



Chelmsford Amateur Radio Society Newsletter

June Meeting
Tue 8-Jun-2021, 7:30pm
Online by Zoom

A Guide to EMF
By John Rogers M0JAV

RSGB EMC Chair, John Rogers M0JAV, will explain all about EM-Field exposure and the assessments that amateurs will need to undertake.

Ofcom is implementing changes to all transmitting licences to require licensees to comply with ICNIRP general public limits on EMF exposure. This will even include previously licence-exempt users who transmit at powers of more than 10W EIRP. John will introduce the work of the RSGB and ARRL experts in assessment of exposure to EM fields; and the tools that are available to help amateurs assess and comply.

He has conducted many investigations into RFI from new technologies in particular VDSL. When working at Racal Electronics he specialised in signal processing for Radar and Radio Electronic Warfare - a great background for understanding and identifying sources of noise/interference.

Background info: www.rsgb.org/emf

Note the date – this is the second Tuesday of the month.

Zoom:

Quick Link: <https://us02web.zoom.us/j/88494685211?pwd=ZHFoN3AvMWY2MnRJSkNzeVI4YiRLZz09>

- Meeting ID: 884 9468 5211
- Passcode: 939011



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Club Diary

Tue 8-Jun-2021	A Guide to EMF – John Rogers, M0JAV, RSGB	Online by Zoom
Tue 6-Jul-2021	Taking Toy Computers Seriously – Damian Bevan G4WPO	Online by Zoom

Club Nets

CARS meets for talks/events on the first Tuesday of the month. The subsequent Tuesdays have club radio nets as follows below and dates listed on our calendar at www.g0mwt.org.uk/main/events/categories/net/ :-

- 2nd Tuesday in the Month – VHF**
 The CARS VHF FM Net uses GB3DA from Danbury starting at 8pm (local).
 GB3DA is 145.125MHz Input and 145.725MHz Output - and CTCSS-only (110.9Hz), 2min timeout
 If for any reason GB3DA is not available then 145.375 Simplex will be used. Vertical aerials are best for this
- 3rd Tuesday in the Month - UHF**
 The CARS UHF FM Net uses GB3ER from Danbury and starting at 8pm (local).
 GB3ER is 434.675MHz Input and 433.075MHz Output - and is CTCSS-only
 Vertical aerials are best.
- 4th Tuesday in the Month - HF**
 The CARS 80m Net on "3756kHz" Night, SSB and starting at 8pm (local).
 Horizontal aerials are best. The idea is to enable distant CARS Members to join the Net.
- 5th Tuesday in the Month (when there is one!) - MF**
 This is the CARS Top Band Net on 1947/1950 kHz +/-QRM, LSB and starting at 8pm (local).
 Horizontal aerials are usually used for this Net. A reminder - limit your power to a max of 30 Watts, please.

Training & Morse Classes

If you are interested in the new RSGB online exam or other opportunities, please contact **John O'Connell M0JOC** our training coordinator and Exam Secretary

John can be contacted via training2021@g0mwt.org.uk or 07868-004380

Note: RSGB now have all three levels of exams available via their online exam booking system. It also has new Foundation training videos online at: <http://rsgb.org/foundation-practicals/>

In addition RSGB expects to update the exam syllabus for the recent Ofcom EMF changes

More info and other updates are at: www.g0mwt.org.uk/training

Morse classes at Danbury are suspended – but do contact Andy G0IBN who has on-air practice sessions and via Skype too...

 Follow @TrainWithCARS

May Meeting: Further Adventures at VHF/UHF

Following our HF talk in April by Don Field G3XTT, for May we moved up in frequency...

Tim Kirby GW4VXE from Practical Wireless gave his own perspective on 'Further adventures with your VHF/UHF station'. His aim was to speak from his own experience on things to try, station setup, antennas etc.

Tim is an author for both Practical Wireless (~10 years as VHF columnist) and some work for RadCom such as on equipment reviews.

Further adventures with your VHF/UHF station

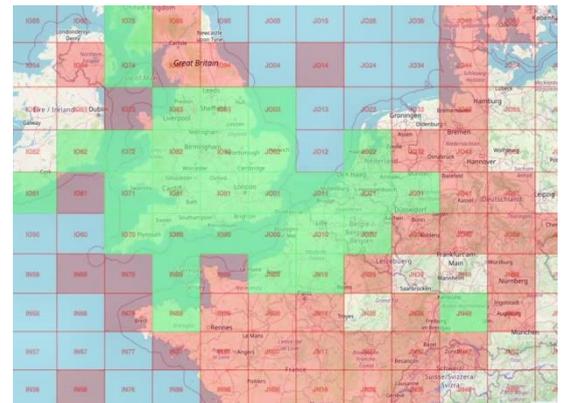
Tim Kirby GW4VXE



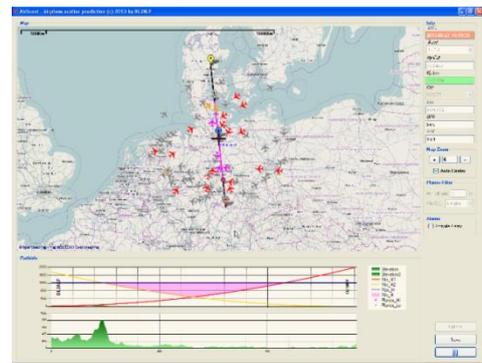
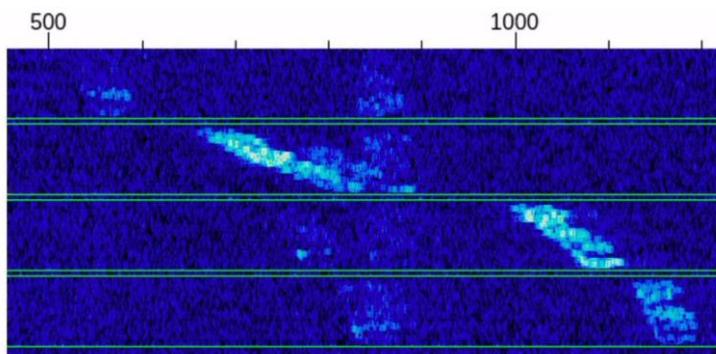
Tim recently moved to West Wales for both quality of life and a nice radio qth. He started quite topically with the news that the sporadic-E season had been one of the RF highlights last year during lock down, though it had been a slower start this year. Apart from amateur reports, he still found that European CB signals on 27MHz was still a good indicator of an opening and the MUF changing

<< Tim Kirby GW4VXE via Zoom

Nowadays digital modes play a key role for activity, and on 6m the FT8 usage has been centred on 50.313 (and longer DX on 50.323). the mode is a real help for smaller stations and lower powers. The next 'Joe Taylor' development is the new Q65 mode that has been added to the WSJT-X suite which has been optimised for VHF as it can cope greater Doppler spreads than FT8 which was intended for HF. The square map opposite shows his 144 MHz FT8 squares – showing that VHF definitely can reach beyond line of sight. Many of Tim's QSOs have been made using a simple vertical with FT8 (ie broader use than just traditional FM) – no need for a large beam.



Another technique for long range VHF/UHF contacts is aircraft scatter. Time used to live in Windsor near Heathrow and was able to have many aircraft scatter QSOs on SSB. As per the picture below the Doppler shifted signal reflected via the aircraft is seen going across the waterfall plot. Exploiting this can be assisted by software and websites that track aircraft positions and ones tailored for amateur radio predictions such as 'Aircscout'.



Aircraft scatter reception and the Aircscout.eu software

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Overall Tim has managed 2000 QSOs with FT8 on his classic Yaesu FT847 – with the best DX being SV2JL in Greece. Further up the bands, 70cm and 23cm are harder (not helped by the Doppler/spreading), but he still managed to get 70cm FT8 to the Canary Islands

In summary VHF/UHF isn't just good for local chats, but it can be good for DX too, with the newer digital modes offering a real benefit, especially for smaller stations

- *Thanks Tim!*

Useful links:

- WSJT-X: <https://physics.princeton.edu/pulsar/k1jt/wsjt.html>
- Airscout: <http://airscout.eu/>
- Longer talk by Tim:
<https://rsgb.org/main/blog/tonight-at-eight-archive/2020/09/28/28-september-my-world-of-vhf-by-tim-kirby-gw4vxe/>

Forthcoming Talks

Colin G0TRM has been able to arrange some interesting topics and speakers via the CARS Zoom facility, so make sure your diary has this:-

July 6th – "Taking Toy Computers Seriously" – Damian Bevan G4WPO

Damian Bevan G4WPO who gave us the fascinating Alan Turing talk last year returns to talk about 'Taking Toy Computers Seriously'.

Low cost ARM-based processors have given us the BBC Microbit and Raspberry Pi amongst many other diminutive devices – yet they are surprisingly capable for their size. They are also prompting a new effort on coding in schools – as well as a vast range of applications, including for amateur radio.



Essex CW Boot Camp

An early heads-up that Essex CW Club, @ecwarc plan that their annual CW bootcamp will be held in Witham, Essex on Saturday 16th October 2021. Due to its popularity spaces are limited, if you'd like to attend please email Andy G0IBN g0ibn1@yahoo.com

Wanted: Volunteers

We still have important **Vacancies to fill:-**

PR/RadCom, Newsletter Editor, Equipment Manager, Event/Operating roles and other volunteers

Please contact Colin G0TRM or Chair Elliott M0JBY

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