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Local Repeaters  
GB3MH: 145.625/88.5(FM)  
GB7MH: 439.6375(D-Star/DMR/Fusion)  
GB3NX: 430.850/88.5(FM)  
GB3NS: 439.675/82.5(FM)  
GB7NS: 439.1625(DMR)  
GB3HO: 430.8875/88.5 (438.4875)(FM)  
GB3HY: 430.900/88.5 (438.500)(FM)  
Local DX Cluster GB7DXS : Telnet  
81.149.0.149 Port 7300



# Club newsletter



July 2022

**Editor: Richard, G3ZIY**

Hi Fellow Members,

It seems like so much has happened since the last newsletter that it's hard to know where to start.

On the air, HF conditions have been good up to late spring. We're in the summer lull at the moment but both sunspots and SFI have been reasonable with good F layer propagation to VK/ZL on 10m in late evening. The 6m Es season got off to a slow start but here have been a couple of major opening to the USA and shorter weaker openings to Asia. The club station worked Indonesia on 6m mid afternoon a couple of weeks ago. This makes 103 confirmed DXCC on 6m.

The club took part in Mills on the Air from Ifield water mill. A lovely day out for those who took part and even the local MP popped by.

Another Special Event, this time at the club saw CARC take charge of the GB70E callsign on SSB for two Sundays in June. Phil arranged the callsign and oversaw the activity with plenty of members popping in for a go at operating this popular callsign.

Contest wise CARC joined forces with RATS to take part in the RSGB VHF NFD contest putting on 5 stations during the 24 hours in the "top" OPEN section. At the time of writing the results haven't been published but hopes are high for a good result.

The club refurbishment has been paused for a few weeks due to holidays and operating activities. We hope to get back to the final half wall of painting quite soon and a priority is to get the new infrared heating installed and working before the cooler weather of autumn arrives. There's still plenty of finishing touches to do, including painting the cupboards in the hall and adding some trunking for the plugs and sockets.

We are now turning attention to the CARC radio shack. All the equipment there is now 12 years old and it is time to consider refreshing the line-up. We've currently got a Flex6400 on loan which is working very well. Come along and see what you think.

I'd like to point out a couple of events coming up in the early autumn: the club are planning a visit to Bletchley Park on Saturday 10<sup>th</sup> September. It's free entry for RSGB members and we plan to organise informal car sharing to keep the travel costs down. Next up, CARC will host the microwave round table, effectively a mini rally at our own club. Please do come along on Sept 18<sup>th</sup> to meet the visitors and pick up some tips on operating the higher bands.

Following that between October 7<sup>th</sup> to 9<sup>th</sup> is the RSGB Convention being held in Milton Keynes and streamed live on YouTube. This is always a great gathering with excellent talks covering HF, VHF, technical and operating.

The last big one of the autumn is the National Hamfest in Newark on 14<sup>th</sup>&15<sup>th</sup> October.

Take care and hope to see you at Hut18 very soon.

Regards, Mike, G0KAD CARC Chair

## GB70E

The club was awarded the privilege of operating GB70E in honour of Her Majesty's Platinum Jubilee celebrations on two consecutive Sundays in July. Conditions were quite good and the rota of operators kept up a steady stream of contacts from near and far.

Many of the foreign stations did seem to be aware of Her Majesty's achievement, and one German station said "God Save The Queen" instead of 73 at the end of our QSO, which I thought was a nice touch. Several stations that happened to have a "Q" in their callsigns used queen instead of quebec as their phonetic for that letter.

So thanks to the Committee and the RSGB for organising that for the club.

*Richard, G3ZIY*



*Our Honorary Secretary warming up the æther!*

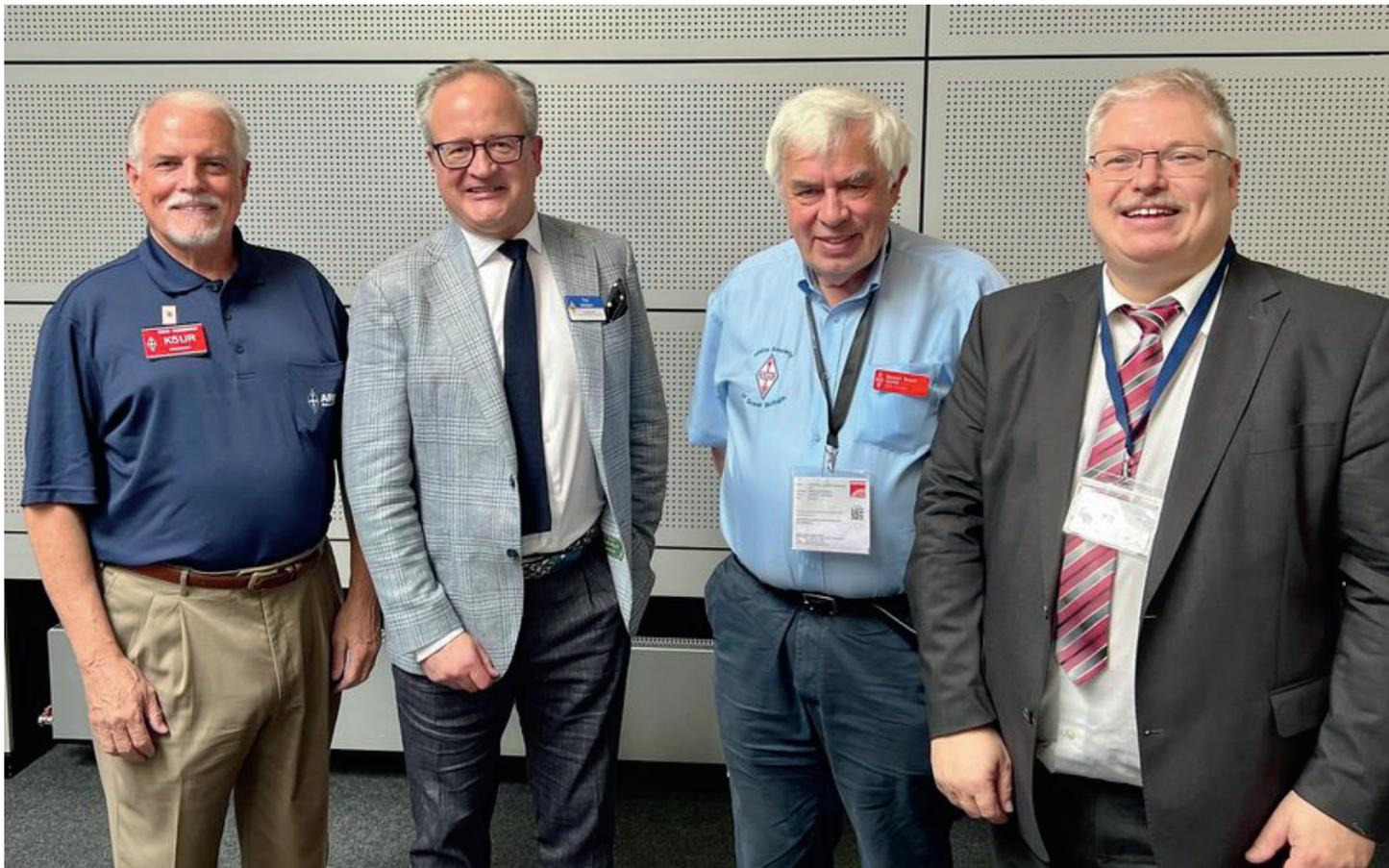


*Club Members with a coaxial cable loop aerial.*



*Seen at the VHF NFD contest station*

*Seen at Friedrichshafen...*



*Richard, K5UR, Timothy, VE6SH, Stewart, G3YSX, and Christian, DL3MBG*



*Dave, G4BUO and Stewart, G3YSX*

## FRIEDRICHSHAFEN 2022



This year we originally planned for 4 of us to go by car unfortunately 2 had to drop out for good reasons, so that just left Paul G4TMC and myself Richard G4ANN.

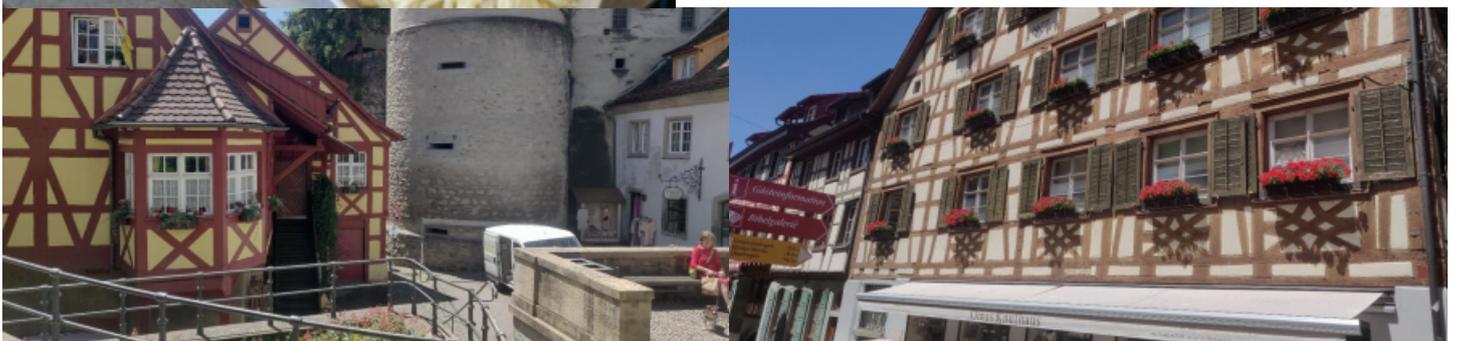
So we decided to go via Basel by air then train from there, only problem with this route was there is no train station at the airport so have to catch a bus to the train station unfortunately this is not the right station the one we wanted was across town, but otherwise it's a good route.

We arrived on the Wednesday so we had a nice evening meal at one of the many lake Constance restaurants. Next day we went to Meersburg just along the lake from Friedrichshafen by ferry, and had a stroll around there and spaghetti ice cream all round.



On the Friday we went to the rally at the *Messe* slightly smaller than previous years but still very good with a complimentary cup of coffee at the RSGB stand.

Saturday went to a tractor and motor museum this was in the middle of nowhere after disembarking from the train we had to walk down farm tracks to get to it, but worth it when we got there, had a nice lunch there first before going round the museum.



*Meersburg*



On Sunday we went to the Dornier museum and had a good view of the Zeppelin taking off from near the *Messe* whilst having our lunch; you can see the exhibition halls in the background.

On Monday we set off for home. Our flight was quite late anyway and was then delayed, so we got back to Gatwick very late.

*Richard G4ANN*



*Seen at the Sonning McMichael rally:  
Richard II, Richard III and Richard I aka G3ZIIY, 2E0SXX and G4ANN*

## Homebrew Moxon for 6m

Making an antenna for 6m band has been on my todo list for around 6 years – this year it came up to the top!

Planning (ie XYL Caroline) will not allow a permanent installation so it had to be compact and also easy to dismantle and store in the already overloaded garage.

### Construction

I decided on a Moxon antenna as that could also utilise some fibreglass tent poles I had available scrounged from the bin after a friend's tent failed to make it through a hurricane while camped in Fort Purbrook in 2007. I knew they would come in handy some time.

There are lots of different ways to build a Moxon. Lots of information including a calculator for the dimensions can be found at this link, amongst others:

<https://web.archive.org/web/20211206044139/https://moxonantennaproject.com/design.htm>

Note this is an archived page – the original is not secure and no longer works – don't try it!

The calculator provides a useful diagram with dimensions – 1.73mm is the diameter of 2.5mm<sup>2</sup> wire.

**Moxon Rectangle Generator**

Frequency  MHz    Wire size

Diagram labels: A (total length), B (Driven Element height), C (Driven Element width), D (Reflector height), E (Reflector width). Labels: Driven Element, Reflector, Feedpoint.

Results:

- A:  mm
- B:  mm
- C:  mm
- D:  mm
- E:  mm

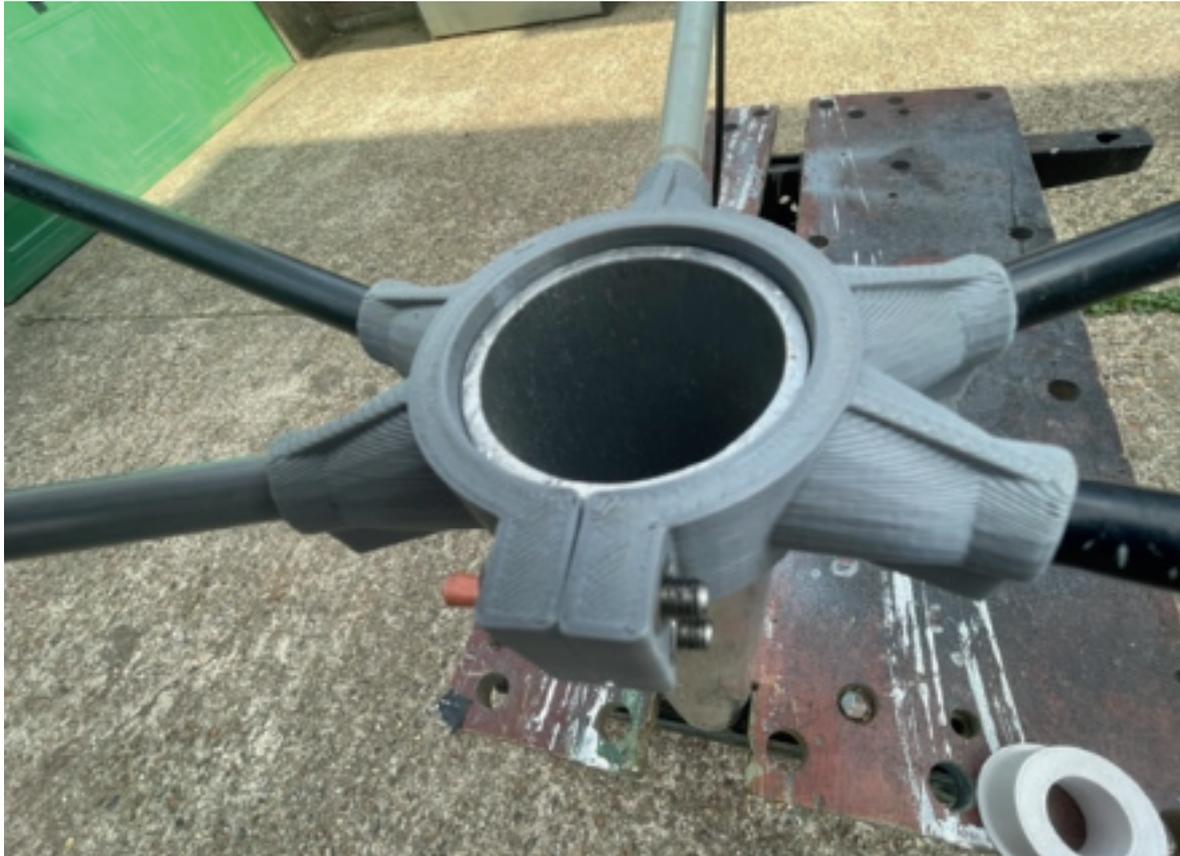
Results Units:

- Feet
- Inches
- Meters
- Millimeters



*Here is a photo of the finished item on the fibreglass mast*

The centre is 3D printed and allows the poles to be just pushed in place. There is a pilot hole on the bottom suitable for a small self-tapping screw if needed. The design was made using TinkerCAD. The centre hole is suitable for a 2" mast. An adaptor to suit my portable fibreglass poles was also designed and printed.



The feed is very simple, just a “chocolate block” electrical connector, the wire used is stripped from an old length of 2.5mm<sup>2</sup> twin/earth. Obviously something more weather resistant would be needed if it was permanent. A few turns on the coax acts as a choke.



Wire supports that push on the end of the tent poles were also designed and 3D printed. The elastic originally holding the tent poles together was repurposed to tension up the wires at the gaps in the side. Nothing sophisticated here – the end of the wire just lightly twisted to form a loop for the elastic to pass through. The finished item was pretty close to the required frequency, needing a little shortening of the wires to bring the frequency up, with a good match.

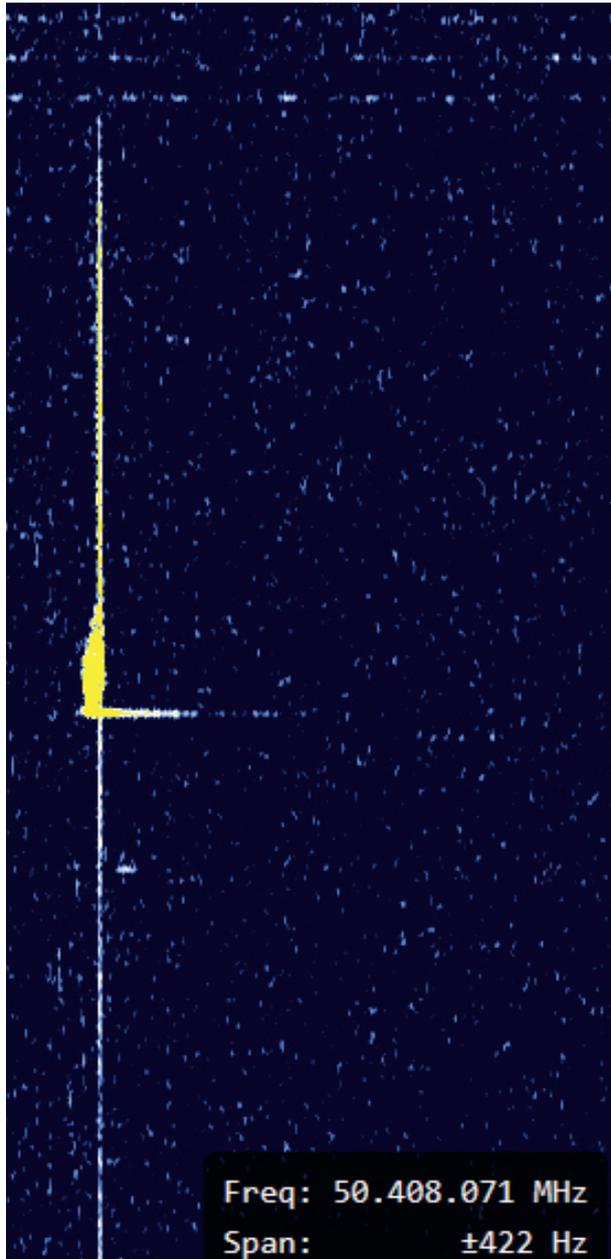
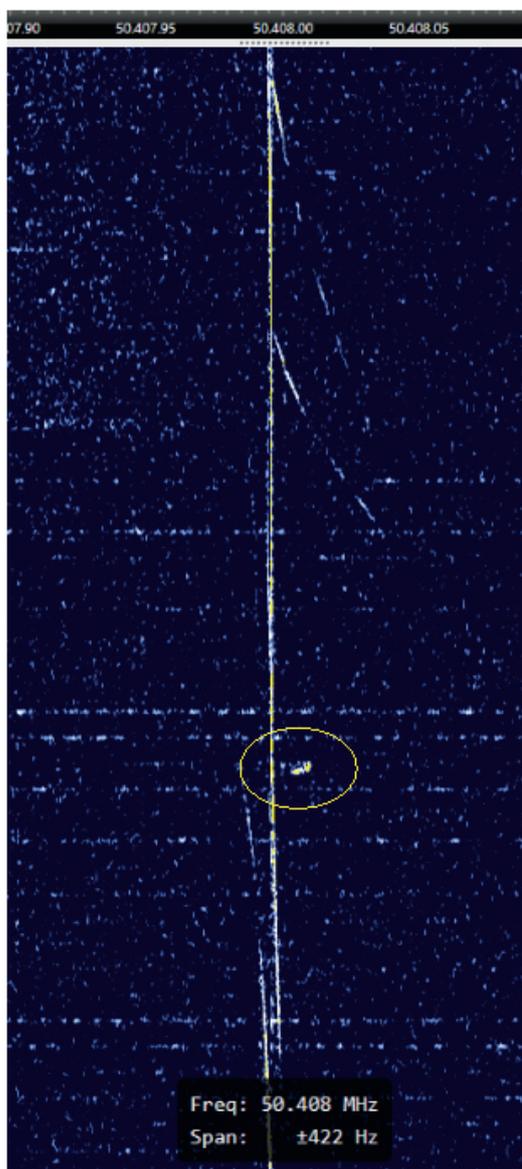
## Meteor Beacon

The antenna was put up at around 4m on a temporary fibreglass pole. Nothing to be heard on SSB apart from pulse interference every 5 seconds or so when the antenna was aimed north. Tuning to FT8 I could decode one M7 station. Checking on PSKReporter there was virtually no activity. As I am having a self-imposed FT8 free year (next year may be different) no chance of a QSO there. Clearly no E's around then. Or was the antenna just not working?

Looking for a beacon to tune into I noticed the new meteor beacon GB3MBA up in Mansfield. This started operation in May and is funded by the RSGB Legacy Fund. More information can be found on their website <https://ukmeteorbeacon.org/Tx>. All we need to know here is it transmits 80W of CW at 50.408MHz, using a crossed pair of Moxon antennas to essentially fire straight up.

I was surprised to find I could detect this beacon almost all the time I had the antenna up, which was over several days.

There is plenty of aircraft activity as you can see in the image below (L) with the long trails shown in this screen grab from SDR Console. Receiver was a SDR-Play RSP1A. The larger short blip circled about 1/3 the way from the bottom may have been a meteorite.



In the RH image I was lucky to witness the large short reflection that will surely be from a meteorite, the longer strong reflection after the initial blip will be from the ionised particle trail left in its wake.

# FT8

Unfortunately I still have not made a 6m QSO. As I write this and check on PSKReporter there were zero SSB QSOs in the last 30 minutes for the whole world (none on the clusters either)! FT8 is a different matter though ☺ - looks like there is an opening towards Poland, Estonia, Sweden and Finland!

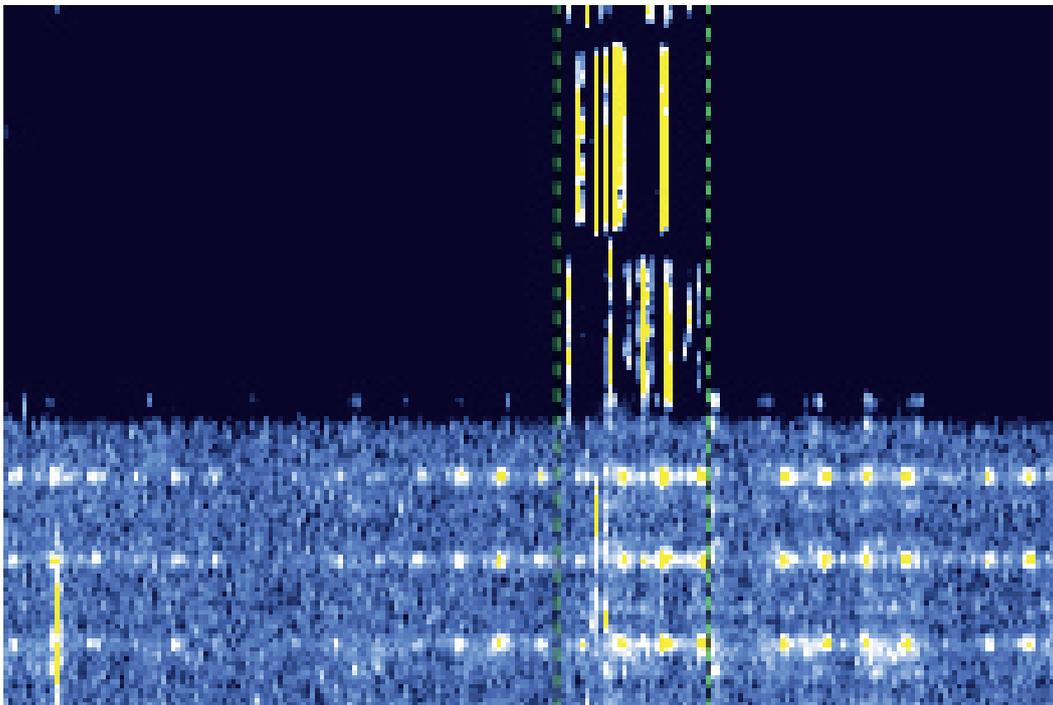
The antenna was quickly removed from garage and put up. Many FT8 signals were decoded with good strength, so I think the antenna works fine and SSB would be possible if there was anyone listening.

----- 6m									
173900	0	0.3	1677	~	W7DHH	SM0IKR	JO99		
173900	-2	1.3	1318	~	OK2FD	ES2AJ	73		
173900	-15	0.2	1608	~	W7EW	OH3JR	KP21		
173900	-15	0.3	1310	~	CQ NA	OH8LXT	KP23		
----- 6m									
173930	-4	1.3	1318	~	OK2PKT	ES2AJ	-02		
173930	-8	0.4	1808	~	CQ G3PXT	JO02			
173930	-13	0.3	1310	~	CQ NA	OH8LXT	KP23		
173930	-14	0.7	1827	~	SQ5N	OH3BYZ	RR73		
173930	-20	0.3	1648	~	GW4FRX	MOVCP	JO02		
----- 6m									
173945	3	0.3	1459	~	G0HVQ	ES2NJ	KO29		
----- 6m									
174000	5	0.3	1550	~	CQ NA	OH8LXT	KP23		
174000	-2	0.3	1237	~	N6RMJ	SM0IKR	JO99		
174000	-13	1.3	1318	~	OK2PKT	ES2AJ	-02		
174000	-3	0.3	1809	~	CQ G3PXT	JO02			
174000	-23	0.2	1647	~	GW4FRX	MOVCP	R-13		
174000	-20	0.2	1609	~	W7EW	OH3JR	KP21		
----- 6m									
174015	0	0.3	1460	~	G0HVQ	ES2NJ	R-13		
174015	-2	0.4	1517	~	ER5GB	SM6TKG	R+08		

Finnish stations were observed having QSOs with North America! Huge local QRM prevented me from decoding anything with the antenna pointing west. The Moxon design has excellent front/back ratio. The screen shot of the waterfall below shows the difference turning from east at the top to west at the bottom.

**Conclusion**  
 In summary, the Moxon is an easy to build compact antenna that can provide a lot of fun for just the cost of the 3D printer filament (if you have suitable junk in the garage!).

*73, Dave M0WID*





**Gliwice Radio Tower Incident, A Talk presented by Phil Miller Tate M1GWZ**  
 On Wednesday June 15th, we had the first external live talk since the start of the pandemic. CARC was delighted to welcome Phil Miller Tate, M1GWZ, to talk about the Gliwice Radio Tower Incident, a false flag attack on the radio station Sender Gleiwitz in Gleiwitz staged by Nazi Germany on the night of 31 August 1939.

# FOR SALE - WANTED

## FOR SALE

One **Diamond K33 boot lip mount**. Used briefly for experimental purposes. This is in it's original packaging with all it's contents intact. In good condition £20 or near offer to richardg3ziy@gmail.com



## FOR SALE

One **Moonraker MC-ECH 5m cable kit [SO239-PL259]**  
 Complete in original packaging, in very good condition. Used briefly for experimental purposes. £10 or near offer to richardg3ziy@gmail.com



***These two items fit together making a mobile antenna system with your own PL259 terminated whip antenna.***

**Deadline for contributions to the next Newsletter 15<sup>th</sup> September**

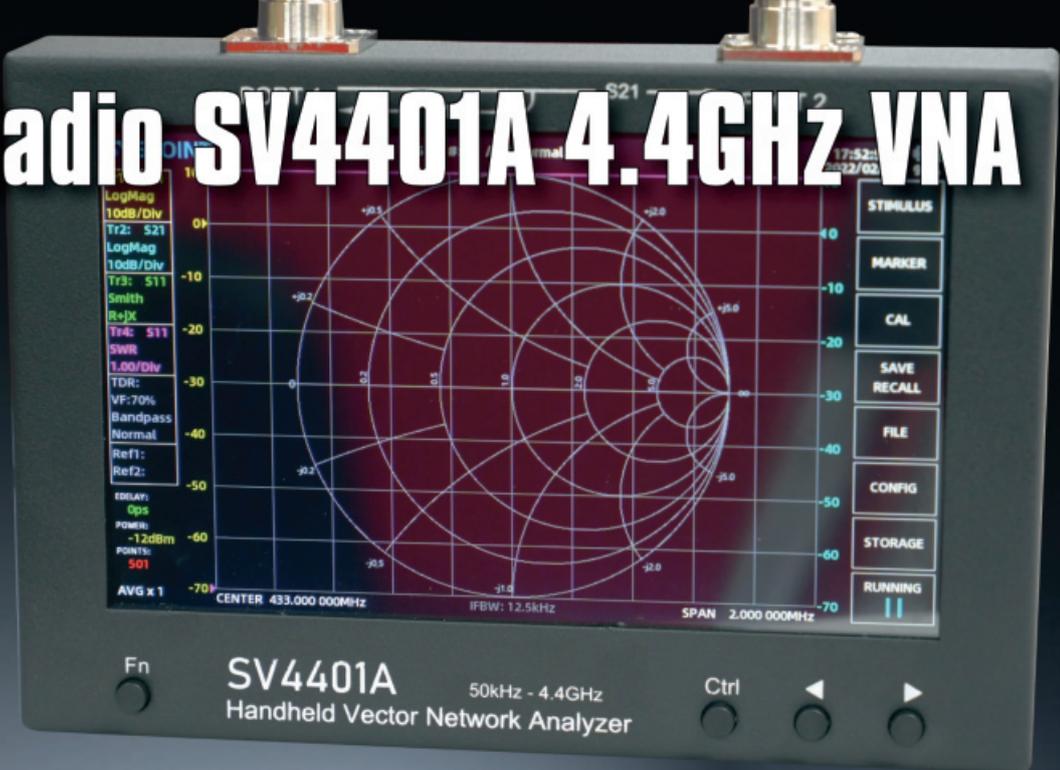
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**NEW**

# JNCRadio SV4401A 4.4GHz VNA

- Frequency range: 50kHz - 4.4GHz
- S21 dynamic range: 75dB, S11 dynamic range: 50dB
- 7-inch high-brightness IPS capacitive touch screen, clearly visible outdoors
- Metal case, effectively shield electromagnetic interference
- N-type RF connector, stable and durable
- Full touch screen + 4 physical buttons, convenient and smooth operation
- Dimensions: 190x130x30mm;
- Designed with a back bracket for desktop operation
- Supports local screenshot, able to save the screenshot to the built-in memory card
- Built-in 8GB memory card to store calibration status, snp files, screenshots, etc
- 2 built-in 3350mAh 18650 lithium batteries with a battery life of up to 4 hours
- TDR function, which can be used to measure cable length
- Up to 2 reference traces
- Up to 8 markers, and the marker table can be dragged to anywhere on the screen
- 12 save/recall slots, and supports save/recall calibration state from files
- Charging via USB Type-C, and the charging voltage is 5V DC
- Designed with a 5V/1A USB power output port
- Firmware upgrade via virtual U disk with USB Type-C cable
- Comes with SMA calibration kit and 50cm SMA coaxial cable
- Screen brightness adjustable
- Automatic sleep to save power
- Supports console commands and PC software
- Comes with a storage bag



## Product Spotlight

**NEW**

# Air!Squitter ADS-B Receiver



- ADS-B receiver as bundle with combined ADS-B/GPS antenna, 10m antenna cable and mounting kits.
  - Integrated device with all features for problem-free ADS-B and MLAT reception.
  - OLED display with most important operating parameters.
  - MLAT (Multilateration) is provided within the Jetvision Flight tracking network (see note below\*).
  - Feeders for FlightRadar24, FlightAware, Opensky Network, Planeplotter and ADSB Exchange.
  - Connection over WIFI or LAN, supports simultaneously multiple users via desktop, tablet or smartphone.
  - Extensive map display on the web browser, filter options, status, range and performance diagrams.
  - With the integrated combined ADS-B/GPS antenna only one antenna cable required.
- \* In this version, the Air!Squitter is permanently connected to the Jetvision Flight Tracking Network. Registration included.

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(The only URL with no hyphens, no extra words thrown in and no imitation)

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