



An Amateur Radio publication for the Microwave Enthusiast

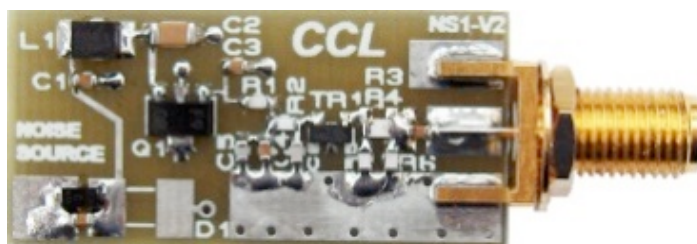
scatterpoint

April 2015

Published by the UK Microwave Group

Top band through 13cm
receiver sensitivity test source
RXGen

by G3AAF & G8FEK



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Editor's corner

Last call for the AGM and Martlesham Round Table.
The booking system is open with 80 signed up by 10 April.
See you there?

73 de Martin G8BHC

Subscription Information

The following subscription rates apply.

UK £6.00 US \$12.00 Europe €10.00

This basic sum is for **UKuG membership**. For this you receive Scatterpoint for **FREE** by electronic means (now internet only) via the [Yahoo group](#).

Please make sure that you pay the stated amounts when you renew your subs next time. If the amount is not correct your subs will be allocated on a pro-rata basis and you could miss out on a newsletter or two!

You will have to make a quick check with the membership secretary if you have forgotten the renewal date. Please try to renew in good time so that continuity of newsletter issues is maintained.

Put a **renewal date reminder** somewhere prominent in your shack.

Please also note the payment methods and be meticulous with PayPal and cheque details.

PLEASE QUOTE YOUR CALLSIGN!

Payment can be made by: PayPal to

ukug@microwavers.org

or a cheque (drawn on a UK bank) payable to 'UK Microwave Group' and sent to the membership secretary (or, as a last resort, by cash sent to the Treasurer!)

Articles for Scatterpoint

News, views and articles for this newsletter are always welcome.

Please send them to

editor@microwavers.org

**The CLOSING date is
the FIRST day of the month**

if you want your material to be published in the next issue.

Please submit your articles in any of the following formats:-

Text: txt, rtf, rtf, doc, docx, odt,

Pages

Spreadsheets: Excel, OpenOffice,
Numbers

Images: tiff, png, jpg

Schematics: sch (Eagle preferred)

I can extract text and pictures from pdf files but tables can be a bit of a problem so please send these as separate files in one of the above formats.

Thank you for your co-operation.

Martin G8BHC

Reproducing articles from Scatterpoint

If you plan to reproduce an article exactly as per Scatterpoint then please contact the [Editor](#) – otherwise you need to seek permission from the original source/author.

You may not reproduce articles for profit or other commercial purpose.

You may not publish Scatterpoint on a website or other document server.

UKμG Chip Bank – A free service for members

The catalogue is now on the UKμG web site at www.microwavers.org/?chipbank.htm *Latest Stock Update was end of October – so do take a look!*

Non members can join the UKμG by following the non-members link on the same page and members will be able to email Mike with requests for components. All will be subject to availability, and a listing of a component on the site will not be a guarantee of availability of that component. The service is run as a free benefit to all members and the UK Microwave Group will pick up the cost of packaging and postage.

Minimum quantity of small components supplied is 10. Some people have ordered a single smd resistor!

The service may be withdrawn at the discretion of the committee if abuse such as reselling of components is suspected.

There is an order form on the website with an address label which will slightly reduce what I have to do in dealing with orders so please could you use it. Also, as many of the components are from unknown sources, if you have the facility to check the value, particularly unmarked items such as capacitors, do so, and let me know if any items have been miss-labelled. G4HUP's [Inductance/capacitance meter](#) with SM probes is ideal for this (Unsolicited testimonial!!)

Don't forget it is completely free, you don't even have to pay postage!

The Chip Bank will be at the Martlesham RT.

Mike G3LYP

UKμG Project support

The UK Microwave Group is pleased to encourage and support microwave projects such as Beacons, Synthesiser development, etc. Collectively UKμG has a considerable pool of knowledge and experience available, and now we can financially support worthy projects to a modest degree.

Note that this is essentially a small scale grant scheme, based on 'cash-on-results'. We are unable to provide ongoing financial support for running costs - it is important that such issues are understood at the early stages along with site clearances/licensing etc.

The application form has a number of guidance tips on it - or just ask us if in doubt!. In summary:-

- Please apply in advance of your project
- We effectively reimburse costs - cash on results (eg Beacon on air)
- We regret we are unable to support/running costs

Application forms below should be submitted to the UKμG Secretary, after which they are reviewed/agreed by the committee: <http://www.microwavers.org/proj-support.htm>

UKμG Technical support

One of the great things about our hobby is the idea that we give our time freely to help and encourage others, and within the UKμG there are a number of people who are prepared to (within sensible limits!) share their knowledge and, more importantly, test equipment. Our friends in America refer to such amateurs as "Elmers" but that term tends to remind me too much of that rather bumbling nemesis of Bugs Bunny, Elmer Fudd, so let's call them Tech Support volunteers.

While this is described as a "service to members" it is not a "right of membership!"

Please understand that you, as a user of this service, must expect to fit in with the timetable and lives of the volunteers. Without a doubt, the best way to make

people withdraw the service is to hassle them and complain if they cannot fit in with YOUR timetable!

Please remember that a service like our support people can provide would cost lots of money per hour professionally and it's costing you nothing and will probably include tea and biscuits!

If anyone would like to step forward and volunteer, especially in the regions where we have no representative, please email john@g4bao.com

The current list is available at

www.microwavers.org/tech-support.htm

UK Microwave Group AGM

Sunday 26th April 2015



Notice is hereby given that the 2015 Annual General Meeting of the UK Microwave Group will be held at 10:00am on Sunday, 26 April 2015 as part of the Martlesham Microwave Round Table event which takes place over that weekend.

This will include the election of the officers of the committee and the presentation of the Chairman's, Secretary's and Treasurer's Annual Reports. We are looking for enthusiastic volunteers to join our committee and help shape the future of UKμG.

This year the following Committee officers/members are standing down.

**Dave Powis G4HUP Trophies & Awards
and we still don't have a Chairman.**

We are therefore interested to hear from anyone who would be willing to take on these vital UKμG committee positions. If any UKμG member is interested in the office then please submit your name (and the name of your seconder) to the UKμG Secretary, John Quarmby G3XDY, as soon as possible.

If you are interested in joining the committee, have any agenda or AOB items for the AGM then please contact the UKμG Secretary,

John Quarmby G3XDY by 10 April 2015 by email to

secretary@microwavers.org.

A full list of the current committee and their roles is at:

www.microwavers.org/cmmittee.htm, and on P2 of Scatterpoint.

73 John Quarmby G3XDY,

General Secretary UK Microwave Group

DKARS Magazine

The ninth DKARS Magazine is available for download. The [Dutch Kingdom Amateur Radio Society](http://www.dkars.nl/) is a foundation wishing to represent the interest of ALL radio amateurs within the entire Kingdom of the Netherlands.

The DKARS-Magazine is not copyrighted and everyone is free to forward this link to as many radio friends as they like.

DKARS Magazine is published once every month and we would also like to receive all possible(ham related) contributions that you like us to publish.

Would you like to receive the DKARS Magazine a couple of days earlier then everyone else who is on our regular mailinglist?

That is possible by becoming a donor. You can already be a registered donor for EUR 9,95 for one year.

More information on donorship on this link: <http://www.dkars.nl/index.php?page=donors>

On behalf of the Dutch Kingdom Amateur Radio Society, I hope you enjoy reading, after you have clicked on this link: http://www.dkars.nl/index.php?page=magazine_uk

73 on behalf of the DKARS

Peter de Graaf PJ4NX and PA3CNX, Secretary DKARS

Martlesham Microwave Round Table

25th & 26th April 2015

Organised by the UK Microwave Group and Martlesham Radio Society

The Martlesham Microwave Round Table will take place on the 25th and 26th of April 2015, at BT Adastral Park, Martlesham Heath, Ipswich, IP5 3RE.

There is no entrance charge for the Round Table. Traders tables in the fleamarket area will be charged at £5 per table.

Please remember if you are planning to attend the Martlesham Microwave Round Table on 25/26th April that you must register prior to the event for security purposes. Registration is online at:

<http://mmrt.homedns.org>

Please click the Register tab on the top header menu and follow the links to register.

Registration will close at 23:59 on Sunday 19th April.

There are still spaces for the informal dinner on Saturday night **but the Cameo hotel accommodation is currently fully booked**. There are details of alternative nearby hotels on the web site under Register/Accommodation. Booking for the meal will also close on the Sunday night prior to the event.

The dinner will be held at the Cameo Hotel <http://www.cameohotels.com/>. The three course dinner with coffee will be £24, payable by Paypal. Full menus will be on the booking web site.

The lecture programme is as below (please check on the web site for any further updates):

Saturday 25th April

10:00 Truck Stop breakfast

12:00 Doors open

Refreshments available from 12:00 (sandwiches, drinks, biscuits & cakes)

13:00 Welcome

13:15 WA5VJB. Variations on Yagi Designs

14:15 DF9IC 23 cm PAs with MRFE6S9160 - from 150 W up to 1 kW

15:00 Open slot

Measurements all afternoon

16:55 close

19:30 meet for dinner at 20:00 at the Cameo Hotel, Ipswich

Sunday 26th April

09:00 doors open

09:50 Welcome

10:00 UKuG AGM+ Trophy presentations

11:00 OZ2M. PI4 - A digital modulation for beacon purposes.

11:45 MGM beacon Forum

12:30 Lunch (sandwiches, drinks, biscuits & cakes)

13:15 G4FRE Remote control radio systems for free

14:00 G8CUB/G0FDZ 76GHz and above – our experiences so far

14:45 Break

15:00 G4HUP Azimuth Drive System for a Small Dish

15:45 G3XDY Contest Forum

16:30 Close

Measurements up to 14:45

The fleamarket will operate from 12:00 Saturday until close and again from 09:00 to 16:30 on Sunday

Test equipment

We will have measurement facilities for noise figure up to 10GHz (possibly higher) and a network analyser that goes up to 6GHz, plus power measurement in the range of -30dBm to +50dBm. Some higher frequency capability may be possible if other test gear is brought along, but that has not been confirmed yet.

Note that we don't have current calibration certificates for this test gear (its privately owned), so the measurements are "as seen".

MMRT – The Programme

The programme is almost finalised and will include the usual two days of talks, measurements, chat, dinner on the Saturday and the best microwave Fleamarket in the UK!

The event will start at the Orwell Crossing Truck Stop at 10:00am on Saturday for the usual breakfast and pre-meeting chat, followed by the doors opening at Martlesham at 12:00.

We plan a short talks programme on Saturday afternoon, supported by the measurements and fleamarket.

On Saturday evening dinner will be held at the Cameo Hotel, Ipswich. 19:30 for 20:00. You need to book and select your meal choice in advance. The meal cost has been held to the same as last year.

On Sunday the Martlesham doors open at 09:00. If you want to, you can meet at the Orwell Crossing Truck Stop for breakfast beforehand!

OZ2M has been invited to give us an update on the PI4 beacon next generation beacon. This will be followed by a forum where you will have an opportunity to discuss the introduction of MGM to our various microwave beacons. Whilst many of the UK microwave beacons are now frequency locked, the subject of MGM is still a little more contentious. What mode is best? Would plain carrier make monitoring propagation conditions easier through averaging? At this stage we are pretty sure Bo will be able to make it to Martlesham, but his QRL may decide otherwise!

In memory of our friend **John, G4EAT**, his fellow millimetre aficionados G8CUB and G0FDZ will be taking the 2:00 slot occupied by John, last year's MMRT. **Please bring a QSL card** (see below)

We will be observing a one minute silence in memory of John.

Other confirmed speakers are G4FRE and G8EMY, with at least one other still to be confirmed.

John, G3XDY, will be organising a UKuG Contest Forum and the usual UKuG AGM will take place on Sunday morning.

Catering will be provided on both days and we will run our usual raffle for some very desirable prizes. Proceeds from the raffle go towards a donation to our speakers.

This will be another MMRT to remember.

The Martlesham Radio Society, in conjunction with the UKuG, look forward to welcoming you all to Martlesham on the 25 and 26th April.

Tribute to John G4EAT at Martlesham

Following a suggestion to the committee we have decided to have a tribute to John at Martlesham.

We will have a pin board where you can place your QSL card with any tribute written on the reverse and these will be given to Yvonne Wood after the event.

For those who do not have any QSL's I suggest that they could use a postcard sized message with their callsign and name on the front and for those who cannot attend could send their QSL card 'tribute' to me QTHR and also on QRZ.com and I will pin them to the board at the RT.

So please do remember to bring your QSL card to the event and I will also bring the pins and some blank postcards.

Chris G0FDZ

This month I 'ave mostly been building...

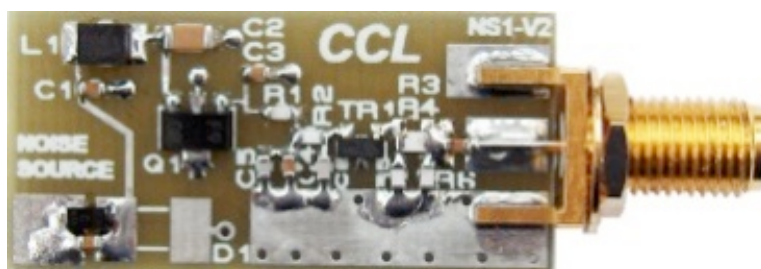
A new column (idea borrowed from the [SBMS Newsletter](#) and with a hat tip to Mark Williams' character [Jesse](#) of the Fast Show) designed for those of you who don't want to write a full technical article – but also those of you who do but only have a snippet to contribute such as a new project or a progress report.

John G4BAO

As well as preparing the weekly GB2RS VHF and up propagation bulletin, writing the RadCom GHz bands column, and producing the UKuG accounts for the AGM, I've been working on a 24GHz beacon transmitter based on G4JNT's LMx2451 synthesiser. I've rebuilt my recently-built Elecraft K3 after some unfortunate pyrotechnics involving a current sense chip on the main board. Elecraft have been first class in their support and shipped me a new main board, front panel and DSP board free of charge. So far it is working well alongside my transverter interface and Anglian Transverter. Turns out that, as reported last month I HAVE NOT blown up my 24GHz preamp as feared, so I'm still QRV on that band and looking for test partners.

New product announcement March 2015

G3AAF & G8FEK



Top band through 13cm receiver sensitivity test source RXGen

RFDesign have launched a new calibrated test source for AM/SSB/CW receiver sensitivity measurements. RXGen has accuracy of better than 1dB and flat output from 2MHz to 2.4GHz. Application notes describe experiments with RXGen using shareware PC programs for signal to noise and noise figure measurements.

The source allows accurate sensitivity comparisons between rigs, checks following repair and for final tuning of homebrew projects. RXGen is a valuable tool in the field, allowing portable station operators to check equipment and antenna feeders.

Data and application notes at www.g8fek.com

Contact: martyn@rfdesignuk.com

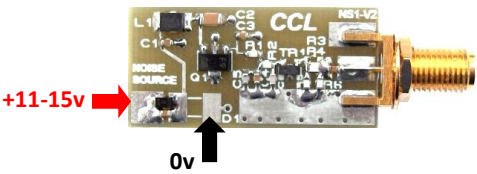
Telephone: + 44 (0)1482 631558

RFDesign
35 Highfield Way
North Ferriby
HU14 3BG
UK

2MHz to 2400MHz

Features

- precision noise source with flat output against frequency
- use supplied graphs to determine the sensitivity of your receiver
- covers all ham bands from top band through 2.3GHz
- 11v – 15v DC drive with reverse polarity protection
- stable reference source for your experiments, 10dB ENR +/-0.5dB
- excellent VSWR noise on or off, <1.15:1 across the operating band



Applications

- amateur radio and radio astronomy noise figure measurements (+/-0.5dB)
- HF to microwave receiver sensitivity measurements

Electrical specifications at 20°C

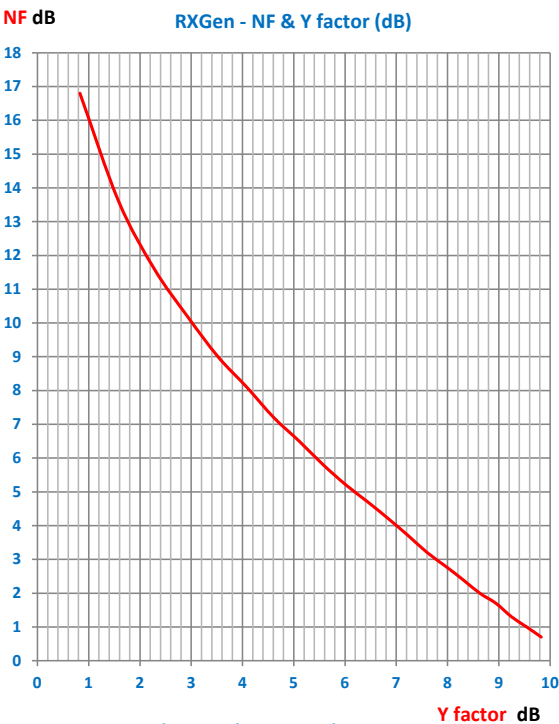
model	Frequency (MHz)		ENR (dB)		50 Ω VSWR	DC power	
	min	max	min	max		Volt	Current mA max
RXGen	2	2400	9.5	10.5	1.15:1	11.0 - 15.0	9.0

Continental Compliance Ltd

Registered in England and Wales No 02856093
35 Highfield Way, North Ferriby, East Yorkshire. HU14 3BG, UK.
Telephone +44 (0)1482 631558

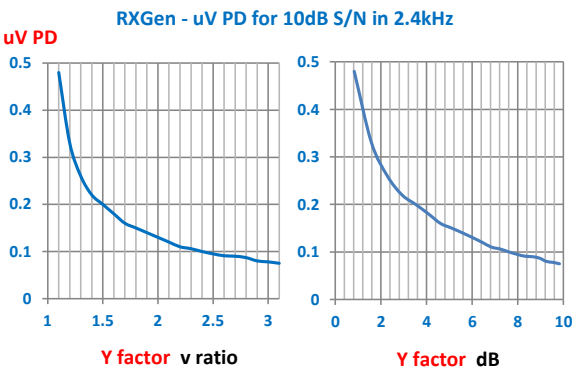
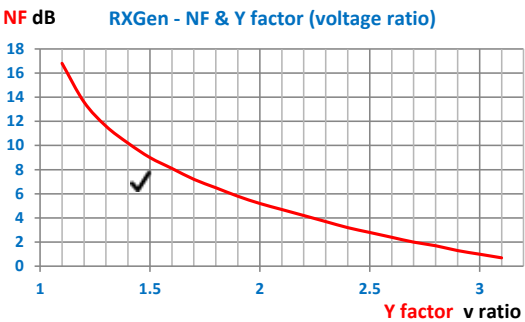
RXGen application notes available at www.g8fek.com

RXGen Rev 1A5



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RXGen application notes available at www.g8fek.com

RXGen Rev 1A5

Licensing News

ACMA seeks comment on remaking the Amateur LCD, changes to 9cm band

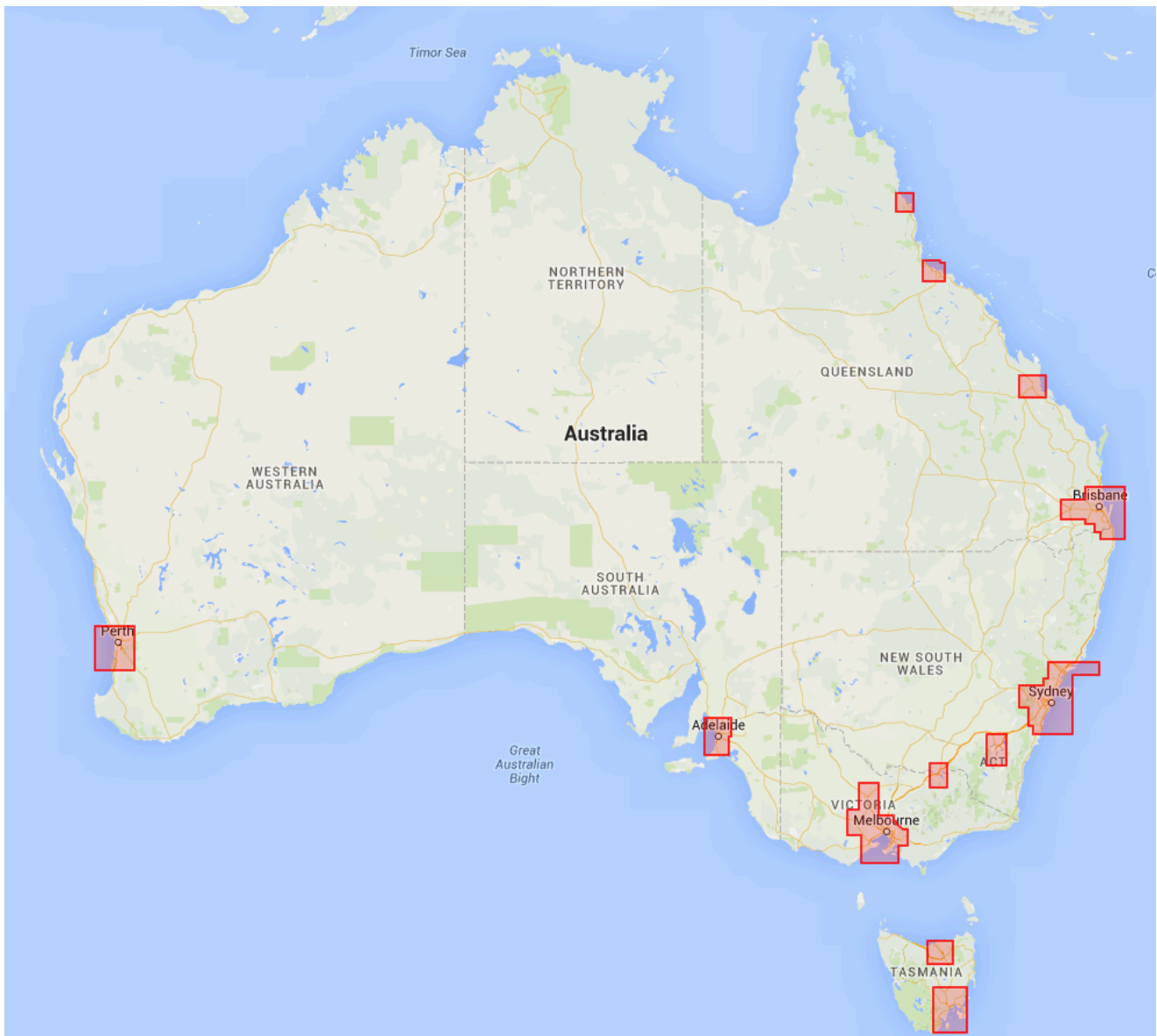
Date : 14 / 03 / 2015

Author : Roger Harrison - VK2ZRH

The Australian Communications and Media Authority (ACMA) is seeking comment on a proposal to remake the Amateur LCD and the Class Licence enabling overseas amateurs visiting Australia to operate here. As expected the proposed changes are of a minor nature, generally administrative 'tidying-up'. At the same time, but as a separate issue, the ACMA proposes to restrict access to two segments in 3.3-3.6 GHz (the 9cm band) for Advanced licensees, where spectrum access may be required by the National Broadband Network (NBN). The ACMA's consultation paper is available via this [Link](#)



It affects these city areas. Source: <http://vk4ghz.com/mapping/mapping-schedule5.php>



The current density and warm-up of printed circuit tracks

André Jamet F9HX agit@wanadoo.fr

Current density

Expressed usually in amperes per square millimetre (A/mm²), the current density is the constraint caused by the passage of an electric current per unit area of a conductor. It is of the order of few A/mm² for conventional conductors. It can reach much higher values if the permissible temperature is higher, the case of the filament of an incandescent lamp being a limit before melting, or if the cooling of the conductor is very effective.

The case of printed circuits

For an electrician, the current density reached in a PCB track is rather surprising.

Here is the example of 15 watts SSPA at 10 GHz realized on a R0 4003 material thickness 0.5 mm (figure 1). The final transistor drain current can reach 4 A_{dc} in two sections of track measuring each approximately 1 mm wide, 5 mm in length and 35 microns thickness.

We have:

Cross section:

$$S = 1 \times 10^{-3} \times 35 \times 10^{-6} = 3.5 \times 10^{-8} \text{ m}^2$$

$$\text{Length: } L = 10 \times 10^{-3} \text{ m}$$

$$\text{Resistivity: } \rho = 1.72 \times 10^{-8} \Omega \cdot \text{m}$$

$$\text{Resistance: } = \rho l / s$$

$$= 1.72 \times 10^{-8} \times 10 \times 10^{-3} / (3.5 \times 10^{-8})$$

$$= 4.9 \text{ m}\Omega$$

$$\text{Voltage drop: } \Delta u = 4.9 \times 10^{-3} \times 4 = 19.6 \text{ mV}$$

$$\text{Power: } P = 19.6 \times 10^{-3} \times 4 = 78.4 \text{ mW}$$

$$\text{Current density} = 4 / (3.5 \times 10^{-8} \times 10^6) = 114 \text{ A/mm}^2$$

(really frightening for an electrical engineer!)

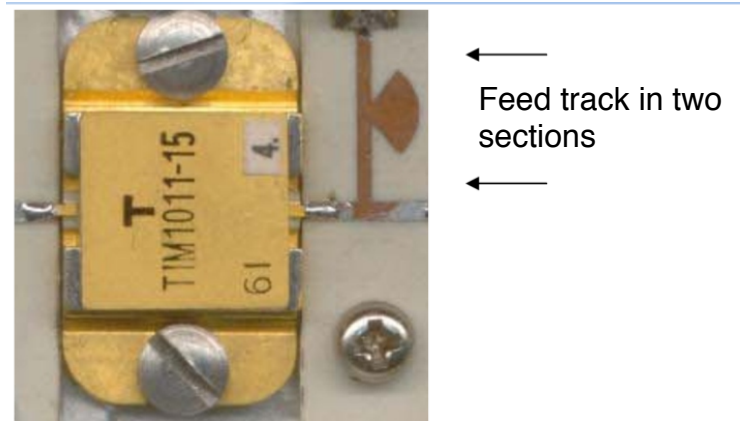


Figure 1. FET in a SSPA 15 W

But, it is necessary to take into account that the ratio width / thickness, thus the ratio surface/volume is very high, much more than in the classic electrical conductors. Furthermore, the copper tracks are stuck on a support very thin and in relatively good heat conducting material, itself is stuck on an aluminium surface fixed against a ventilated heat sink. More still, the extremities of sections are connected with copper areas of bigger size which help in the heat evacuation. Printed circuits used for the devices making a conversion of energy, rectifiers, converters AC/DC and DC / DC, are even more submitted to very high currents. The use of 70 µm is compulsory. Here is the example of a 13 V 10 A voltage-booster (Figure 2) [1]. The high currents are led by surfaces rather than by simple tracks.

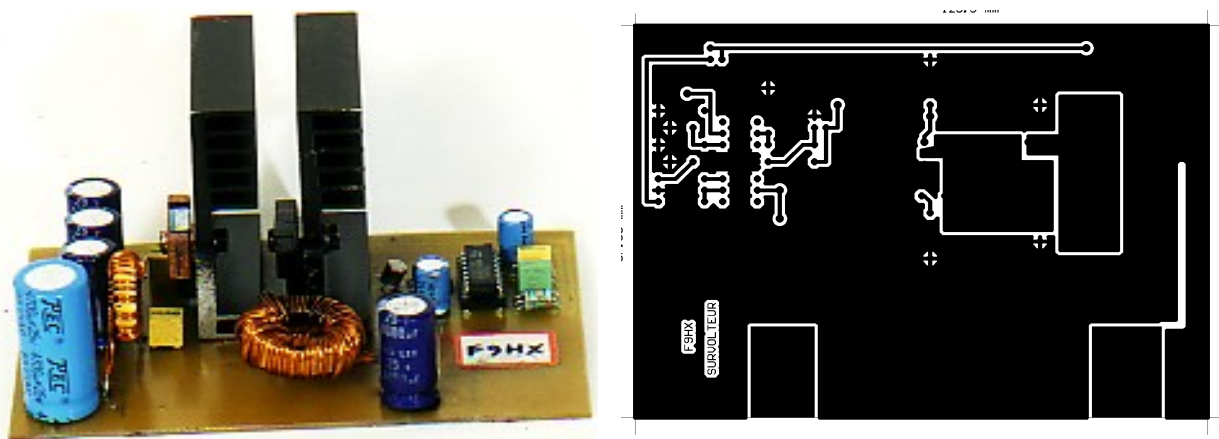


Figure 2. 13 V 10 A voltage-booster

Available studies

Numerous studies on this subject are available [2,3,4]. We can find tables giving the acceptable intensities in tracks of diverse thicknesses onto printed circuits. Here are two interesting extracts for thicknesses of 35 and 70 μm for an ambient temperature of 20 °C (figures 3 and 4).

Figures 5 and 6 give the warm-ups of tracks according to the current which travels them.

Width (mm)	Current (A)	Cross-section (mm ²)	Density (A/mm ²)
0.31	2.7	0.021	127
0.41	3.8	0.028	136
0.60	5.2	0.042	124
0.90	6.8	0.063	108
1.75	8.3	0.123	68
2.3	9.7	0.161	60
2.9	11.2	0.203	55
3.5	13	0.245	53

Figure 3. Acceptable current and density for a 35 μm track

Width (mm)	Current (A)	Cross-section (mm ²)	Density (A/mm ²)
0.31	2.7	0.021	127
0.41	3.8	0.028	136
0.60	5.2	0.042	124
0.90	6.8	0.063	108
1.75	8.3	0.123	68
2.3	9.7	0.161	60
2.9	11.2	0.203	55
3.5	13	0.245	53

Figure 4. Acceptable current and density for a 70 μm track

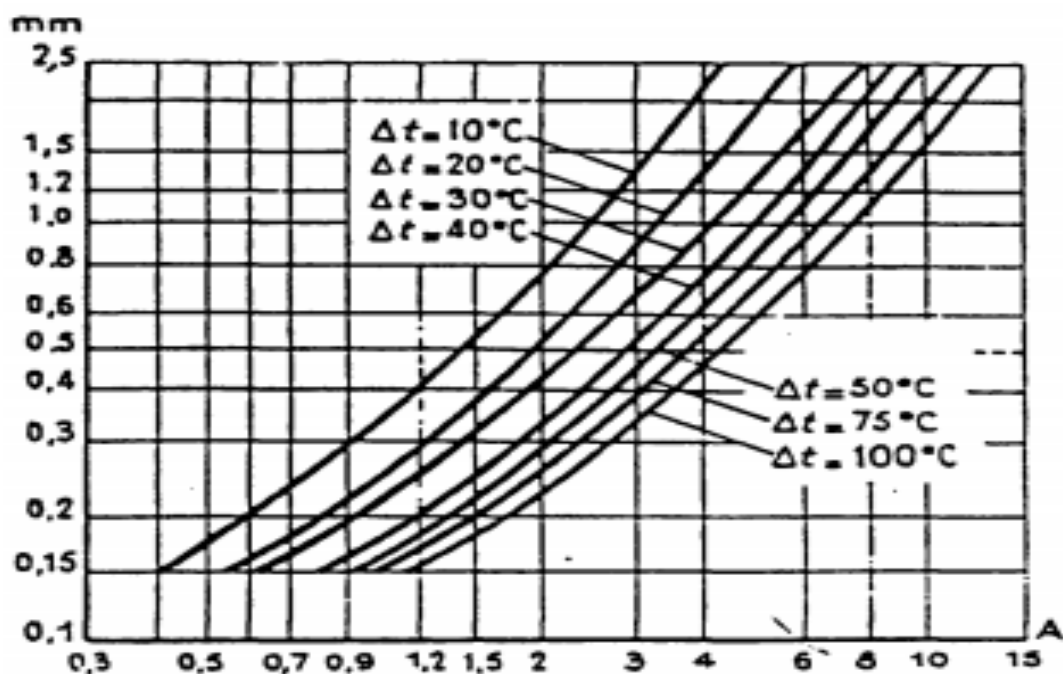


Figure 5. Warm-up of 35 μm track for 0.1 to 2.5 mm width

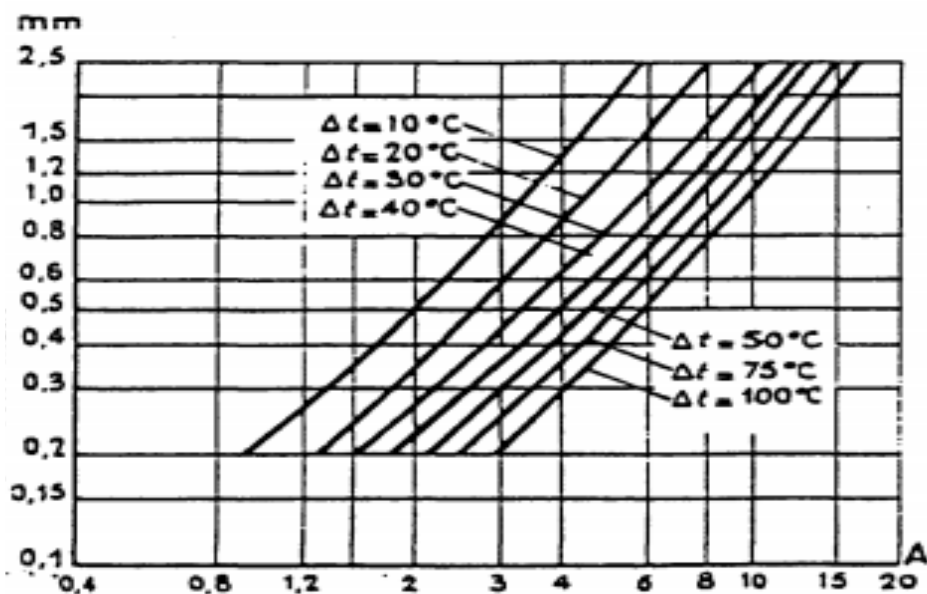


Figure 6. Warm-up of 70 μm track for 0.1 to 2.5 mm width

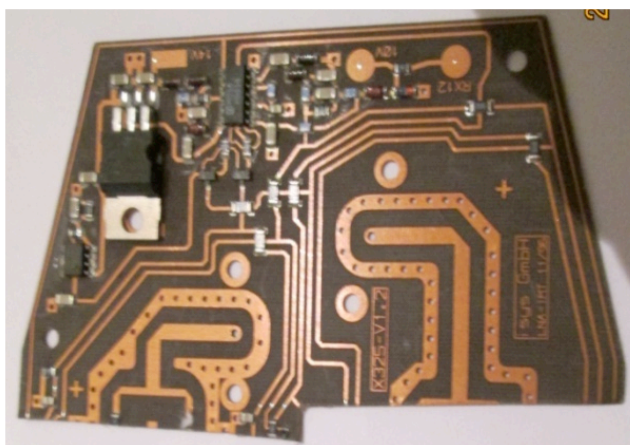


Figure 7. PCB



Figure 8. Infrared pyrometer

Destructive testing

I used a piece of printed circuit intended for a satellite LNB which several copies were available for us (figure7).

By passing current in the tracks, I could get the following results:

track 0.5 mm	length 50 mm	5A	70°C	6A	change of colour, melting after 5 min
track 0.9 mm	length 25 mm	7A	75°C	10A	melting after 3 min

This supports the figure 5 values. The temperatures were measured by an infrared pyrometer with unpretentious accuracy.

Conclusion

So do not be afraid of high densities in the lines of printed circuits. Nevertheless, they must be taken account during design.

Attention also on the overloads and the short circuits during testing to avoid tracks damage

References

- [1] Un survolteur pour batterie 12 V, F9HX, Radio-REF 09/2002
- [2] Etude de la capacité en courant des pistes de cuivre, Thierry Lequeu, 1/2005, projet IUT4
- [3] Thermal Design Guideline of PCB traces under DC and AC Current, Yi Wang, S. W. H. de Haan, J. A. Ferreira, 978-1-4244-2893-9/09/\$25.00 ©2009 IEEE 12404
- [4] The CircuitCalculator.com Blog » PCB Trace Width Calculator

March 2015 Lowband Contest Results

There was some recovery in entry levels for this event, with several new callsigns appearing the tables this time which was very welcome.

Conditions did not appear to be particularly good, despite EA being worked in the coincident 144MHz contest. The leading stations took advantage of the continental activity during the contest period to boost their scores and DX on all three bands.

The winner on 1.3GHz this time was Mike G8CUL, with a couple more QSOs and almost 20% higher score than runner up Tony G4NBS.

Activity levels on 2.3GHz seemed to be similar to the same event in 2014, but with an extra couple of entries this time. G8CUL took top spot on this band too, with a comfortable lead over M0HNA/P, the leading portable entrant.

Neil G4LDR came out on top on 3.4GHz, thanks to working PI4Z and three other UK stations. Last years band leader G3UKV was runner up this time.

The overall winner by the slimmest of margins was Mike G8CUL, who won both 1.3GHz and 2.3GHz.

Neil G4LDR was just pipped by 1 point into the runners up slot, he was 5th on 1.3GHz, 3rd on 2.3GHz and band winner on 3.4GHz.

M0HNA/P, the Combe Gibberlets took third place overall and the leading portable station award on all three bands.

Certificates go to G8CUL as overall winner, to G4LDR as runner-up and to the following band leaders, runners-up and leading portable and low power stations.

1.3GHz	G8CUL, G4NBS, M0HNA/P, M0WXB/P
2.3GHz	G8CUL, M0HNA/P, M0WXB/P
3.4GHz	G4LDR, G3UKV, M0HNA/P

Normalised scores will go forward to the overall championship table which will be published when the results of the next low band contest are available.

John G3XDY UKuG Contest Manager

March 2015 Low Band Contest Results

Overall						
Pos	Callsign	1.3GHz	2.3GHz	3.4GHz	Total	
1	G8CUL	1000	1000	0	2000	
2	G4LDR	386	613	1000	1999	
3	M0HNA/P	715	736	421	1872	
4	G3UKV	307	447	578	1332	
5	G4KIY	747	456	0	1203	
6	G4NBS	814	0	0	814	
7	G8EOP	271	526	0	797	
8	G3UVR	223	415	0	638	
9	M0WXB/P	191	434	0	625	
10	M5MUF	165	0	0	165	
11	G1DFL	24	0	0	24	
1.3GHz						
Pos	Callsign	Locator	QSOs	Best DX	km	Points
1	G8CUL	IO91JO	23	DF0MU	587	5848
2	G4NBS	JO02AF	21	DF0MU	495	4759
3	G4KIY	IO92WN	15	DD8DW	557	4370
4	M0HNA/P	IO91RF	18	DF0MU	549	4181
5	G4LDR	IO91EC	11	ON4CJQ/P	455	2260
6	G3UKV	IO82RR	12	GI6ATZ	292	1797
7	G8EOP	IO93EQ	9	M0HNA/P	284	1582
8	G3UVR	IO83KH	7	G3XDY	324	1304
9	M0WXB/P	IO81XU	9	G3XDY	224	1117
10	M5MUF	IO92JP	7	G3XDY	177	966
11	G1DFL	IO91NL	2	G4NBS	105	142
2.3GHz						
Pos	Callsign	Locator	QSOs	Best DX	km	Points
1	G8CUL	IO91JO	9	DF0MU	587	1995
2	M0HNA/P	IO91RF	10	G3UVR	291	1468
3	G4LDR	IO91EC	7	PI4Z	385	1222
4	G8EOP	IO93EQ	5	M0HNA/P	284	1050
5	G4KIY	IO92WN	5	PI4Z	298	910
6	G3UKV	IO82RR	7	M0HNA/P	216	892
7	M0WXB/P	IO81XU	8	G3XDY	224	866
8	G3UVR	IO83KH	5	G3XDY	324	828
3.4GHz						
Pos	Callsign	Locator	QSOs	Best DX	km	Points
1	G4LDR	IO91EC	4	PI4Z	385	877
2	G3UKV	IO82RR	3	M0HNA/P	216	507
3	M0HNA/P	IO91RF	2	G3UKV	216	369



Activity News : March 2015

By Bob Price G8DTF

Please send your activity news to:

scatterpoint@microwavers.org

Introduction

It has been an eventful month personally, after my little incident, but things are settling down a bit now. I am still without a car as the repairs seem to be taking forever. I am hoping it will be back in time for Martlesham.

I have managed to get on for the UKACs this month, but missed the Low Bands Contest.

Conditions have not been much better than flat during March, but it looks like we may have some better conditions this month.

Beacons & Reverse Beacons

From Bob G8DTF IO83

On the 24th March I had a listen for beacons on both 2.3 and 3.4GHz. I could hear GB3ZME on both bands, and GB3OHM on 3.4GHz.

From Dave G4FRE – Source: <http://g4fre.blogspot.co.uk/2015/04/rsgb-propagation-forecast-alerts-me-to.html>

Tuesday night was the 2m UKAC contest and as the clocks had changed, (enabling setup in Daylight), it was time to go portable from Bloreng, IO81LS again. As the RSGB prop forecast said conditions should be good to the east I also took along a small 24G system to see what beacons I could hear before starting setting up the 2m gear. I took my normal 24048/432MHz transverter (retuned from 24192MHz it used in the USA) with an FT817 as the IF and a 20dB reference horn. Sure enough upon arrival there was a big Inversion layer visible to the east. **GB3CAM at 210km was quickly found and was a good decode.** GB3ZME was also a reasonable signal at 105km LOS, but not on the direct heading of 020 degrees but on 070 degrees! No other beacons were heard (GB3SCK and GB3AMU were considered possibilities)

EME

From John G4BAO JO02

On the 24th of Feb JW/DL2NUD was QRV on 13cm EME from Svalbard, running just 100W to a 1.5m dish. I worked him on JT65C at -26 both ways, very marginal!

Also on the day I worked the following on 13cm EME OK1KIR, IK2COJ, DF3RU, PY2BS and PE1LWT all on JT65C, plus YO2BCT on JT4F

Millimetre Bands

From Roger G8CUB JO01

Not much to report activity wise.

I did manage a 1 way contact as G8CUB/P with Chris G0FDZ/P on 134GHz on Friday afternoon 20th March.

I was at One-tree-hill Basildon Essex (JO01FN), Chris was across the Thames at Higham Kent (JO01FK). His signals on 134G were 529, unfortunately he only caught a wisp of my 134GHz signal. The wall of mist between probably provided enough attenuation to snooker the 2 way attempt. Distance was 14.6km. His power 130uW to a 4" dish (that is 4 inch!).

Talkback was on 2 metres.

UKuG Low Band Contest

From John G3XDY JO02

Fairly flat conditions as seen here. Nice to work a reasonable haul of UK stations including GI plus some continental DX:

- 1.3GHz - 8 DL's worked, best DF0YY in JO62GD
- 2.3GHz - DK2MN and DK0PU plus 3 PA0 stations
- 3.4GHz - DK2MN, PI4GN, and PA0BAT

March 23cm UKAC

From John G3XDY JO02

There was a good activity level and fair conditions for this session. The AirScout plane scatter prediction program is not working as well as before, the plane feed now available is not as comprehensive or reliable as Flightradar24 was. However, it was possible to work SK7MW (JO65) on SSB rather than the usual CW this time.

Other good contacts included OZ9KY (JO45), DL0VV (JO64), DF2VJ (JN39), OZ9ZZ (JO46), GI6ATZ & GD8EXI(IO74), G0EHV/P (IO84), GM4JTJ & GM4AFF (IO86), and GU6EFB (IN89).

From Eddie G0EHV IO84

After the winter break, G0EHV ventured out for the first microwave activity from the portable site in IO84.

UKAC on 17/3 netted 40 QSO's on the band, conditions seemed to be below par, but not unusable, activity was very good with best of the bunch being G0PEB/P at 472 Km.

Main station improvement is the switch to EE as a service provider for a reasonably solid 'KST connection! Usual TS2000-X, 100W PA and 55 element Tonna at 15 feet or so.

Highlight of the evening was stopping on the moor road and watching the visible aurora on the way home.

From Bob G8DTF IO83

I was using my normal set-up with 3W and a 44ele WIMO.

I worked 6 local stations in IO83 G8HXE/P, GW8ASD, G4HGI, G4MVU, G4NTY, G1SWH and G4JLG, 2 in IO93 G8XVK/P and G8EOP, 2 in IO91 G4BRK and G8CUL, 2 in JO02 G3PYE/P and G4NBS, 2 in IO82 G4BVE/P and M0COP/P, plus G8OHM in IO92 and GM4CXM in IO75.

I should have 10W for the next UKAC so we will see how much improvement there is.

March SHF UKAC

From John G3XDY JO02

A near QSO with SK7MW on aircraft scatter was the got-away of the night, just missing final Rogers as the plane left the optimum scatter zone. The only other DX on 2.3GHz was PA0BAT, several contacts were marginal at best. 10GHz was quite active, with 7 QSOs and PA0BAT as the best DX. A couple of QSOs on each of 5.7GHz and 3.4GHz at least proved the gear was working on those bands. The test on 3.4GHz with PA0BAT failed, despite good signals both ways on 2.3, 5.7 and 10GHz.

From John G4BAO JO02

Good level of 10GHz activity but average conditions. I worked 8 stations on 10GHz, ODX PA0BAT via AS at 428km. On 2320, I worked 12 stations, again, ODX was PA0BAT via AS.

From Eddie G0EHV IO84

13cms

No activity, motivation seems to be a bit low with the bad weather and lack of light.

Big effort to get /P on the air required, typically 6 hours required to set up and take down including travelling for only 2 hours operating doesn't balance too well.

3cms

No activity so far this year but I plan to be /P as often as possible with the improved system. Mostly at weekends, but may do Tuesday evening UKAC in the warmer months.

From Bob G8DTF IO83

13cm

Same equipment as normal – Downeast Microwave Transverter + Preamp and 20W SSPA to a 62 element yagi

I worked 5 local stations in IO83 G3UVR, G4MVU, G8PEF/P, G4JLG/P and GW8ASD, 4 stations in IO93 G8EOP, M0ORO, G8SFI/P and M0UFC/P, 2 in IO81 G3VKV and G4WLC/P, 2 in IO92 G8OHM and G4ODA, 2 in IO91 G0MJW and G8CUL, plus GM4CXM in IO75.

9cm

Same equipment as normal Downeast Microwave Transverter + Ionica SSPA (5W out) to a 20dBi panel antenna.

Only locals worked. G4JLG/P, G8PEF/P, G4MVU in IO83 and M0UFC/P in IO93.

ATV

From Eddie G0EHV IO84

Activity several times a week from home, using 2328 MHz (analogue) to access GB3KM and 3410 MHz (digital) to receive.

Television is alive and well up in NE England, although more would be welcome. Catch activity on the BATC streamer <http://www.batc.tv/> and select the repeater required.

Other Activity

From John G4BAO JO02

March activity as follows

15/03/2015 worked PAØBAT JO31FX 428km via 10GHz Aircraft Scatter on ISCAT-A mode

16/03/2015 worked G8EOP IO93EQ 200km via 2320 Tropo

23/03/2015 worked PA3CQE JO21PL via 2320MHz EME JT65c -19

...and finally

I want to encourage you get on the air as often as possible and report your activity to clearly document use of the amateur microwave bands. This means not just DX and EME, but also local activity with ATV, low power or WB equipment.

Please send your reports to Scatterpoint@microwavers.org, remember the deadline is the 1st of the month.

73 Bob Price G8DTF

The 2015 Crawley Roundtable, Sunday 20 September



We will be holding a heat for the UK Microwave Group annual project contest for the [G3VVB trophy](#). Please do bring along your constructed equipment or project and enter. Entries do not necessarily need to have been finished during the last year. This year the contest will also accept software entries as well as hardware. The winner of this round will go on to be considered together with entries from all the other roundtables over the past year after this event.

The morning will feature the usual 'bring and buy' sale, so if you have something to sell then please bring it along.

The program this year offers the microwaver something different - come along and support the construction contest and hear the talks.

Below is the **provisional** timetable – **Please contact Chris G0FDZ if you have a talk!**

Location: Crawley Amateur Radio Club

10:00AM	Venue opens
12:00	UKuG Project contest round judging commences
13:00	Lunch (rolls, sandwiches, tea/coffee available)
14:00	Opening address and the results of the Project contest heat
14:15	Talk-1 - tbc
15:00	Talk-2 - tbc
15:30	Break (tea & coffee available)
16:00	Talk-3 - tbc
16:30	End of meeting

If you need further information, contact Chris Whitmarsh G0FDZ or Derek Atter G3GRO

Access to Site:

The access road into Tilgate Recreational Centre and the CARC Clubhouse (Hut18) is via the sliproad at the new traffic lights on the southbound carriageway of the A23 (Brighton Road), just south of Crawley heading towards Brighton, and about 200m from the Broadfield Football Stadium roundabout which is well signposted.

The Clubhouse is accessed via a fairly narrow track for about 200m. Watch out for anti-traveller caravan chicanes then turn right at the 3rd sleeping policeman!

More Directions: [CARC Directions](#)



UKuG Microwave Contest Calendar 2015

Contest results are also published online - please follow the link from the UKuG Contests Page at:

www.microwavers.org/?contesting.htm

The contest rules and calendar for next year will be in the next issue of Scatterpoint but will appear first on the UKuG web site in early 2015.

Events calendar

2015

Apr 11	CJ-2015, Seigy	cj.ref-union.org/
April 25 – 26	Martlesham Round Table	mmrt.homedns.org/
May 15 – 17	Hamvention, Dayton	www.hamvention.org/
June 14	“RAL” at the village hall in East Hagbourne	Programme/Registration Hagbourne Village Hall
June 26 – 28	Ham Radio, Friedrichshafen	www.hamradio-friedrichshafen.de/
July 11 – 12	Finningley Round Table	www.g0ghk.co.uk/
July tbc	Amsat-UK Colloquium, Holiday Inn, Guildford, Surrey	www.amsat-uk.org/colloquium/
Sept 5–6	BATC CAT-15, Finningley	
Sept 6 – 11	European Microwave Week, Paris	www.eumweek.com/
Sept 11 – 13	60.UKW Tagung Weinheim	www.ukw-tagung.de/
Sept 20	Crawley Round Table	
Sept 25 – 26	National Hamfest	www.nationalhamfest.org.uk/
Oct 9–11	RSGB Convention	rsgb.org/convention/
Oct 15–18	Microwave Update, San Diego	www.microwaveupdate.org/
Nov 7	Scottish Round Table	www.gmroundtable.org.uk/

2016

Jan 23	Heelweg	www.pamicrowaves.nl/
Apr 9	CJ-2016, Seigy	http://cj.ref-union.org/
May 20 – 22	Hamvention, Dayton	www.hamvention.org/
Jun 24 – 26	Ham Radio, Friedrichshafen	www.hamradio-friedrichshafen.de/
Oct 3 – 7	European Microwave Week, London	www.eumweek.com/
Oct 7 – 9	RSGB Convention	rsgb.org/convention/

2017

Jun 23 – 25	Ham Radio, Friedrichshafen	www.hamradio-friedrichshafen.de/
Oct 8 – 13	European Microwave Week, Nurembourg	www.eumweek.com/