



North Bristol Amateur Radio Club

S.H.E.7, Braemar Crescent, Northville, Bristol BS7 0TD
G4GCT, M0NBC, G6PNB

June 2021

Covid-19 Edition

Our First Meeting Since Lockdown. (Non Members also welcome)

We are now allowed to meet outside together as a group of 30 or less, there was not enough time to organise anything before this Q5 was published so I have therefore organised a Get Together for **Friday 11th June** at the Downs, the area known as Sea Walls. (Mind you, there is no sea only a river)

Talk in will be via GB3BS and if the Weather is Rain or Snow, we will revert to a normal net night. Start time at The Downs will be from about 7pm.

Stop Press

At a Committee meeting held on 2nd June it was decided that as indoor meetings are still not allowed, we would continue with outdoor events while the weather is fairly good.

A regular email will be sent out with the date time and venue of meetings. It was suggested that after my meeting at Sea Walls we meet the following week at Filton Field. This however is not written in stone so look out for those emails.

Special Events

Providing nothing changes with regards to meetings, it looks like Churches / Chapels on the air will go ahead on Saturday Sept 11th 10am to 4pm and Railways on the air on sept 25th and 26th



Did you order the good Weather for the 11th Mat?

Special Events Continued

An event I had forgotten (50 Lashes to me) was Lighthouses & Lightships on the air. This is to take place on the weekend of August 21st & 22nd

Mat has already contacted the Avonmouth community centre and they are over the moon that Mat made contact with them. Every thing stays the same as 2019, A Long time ago now but, here is a recap. We are indoors, antennas out side and could be secured inside a tennis court to comply with RF isolation also we have toilets.

Here is the calendar so far

August 21st - 22nd International Lighthouses on the air.

Sept 11th Churches & Chapels on the air

Sept 26th - 27th Railways on the air

It is to be noted that only the Lighthouses event is set in stone. Avon Valley Railway has not been contacted as of this publication of Q5 although I have been to the railway but the contact was unavailable. Also I have not made contact with Steve G8JUT or Tony G8CKK with regards to Churches but there is a bit of time yet.

New RF Separation Rules

Don't get too upset about these new rules but when we run any special event we have to complete an assessment. Using a dipole on the HF bands at 100w SSB we need to keep the public away by about 3.4m. So the height of any part of the wires should be no lower than 5.8m if a person of 1.8m in height is to walk underneath.

VHF is slightly different. If we used a "Handie" as a talk in station, we comply as we are generally only a max of 5w For other powers and types of antennas take a look at the spread sheet on the RSGB web site. This is quite good in the fact we can enter in the mode, power, type and length of coax and antenna type. The result is then given. If the public has access to the area underneath the antennas add 1.8m for the height of a person. There will be more on this subject in a latter edition of Q5.

Dodgy Chargers and PSUs

This article came about because of a conversation we all had on the technical Wednesday Net..This just goes to show that the nets we have are useful from time to time..... I now pass the pen over to Mat, G7FBD to fill you in.

Dave G7BYN

Well over my last year of lockdown – Yeah, some of us have been hiding in the bat cave while the world continues to spin out of control. Or in reality, I have been self shielding due to a combination of the MS, My wife working on a Covid ward and my boss insisting as we can work from home he would prefer the whole team to do this to help stop the spread until the whole team has had their second jabs. As stated in the last Q5 – Please, please if you're offered the job please take it, not just for your own protection, but for the protection of all around you.

Back to my last year of isolation this has given me plenty of time to get disheartened with the hobby mainly due to the new regulations being proposed on antenna isolation from “humans” and my longwire being on the top of a 2m wooden fence that for 16m runs parallel with a footpath. Isolation distance at best 1m. Then get interested in the hobby again thanks to QO100 the geosynchronous satellite parked over the Middle East. More on my QO-100 project in future Q5's if the editor allows.

For part of my QO-100 project I was looking at a mains powered USB power supply for bench testing before final construction.

Ebay prices ranged from £2.00 up to £20 plus. Amazon was much the same prices. Probably the same supplier as it seems common now for a seller to have multiple identities on these market places.

On YouTube, I am aware of a channel called Big Clive. He looks at different power supplies and how dam right dangerous some of these things can be due to poor design, isolation or overload protection.

Also, as some of you who use YouTube know once a video ends more recommendations are displayed. One recommendation was to a channel of Czech republic content maker 'Diode Gone Wild'.

Dodgy Chargers and PSUs Continued

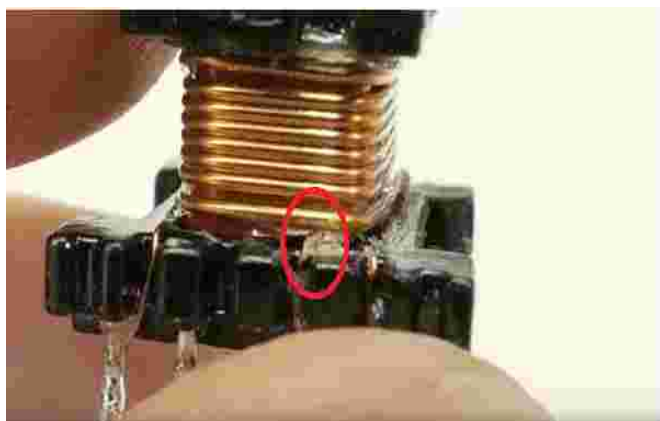
I recommend this guy as his teardowns and explanations are, well fantastic! For some he has a strong accent (I commented sounded a little Italian, but a friend pointed out he was Czech) may take a short while for your brain to adapt to, but you soon get used to it.

Anyway – Check this channel out BEFORE you spend money on any power supply not just a USB charger.

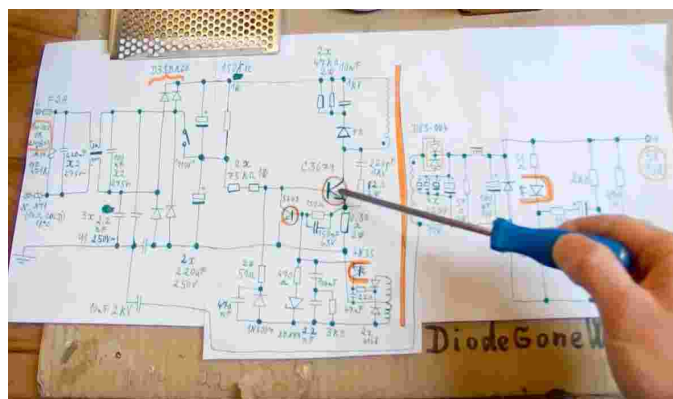


This guy tests the equipment against its claimed ratings, then tears them down to see how safe there construction is.

For example in this picture you can see the secondary is almost touching the second half of the primary (240v) winding, only the lacquer is protecting it!



Once he has finished dis-assembly he normally reverse engineers the supply, draws out the diagram and explains principles of operation. As seen from a flyback switching transformer he got from China that was used in another video.



Returning to the USB chargers, after he has torn down the devices, he gives it an over all safety rating. This may, to some of you be meaningless as your purchase is driven by cost not safety.

Dodgy Chargers and PSUs Continued



But its worth noting that the USB supply he tore down felt and looked good quality, however that weight was down to a piece of metal stuck to the inside of the plastic shell with a double sided sticky pad! (circled in red).

The USB charger in question got very hot when drawing load. As Danny points out, this can cause the sticky pad to fail and you have a slab of metal floating around inside a device that could connect the output stage to the mains input. I don't think even an iPhone X would survive 240V at lets say maximum ring final circuit current of 30A (most USB chargers rely on a fusible resistor not a traditional fuse to provide input protection).

In Summary, think twice about buying a cheap budget power supply, or USB charger plug. Its cheap for a reason!

Do a little research, read the reviews, check if anyone has tore down the supply and check their findings. I know, I know it means a lot of hard work researching things. But 5 minutes researching could save your life, a loved one or even your home.

To help a little, check out the website below. It help me choose a Cheep(ish) power supply with the confidence for my QO-100 project.

<file:///C:/Users/asus/Desktop/ChargerDCIndex%20UK.html>

There are hyper links to tear down and reviews, sadly the ones I looked at miss out on un-winding transformers Danny style.

Mat, G7FBD

Field Strength Meter



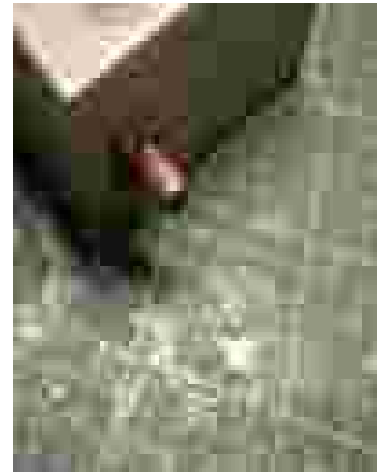
This field strength meter is not intended to use for the checking of EMC separation distances. A meter for that would be several hundreds of pounds. This one is to check if a transmitter is actually transmitting and the relative strength around the antenna. This actual Meter helped me win 2 Direction Finding Contests. More of that latter. This Item that was in the test gear for newbies last month. Rik, 2E0HFR, a regular on our nets asked me if I could explain more so here goes.

The Meter you see here is for the 2m band, that was the primary band of days gone by. It was built as a NBARC project with the inspiration of Frank Fields, G0CEN (SK)

The case is just an aluminium one from your favourite supplier. Note a plastic one will not do as capacitance from your hands will effect the tuning. (although you can find some designs using plastic) You notice that I have fitted a BNC socket to the top. The reason being all Handies in those days had BNC antennas not the stupid things of today, but that is another story.

The Meter is any moving coil meter taken from old gear or from a second hand stall at a radio rally. Likewise, the tuning capacitor.

The assembly you might say is trial and error the coil and capacitor forms the tuned tank circuit. If you want the formula it is $f=1/2\pi\sqrt{LC}$



The coil you see here in red is really a strip line. Just $\frac{1}{2}$ a turn across the capacitor. The diode is any germanium diode. By the way, this is the first time I have seen inside since I made it back in 1989.

I apologise for the quality of the photographs I tried my best.

Field Strength Meter Continued

As I said earlier, I used a BNC socket so that I could connect various antennas. I used an HB9CV beam to home in to a hidden transmitter in various Fox Hunts over the years. As the beam is pointing to the transmitter the meter reads higher. The tuning having previously been tuned to the Fox's frequency, I marked the position of the knob with a pencil. This believe it or not is the first time in 30 years that I have seen inside my meter.

There are lots of designs on Youtube, most of them are for either HF or VHF although some work over various RF bands.

The one I have just described is Tunable over the 2m band but, most are just RF absorption meters for HF. If RF is present, then a voltage is induced into the coil and the meter will measure this after rectification i.e. after the AC of the signal is changed to DC for the meter.

These un-tuned meters generally has an attenuator to turn the received level down so the meter is not end stop all time on receiving a strong signal. A circuit for an HF meter is shown in Fig1.

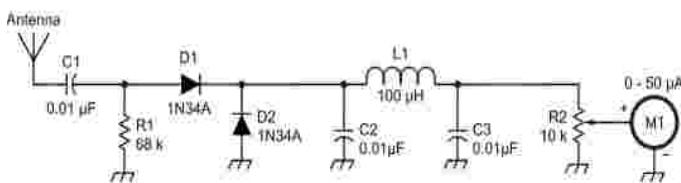


Fig1

The circuit is the one as fitted in my Commercial unit shown below. This is another of my older units dating from the 1970s it covers 1kHz to about 30MHz the same type can be found on Amazon for about £30

This is another project that can be quite easily covered at the club on our return if required. Bear in mind that a constructional project is more complex to write than to make at the club. It is great fun to make and you can then say, "I made that"



Dave G7BYN

Thought for the Month

This month I thought that I would follow Dave, M0RKE with a bit of controversy. For those who like contesting I will be an Ogre. Others may say that we should have spoken out louder.

How many of us have tried to find a spot on the dial most weekends to call CQ and find it jammed pack full with contest stations, I must say mostly from Europe. This is why Dave, M0HDJ and Tony, G8CKK give up on the Sunday 80m net. It has been impossible over the past few months and the 80m RSGB news is also finding it a struggle. In the Radcom letters page this subject was first brought to the fore by our old friend Rob Manion, G3XFD the retired editor of Practical Wireless. Along with many other complainants.

Contest organisers MUST do something to cure this take over of the bands.

1 Stick to the band plan

2 A fine (Deduct Points) for those that work over Beacons, SSTV frequencies etc

A way to do this is, The log must include the operating frequency not just the band worked. That way the adjudicator would know if the contestant was on a frequency for another service.

A station receiving interference could report call signs to the organisers the offending station not just losing the points but double the points.

Repeat offenders have a two contest ban from taking part as, let us face it they are bringing amateur radio in to disrepute.

I will also throw another thing into the mix. Stations not to occupy a spot. When they work a station they must QSY. Say 5 or 10kHz That would sort the men from the boys.

I don't wish to spoil the fun for a great majority of Hams but they have been spoiling the fun for many others for too long.

The RSGB is in a position to discuss with other organisations and countries to sort this out once and for all.

NBARC Nets

To spice up our nets, the Wed net will be a Technical net. If members have a problem, or just want to know how something works, ask your question here. This came about because some participants of our nets didn't want to spend the night talking about the weather and general chit chat. They said it was boring, so wouldn't come on any net. The Chit Chat evenings will be the club night being Friday and the Sunday net. We hope this will cater for all.

Wednesday net GB3BS 20:00 to 21:00 Local

Friday net GB3AC (If Working) 19:00 to 19:30 Then QSY to GB3BS
19:30 to 20:00 more often than not to 20:30

Saturday DMR Net GB7BS 19:00 to 20:00 South west cluster TS2 (950)

Sunday morning 80m Net 3.65MHz 08:00 has now been suspended.

Sunday Evening Net Dave, M0RKE ran this net on GB3AA for a while but, the Sunday Net now reverts to GB3BS 20:00 to 21:00 clock time.

Club Contacts

Chairman

Paul Stevenson G8YMM

Phone 07921942922

Email g8ymm@nbarc.co.uk

Editor

Dave Bendrey

Phone 07533933831

Email g7byn@blueyonder.co.uk

Next Q5

Early July (See Note opposite)

Dave G7BYN.

Please Note, All Dates quoted are subject to change due to any Covid laws and advice given by the authorities. This may be at short notice.

Q5 Publication

During the pandemic I have been publishing Q5 as near to monthly as possible. However, as soon as we start back at the club Q5 will revert to quarterly. It is hoped that I will still get articles sent to me from time to time and I thank all of you that have submitted items over these difficult times.