



NKRS Newsletter

Prepared By
Telephone (44) 04794 796476
Secretary Stephen Osborn G8JZT

D.R.J. Collings G4YIB
Email nkrs@crystaldave.com
(44) 01322 441749 • secretary@nkrs.org.uk

Our next meeting will be whenever the world is declared safe but when it happens it will be at **The Hurst Community Centre, Room 15, Hurst Place, Bexley, Kent, DA5 3LH**
Doors open at 8PM

At the moment of writing this the committee have considering the best way forward for meetings.

What we are proposing is on Page 2 of this document, please let us have your feedback on this.

Email our secretary Stephen about this and a copy to me would be appreciated but is not essential.

From the International Lighthouse Lightship Weekend - ILLW website

Please note that the ILLW for 2020 will NOT be cancelled due to the impact of the Corona virus. Participation will be the decision of each entrant depending on their own circumstances and Government rulings regarding border and national parks closures and social contact etc.

The committee's opinion is that we should proceed with our usual entry **if enough members are interested in attending. We have submitted an application.**

This year the event takes place from the 22nd August to 23rd August 2020. We will just participate on the Saturday (22nd).

Please let us know by email as soon as possible if you are prepared to attend so we can make suitable plans.

Again email our secretary Stephen about this and a copy to me would be appreciated but is not essential.

Club Net

The club net is now taking place every Tuesday 8.30pm , call on 145.5 and then we move to a convenient clear channel. Please join us.

PLEASE NOTE UNTIL MEETINGS RESUME I WILL ONLY PRODUCE THE NEWSLETTER MONTHLY

NKRS MEETINGS The way forward

Having read all the documentation relating to our meeting place as sent by the Hurst Road centre and circulated by our Secretary to the Committee , Stephen and I thought we would advise you of the committees decision regarding the way forward.

My (personal) initial thoughts were that it would be too restrictive for us to return in September but having given it my consideration it occurs to me that they are demanding (for the most part) nothing unreasonable and pretty much little more than we imposed upon ourselves for our last meeting that took place before lock down. We live in difficult times and we must make the best of what we can do in a safe and practical manner.

Our Conclusions

- 1 We could return to meetings in September if
 - a The Centre is actually open in the evenings (see 3 below)
 - b Sufficient members are willing to return to meetings
- 2 Now may be a good time to negotiate a room downstairs as there may be a number of groups not returning at that time. Even if this is not on a permanent basis it would not be essential for us to have the same room each time.
- 3 If the centre is not open in the evenings we could consider having afternoon meetings. Most of our members are retired and we would need to get feed back from them regarding their feelings on this matter.
I would view this as a temporary thing in the hope that things might improve in the future.
- 4 I did originally have reservations about clause SC3

SC3:

You will be responsible for cleaning all regularly used surfaces during your period of hire (including tables, chairs, wash hand basins, door handles) using the products supplied.

I look forward to hearing members feelings on this so please submit them to Stephen. That way we can plan a way forward for the future.

Prior to any meetings taking place documentation regarding the use of the centre will be forwarded to you.

My Opinion

None of this is of course ideal but it is a way forward for the ,hopefully ,immediate future only. The important thing is to try and maintain the viability of the club an association for people with a common interest to meet and discuss, The club net is part of a way forward towards this but does not fulfil the full requirements.

Your opinions do matter to us so let us know your thoughts.

Dave Collings G4YIB
Chairman
North Kent Radio Society



Antennas in field at Cold Norton May 2020 BY Kevin G0MLQ

During a walk along a footpath near Cold Norton in Essex recently, I spotted some aerials in the field (see pics below).

It was a line of 8 HF active antennas plus a whip on a box at one end, a large crate at the other (maybe containing the RX and a stack of batteries) and a little way away, a microwave dish which I think said around 23GHz on it. The dish looked like it was pointing at Langdon Hills, several miles away which of course has a tower on it bristling full of dishes & aerials.

Also adjacent the "crate" was a short-ish 6 feet pole which had what I assume was both a satellite printed circuit board aerial plus a horizontal short whip, maybe cellular?

So, any idea what this all could be? Maybe a propagation experiment? Maybe a beacon of some sort although if anything serious I imagine it would have been fenced in. This was all just in the middle of a sloping field and not particularly high either.

More photographs follow on Page 3





Any ideas? Please email us and let us know as I am sure many reading this will be curious.

Cheers, Kevin G0MLO



New seal



Old seal

The FCC gets a new seal

Formed by the Communications Act of 1934 it replaced the radio regulation functions of the Federal Radio Commission and took over wire communication regulation from the Interstate Commerce Commission. Their jurisdiction covers the 50 states, the District of Columbia, and the territories of the United States as well as providing varied degrees of cooperation, oversight, and leadership for similar communications bodies in other countries of North America.

The FCC is funded entirely by regulatory fees. It has an estimated fiscal-2016 budget of US \$388 million. It has 1,454 federal employees as of July 2019. Now in 2020 (apart from a delay caused by COVID-19) it is locating to new offices and has had a new seal designed.

It appears that they have a new office new seal policy but what I could not find out was how much it cost them to have a new seal designed, I would imagine it would be quite a lot of money. The new seal will be incorporated on official stationery, business cards, publications, and other materials.

The winning design for the new seal was selected by a vote of the agency's employees and contractors. "The revised design incorporates several elements: communications technologies currently transforming our world; four stars on the outer seal border, drawing from the legacy of the predecessor Federal Radio Commission seal; 18 stars on the shield, recognizing the current number of bureaus and offices, and the eagle and shield, identifying the FCC as a federal government agency."

On the positive side the new smaller offices will have a reduced rent, the move will cost \$71 million (very modest expenditure) but will claw that back with up to \$119 million on savings over the next 15 years.

If anyone who is around in 15 years and has read this perhaps they can check whether that happened.

Emergency Ventilator Designed and Constructed by Radio Amateurs

Radio amateurs have succeeded in providing a complete, working ventilator to University of Florida researchers who, in April, were in the process of applying to the Food and Drug Administration (FDA) for an Emergency Use Authorization (EUA).

If the application is successful it would lead the way for volunteers and manufacturers around the world to create low-cost, highly functional Intensive Care Unit (ICU) or anaesthesia-care ventilators that offer many of the features of modern ventilators at a fraction of the typical cost.

Dr. Gordon Gibby, KX4Z, who is associated with the project, said they were working on further improvements to the device.

Using a [Groups.io](https://groups.io) forum, up to 140 volunteers have been studying or working to push the project to completion. Software is being created by multiple volunteers, with amateur radio operators involved in that phase as well.

The ventilator's valves will precisely time the flow of compressed oxygen into a patient with lungs weakened by viral pneumonia in order to extend life and allow time for the body to clear the infection.

The ventilator controller circuit board was designed by Michael Stapleton, WD4LHT and the prototype completed in Florida was built using typical tools, with assembled boards provided by LifeMech, which is a non-profit organization that is working to bring the life-saving benefits of a ventilator to more patients in need, fast.

<https://uk.gofundme.com/f/efj4dc-lifemech-machines-saving-lives>

Have you paid for your North Kent Radio Society membership ?

Technically payment should be made after the AGM but if you have not done so the club would appreciate a payment which is easy to make.

Subscriptions for 2019/2020

Full Member £30.00

Family Membership £45.00

The preferred method is by BACS Payment to
SORT CODE 09-01-53 ACCOUNT 56884007 Put your name as a reference

Alternatively by cheque made payable "North Kent Radio Society".
Send to

Honorary Treasurer, Andy Fribbens, G8MLQ
12 Appleshaw Close, Gravesend, Kent. DA11 7PB
Telephone 01474 365694

PLEASE INCLUDE SAE if you require a receipt.

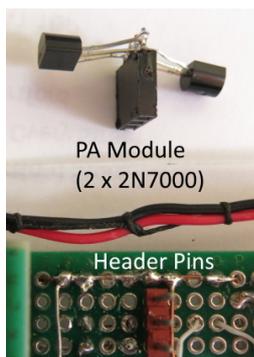
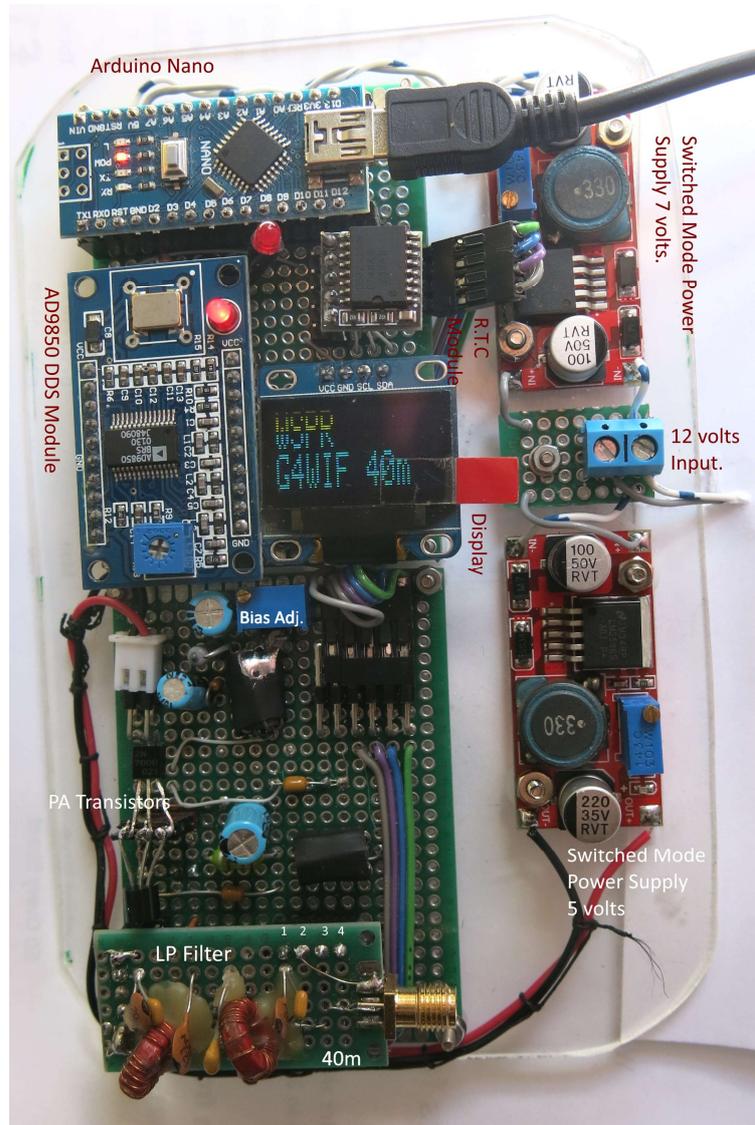


Homebrew WSPR beacon – Tony G4WIF.

Now that my 80m End Fed Half Wave antenna is netting me good contacts I thought it would be useful to study where my signal was getting to. Also what time of day is best - and what my received signal level was. Initially, I used the reverse beacon network and sent 5 watts of CW. That power level is as low as my TS2000 can go without modification. That worked well and I even got up in the wee hours to test propagation.

Really though, what I needed was something I could leave on all day and my TS2000 was not something I wanted to abandon for hours on end. The answer came a few months ago in a Radcom article from Tony F4GOH. In that article he described a 100mW WSPR beacon transmitter. It is controlled by an Arduino and uses a DDS module to generate the RF. A couple of Mosfets provide the PA stage and accurate time is provided by a real time clock module. These cost under ten pounds for five of them (including postage) from Amazon. The little display module was just a few pounds and I built in all on perfboard which can be ordered in packs from China for just a few pounds.

Although the DDS provides a sine wave output there is still a need for a low pass filter to clean up harmonics. I built this as a plug in module. In fact, everything is built that way for easy fault finding and replacement.



Even the two 2N7000 Mosfets are mounted on a plug – though I haven't had to replace any now that I have the drive bias set correctly. There are only so many times you can resolder the perfboard!

To the right of the larger perfboards are two small switched mode power supply modules.

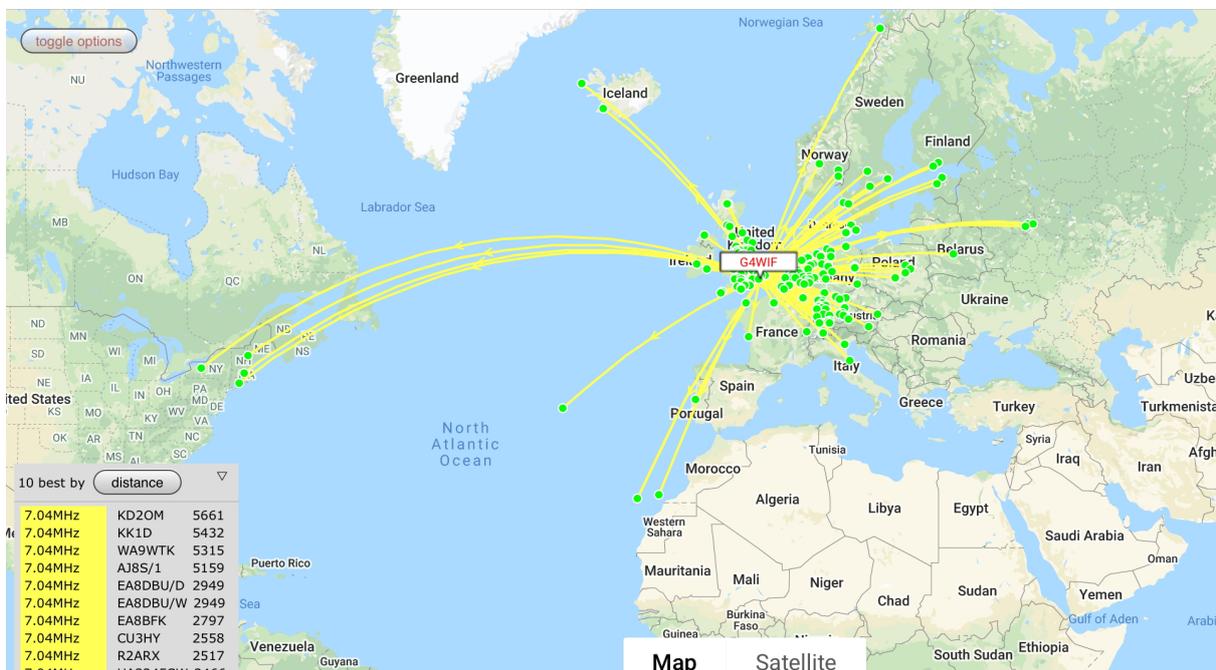
Fed from a common 12 volt supply, one module provides 5 volts for the PA stage and the other the 7 volts that feeds the “Vin” pin on the Arduino. That extra 2 volts provides enough headroom for the Arduino onboard 5 volt linear regulator.

F4GOH designed this as a single band beacon and so in the early tests I have concentrated on 40m. Below you can see some results over a 36 hour period.

This was very pleasing to see. I was amazed that my little signal can be received all the way across the Atlantic. Some 20m testing has shown that I can easily reach Australia with 100mW.

What is really useful with the WSPR reporting sites is that you can adjust the time of the graphical display map and see how it changes throughout the day.

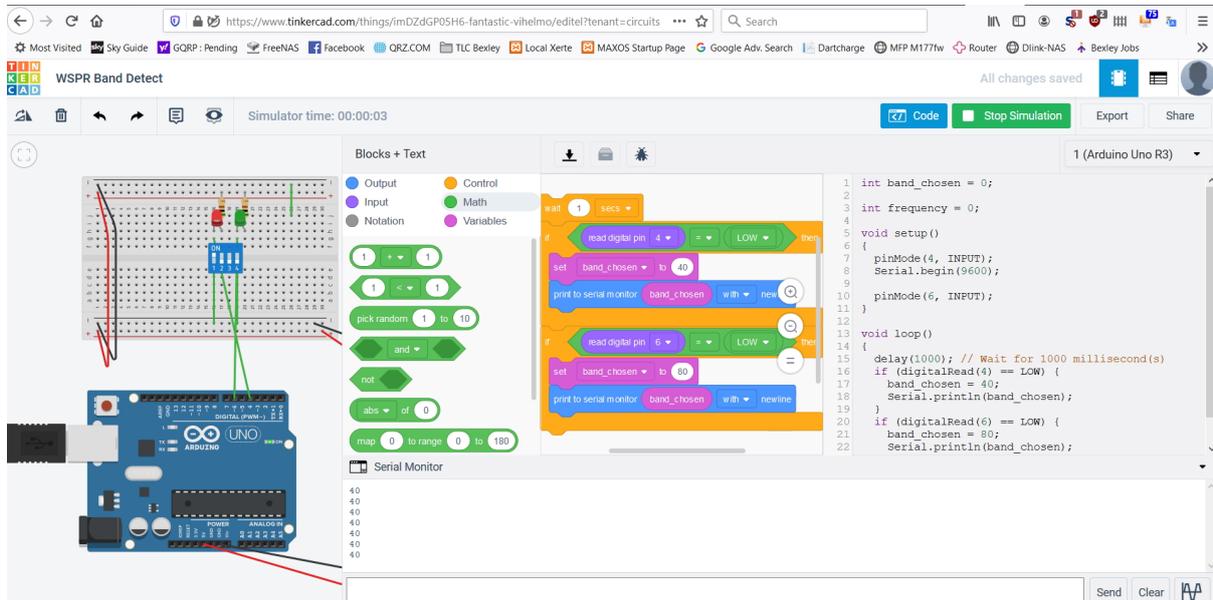
This tells you (for instance) that there are very better times when a CQ for Western Sahara is likely to succeed. By the way, those particular “spots” are very small islands – not ships at sea!



So having got this far I wanted to try other bands. At the moment I would have to change the F4GOH code and then upload it again to the Arduino. What I wanted was to be able to achieve was when the appropriate low pass filter was inserted it would signal the Arduino on initialisation. As part of the build I provided a four way header that the low pass filter plugs into that has a ribbon cable going to the Arduino. There is an earth on only one of the pins and that denotes which module it is.

I have numbered those pins 1,2,3 & 4 on my photograph. If you study it, you will see that pin 2 of the 40m filter is grounded. The 80m filter will have pin 1 grounded – and so on...

I’m not the most competent programmer and the syntax in “C” drives me to distraction at times. So I often use an alternative graphical way to design my programs. I do it in small modules by assembling “shapes” or *codeblocks* into a logical flow. That then generates the “C” to transfer into the Arduino but it can be tested first in a simulator.



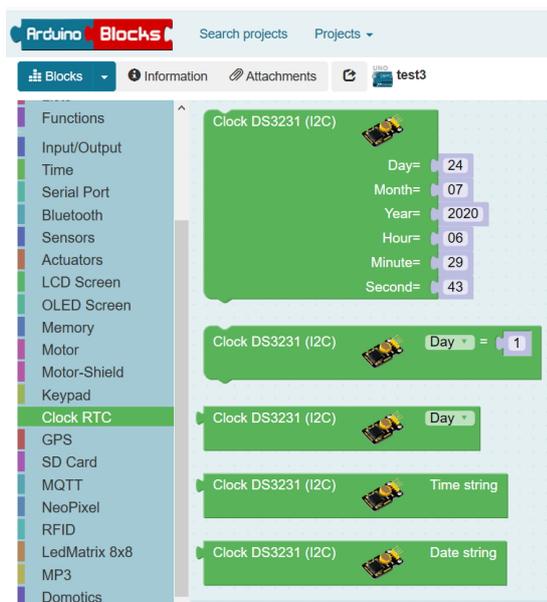
Above you can (hopefully) see I have used a simulated DIL switch to select the band instead of the plug in filter. The bottom right serial monitor window shows I have selected 40m. Having got that part working I can transfer it into the Arduino programming environment and move onto the next part – which in this case is having detected which filter module is present will set up the DDS appropriately.

There are quite a few “code blocks” methods and usually these are free to use.

I like “Tinkercad” which I show above. I also like “Arduino Blocks”.

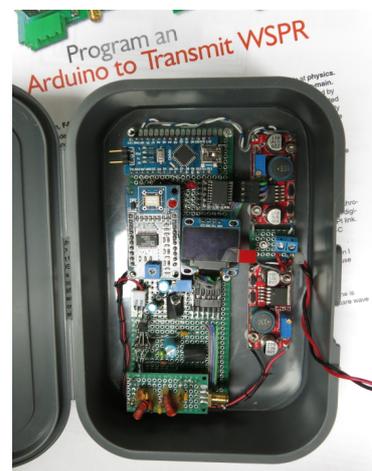
www.tinkercad.com and www.arduinoblocks.com

Both use the “jigsaw puzzle” method of connecting blocks. Only the correct shape will fit into another.



Each have their advantages. Tinkercad has the simulator and Arduino Blocks has a huge library of parts – and that means it has logical blocks that are aware of the hardware parameters that need to be configured.

Here I show that the “Arduino Blocks” library knows about the Real Time Clock module used in the WSPR beacon.



The whole project is housed in a hinged lid sandwich box from LIDL where they

come in packs of various sizes for around five pounds. You will recognise that a bigger version from the pack was used to house my End Fed Half Wave auto transformer.



Out and about in the South East

Making the most of my “clipped wings” travel, Hilary and I have been out and about in the South East area and here are a couple of shots from some of our travels.

Above are the Dinosaurs in Crystal Palace park. They are getting a bit old by now and some need a bit of medical attention but they and the park in general are well worth a visit.

The park is a safe and spacious place to visit with the added bonus of Free Parking.

Below are a couple of views of Item Mote. We were not specifically visiting this well known National Trust property but just passing through the grounds on a longer walk.



The Robin Hood and Little John, Lion Road Bexleyheath has reopened.

I actually thought they may not make it through the current situation but they have emerged from (what we hope is) the worst.

All the correct precautions are in place, G0FDZ, and a not radio afflicted friend and myself had a very pleasant and what we considered safe evening.

The are suffering from lack of income because of the reduced capacity for guests but the excellent family run establishment will hopefully weather the storm.

Thats all for this issue and thanks to Kevin G8MLO and Tony G4WIF for their contributions



Keep Safe
Dave G4YIB

02/02/2020