

# THE BRISTOL 70CMS REPEATER GROUP

## GB3BS & GB7BS NEWSLETTER 2024

RU68 - 430.850MHz - TONE J: 118.8Hz.

DVU13 - 439.6126MHz - Colour Code 3.

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As we approach the 2024 festive season, its time for the Bristol 70cms Repeater Group newsletter.

This year, like the last several years has really flown by. Maybe it's because I am getting older, but it does seem to get faster and faster.

I find my memory of events through this year is getting worse, not only in regards to what the group has been doing, but also in my personal life. I find myself again asking Mark "So, what have we been doing this year with the Repeaters?"

Thankfully, Mark's reply has again been a re-assuring "Umm...?", and then proceeded to rolled off a number of key points, all of which you will find further in this year's newsletter.

We do have a full technical report from Mark about the key activities based around both **GB3BS** and **GB7BS** and we also look at the surprising growth of the South West Cluster (The DMR system).

Mark and I have also been working on a couple of "Off Grid" projects that you, as our valued members, may find of interest. Like last year, there is no rally activity to report on, as we (Mark and I) have found that we end up sitting/standing at a table, just watching people walk past with their purchases trying their hardest not to engage with anyone.

It is really a waste of time! Besides we find people engage with us more through the "Contact Us" sections of either [www.gb3bs.com](http://www.gb3bs.com) or [www.thesouthwestcluster.co.uk](http://www.thesouthwestcluster.co.uk), or even our [Facebook](#) Group pages, more than they ever did face to face (sadly).

I do apologise if the order of subjects discussed in this newsletter jump around a bit, this is because they were written in the order we both remember things. I do hope to move them into some sort of order when I do final layout/editing. (Nah, I left them in the order I got them - Ed).

Finally, I want to clarify something which maybe on the minds of the membership. This is to do with the South West Cluster and the maintenance cost of the cloud server, which is at the heart of the cluster.

The operational costs and upkeep costs of both the server and the South West Cluster website are met at the moment by the keepers of the various repeaters around the South West.

NO financial transactions between our members or the Bristol 70cms Repeater Group are used to support the server or other repeaters that make up the Cluster. Just like The Bristol 70cms Repeater Group, each repeater that makes up the cluster has its own group and is funded directly by that group!

To help maintain this separation the South West Cluster Server has its own separate bank account. However, if you would like to independently support the South West Cluster and help with the upkeep of maintaining the server, you can make a donation via the links that can be found at [www.thesouthwestcluster.co.uk](http://www.thesouthwestcluster.co.uk) – by doing so you will be supporting ALL of the repeater groups connected to the SWC.

Without further a do, let's dig into this newsletter. Before we do, let me Wish everyone **Seasonal Greetings and Happy New Year for 2025.**



73

Mat – G7FBD/KG7FBD/DU5FBD



## GB3BS / GB7BS Report

Well here is another year almost at its end. There is very little to mention again this year. As they say “No news is good news”. The repeater **GB3BS** has proved to be very reliable, the year has passed without a single incident or outage.

The control logic, the Arcom RC210, has also performed faultlessly and, as far as I can tell, without a single reboot.

Since the RC210 was upgraded to the new processor and a complete re-write of the command macro's a few years back now, seems to of made it much more reliable.

There were times in the past where every now and then the RC210 would either crash or lock up leaving the repeater requiring a manual reset. Those days now seem to be gone.



Mat (*G7FBD*) has now managed to replace the main processor in our spare RC210. This allows us to now bring our spare up to date as far as Firmware is concerned and also makes it sort of future proof. The old processor had gone End of Life and if it was not changed out we could not upgrade it to run the latest Firmware.

As with the **GB3BS** Repeater, our DMR Repeater **GB7BS** has run without incident. Being of commercial grade equipment one would hope this to be the case! With the growth of the South West Cluster this last year has seen an increase in its use, which is good to see and with it the activity generated by the SWC Network as a whole.

The South West Cluster has grown over this year to around 24 connected Repeaters, at this time. This means that the activity on **GB7BS** has grown, along with Dial on Demand, its getting a lot of air time.

During the year we have seen a few occasions when **GB7BS** has been disconnected from the rest

of the Cluster and this has been due to Mat's Internet Service Provider (ISP) having issues of their own (Or pre-planned scheduled work), unfortunately we are in the ISP's hands, and can only wait for them to resolve the issue. However, these outages have been very few and far between with outages being fairly brief and mostly late at night.



## Aerial Combining.

This last year has flown by and little items on the “To Do” list got checked off. However, this year it was my plan to give the Antenna combining and filter system a full going over. This had not really been fully done since moving GB3BS & GB7BS over to using a single antenna.

Moving over to single aerial working was a bit of hard work and careful planning. To maximize the frequency spacing's meant the careful selection of GB7BS's frequencies. The splitting of two UHF receivers and the combining of two transmitters had to be carefully done using a set of good quality Diplexers, Bandpass filters and notch filters. This then all comes together at the antenna common feed point via a circulator.

Suffice to say this arrangement involved a lot of carefully tuned devices made up mainly of brass. One worry was that over time during summer and winter temperature changes would cause the filters to become off tune, so I decided to strip it down and check it all with the Network Analyzer.

It was around mid October when both GB3BS & GB7BS were turned off and I started checking things. Fortunately the room was at a reasonable temperature so things should be stable; neither being too hot or too cold (said the bear).

After around three hours of careful checking and comparing the original specification notes I had made, all seemed in very good condition, I was expecting some drift in the tuning but everything was right on tune. I had expected some tuning drift as the whole system was subject to the extremes of winter and then the heat of summer, this going backwards and forwards flexing all the brass and aluminium for over 5 years. One of the reasons brass is used, even so, I was well happy with the performance.

Time to check the spectrum analyzer with both GB3BS & GB7BS transmitting at the same time to check for any gremlins, but this again proved to be excellent. Then a final check of the receiver paths for any potential losses, to my amazement, this was also well in spec with around -1.2db of loss.

Time to reconnect everything and bring both GB3BS & GB7BS back on-air. It was a good job to get done as it has proved that the aerial combining system is working well and can withstand the riggers of site temperature variations.

The combining of both repeaters to use a common antenna is in it self nothing new, the commercial guys do it all the time, but they have copious amounts of money at hand to do it, and lesser constraints on frequency Tx/Rx splits that us Amateurs have.

## Social Media

Over the years we have held accounts with most of the social media platforms, such as Facebook and Twitter or “X” as it's now called. Looking back it has become clear that we seldom use “X” to post any news to our followers. While our Facebook presence has grown fairly reasonably as it combines postings about GB3BS & GB7BS together with the South West Cluster. It also allows members to better contact us, add their own postings and for us to circulate news and media content better than “X” could provide.

With this in mind we have decided to delete our “X” Account. By now all our followers on “X” will have received notice of this intention. And now the account is no more!

We hope that any remaining “X” followers will join us on our Facebook Group page, this can be found here:- <https://www.facebook.com/groups/gb3bs>

## South West Cluster.

This last year has seen an explosion of repeaters joining the SWC. To date we have a total of 27 repeaters, although a few are yet to go live and one has a site move pending. Out of this impressive number, 4 are VHF with another one planned.

The most southern VHF Repeater GB7PC is located at the Marconi Centre at Poldhu Cove. This currently provides coverage to the Isles of Scilly where stations have been heard accessing the SWC.

Unfortunately we have temporarily lost GB7DW at Dunkeswell Aerodrome due to the site becoming unavailable. It is unclear at this time if the repeater will move to somewhere else within the aerodrome site or be moved to a completely new location.

The VHF Repeater GB3JB is currently suffering from the usual winter blues brought on by low levels of sunlight to charge the batteries. If people do not know, GB3JB runs solely off grid and its batteries are charged using a mixture of wind and solar power.

The keeper, Dave G3ZXX, informs us that at this time the repeater is turned Off at around 22:00 and then back On at 07:00 so as to conserve the batteries charge. This pattern will probably last until the end of February 2025. For more information please visit the GB3JB web site at <https://gb3jb-repeater.mailchimpsites.com>

For **much** more on the South West Cluster please visit our dedicated web site at: - [www.thesouthwestcluster.co.uk](http://www.thesouthwestcluster.co.uk)

It has all the latest Repeater lists and coverage maps to view and download. It also provides a link to the SWC Dashboards - and much more

## Server Status.

Our Cloud Server that runs the SWC has now reached 2 years of age. It seems like only yesterday Mat and I were getting this built and on-line, not to mention getting a sharp & steep learning curve in Linux.

Back in July this year we were told by our hosting company that our server had to undergo some changes! One of the changes

was the platform, called Edition 1, (whatever that means), was being discontinued and we had to move to, yes, you guessed it, Edition 2. Moving to Edition 2 was nice and easy for us as we did not have to do a single thing, our hosting company did it all for us. In a blink of an eye (or less) the SWC server was moved over to this Edition 2 platform, and we did not even loose any traffic or suffer any down time. This is one of the advantages of having a server located in the cloud; it is all managed for us by the provider!

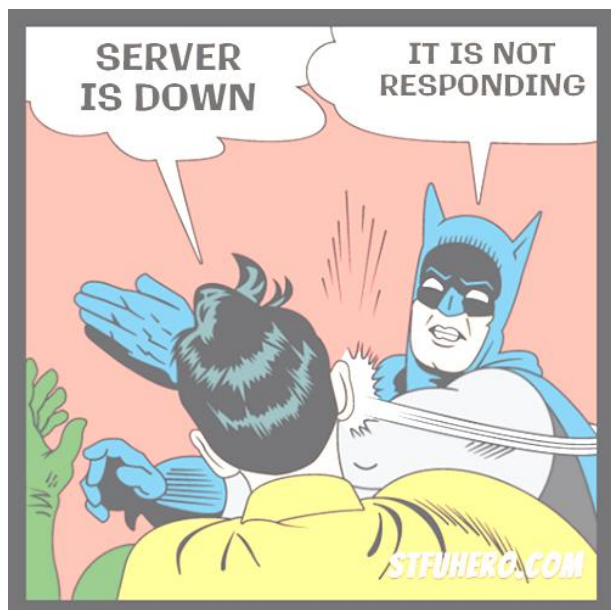
But that was not the end of it. At the same time our server was being moved to a new platform, it was geographically moved from its location in Gloucester, to 25 miles up the road at a newly built data centre in Worcester. All in all it went without incident. It was a slightly nail biting event none the less.

This new site is state of the art and should be our home for a good few years. With a fast multi Terabit internet connection sitting on a Tier 1 backbone with a very low latency figure it should serve us well. Ok, so we had to get use to a new style user interface and make sure the automated backups were correctly configured, but looking back, moving to a cloud service was one of our best decisions.



At this point it should be noted that the annual running cost of the SWC Cloud Server is **not** paid for by the Bristol 70cms Repeater Group. Rather, it is paid for and supported by donations from the individual repeater keepers that make up the SWC (As mentioned on the front page item).

However, if you would like to make your own donation and help contribute to the Server fund then details on how to contribute can be found on the SWC web site ([www.thesouthwestcluster.co.uk](http://www.thesouthwestcluster.co.uk)) under the Dashboards tab.



## CODE RED! – SERVER DOWN.

Saturday 9<sup>th</sup> November 2024, just after midnight the server was taken down for some routine work. The work in question was a minor tweak to one of the configuration files. The work took less time than I expected, in fact I had not even gotten more than  $\frac{1}{4}$  of the way though my cup of coffee. Happy with the changes the server was re-started, and that's where the world ended! The server start up flagged two errors, one was an expired security certificate, the other was an error we have seen before and was related to the dashboard system. Of course, the first steps were to roll back the change I had done. This was a simple "Delete the file with the change, and restore the backups taken before work was done".

It was the certificate that I were concerned about. Undoing the changes made no difference; the system was still failing to start with the same errors as above. Clearly it was not the work undertaken at the start of the evening. At this point I contacted Mark for both moral support and to share the pain the server was causing. It was also for the "two minds always better than one".

As the hours passed a lot of adjustments and testing was carried out to confirm the security certificate issue was not local to our server. The server is part of a very large complex network that allows not only TG950 but the Dial on Demand system to work. However, because it is connected to other servers it primarily makes contact with a controller server within the inner workings of the FreeDMR system. It was the certificate on this 'up stream' server that had expired and not on our server (nice error message Mr. Programmer). At 03:05 there are not many people about in the UK so, I reached out to the international keeper community and took advice from a couple of stations, one in the USA and the other in Chile to try and fashion a work around. This sadly did not bypass the problem. It was suggested that the only path was to contact the FreeDMR team once the day started here in the UK for normal people. They were glad this error had been picked up, as they would now not reboot their own servers as would be the norm for them.

At 09:30 I reached out to the FreeDMR team, but with it being a weekend and people have real lives away from radio, it did take a while to get a response.

The certificate problem could not be resolved until later in the weekend due to people not being at home. All I could do at this point was to message the SWC keepers and update them. Our Facebook page was also updated to reflect the current situation, things were really broke!

Sadly, once the certificate issue was resolved the system would still not start. There was an internal IP clash within our server that was causing the system to fail to start. We have seen this before, but none of our 'normal' fixes would work. It required me to reach out once again to the system programmer. In typical speed they identified the issue and resolved it in what felt like 20 seconds but it was quite a few minutes in reality. Anyhoo, once the problem had been identified and the fix applied our sever booted back to life, and for what felt like the first time that weekend I could breath again.

What was amazing, even before we could send a message to the keepers to advise the system was back up; people were showing on the Dashboard and there was even a QSO in progress!

Sorry everyone for the total loss of the SWC. And a BIG thank you to all for not bending Mark or my ear over this. Still, I suppose its one way to learn the inner workings of Linux from the command line, none of the pretty Icons found on a desktop, just pure hell of the keyboard ☺

## MB7UVV and MB7VV (The Evil Twins).

Both units perform fantastically with only MB7UVV having a number of reboots though out the year thanks to a small amount of QR-WIFE, who for some reason when she decides the radio equipment needs a dust, cables fly everywhere. Throughout our 30 years plus of marriage she still has not learned, if it's my radio stuff, do not touch!

## Changes to the NOV's issued to MB7UVV and MB7VV

In short they have gone! Instead it's some certificate of conformity issued by the RSGB/ETCC. I would say this is simply paperwork to keep someone on a job. For now I will continue to play the game.

As an example of the stupidity the new system brings, MB7VV at Lansdown is now permitted to transmit data from the internet where as up to the recent change my NOV would not allow this due to the risk that a non-amateur could send an inappropriate message.

Now, the new terms say that MB7VV is now permitted, however for this to happen I am instructed to simply add U in front of the callsign and then update the application at the next renewal in March 2025. Now the issue they (The ETCC) have not picked up on is they want me to rename MB7VV to MV7UVV which cannot happen as I already operate MB7UVV which does actually provide TX from the internet as it's sat 11 inches (27.9cm) away from me as I type this newsletter article.

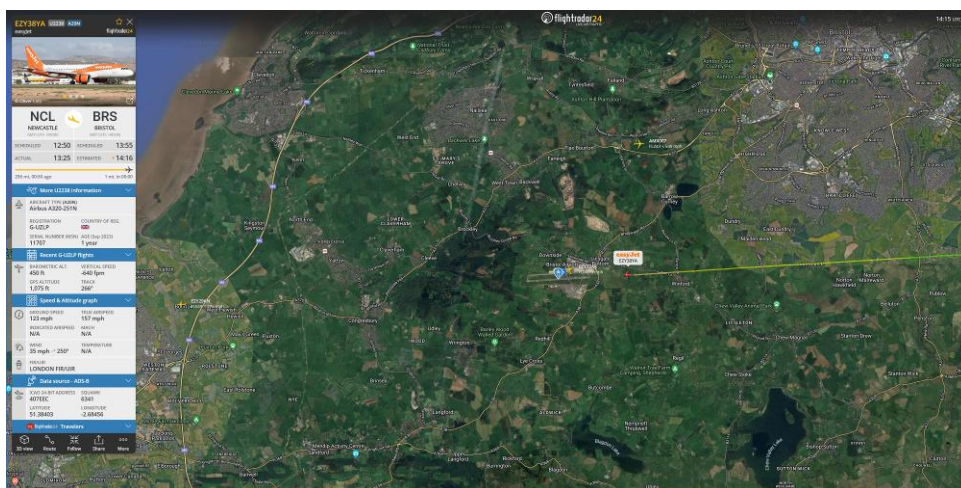
It's made worse, as it kind of indicates I can operate two stations with the same callsign! I don't think so! Sadly to date my questions to the ETCC about this have gone un-answered.

## Flight Radar24.

Some of our Membership will recognise the name "Flight Radar24", but for those who have never come across the name let me explain what it is, and how Mark and I got involved.

The [Flight Radar24](#) receiver system has been developed in Sweden but rolled

out around the globe. There are a huge number of ADS-B receiver ground stations, all feeding data back to a central point, where it is interoperated and the results are displayed on a website. The receiver system is not officially part of the ADS-B system used by the aviation industry, however the reporting provided by flight radar is used by not only amateurs interested in aircraft movement, but organisations such as the news media, and even air crash investigation services. The **Automatic Dependent Surveillance – Broadcast** system is not a new development, in fact it has been in use by the aviation industry since the mid 2000's. Here in Europe since its adoption it has become mandatory for a high number of aircraft types from commercial, to an ever increasing number of privately operated aircraft. Even Police, air ambulances and certain military aircraft are fitted with transmitters. However current legislation does allow such a system to be de-activated when needed.



I think you would agree, if an enemy of the state could track a military aircraft heading towards them, then it might not be the best idea in the world.

There is also an ever increasing numbers of places in the world that if you're flying an aircraft using "Instrument Flight Rules" (IFR) it is compulsory the aircraft is fitted with ADS-B. As time goes on more and more countries are adopting the ADS-B system.

The ADS-B system transmits a lot of technical information about the aircraft it's fitted to. Not only the "SQUAWK" number that is issued by air traffic control to assist in identifying an aircraft on radar, but also information such as the aircrafts altitude which is read from both the traditional altimeter and the aircrafts GPS derived system. Other things transmitted include the aircraft air speed, its actual ground speed, heading, rate of climb or decent, it's originating airport (Normally set when the SQUAWK number is initially set) to name but a few. ADS-B is also able to transmit specific engineering information such as oil temperatures and torque in the engines as well as exhaust gas temperatures and fuel burn rates per engine. I am sure the system could even transmit what the pilot is having for lunch if needed.

As stated there are receiver stations all over the world, some are run by professional companies and organisations, others simply by interested parties. The latter actually make up by a high number of stations in operation and out of those, many are operated by amateurs.

Most of the important data collected is processed and then displayed on the <http://flightradar24.com> web site. The site allows members of the public to connect and search for a specific flight (A loved one flying off on holiday for example) or even just randomly select an aircraft from the chaotic landing page. The website landing page (Where you end up using the link above) shows ALL aircraft that are about to take off, in flight or have just landed.

You're able to zoom in anywhere on map and select any aircraft to view the ADS-B information for that aircraft. There is also a search system, where you can search for a flight, or airport. You are also able to search airport arrivals or departure boards, even replay flights that happened in the past.

Creating an account unlocks more features, as does becoming a paid member. You can even register as a business which unlocks even more features not available to the casual user.

So, why is the Bristol 70cms Repeater Group interested?

Much like the Blitzortung Lightning detector system that Mark provided, there are those members who find 'Other' things outside of our hobby interesting much like Mark and I. Watching lightning storms develop and in the case of Bristol, manage to turn away to avoid the city is quite fascinating, much like watching aircraft, it is interesting to view where the aircraft roaring overhead originated from, or is heading to, I guess this is what comes from living under part of the approach pattern for Bristol Lushgate airport, or indeed living under Green 5, one of the many flight lanes heading towards Heathrow. It is also nice providing "Something" different to our members and more importantly not at any cost to the membership.

So, back in June 2024, I reached out to Flight Radar to understand what was needed to build and integrate a radio receiver station as I was interested in 'having something to do' with my un-intended new found spare time. I was expecting them to point me at a website or sites where I would find instructions on building a simple receiver, and then have to download a Linux program that would run on some flavour of Raspberry PI and in turn squirt data as their website, so, I was surprised when I got an initial email response asking where I was planning to put the station and if I had access to power.

I had initially planned a private project to fit at FBD towers. But still surprised by the response I spoke to Mark. I was even more surprised that it turned out Mark had contacted Flight Radar24 in the past with no response as he was also thinking about building something up on the Lansdown site due to its relatively un-obscured view of the sky.

At this point it made sense to build something there rather than my home. I had a spare Raspberry Pi so that was not a problem, with the new location in mind I wrote back to Flight Radar with location information about the site, potential antenna location the ASL and AGL etc. The reply back was even more of a surprise than the initial email response. It asked me to confirm a shipping address. I, of course responded to ask for clarification as I was not purchasing anything. The reply explained that we met their criteria for them to supply a complete receiver station and antenna at their cost, with access to a 'Business' account and they were looking for a shipping address to send the equipment. Further verification emails were exchanged to ensure everything was above board and at zero cost to the Repeater Group. In short, the equipment being supplied was owned, operated and maintained by flight Radar24 all 'we' as a group were supplying them was some equipment rack space and a location for their ADS-B and GPS antenna's.

Once Mark and I were happy and Flight Radar24 themselves were happy shipping information was shared and within a couple of days a box arrived at FBD towers shipped directly from Stockholm. It is still amazing you can get something shipped from outside the UK to an address in the UK quicker than post takes to travel from one side of Bristol to the other, that's a conversation for another time.

Inside the box was a 525mm long ADS-B antenna along with the associated mounting kit, a 'Standard' GPS antenna including 5m feeder, the receiver itself, a 2m Ethernet RJ45 Patching cable, UK Power Brick, 15m roll of pre-terminated feeder cable and an instruction guide. The latter was more a guide to mounting the antenna, as the whole kit is just simply plug and play. Unfortunately the kit had to sit in its box for around 3 weeks while site access was sorted.



I did get a chase email from Flight Radar24 to ensure the shipment was successful and when did we plan to fit it. I replied with details of the delays which they were happy about.

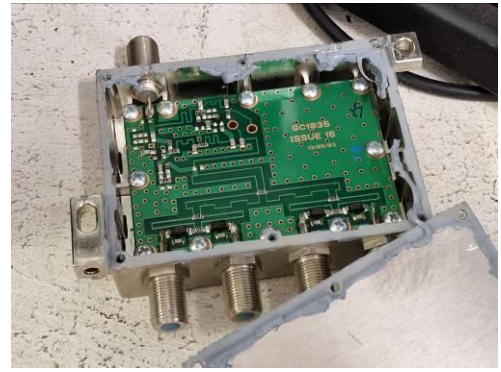
When the day finally arrived both Mark and I attended site. Mark, the rigger and me in more a 'Nut sorter outer' roll. Once the Antenna was in position at it's declare location and the feeder laid into our cable management system our focus moved to the inside work.



I had a spare 19" tray at my house from my de-commissioned network lab. This was pressed into service and was racked. Fitted to the tray was a modified Global Communications Split 4AF unit which is designed to share a satellite dish with 4 receivers. The bandwidth of this unit makes it suitable for distributing GPS signals. The Modification is simply to isolate the feed to the antenna from the units 12v d.c. Then supply and inject a 3.5v d.c. phantom supply (regulated down from the units internal 12v d.c. supply) this is then connected to the now isolated antenna port. The modification allows an active GPS antenna to be powered.



Existing diodes isolate the outputs from any volts. This solution works fine and means that we still only have one GPS antenna outside of our building, but the Blitzortung lightning detector and the Flight Radar24 units all 'see' the sky via the existing GPS antennas. After all the cables were secured on the tray and the connection to the network was laid in, it was time to plug in the unit and power it on. As one would expect with a professional piece of equipment, power up was a little bit of an anti-climax.



Basically the unit splashed a Flight Radar24 logo for a few seconds before displaying some basic station information and its IP address it had been issued by my DHCP server. Of course everything was RED to indicate it was not receiving anything.

Within a couple of seconds the network connection went green to show the unit had connected to their server, and a few seconds more the section showing the number of ADS-B signals went green to show it was receiving data from aircraft.

The only item that did not go green was the GPS signal line. This showed it could see a number of satellites and was getting accurate location and time signal, but there was no antenna fitted.

Checking with Flight Radar24, the current firmware on the unit does not have function to turn off the antenna detection. It is looking for a small current drain caused by the antenna, and of course our splitter blocks all d.c. so no current would flow.

At some point I will fit a resistor of approximately 350R to the splitter port to simulate the typical current draw of a few milliamps. As the GPS receiver is part of the kit owned by Flight Radar24 I thought it only proper to inform them of my plan and they agreed it should provide a work around.

As far as members of the Repeater Group are concerned you're not able to view the data direct from our ADS-B receiver but please be assured we are contributing to the data available on the website. In fact since we launched F-EGTG2 (Our allocation) is currently ranked at 2933 in the world, and 299 in the UK. Not bad since we launched back on the 3<sup>rd</sup> August 2024 and at present there are 44,271 units on air. F.Y.I. when we switched on we were at 44,271 😊.

## Membership.

Membership during the last year has remained fairly constant at around 45, a slight drop from last year with some members not bothering to renew their membership for what ever reason, and then out of nowhere we have new members joining, which is great to see.

Looking back over the last 5 years, membership has been fairly constant. Figures do bob up and down throughout the year. It is only when looking back a bit further that we see membership in the low sixties. Unfortunately getting people to help support what they use seems to get harder each year.

Currently our bank account is not looking to bad, all things considered. Especially after our Antenna change out, Generator starter battery replacement and charger, all in the same year, it was quite a large bill.

So, a BIG thank you to everyone who gives money through membership, it is very much appreciated and with out it we could not keep going. You can of course check our web site to see your membership status.

## MEMBERSHIP LIST

<b>2E0HOM</b> Nov 2025	<b>2E0JWJ</b> Dec 2024	<b>G0FAJ</b> Oct 2025	<b>G0IUE</b> Feb 2025	<b>G0IWT</b> Aug 2025	<b>G0XAY</b> Oct 2025	<b>G1ERM</b> Apr 2025
<b>G1IHL</b> Sep 2025	<b>G3XED</b> Feb 2025	<b>G3XOU</b> Nov 2025	<b>G4CPO</b> Jan 2025	<b>G4EJH</b> Jan 2025	<b>G4KUQ</b> Oct 2025	<b>G4MCQ</b> Oct 2025
<b>G4SDR</b> Oct 2025	<b>G4TAH</b> Nov 2025	<b>G4ULV</b> Dec 2025	<b>G4WOD</b> Apr 2025	<b>G4XCB</b> Dec 2025	<b>G6MRJ</b> Aug 2025	<b>G6YCG</b> Nov 2025
<b>G6YNL</b> Feb 2025	<b>G7BYN</b> Dec 2025	<b>G7FBD</b> Jun 2025	<b>G7KNA</b> Apr 2025	<b>G7TFS</b> May 2025	<b>G8NQO</b> Jul 2025	<b>G8YMM</b> Jun 2025
<b>M0HDJ</b> Jan 2025	<b>M0JVY</b> Feb 2025	<b>M0KEE</b> May 2025	<b>M0LHS</b> Oct 2025	<b>M0MGT</b> Dec 2025	<b>M0TJX</b> Jul 2025	<b>M0WYB</b> Dec 2025
<b>M0XMM</b> Jun 2025	<b>M0YHF</b> Dec 2025	<b>M6GFM</b> Dec 2025	<b>M7GCV</b> Jul 2025	<b>M7KWC</b> Mar 2025	<b>M7NCK</b> Feb 2025	<b>M7UYB</b> Apr 2025

Snapshot taken 15<sup>th</sup> December 2024 and is correct at this time.

	Membership expires THIS MONTH.		Membership expires NEXT MONTH		Membership expires over two months time.
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### Payment Methods.

Just as a reminder, when renewing your membership, could we ask that, if possible, you pay using Bank Credit Transfer (BACS). This way we get 100% of your money rather than via PayPal who take their cut off our income.

We introduced payment via BACS last year and it appears to be growing in popularity. Paying any membership or donations via PayPal is of course still acceptable if more convenient.

Our BACS details are as follows:

**“Bristol Seventy Centimetres Repeater Group”**  
**Sort Code: 20-13-34, Account Number: 20201316.**

Note: If paying via BACS, please send us an email ([info@gb7bs.com](mailto:info@gb7bs.com)) so that we can check that your payment has been received into our bank account and you're verified as the source.

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This just about wraps the 2024 Newsletter up, As you have found, things are just running along smoothly and goes to show, that little extra time in the design and build stage of a project certainly does reward. Thanks to Marks eye for detail and persistence with tuning, testing, retune and test over and over has meant that the repeaters now need very little love and attention, just a normal system inspection in line with our licence recommendations once a year to double check nothing is brewing, so that we end up with Repeater systems that just perform!

One last minor project I am undertaking is to install a SDR receiver on site for me personally, as those who know me well, and where the QTH is, knows that my next door neighbour is also licensed and as such spends a lot of time on the air. Okay it's 11m but that aside; I suffer from breakthrough on just about everything that has a speaker. (Boy the modern callsign on 11m has grown by a lot of letters and numbers since my time!).

So I suggested we install an SDR RX on site to firstly test the local noise floor, and also to try and give me a fighting chance of hearing stations. The idea is to transmit from “FBD Towers” and receive via the internet on the SDR. Well that's the plan. So far the hardware is built using a Hack RF One and a Pi 4. I am now waiting for a dry and not to cold weekend for Mark (Our Antenna rigger) to install the active loop antenna for me. But you guessed it, with the British weather, any chance this year has gone and knowing my luck, most of next year to.

For now, from Mark and I, we wish you a “Merry and safe Christmas, and a Happy New Year” –

**73 SK.**

# 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 **£10.00**. Your details and membership fee will then be passed to our treasurer. You can also subscribe using BACS (Preferred) or by Paypal™ this also supports Credit/Debit card payment. See “Membership” on our website for detail. 100% of your membership goes towards looking after both repeaters and the site in which they are located.

If using Paypal™, please note Paypal charge the Repeater Group a percentage of your payment. Robbing lot!

**\*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 payable to “Bristol 70cms Repeater Group”**



Please tick appropriate boxes and print clearly – Thank you.

£10.00 Membership

Donation Amount £ \_\_\_\_\_

I am paying by **BACs / Paypal / Cheque** **Please delete the appropriate.**

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

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

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

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

\_\_\_\_\_

\_\_\_\_\_

Postcode \_\_\_\_\_

If you wish to subscribe via a cheque (Not preferred) then please email [info@gb3bs.co.uk](mailto:info@gb3bs.co.uk) requesting our postal address. Please ensure you supply a callsign with this request.

**PLEASE NOTE:** Membership is based on a yearly subscription (from the date processed). Although we can process multiple (advance) year 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 directly associated costs.

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 to comply with GDPR. 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. It is **YOUR** responsibility to inform us of any changes to postal or email addressing. It is also your responsibility to check spam/junk email folders for email/email content from the repeater group. All email sent is scanned for virus, malware and un-intended attachments. The Bristol 70cms Repeater Group is not responsible for any tampering in any form to emails once transmission has been completed by our SMTP server.