

# Newsletter

## Chesham & District Amateur Radio Society

[www.g3mdg.org.uk](http://www.g3mdg.org.uk)

January 2022

We meet the 2<sup>nd</sup> and 4<sup>th</sup> Wednesdays of the month at the Ashley Green Village Hall, Ashley Green, HP5 3PP

### Welcome

Here's hoping you all had an enjoyable festive season whatever you celebrate and welcome to 2022.

I can still remember our neighbours in our cul-de-sac wishing us a Happy New Millennium, all of 22 years ago, but still a fresh enough memory to make it feel like yesterday, how time flies...

This month we have part 2 of the 2-part series on VHF/UHF "Eggbeater" antenna's for satellite work, hopefully it was of interest to you.

It's Dave's (G8FMC) turn to tell you how he came across Amateur Radio, sadly he has some other news.

As promised, I built and tested an almost 'solder free' digital interface, and it works, see my report.

Malcolm gives us part 2 of his Log4OM article, hopefully this will aid you in using this excellent software, thanks Malcolm, looks like a lot of work went into that one.

If you're into contesting then the VHF contest section will keep you busy this coming month and February.

Bryan M0IHY

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### Contact details

Chairman - Jeremy Browne (G3XZG) Secretary - Malcolm Appleby (G3ZNU) Treasurer - Matt Whitchurch (M1DTG)

All the above are members of the committee and can be contacted on [cdars-committee@googlegroups.com](mailto:cdars-committee@googlegroups.com)

Editor - Bryan Page (M0IHY)

# Chairman's Ramble

Firstly, a very happy and healthy new year to all.

It's not yet new year, but a rather damp day in late December. Still, the urge to write 2022 somewhere was irresistible, after the vagaries of 2021. I have never tried to forecast what a new year will bring, either in Amateur Radio terms or anything else. That's partly because there seem to be too many indefinites, particularly at the moment, but also because I'm just really bad at forecasting. If I say I think propagation is going to be good, it will in fact be rubbish. If I say that a dry weekend is in prospect for field-day, make sure to bring your wellies.

I will review the year properly at the AGM, due on 26th January, as you will have seen from the notice. I will just confine myself to personal highlights here. Things that stick in the memory are not necessarily the successes, but more likely to be the quirkiest side of Radio. Sitting in a field which had not yet been cut on a warm July evening, eating pie and chips and drinking beer in good company, while we had agreed to shut down because of supposed interference and with half an ear on England winning a football match.

Getting back to Brill windmill in May and being actually warm for once inside the mill, though that was upstairs. It was still freezing in the bottom part. Realising just how much coax the club possesses and being surprised at the amount which is actually useable. Staying with temperatures, spending a night in the club tent on SSB field-day and waking up to realise that my clothes were not in fact stiff this time.

Over the summer I enjoyed working on 50 MHz, which was its usual random self. I managed to confuse I3XZD who thought he had an echo.

Returning to the AGM, You will have seen that Bryan and Angie are standing down for the moment. We are therefore looking for at least one new recruit to the committee, and new thinking is particularly welcome. Please think whether you can help.

Finally, and nothing to do with radio, a story from Turkey caught my eye. A man who lives in the south-east of the country had spent a convivial and long evening drinking with friends. He was making his way, meandering and mellow, towards his home through a small forest when he came across what evidently a search party and thought he should volunteer to join in and help, which he did. After a little while and responding to shouts from one of the other members of the group, he realised that he had spent the last half-hour or so helping a search party who were looking for him. Apparently his wife had become worried when he did not return home. The police took him home, and I expect the conversation would then have been interesting.

73 all and see you soon.

Jeremy. G3XZG

## Editor's Muse

Okay, what did you all get for Xmas?

I was fortunate enough to be offered a good great deal on my TS590SG and FT847 from Moonraker, this was almost (but not quite) a swap with an FTDX10, not a Christmas present as such, but as good as. I have yet to play with it seriously, the "[radiotoday guide to the YAESU FTDX10](#)" purchased from the RSGB shop should guide me through the potential of the rig, hopefully I shall be able to report good things.

Bryan M0IHY

# Getting to know you

My 'Ham-Radio' story – Dave Keston G8FMC (or sometimes MOK in allowed contests)

How to condense 50 years of Ham-Radio into just 250 words; just 5 words per year! Quite a challenge for me?

I guess it really started when my late uncle got me a crystal-set for Christmas, just before my 5th birthday & before I had started school. Within a short while I had gone to my Dad's desk drawer & taken out a screwdriver (against all parental rules!) & unscrewed the back cover 'to see what was inside & what made it work'. My future as an engineer, rather than following my dad into 'High-street Retail' was determined, before even starting school!

Lots of crystal sets & other radios later, when in my teens, I stumbled on 'Top-band' (160m am) just off the end of medium-wave. During early apprentice days a couple of us built a TX & did the inevitable 'Pirating' on 160m & a little higher on Army Cadet channels!

It was not until I had finished my apprenticeship & 6 years at Tech College, got married & with 1st daughter due, that I took the RAE & got my Class B licence in October 1971, which allowed 2m & up only. An old Pye Base-station with about 35W of AM in conjunction with a home-brew RX converter into an EX WD National HRO RX. I soon joined CDARS as we were living in Berkhamsted at the time. Early (mid 1970's?) 'Contest' operating also featured with Terry G6AHS (now G0VFW) & others.

Radio activity was rather sporadic (& on a 'shoe-string' budget) for many years as we had two more girls & one modestly paid engineer attempted to keep 5 of us above the bread-line. 'Mobile operation', often using GB3VA became very popular during the daily 'commute'.

Some years on & our girls became more self-sufficient & I found more time (& disposable income) to 'play radio'. I got back into 'contesting', partly because casual evening chats on 2m SSB has somewhat died-out & the 'new' UKAC's had been initiated.

That sort of brings me up-to-date? Oh & I seem to have somewhat 'over-run'!

Since 2009, when out of the blue I became carer to my wife Jean; Ham radio & the many friends made through that medium have been a life-saver, keeping me grounded. Thanks guys, 73 Dave K.

## Jean

I sadly have to advise you that my dearest wife Jean passed away on Christmas day morning. (She sometimes had an interesting sense of timing!)

A number of you would have been aware that for the last 19 months she has been in a nursing home, in constant pain & very unhappy. Before that back in May 2009 she had a massive brain haemorrhage (which she should not have survived) but was able to be nursed at home for 10 plus years. In May 2020 she had a sharp down turn, when it became impossible for us to look after her at home.

She is now at peace & no longer in pain, so a burden has been lifted from both of us.

I need to move on so will still be involved with the radio clubs, maybe even more?

Jeans funeral will be pm on Thursday January 27<sup>th</sup>.

Dave G8FMC

# “Eggbeater” Antenna VHF/UHF - Part 2

Credit: Courtesy ON6WG / F5VIF

## Summary

Note : In Part 1, Fig 1 shows a maximum gain of 6.45 dBi. Several design attempts were made using slightly different configurations ( i.e. reflector to radiator distance, radius of the reflector, etc...). It was not possible to improve the gain above this value.

In Part 1, three particular satellites were chosen for the receiving tests. They were mainly chosen because of their similar orbits, close to 800 km, and then for their transmission system, antennas and polarization system. The comparison table ( Part 1 – page 5 ‘Levels of received signals’) was computed after twenty passes for each of them and gives an average value of received signals.

Two properties of the  $\frac{1}{4}$  wavelength line were tested and put into practice: impedance matching and 90 degree phasing to obtain circular polarization. In this design we make use of the same two properties of the coaxial line.

It was also shown how the reflector can influence the radiation field pattern giving to this design a gain of 6.5 dBi. at high elevation angles ( between 60 and 90 degrees.).

This design was created to obtain signal levels as high as possible in order to use high speed digital communication satellites. The goal was also to use a simple antenna without any rotator.

As strong signals are needed for this purpose, low satellite passes with low signals were not taken into consideration. The result is a good design for elevations over 35 degrees.

Here in Part 2, we are examining how to further improve the performance of this design.

## Introduction

In « Part 1 » we saw a ‘2 dimensional’ radiation field pattern. Here I am using a ‘3-D’ radiation field pattern of this circularly polarized antenna.

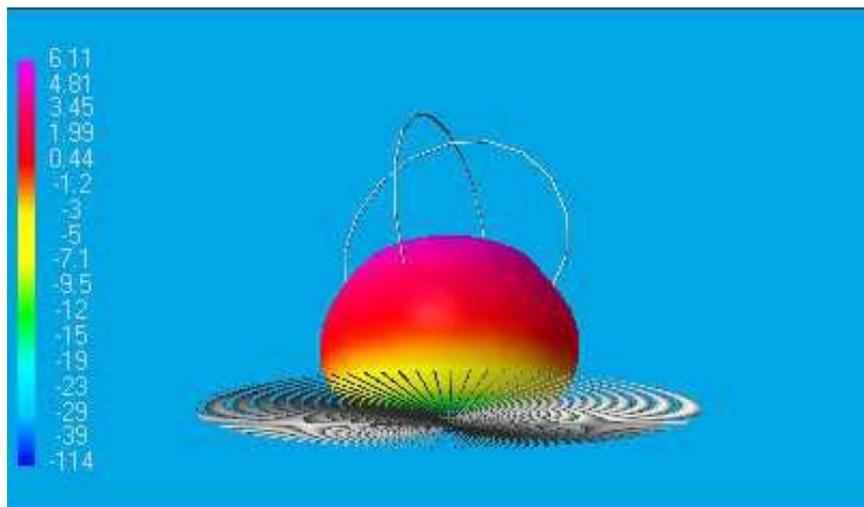


Fig 8

3-D development shows a good view of the radiation field pattern as well as the gain at different elevation levels. The maximum gain, shown here as purple in colour, covers an elevation angle from 60 to 90 degrees.

# “Eggbeater” Antenna VHF/UHF - Part 2

The ability to reverse the polarization (RHCP to LHCP) will greatly improve the antenna performance. I decided to connect a coax switching relay at points C and D, (see Part 1, fig. 7), inside the tube used to support the antenna. If the relay can not be fitted here, we can use the properties of the  $\frac{1}{2}$  wavelength coax lines, to fit it lower down, where there is more room.

Explanation : when a section of coax line is equal to or is an even multiple of a  $\frac{1}{2}$  wavelength, the impedance measured at the beginning of it will be reproduced at the end of it. We can use any type of coaxial cable ( RG-155, RG-58 or RG-62 ) to make a link between the coax relay switch and the antenna. So each loop can be coupled to the relay by a  $\frac{1}{2}$  wave, or 1-wavelength or 1  $\frac{1}{2}$  wavelengths of coax; any half wave multiple in fact. To calculate the electrical length of this  $\frac{1}{2}$  wavelength line, the velocity factor must be taken into account. Electrical length = measured length x velocity factor.

If the lines are correctly cut, an SWR meter placed in the feeder will not show any difference in its measurement, with or without the  $\frac{1}{2}$  wavelength lines in the circuit.

## Schematic

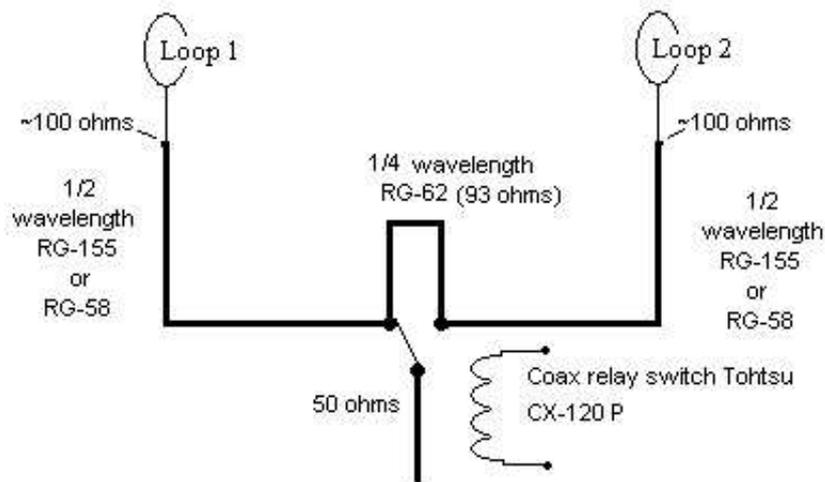


Fig 9

For information, here are the calculated lengths for the  $\frac{1}{2}$  wavelength RG-58 coaxial lines (velocity factor 0.66) used in the prototype antennas.

145 MHz : 68.5 cm

435 MHz : 22.8 cm

The  $\frac{1}{4}$  wavelength line can be connected on the coax relay switch. Then the  $\frac{1}{2}$  wavelength lines can be soldered to the coax relay, and all the lines folded over, (as shown in Fig 11), so as to slide in side the tube supporting the antenna.

## Choosing a coax relay switch

Manufactures of 50-Ohm coax switching relays are not too numerous. After some searches, it seemed to me that the TOHTSU CX120P coax relay was the best compromise for this purpose. It is small enough to enter in a 2 inches diam. tube. At a frequency of 500 MHz, it can be used with an input power of 150 watts and the isolation is still good (40 dB). The insertion loss is 0.2 dB. Maxi. VSWR is 1.3.



Fig. 10

# “Eggbeater” Antenna VHF/UHF - Part 2

Fig 10 shows the coax relay used on the antenna. The CX120P model is specially made to be used on printed circuit boards. This model is the more convenient because any size of coax cable can be connected to it. The CX120A model can also be used but it accepts only one size of coax cable.

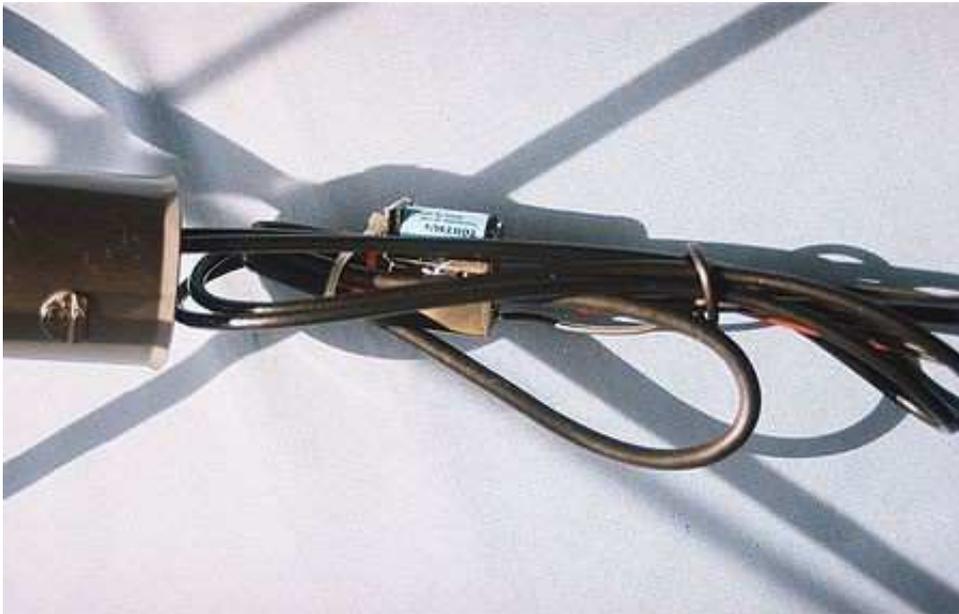


Fig 11

Fig 11 shows coax switching relay, folded  $\frac{1}{4}$  and  $\frac{1}{2}$  wavelength lines and fittings. A part of the tube supporting the antenna is seen on the left side of the picture. The shadow is produced by the antenna itself.

## **SWR measurement with CX120P coax switching relay installed :**

<u>UHF:</u>	Freq. MHz.....	430	432	435	436	437	438	440
	SWR.....	1.5	1.4	1.2	1.2	1.3	1.5	1.5

<u>VHF:</u>	Freq. MHz.....	144.....146
	SWR.....	1.3

## **Performance**

As soon as the polarization of a received signal is inverted, the level of the signal can be maintained by interchanging the polarization of the antenna. It can be also useful sometimes when transmitting to the satellite.

## **Proximity of the VHF and UHF antennas**

When using J-mode, VHF and UHF antennas are often close to each other. As these two bands are used simultaneously, an interference problem can appear on the UHF receiver. It can be caused by the third harmonic when transmitting on VHF. To solve this problem the third harmonic must be removed at the transmitter with a band-pass filter. Separating with some distance the VHF and UHF antennas is also another way to solve it. If, for some reason, it is not possible to separate the antennas with enough distance, one can add a duplexer 144/430 MHz in the feeder line of the UHF receiver. The 144 MHz connector of the duplexer must be left unconnected.

# “Eggbeater” Antenna VHF/UHF - Part 2

## Appendix I

Polarization change and satellite attitude on a circular orbit : A special case.

The attitude of a satellite is its orientation related to one or several co-ordinate points. These coordinate points can be either the center of the Earth, the Earth, the Sun etc... Attitude control systems are placed on board a satellite to give it orientation. Attitude control can be used for orientation of antennas, solar panels, camera or various experiments.

However its main use is to stabilize the satellite. As soon as it is stabilized, other control systems can be used to stabilize other elements like, for example, the internal temperature.

The simplest attitude control system is made with magnet rods. These magnet rods will fall into line with the Earth magnetic field, just like the needle of a compass.

Figure 12 represents the attitude of a satellite equipped with this kind of system passing along its course on a circular orbit around the earth. Notice the turning over of the satellite when passing over the Poles.

The magnetic terrestrial field is shown white in colour. The satellite orbit is shown in red.

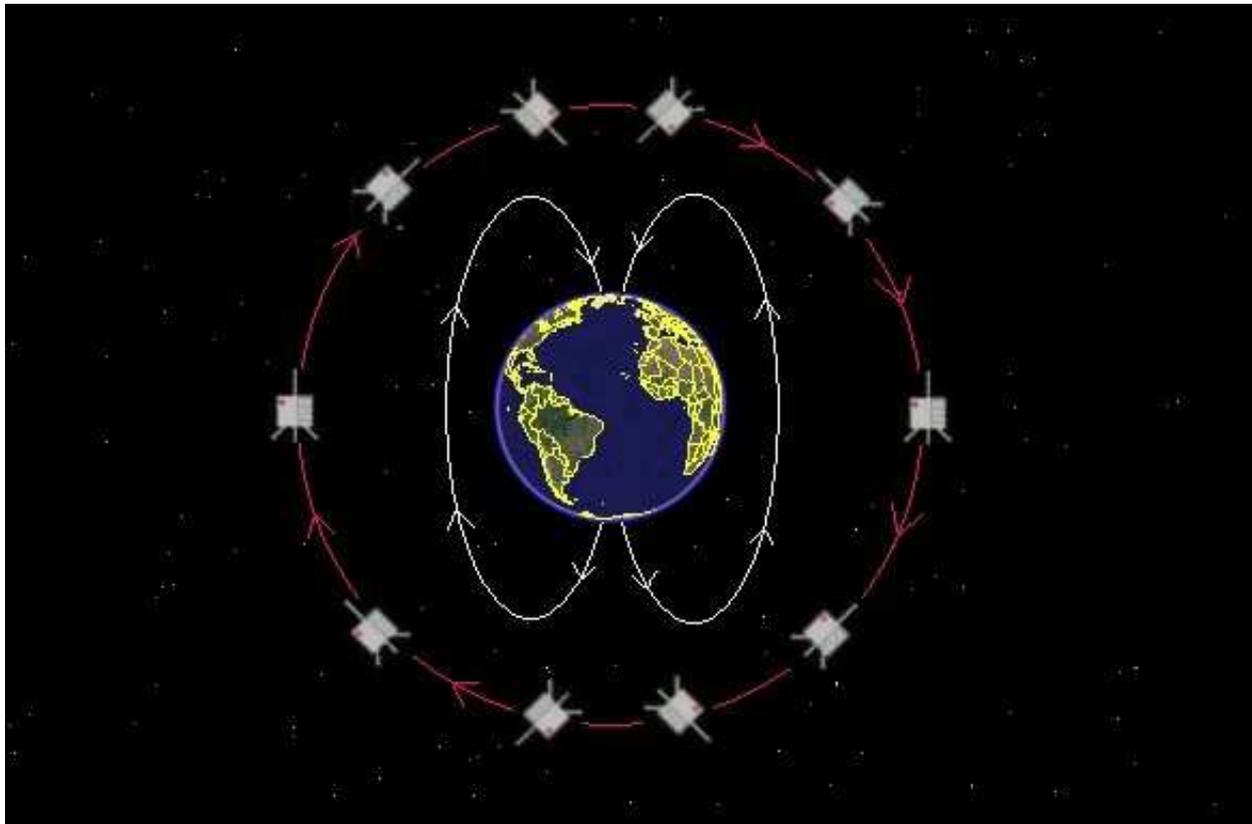


Fig 12

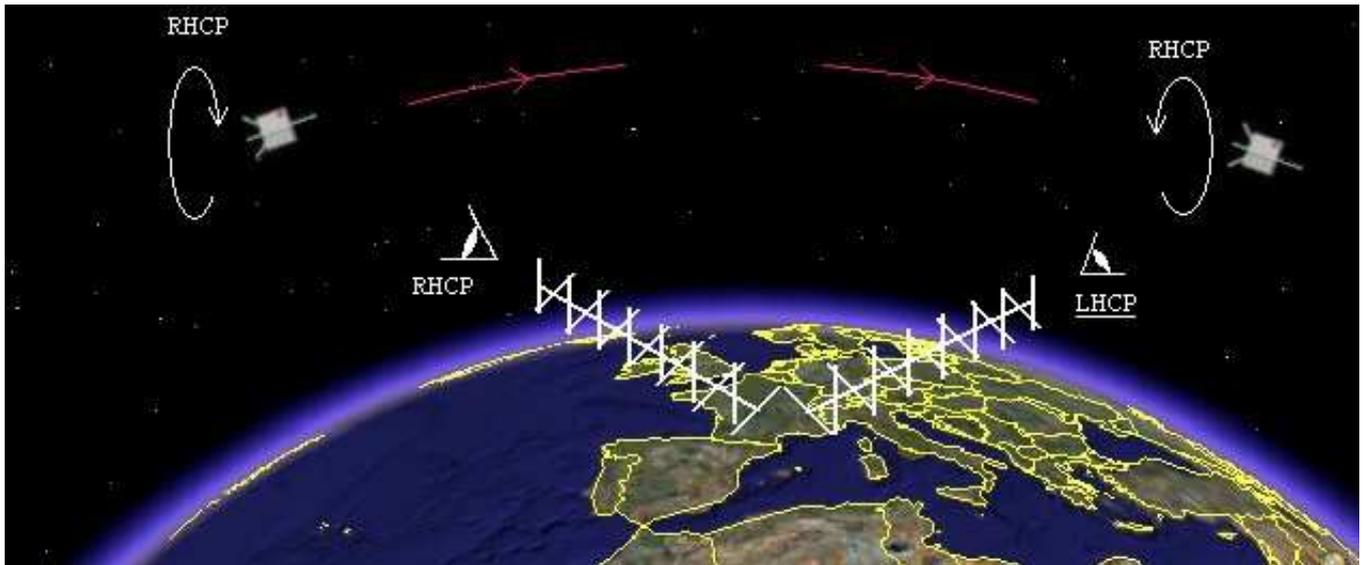
Now moving away from the Poles, what is seen by the antenna located on the earth and tracking this satellite ?

The answer is illustrated on Fig 13. Assuming the approaching satellite is using a RHCP turnstile antenna, the receiving antenna on earth sees a RHCP signal. When passing the Zenith (perigee) of its orbit relative to the the receiving station, the receiving antenna on earth sees the other side of the satellite's turnstile antenna and consequently a LHCP signal.

So, polarization change is not only due to propagation but is in some cases also depending of the attitude of the satellite itself.

In conclusion, we can see the value of having reverse polarization available, on a satellite receiving antenna.

# “Eggbeater” Antenna VHF/UHF - Part 2



RHCP : Right Hand Circular Polarization  
Fig 13

LHCP : Left Hand Circular Polarization

## Appendix II

Click on the links below

To see technical data of CX120P coax relay switch :

\_\_\_\_\_ <http://www.tohtsu.com/> \_\_\_\_\_

To find a place to buy the coax relay CX120P :

\_\_\_\_\_ <http://www.maes-electr.be/> \_\_\_\_\_

Then click on ‘Producten’ , ‘ Toebehoren’ , ‘ Tohtsu ‘

Special thanks to Nigel G4DCQ, for his comments, suggestions and improvements to the English text.

French translation of this article

Traduction française de cet article .. <http://www.on7wr.be/Gigazette/ON6WG/eggbeater2.pdf>

ON6WG / F5VIF Website ..... <http://pagesperso-orange.fr/on6wg/>

To contact the author : \_\_\_\_\_ <mailto:f5vif@amsat.org> \_\_\_\_\_

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# Low cost digital interface

Firstly I take no credit for this article, kudos goes to QSO Shack at:

<https://www.qsoshack.com/low-cost-sound-card-for-data-modes/>

The sole purpose of this exercise was to see if a digital interface could be built with the minimum of work. I built the interface so I could include/exclude isolation between the computer and rig, the original setup on the website didn't have isolation, I've added it as an optional extra.



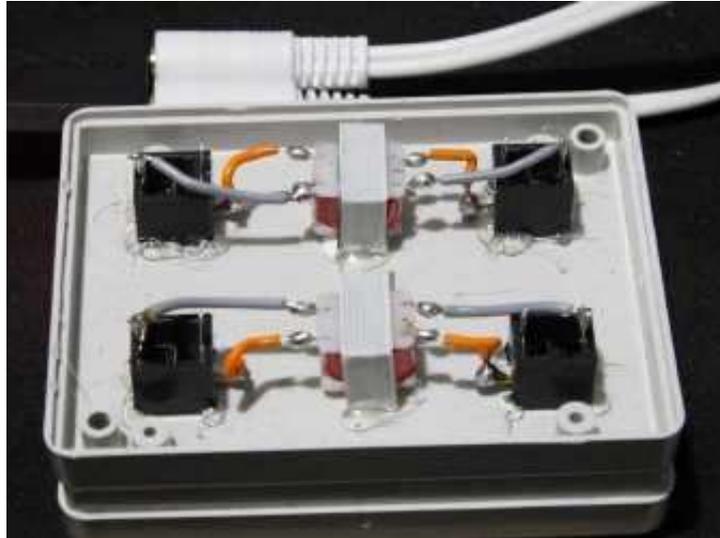
The parts list is quite simple:

- 1 USB Isolator
- 1 Soundcard
- 1 8-pin plug
- 2 short and 2 long 3.5mm jack stereo leads.

# Low cost digital interface

If you want to include the isolation the parts are as follows:

- 1 \* project box
- 4 \* 3.5mm stereo chassis mounts
- 2 \* Isolation transformers



**Stereo sockets (black) and isolation transformers (centre)**



**The sockets appropriately labelled**

The Isolation transformers and stereo chassis mounts were held down with hot melt glue, the stereo chassis mounts also had a nut on the other side.

Wiring is simple, the orange wires are the ground line (connects to the larger part of the stereo jacks) whilst the grey wires are the jack tips (left channel).

The purpose of this setup is to allow the Isolation to be connected if required.

Apart from the soldering in the above picture I had to cut the jack off of one of the longer stereo leads, find the left channel lead and solder it to pins 1 and 7 of my 8-pin plug (Kenwood wiring, other manufacturers will more than likely have a different wiring regime).

The labels on the box relate to the soundcard and rig 'Mic' and 'Speaker' connections.

# Low cost digital interface



The sound is picked up from the 'Phones' socket, data transmitted via the 'Mic' socket.



Not pretty, but it's not meant to be, it is, however, functional! If you decide against the isolation simply connect the loudspeaker of the soundcard to the Mic socket and the microphone of the soundcard to the headphone socket of the rig.

# Low cost digital interface

And to prove it worked here is a QSO I had on FT8.



My thanks go to <https://www.qsoshack.com/low-cost-sound-card-for-data-modes/> for their article, it's an eye opener when it comes to the cost of parts, my build cost just under £30 but that included everything new and nothing that I had. If you choose not to have the isolation that would trim around £10 off the cost.

When you try this out, remember to select the soundcard as the USB soundcard and 'Left' as the channel otherwise it won't work! Other settings will depend upon your rig, mine were:

## RIG

### Transmit Audio Source

Front/Mic

## AUDIO

### Soundcard

Input: / Output: - pick the USB soundcard from the dropdown list, also select 'Left' from the righthand dropdown list.

Give their site a whirl, it gives explanations on why the USB isolator, how to connect up, data mode software settings and setting audio levels.

I tested the interface with and without the isolation, there was no difference, but that's not to say it's a good idea not to have it in circuit.

Bryan MOIHY

# Committee Meeting Minutes



**CDARS**  
**Committee Meeting Minutes**  
**Monday 13 December 2021**

**Present: Jeremy Browne; Malcolm Appleby; Matthew Whitchurch; Bryan Page; Angela Page**

## **1. Apologies**

All members present.

## **2. Minutes of previous meeting „ 7th October 2021**

No corrections to the minutes.

## **3. Treasurer's report**

Matt reported that there is more activity financially as the club has been getting back to a greater number of activities following lockdown. Total income for the year to date is £695, with expenditure £427. There are some hall fees outstanding and these will be settled when the Memorial Hall invoices us.

We agreed to keep the subscription rate at £25 per year. For contest events we might ask for contributions from those operating to cover the extra costs (field payments, hall fees etc). Matt will put out an email to members reminding them that subscriptions are due at the AGM, and that the subscription rate will remain at £25 (with £30 for a family).

**Action: Matt**

## **4. AGM 2022**

We agreed this will be held on Zoom. Malcolm will send out a formal calling notice with the Zoom details

**Action: Malcolm**

Bryan and Angie wish to stand back from the committee for the time being due to personal circumstances, but we agreed that when they are ready to return they could be co-opted back onto the committee.

Jeremy will send round a note to members saying that we are seeking one or more additional committee members, and that nominations can be accepted at the AGM (with the nominee's agreement of course).

**Action: Jeremy**

There are three trophies to be awarded at the AGM, and we agreed the following:

M0JCQ Rookie trophy - to Roger M7RMF

CW trophy - to Chris M0IEA (for making keys as well as using them)

Dennis Kind shield - James M0JCQ

We will announce the trophies at the AGM and arrange a presentation at a later date.

# Committee Meeting Minutes

## 5. Club project

Jeremy asked where we are in relation to the project for a digital interface. John/Peter has been unavailable recently, but Bryan has done some work independently and has written this up for the next newsletter. We will ask members for levels of interest, and if several wish to build the interface we could arrange a construction club night.

## 6. Future programme

We agreed to plan a meeting for February, and set the programme for the coming months when the new committee is in place.

For February we decided to run one of the RSGB Convention or Tonight @ 8 videos „ in person at Ashley Green if possible, with online access as well, or online only if there are meeting restrictions in place at that time.

## 7. Contest entries

We discussed whether, for 2022 contests, we should register the club as a general or local club. There were tactical advantages of being a general club in the 2021 season, although this might have been a temporary anomaly. We will ask Dave G8FMC to find out when we need to register for the 2022 contest season and advise us on a course of action. Regardless of this, the feeling was that we should remain as a Local Club for contest purposes, even if that category has become more competitive.

For the 80m AFS SSB in January, alternative venues are being pursued as Ashley Green is not available.

## 8. A.O.B.

Matt said that following the move from the White Hill Centre it was clear how much equipment we now have, much of which we may not need. We could sell the surplus for club funds, with members given the first refusal. We will schedule one or more informal club meetings to produce an inventory of equipment, then we can decide what to keep and what to sell.

Bryan said he had received an email purporting to be from G0TPK, who went SK this year. Bryan will put a note to members asking them to remain vigilant.

## 9. Date of next meeting

Monday 7th February 2022 @ 8.00pm (via Zoom)

# Log4OM - part 2 - connecting it up

## Malcolm Appleby G3ZNU

In last month's article about the Log4OM general logging program I covered getting it loaded, setting up the database and entering your station details, and some tips about using it – which also covered turning off bits that you probably won't need at first!

A stand-alone logging program is a useful tool, but it's not much more advanced than a paper log. Where a computer-based log scores is when it's connected to your rig, and to external services. In this article I'll cover those topics, not in great detail, but enough to get you up and running. For all the details I'll always direct you to the 230-page user guide.

### CAT interface

CAT stands for Computer Aided Transceiver and is the way that your computer (and the logging program) can both read information from your rig and control the rig. Virtually all rigs support a CAT interface, either with an RS232 interface (typically a 7-pin D-type connector) for older rigs, or a USB for recent rigs.

As most computers have now lost their RS232 socket, if your rig only has that type of interface you'll need a converter cable. These cables are easy to get hold of (see eBay), but they do contain active components so look carefully for the right cable before you buy. You will probably have to download some drivers for your PC so that the cable appears as a COM port – the cable vendor should tell you which drivers you need.

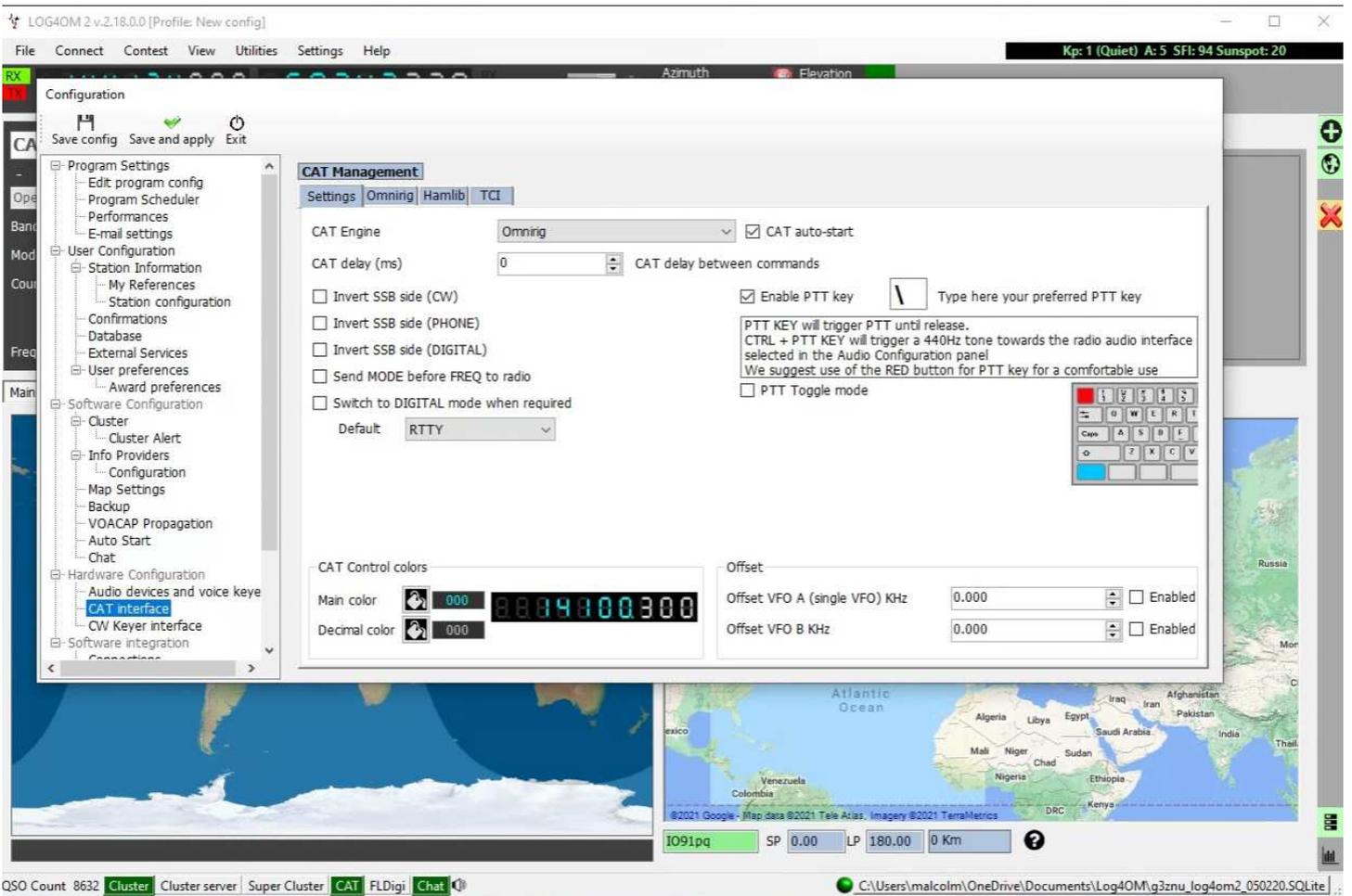
Once installed you'll need to find out what Port number your PC has assigned to the CAT interface. The best place to find this out is in the PC's Device Manager – look in the Ports (COM & LPT) entry. It will typically be COM4 as the lower numbers are reserved by Windows. You will also need to find out or set the data rate used by your rig's CAT interface. This is accessed through the rig's menu structure – read the manual! I would recommend a high data rate if your rig and interface support it otherwise there can be some lag – I am using 57600 baud.

As there are many rigs each with their own CAT instructions set, Log4OM uses some intermediate software to talk to your rig's CAT interface. The two main software sets are Hamlib and Omni-Rig. Hamlib is a software library, contributed by many individual parties and maintained through GitHub. Omni-Rig is written and maintained by Alex VE3NEA, and also covers a very large range of rigs. It's available at [dxatlas.com](http://dxatlas.com).

My preference is Omni-Rig because it's not just an interface to CAT, it has a mediation engine which means it makes the CAT interface available to more than just the one application. In my setup, both Log4OM and WSJT-X (for FT8 and other digital protocols) can both address my rig's CAT, so when I change band in WSJT-X it tells the rig, and the rig tells Log4OM I've changed frequency.

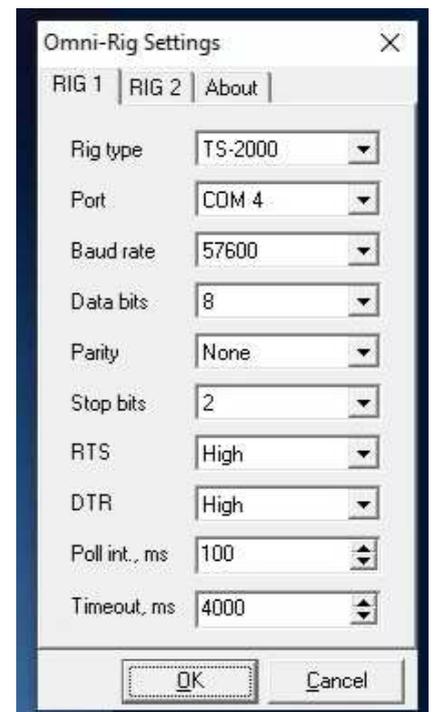
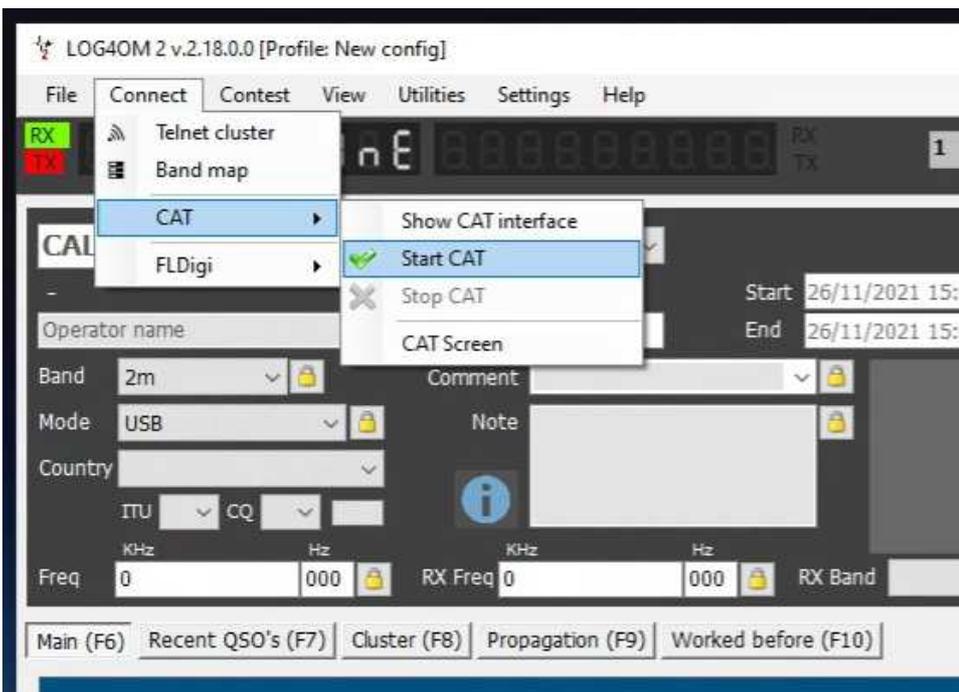
Omni-Rig is an optional install when you install Log4OM, and I'd recommend you do so. To set it up head for the Log4OM Program Configuration (from the Settings menu) and click on CAT Interface in the Hardware Configuration area.

# Log4OM - part 2 - connecting it up



A dialogue box will come up, and under the Settings tab you can either select Omni-Rig or Hamlib. Make sure you check the CAT auto-start box and, if you've selected Omni-Rig, that's it. Save and apply the settings.

Now to configure Omni-Rig itself. On the Log4OM main screen, click on Connect -> CAT, and then select Show CAT interface. Assuming Omni-Rig has been loaded it will start up.



# Log4OM - part 2 - connecting it up

On the Omni-Rig Settings panel, use the drop-down boxes to select your rig type, the port number of the CAT interface on your PC, and the data rate of your rig. Set the Poll interval suitably low – 100ms should be ok – so the CAT interface keeps up when you're tuning. Once you're happy and saved the settings, go back to the Connect tab, and click on Start CAT. The CAT box at the bottom of the Log4OM screen should go green, and the display should show your rig's frequency.

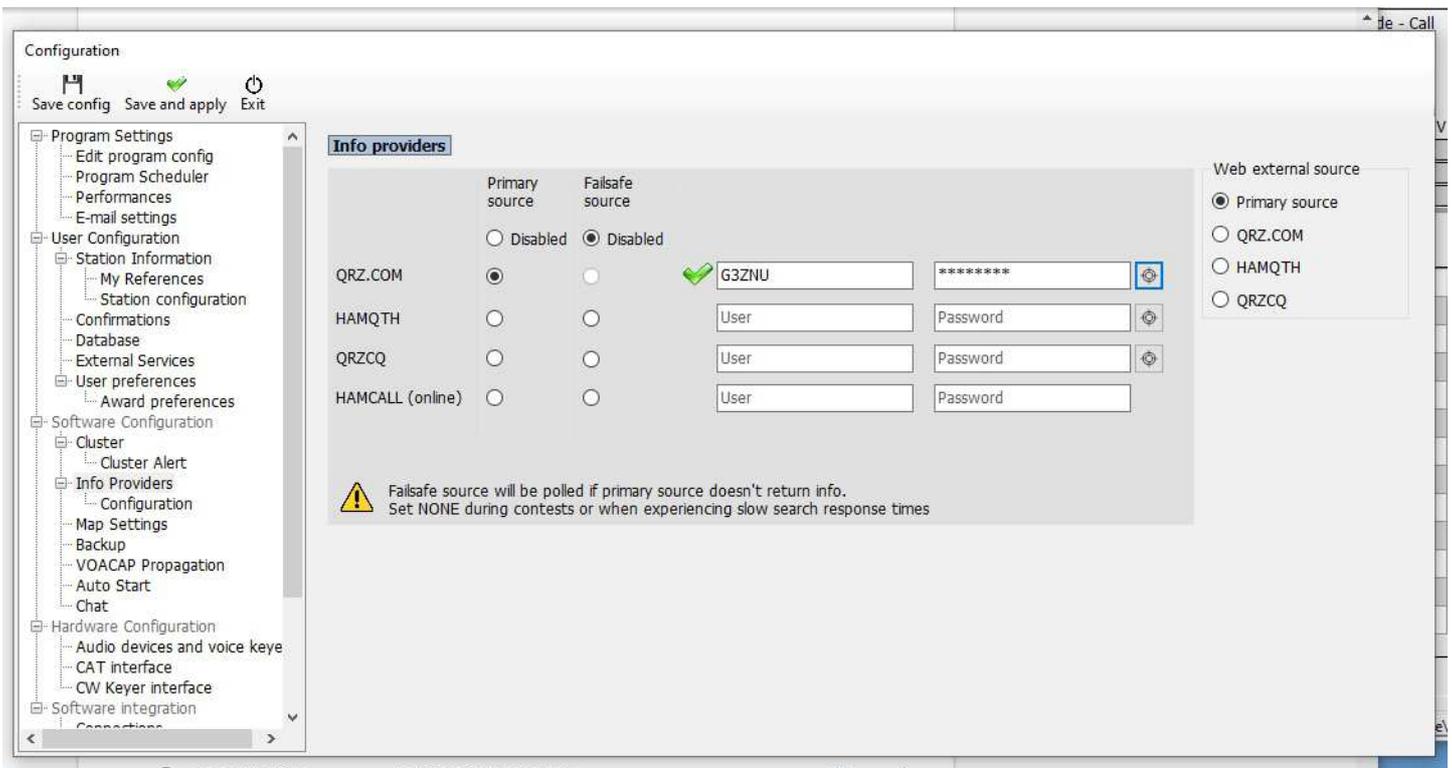
One thing to watch out for – in my set up the CAT interface cable needs to be plugged into the PC directly and not via a USB hub. If I do use a hub it seems like I need to kick it into life using an Omni-Rig client (another download, look for it if you have problems).

If you prefer to use Hamlib, the settings are selectable directly in the Log4OM CAT interface setup panel – click on the Hamlib tab and you'll be able to select your rig type, data rate, port number etc.

## External data sources

When you're working a station and enter their callsign, Log4OM can fetch information about that station from external sources, the most common of which is QRZ.com. Log4OM can also use HAMQTH and QRZCQ. To be fully effective you'll need a subscription with the external source. I use QRZ.com which offers a high-speed XML Logbook Data interface at \$29.95 per year (yes, US Dollars) – not a lot in the grand scheme of things. (I believe you can also use a web interface which is free, but I've not tried this and it might be a lot slower – let me know if you find it works.)

Once you subscribe to QRZ.com you just need to enter your username and password into Log4OM.



This panel can be found in Program Configuration -> Info Providers (in Software Configuration). I also have an account with HAMQTH and have added those login details as my Failsafe source.

Once that's all entered, head back to the Log4OM main screen and enter a known callsign, and after a second or so the details will be populated. (No, I don't know why James' picture is inverted!)

# Log4OM - part 2 - connecting it up



Be careful to check the station's details, however. QRZ.com will populate the station's locator but this may be different from their actual locator, especially if the station has not updated from the default UK QRZ.com locator of IO91vl (somewhere in West London). You can amend any of the details that the station you're working tells you directly before logging the QSO.

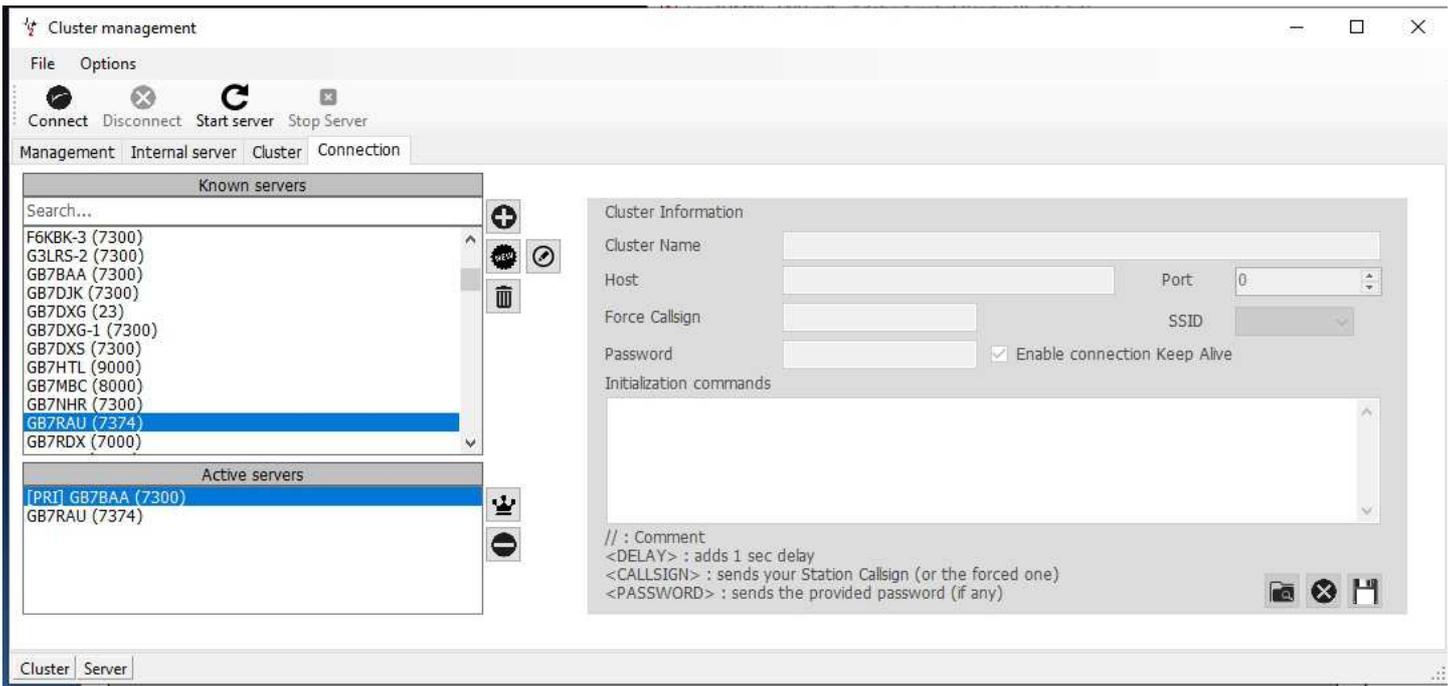
Log4OM will keep a tally of which stations, locators and countries you've worked and had confirmed on each band, and will display this in a multi-coloured panel to the left of the station's picture. If you look just about this panel you'll see five tabs with the default (Stats (F1)) selected; if you click on the Info (F2) tab you'll find more information retrieved from QRZ.com – the station's full address and QSL preferences. Have a play with the other tabs too – in the My ((F4) tab is your own station information that will be logged with the QSO, derived from what you told Log4OM when you first set it up and told it all about your station (you did do that, didn't you?).

## DX Cluster

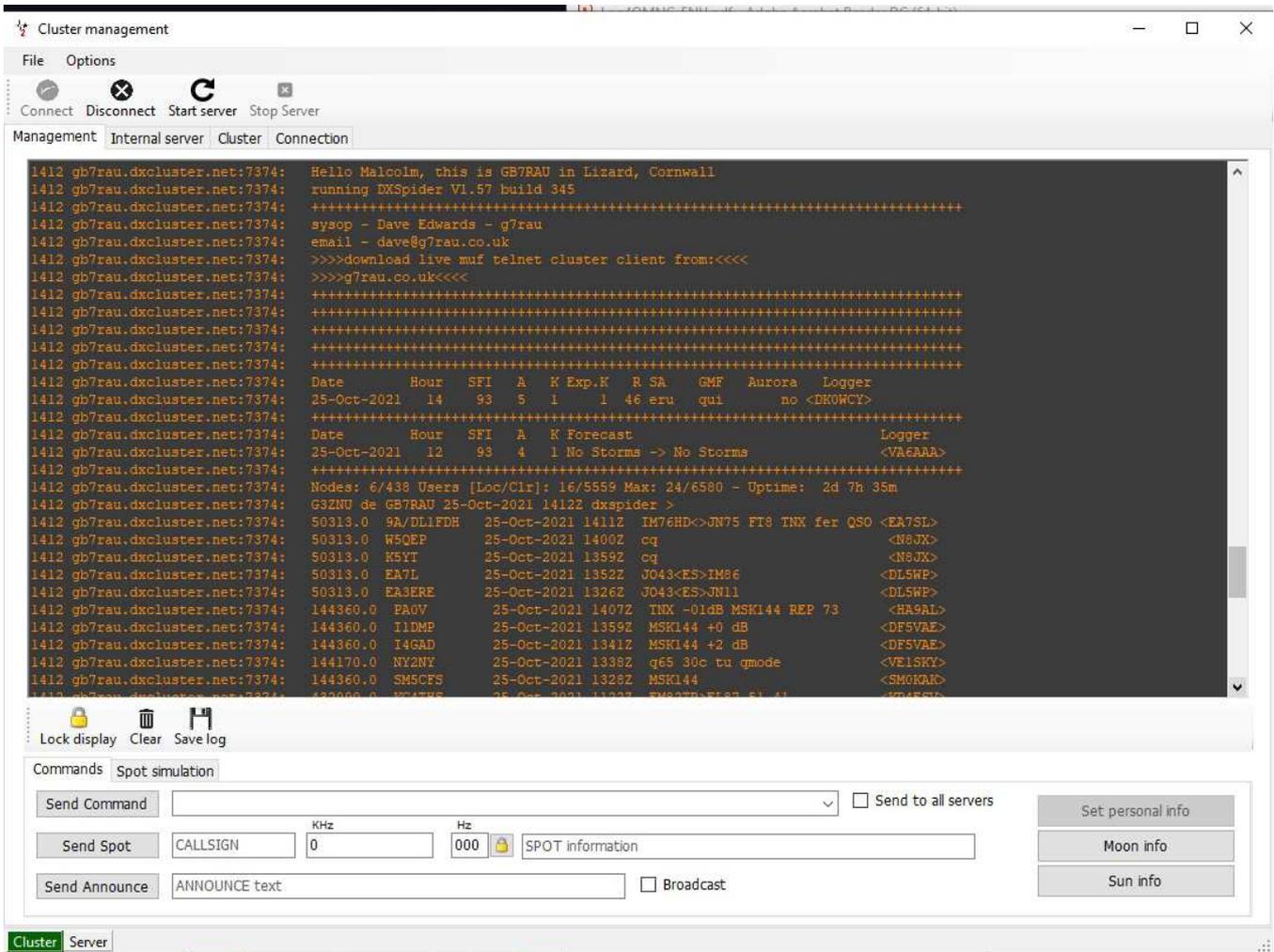
Ever figured out how people find and work DX stations so quickly? Is there someone tipping them off, telling them where to look? In effect, yes. DX clusters are computers set up across the world, all interlinked, which you can interrogate for information about DX stations worked, their frequency and mode. The information is sent into the cluster system by other amateurs – generally after they have worked the station themselves. Log4OM logs into one or more clusters using Telnet, and the clusters sends back raw information which Log4OM reads and presents a filtered version on its screen – so you can opt to just view certain bands and modes.

To set up cluster access, click on Connect -> Telnet cluster from the main Log4OM menu. A panel called Cluster Management will open up.

# Log4OM - part 2 - connecting it up



Click on the Connection tab and you'll find a list of known clusters you can use – select which one or ones you want to use and add them to the Active server list. In the screenshot you can see I've selected GB7BAA as primary and GB7RAU. Then click on Connect and Log4OM will log into the selected servers. If you then click on the Management tab you'll see the dialog between Log4OM and the cluster, and "spots" will start coming in on a regular basis. You can close the Cluster management panel, it will still be working in the background.



# Log4OM - part 2 - connecting it up

Then from the main Log4OM screen select the Cluster tab (towards the middle of the screen). You'll now see spots come in as and when they have been sent in the cluster system. To the right of the cluster display click on the Filters tab, and here you can select which bands you want to keep a watch on, and which modes.

The screenshot shows the Log4OM 2 v.2.17.0.0 interface. The top menu includes File, Connect, Contest, View, Utilities, Settings, and Help. The status bar at the top right shows 'Kp: 1 (Quiet) A: 4 SFI: 93 Sunspot: 46'. The main interface is divided into several sections:

- CALLSIGN**: Fields for Operator name, Grid, Start/End times, Band, Mode (USB), Country, ITU, CQ, and Frequency (000 KHz).
- Stats (F1)**: Includes buttons for NEW ONE, NEW BAND, NEW MODE, NEW GRID, GRID BAND, and GRID MODE. Below these are fields for Country - Call, Band - Call, and Mode - Call.
- Cluster (F8)**: A table with columns: Date, Time, Spot Mode, Callsign, Frequency, Flag, Country, Reliability, Band, Emission Type, and Modulation Type. The table contains several rows of spot data.
- Filters**: A section on the right with a table for selecting filters for PH, CW, and DIG across various bands (160, 80, 60, 40, 30, 20, 17, 15, 12, 10, 6, 4, V, U).

At the bottom, there is a status bar showing 'CONNECTED SC DISCONNECTED' and 'Last update: 25/10/2021 14:13:38'. The bottom right corner shows the file path: 'C:\Users\malcolm\OneDrive\Documents\Log4OM\g3znu\_log4om2\_050220.SQLite'.

If you have CAT control working, clicking on an entry in the cluster list will move your rig to the right frequency and mode to work the DX. Happy hunting!

In the third part of this series I'll cover Log4OM working with online QSL services – specifically eQSL and QRZ.com logbook. I'll also touch on LOTW (Logbook of the World) and Clublog, although these are topics in their own right. Anyone want to write an article on these?

Malcolm G3ZNU

*ED - I managed to rectify James image on page 18, it was presented to me with James upside down, a little editing with my graphics software got him the right way round!*

## January

### HF

Day	Date (2021)	Time UTC	Contest Name
Sat	08 Jan	1300-1700	RSGB AFS 80m-40m Contests CW
Sun	16 Jan	1300-1700	RSGB AFS 80m-40m Contests Datamodes
Sat	22 Jan	1300-1700	RSGB AFS 80m-40m Contests Phone

### VHF

Day	Date (2021)	Time UTC	Contest Name
Tue	04 Jan	1900-1955	144MHz FMAC
Tue	04 Jan	2000-2230	144MHz UKAC
Wed	05 Jan	1900-2100	144MHz FT8 AC
Tue	11 Jan	1900-1955	432MHz FMAC
Tue	11 Jan	2000-2230	432MHz UKAC
Wed	12 Jan	1900-2100	432MHz FT8 AC
Thu	13 Jan	2000-2230	50MHz UKAC
Tue	18 Jan	2000-2230	1.3GHz UKAC
Thu	20 Jan	2000-2230	70MHz UKAC
Tue	25 Jan	1930-2230	SHF UKAC

## February

### HF

Day	Date (2021)	Time UTC	Contest Name
Mon	07 Feb	2000-2130	80m CC SSB
Sat	12 Feb	1900-2300	1st 1.8MHz Contest
Wed	16 Feb	2000-2130	80m CC DATA
Thu	24 Feb	2000-2130	80m CC CW
Mon	28 Feb	2000-2130	RSGB FT4 Contest

### VHF

Day	Date (2021)	Time UTC	Contest Name
Tue	01 Feb	1900-1955	144MHz FMAC
Tue	01 Feb	2000-2230	144MHz UKAC
Wed	02 Feb	1900-2100	144MHz FT8 AC
Sun	06 Feb	0900-1300	432MHz AFS
Tue	08 Feb	1900-1955	432MHz FMAC
Tue	08 Feb	2000-2230	432MHz UKAC
Wed	09 Feb	1900-2100	432MHz FT8 AC
Thu	10 Feb	2000-2230	50MHz UKAC
Tue	15 Feb	2000-2230	1.3GHz UKAC
Thu	17 Feb	2000-2230	70MHz UKAC
Tue	22 Feb	1930-2230	SHF UKAC
Sun	27 Feb	1000-1200	70MHz Cumulatives #1

# 'Air Miles', how far have we gone? / results

With Jeremy as the only one to submit logs this month it's what you might call a 'one-horse' race.

So, how have we done this month?

20m is again the favoured band and CW the favoured mode.

(Running totals in red)

## General

### Most Miles

G3XZG	60,477	849,345	
G3ZNU		1,090,518	
M0JCQ		6,823,008	

### Most QSO's

G3XZG	35	543	
G3ZNU		934	
G3XZG		2,832	

### Longest QSO

G3XZG	AD5A(4954)	VK4DX(10286)	
G3ZNU		L21RCA(11131)	
M0JCQ		VK2LAW(16963)	

### Shortest QSO (miles)

G3XZG	M0CEM/P(19)	G4UZE(8)	
G3ZNU		G4WJS(7)	
M0JCQ		G3MEH(0)	

### Average per QSO (miles)

G3XZG	1,728	1,576	
G3ZNU		1,553	
M0JCQ		2,409	

### Maidenhead Squares

G3XZG	35	485	
G3ZNU		638	
M0JCQ		1,956	

## QSO Economy Drive

### High miles per Watt

G3XZG	49.54(100)	102.86(100)	
G3ZNU		73.16(100)	
M0JCQ		161.92(15)	

### Low miles per Watt

G3XZG	0.19(100)	0.19(100)	
G3ZNU		0.07(100)	
M0JCQ		4.10(100)	

## By Band

<b>160m</b>	<b>30m</b>	<b>12m</b>	<b>2m</b>
	G3XZG 6 89	G3XZG 2 2	
<b>80m</b>	<b>20m</b>	<b>10m</b>	<b>70cm</b>
	G3XZG 16 206		
	G3ZNU 64		
	M0JCQ 1,198		
<b>60m</b>	<b>17m</b>	<b>6m</b>	<b>23cm</b>
	G3XZG 2 33		
	G3ZNU 44		
	M0JCQ 601		
<b>40m</b>	<b>15m</b>	<b>4m</b>	
G3XZG 3 16	G3XZG 6 10		
M0JCQ 89	G3ZNU 30		
	M0JCQ 120		

# 'Air Miles', how far have we gone? / results

## By Mode

---

### CW

G3XZG		36	471	
G3ZNU			30	

## By Country

---

G3XZG		21	91	
G3ZNU			94	
M0JCQ			90	

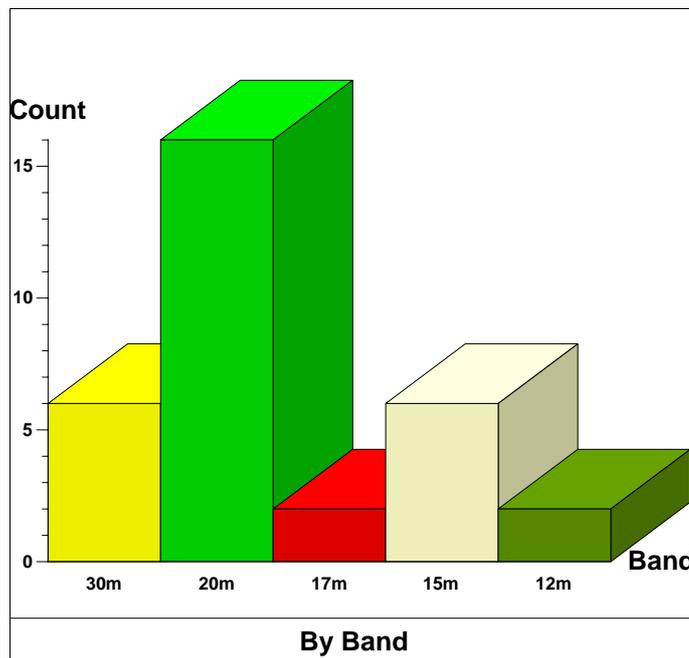
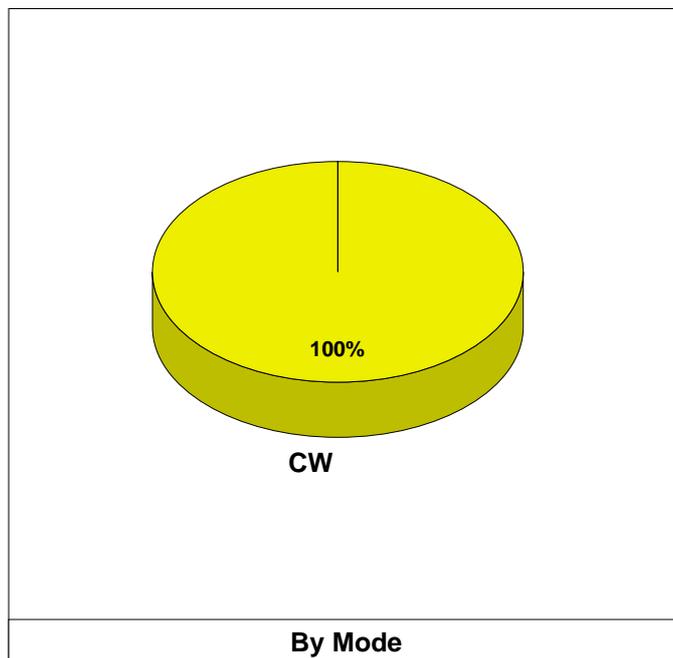
## This month's totals

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Countries visited	-	21
Most visited Country	-	United States - 9 times
Total Mileage	-	60,477
Total QSO's	-	35
Average miles per QSO	-	1,727
Total locators visited	-	35
Most visited locator	-	FN20, FN42, KO85, all 2 times

# 'Air Miles', September at a glance

*This month at a glance (accumulative)*

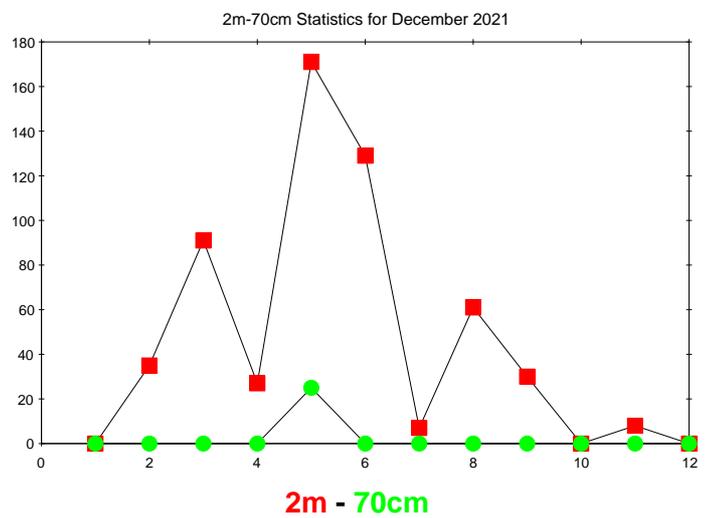
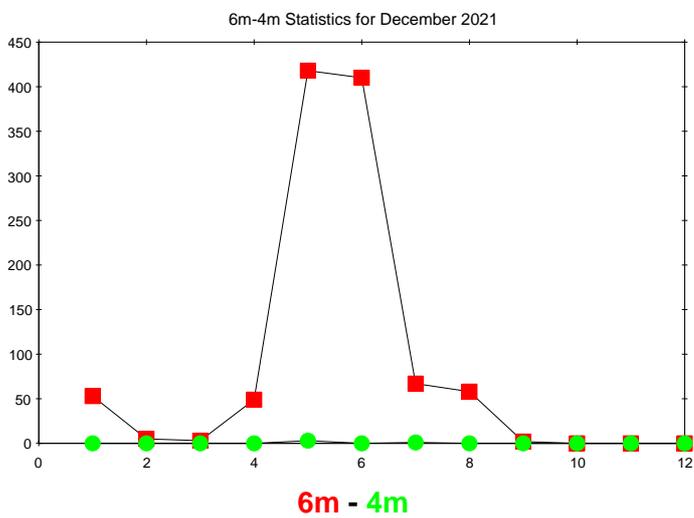
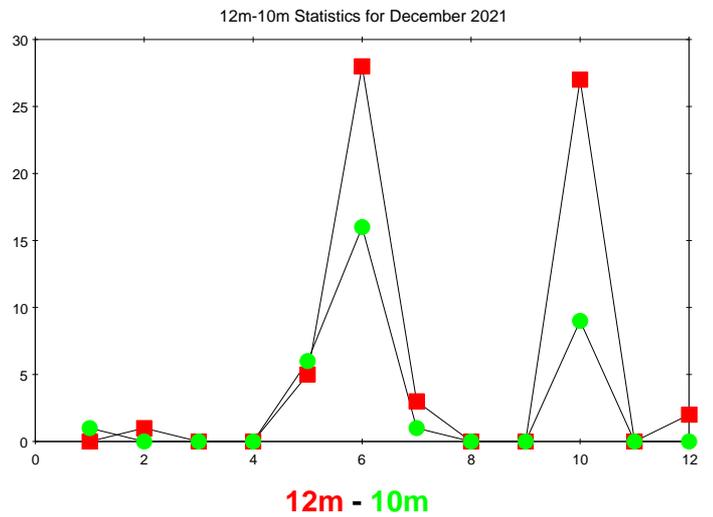
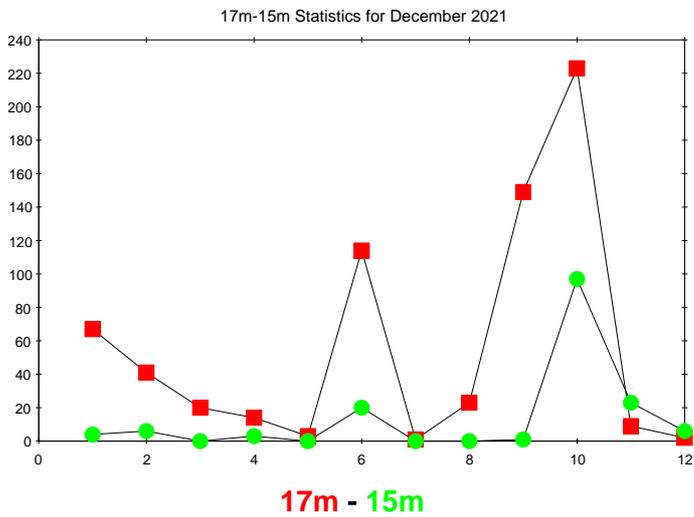
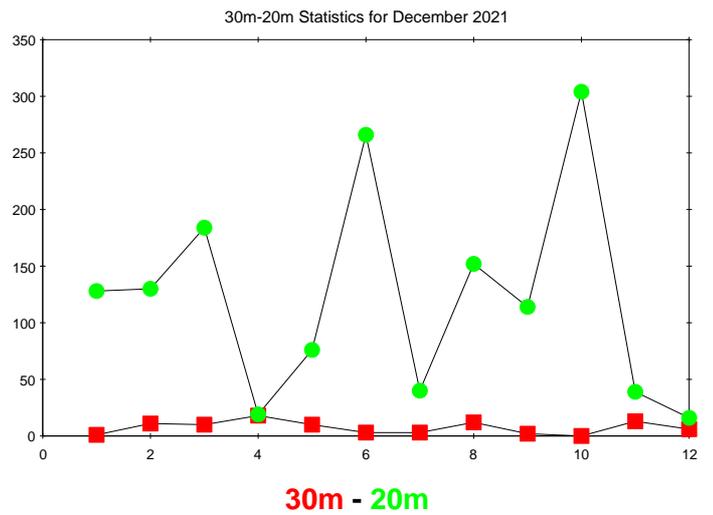
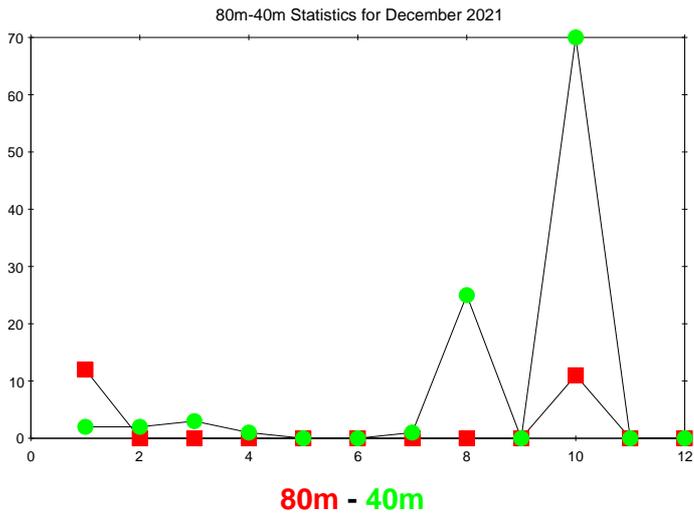


No pretty display this month, far too crowded requiring a magnifying glass to see the results!

Austria	1
Bahamas	1
Bulgaria	1
Denmark	1
England	2
Finland	1
Germany	3
Hungary	2
Italy	1
Latvia	1
Poland	1
Romania	1
Russia	2
Scotland	1
Serbia	1
Slovakia	1
Slovenia	1
Sweden	1
Turkey	1
Ukraine	2
United States	9

**QSO Countries**

# 'Air Miles', bands by the month



# Any other business