

COULSDON AMATEUR TRANSMITTING SOCIETY

G4FUR



M1FUR

“CATS WHISPERS”



June 2017

Affiliated to the RSGB

CATS Committee

Chairman: Stuart Barber G6CJR 

Secretary: VACANT

Treasurer: Steve Conway G7SYO 

Members: Terry Giles G4CDY 
David Milne G6VMI

Vacancies: Currently still remains at **THREE**

CATS Whispers Editor: Andy Briers G0KZT

email for contributions: newsletter@catsradio.org

Regular Society Meetings: These are held on the second Monday of each month at:

St. Swithun's Church Hall, Grovelands Road, Purley, Surrey, CR8 4LA at 20:15 to 22:15

Society Nets

Sunday mornings - 11:00 - Call on 145.400 MHz ± QRM

Sunday evenings - 17:00 - Call on 3.700 MHz ± QRM

Wednesday evenings - 21:00 - Call on 70.425 MHz

CATS Website www.catsradio.org

Email enquiries@catsradio.org

Forthcoming Meetings

Monday 12th June – DF hunt by Denis Noe M0NDJ at Nork Park, Banstead

Monday 10th July – TBA

Monday 14th August – Annual BBQ at Home of Terry G4CDY

Monday 11th September - TBA

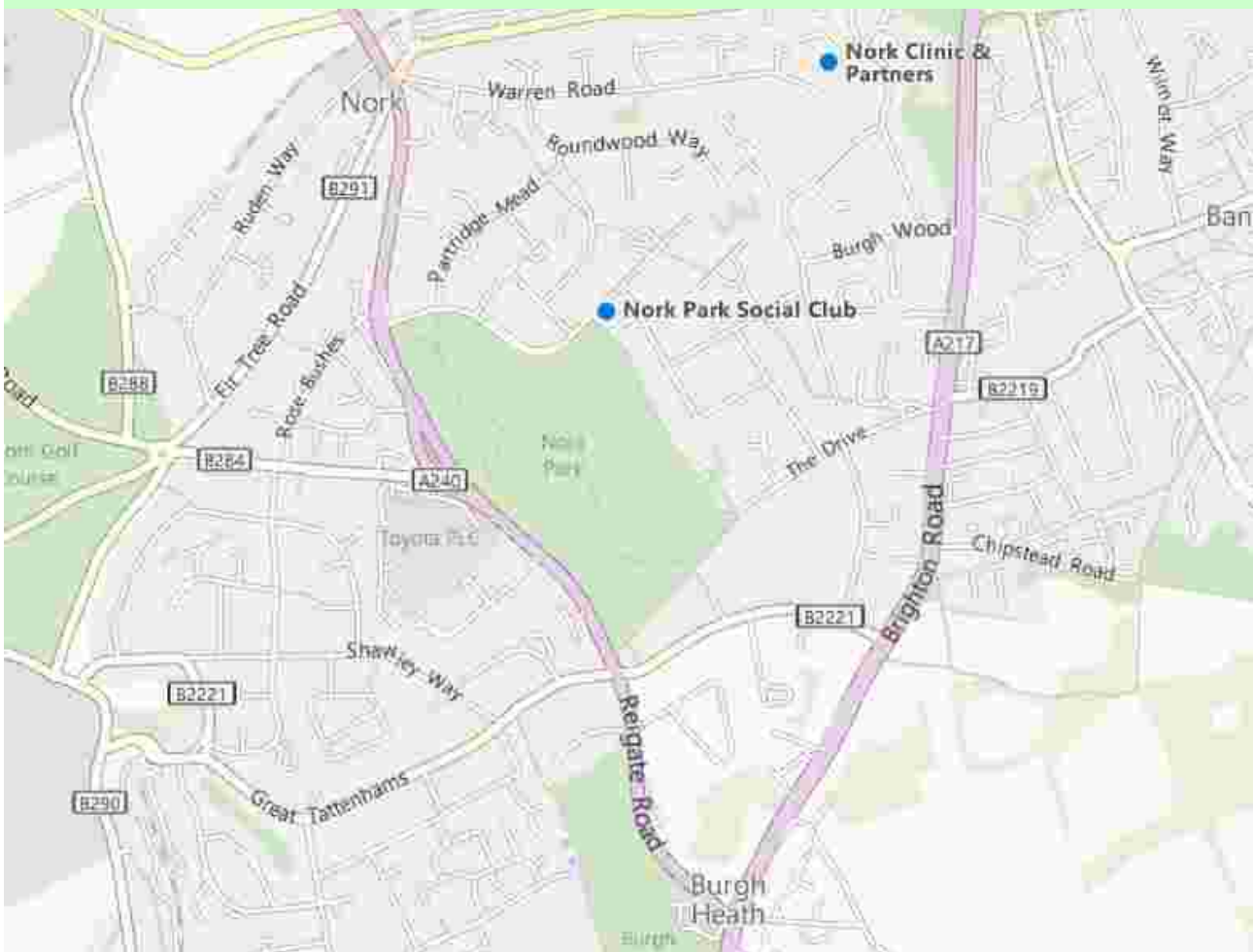
Monday 9th October - Swimming Pool Maintenance by David G6VMI

Monday 13th November - TBA

Monday 11th December – Annual General Meeting

Next Meeting - Monday 12th June

Denis M0NDJ has once again stepped in to provide his ever popular DF Hunt. The RVP start point is Nork Park in Banstead. Meet at 7.30pm for 8.00pm start. RVP at The Drive Banstead Surrey SM7 1DQ. Retire to The Woolpack High Street Banstead afterwards.



For those of you who don't have their own DF Kit, Denis can provide what you need. All you need to do is just turn up.

April Meeting Debrief

432 Mhz DF Receiver Project by Terry Giles G4CDY

Terry kindly agreed to give us a presentation on his passion of DF. He has been closely involved in many of the foxhunts that have been organised by our club, some with foxhunting teams covering many miles by car, but also 'on foot' events, to seek out hidden low power transmitters.



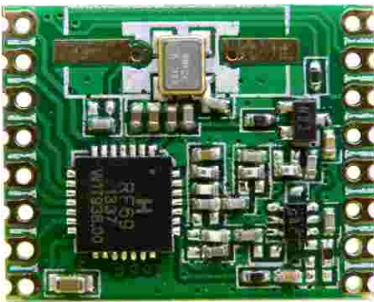
Terry started his presentation by showing a short film made by American Amateur W4OT of an 'on foot' foxhunt to seek out several low-power transmitters that were in ammunition boxes, hidden in bushes. One of the participants in this event was using a novel technique to attenuate the received signal, by mixing it with a 4MHz oscillator and then tuning his scanning receiver up or down in 4Mhz steps to progressively attenuate the signal strength.

After this short film, Terry discussed some of the early history of radio direction finding. It was used by the Royal Navy during WW1 at the battle of Jutland and in WW2 to

locate U-Boats and later for marine and aircraft navigation.

Radio Amateurs have been involved in radio direction finding since the 1930s, but it really became popular in the 1970s. ARDF is now a highly competitive sport with many international groups taking part, the bands employed being either 2m or 80m. A variant of this sport is called 'Fox-Oring', a combination foxhunting and orienteering.

On some of the events organised by CATS and Terryvshowed a photo of a past event, with the teams meeting up at the starting assembly point (a pub car park, of course). A typical fox-hunt involves seeking out several hidden transmitters and once one has been found, removing a tear-off reference number from its container, and then seeking out the next one.



The usual technique is to take bearings of the received signals and then transfer them, with the aid of a compass and then transfer them onto a map. Terry then showed his audience examples of his DF antennas, each employing the use of sections of steel tape measure for the elements. These are unlikely to get damaged by tree and bushes when on the move. A small three element beam can be either used to take peak signal strength bearings or, if it has a sharp null to the rear, the direction of the null can also be used to take a bearing. Terry's three element beam also includes his own designed Micro-DF receiver and a balun. Although the 2m band is commonly used for foxhunts, 70cms can be used as

an alternative with the option of using a rathercheap 'licence-exempt' low power 433MHz RFM 69H programmable TX/RX module (see above left), available from various on-line sources.

Terry, ended his presentation with a bit of practical work for his audience, that included locating an imaginary 'fox' by transferring a list of bearings taken from various NGR references and transferring them to a map. All a bit of fun and a bit of what could be expected from the real thing.

May Meeting Debrief - Terry's Professional Test Gear

This was an excellent opportunity for members to bring along their radios and make some checks on them with the extensive test gear that Terry kindly brought along from his workshop.



Tests included receiver sensitivity, frequency alignment and output power. Vince G1HRD brought along some of his classic 1980's rigs which were found to be surprisingly in good health. Andy G8JAC used it to align some of his own test gear he brought along.

On a personal note, I discovered that my Kenwood TS-2000 which had had a replacement (and lower spec) PA was developing slightly more power than I thought it was. This has now helped me align it better to the 100 watt amplifier I picked up at Kempton in April.



Our thanks to Terry for undertaking to bring along what is both impressive but significantly heavy test gear. Thanks to to members for bring stuff to test, without which, the evening would have had a slightly different angle... simply admiring test gear!!

Andy Briers G0KZT

Future Meetings

Information stil awaits for July's meeting.

However, I have been informed that the Annual club BBQ will take place on Monday 14th August at the home of Terry G4CDY. More details in next month's newsletter.

Topics for the year are still being arranged by your Committee for the remainder of the year. More news next month.

Purley Classic Car Rally & Family Fun Day – **Sunday 25th June 10.00am – 5.00pm**

Mike Buckley has made us aware that the Whitgift Rotary Club are holding a classic car rally at the Rotary Field, Brighton Road, Purley. Entry is £3.00 for adults and £1.00 for children.

If you're lucky enough to have a classic car or motorcycle, £5.00 will secure you and a buddy a spot to show off your vehicle to the public. Contact 07533 107727 or email a.w.l@btconnect.com For more information go to <http://www.rotary-ribi.org/clubs/page.php?PgID=622908&ClubID=1834>

Mike has suggested operating a Special Event Station using G4FUR or an other special event callsign. If you're interested, please let Stuart G6CJR know ASAP.

Ron McDonald G3DCZ - Silent Key

News has been received that Ron sadly passed away on 17th May. He was a great friend and supporter of the Sutton & Cheam Radio Society for a great number of years.

Ron's Funeral will take place at NE Surrey Crematorium on Monday 12th June at 12.40 p.m. Further information from his son Colin at colinmcdonald60@hotmail.co.uk

GB3NS Interference – Update

Some excellent work has been going on behind the scenes to try and identify the culprit behind the recent abuse that has been taking place on our local 70cms repeater. Early reports were that it was either a very weak or non-existent signal to us on the northern side of coverage (where a majority of us are). There is good information that the centre of interference is directly south, perhaps in or around the village of Merstham.

More news as it happens.

And on a positive note, ECHOLINK is now enabled on the repeater. Well done Adam!

CATS 40th Radio & Electronics Bazaar – **Sunday 19th November 2017 – 10.00am – 1.00pm**

The date of our 40th, yes 40th! CATS Radio and Electronics Bazaar is confirmed as Sunday 19th November and will build on the success of the new venue at the Oasis Academy Coulsdon in Homefield Road Old Coulsdon.

So put the date in your diaries NOW and look out for more news in the forthcoming newsletters.

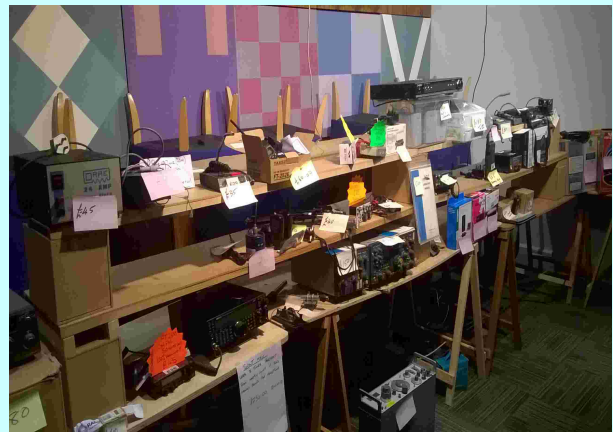
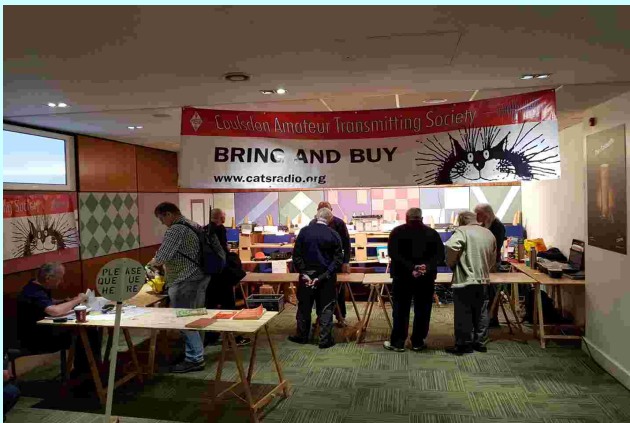
Kempton Park Bring & Buy – Sunday 30th April 2017 – Debrief

The following members were kind enough to give up their Sunday to man the Bring & Buy stand at the Kempton Radio Fair; Stuart G6CJR, John G1RUV, Vince G1HRD and Andy G0KZT. Stuart was the first to arrive with the shelving, banners and the briefcase containing the all important paperwork followed shortly afterwards by the remaining three members. The doors opened at 10.00am and the tendered items were quickly booked in. Several of the sellers had downloaded the booking in sheet and completed it prior to arrival. Nonetheless, the rush was soon dealt with.



Vince G1HRD, John G1RUV & Stuart G6CJR

There were a good range of items for sale and some real bargains too. And what's more, a good percentage was sold!

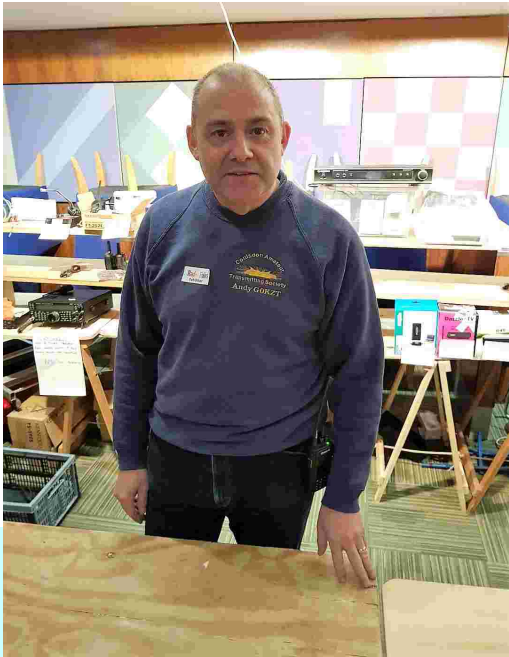


By 2.00pm the rally was beginning to pack up and the sellers came along to either get paid out or collect their unsold items. As usual, we took our 10% commission which for this event totalled £124.20 for club funds.

We have two more "Bring and Buys" to run this year. Both are in November, the first being the Kempton Show and the second being at our own CATS Bazaar.

The Kempton shows, along with the Bazaar as a whole are considerable fund raisers for the Society and, are what keeps our club subscriptions as low as they are. While the four "MusCATeers" managed to run the stand, more help would have been ideal. So, if you can offer your help, it would be most welcome and will allow those volunteers an opportunity to

see the show too



One of the benefits of working the stand is to see the bargains as they arrive. I was extremely lucky to spot a 100 watt 70cms amplifier arrive, something I have been seeking for over three years. I nearly picked one up in Freidrichsafen in 2015 but was foolish to dither and miss out on it (and subsequently kick myself for not buying it). And for just £80.00, this one was not going to be missed. It was even worth the inevitable grilling by management when I brought it home! The really good news is.... it was tested and found to be in full working order... and I lived to tell the tale, well just.. Absolute bargain!!

Andy G0KZT

Sutton & Cheam Radio Society Trip to Bletchley Park

On **Saturday 24th June**, members of the **Sutton & Cheam Radio Society** have arranged a trip to the **RSGB Bletchley Park Museum**. They are **inviting members of CATS** to join them.

Entry is free to RSGB members and anyone wishing to take advantage of the offer will have to download the voucher via the membership services section of the RSGB website.

Our Chairman, Stuart G6CJR will act as a liaison for interested parties. Transport will be by means of car sharing, so if you either need transport or can spare space in your car, please let Stuart know.

UPDATE.....

CATS have secured the use of the Keston Primary School minibus to transport us to Bletchley Park. The school have kindly given me permission (as one of their volunteer drivers) to use it for a small cost. The club will meet this with a suggested donation of £4.00 per person towards the cost of the fuel.

Reserve your seat NOW!

FOR SALE

KENWOOD TS2000X FOR SALE LESS THAN TWO YEARS OLD AND IN VERY GOOD CONDITION BOXED WITH ALL IT MANUALS

THERES A PHOTO OF IT ON MY QRZ.COM PAGE

£1100 OVNO. contact adam G7CRQ at adam.haywood@blueyonder.co.uk

To A Good Home

I have an old yaesu ft101zd and a heavy old ATU to give away if anyone is interested. Collection only from his QTHR in CR2 land.

Please contact Gerry G4SXY on 020 8657 8494 for more details.

FOR SALE

Robin Sykes G3NFV, who has been one of our most loyal traders and who has supported many of our Radio & Electronics Bazaars has a number of items privately for sale.

KENWOOD TS-950S as new inc box, mic, lead & manual	£725.00
KENWOOD TS940S inc box, mic, leads & manual	£425.00
YAESU FT-897 inc box, mic, leads & dust cover	£495.00
YAESU FT-950 inc mic, leads, manual + non original box	£595.00
HF2V 80/40M Vertical antenna 'NEW'	£325.00
60ft Telescopic mast 'NEW' (2 available)	£100.00 or £180 the pair
COLLINS KWM2A inc PSU + 3128-5 VFO in Samsonite cases	OFFERS
COLLINS 30L 1 Linear (wired for 100V AC but simple rewire for 240V)	£450.00
CUSHCRAFT A3WS 12m/17m 3 element beam	£100.00
CREATE RC5-1 Rotator NEW and BOXED	£405.00
CREATE MC2 Mast Clamp	£75.00
30ft VERSATOWER plus Ground Post	£180.00
20 AMP(?) VARIAC (Heavy)	£45.00

Contact Robin on 01372 372587 (leave message) or email robin@sycomcomp.co.uk

PAINTING AND SOLDERING by Steve G3WZK

A new hi-fi system

PART TWO

After Christmas, I started thinking again about this project. What I felt was needed was a suitable receiver to feed into the system. In the 1970s I had built a VHF/FM radio that used Mullard modules: the LP1185 (IF Amplifier), LP 1186 (FM tuner) and LP1400 (Stereo Decoder). This receiver had been in the roofs of several houses for thirty years and I didn't really expect it to work after so long – but it did, although the controls were rather stiff to operate. The stereo decoder lamp (a filament type) had failed, but the stereo sound quality was as good as ever. The only problem was that it was impossible to cover the upper part of Band 2 as the LP1186 was manufactured in an era when the higher frequencies weren't used for broadcast purposes in the UK, although they now extend to 108 MHz. In that receiver, I had used a pushbutton unit intended for UHF televisions to provide pre-set tuning, but this unit only had 5 push buttons. It didn't seem that it would be possible to use the old radio with the new system without being rather limited in the stations it could receive: a maximum of five stations and nothing above 104 MHz. I needed something else but what should I do? With government plans to close down VHF Band 2, it would have to be fairly simple to be worth the bother. Constructing a DAB radio seemed far too ambitious to me, although in the course of my research I did find that Jaycar in Australia marketed a DAB+/FM Digital Radio Kit (KC5491) at a cost of \$399 Australian. This seemed a high price for a kit – not all kits work first time and some never do. STOP PRESS: As of March 2017, the kit is now “only” \$249. NB: *This receiver operates on DAB+ and VHF. It does not claim to operate on “DAB”. This could be an issue for UK users.*

<https://www.jaycar.com.au/dab-fm-digital-radio-kit-kit-back-catalogue/p/KC5491>

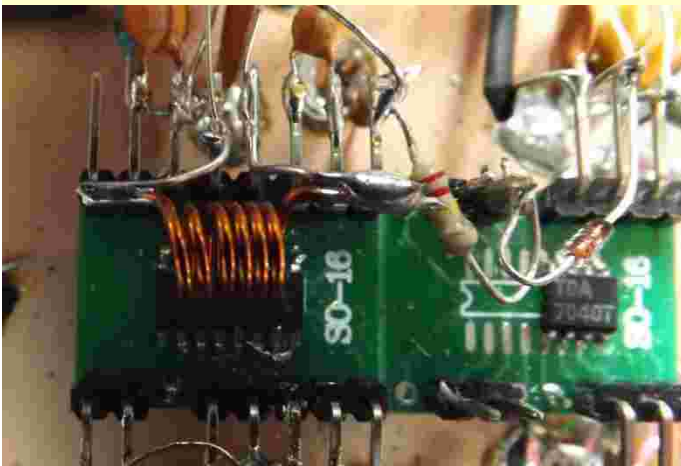
There are no modern equivalents to the Mullard modules but there are a small number of ICs that are still on the market and which can be used to build a VHF/FM receiver, in particular the Philips TDA 7021T (FM radio) and TDA7040T (Stereo decoder). Philips' application notes were quite helpful and included a circuit diagram of a complete radio that used the TDA7050T as an audio output stage. The circuit used a conventional variable capacitor for tuning the local oscillator. It didn't look as though it would be too difficult to use varicap tuning instead. I would have to buy or make a 56nH coil for the local oscillator and a suitable coil for the antenna tuning stage – although the required inductance value was not given in the application notes. Both ICs were available from eBay suppliers – the TDA 7021T for £3.99 and the TDA 7040T for 1.19 Euros, the latter from a supplier in Germany. The only catch was that both of these ICs were surface mount types and I had only ever soldered one SMD component in my life before – a solitary capacitor at a CATS talk on SMDs given by Terry G4CDY at a CATS meeting back in February 2010.

Also on eBay I found a kit from China priced at only £2.43 including postage, for a “Wireless Stereo FM Radio Receiver Module PCB DIY Electronic Kits 76MHz-108MHz UK”. This also has a surface mount IC. See: <http://www.ebay.co.uk/itm/272374743366?trksid=p2057872.m2749.l2649&ssPageName=STRK%3AMEBIDX%3AIT>

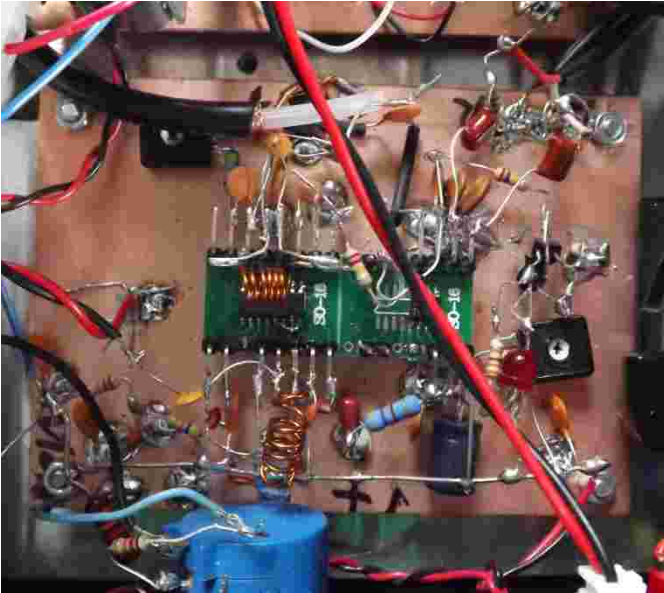
I decided to hedge my bets by ordering this kit and if successful to go on to construct a “proper” VHF radio. I was still nervous about soldering a surface mount IC but on YouTube I found some extremely useful videos, including one that demonstrated a technique called “Drag Soldering” and how to use solder wick afterwards to clean up. When the eBay kit turned up there were no instructions whatsoever, but I did find some construction notes

When the adapter boards arrived, the four boards were in one unit and it was clear to me that it was intended for users to snap off each tiny board as and when required. This gave me the idea of snapping off two boards together *but not separating them*, and using one board for the TDA7021T and the other for the TDA7040T, to facilitate their interconnection, using the supplied pins as appropriate. So the plan emerged to use two adapter boards and build the rest of the receiver dead bug style on a piece of single-sided PCB 70mm by 100mm that I already had. I needed to buy a few more components such as a multi-turn pot for the tuning and a suitable varicap diode, as described earlier. I also bought a module to measure and display the frequency of the radio, entitled "1MHz ~ 1000MHz RF Singal Frequency Counter Tester Meter Digital LED Ham Radio G" (sic) from eBay for £7.38, including postage, from Hong Kong. The key point is that it should be able to work well at up to 120 MHz so as to measure the local oscillator frequency.

To construct the radio, I began by mounting the ICs onto the adapter boards, and then mounting the adapter boards in the centre of the PCB as mentioned earlier. To create the two inductors, I used a 5mm drill shank as a former and six turns of close wound 22 SWG wire and mounted them directly onto the pins of the adapter board as an aid to frequency stability. The circuit was then gradually built up dead bug style a few pins at a time. Power connections were made to 100n capacitors earthed at the other end, while signal connections were made to 1 megohm resistors also earthed at the distant to the PCB, to hold everything rigid.



The "Core" of the VHF radio: L- input tuning coil with TDA7021 IC underneath: R- TDA 7040T IC and mounting arrangements.



The complete homemade VHF FM radio: Oscillator tuning coils at bottom left. Antenna input tuning coil at top left. Multi-turn tuning potentiometer (pale blue) at bottom

The unit is designed to work from a 3v battery, but can cope with higher voltages if required. For testing purposes, I connected it to my PC's powered speakers, rigged up a simple wire aerial, fitted two AA cells into a battery holder and switched on. There was a comforting quiet hiss from the word go. Although no stations could be received, the tuning did appear to work as one or two odd signals were audible at one end of the tuning range. But was the frequency too high or too low? I had no idea so, as an experiment, I spread out the turns on the oscillator tuning coil (to reduce the inductance) and tried again. This time I could hear a few broadcast stations but only at one end of the tuning range. I solved the tuning problem completely by running the pot that fed the varicap diode from a separate 9v supply (PP3 battery). Next I brought the frequency display unit into use. It can be set up to subtract the IF from the measured frequency; in the case of the TDA7021, the IF is 76 kHz and it took several attempts to set this up properly. The unit seemed to be quite sensitive in that it worked reliably when coupled to the oscillator circuit via a 1pF capacitor although later on I changed this to 4 pF. It did not upset the performance of the receiver at all. I assume this is because the unit uses fairly aggressive AFC (Automatic Frequency Control), so it is hard to knock it off frequency once tuned in. This display needs a supply between 8 and 12 volts and 9 volts is fine. The snag I found was that this had to be a separate 9 volt supply from the one used for the varicap tuning as the two items interacted if run from the same battery. I realised that this would need careful thought when designing a mains-driven power supply.

The radio would also need to be boxed up to match the amplifier/ pre-amplifier setup. It was hard to find anything suitable, so in the end I decided to buy another box identical to the amplifier box. However, this box would be too big to house just a VHF radio. What else could I usefully house within the same box? I looked on eBay to see if there were any modules that I could use to access the many music files stored on the various computers in the house, for example by Bluetooth, but there was nothing suitable. What I needed was some sort of computer.

To be concluded next month.

Contest Update

By now, those members who have been regularly taking part in contesting within the Society will be familiar with the contest diary. So, instead of publishing the contest calendar each month, I have provided this link to the RSGB Contesting Website to act as a reminder. <http://www.rsgbcc.org/>

The website also allows you to follow links to results plus to areas where you can upload or transcribe an entry.

Rallies & Events

18 June 2017 30th Newbury Radio Rally

Newbury Showground, Priors Court, Hermitage, Thatcham, Berks. RG18 9QZ.
by M4,J13 - follow the AA signs.

Open 09:00/08:00 sellers. Admission £2.50/£12.30 for car boot area. Free parking.
Exhibits. SIGs. Amateur radio display. Clubs & societies. No on-site catering or disabled facilities. Discounted advance bookings via the website:

<http://www.nadars.org.uk/rally.asp>

14-16 July 2017 Hamtronic Show, Friedrichshafen, Germany [Friday-Sunday]

Messe, Friedrichshafen, 88046, Germany

Open 09:00-18:00. Admission €9.00, (other ticketing formats available).SIGs. Trade.
IARU Member Societies' stands. Lectures, some in English. Large flea market.RSGB books.

Details:<http://www.hamradio-friedrichshafen.de>

16 July 2017 McMichael Rally

Reading Rugby Club, Holme Park Farm Lane, Sonning Lane, Sonning-on-Thames,
Reading RG4 6ST.

Open 09:30. Entry £3. Talkin S22. Tables & car boot spaces £10. Trade. SIGs.
Catering/bar on site. No dogs allowed - venue rules (assistance dogs excepted).

Details: Andy, 07775-940016 or Min, 07715-771665 <http://www.mcmichaelrally.org.uk/>

30 July 2017 Chippenham and District Amateur Radio Club Rally

Kington Langley Village Hall, Church Road Kington Langley, SN15 5NJ.

Open 10:00 to 13:00/07:00 Sellers. Entry £2/kids free. Talkin S22-145.55 MHz.

On-site parking. Disabled facilities. Tables inside £8, car-boot pitches £6
for cars & vans, payable on entry. On-site catering.

Details: Brian, g6huim3hui@gmail.com Club Website:<http://G3VRE.org.uk>

Other Club News & Contact Information

BROMLEY & DISTRICT ARS

Website: www.bdars.org.uk/

Email: info@bdars.co.uk

Club Net: Wednesdays 9:00pm - meet on 145.500 MHz FM and QSY

Meetings: 3rd Tuesday of every month at Victory Social Club, Kechill Gardens, Hayes, Kent, 19:30 for 20:00.

Jun. 20 Direction Finding 2E0DIZ

Jul. 18 Morse Code G4NPD

CRYSTAL PALACE & DISTRICT RADIO SOCIETY

Website: www.qsl.net/g3oou/ or <http://www.g3oou.co.uk/>

Club Net: Wednesdays 20:00 on 145.525 MHz

Meetings: 1st Friday at All Saints Parish Church, Beulah Hill at 19:30

7th July – GPS by Nick Stapley followed by another short talk TBA

4th Aug - Summer Social

1st Sep - Antenna Modelling by Quin Collier G3WRR

6th Oct - SDR Without Maths by Alan G0TLK

1st Dec - Christmas Social

CRAWLEY ARC

Website: www.carc.org.uk

Meetings: Every Wednesday at Hut 18, Tilgate Forest Recreational Centre, Tilgate Forest, Crawley from 19:30, and Sundays, 10:30 to 13.00.

CRAY VALLEY RS

Website: www.cvrs.org

Contact: Richard Cains G7GLW rcains@btinternet.com

Club Net - 10m Sunday morning net @ 10:00 local: 28.570 MHz +- QRM

4m net – Fridays in weeks where there is no club meeting @ 20:30 local: 70.450MHz, then QSY to 70.425 or 70.475MHz

Meetings: 1st and 3rd Thursdays at 1st Royal Eltham Scouts HQ, Rear of 61 - 71 Southend Crescent, Eltham, London, SE9 2SD.

Thursday 15th June – DF Hunt by Guy G0UKN

Thursday 6th July - BERU from East Africa – Nick G3RWF

Thursday 20th July - DXing without the luxuries – Richard G8ITB

DORKING & DISTRICT

Website: <http://www.ddrs.org.uk> Email: ddrs.secretary@yahoo.co.uk

Contact: George Brind, G4CMU

Club Nets: Sunday 08:15 on 3.770 MHz & Thursday 20:00 on 144.775 MHz

Meetings: Friends Meeting House, Butterhill, South Street Dorking at 19:30

27th Jun - Wireless, my early days by Ken Tythacott M3CFC

HORSHAM ARC

Website: www.harc.org.uk

Club Nets: Saturdays 21:30 on 144.725MHz and Sundays 10:00 on 3.722 MHz

Meetings: 1st Thursday at The Guide Hall, Denne Road, Horsham, Sussex

MID SUSSEX ARS

Website: www.msars.org.uk

Club Nets: Sundays 08:00 on 3.740 MHz and at

11:00 on 145.350 MHz, Wednesdays 20:00 on 145.350

MHz and Daily 13:30 on 21.330 MHz

Meetings: Every Friday at Cyprus Hall, Cyprus Road, Burgess Hill, West Sussex for 19:45

SURREY RADIO CONTACT CLUB

Website: www.g3src.org.uk

Contact: John Kennedy G3MCX, 020 8688 3322 email secretary@g3src.org

Club Net: Sunday 09:30 on 1905 kHz , 70.300 MHz Thursday 8:00 pm, 145.35 MHz +/- 25kHz Friday 8:00 pm

Meetings: 1st & 3rd Mondays at Trinity School, Shirley Park, Croydon CR9 7AT 19:30 for 19:45.

Monday 10th July – Summer Barbeque

Sutton & Cheam Radio Society

Sutton United Football Club. The Borough Sports Ground, Gander Green Lane, Sutton, Surrey, SM1 2EY

Web site: <http://www.scrs.org.uk> General Enquiries e.mail: info@scrs.org.uk

Nets – Wednesday 20.00hrs 145.500 MHz , Saturday 10.00 7.125 MHz, Saturday 11.00 145.500 MHz

15th June - The Sun & The Sky - How Space Weather Affects Radio Signals –

Dr Colin Forsyth.

24th June – Visit To Bletchley Park

20th July - The Icom IC7300 SDR Transceiver by Mike Davies G0KAD. (revised date)

17th August 20th - ICQ PodCasts by Martin Butler M1MRB (revised date)

2nd & 3rd September – SSB Field Day

Wimbledon & District Amateur Radio Society

Meets on the 2nd and last Friday in the month at Martin Way Methodist Church Hall, Martin Way Merton Park, London, SW19 9JZ at 19:30hrs for 20:00hrs.

Contact: Andrew G4ADM on 020 8335 3434 or andrew.maish@ntlworld.com

Submissions are most welcome from CATS members, Local clubs and societies

CATS Whispers is published monthly by Andy Briers G0KZT on behalf of the Coulsdon Amateur Transmitting Society.

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CATS fully support the RSGB Child Protection Policy



CATS are twinned with the Crescenta Valley Radio Club
Glendale California USA www.qsl.net/cvrc