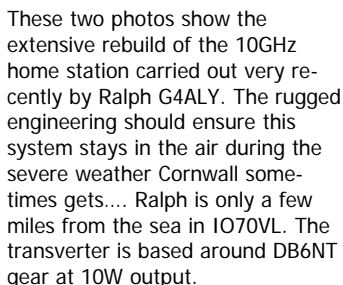




scatterpoint

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Ralph is well known among the French microwavers for his consistent signal across the Channel



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**MANY THANKS TO ALL OUR
CONTRIBUTORS THIS JUNE ...
WITHOUT YOU THERE WOULD BE NO
SCATTERPOINT!**

UK Microwave Group Contact Information

Chairman: G4NNS Brian Coleman Email: chairman@microwavers.org Located: Hampshire (IO91FF) Address: Woodlands, Redenham, Andover, Hants., SP11 9AN Home Tel: - n/a	General Secretary: G8KMH Lehane Kellett Email: secretary@microwavers.org Located: Hampshire (IO91) Address: Honey Cottage, Bent Street, Nether Wallop, Hants., SO20 8EJ Home Tel: ++44 (0)1264 781786	Membership Secretary: G8DKK Bryan Harber Email: membership@microwavers.org Located: Hertfordshire (IO91VX) Address: 45 Brandles Road Letchworth Hertfordshire, SG6 2JA Home Tel: n/a	Treasurer: G4FSG Graham Murchie Email: treasurer@microwavers.org Located: Suffolk (JO02) Address: 42 Catherine Road, Woodbridge, Suffolk, IP12 4JP Home Tel: ++44 (0)7860 356775
Scatterpoint General Editor: G3PHO, Peter Day Email: editor@microwavers.org Located: South Yorkshire (IO93GJ) Address: 146 Springvale Road, Sheffield, S6 3NU, United Kingdom Home Tel: ++44 (0)114 2816701 (after 6pm)	Scatterpoint Activity News Editor: G8APZ Robin Lucas Email: Scatterpoint@microwavers.org Located: Essex (JO01) Address: 84 Woodman Road Brentwood Essex, CM14 5AZ Home Tel: ++44 (0)1277 211126	Contest & Awards Manager: G3XDY John Quarmby Email: g3xdy@btinternet.com Located: Suffolk (JO02OB) Address: 12 Chestnut Close, Rushmere St. Andrew, Ipswich, Suffolk, IP5 1ED Home Tel: ++44 (0)1473 717 830	RSGB Microwave Manager: G6JYB Murray Niman Email: mjniman@iee.org Located: Essex (JO01) Address: 5 5 Harrow Way Great Baddow Chelmsford Essex, CM2 7AU Home Tel: ++44 (0)1245 474969



From the Editor's Desk

Hello once again. This year is flying by as usual.... It's already half way to winter! Still, there is time to get out and about and do a bit of portable operating. The May 5.7GHz, 10GHz and 24GHz event saw a goodly number of you making the effort to get away from the TV and the XYL's Sunday roast to do a spot of outdoor micro-waving.... well done lads! Robin's column at the back of this newsletter details what took place as a result of your efforts.

Some of this edition was edited under "maritime mobile" conditions as my shack was flooded, for the second time in two years, during a very heavy rainstorm on the night of the 10th June. A a rapidly rising water table saw the wet stuff seeping into the cellar shack after some 40mm of rain in 12 hours! Frantic lifting of gear off the floor and

mopping up with towels resulted in around 100 litres of water being removed. Rather than risk going to bed that night and more water entering the radio room, I decided to stay down there until 4am until the rain stopped and get on with Scatterpoint! Thankfully there were no more incursions... the things we editors do for the microwave cause!

My thanks go to our contributors this month... Paul W1GHZ, Mike G3LYP, Simon G8ATB and Chris GM4YLN, not to mention the many of you who have submitted activity news and other general interest items. Keep it coming!

73 from Peter, G3PHO

News, views and articles for this newsletter are always welcome. Please send them to G3PHO (preferably by email) to the address shown above. **The closing date is the Friday at the end of the first full week of the month** if you want your material to be published in the next issue.

SOUTH YORKSHIRE MICROWAVES July 11-12th 2009

If you haven't yet registered on the Funningley Amateur Radio Society's website you have just a couple of weeks to do so! While registration is not mandatory for a casual attendance on one or both days, it is required if you need to use the catering and like to attend the Saturday evening dinner. If you wish to camp overnight on the site then registration is needed. A fairly definite idea of numbers likely to be at the event makes life easier for the organizers, so please register!

Go to: www.g0ghk.co.uk/table.php

The programme (see below) is now confirmed. In addition there will be an antenna test range available, subject to the weather, and also a limited range of microwave test equipment.

SATURDAY:

10am– 4.30pm: MICROWAVE ATV WORKSHOP
(Organised by G3PYB and G8DKK)

This is aimed that those who have an interest in microwave ATV but have not yet got going. It will also be of interest to more experienced ATVs.

7.30pm–11pm: Meal in a local pub

This will be most enjoyable, as was last year's so please come along. It's essential to register for this on the Funningley ARS website (see above).

SUNDAY: (Doors open at 10am)

All Day: Fleamarket/ bring and Buy

10am-10.15am: Welcome by FARS & UKuG

10.15-12noon: Socializing

12noon-1.30pm: Lunch

1.30-2.15: The Bawdsey Manor Project
by Dave Powis, G4HUP

2.30-3.15: LNB based 3cm receiver for
the Bawdsey Project ...
by Bernie, G4HJW

3.30-4.15: Reflections on microwaves ...
An intriguing talk by Barry,
G8AGN on some of his recent
experiments

4.15-4.30: Last minute purchases at the
Bring & Buy followed by close down

UK MICROWAVE GROUP SUBSCRIPTION INFORMATION

The following subscription rates now apply.

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!

Your personal renewal date is shown at the foot of your address label if you receive Scatterpoint in paper format.

If you are an email subscriber then you will have to make a quick check with the membership secretary if you have forgotten the renewal date. From now 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 (the editor suggests having it tattooed on your forearm!).

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

Renewal of subscriptions requiring a **paper copy** of Scatterpoint are as follows:

Delivery to:	UK £	US \$	Eur €
UK	14.00	-	-
Europe	18.00	36.00	26.00
Rest of World	24.00	48.00	36.00

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!)

The standard membership rate for
2009 is:

UK	£6.00
US	\$12.00
Europe	€10.00

This basic sum is for **UKuG membership**.
For this you receive Scatterpoint for **FREE**
by email. If you want a paper copy **then**
the higher rates apply.



MMIC Oscillator Experiments

Paul Wade W1GHZ ©2009
w1ghz@arrl.net

MMICs (Monolithic Microwave Integrated Circuits) are incredibly useful as amplifiers, but oscillate much less frequently than most other amplifiers.

They are well-behaved enough to oscillate when desired. And they are predictable enough that I was able to build a wide-range VCO (Voltage Controlled Oscillator) that behaves nearly as simulated in software.

I have a fair amount of test equipment but no signal generators that cover frequencies between 1300 and 2000 MHz, at least ones that I can lift. So, when I wanted to test some 1296 MHz filters, I had to come up with something. In the past, I have used a Minicircuits Frequency Doubler to cover this range and I thought it might be easier if I could sweep the frequency with a VCO.

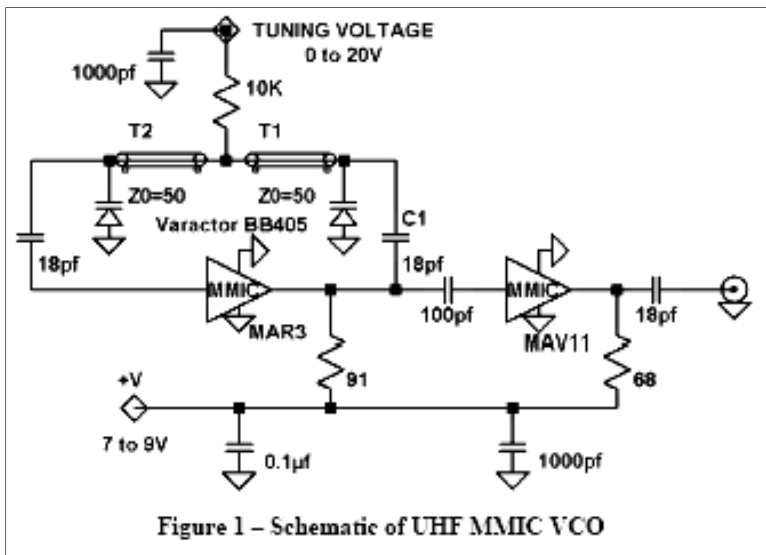
Some time ago, I played with a UHF VCO design from UHF Communications (I've lost the reference), but wasn't happy with the amplitude variation with frequency. At the time, it was a good lesson in why you shouldn't use a wide-range oscillator for a synthesized oscillator – small changes in tuning voltage cause large changes in frequency, so normal random noise results in a lot of phase noise. However, I recalled the technique used to vary the frequency and decided to try it with a MMIC.

Oscillator

One type of oscillator uses positive feedback – we apply feedback around an active device to form a loop. The Barkhausen criteria states that when the loop gain is greater than one and the phase shift around the loop is 360 degrees, it will oscillate. An inverting device like a transistor or MMIC has 180 degrees phase shift at low frequencies, so we must provide the other 180 degrees – for instance, a half-wave line. At higher frequencies, the time an electron takes to get through a transistor becomes significant, so the internal phase shift is greater than 180 degrees and less is required externally. Conceptually, it is easy to make a single frequency oscillator with a half-wavelength of coax.

MMIC VCO

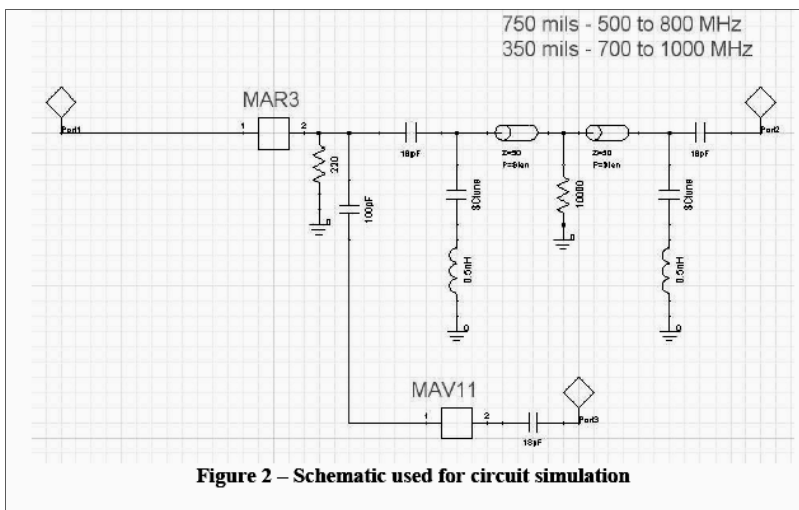
Making the frequency variable and controllable is where the difficulty lies. We would like to vary the length of the line forming the feedback loop, to control the phase shift. Adding capacitance to a transmission line makes it electrically longer. In the circuit in **Figure 1**, a varactor diode at each end of the transmission line acts as a variable capacitor, so that the line length is tunable. Increasing the tuning voltage reduces the capacitance, increasing the frequency. The tuning voltage is connected in the center of the line, where it will have the least effect.



The buffer amplifier allows the oscillator to work into a relatively constant load, so that the frequency is less affected by whatever is attached to the output.

Simulation

The circuit was simulated using the free Ansoft Designer SV software (www.ansoft.com). Since our primary concern is loop gain and phase shift, we break the loop and look at it as an amplifier, as shown in **Figure 2**. The loop is the gain from Port1 to Port2; we plot both gain and phase,



looking at the gain where the phase shift is 360 degrees. The varactor tuning is approximated by changing the value of \$C_{tune}\$ – for the BB405 diode, the range is 2 to 11 pf. With $\frac{3}{4}$ inches of transmission line, it should tune from about 500 to 800 MHz. The simulation files will be available at www.w1ghz.org.

One key to good VCO operation is that there is only one frequency with gain greater than 1 and 360 degrees phase shift. The MAR3 MMIC is a good choice for this frequency range – the gain drops off enough at the third harmonic so that loop gain is less than one, so the oscillator will only operate at one frequency. A hotter microwave device would have enough gain at higher harmonics to potentially oscillate at the third harmonic, where the transmission line is $\frac{3}{2}$ wavelengths. While tuning, the oscillator might jump between fundamental and harmonic frequencies.

Test Results

I kludged a couple of these oscillators together on scraps of PC board cut from transverter prototypes (too ugly for photos!), using 0.141" semi-rigid coax for the transmission line. With about $\frac{3}{4}$ inch of transmission line, the VCO tuned from about 375 to 650 MHz, with about +19 dBm out of the buffer amplifier. A shorter transmission line, about $\frac{1}{2}$ inch, tuned from about 380 to 700 MHz, with about +16 dBm output.

The output level is plenty to drive a surplus broadband doubler module – after a filter, an output power of 0 to +2 dBm was available at twice the frequency.

The frequency range is somewhat lower than simulated, probably because the capacitance added by the PC board raises the minimum tuning capacitance. Dead-bug construction should have less stray capacitance and might work better. For lower frequency operation, longer lines and varactors with higher capacitance will do the job.

Microwave Oscillators

The same techniques could be used to make a loop oscillator for higher frequencies, by replacing the feedback loop with a pipe-cap filter. At resonance, phase changes very quickly, so there will be some frequency very close to resonance with the right phase shift and low enough loss to permit oscillation.

The MMIC should be placed between the two pipe-cap probes so that lead length is minimized. No blocking capacitors are needed since the probes provide DC isolation.

For a given probe length, filter coupling is reduced at lower frequencies. However, MMIC gain is higher at lower frequencies. Thus, it should be possible to find a probe length that works over the wide tuning range of the pipe-cap. My initial attempt was not quite right – it oscillates around 4 GHz but not at lower frequencies.

Summary

MMIC oscillators work without much difficulty, and are easy and cheap to build. For those who like to experiment, these should be fun to tinker with.

CREDIT WHERE IT IS DUE ...

The photos of the RAL Microwave Roundtable event, published in last month's Scatterpoint, should have been credited to Murray, G6JYB and not as shown. Our apologies Murray! The mix up was due to a number photos from different sources being all placed in one undefined folder on the computer.

Transfer Relay Switcher

by Simon, G8ATB

This little project started with the need to use a 28volt latching transfer relay using the PTT contacts on an FT817.

Circuit description:

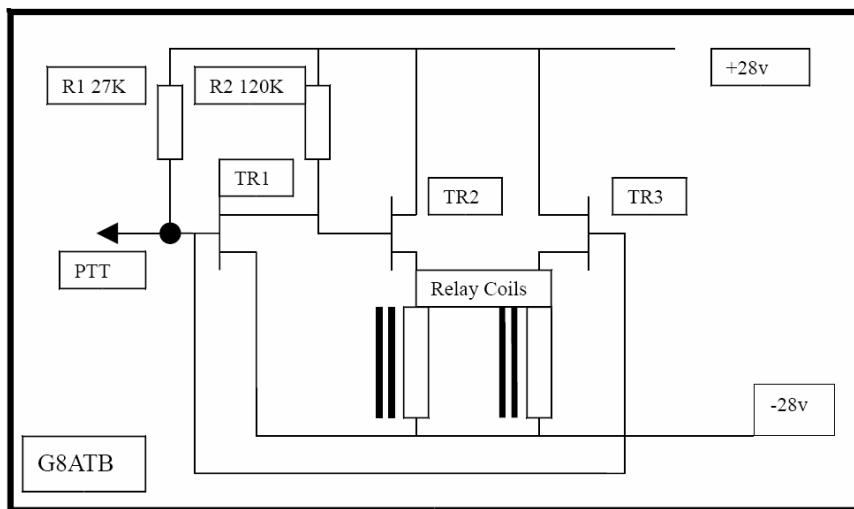
Upon initial power up TR1 is biased "ON" by R1 as the FT817 presents an O/C on RX. TR2 is turned off and hence no current flows through the first coil of the relay.

TR3 is turned "ON" by the positive bias from R1 and hence current flows through the second coil of the relay.

On TX the 817 PTT line goes to earth and TR1 is turned "OFF", TR2 turns "ON" via the small positive Gate voltage provided by R2 and the earth provided by the PTT line turns TR3 "OFF" changing over the relay.

The two benefits of this Cct are that on initial power up the Relay moves to the RX position irrespective of its last state. Secondly the Relay can be driven from a variety PTT sources with little modification. E.g if the rig PTT line presents a positive voltage on RX then R1 can be omitted.

As the transfer Relay used had both polarity and back EMF protection diodes fitted these are not included in the switcher – they should be used if not fitted on other relays

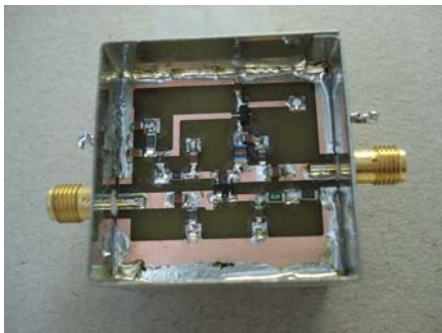


Disclaimer:- No originality is claimed except some basic brain power.

Components:

All 3 FETs are "N" type STP36NF06 because that's what I had in the junk box.

A Remotely Controlled Variable Attenuator by Mike Scott, G3LYP



A common problem with UHF and microwave transverters is too much gain on receive, resulting in the "S" meter on the IF transceiver giving a high reading on noise. This can be controlled by inserting an attenuator in the lead to the transceiver but this also attenuates the transmit signal. A better approach is to incorporate an attenuator in the link from the receive converter to the interface unit and adjust it so that the "S" meter just indicates a small increase when the transverter is connected. This is no problem if the system is fixed and no changes are anticipated but, as often is the case, the transverter

may be used with different transceivers and/or pre-amps in different situations resulting in different levels of attenuation being required.

Small variable attenuators are available, and some were on sale at Martlesham, and consist of a small tinplate enclosure containing some sort of variable resistor network which is claimed to give 10 or 20 dB attenuation at 50 ohms. These do the job quite well, but have to be mounted near the front panel of the unit if changes are to be made without having to delve into the works of the unit. I suspect also, that like most pre-set devices, they are not intended for repeated adjustment, and might become unreliable with constant use.

An alternative would be to use a switched attenuator of the type often seen at rallies and roundtables. These have the disadvantage of being bulky and are also quite expensive if in good condition. They also require that the lead from the receive converter to be brought to the front panel and back to interface unit.

Ideally, what is required is for the attenuator to be incorporated into, or near, the interface unit and to be varied by a potentiometer on the front panel. I was looking at the data sheets for some PIN diodes recently and saw that as well as the usual use as RF switches, they could be used as attenuators. As no application circuit was given, I put a request for information on the Microwave Reflector, and immediately received a reply from John, G3XDY, attaching a data sheet for a Telefunken device, TDA 1061, which appeared to do exactly what was required. This device consists of three PIN diodes in a pi configuration and is packaged in a stripline form similar to the MAR modamps. John also kindly offered one of these devices. However, the pi configuration rang a bell, and I remembered that, many years ago at an RSGB Microwave Committee meeting, Le-hane, G8KMH, had handed out some devices made by Siemens together with datasheets. I still had these filed away and on examination, found that they were BAR61s and also consisted of a pi network packaged in a four pin SM SOT 143 case. The circuit for an attenuator was virtually identical to the TDA1061 and is reproduced here, with acknowledgement to Siemens (now Infineon, I think).

I laid out a PCB using all SM components, and replaced the BC238 with a general purpose SM transistor in an SOT 23 case. The dimensions of the board were such that it would fit into a 35x35mm tinplate box. Initially, it did not work, but after some probing with a multimeter, I found that I had applied the DC, via the inductor, to pin 1 of the package instead of pin 3. I believe I have an excuse for this apparent carelessness in that in the data sheet on the page giving

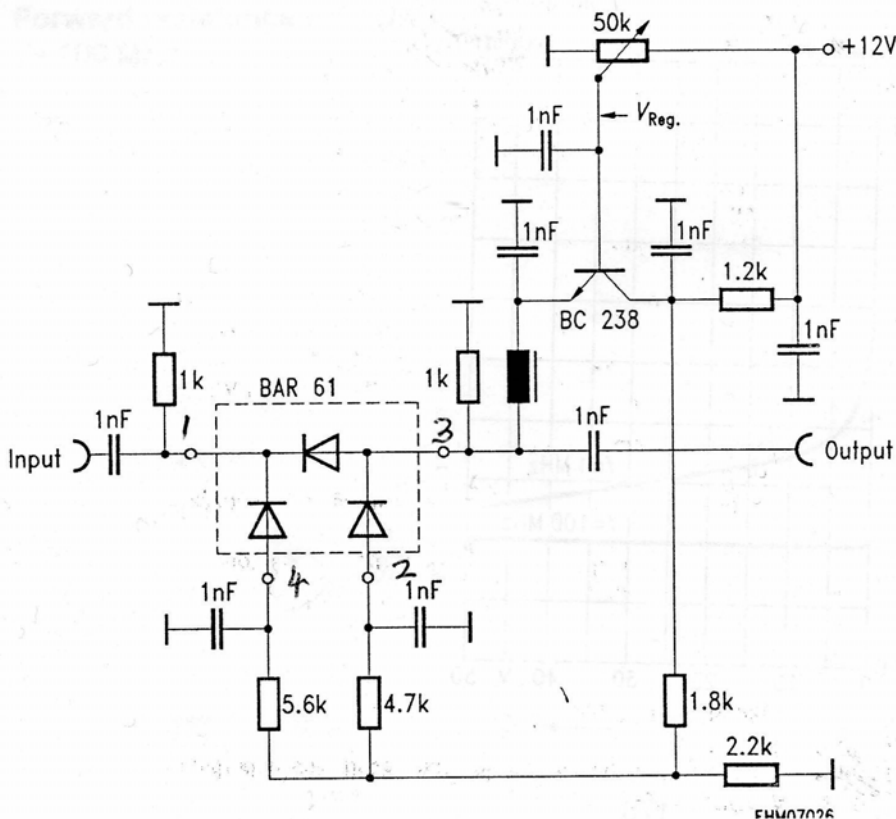
the pinout, the device was a mirror image to that in the circuit diagram, and the latter had no numbering. (I have added the numbering to the circuit given here.) I replaced the SM inductor with a 4.7uH wire ended inductor and bridged it over to the correct pin, and all was well and the circuit performed as expected.

I redesigned the PCB to correct the error and built a second prototype and this worked well. At 144MHz the minimum insertion loss was about 1.5dB and increased to over 30dB as the potentiometer was adjusted. In practice, only about half of the potentiometer track was used, so I replaced the 50K pot with a 25K pot and a 27K resistor to the 12 volt rail.

I am not sure how available the BAR61 is currently. Farnell list them but have no stock, and as I have a few, I didn't pursue sourcing. One thing which I haven't tried but might be a possible alternative would be to use three independent PIN diodes.

Although I have included a full sized artwork for the PCB and a larger scale diagram showing the component placement, if anyone wants a transparency of the artwork I can supply this for a small cost for the material used.

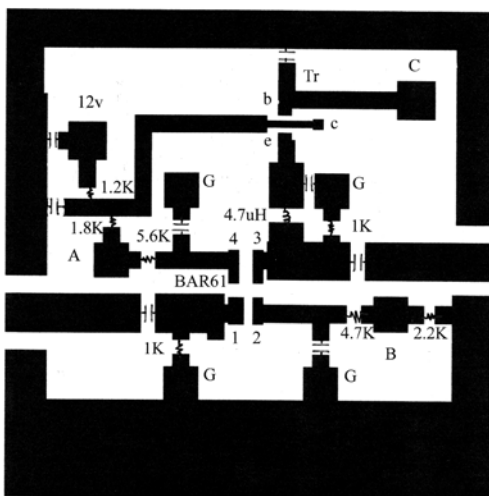
Application circuit for attenuation networks with diode BAR 61





PCB master

Component layout



- 1) Point "A" linked to Point "B" on groundplane side of PCB.
- 2) Points marked "G" linked to groundplane with Veropins.
- 3) Point "C" connected to potentiometer wiper via 1nF feedthrough.
- 4) 12V connected to supply via 1nF feedthrough.
- 5) All capacitors 1nF 0805.
- 6) Tr is a general purpose NPN transistor in SOT-23 case.

Olympics use of Amateur Frequencies

From: Murray Niman G6JYB <mjniman@iee.org>

Date: 29 May 2009

For those of you who may not be aware, Ofcom have now started the consultation on the finer detail of the 2012 spectrum plan, including a whole catalogue of frequency bands.

On the whole the main document and its accompanying consultants report make for a pretty good read but 2m, 70cm, 23cms, 13cm(2.4GHz), 6cm and 3cm are in the list of bands they may well need to borrow, mainly around the London area although sailing (for instance off Weymouth) may need spectrum too. 2.3 and 3.4GHz are excluded but there are other reasons for that.

Read on at: <http://ofcom.org.uk/consult/condocs/london2012/>

They don't need HF though!

It's obvious that we will need to cooperate. Please email comments to me as I, as other RSGB volunteers, have been working with Ofcom on this for a while

By the way, we do get something for ourselves as there will be a few very special amateur stations as part of the public / cultural events

Regards Murray, G6JYB

March 2009 Lowband Contest Results

As last year, conditions and activity were poor for this event, with challenging weather for the few that ventured out portable. It was aligned with the European all band contest which at least provided some DX for the leading stations.

There were more entries on 2.3GHz this year, which was welcome, with entries steady on the other bands, although scores were well down.

Congratulations to Neil G4BRK who won the lower two bands and the overall contest, with George G8AIM in overall runner-up slot and winner on 3.4GHz. Other runners up were G4RGK (2.3GHz) and G4BRK (3.4GHz).

73

John G3XDY

March 2009 Low Band Contest Results					
Overall					
Pos	Callsign	1.3GHz	2.3GHz	3.4GHz	Total
1	G4BRK	1000	1000	567	2567
2	G8AIM	846	209	1000	2055
3	G4RGK	381	534	0	915
4	G0DJA	257	0	0	257
5	G0JMI/P	32	73	0	105
1.3GHz					
Pos	Callsign	Locator	QSOs	Best DX	Points
1	G4BRK	IO91HP	5	GM4CXM 517km	1492
2	G8AIM	IO92FH	6	DF0MU 603k	1262
3	G4RGK	IO91ON	3	PA6NL 342km	569
4	G0DJA	IO93IF	2	G4LDR 237km	384
5	G0JMI/P	IO91ME	1	G4LDR 47km	47
2.3GHz					
Pos	Callsign	Locator	QSOs	Best DX	Points
1	G4BRK	IO91HP	3	PA6NL 380km	640
2	G4RGK	IO91ON	1	PA6NL 342km	342
3	G8AIM	IO92FH	2	G4BRK 76km	134
4	G0JMI/P	IO91ME	1	G4LDR 47km	47
3.4GHz					
Pos	Callsign	Locator	QSOs	Best DX	Points
1	G8AIM	IO92FH	2	G4BRK 76km	134
2	G4BRK	IO91HP	1	G8AIM 76km	76

April 2009 Lowband Contest Results

Conditions were no great shakes for this event, but at least activity was a little up on the March contest. The only contact recorded with a station outside the UK was by G8AIM with DJ5BV.

Ross G6GVI/P entered a 1.3GHz contest for the first time, interestingly all but one of his contacts were on FM.

The adoption of a squares multiplier made no difference at all to the band table positions, it just widened the gaps between the leading scores, and only made one change to the overall table with GW3TKH/P and G0JMI/P swapping places. On this evidence there does not seem to be a compelling case for adopting this multiplier scheme. It will be interesting to compare this with the effect of the "own country" bonus system in the forthcoming December event.

Congratulations to Neil G4BRK who won the overall contest and the two higher bands, just like last year. This time it was George G8AIM's turn to take top spot on 1.3GHz and the runner-up position overall and on 2.3GHz. Peter G3PHO/P was runner up on both 1.3GHz and 3.4GHz.

73 John G3XDY

April 2009 Low Band Contest Results						
Overall						
Pos	Callsign	1.3GHz	2.3GHz	3.4GHz	Total	
1	G4BRK	397	1000	1000	2397	
2	G8AIM	1000	603	630	2233	
3	G3PHO/P	606	0	864	1470	
4	GW3TKH/P	250	0	0	250	
5	G0JMI/P	30	62	52	144	
6	G6GVI/P	58	0	0	58	
1.3GHz						
Pos	Callsign	Locator	QSOs	Multiplier	Best DX	Points
1	G8AIM	IO92FH	10	8	DJ5BV 624km	14640
2	G3PHO/P	IO93AD	10	7	G4DDK 253km	8876
3	G4BRK	IO91HP	6	6	G8ARM 332km	5808
4	GW3TKH/P	IO81LS	5	5	G4BEL 224km	3660
5	G6GVI/P	IO83RO	9	2	G8AIM 158km	844
6	G0JMI/P	IO91ME	2	2	GW3TKH/P 158km	434
2.3GHz						
Pos	Callsign	Locator	QSOs	Multiplier	Best DX	Points
1	G4BRK	IO91HP	3	3	G3XDY 184km	957
2	G8AIM	IO92FH	2.5	2.5	G4FSG 195km	577
3	G0JMI/P	IO91ME	1	1	G4BRK 59km	59
3.4GHz						
Pos	Callsign	Locator	QSOs	Multiplier	Best DX	Points
1	G4BRK	IO91HP	3	3	G3PHO/P 172km	1128
2	G3PHO/P	IO93AD	3	3	G4BRK 171km	975
3	G8AIM	IO92FH	3	3	G3PHO/P 96km	711
4	G0JMI/P	IO91ME	1	1	G4BRK 59km	59

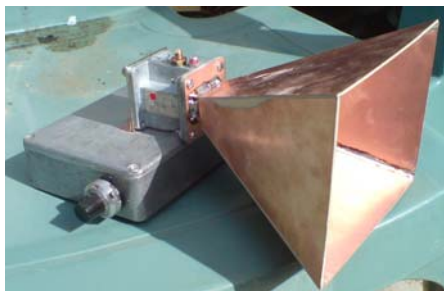
WIDEBAND FM LIVES ON

Some notes by Chris GM4YLN

Editor's note: The simplest approach to 10GHz is to play with wideband FM. Universally used before the early 1990s, it encouraged many people to have a go at simple microwaving at minimum cost. Many of us reading this will have 'cut our teeth' on this mode. While no-one these days would expect lots of QSOs with this gear, there's no doubt that it still has a place as a fun thing. In the USA wbFM is still often heard in their microwave contests.

Here are some photos of my 3cm portable WBFM transceiver. I found the circuit on the UK Microwave site in the Museum page. The GM3OXX rig. I found a few mistakes on the circuit around the TAA350 ic but have got it working now. I am going to take it to George, GM3OXX for my first 10GHz qso with his original rig soon. I am also going to have some narrow band 3cm equipment soon so should be on the band for QSOs in the near future.

73 from Chris



IMPORTANT NOTICE TO ALL READERS

ARE YOUR CONTACT DETAILS CORRECT ON THE UKuG DATABASE?

Every year at this time (and to a lesser extend at other times), our Membership Secretary sends out lots of subscription renewal reminders, by email, to all those who have a June renewal on his database. Unless your email address is correct you will not receive the reminder and therefore run the risk of having your Scatterpoint delivery cancelled! We know you all want to have an uninterrupted supply of your favourite newsletter so please check that have informed G8DKK of your present email address.

The same also applies to your postal address, even if you do not receive Scatterpoint by post since if your email address doesn't work Bryan may have to resort to "snailmail" reminders. Likewise your telephone number is an essential item of data as the phone is the next line of enquiry if the email address fails.

If you have changed any of your contact details recently please confirm the new information with UKuG. G8DKK's contact info is found on page 2 of every Scatterpoint.

If you don't receive your newsletter one month then the reason could be at your end!

GB2RS NEWS

14th June 2009:

The news headlines:

New National Hamfest announced by RSGB

The RSGB, in conjunction with the Lincoln Shortwave Club, announces a brand new national amateur radio show for the UK. The National Hamfest has the full support of the major amateur radio traders and manufacturers and will take place on 2 and 3 October 2009. The venue for the National Hamfest is the George Stephenson Hall at the Newark and Nottingham showground. Built in 2005, the spacious hall is well lit and provides great facilities for both traders and visitors. There is ample free parking and there will also be an amateur radio car boot sale and a flea market. Full details of this event will be published in the July RadCom and can also be found online at:

www.nationalhamfest.org.uk.

VHF Stream at the RSGB Convention in October

Many listeners will be aware that a VHF and Up Stream is to be included in this year's RSGB Convention at Wyboston in October. Reg, G8VHI and Neil, G3RIR have organised a full set of talks on both days of the convention. It would be unfair to suggest that one talk is to be more of a highlight than another but they have some very famous names coming to present talks including G4DDK, GM3SEK, GW4DGU and G3YLA, as well as some talks from G8UBN, G7RAU and others. The talks range from the highly practical to the highly technical and cover such subjects as DXCC at Microwave, SOTA in a VHF context, the future of VHF Communications and understanding how the weather impacts propagation.

More details will follow in the forthcoming weeks.

The UKuG Committee are planning a microwave stand at this event. If you can help please email G4NNS as soon as possible (see page 2 for his email address).

G4UPS SK

It is with great regret that I have to inform you all that Ted, G4UPS passed away in the early hours of Wednesday morning. Many of you will know Ted both as an avid 6m operator and particularly as a keen recorder of propagation on 6m. He also came to prominence operating as ZD8TC some 25 years or so ago. I expect a full obituary will be available in the next Issue of Six News."

SOURCE: Trevor, G3ZYY via UKSMG Announcement

New WSPR Beacon design software

From Andy Talbot
<andy.g4jnt@googlemail.com>

New, on my website, is a self-contained utility that, in one go, will generate an 'include' file for PIC assemblers for generating WSPR signals from a DDS.

Run GENWSPR from the command line and specify call, loc and power, for example 'genwspr, g4jnt, io90, 43' and it will go away and generate a file WSPONES.INC for importing into a PIC assembly file.

Unlike the utilities already there for WSPR to PIC data conversion—'WSPR.EXE' by Joe himself, and my 'WSP2INC' - this does everything in one go, is not fussy about upper lower case in data entry and reports errors sensibly. It also cures a small bug in WSP2INC that generates the last two symbols incorrectly and which went unnoticed as the error correction in the WSPR protocol is so strong it laughs at two symbols being in error.

The program is first attempt at C programming and, going from fervently disliking the language a few days ago (so come round to actually quite liking it! So please report any bugs and/or errors.

www.g4jnt.com/GENWSPR.EXE or
www.g4jnt.com/beacons.htm

Andy G4JNT

The West Coast ATV - NARROWBAND uWAVE Marathon

26th July 2009

Provisional notes Issue 8 11.05.2009

Possible locations (no particular order)

This is the first list of sites and some stations known to be at the location for the 26th July. We have provisional contact with stations in EI and GD and, as detail are provided, we will update this list on the various internet reflectors. Please send details of your site and station to **peter.blakeborough@pop3.hiway.co.uk**. We would welcome stations in GI, GM and some more stations on the Pennines.

LOCATION:	DETAILS	STATIONS ACTIVE
Nebo, Penysarn NGR SH472908	Amlwch, Anglesey (the GB3TM Repeater site). 160m amsl. Streaming 23cms through GB3TM to GW3JGA QTH (Prestatyn). The GB3TM repeater will operate as normal but an extra site will be located nearby with larger antennas and higher power to provide good signals to EI,GI.GM and G. This station will have 23cm FM ATV, 3cm FM, plus digital 23cm and 3cm. A local 3cm link	GW3JGA GW4KAZ GW8PBX GW3PYB
Lon Wen, Rhosgadfan NGR SH515585	Viewpoint, Public access, I.o.s. to Snowdon. 250m amsl (exposed, no facilities) Good site, West, North & NE, not South Wales or South Lancs	
Prestatyn NGR SJ076818	Viewpoint, Hillside Car Park, (exposed, no facilities) Nom. 200m amsl. Good site, EI, GI, Anglesey, GD, GM, North Lancs. Possible streaming 23cm through GB3TM SH 472 908	
Llandudno NGR SH767834	Great Orme Head. Car Park, Toilets, café. 200m amsl. Possible streaming 23cm through GB3TM	
Old Marconi Site NGR SH532611	Ceunant, Waunfawr, Caernarfon, Gwynedd LL55 4SA. 220m amsl Private Car Park (ok) Toilets, Climbing Club café nearby. Good path to North East & GI, <u>other directions restricted</u> Possible streaming 23cms through GB3TM SH 472 908	
Bwlch Mawr NGR SH436478	Crown Castle Estate microwave link site. 260m amsl, off road parking. Good site for North and South, Not West to EI or to G Possible streaming 23cms through GB3TM	GW3FDZ MW1WEJ
Winter Hill NGR SD 659 149	Nr Bolton, Lancs. Matchmoor Lane. IO83RO. Narrow grass verge but room for two or three stations. Excellent take off West through to SE. LOS to Clee Hills and Snowdonia/Anglesey region. 456m amsl at summit.	G3PHO/P
ATV Repeaters: GB3TM 23cm. Nebo, Penysarn, Amlwch, Anglesey SH 472 908 GB3GW 23cm Pentrefelin, Porthmadog SH 513 401	Input 1249 MHz Output 1316 MHz Streaming through to GW3JGA Prestatyn SJ 076 828 Input 1280 MHz Output 1310 MHz	

ACTIVITY NEWS FROM THE WORLD ABOVE 1000MHz

By Robin Lucas, G8APZ

CONTEST and ACTIVITY REMINDER June

- 16-Jun 1900** - 2130 1.3/2.3GHz Activity Contest
Arranged by VHFCC (RSGB Contest)
21-Jun 0900 - 2000 2nd 5.7GHz Cumulative
21-Jun 0900 - 2000 2nd 10GHz Cumulative
21-Jun 0900 - 2000 2nd 24GHz Cumulative **

July

- 19-Jul 0900** - 1700 2nd 24/47/76 GHz Cumulative
21-Jul 1900 - 2130 1.3/2.3GHz Activity Contest
Arranged by VHFCC (RSGB Contest)
26-Jul 0900 - 2000 3rd 5.7GHz Cumulative
26-Jul 0900 - 2000 3rd 10GHz Cumulative
26-Jul 0900 - 2000 3rd 24GHz Cumulative **

August

- 18-Aug 1900** - 2130 1.3/2.3GHz Activity Contest
Arranged by VHFCC (RSGB Contest)
23-Aug 0900 - 2000 4th 5.7GHz Cumulative
23-Aug 0900 - 2000 4th 10GHz Cumulative
23-Aug 0900 - 2000 4th 24GHz Cumulative **

** G0RRJ Memorial Trophy

FRENCH JOURNEES d'ACTIVITE (JA)

- 20th-21st June** - 1296MHz and up
12th July - Sunday morning - 5.7GHz and 10GHz
Reflections from Mont Blanc
25-26 July - 1296MHz and up
29th-30th August - 1296MHz and up
26th-27th September - 1296MHz and up
24th-25th October - 1296MHz and up

Duration of all the Journees (except for 12th July) is from 17:00 Saturday to 17:00 Sunday

Last month's column was almost complete when the May contest took place, which meant that some the later reports had to be held over. Time to catch up....

MAY IARU CONTEST

From: Keith, GW3TKH/p

I was back at Cefn Y Galchen, IO81LS, with **1296MHz** and **24GHz** gear for Sunday 3rd during the microwave contest weekend. The weather was clear, dry and mainly sunny with a strong cold wind.

I worked the following on **23cm** - **G3OHM/p** (IO92) 113km, **GM3HAM/p** (IO74) 355km, **G4RFR/p** (IO80) 110km, **2E0NEY** (IO81) 68km, and **GDOEMG** (IO74) 285km.

The contact with **GM3HAM/p** took about 10 minutes, rather shorter than my first from this site with Ray, **GM4CXM**, in December 2008.

On **24GHz**, I had contacts with **G3ZME/p** and **M5AFG/p** both at 83km in IO82QL. The path to Brown Clea is obstructed by the Brengre, 1km away and 51m higher than my site. I set up on the direct heading that was successful when I first worked the path with 529 reports in September 2008. This time, the peak signal was 6 degrees further round to the East, directly over the peak of the Brengre. With signals S8/9 Dave, **M5AFG/p** switched to FM to complete the contact in style!

The next test was with **G4RFR/p**, IO80UV very close to the Bell Hill beacon site. **GB3SCK** was easily readable at 112km with QSB into the noise, but things looked promising.

After more than an hour of antenna tweaking a very scattered signal was received at Cefn Y Galchen but nothing in the other direction. We tried again 15 minutes before the contest ended, by this time **'SCK** was only just detectable, but nothing was heard. Thanks to John, **G0API** and team for their perseverance, we hope to try again in the next contest.

The final test was with **GW4DGU/p**, (IO71QX) at Frenni Fach. The path is 107Km with two sharp diffractions at 41Km. I heard Chris immediately and sent a report of 519 but QSB took over and I could not get my report. So no complete QSO this time. At least we heard each other and Chris is no longer in **24GHz** isolation in West Wales. A very useful day, and I look forward to the next.
73, Keith

MORE MICROWAVE "FIRSTS"

Chris, **G0FDZ** (**GDOEMG** team) wrote with some details of the group's efforts from the Isle of Man during the May IARU contest.

It looks as though the group has made some new firsts from **GD** to **PA** on no less than three bands. On **9cm** and **6cm** they worked **PA6NL** and on **3cms** they had a contact with **PA5DD**.

Also of note, another first from **GD** to **F** was their longest distance QSO on **3cm** with Maurice **F6DKW** at 761km. This was achieved by aircraft scatter and the QSO took around 45 minutes to complete. Finally, the group worked Tony **E14GHB** to give him his first QSO on **3cm**. It looks as though an enjoyable weekend was had by all.

Several more "firsts" have been achieved in the Baltic area. A team of three operators (**LY2VA**, **LY3BF**, **LY4U**) operated the **LY2WR** club station in its "new" QTH - a long abandoned brick radio tower in KO24FO, 50km west of Vilnius. The tower 40m high on a site which is 240m above sea level.

LY2VA had built an 8-10W PA for his existing **DB6NT** transverter for **13cm**, and this equipment was used for the IARU contest.

LY2WR made a **13cm** "first" during that weekend on the Saturday morning. At 05:00UTC with the **ES0SHF** beacon fading out fast, **OZ7IGY** and couple of **SK7** beacons on **23cm/13cm** were still there, and they desperately looked for Scandinavian QSO partners on **ON4KST** Microwave Chat.

When Christian **OZ2LD** from JO54TU logged in, they moved quickly to **13cm** and made an easy QSO which is the first ever **LY-OZ** on **13cm** and a new **LY** record for that band at **823km**.

On the Sunday afternoon, **LY2WR** decided to try **13cm** with Ulf **SM7LCB** (JO86GH), and at 07:30UTC completed a 539/519 QSO at 534km for the first ever **LY-SM** on the **13cm** band.

Ulf, **SM7LCB** was very pleased to work **LY2WR** on **13cm** for the first **SM-LY** on **13cm**. He operates a remote station which is based at his summer QTH Öland (Torngård), and all radio activity from this QTH is remote operation either by Internet from Stockholm or local remote operation on Öland.

Ulf thinks the activity from the Baltic countries is going up, especially from **LY** on both **23** and **13cm**. He now has a better antenna on **13cm** and is hoping for some good conditions.

23cm/13cm ACTIVITY CONTEST

The evening of 19th May saw another RSGB activity contest session. A level of activity which was better than normal was apparent for this event, with Ray, **GM4CXM** (IO75tv) getting no less than 18 stations in the log - his best result to date.

Amongst the stations worked were two new ones for Ray in the shape of **G4GSB** (IO82), and **G3VKV** (IO81). No less than nine of the stations were over 400km, and the joint best DX were **G4EAT** (JO01) and **G4DDK** (JO02), both of whom were 572km.

Aircraft scatter was used for most of the long haul contacts, and patience for the medium distance ones.

Chris Bartram, **GW4DGU** (IO71SV) wasn't QRV until about 9pm, and spent a bit less time tuning around, but paid more attention to 'KST this month. The results were some of the best he's had in the UKAC. Chris completed nine QSOs in seven locators, at an average of ~325km/QSO. Chris's contacts ranged from 163km to 449km.

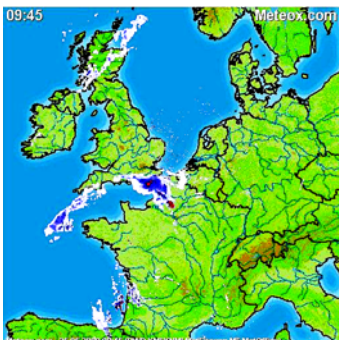
A rather different view was taken by David, **MOGHZ** who said that it was the worst evening for a long time. He had no contacts for the first 30 minutes, and worked only 4 stations direct and 4 via 'KST skeds.

TROPO and RAINSCATTER

With the "rainscatter season" well under way, there were a number of events in mainland Europe, but on 25th May, a particularly widespread event occurred. The previous evening, there had been some extended tropo to Scandinavia, and as early as 04:00utc **OZ2LD** was reporting fine conditions to UK. An hour later, Gordon, **GOEWN** was in QSO with **DK2MN** on **23cm** and exchanged 59 over a 612km path. He went on to work **OZ1FF** on **3cm**, as did **G4EAT**.

Before 05:00utc Brian, **G8ARM** in Penzance had mentioned an extreme thunderstorm crossing the channel. At 06:45utc Jean-Noel, **F6APE** was looking for rainscatter contacts, and Christophe, **ON4IY** noted the scatter on the **F5ZTR** beacon was enormous - the biggest he's ever heard.

At 07:43z Kjeld **OZ1FF** (JO45BO) and Jean-Noel **F6APE** (IN97QI) had a **3cm** RS QSO at an incredible distance of 1099km! The scatterpoint was in JN09 but the QSO was tropo assisted enabling **OZ1FF** to reach the scatterpoint. **The QSO is believed to be a 3cm world record on RS**. **OZ1FF** also worked **F6DKW** (JN18) and **F6DWG/p** (JN09).



The weather radar at the time of these QSOs shows intense rain in a relatively small area, ideal for rainscatter.

The image was obtained from the website of **Meteox.com**

Having seen the 'KST reports of this QSO, Karel, **OK1JKT/p** decided to go to his portable site, and worked 21 stations during the RS event between 13:00 and 19:00. Eleven of these were over 800km, with his best DX being **G4EAT** (JO01) at 903km. Karel has approx 5W into a 1.2m dish, and a superb portable site in Bohemia at 920m asl.

From: Richard, G3CWI (Macclesfield, Cheshire)

I logged into KST and saw that DX was being worked from the SE of England and that Gordon, **GOEWN** had had some success. The storm history indicated that it might be useful for me shortly as it was moving north so I scrambled out with the **10GHz** portable system. I soon set up and logged into 'KST'. As I half expected, there was no DX reaching me at all. I did a few tests and in the end just worked Sam, **G4DDK** and Neil, **G4BRK** before I returned home.

In the early evening I checked KST and saw an upsurge in activity. I noticed that John, **G4EAT** had worked an **OK** portable at just over 900km on **10GHz** and Rob **MODTS/p** was QRV and had worked into **OZ**.

A check of the rain radar showed a more encouraging picture and 30 seconds later I decided yet again to pack and go. Five minutes afterwards I was in the car on the way out. I arrived at my favourite local site and unpacked (it takes three minutes to set up the **10GHz** portable system).

Immediately I heard a strong station calling CQ. I expected it to be **GOEWN** but it wasn't. It was Gerd, **DJ5BV** at 59s. For some reason I didn't actually expect Gerd to hear me but he did - first call. We easily completed for a new best DX for me at 688km. Gerd was a huge signal for nearly an hour. At one stage he was so strong he was overloading the receiver and was audible on two frequencies.

Although I made just the one DX contact, I was quite happy with the results given that my system is very small and low power (40cm dish and 1 Watt). Even 1,000km now looks quite possible on the right day!

73, Richard G3CWI

From: Jeff G4HIZ, Dover, Kent

Having planned a Bank Holiday visit to Dover Castle in the morning with the family, as an additional afternoon activity I decided to take along my **10GHz** listening set-up to try a bit of beacon spotting from the cliff top.

The weather forecast was for rain heading in from France and Rain Scatter was a distinct possibility. The dish was only a 25cm prime focus tacked onto my **DB6NT**, but I wasn't to be disappointed.

First I heard the French beacon **F5ZTR** on 10368.842MHz at Beauvais (JO09FJ). This was only about 3dB S/N but clearly readable at 196km. Next came the German beacon **DB0ANU** on 10368.810MHz at Ansbach (JN59GG) with similar readability at 690km. At this point, I went to listen on the calling frequency. Immediately, I heard **DJ5BV** calling CQ on CW at S8 from 400km away. Then I found **OK1JKT/p** also S8 using CW, at over 800km !

A better demonstration of the capabilities of Rain Scatter, one couldn't have hoped for. **73, Jeff**

6cm/3cm/24GHz CUMULATIVES

The first of these took place on Sunday 31st May, and a good number of reports have been received.

Steve **G1MPW** and Dave **G6KIE** worked on **10GHz** from their usual site near Firle Beacon (JO00AU) for the May contest - it was also the first outing for their new Alacatel based **24GHz** systems.

10GHz got off to a slow start as usual for the first event of the year, but soon picked up. Using a mixture of 144MHz talkback and 'KST they managed 14 QSOs, their best DX was to **G3PHO/p** at 346km. They had tried the path fairly early on in the day without any signals being heard at either end, but it went quite easily later in the afternoon.

They were unable to hear any **24GHz** beacons but managed 2 QSOs on **24GHz**, **G4ZXO/p** at 12Km for their first "proper" QSO, and a bit later managed 49Km to **G8CUX/p**. Tests with **G4EAT** (105km) and **F6DWG/P** (215km !!) didn't provide any results. By all accounts it was a poor day for propagation on **24 GHz**

From: Martyn G3UKV (Telford & DARS, G3ZME/p)
Commissions to one or two stations who had some difficulties whilst out portable. We had problems too.

After fixing yagi and dish to the portable mast, two identical coaxes come down the mast, one from the 2m yagi, the other from the 5.7G transverter. Time to check out 2 metre system (incl. 100W PA). Seems OK. Plug in other coax.....nothing audible on **5.7GHz**. Yes, you've guessed it - blasted the **DB6NT 5.7GHz** transverter with 100W of 2m. "Oh, bother" (or equivalent!).

Lots of suggestions about avoiding such accidents in the future, but rather like reversing DC leads from rig to battery, it's not the sort of thing you do twice in a lifetime! Moral: Clearly mark ALL leads! Ah well ...

Back to the other bands: On **24GHz**, found conditions about average, despite fairly high humidity (60%+). Thanks to Keith **GW3TKH**, Andy **G4MAP** and Dave **G8VZT** we had 3.5 QSOs on **24GHz**, plus worthwhile attempt with **G4NNS** (Walbury - nothing heard either way).

On **10GHz**, poorer results: 16 QSOs, but nothing out of the ordinary. An attempt with Maurice **F6DKW** near Paris, which often succeeds, failed. Best DX was **G3XDY** (264km), **MODTS/P** (240km), **G6KIE/P** and **G1MPW/P** (both 257km) and **G4EAT** (236km). Sorry we also failed with Tony **EI4GHB/P** who travelled a heck of a long way to operate **10GHz**. Tony was near Dublin at just 248km, which should have been a go-er, but it was not to be. A sticky relay gave us difficulties on this band all day; thanks to all who were patient with us. It'll be fixed for the next time - but who can tell what else will go wrong then? The trials and tribulations of portable microwaving ! **73 Martyn G3UKV**

From: Bob G8DTF, Winter Hill

I had a pretty disastrous day today. The wind was quite gusty today up Winter Hill. I managed 2 contacts (**G3ZME/p** and **C3CWI/p**) before the dish and tripod blew over. I was in the process of trying to listen for Neil **G4BRK**. The damage is unfortunately quite severe. A number of SMA connectors and other compo-

nents broken and a dented dish. Just my luck it was a few minutes before Tony **E14GHB** appeared on KST.

It was surprising that the dish blew over as the tripod is an old heavy metal one of military origin. Looks like I will not be on for a while now.
[A common problem Bob, try taking a strong bag and filling it with rocks on site. A bungee under tension can be hooked onto it from under the boss of the tripod]

From: Richard, G3CWI/p Merryton Low

Starting over an hour late I rather expected the band to have quietened down after the initial flurry of activity. I had forgotten that **10GHz** contest are frenetic from beginning to end and the band was humming. Contacts came thick and fast and the serial number soon started to rise nicely with 11 contacts in the first hour. No DX but plenty of activity.

The wind gradually increased throughout my short operating period, and I was fighting to keep the beam pointing in the right direction and not pointing towards the sky. An easy task under some circumstances but not when another hand was required to stop the dish lifting off and a third hand was required to send CW.

Conditions seemed normal in that some people were stronger than expected while others were weaker. I worked no real DX - indeed nothing over 300km. In the end, after nearly 4 hours outside in the wind, I decided to call it a day. 22 contacts seemed a fair return for relatively little effort. Especially pleasing were contacts with Roger **G4BEL** who I knew well in the late 70s and an SSB contact with Ian **G8KQW**. Best 2-way DX was **G4ZXO/p** in IO90, at 280km - a good distance on SSB

From: Peter, G3PHO/p Pocklington, E. Yorkshire
Predictably, the hot weather saw rather poor inter UK band conditions. 144MHz was particularly poor and normally strong stations like **G1MPW/p** (JO00AU) and **G4BRK** were weak and watery on the 2m talkback link. However, **G3XDY** was a rock crusher... but then he does not run portable ERP !

My first contact was a particular delight in that it was a brand new **10GHz** station, John **G8FDJ/P**. Even more important, he lives in Sheffield, just a couple of miles north of my QTH and over the winter has built up a **DB6NT** system. Using just a horn, he seemed to be doing well from IO93FK (Bradfield, Sheffield) has was up to 3 QSOs when he worked me. Later in the day Barry, **G8AGN/p** (IO93EI), also from Sheffield, came up with one of the loudest signals I've ever heard on **10GHz**. Like John, he was using just a horn antenna and a **DB6NT** system. The 85km path to me was LOS!

Another first QSO for me was with Roger **G8CUB/p** at Therfield, IO92XA. He had also just made his first **47GHz** QSO that day ... congrats!

The day was notable for the large turnout of /P operators, at least a dozen were noticed. I really hope this is the start of a revival of portable operating as I've seen activity on these bands fall off in recent years as the portables have given up for various reasons. Four or more years ago, one could work 30-40 **10GHz**

and 15 **6cm** stations in the day. Yesterday my tally was a mere 21 (only 3 of which were on **6cm**).

10GHz produced much better signals than **5.7GHz** the reverse of what I usually find. Others were finding the same thing. **G4ALY**, usually heard from this site, was totally inaudible and very weak on 2m

My best **10GHz** contacts were **G1MPW/p** and **G6KIE/p** on Firle beacon (JO00AU) at 351km and the **G4ZXO/G4WVJ** portable duo on Ditchling at 341km

After a frustrating day of weak UK signals, it came as a complete shock to hear a very strong beacon on 10368.810 just before I closed down. It was **DB0GHZ** and it was end stopping on the FT817 "S" meter !!! I called CQ on .100 for 15 minutes but got no replies.

73, Peter G3PHO/p

From: Russ, G4PBP

I don't think conditions were up to much and my usual **GM** contacts were just not audible. Most contacts were on CW, where several are normally phone.

On **6cm**, the total was 6 with ODX **F5IGK** (JN09). An attempt with **F6DWG/p** failed after we had several attempts and heard each other but did not complete. On **3cms**, eleven stations worked, with the best DX **F6DKW** in JN18 at 524km.

From: John, G8ACE

Three bands /p is just too much I think. Rigging time is long to get it all organised on tripod(s) or masts for one operator stations. Three bands for a home station contest is fine of course when all you do is throw switches but not for /p Plus there is also the ever less useful .175 talkback to rig up.

I think **G3PHO**'s decision not to take out **24GHz** was the right one. Returns for **24GHz** effort remain small in a **3cm** and **6cm** affair. **3cm** and **24GHz** as of a few years ago would be fine as my opinion is **3cm** is valuable for **24GHz** alignment.

From: John, G0API, Corfe Mullen, Dorset

Paul **MOEYT** and I decided to test on **10GHz** from my QTH (IO80XS), which has usually resulted in making contact with **G3PHO/p** in the past, but no this time.

As I cannot run more than a couple of watts of 144MHz ssb without the digital TVs locally going into pixel warp we used 'KST only. On **10GHz** the gear is the same we use to work **G4NNS** via the Moon (less the 3.4m dish) - 60cm offset, all at 35ft agl and the QTH is 200ft asl.

We were monitoring from 09:00 through to at least 18:00 and worked a total of 8 stations using Paul's call **MOEYT/p**. A one way with Richard **G3CWI/p** and two "no go" attempts, and that was all that appeared on 'KST wanting to QSO.

The North/South path was very poor - it was 26C at times and low humidity. Best DX would have been Peter **G3LRP** near Wakefield, IO93HO. We heard each other S7 via Aircraft reflections at our end but massive doppler and short duration bursts were not sufficient to make the exchange.

Continued on page 20 >>>>

Conditions remained poor as we tried later in the day.

I would agree its still a very good scheme to take 144MHz talkback out portable but where was everybody in the May UHF and Up Contest? **G4RFR/P** using my 100W 746 and a **DL6WU** 35ft boom 19 el Yagi 30ft agl at 900ft asl only had 3 QSOs initiated via 144MHz, even though the **GB3ANG** beacon was a constant S6 for the whole 24Hrs.

Weird stuff this propagation!

John, G0API (Confused of Corfe Mullen)

From John, M0ELS, JO01GN, Pitsea, Essex

I went up to a nearby hill and set up **3cm** using a 56cm dish, DEMI transverter + 3w PA, a 12v to 230v 800w inverter and a 12v car battery. I had to park near the top of the hill and my father in law and I carried the equipment about 100m to my preferred spot.

The view was only North and North East, due to the tree line. After a huff and puff break, I assembled the dish, connected all the cables and called CQ. Two hours later I began to wonder if I had a problem, as no-one was heard nor any beacons. I frantically called Dave **G0DJA** with a moan and he announced my location on 'KST'.

After a call to **G8APZ** on the phone for a test, I suddenly had **G4EAT** on my hook who boomed in at 59+-. John advised me that I was 60KHz low in frequency. I must retune that crystal some time or maybe it will drift back over time.

Lessons learned? Well, where do I start ?

73, John - M0ELS

G8APZ says: Unfortunately, I was re-cabling my mast at the time, and was unable to give John a signal on 3cm when he called me but I was able to alert G4EAT! I've written an email to John with some suggestions. It's worth noting that this was John's first QSO on 3cm with his new DEMI transverter.

EME

Peter Blair, **G3LTF** wrote following the **13cm** and **9cm** DUBUS contest. In Peter's email, he mentioned that on **13cm**, you transmit on **2320MHz** but to work every-one who is QRV you need to receive on three other bands, namely **VK 2301MHz**, **W 2304MHz** and **JA 2424MHz**. In the following account, such contacts are marked (* = crossband).

"I started off on **13cm** just before moonset on 2nd May and worked **WD5AGO*** and **W5LUA*** and heard **W7BBM*** 569, but I don't think he has 2320 receive. At moonrise I spent an hour trying to work **VK3NX** crossband but the QRM on his frequency was so bad that it was hard to make out what he was sending much of the time.

I then worked **JA4BLC***, **OK1CA**, **DL1YMK**, **SP6GWN**, **F5JWF**, **LZ1DX**, **F2TU**, **OK1KIR**, **HB0/DF1SR**, **OK1DFC**, **IW2FZR**, **SD3F**, **G3LQR**, **GW3XYW**, **DL4MEA**, **SV3AAF**, **SM2CEW**, **G4DDK**,

K2UYH*, **G4CCH**, **LA9NEA**, **WA6PY***, and **VE6TA**.

Stations called, but with no reply were: **W7BBM***, **VK3NX***, **JA6CZD***, **NA4N***, **OZ4MM***, **OH2DG*** and **OE9ERC** was heard.

On **9cm**, at this low moon declination, I have a very short window to **VK** due to trees. I worked **OZ6OL** through a gap in them and then **VK3NX**, still with considerable ground noise. I then worked **OK1KIR**, **OK1CA**, **DL1YMK**, **G4NNS**, **DL4MEA**, and **W5LUA**. **K5GW** came on after I had closed down.

Thanks to all for the QSOs. Happily the activity on both bands continues to increase every year".

[Peter's system on 13cm is a 6m dish with 250W at the feed and G4DDK preamp, and on 9cm the same 6m dish with 25W at the feed and a W5LUA preamp.]

BEACONSPOT.EU

www.beaconspot.eu reached another milestone on 3rd June, with the 500th registered user. On 25th May, when the big rainscatter event occurred, the total beacon spots on the microwave bands during the twenty four hour period reached a record total of 90.

A recent email from **John W3IK** said of beaconspot: "Wow...we on this side of the pond have much to learn from our European brothers/sisters. Great site.

Although I am not a microwave beacon operator, I do operate an HF beacon, and I do monitor for all beacons across the spectrum. Albeit, I probably will not hear any European beacons until I go to the Czech Republic to work someday, I sure enjoy seeing what you all do. Great site, great beacons, cheers to all."

LATE SNIPPETS

On 7th June, Rudi **OE5VRL/5** (JN78DK) reported working **E71EBS** on **3cm**. This is believed to be a first between Austria and Bosnia and Herzegovina.

...AND FINALLY

It is a very pleasant change to have more material than I can fit into the column, so this month, I've had to make a take-over bid for this back cover page!

It seems as if the first of the high band cumulative contests got off to a good start, and hopefully it will continue with the next session. There have also been some "firsts" on various bands, and some rainscatter and tropo events, so all told it has been a very good month on the bands.

Thanks to all those who have sent reports this month and please keep them coming!

73, Robin, G8APZ

Please send your activity news for this column to:

scatterpoint@microwavers.org