM</b>	<b>GW11LOR</b>	<b>M0JVY</b>	<b>M0KEE</b>
<b>M0LHS</b>	<b>M0MGT</b>	<b>M0WYB</b>	<b>M0XMM</b>	<b>M0YHF</b>
<b>M1CEL</b>	<b>M6GFM</b>	<b>M7CME</b>	<b>M7NCK</b>	<b>MW0VCK</b>

 Membership current with over two months

 Membership due to expire within two months.

 Membership due to expire within one month.

 Membership expiring at the end of December 2022

**Obituary. (Silent Key)**

**Jim Spoard, G0GZW.**

**It's with deep sadness that we learned of the passing of Jim in July of this year. His death was not connected to Covid. Jim had been an active member of the Repeater Group for many years, and our Treasurer at one time.**

**Since his move to Gloucester he was heard less often on GB3BS. He was very mechanically minded and would often try to help friends, even though it was obvious he was in pain from an industrial injury. He leaves behind a Son.**

# THE BRISTOL 70cms REPEATER GROUP.

## GB3BS & GB7BS

Website: [www.gb3bs.co.uk](http://www.gb3bs.co.uk) Email: [info@gb3bs.co.uk](mailto:info@gb3bs.co.uk)

If you use the Repeaters, **GB3BS** or **GB7BS** and would like to support the group then all you need to do is fill out this form and part with **£8.00p** (Increasing to **£10.00** as from April 1<sup>st</sup> 2023). Your details and membership fee will then be passed to our treasurer.

You can also subscribe using Paypal<sup>™</sup> (Paypal also supports Credit/Debit card payment). Or you can pay by BACS. Bank Account number: 20201316 Sort Code: 20-13-34  
Account name: Bristol Seventy Centimetres Repeater Group.

### PLEASE REMEMBER

*Repeaters do cost money to run.*

*Without members the repeaters GB3BS and GB7BS would cease to exist.*

*Please help support what you use.*

**Please make cheques (No longer preferred) payable to “Bristol 70cms Repeater Group”**



Please tick appropriate boxes and print clearly – Thank you.

£8.00 Membership

Donation Amount £ \_\_\_\_\_

I am paying by **CHEQUE / CASH** Please delete the appropriate.

Callsign: \_\_\_\_\_

Email: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Postcode \_\_\_\_\_

**PLEASE NOTE:** Membership is based on a yearly subscription (from the date processed). Although we can process advance yearly membership we would discourage this method. At present we DO NOT have a “Family” membership, or any other concessions. Please also note ALL membership fees and donations are NON refundable. We recommend you do not send cash through the postal system. The Bristol 70cms Repeater Group cannot be held responsible for lost or missing payments. Being listed on our website is conformation of membership. No receipts are issued unless a stamped address envelope has been provided. Membership is used for the upkeep of BOTH Repeaters.

Any information/data provided will **ONLY** be used to mail or email you our newsletter and send membership reminders. Data will be deleted 6 Months after the laps of any membership. Reminders of pending membership laps will be sent via email where possible one month before the expiration date. The membership section of our website also reflects this information.