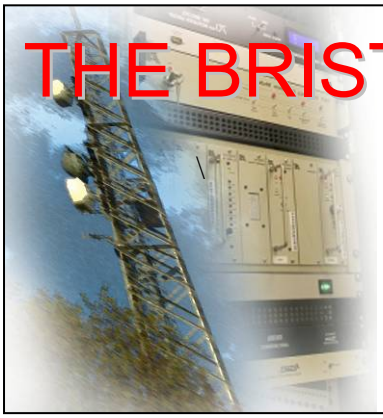

THE BRISTOL 70cms REPEATER GROUP

GB3BS and GB7BS

NEWSLETTER 2021

RU68 - 430.850MHz - TONE J: 118.8Hz.
DVU13 – 439.6126MHz – Colour Code 3.

Serving Bristol for 45 years.

Welcome to the post-apocalyptic
Bristol 70cms Repeater Group Newsletter.

We hope to find you all in good health and are keeping safe.
Over the last year our time on site has been very limited. Dictated mostly by lockdowns and social distancing, but also the equipment has 'mostly' been performing as expected.
I say mostly performing as expected, as you will see from our technical reports, there were a few little gremlins that crept under the radar.

My own station manager had to get involved helping me sort out one issue during our first lockdown of the year! Her reluctant help was required as she is of course in my social bubble and yes, she did moan a lot while we were on site. Mostly due to it being cold on site in February and yes, she has told me, kind of politely, that was the last time she helps.

Sadly she had lost interest in pursuing her license after hearing some of the umm, not so nice QSO's carried by other well known repeaters around the area, including, at times; GB3BS.

That aside, Marks Technical report on his Blitzortung Lightening detector should be of interest as it was probably the first time this year both he and I were on site at the same time looking at an issue that turned out to be a completely different "rabbit-hole" to climb down, rather than an expected one.

Another 'duel' site visit was needed after another technical issue immerged following a site wide power outage. This particular issue would have been picked up during a routine maintenance visit to the site rather than being a more pressing urgent matter, again full details of this visit is in the technical sections below.

Continuing on from last year, North Bristol Amateur Radio Club (NBARC) has made good use of GB3BS during the lockdowns with nets on Wednesdays and Sundays. The Friday night net was dropped once the club house was opened for face-to-face meetings again, and personally it's been good catching up with people at the club when I have been able to fit meetings in and around work and social time (The latter is on big demand by others).

This brings me on to the hot subject of membership. Our numbers have been stable for the last couple of years, but as with all UK repeaters, they are NOT sponsored by the RSGB or Ofcom, as some out there would think. They are kept on air with the help from the people who use them. Basically, if you regularly use ANY repeater please try and show your appreciation for the efforts of building and maintaining the box by supporting the group that are responsible for running it. Most of the groups now have websites that show how you can help support the repeater(s) or the group. It might also be worth raising this with other general users of repeaters you may have a QSO with, as they might not realise who pays to keep the lights on.

'73

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Technical Reports by Mark - G4SDR

Here we are again folks. What with the Covid-19 situation gripping the country, this last 12 months has really flashed past us and with that the opportunity to do any outstanding site work has been minimal or put on hold. However, essential work to keep things running and safe has always been our priority and fortunately these have been minor.

Hopefully when the Covid situation eases then our site activity will increase and allow us to finish those outstanding jobs which are mainly regarding the upkeep of the building etc.

So, onward with various reports on the things that we have been doing over the past year, albeit a slightly thinner one.

GB3BS

The Repeater has been working away this past year without any real need for intervention. As usual a brief check was carried out to ensure everything was as it should be and that nothing was moving out of peak performance.

One issue was brought to our attention and that was concerning the CTCSS Decoder in the Receiver. We had one report that a user appeared to keep dropping out of the Repeater even at close range. Level checks were carried out on the Decoder but were found to be well within spec. Subsequent monitoring of the station concerned found that his rig had a very very low CTCSS Tone deviation, which was then corrected. No more problems!

It is probably a good time to remind people that a CTCSS Tone must be on during your transmissions and be of the correct Frequency tolerance and Deviation. If the incoming CTCSS Tone to the Repeaters receiver is not correct then the Repeater controller will simply mute the through audio.

The small backup battery was checked on a battery tester to see if there has been any degradation of being float charged for the vast majority of its life. The tests showed that it was in perfect health.

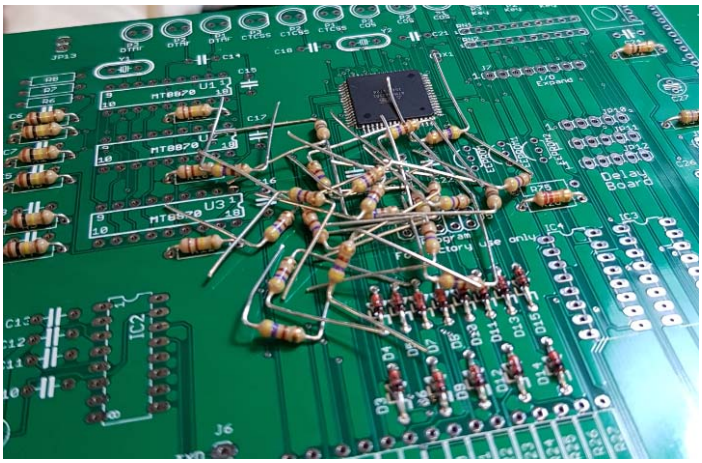
This backup battery is only there to provide supply to GB3BS when a site mains failure occurs and the Standby Generator coming online, which usually takes no more than 10 seconds. So, you can see that the battery has very little use, but never the less, it serves an important purpose.

However, should the worse happen, in that there is an incoming mains failure and the Standby Generator fails to start, then this standby battery would keep GB3BS fully operational for around 6 to 8 hours (depending on Repeater usage).

RC210 Repeater Controller.

Those of you that have followed us over the years are probably aware that the Repeater Controller that we use for GB3BS is based on the Arcom RC210. This controller has, over the years, gone through a few updates instigated by the designer.

The latest change has been around the introduction of a new Processor as the original processor used is or has become obsolete. Our spare RC210 Controller had its processor upgraded to the new type last year (see the 2020 Newsletter) with the intention to swap out the RC210 on site and install with the new and upgraded RC210.



This for various reasons got delayed as new firmware was also updated and with this a new configuration had to be written and tested, which was done.

On the 4th of July 2021 we swapped out the old RC210 Controller for the new one. With the new processor and firmware came some new functions to the controller. It also makes the unit semi future proof as development by the manufacturer will continue.

The new controller has now been operational since July and has worked flawlessly and has needed no tweaks or adjustments, that lab testing time paid off, it would seem.

**Some interesting stats have come out of the new RC210 logs, in that between July 4th and the 30th November the RC210 has recorded 3626 hours of up-time and 29518 Transmitter activations.*

So, what changes have we made?

One of the changes revolves around how GB3BS is first accessed from cold and concerns a thing called a Kerchunk Timer. This is used to prevent or limit those people who just like to Blip up repeaters and not bother to properly call through. This timer would check that a station accessing the Repeater was applying a valid signal for a set amount of time before giving full access.

However, one problem is that this would cause the first part of a station accessing from cold to be missing the first part of their transmission, while the Controller evaluated if the signal was not a Blipper !

The new setup is partially the same, but, once the controller has given access to a station and the repeater then shuts down, the Kerchunk Timer is disabled for 30 seconds. So any re-access will be immediate and not succumb to the Kerchunk filter. So far this seems to be working well and there has been no need to adjust the timer.

The other change concerns Timeout or rather when timeout comes to and end and the Repeater continues its operation. When the Repeater went into timeout it would be indicated by the spoken word “Repeater Timeout” and the transmitter would be turned off. As soon as the offending station ceased his or her over the repeater would immediately come out of timeout by saying “Timeout Cancelled”, and the repeater could continue as normal.

During any timeout period there would inevitably be stations trying to re-access or think that by blipping or keying up would some how override the timeout!

Now, when anyone times the repeater out and the offending station finishes the over the repeater will **not** immediately come out of timeout for a set period of time, currently 20 seconds. But, if there are attempts to re access the repeater or continually blip the input of the repeater then each time the controller detects this sort of action the 20 second timer will reset and start over again. So providing the repeater input remains clear for 20 seconds and users wait for the voice announcement that the repeater has come out of timeout then the repeater can be used as normal.

Beacons, primarily the voice announcements have had a very small change. These have mainly been a change to the wording and length, I am sure no one has spotted the change, they are not dramatic!

Personally I have never liked Repeaters with too many “Bings” and “Bongs” or with multiple different CW & Voice announcements.

Certainly the RC210 Controller with its new CPU is capable of a lot more things and maybe some of these will be implemented on GB3BS in the future. But for the time being things seem to be running well, so as they say “If it ain’t broke don’t fix it”.

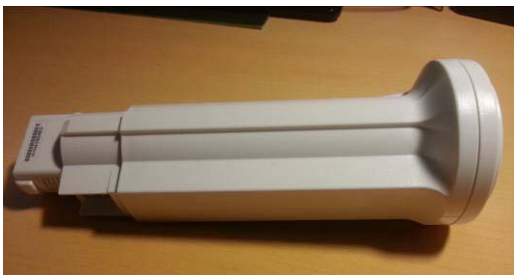
GB7BS

What can one say? There have been no outages once again this year of GB7BS, the equipment has run faultlessly.

There have been the odd, and brief, times when due to our Internet feed failing we have lost connection to the South West Cluster Network, during these times the repeater was in Standalone Mode.

I think there were two prolonged Internet outages during the year, one was due to a general mains failure to Mat’s QTH and surrounding area, and the second time was while Mat made electrical changes to his shack.

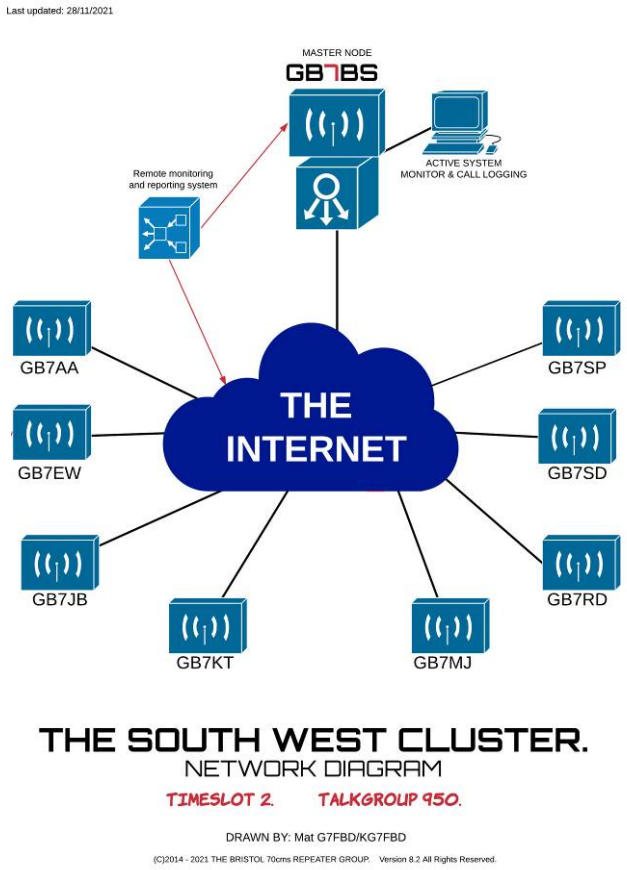
Up at the GB7BS site a quick check through the repeater was carried out and apart from cleaning the dust out of the fan filters, not much else was needed.



The main Microwave link between Mat’s QTH and the Repeater site was also checked, although there is virtually nothing to do as the transceivers are non serviceable units. About the only thing to do is update its firmware when required and check that Ethernet connections are secure and waterproof.
After a few configuration changes to the Microwave link equipment we are now managing to get reliable error free throughputs of around 55 Mbps on both uplink and downlink. Which is vastly more than we need, and currently faster than I get at the home QTH, much to my annoyance.

At least there have been no further occurrences of rodents gnawing through the cables!

All being well, next year I plan to carry out a full maintenance on both GB3BS & GB7BS along with the Aerial combining system, so this will probably require an outage to both repeaters for a few hours.



South West Cluster Network.

Over the last year we have seen quite a bit of activity and changes. Firstly, back at the start of August we unexpectedly lost GB7DR near Poole from the SWC. After some enquiries it turned out that it was not a fault but that the keeper had decided to, with out notice, leave the SWC and connect the repeater to another DMR Network.

Obviously we are disappointed to see it leave as it was one of the very first repeaters to join the SWC at its conception. However, our philosophy has always been that repeaters can come and go as they wish. So we wish GB7DR all the best for the future, wherever they are connected now!

But following that loss, we have gained two new repeaters, GB7RD near Yelverton and GB7EW in Exeter. Both repeater groups have put in a lot of time and effort in getting these on air and connected to the SWC.

For a while GB7RD operated without any issues but problems occurred with its Internet feed which has been traced to some Ethernet over Power Line Adaptors. These devices allow the passing of the Internet feed over a mains cable for short distances.

The repeater keeper has now invested in a pair of Ubiquity 5G Access Points in order to create a link between the repeater and the main Internet feed which is around 200 feet apart. By the time this Newsletter comes out this link should be fully operational.

South West Cluster Repeater List

Repeater	Location	QRA	Channel	Output Freq	Input Freq	Colour Code	Notes
GB7AA	Thornbury, Bristol	IO81RO	DVU54	439.6750	430.6750	1	
GB7BS	Bristol/Bath	IO81TK	DVU13	439.1625	430.1625	3	
GB7EW	Exeter	IO80FR	DVU42	439.5250	430.5250	3	
GB7JB	Wincanton	IO81TB	DVU37	439.4625	430.4625	1	
GB7KT	Andover	IO91GE	DVU40	439.5000	430.5000	1	
GB7MJ	Romsey	IO91GA	DVU51	439.6375	430.6375	5	Not yet connected to the South West Cluster
GB7RD	Yelverton	IO70XL	DVU55	439.6875	430.6875	3	
GB7SD	Weymouth	IO80SQ	DVU33	439.4125	430.4125	1	
GB7SP	Salisbury	IO91CB	DVU60	439.7500	430.7500	3	

Talk Group List: TG9 - Slot 1 Local
TG950 - Slot 2 SWC

© Bristol 70cms Repeater Group

Information Correct as of December 2021.

Over the past year it has become clear that the main cause of most outages has been down to Internet feeds failing or ISP's carrying out some sort of remote configuration of their Router or Modems. It does sort of show how fragile the Internet is, at times.

GB7MJ, located in Romsey has long been on air but due to technical difficulties was not able to join the SWC, as was originally intended. I have received a few emails and questions posted on our Facebook Group page about its status.

I am pleased to report that the technical issues have been resolved and all the equipment has been gathered together and tested. So far, as I write this, the Repeater is very close to joining the SWC and may even be on-line when you all read this, fingers crossed!

It's worth mentioning, like we do every Newsletter, that there is a SWC Net every Saturday starting at 19:00 and is on Slot 2, Talk Group 950 and is open for anyone to join in or maybe check their rig. It's informal and has no talk time restraints like other Networks.

This brings me onto mentioning that we receive a few requests regarding problems accessing the SWC and the settings on rigs. Most of these problems reside around two parameters. One is Tx Admit Criteria and the other is Tx Talk Group. With so many rigs out there now and each one has a different wording of these parameters it sometimes difficult to interpret their operation correctly. But these are worth spending some time on checking if you are having problems.

This is also a good time to mention a few setting that are a big no no and MUST be turned off or disabled when operating on the SWC. These settings include any GPS Location Data being periodically sent and a parameter called "ID Alias", this one may be called something different with each rig, but MUST be turned off.

Also turn off anything that mentions on air programming, radio enable/disable and remote monitoring. Finally turn off Talk around. Our Facebook pages have a number of basic code plugs for you to download. Above all, download your codeplug from your radio and explore it, spend sometime and look up or ask about 'terms' you may not be familiar with. Once you understand the terms used the programming of a DMR radio is fairly trivial and could save you lots of money and time buying a codeplug from someone else. What's more, learning the inner workings of the codeplug means you can program things you want in a way you want thus making radio operational more slick and quicker (Not to mention updating things like contacts that you may not have listed in the radio.

Site Maintenance.

The last 12 months has seen very little site maintenance being carried out and in particular the ongoing work repairing the door frame bottoms. Fortunately the small amount of wood rot was removed last year (as detailed in the 2020 Newsletter) and repaired with plastic filler. So now, all that remains to do is a bit of sanding down and a good coat of exterior paint and things should be as good as new.

Our new double doors have been fully painted and are standing up to the harsh weather that we sometimes get up there. It is planned to give them another coat of paint sometime next year along with the fitting of brush strips at the bottom of each door to prevent dirt, dead leaves and moss to collect under the doors, which can then collect moisture and if not careful cause the doors to rot, which is what happened to the original set, but they did last some 40 odd years!

The roof was inspected and swept clear of dead leaves and some tree debris left over from the high winds. The roof was completely repainted last year with a reflective bitumen sealer; this is still looking good so was certainly worth the effort.

The roof drainage pipes were also checked. Last year we found that they were completely blocked with dirt and moss. This then caused one of the down pipes that at some point comes inside the building to leak and thus causing a small flood in the standby generator room.

These two roof-drain gratings and pipes certainly need an annual inspection. The amount of tree debris and moss is a real problem so clearing the roof and drainage is going to be an annual event now. This is one of the problems of having the building partially under tree cover.

Another job is to really give the Generator room a clean and a paint job, including the ceiling. This has been long overdue for many years but as its condition is not too dire, we have always put it off. But then, who likes decorating after all? Fortunately thanks to donations, we already have the paint, it just needs a load of elbow grease now!

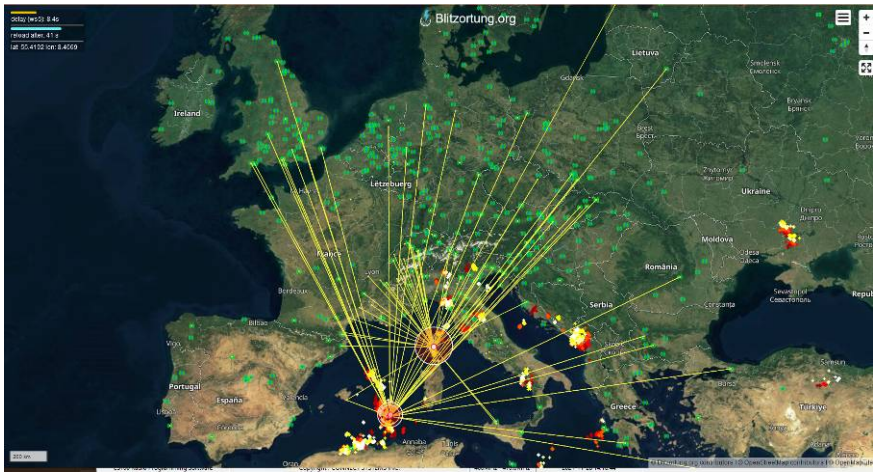
So, yes, next year we have a bit of catching up to do with maintenance to the site. It's not exactly Radio, but with a bit of TLC it will be worth it and continue to provide us with a good clean and sheltered Repeater hut!

One problem that crept up on us was that the main UPS that keeps 240v AC supplies to the Microwave Link (which supports the SWC Network), Cisco Switch, MB7VV APRS, Blitzortung Lightening Receiver and the main Server developed a Battery problem. A quick check found that the two sealed lead acid batteries had come to end of life and needed replacing.

It was a good job we did a spot Generator and UPS test or we may not have known about it until the next site mains fail. Goes to show that a bit of site maintenance and testing does pay off.

A quick dash to the local battery shop secured a pair of new batteries which were soon installed into the UPS and everything was back to normal.

Our records show that the batteries lasted 5 years, and according to the battery specifications it's quoted as between 3 to 4 years, so we have not done badly out of them.



Blitzortung -
(Lightening Detection) Project.

Our Lightening Detection unit has been running for around 14 months now and after a bit of tweaking of the parameters, it seems to of settled in quite well.

There are so many variables with this unit such as E & H Plane Antenna Gain, Amplifier Gain, Threshold Ranges, and Sampling etc etc

So making adjustments to maximise the performance has taken a bit of time, but we think its running just about right.

One downside we have found is a lack of documentation with regard to all these settings and what they do and how they interact with each other, it's been a nightmare.

The designers of the system rely on a web based Forum which is not the easiest of platforms to drive & navigate.

After the fitting of the optional filter chips to each antenna pre amp has made a big difference. The fitting of the devices allow us to limit the bandwidth of the VLF Receiver. Currently this is set to 0 to 38 KHz as this is the peak range for detection. We do have some local site noise at around 45 KHz that was causing a few random signals to be detected. Fortunately the fitting of the filters has completely eliminated the unwanted 45 KHz signal.

The nice thing about this project is that everything can be reconfigured remotely, so any tweaks can be checked and monitored without attending site. All the data received is pre- processed before being live streamed up to the Blitzortung servers.

Unfortunately problems struck the project in August when one of the H-Plane Antenna amplifiers was showing a very low noise floor and its performance has dropped off quite dramatically. Despite a few adjustments it was clear that we had a problem which could ether be an Amplifier had died or an Antenna fault or something in between. So a site visit was needed to investigate.

After a few cursory checks of the installation and the exterior hardware, just to make sure some pesky rodents had not decided to have a meal of our UTP cable, we disconnected the Antennas to find that all the noise floors fell to around the same values, this was good news!

The decision was then made to lower the twin H-Plane antennas (see pic). Each of the two antenna rods come together in a waterproof box inside which is a small PCB which contains the antenna terminations to the first active RF Amplifiers stage.

Standing precariously on the top of the ladder, so as to gain access to aerial box and the screws holding the lid on, I started to unscrew the 4 screws when I noticed a very small crack on the side of the box cover, which opened up when the adjacent screw was removed. Emmm, not a good sign I thought.

With the cover now fully removed I quickly saw the problem. The antenna box was full to the brim with water and the surface mount PCB was almost fully immersed apart from one small part. This part contained the Amplifier IC and was still working, the rest was under water and it was clear this was the problem. The small desiccator that was added to help keep any damp out was also under water; clearly it had not done its job!

To find the box full of water was annoying as it was supposed to be IP66 rated, but due to the crack found in the lid this rating was immaterial. So the H-Plane antennas were removed from site for repair. The unit was left running on the separate H-Plane Antenna which it turned out worked reassuringly well.

The good news was that although the small PCB took a bit of damage from being immersed in the water and along with the DC supply to the submerged board caused one of the small tracks on the PCB to get eroded away. Fortunately Mat – G7FBD was able to make a full and proper repair to the PCB.

Mat also contacted the company that supplied us the water proof box, who were kind enough to replace it free of charge. So the new Mk2 Antenna box was constructed, which now includes a drain hole, just in case.

The H-Plane Antenna box was reinstalled and connected up without any further issues. The noise floors of both amplifiers were now at the right levels and both Antennas were equally & reliably detecting strokes (strikes) as originally intended. To view the output of the whole network or just our station then click on the links below.

Blitzortung Live Vector map (Zoom & Clickable): **https://map.blitzortung.org/#4.32/53.13/0.93** from here you can click on our station, which is number **2834**, for a much more detailed view.

Detailed output of our station (2834): **https://tinyurl.com/y47ykbnm**

Technical Report by Mat - G7FBD

MB7VV and MB7UVV

Early on at the start of the 2021 lockdown I received an email from the keeper of MB7UNE to say that MB7VV was transmitting carrier only, no data. I have had this same issue in the past and that turned out to be a bug in the firmware of the APRS Modem. The fix last time was to re-boot the unit. This was the first thing I did then Monitored on air, sadly I could still hear the repeater key the transmitter with no audio. At this point the only thing I could do was disable the transmitter until such time as I could get to site.

Disabling the transmitter did mean that MB7VV was still listening on air and was able to push received data down onto the internet. As soon as I could due to lockdown I went to site alone to investigate. I took a handy with me so I could monitor things live.
The first thing I did on site was to physically pull the power out of the modem and powered it back on. It took me a moment to realise the PTT was disabled. Yes, I stood there looking at it wondering why the box was not keying the transmitter.

Once PTT was enabled and I rebooted again, I observed the transmitter key and the handy blurted out AX25. Perfect I thought, I rebooted again and observed the same AX25 traffic. Perfect! Time to go home!

A couple of days later I was monitoring things and noticed there was a low Carrier with no audio. I initially excluded this being MB7VV due to its low carrier and did not react.
The following day I was sent another email from the keeper of MB7UNE the carrier was MB7VV.

Again, I turned off the transmitter remotely as I was at work. When I got home I asked the station manager if she would be able to come with me to site as a baby sitter as I needed to do some work in and around the rear of the equipment and possibly need to pull out the APRS shelf and she was in my social bubble (the Repeater Group have a rule that if any work is to be conducted in the rear of the cabinets, or removal of equipment then two have to be on site. A basic health & safety rule). To my surprise I did not need much persuading really. I could not ask Mark as he was outside of my social bubble.

On site I started by plugging a microphone into the transmitter and making a test call while monitoring with the handy. That proved the transmitter was okay. I then explored the cabling from the rear of the radio through the auto isolation transformers and onwards to the modem. I did not suspect the cable too much as it was all tied down to the tray and had not been disturbed since the system was built.

The Isolation transformers are in a small 2” square dicast box (red in the picture to the left).

Inside I had added test points as at the time of build I thought they may come in useful at some point. I was able to attach my Oscilloscope to these test points and discovered audio was not getting to the transformers from the modem. The cable and plug (Mini 6 pin din-plug) were all tied down and plugged in firmly.

I gave the plug an un-necessary push to make sure it was connected to the modem. I removed the plug and scoped the connector; this confirmed audio was being generated by the modem. So the fault had to be either the plug or the cable. Both looked visually in good condition.

Now you remember the station manager Had come along to site?

This turned out to be a good thing! With her help I was able to extract the shelf containing MB7VV and move it to the bench where I could take a much better look at things.
I disassembled the short cable loom from the tray so I could then do continuity on the plug and cable, through to the transformers, and from the other side of them out to the plug that connects to the radio. Everything buzzed out just fine.

Again with the station managers help holding my multi-meter probe on pins within the radio connector I was able to buzz the cable again, but this time flexing things around. Sure enough as I manipulated the plug that connects to them modem, the audio line dropped continuity. Letting the plug and cable relax back to their original resting positions back came the continuity. VERY ODD!

At this point the station manager asked if we were going to be much longer as she was cold. In fairness the comms room thermostat was showing the frost heaters were on, so the room was at least around 5C (MS does have its advantages as I feel hot all the time so don't notice the cold or her shivering).

Next, I took the 6 pin Mini Din plug apart. I personally think they are the worse connector ever. Everything looked in order.
Okay when I assemble plugs and sockets, I try to either heat-shrink or Hellermen sleeve the wires once soldered to the connection. In this case I used heat-shrink over the wires. When I gently pulled back on the wires sure enough one wire pulled out and as you guess it was the audio line from the modem out towards the transformers. Interestingly the wire that pulled out only had a single strand protruding out of the insulation.

Cutting back the heat-shrink the joint looked sound. So it's not clear the cause of this fault. But fault all the same.

Firing up the heated metal glue gun (Soldering Iron), I cut back the broken wire and was able to re-terminate it back onto the plug (Tip for the young players out there, always leave enough spare to enable you to re-terminate a wire if needed).

Once reassembled with the help of the now not so happy station manager I re-buzzed the cable and even moving it around the continuity was solid.

Within 15 minutes we were back in the warmth of the car having re-racked the now repaired MB7VV and was monitoring it on my handy burbling away nicely. The drive home was interesting as I posed the question as to the station manager resuming her study towards her foundation license.

Thankfully we do not have enough newsletter space to transcribe the whole of the conversation but here is the summarised version. "No", "That sound makes me feel sick" and "It's a waste of time and money".

Rally Report.

As in last years report we were unable to attend any rallies, due yet again to the Covid pandemic imposed lockdowns and lack of time. Hopefully 2022 will be better and we hope to return to the Cheese and Grain at Frome for the West rally.

Bristol 70cms Repeater Group – Membership.

Membership over the last 12 months has once again been uneventful in that the numbers have pretty well stayed around 50. We have seen the usual fair share of those that have decided not to renew their membership, while then being replaced with new members. Sadly we have seen a few long term members leave us for what ever reason, but it is also good to see and welcome new members.

We hope that anyone who regularly uses either GB3BS or GB7BS that they think to become a member as it's our only method of income we have and is needed to pay the bills.

As we say every year, "All we ask is that if you use it - then please think about supporting us".

And, as always, we want to thank everyone who has supported us by way of membership and the odd donation. Every bit goes into the upkeep and running of the repeaters and we hope that you feel its good value.

2E0JWJ Dec 2021	2E0PGS Jun 2022	2W0CGM Feb 2022	G0FAJ Oct 2022	G0GZW Jul 2022	G0IUE Feb 2022	G0IWT Aug 2022	G0XAY Jun 2022
G1ZKJ Jan 2022	G3XED Jan 2022	G3XOB Silent Key	G4EJH Jan 2022	G4FUA Nov 2022	G4GUG Nov 2022	G4KAM Sept 2022	G4KUQ Sept 2022
G4MCQ Jul 2022	G4OJI Oct 2022	G4OPQ Sept 2022	G4SDR Oct 2022	G4TAH Nov 2022	G4UGV Sept 2022	G4ULV Sept 2022	G4WOD Apr 2022
G4XCB Dec 2021	G6FFB May 2022	G6MRJ May 2022	G6YCG Nov 2022	G6YNL Feb 2022	G7BYN Nov 2022	G7FBD June 2022	G7KNA Jan 2022
G7NSY Apr 2022	G8CKK Nov 2021	G8EMA Jun 2022	G8NQO Apr 2022	G8YMM Jan 2022	GW1LOR Apr 2022	M0HDJ Nov 2022	M0JVY Apr 2022
M0KEE May 2022	M0LHS Oct 2022	M0LJT Nov 2022	M0MGT Jan 2022	M0TJX Jul 2022	M0WYB Dec 2021	M0XMM Jun 2022	M0YHF Dec 2021
M1CEL Jul 2022	M6GFM Dec 2021	M6OJI Oct 2022	M7CME Nov 2022				

Members 52	About to expire	2 Months remaining

MERRY CHRISTMAS TO ALL THE SUPPORTERS OF THE BRISTOL 70CMS REPEATER GROUP.

We hope you enjoyed the Newsletter; feedback would be welcome, just to let us know we are not wasting out time producing it! Please all stay safe and well. Mark and I look forward to hearing you on air soon.

73'

Mark – G4SDR & Mat – G7FBD.

'73 to David G3XOB who fell silent key on Friday 3rd of December 2021 – Our thoughts are with Ann at these times. He will be missed!

THE BRISTOL 70cms REPEATER GROUP.

GB3BS / GB7BS

Website: www.gb3bs.co.uk Email: 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 **£8.00**p. Your details and membership fee will then be passed to our treasurer. You can also subscribe using Paypal[tm] (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.

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 tick appropriate boxes and print clearly – Thank you.

☐ £8.00 Membership ☐ Donation Amount £_____

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

Callsign: _____ Email: _____

Name: _____

Address: _____

_____

_____

Postcode _____

Please make cheques payable to "Bristol 70cms Repeater Group"

Please contact us for our postal address if sending Cheques by post. Thank you.

BACS details: Our Sort Code is: **20-13-34**, Account Number is: **20201316.**
*If paying by BACS please send us an email (info@gb3bs.co.uk) to advise us of the payment.

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.