An Amateur Radio publication for the Microwave Enthusiast

scatterpoint

September 2011

Published by the UK Microwave Group

Deep concentration at Finningley –
Warren G6OXY starts on the first Berniebox 3cm converter
(see last months edition)

In this Issue

4 Using Horns on much lower Frequencies
5 Crawley Microwave Round Table – 11 Sept
6 A 30db Power Attenuator – a PS
8 Leaky plumbing
10 Second User Microwave Power Meters & Power Meter Accuracy
16 Microwave Field Day 2011 Results
18 Microwave Field Day 2011 Report from G2AS/P
21 3 Squares Awards in a Week
Scottish µwave Round Table
22 We could have done this contest lying down
24 Telford expedition to Guernsey
26 Nanowaves
27 IARU Contest
View from the Drey
28 Activity News
28 Events & Activities calendars

Latest News

A big Thank you to Robin G8APZ/ F1VJQ who has edited the Activity News for the past four years. Robin is standing down and his last column will be in the Nov/Dec issue. I'm particularly grateful for his help during my first few months as Editor.

Martin G8BHC

Many thanks to all our contributors this month, without whom there would be no Scatterpoint!

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Editor's bit

Thank you to all contributers.

Readers, please let me have your ideas for topics, even if you don't feel able to write an article yourself.

Downloading Scatterpoint

A very small minority still seem to have issues retrieving Scatterpoint from the Yahoo Files section. If you can log in to the UKMicrowaves reflector then I suggest you use the same login address for the Scatterpoint group, that way you won't have to keep swapping logins. As a last resort, please read the instructions...

Yahoo files are listed only in alphabetical order (which is not helpful). The files tend to be called **Scatterpoint <YYMM> A4.pdf** or **Scatterpoint <YYMM> booklet.pdf**

I have taken to placing the latest edition (A4 and A5 booklet formats) in a Dropbox and will post the link via the Yahoo message when I publish. I'd prefer you to use the Yahoo facility and only use the Dropbox as a last resort as it could bust my download allowance. The files will remain in the Dropbox for 2 months but longer in the Yahoo files. The 2010 volume will become available vie the microwavers.org site at the end of December.

73 de Martin G8BHC

We don't have problems, only insurmountable opportunities

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, rtfd, doc, docx, odt, Pages

Spreadsheets: Excel, OpenOffice, Numbers

Images: tiff, png, jpg

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 you co-operation.

Martin G8BHC

Colour codes

Editorial & Events

Activity & Contests

Technical

Nanowaves (optical)

Commentary

UK MICROWAVE GROUP

SUBSCRIPTION INFORMATION

The following subscription rates now 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). You will only be able to receive Scatterpoint electronically 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.

QUOTE YOUR CALLSIGN PLEASE!

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!)

Reproducing articles from Scatterpoint

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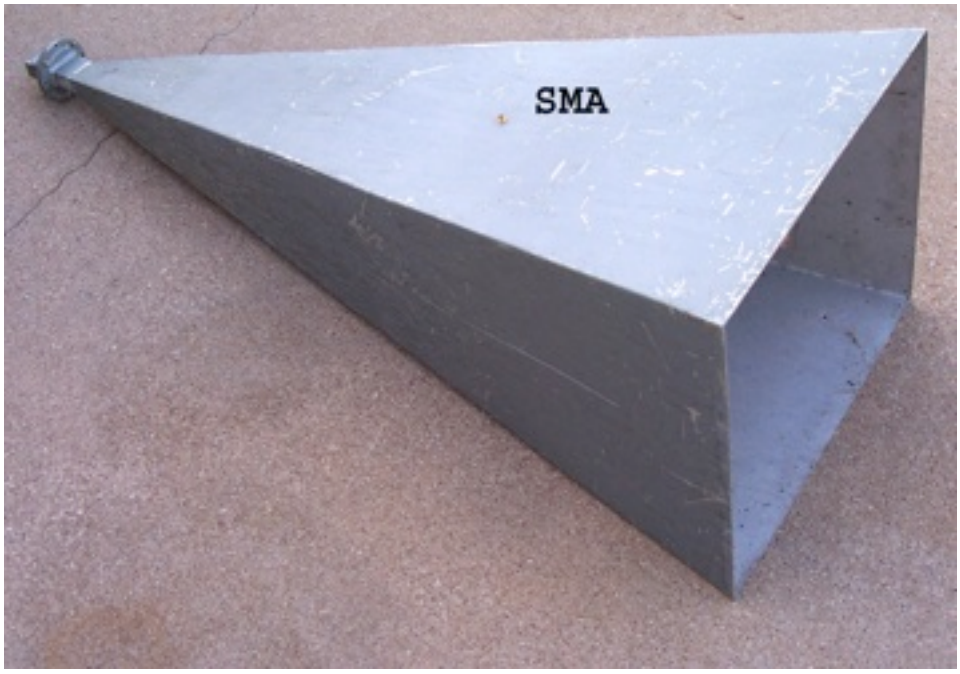
Using Horns on much lower Frequencies

By Kent Britain 2E0VAA



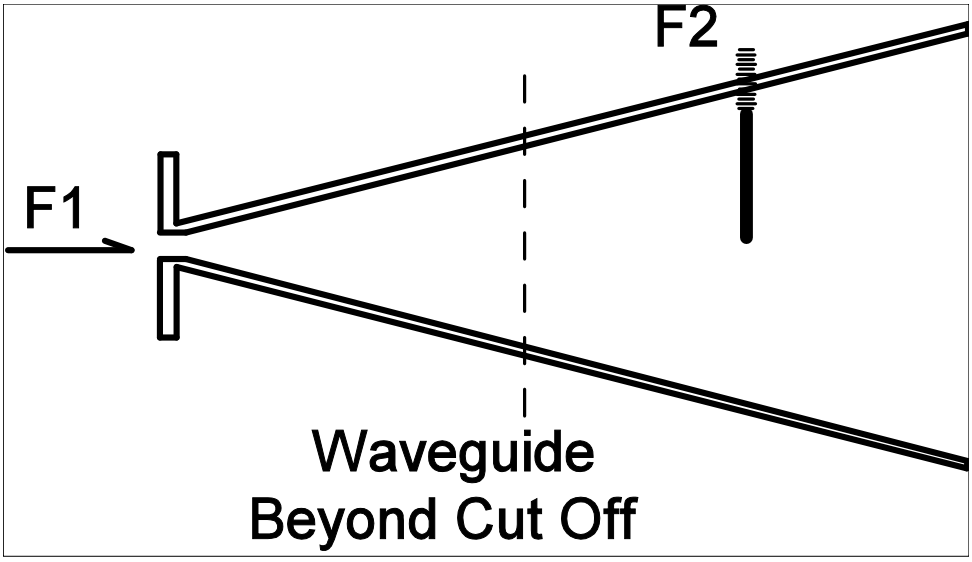
Recently I was doing some 700 MHz work on the antenna range and needed a good source antenna. So I used a 6 cm horn. A 6 cm horn on 700 MHz? Yea, well, it is a pretty big 6 cm horn.

In the drawing you can see how only the end of the horn is used at the lower frequency.

For the second frequency you plan to use the horn on, calculate the size of waveguide – beyond-cut off. That is, the size of the opening that will not pass a wave on that frequency. For 700 MHz that works out to when the throat of the horn just over 200 mm wide.

Now you can do the typical calculations for a Coax/Waveguide transition and mount the 2nd probe about ¼ wavelength in front of the cutoff point. If you can measure SWR/Return Loss, then by all means tweak the length and position of the new problem. It is handy to use a threaded though connector that will let you remove the low frequency probe, just in case you need to do some serious work on the horn's original design frequency.

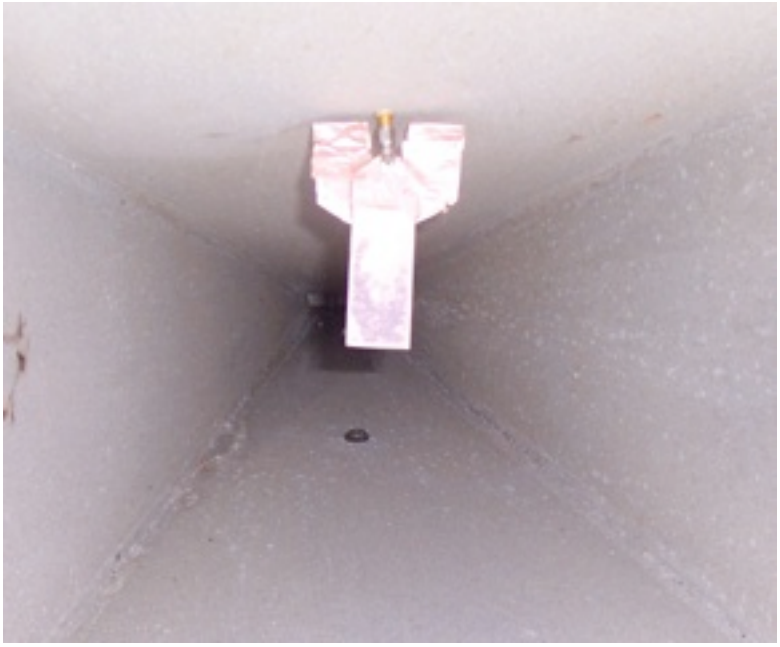
Just a technique to let you use that big 3cm horn on 6, 9, or maybe even 12cm.



Position of the new feed probe.

Added 700 MHz probe on an SMA connector.

This one liked a bit of C to ground for best return loss, thus the T shape



Crawley Microwave Round Table

Sunday 11 Sept at Crawley Amateur Radio Club

Location: Hut 18, Tilgate Recreational Centre, Tilgate Forest, Crawley

As usual we will be running the UK Microwave Group annual construction contest for the G3VVB trophy. Please do bring along your constructed equipment and enter the contest. Entries do not necessarily need to have been constructed during the last year.

Do come along and support the construction contest and hear the talks.

Provisional times:–

10:00	Venue opens
12:00	Construction contest judging commences
13:00	Lunch (rolls, sandwiches, tea/coffee available)
13:30	Opening address by Derek G3GRO and the results of the construction contest
14:00	'An Experimental Transverter for 3.4 GHz' or "Fun with filters" - by Mike Scott G3LYP
14:45	'An Examination of Local Oscillator Noise' - by Chris Bartram GW4GDU
15:25	Break (tea & coffee available)
15:45	'A simple Diode RF Power Meter usable from HF to 6.0GHz' - by Peter Head G4FYY and Derek G3GRO
16:30	End of meeting

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

73, Derek Atter, G3GRO, Hon. President, CARC

A 30db Power Attenuator – a PS

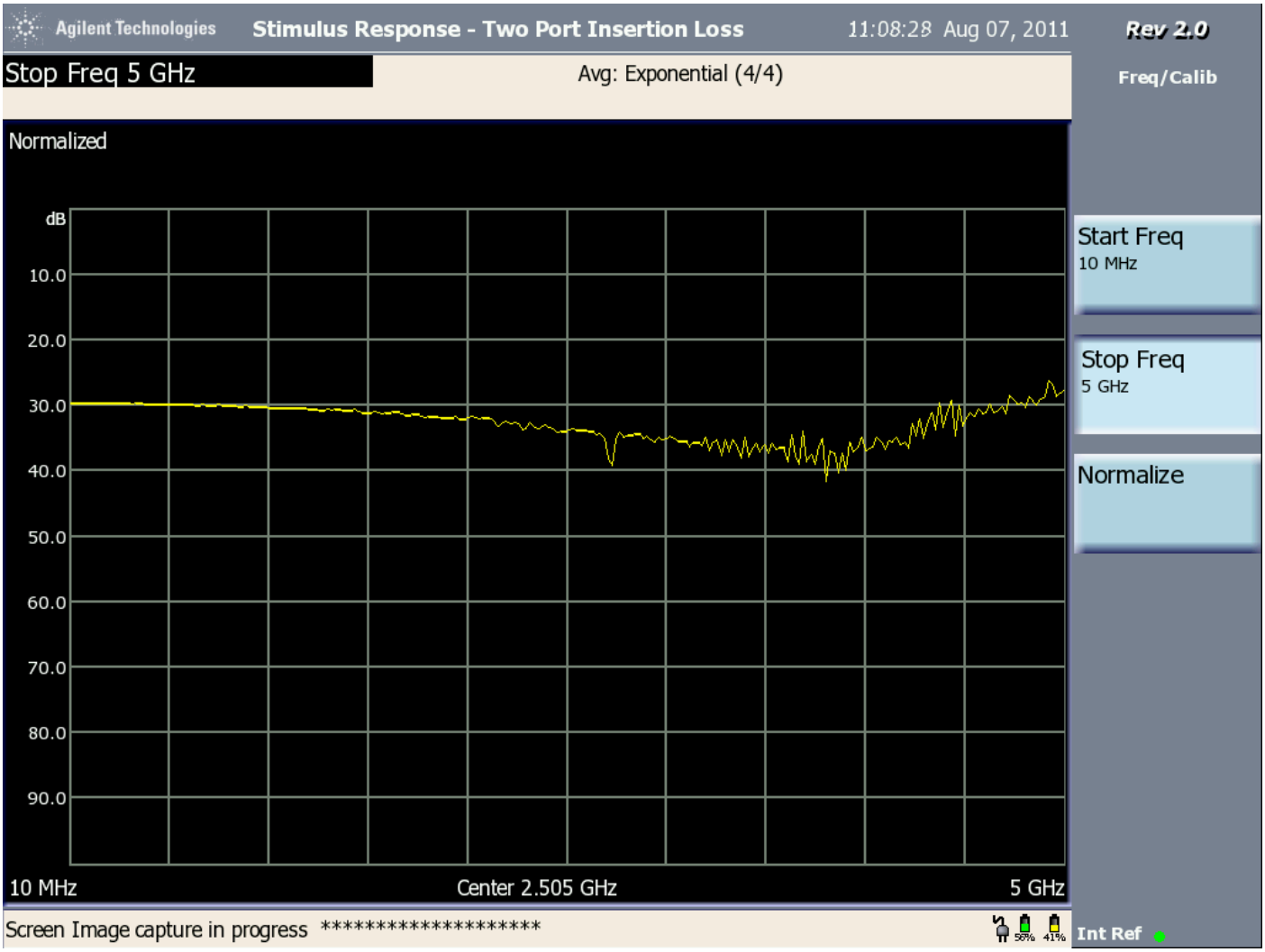
By Colin Ranson G8LBS

I now have measurements of the attenuator, courtesy of Graham G4FSG, and it seems perfectly adequate for use up to 23cm.

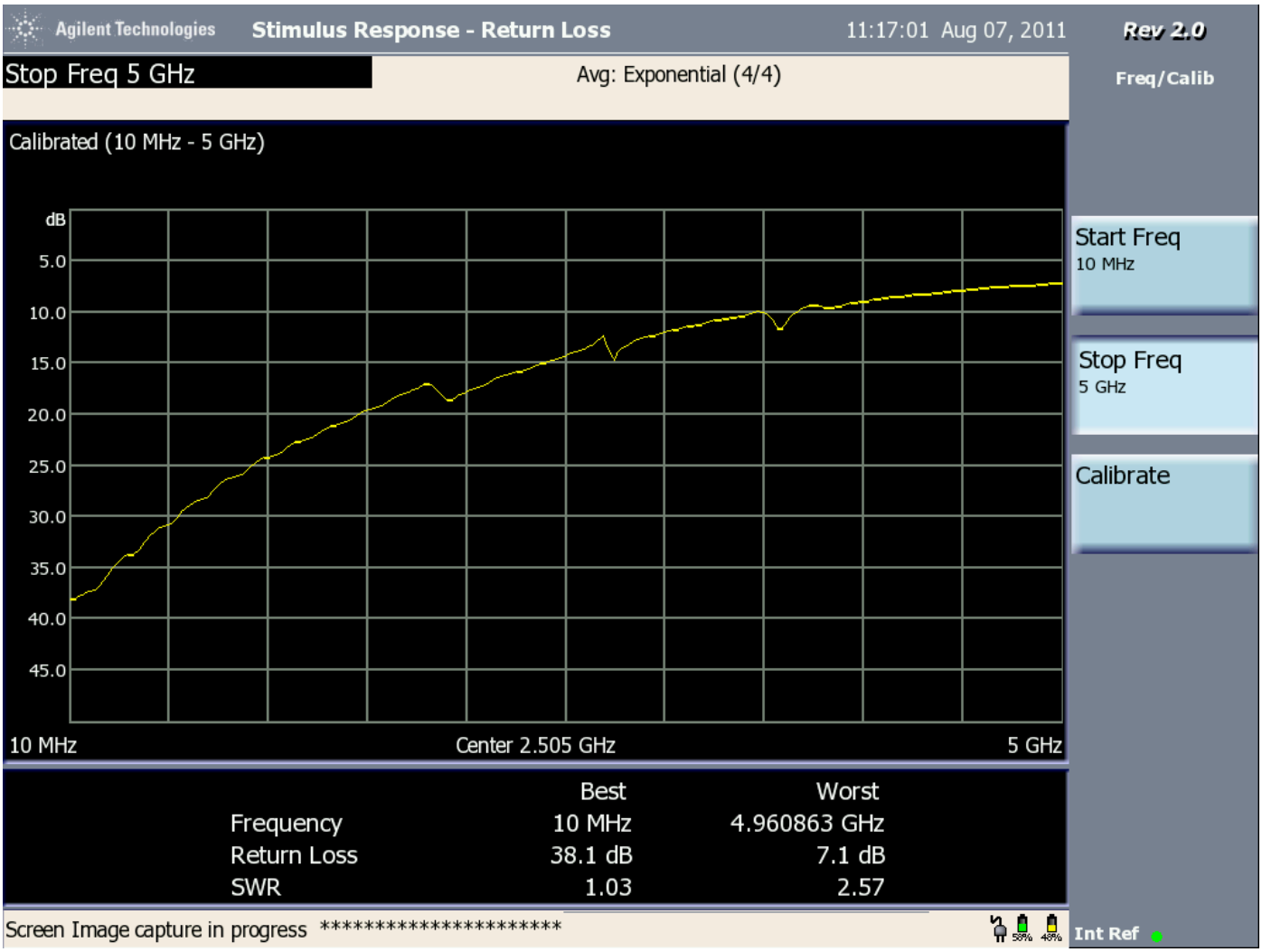
The loss begins to increase above about 1GHz (but you can use the plot for correction) and the Return Loss is probably OK up to 2.3GHz.

I did check with a Mini Circuits 30dB equivalent and with the test setup it was flat to 4GHz.

Colin G8LBS



Insertion loss vs frequency



Return loss vs frequency

Greetings to all.

I just wanted to describe that well-known microwave parts eBay seller "pyrojoseph" (Joe, KI4NPV) currently has a very good little 24 GHz slot antenna available on eBay's "buy-it-now" terms. The eBay item number is: 220827359687

The purpose of this posting is to describe that a few weeks ago I purchased one of these antennas from Joe and that I have been very impressed with its electrical performance, so much so that I reckoned that an endorsement here is in order.

Joe makes these one at a time and carefully tunes them for optimum performance at the 'amateur radio' part of K-Band. I was seeing around 30 dB return loss there, and it's a very acceptable 15 to 20 dB return loss at other parts of the spectrum close by there (say 22 to 25 GHz).

Joe tells me that these antennas should become available one at a time as he gets time to make them so, if someone is interested but misses out this time, another opportunity should come around later.

Best 73,

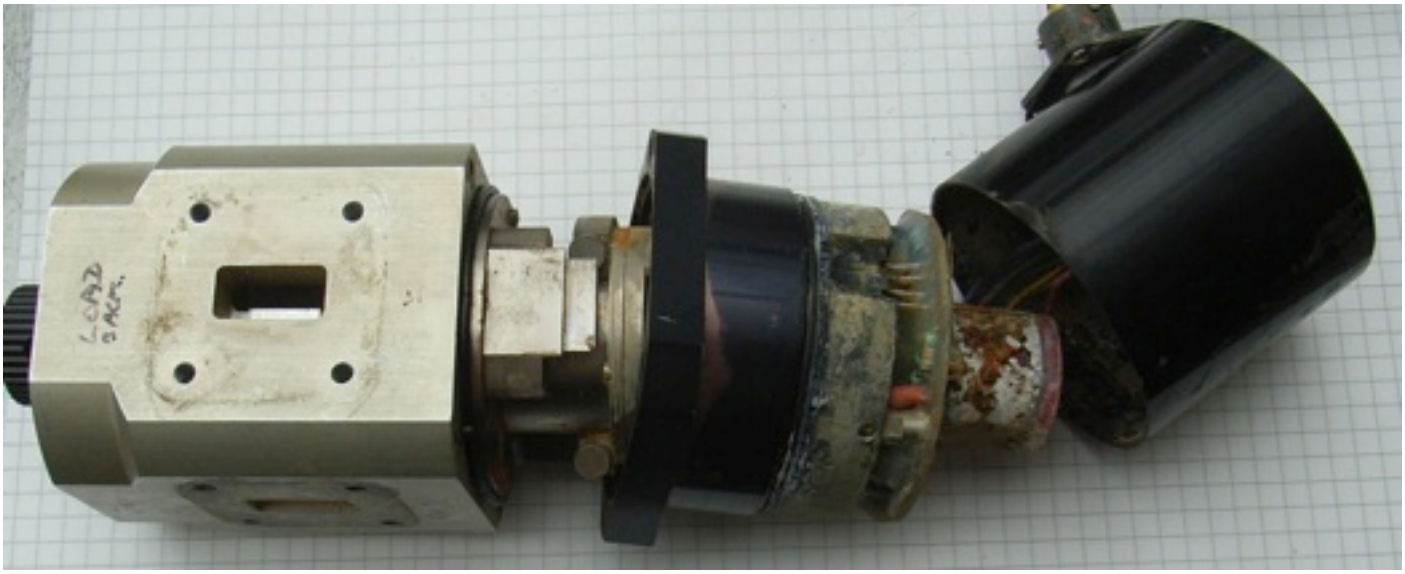
Doug Friend, VK4OE

p.s. I don't have any connection with Joe other than being a satisfied customer (many times over!)

Leaky plumbing

By Brian Coleman G4NNS

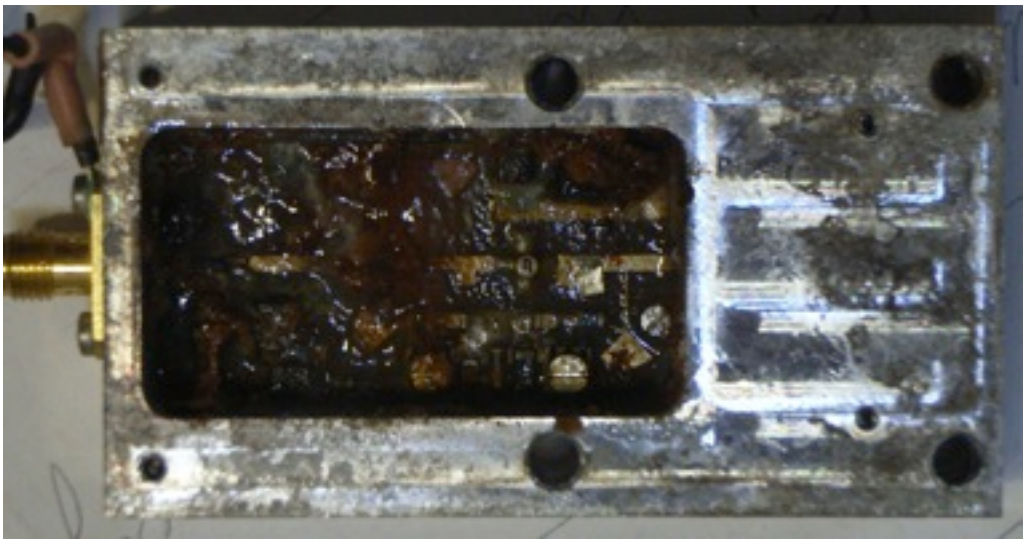
I had always bragged about my 10GHz system being an “all weather” one and have left it out on the dish in all weathers, with power on so that the small amount of heat will prevent condensation in the equipment pod at the rear of the dish. Recently I had to park the dish with it pointing at the horizon while the elevation gear box was worked on. A bearing had started to fail and the coupling from the motor was of poor quality making the elevation motion very jerky. On completion of this work I was horrified to find that the waveguide switch and pre-amp had filled with water.



I soon decided that the waveguide switch was a write off a as it was thoroughly seized . Fortunately a replacement was available. I thought it worth having a try at repairing the preamp and, as it was August, I thought it would not be possible to order a replacement as Kuhne Electronic would be closed.

After giving the pre-amp a good wash and dry I took it apart, removing the PCB for more cleaning using de ionised water, followed by thorough drying and more cleaning using solvent. I then first checked that the bias supply was working, which, after replacing a couple of capacitors, it was. The input regulator had failed as had the protection zener diodes. These were replaced. Fortunately the bias adjustment pots seemed to be OK. Next the GaAs FETs were replaced and their bias set so that the drain voltage was about 2V. Meanwhile the aluminium housing had been

thoroughly cleaned including immersion in caustic soda and then polished as well as I could using a multi tool with wire brush etc.



The PCB was replaced into the housing using conducting paint (as used for repairing heated windscreens) to ensure a good contact with the housing. A new socket and feed-thru capacitor were fitted. As I don't have a PANFI [Precision Automatic Noise Figure Indicator], the next stage was to re-assemble the pre-amp, new WG switch and transverter and test it on the dish. But first I checked ground Y-factor against cold sky. That was about 3dB so I thought it worth checking for sun noise using the dish. Once back on the dish, the first thing I noticed was that there was hardly any change in noise from ground to sky. After a while realised that, having last used the system on 5.7GHz, I had put the Cassegrain sub-reflector, used on 10 and 24GHz, back in the wrong place. After correcting this I was still seeing only about 11.5dB of sun noise and 1dB of Ground noise. The VK3UM EME calc program suggested a loss of about 1.5dB between the transverter and the feed horn. So I dismantled the feed system to clean it and remove any corrosion. This did not appear to be too bad but there was some corrosion on the flange faces. Meanwhile, with the transverter and pre-amp back in the shack, I borrowed a PANFI from John G8ACE and adjusted the bias to the two GaAs FETs for best noise figure. I had removed the tuning tab on the input line to clean underneath it and had replaced it in its original position as accurately as I could. The measurement was made after the new waveguide switch so I was particularly pleased to achieve a figure of 0.8dB. On replacing the gear onto the dish I was even more pleased to find I had 17.5dB of Sun noise, 2.6dB of moon noise and good echoes. So back to the original performance. I think most of the loss in the feed was due to corroded flanges, particularly the last joint which is of dissimilar metals – brass to aluminium.

Brian G4NNS

Second User Microwave Power Meters & Power Meter Accuracy

By Bryan Harber G8DKK

This is a summary of Bryan's talk given at Finningley MRT

Summary

- Power Meters
  - Bird 43 Thru'line
  - Second user power meters & power sensors
- Power Meter/Sensor Accuracy
- Useful/Essential Accessories

Power meters

In general these types of meter are just processing and display devices.

There are two types of display: analogue meter and digital display. The critical part is the accessory measuring head or power sensor.

Bird claim ± 5% of full scale reading which depends upon the element fitted. This fails to account for the mismatch error due to the load which could produce an infinite range of values!

It is possible to approach this value by fitting a very well matched load (VSWR < 1.1:1) directly to one of the meter connectors. Remember this is ± 5% of FSD and ± 20% of reading is a more likely value.

Power sensors

There are two basic types:

- Diode (Bird elements)
- Thermal – usually: Bolometer, Thermistor Bridge, Semiconductor Thermocouple

Second user power meters

Here are a few that you may have or might like to look out for or see on Ebay

MI 6950 Power Meter
MI 6460 Power Meter
HP435A Power Meter
HP432A Power Meter
Marconi/IFR 6960

} facing page

Then there are others that may be around in a year or two.

MI 6460 Power Meter

HP432A Power Meter

HP435A Power Meter

Marconi/IFR 6960

Other HP power meters

HP 436A ***Digital, red LED display + peaking meter***

HP 437A ***Digital, LCD display + peaking meter***

HP 438A ***Dual channel version of HP 437A***

Agilent E4418B Power Meter (top)

Marconi Instruments IFR 6970 Power Meter (bottom)

Other manufacturers include

Anritsu (2437, 2438)

Boonton

Gigatronics

Krytar

Rohde & Schwarz (URV series)

Power sensors

There are two basic types:

- Diode – measure V peak
- Thermal – measure RMS power

Thermal types are usually:

- Bolometer
- Thermistor Bridge
- Semiconductor Thermocouple

Thermal sensors are generally more accurate, with better match and linearity, but they respond more slowly and have a smaller dynamic range (-30dBm to +20dBm).

Diode sensors have a much faster response and potentially greater dynamic range. The response linearity is only easily predictable in the square law region (< 10µW, -20dBm). They are more prone to temperature variation and react badly to forms of amplitude modulation.

Here are some

Marconi 64XX TFT Sensors

and here some

HP 848X Power Sensors (right)

and

Marconi/IFR Power Sensors (below)

For many years the workaround with diode sensors has been to restrict the range to 50dB and to use an attenuator pad. This is still the best advice when acquiring a unit for amateur use - but watch out for surplus attenuator pads from rallies!

Modern professional diode sensor heads incorporate more than one diode/attenuator combination and an EEPROM.

Surplus Power Meter sensors

Power meters appear on the surplus market quite frequently – some at reasonable prices.

Problem 1 is to find the sensors – especially working sensors!

Problem 2 is to acquire the connecting leads for the detachable sensor

Power meter sensor accuracy

The UK National Standard – NPL can measure:

- Frequency to one part in 10^{15}
- DC Volt to a few femtovolts

But RF power above 1 GHz to about 1% on a good day! A little better at frequencies of 50 MHz and below.

We can group the errors for this type of microwave power meter into 4 areas:

- Meter instrumentation error
- Sensor calibration uncertainty (frequency response)
- Sensor linearity
- Mismatch error (sensor + DUT)

The overall worst case error is the sum of all 4.

This assumes all 4 errors either all add or all subtract so a RSS approach is more realistic

A simplified example:

Meter	0.8%
Sensor Cal	4.1%
Linearity	0.2%
Mismatch	5%
Total	10.1%
RSS	6.5%

In practice we should also add a further 0.5% for the error in the 50MHz, 1mW reference

Narda 20dB 20W 11GHz attenuator

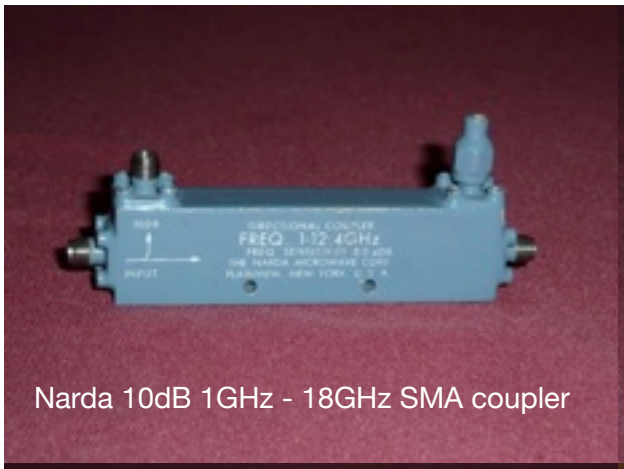
Marconi 6534 series 5W 18GHz attenuators

HP/Agilent 30dB 30W 18GHz attenuator supplied as part of a high power sensor

Useful/Essential Accessories

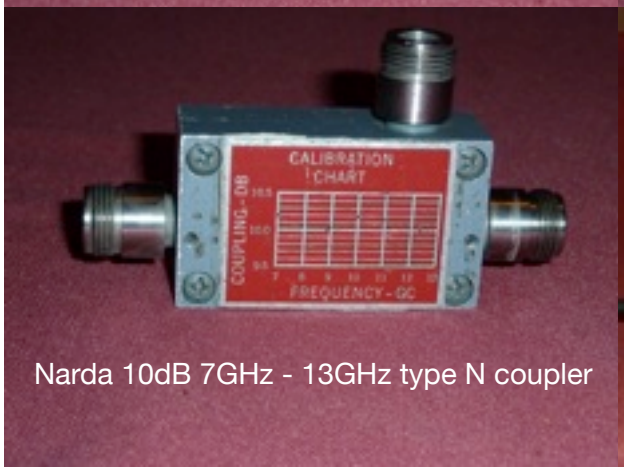
Attenuators (examples opposite)

Directional Couplers, Power Dividers & Power Splitters (below)

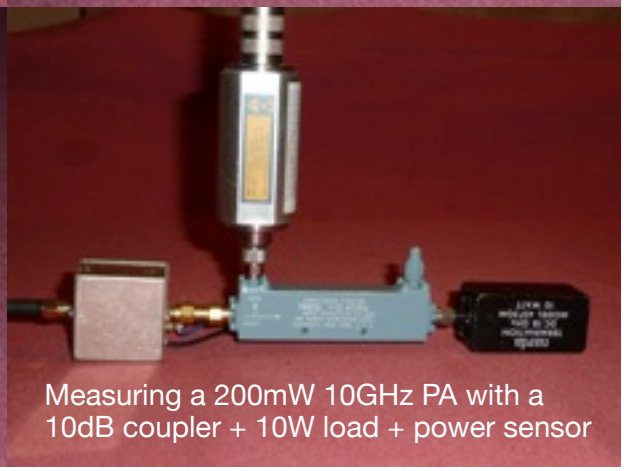


Narda 10dB 1GHz - 18GHz SMA coupler

Weinschel DC - 18GHz resistive splitter

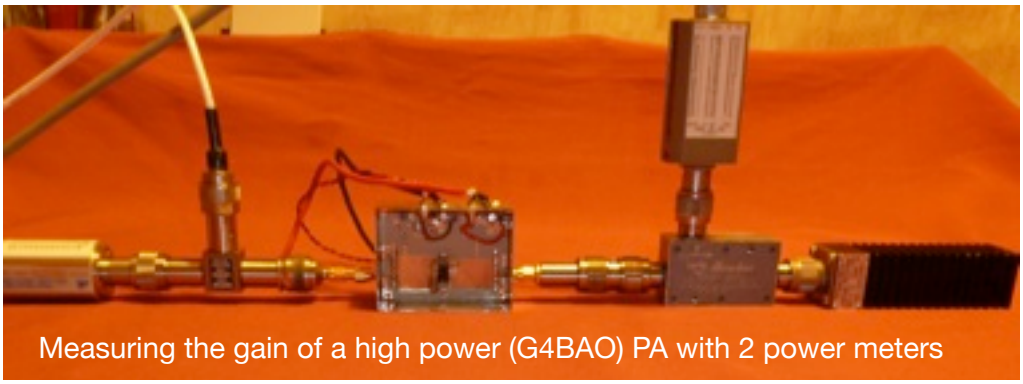


Narda 10dB 7GHz - 13GHz type N coupler



Measuring a 200mW 10GHz PA with a 10dB coupler + 10W load + power sensor

Two Power Meter Application



Measuring the gain of a high power (G4BAO) PA with 2 power meters

Conclusions

A Bird 43 is a useful device for 23cm and 13cm. There are many microwave power meters around from several manufacturers that still do a very good job.

Obtaining meter, sensor and cable is not always easy.

Having a set of useful accessories is essential. Two power meters can be even more beneficial.

Bryan Harber G8DKK

Microwave Field Day 2011 Results

By John Quarmby G3XDY

This was the first outing for this contest. Participation was modest but those entering welcomed the event and are looking forward to next year. Wider publicity will be undertaken to drum up more club interest next time. There were no adverse comments on the format, so the 2012 event will run on similar lines.

Although activity was rather sparse, it was well spread round the UK with 4 countries represented, including rarities such as GI on 10GHz. There was good support from fixed stations, providing the majority of entrants contacts on 1.3GHz. The weather was very windy for many, with some blustery showers around that did provide some rain scatter propagation on 10GHz.

1.3GHz

In the Open Section GM3SEK/P [see p.22], operated by GM3SEK and GM4CXM from near Whithorn, was the winner by a considerable margin. Access to their site proved a problem, but was eventually overcome and the resulting late start did not prevent them running up a good score. Runner up was the Sheffield ARC, G2AS/P, operating from Merryton Low [see p.18].

Neil Ackerley G3RIR/P led the Restricted Section, with some good distance contacts from North Norfolk. In second place is Ross Wilkinson G6GVI/P operating from Winter Hill.

A good crop of checklogs was received, thanks go to G1SMI, G1SWH, G0DJA and G8DTF.

10GHz

Unusually, most of the activity for this event was in the Northern part of the UK, with few contacts from south and east of IO93 square.

In the Open section congratulations go to Alan Dimmick GM0USI/P for a resounding win over Gordon Curry GI6ATZ/P the runner-up. Both stations are recent recruits to 10GHz and this event proved that their systems are working well.

The Restricted Section was won by Richard Newstead GW3CWI/P, operating from the North Wales mountains. Runner up was Colin Shaw M5FRA/P, one of a number of stations operating from around Merryton Low in the Peak District.

A checklog from G8DTF was welcome.

Overall

In the Open section, the Scottish group consisting of GM3SEK/P and GM0USI/P were standout winners on both bands and receive the overall winner certificate, with Sheffield Amateur Radio Club G2AS/P in the runners up spot.

There was a tie for first place in the Restricted section between 1.3GHz winner G3RIR/P and 10GHz winner GW3CWI/P.

Congratulations to the winners and runners-up, who will all receive certificates.

73
John G3XDY
UKuG Contest Manager

August 2011 Microwave Field Day Results Table

Restricted Section

Overall

Pos	Callsign	1.3GHz	10GHz	Total
1=	G3RIR/P	1000	0	1000
1=	GW3CWI/P	0	1000	1000
3	G6GVI/P	781	85	866
4	M5FRA/P	0	600	600
5	GM8OTI/P	324	0	324

1.3GHz

Pos	Callsign	Locator	QSOs	Best DX	Points
1	G3RIR/P	JO02ST	4	G4BRK 238km	589
2	G6GVI/P	IO83RO	8	G8OHM 140km	460
3	GM8OTI/P	IO84AT	2	G1SWH 160km	191

10GHz

Pos	Callsign	Locator	QSOs	Best DX	Points
1	GW3CWI/P	IO83IE	7	GI6ATZ/P 219km	727
2	M5FRA/P	IO93AD	6	GM0USI/P 234km	436
3	G6GVI/P	IO83RO	1	MW1FGQ 62km	62

Open Section

Overall

Pos	Callsign	1.3GHz	10GHz	Total
1	GM3SEK/P & GM0USI/P	1000	1000	2000
2	G2AS/P	227	263	490
3	GI6ATZ/P	0	297	297

1.3GHz

Pos	Callsign	Locator	QSOs	Best DX	Points
1	GM3SEK/P	IO74TQ	17	G0KLX 439km	3933
2	G2AS/P	IO93AD	11	GM3SEK/P 234km	893

10GHz

Pos	Callsign	Locator	QSOs	Best DX	Points
1	GM0USI/P	IO74TQ	8	G3VKV 347km	1684
2	GI6ATZ/P	IO74AI	4	G4CBW 281km	500
3	G2AS/P	IO93AD	7	GM0USI/P 234km	443

Checklogs

1.3GHz	10GHz
G1SMI	G8DTF
G1SWH	
G0DJA	
G8DTF	

Microwave Field Day 2011 Report from G2AS/P

By Peter Day G3PHO

Overall view of G2AS/P. The blue vehicle and dish on the right hand side are those of Colin, M5FRA, who operated 10GHz under his own callsign. It was his first full outing in the band.

Sheffield Amateur Radio Club fielded 23cm and 3cm narrowband, plus a 3cm wideband FM station for this event. The latter was at the request of several UKuG members. The weather was changeable with a stiff, cold breeze and occasional rain showers.

Our chosen site was Merryton Low Triangle, IO93AD, NE of Leek in Staffordshire.

Outside the occasional club lecture by G3PHO, Sheffield ARC members had not experienced microwave radio before this event so it was good to see the following club members come along for the day and get involved: M1ERS, M0TWS, M6KSH, M6KJP, M6EFT, M6HOM plus visitors M5FRA and Connie, KB0ZSG, from Texas. M6s 'KJP, 'EFT and 'HOM had only had their callsigns for a week or two.

G2AS/P 23 and 3cm stations. M1ERS's motor home in the back-ground housed a 70cm stations also

During the day, the aim was not so much to enter into the competitive side of the Field Day but to let the members experience microwave QSOs. All of them were able to do so on both bands, under the club callsign and G3PHO's supervision.

Peter, G3PHO,

provided all the equipment including his very recently refurbished 23cm transverter, an 'ancient' DEM (KK7B) design which had been used until August this year and which still had the original RX front end, the NF of which led a lot to be desired in the shape of 4 or 5dB! A few days before the Field Day, Peter fitted one of G4DDK's latest sub 1dB NF SPF5043z preamps as described in the July 2011 Scatterpoint. The improvement was quite remarkable! Received signals are now much improved and it is now possible to give reports equal or better than the ones received, quite the reverse of what was the case before. The preamp sits behind an interdigital filter while X/RX changeover is now sequenced by a DB6NT board in order to protect the preamp. The overall NF is now estimated to be around 1.2 to 1.5dB, adequate for terrestrial use.

The 3cm gear was the tried and trusty 5 watt DB6NT based transverter built many years ago.

Antennas included a 35 element Tonna Yagi for 23cm and a 1.2m prime focus dish on 3cm. Talkback was 50 watts on 144MHz ssb from an IC706Mk2, the Vodafone 3G dongle failing once again, at this location, to get a reliable signal for use with KST!

Activity on both bands seemed very low compared to the monthly cumulative contests. It was very disappointing to have made the effort to set up a field day station only to be let down by lack of fixed station and other portable activity. It may be the case that a large percentage of UK microwavers are not members of their local amateur radio club and so were not motivated to organise a Field Day station on their behalf. Sadly, there is a misconception that local clubs are not technically minded and are full of ex CB - now FL licence holders who are not interested in microwaves and matters technical. In the writer's view this need not be the case. It's up to us experienced microwavers to carry the message to local clubs that there is a very interesting world above 1GHz!


G2AS/P 5 watt 10GHz station

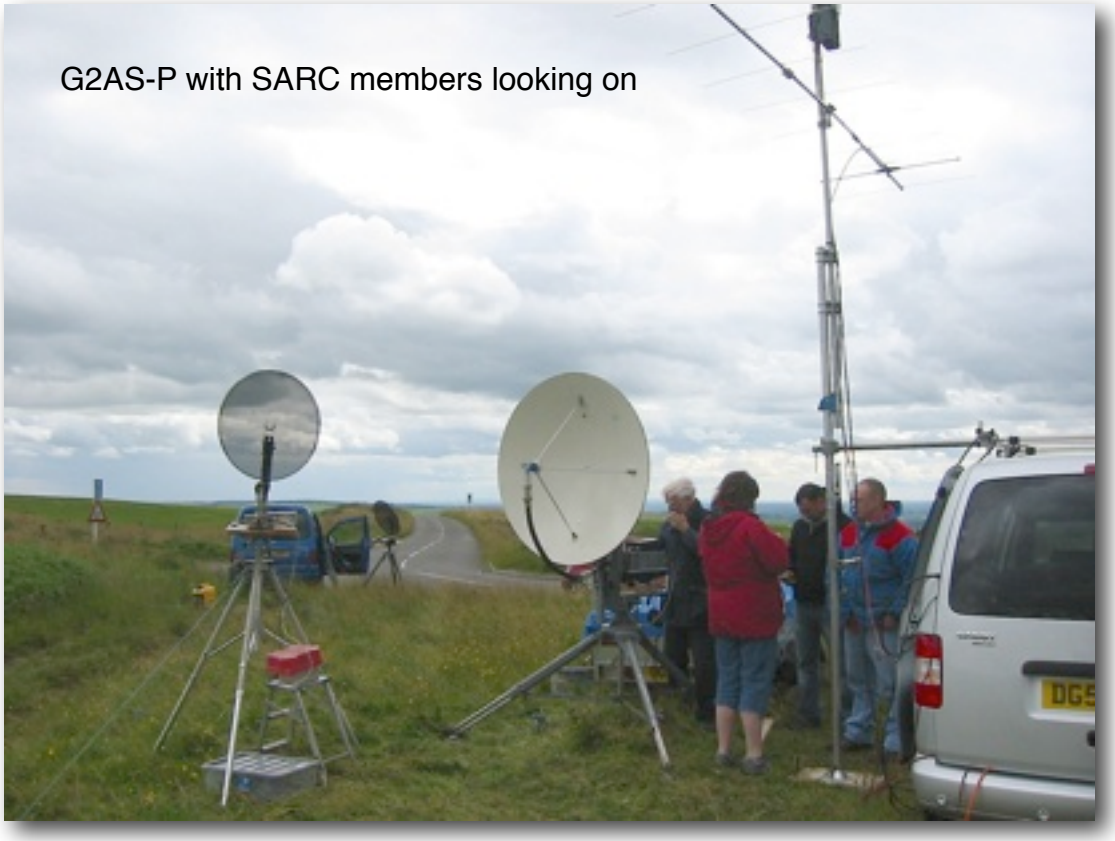
The 2m talkback channel was used to set up a few contacts but most QSOs came from direct calls on 23cm and, in three instances, direct calls on 10GHz! One of these was with Alan GM0USI/P who had an excellent 10GHz signal from IO74TQ. 11 stations were worked on 23cm and only 7 on 10GHz. The best DX was two GMs from IO74TQ, GM0USI/P and GM3SEK/P. An interesting test was done with G0DJA (IO93IF) who tried to work us on 3cm using an indoor transverter to a horn antenna. His CW was clearly heard at G2AS/P but Dave could not hear us in return.

G8AGN/P (IO93EI) and G6GVI/P (IO83RO) both came out with 3cm wideband FM equipment but sadly no contact could be made with them. Both paths are obstructed by Peak District Hills. G6GVI/P did, however,

work MW1FGQ (Near Mold, Flintshire) on wideband. Nothing was heard of M1EGI who had planned to activate his wb equipment from West Yorkshire.

All being well we plan to be out /P in next year's Field Day but we hope more microwavers will take part and that more bands can be included.

Peter Day, G3PHO



G2AS-P with SARC members looking on

G3PHO operating
G2AS/P at IO93ad

3 Squares Awards in a Week

After a quiet time on the awards front, things appear to have got moving during the summer holidays with no fewer than three squares awards in the space of a week.

The first two were for Gordon Fiander G0EWN, for 20 squares on 1.3GHz, which received award number 40 (continuing with the RSGB awards numbering). This included some choice DX worked during tropo openings in the past few years. The second was a 10 squares award for 10GHz, again including some nice tropo contacts, this one was award number 8.

By coincidence, Tony Collett G4NBS also receives certificate number 8, this time for the 60 squares mark on 1.3GHz. Some of the cards were for contacts made back in the 80's in big tropo openings, and included some rare OK and SP squares.

Congratulations to both Gordon and Tony.

I would be very pleased to have a few more claims arriving, for both squares and firsts awards. The rules and application forms can be found on the UK Microwave Group Web Site here.

I hope to have the existing paper records of the winners of squares awards converted for publication on the web site soon.

73 John Quarmby G3XDY,
UKuG Awards Manager

Scottish Microwave Round Table

Saturday 5th November 2011

You are invited to attend the first Scottish Microwave Round Table.

A full programme of talks will be published in due course and will include technical and operational subjects of interest to all microwave operators.

There will be plenty time for socialising during the day, meeting friends old and new as well as putting faces to a lot of callsigns. This will continue later in the nearby Burntisland Sands Hotel for evening dinner.

The Museum of Communication venue will also be well worth a good look around.

There will be a small admission charge of £8 for the day event to cover the room hire, refreshments and a sandwich and finger buffet lunch.

Provisional programme

Talk & refreshment times subject to change

10:00	Doors open
10:30	Introduction and welcome
	Guest speakers, lunch and refreshments
16:00	Close RT
18:00	Pre-dinner drinks at the Burntisland Sands Hotel
19:00	Evening Dinner at the Burntisland Sands Hotel

Keep en eye on the web site for updates

The venue has a limit on numbers, so PLEASE REGISTER NOW to avoid disappointment!

www.rayjames.biz/microwavert/index.html

"We could have done this contest lying down"

Wait a minute, we did!

By Ian White GM3SEK

Once upon a time, GM4CXM and GM0USI decided it would be a good idea to try Microwave Field Day from the SW coast of Scotland. The 'sweet spot' with the clearest sea paths into Englandshire is somewhere near Whithorn, at the southern tip of the Machars peninsula – so, as a local resident, yours truly was despatched to find a site.

The plan was for Ray and myself to operate 23cm using Alan GM0USI's 30W station and 1.2m dish (which therefore put us in the Open section) while Alan himself would operate 3cm.

I found a site, checked for vehicle access both in dry conditions and on wet grass, and Ray arrived on Saturday to help ferry the heavy gear to the top of the hill, ready for an early start on Sunday. What could possibly go wrong?

Rain, that's what. The heavy rain that most people experienced on Sunday during the contest had arrived here on Saturday night and by Sunday morning it had already gone – but the ground had turned so muddy that we could no longer get vehicles up the last steep bank. It was only a short stretch, but nonetheless a complete stopper.

So Ray and I had to carry all the rest of the gear up to the top, and instead of a comfortable car we had to operate from Ray's tiny pop-up tent. Only one person could get in to operate lying down alongside the gear, while the other had to stand outside. This was turning into much more of a 'field' day than we'd ever expected!

We finally got 23cm on the air about 2 hours late, only to find that the contest had been largely washed out because rain was still falling very heavily over most of England and Central Scotland. It then became a slow,

23cm, lying down on the job [GM4CXM]

steady slog to catch whatever stations we could. We only worked two portables so we're very grateful to all those fixed stations who came on during the course of the day... usually with a serial number of 001.

Nobody beams to this far SW corner of Scotland by chance, as it's a long way west of the main axis of G–GM activity. This means that access to talkback is a vital consideration when choosing a site. The peninsula where we had chosen to operate is a notorious mobile black-spot so the hilltop was the only place that had a workable mobile/GPRS signal (3G – what's that?). OZ2M's KST2me program provided the essential KST connection but GPRS was not fast enough to watch for aircraft-scatter opportunities in real time.

Our lightweight operation also meant that the 7el 2m talkback antenna had to be located below the 23cm dish, little more than 1 metre above ground. That was plenty high enough for this particular site, for GB3VHF was a very good signal all day, yet the only one microwave station was raised. Although that 2m link was used to arrange our best DX QSO on 3cm, we could have done exactly the same via KST instead, so it is questionable whether 2m talkback was worth all the additional effort.

GM3SEK operating while GM4CXM looks on [GM0USI]

Alan GM0USI had prudently set up his 3cm gear by the roadside below, which still had an excellent sea takeoff but didn't have a reliable phone signal for talkback. With valuable help from Tony G4CBW throughout the contest, Alan managed 8 contacts into England, Wales and Scotland, mostly at good strength. Best DX was G3VKV in Cheltenham. Although the 23cm station was unable to work GM4ISM, Alan managed it on 3cm using a dog-leg RS path to avoid Mark's local obstructions.

GM0USI/P on 3cm by the roadside [GM0USI]

The 23cm station continued steadily, concentrating on working 'the usual suspects' who are on the band when there's any sign of activity, and ended with 17 QSOs. Best DX was G0KLX (Middlesex). We tried ACS three times with GM8IEM with no signals either way, and another notable *got-away* was G3RIR/P in Norfolk.

Unlike most of the UK, we had enjoyed fine and sunny weather all day, so the track had dried out somewhat by the end of the contest. After carry so much gear uphill that morning, we were very relieved to be able to remove the generator and other heavy items by car.

In all, a great weekend and a very useful learning experience. The Whithorn CG will definitely do it again!

Ian GM3SEK

This article will also appear in the October issue of Radcom.

Telford Expedition to Guernsey

By Martyn Vincent G3UKV

The Telford & DARS Group had their planned mini-expedition to Guernsey, under the club call of GP3ZME/P. The clash with RAL was unfortunate, but certainly not fatal, as results prove. A 24GHz whitewash was saved by Ralph F9ZG/P in IN98JW, who moved his gear a short way to give us a 112km path from IN89RK on that band. We had hoped a move south would result in some effort by UK microwavers to have a trans-channel QSO on 24GHz - but nothing came of this. Where has the spirit of adventure and enterprise gone ?

Anyway – enough of the negative side. Here's a breakdown of what we achieved. The gear was 10W and 23 ele on 23cm (barefoot IC910), 20W and dual band horn feeding a 90cm dish on 13cm, same horn/dish for 9cm with 15W; another 90cm dish and horn for 6cm with 15W, third 60cm dish with sub reflector and 4.5W on 3cm; fourth 70cm dish and 0.5W, also with curved sub-reflector feed for 12mm band.

The microwavers included Jim G8UGL, Martyn G3UKV, Dave G8VZT, Richard M1RKH, Mike G4NKC (+ family members Kim and Lucy). Other ops on site included Paul M0PNN, Dai 2W0ZJA, Peter 2E0ZSU, Peter M1FGN who had a ball on the DC bands with about 850 QSOs total!

We set up on Friday 19th August on a favourite Guernsey site ("Le Coudre") at IN89QK in the SW of the island, with a superb take-off to most of England and Wales. Gently rising ground from about 35deg azimuth clockwise added some semi-local attenuation. At 18:00 we had our first µWave QSO on 10GHz with John G4EAT (JO01HR) at 343Km, then Ralph G4ALY joined in with easy QSOs on 3, 9, 23 and 6cm respectively (162 Km). The following day, Saturday, we had QSOs on 3cm with Claude F9OE (196Km) and Brian G4NNS (214Km). 6cm included F9OE again, David/Peter M0GHZ/2E0NEY (224Km) and G4NNS. On 23cm we worked F9OE, G4KIY, GD8EXI (538 Km), M0GHZ, 2E0NEY, Roger G4BEL. Saturday was also memorable as the day I stuffed 100 watts 2m TX up the 9cm transverter IF output. Oh dear ..... no more 9cm this trip.

Jim G8UGL surveys his 10GHz gear for signals

L to R: Antennas – 2m, 23cm, 13cm, 6cm, 24 GHz, 3cm. G3UKV and G4NKC in the tent

Sunday was contest day, of course, for 5.7/10/24 GHz. We decided that as the French contest lasted only until 13:00 (local), we would find a better site at the SE tip of the island known as Jerbourg (IN89RK) and operate from there in the morning. Superb site for all parts of France, and they sensibly use 2m talk-back (144.390 MHz) which

makes life far easier whilst out portable, although KST was reliable from both sites using a Guernsey SIM dongle lent to us by a local Tetra engineer Gavin. (The T-mobile £5 a week roaming package lasted just one day for some inexplicable reason, with no easy way to add credit - Guernsey does not count as UK!).

All bands (nearly) from 3.6 to 24048 MHz. This is GP3ZME/P August 2011

From this site on 3cm we worked F6APE (IO97QI), F6DKW (JN18CS, 354 Km), F1TBP (IN97GH) and Ralph F9ZG/P (IN98JW) on both 10 and 24 GHz. (bless him!). Then back to base after lunch-on-the-move to IN89QK again, with all bands available.

We had a total of 17 QSOs on 10GHz and 7 on 5.7 GHz during the Cumulatives, plus the 1 QSO on 24GHz. New callsigns (not worked prior to the contest) included G8CUB/P (IO91GN), G3FYX (IO81RM), M0EMM/P (IO82QJ), G4PBP (IO82WO), G4CBW (IO83UB - 404 Km), G0JMI/P (IO90KX), G4ZXO/P and G4WYJ/P (IO90WV), G0OLX/P (JO01BB)G6MXL/P (IO80WP).

After the Cumulatives, we went on to work G8OFA (IO91CB, 23cm), F6DWG/P (JN19AJ, 6cm), G4EAT (JO01HR), F5PEJ ((JN19BQ) and our Best DX of the trip with Peter G3LRP (Wakefield, IO93HO, 472 Km) on both 6 and 3cm. A test on 13cm surprisingly was a no-go.

On Monday and Tuesday, we had many more QSOs on 3, 6, 13 and 23cm. New call signs in the log included G3XDY (JO02OB) on 3/6/13 and 23cm, F1PYR/P and F1DBE/P (both JN19BC) on 13/6/3 cm, G4CBW 13/23 cm, G4BRK (IO91HP) on 6/13 and 23cm, ON4IY (JO20HT) 23cm.

Finally during the UKAC 13cm and up event on Tuesday, new contacts included G8OHM (IO92AJ) 13cm, M0GHZ (IO81VK) on 6 & 13cm and G8GTZ (IO91KH) on 3cm.

So that totalled 75 microwave QSOs, with 12 on 23cm, 12 on 13cm, 1 on 9cm, 20 on 6cm, 29 on 3cm and just one on 24 GHz.
As I had set out with the aim to have at least 30 QSOs on microwave, I would call that a most successful outing.

A few other observations. The sea-path propagation to Bell Hill beacons (GB3SC.. in IO80UU) on all bands was quite strange. We could hear the beacons on all bands (except 24G), and like our last visit in 1994 (when we only had 3cm + VHF/UHF), it generally built up each day from S2-3 to S9+ in the afternoons/evenings until some time after sunset, when it generally dropped in strength. However, on the very misty day (Tuesday 23 Aug), all signals (3/6/13 cm) were minimal, and disappeared altogether on 10 GHz until evening. Our site was 100+m ASL, so not straightforward surface sea-path ducting. We thought we might have a RX fault at one stage! The Cornish GB3MCB on 3cm followed a similar pattern, but did not totally vanish at any stage. Martlesham beacons (JO02PB 401 Km) were heard consistently a few dB above the noise on 13 and 23cm, but not the higher bands. Our own GB3ZME beacons (IO82RP, 360Km) on 6 and 9cm were S1-4 at various times of the day/night every day, which was very pleasing, and quite a surprise!

The effort and cost of the trip (£1000 ++ overall shared) was thoroughly worthwhile from all of our group members' points of view, and I hope we gave many stations their first Guernsey QSO on one or more of the microwave bands. Our thanks especially to Dave Eaton GU8ITE, Mike Corbin (ex-GU8IRF), Gavin (Tetra Engineer) and Dave Henry GU0HRY for their assistance obtaining the site and supporting us in many ways. We suspect there are a few 'firsts' in the results listed above, but we haven't yet had time to fully analyse the results. Any claims, anyone??

Martyn Vincent G3UKV
for Telford & District ARS.

Nanowaves

Successful 46km 850nm contact

By Stuart Wisher G8CYW

Stuart, G8CYW, Brian G8KPD and Peter, G8POG, and Gordon G8PNN set out at 1200 BST today [30 Aug] to attempt to increase the distance worked on 850nm NIR in the middle of the day. Stuart headed for Hisehope Head Co Durham, and all others to Winter's Gibbett, Northumberland. The intention was to be operating at 1307 BST which is the sun transit time today (highest in the sky). We were thwarted by a number of factors including rain, grey clouds and mist at both ends of the path when we arrived at our respective locations, plus Gordon's car had hit a large pothole and damaged a wheel and tyre on the way. Brian and Peter went to his help and eventually the RAC were called and Gordon had to return home, so we were one 850nm station fewer. Brian and Peter returned to their site later, more rain and wind were in evidence, but after nearly two hours and a weather radar report from Eddie G0EHV said that things were getting better, we set up.

The stations were both using LED transceivers and single optics.

This time we had decided there were to be no visual aids such as beacons or strobes, instead both remaining stations had aligned their optics to a higher accuracy than ever before hoping simply to beam accurately at each other. Stuart began radiating a 20kHz subcarrier on 850nm and almost immediately Brian picked up a tone on LSB, which was confirmed by Stuart keying it on and off. Both rigs were then adjusted for aim and we were in QSO around two minutes later, the quickest set up time we had ever managed. Signal reports were exchanged at 59 both ways on SSB, FM was also tried, signals were strong but fluttering so much it made copy difficult. The wind which was forecast to be at 10mph, but it was at least 30mph on the tops, causing the gear to vibrate and much turbulence in the atmosphere. This was another case where SSB gave a better result.

We then went into conversation mode on SSB which as stated, won the day over the atmospheric conditions. We actually made contact within a two hour period around local noon, but I did not get round to recording a sample until a few minutes after this. We maintained the contact on various tests for around 90 minutes. After the rain the sky cleared up and there was even sunshine at times.

So, having dispensed with the visual aids and made contact despite the inclement conditions, we moved on to the next trial, which was to use an iris plate attenuator to reduce the signal by a known amount. Put simply, a 6dB attenuator (which reduced the area of the Fresnel lens by a factor of four to roughly a rectangle 10cm by 14cm) reduced signals on SSB to 57 one way and 58 the other. This roughly simulates the signal level at twice the distance without taking account of the larger extinction coefficient at that distance.

The iris plate can also achieve a 12dB reduction in signal strength,(which meant we were operating through a silly little hole roughly 5cm by 7cm in a sheet of cardboard in front of the lens) was duly tried next. Although Stuart clearly copied Brian with it in place, the wind ripped the cardboard attenuator off the front of the rig and hurled it across the road. Stuart recovered this before it got run over by a passing car. We were not able to fully explore this due to some re-aligning being necessary due to the rig being buffeted by the strengthening wind, but it indicated that a further signal margin was available. We gave up with the attenuator at this point as it was felt that the result at 6db alone was useful.

We also noted that the received noise level due to daylight was around S3-4 using 850nm long-pass filters in the rigs. Removing my filter increased the noise to S6-7 so the use of a long-pass filter is a benefit, particularly as it had no effect on the wanted signal. The iris plate had exactly the predicted effect on the noise level as was expected, the 6dB aperture reducing the noise (and signal) by 2 S-points.

So our result is that subcarrier communication “in the middle of the day” is possible using 850nm NIR, at 46km distance.

Stuart G8CYW

View from the Drey

Reflections on a Reflector

By Secret Squirrel

More Summer madness close to the drey this month. As it's BBC Proms season, Him Indoors organised a lunchtime concert for all his friends. There were LED lights in the garden, despite it being bright sunshine and the event drew an audience of hundreds, including some passing bird hunters from the Southern Mediterranean, looking for my friend the magpie, (who they all referred to as "the New MIMIC" because of his tendency to impersonate other birds in an effort to escape their guns)

The Lunchtime concert featured that well-known Celtic folk band, "The Wobbly Tripods" who played their minor hit ***I still haven't found the beacon*** and were supported by some fine (GPS) Jammin' by reggae stars, the Blue Hand Gang, last seen during the "Concert on Snowdon" earlier in the year.

The second half of the concert, quite frankly, went on for far too long. It featured the premiere of a new work by Karlheinz Stockhausen, ***Hast du nichts Besseres zu tun?***

The piece starts with an homage to John Cage; 15 minutes of silence, during which time each member of the orchestra takes the Amateur Novice exam, then, on completion, shouts an Amateur radio callsign at random intervals, and with increasing ferocity until the final bars when the local Ofcom officer closes the work by arresting the string section and the principal Tuba player for misuse of their new license. This piece has attracted much critical acclaim from both France and Stockhausen's native Germany.

I continue to be amazed when I reflect on what him indoors gets up to each month, and will of course continue to report it to my readers.

IARU Region 1 Microwaves Contest

By Martin Henz DL5NAH

On behalf of the IARU, Region 1 I would like to invite you and your fellow radio amateurs to participate in the annual IARU Region 1 145MHz Contest and the IARU Region 1 Microwaves Contest, which will take place, as usual, on the first weekend in September and October.

03./04.09.2011 IARU-Region-1 145 MHz September Contest

01./02.10.2011 IARU-Region-1 UHF/Microwaves October Contest

This year the German Amateur Radio Club (DARC) is adjudicating these contests.

Please read the Rules of these Contests, based on chapter 5 in the VHF Manager's Handbook V 5.40.

Logs in standard digital format (EDI, REG1TEST) shall be sent to: dl5nah@darc.de.

Deadline for Logs (contest managers):

23.10.2011 IARU-Region-1 145 MHz September Contest

20.11.2011 IARU-Region-1 UHF/Microwaves October Contest

Participants from countries that do not have VHF Manager or Contest

Committees nominated can, by exception, send logs directly to the

email: dl5nah@darc.de (deadline for logs: 12.09.2011 and 10.10.2011).

Good luck in the contest.

Martin, DL5NAH

Activity News

from the world above 1000MHz

By Robin Lucas G8APZ

This is not the column I had originally prepared for the September issue! That was almost complete at the end of August, when Murphy struck. The word processor document disappeared from my computer, without a trace. I didn't delete, rename, or overwrite it, nor was it in the recycle bin, so you can imagine I was rather “upset” about it to say the least! Some of the content will be impossible to reproduce, but I had to bite the bullet and start again. My apologies if I have omitted something which I ought not to have.

August has been a very hot and sunny month here in SW France, and with that usually comes storms and rainscatter opportunities. Many events have occurred both in France and Germany, and I’ve had the good fortune to have been in on some of them.

This month, we report a number of “firsts” which is always a pleasure … it shows that there is always a challenge remaining on microwaves!

10GHz First from E7 to DL

On 6th August, the first QSO on 10GHz between Bosnia Herzegovina and Germany was made on rainscatter.

Claus DL7QY made contact with E7/9A6K (JN84tg) via a scatterpoint at JN67er over a distance of 788km. Signals were 559/559 – clear signals without the usual distortion.

The group at the Bosnian end of the contact used 8W into a 120cm dish, from a mountain site at 2000m altitude.

Claus used 17W into his 0.7m dish which is mounted at 570m asl. It is of interest to note that the scatterpoint was about 250km from Claus, but 520km from E7/9A6K. Signals lasted for over two hours, peaking at S7 for more than an hour!

Claus went on to work E77Y (JN84tg) for his second E7 station on 10GHz.

The team at E7/9A6K also worked:

9A2SB, 9A3AQ, I6XCK, S51ZO, 9A1Z, OK1JKT, DL7QY, DC8EC and OM1GX, HA8MV/p, SP6GWB and I4XCC on 10GHz.

Radio Club Josipovac DXpedition members are pictured here on their DXpedition QSL card. On the left 9A4WT and in the centre Marin, 9A5MT

24GHz First from SM to OH0

On 5th August, OH0/OH2AXH (JP90sf) and Per, SM0DFP (JP90jc) worked each other on 24GHz over a 44km path at 59/59.

Although the distance is modest, it is believed to be a “first” between Sweden and the Åland islands.

Per used 500mW with a 40cm dish, and the OH0 team consisting of Pertti OH2AXH and Jukka OH6DD ran 1W and a 40cm dish.

Per, SM0DFP lines up the dish on 24GHz.


Per, SM0DFP

47GHz First from SM to OH0

On 6th August the team repeated the distance, but this time on 47GHz with 559/559 exchanges. SM0DFP used 20mW on TX with a 20cm offset dish, and a prime focus 25cm dish on receive. The OH0 team had 50mW and a 40cm dish.

On 7th August, the distance was increased to 55km with 599/599 during an early morning test from JP90vc. The early morning conditions produced very good signals indicating that a much longer path is possible.

July Cumulative contest

Steve, G1MPW, combined a family visit to the West Country with some microwave activity to operate in the July cumulative from Dunkery Hill (IO81) on Exmoor. Because of very limited space in the car, his activity was limited to 10GHz. There was no room for either 144MHz or 24GHz but ‘KST was used for talkback. A total of 8 QSOs were made, seven of which were home stations. The ODX was G4DDK at 347km.

Using 'KST on Exmoor proved to be difficult, with limited 3G coverage for the data card. Steve tried the Vodafone and T-mobile networks, but coverage was patchy. Apologies from Steve to the stations who were left in limbo waiting for a reply that never came on ‘KST.

A National Trust LandRover turned up about lunchtime, and after a bit of litter picking , the Ranger walked over. Steve expected the usual grilling, so he put on the headphones and hoped for the best! … but the Ranger wasn’t going to be put off. “Are you contesting or just operating?” he asked with a grin on his face. He happened to be a local G3! After a quick chat he departed quite happy with a parting comment of “Good luck in the contest”.

Around the bands

From: John Quarmby, G3XDY, JO02ob

Thanks to some recent expeditions and rainscatter there is actually something worth mentioning this month. Extensive tropo seems however to be notable by its absence this summer.

Starting in the morning of 31st July I worked LA3EQ (JO28) on 1.3GHz on SSB from his home location behind a hill. This was followed by F6FHP (IN94) on 2.3GHz. Later on in the cumulative contests I worked a couple of stations on 5.7GHz and half a dozen on 10GHz but conditions had dropped away by then.

On 2nd August OZ1FF (JO45) was worked on 10GHz tropo, but signals were weak.

There was a good rainscatter opening to Germany on the afternoon of the 18th August. The first contact was DL7QY on 10GHz in JN59 at 55s both ways, we then tried on 3.4GHz and made a successful contact at 708km, my best DX so far on 3.4GHz rainscatter and a new square.

After returning to 10GHz, I worked DJ1KP (JO40) with good signals, followed by DB6NT (JO50) on both 3cm and 6cm. I heard Michael on 9cm as well but he could not read my signals on that band. DF6NA (JN49) was loud on 3cm but we could not hear each other at all on 9cm when we tried - very odd.

The next RS opening was on 22nd August, starting with some inconclusive tests with Robin F1VJQ (IN95). I then worked the Telford Group expedition to Guernsey on four bands (23/13/6/3cm) for new countries on 13cm, 6cm and 3cm, and new squares on 13 and 6cm. Later in the evening the RS improved and after working DH8AG (JO31) I tried again with F1VJQ on 10GHz, and after some searching we succeeded in making a QSO at a distance of 747km for a new square.

In the French activity day on the 28th August I worked ON4IY (JO20) on 13 and 3cm, F1DBE/P (JN09) on 23/13/6/3cm and F6APE (IN97) on 6cm, the latter was by aircraft reflection, the first two aided by some light rainscatter.

73, John G3XDY

From: Robin Lucas, F1VJQ, IN95ol

During August whilst I'm in SW France, I've been able to catch some of the rainscatter openings, and a bit of good tropo too. I've had many contacts during the month on 3cm, but I will only include a selection here!

On 7th August, I had a 56/56 contact with F6DWG/p in IN77 for a new square, and on 10th August, tropo to G4ALY (IO70) with 55/54 reports on SSB at 611km.

On the 20th, a contact with F5DQK (JN18gr) with 45s/58s reports gave Marcel a new square at 441km.

Excellent rainscatter conditions lasted throughout the day and late into the evening on 22nd August. I worked ON4IY 55s/52s with my poor CW at 716km, and then John, G4EAT on SSB at 55s/55s over the 703km path. An attempt with G3XDY during the morning failed, though we both heard each other briefly. Later in the day however, we tried again, when a suitable scatterpoint was mid-path, and this time made it with reports of 52s/51s (CW) at 747km, a new square for both.

On 23cm, the 10th produced some good tropo, and contacts with G6HIE (IO90) at 59 both ways, M0CFO (IO90) 58/59, and G4ALY (IO70) at 55 both ways. On 11th, the conditions were very good, and I as able to work ON4IY (JO20) at 55/55.

Rainscatter on 10GHz

On 18th August, Dominique, F1NPX/p worked some good distances on 10GHz during the evening. He didn't have any talkback or 'KST so operation was random. With his 5W and 1.2m offset dish, he worked PA0TGA (JO21) 295km, DF9QX (JO42) 438km(new#), PA0T (JO33) (with just 200mW) 456km(new#), DG9YIH (JO32) 375km, F5PEJ/p (JN19) 162km, DB6NT (JO50) 551km, and F1PYR/p (JN19) at 159km.

On 25th August Guy F2CT/P (IN93gj) had some very strong rainscatter signals during the evening on 10GHz.

He had an SSB QSO with HB9AMH (JN37) 55/53 at a distance of 806km for his first QSO with HB9, and a new square. Philippe, F6ETI (JN05) was worked on CW with 55/57 reports with F6ETI running just 600mW. Guy was receiving the HB9G beacon at 55S for nearly two hours. An unfortunate mix up meant a failed attempt with DL7QY (JN59) at 1093km. Guy heard Claus, but despite several attempts, no QSO resulted. Guy had made an error in his transceiver split which did not allow for 4kHz of Doppler shift.

Extended Tropo

On 11th August, a tropo lift was not entirely unexpected, since stations had been observing the Hepburn map, and conditions were good during the evening of 10th August.

At around 0:30 local time, Dom, F6DRO (JN03tj) noted tropo to IO70, IO90, and JO10, with all stations at 59. After a few QSOs on 2m, he moved to the microwave bands.

On 3cm, a test with Ralph, G4ALY (IO70) resulted in a CW QSO where the signals were not strong, but enough. Easy QSOs with Ralph on 13cm and 6cm followed, with 579 reports on 6cm.

Several tests with ON4IY produced nil results. Dom, has been trying to work ON4IY on 3cm for a long time. He finally achieved his objective during the late morning of 11th August.

The contact was described as "pretty easy" (weak but OK). Dom points out that it is an 855km QSO between fixed stations (not up at the top of a mountain!) and the Massif Central is between the two stations.

Dom adds that his "semi crappy" station has the antenna at 1.8m high and there are obstructions everywhere, but it was nevertheless, a very significant QSO!

Christophe, ON4IY described the propagation as the finest towards the south for at least 15 years. He could remember JN02 on 23cm, but that was before 2000. During this lift, he had 23cm contacts with F1VJQ (IN95) 716km, and F6CBC (IN94) 765km. On 3cm, F6CBC, and F6DRO 855km.

6cm Tropo DX

On 20th August at 09:45utc, Guy, F2CT (IN93gj) worked Theo, PA3AWJ (JO21gw) on 6cm over a 1049km path. Theo was using 18W into a 1.1m dish, and Guy had 35W into an 80cm dish.

Beacons

The old HB9G beacon is being tested at JN36bg, for future use in JN28. It runs about 700mW on 10368.866MHz to a slotted waveguide antenna 12m agl.

On 14th August, F6ACU (JN38fc) reported hearing the beacon for the first time on 10GHz rainscatter at a distance of 205km. That isn't a particularly unusual distance, but what was unusual was that he was using a simple satellite TV LNB resting on his window sill, without a dish, and getting a S7 signal.

He also received the LX1DB beacon at S9+ with very distorted signals.

JT4 modes

In a short exchange of messages on one of the EME loggers, Joe Taylor, K1JT told me that the "experimental mode" JT4 is here to stay. Great news for beacon ops!

Alimast

A few months ago, I mentioned that the M1CRO/p group were testing a new mast. John, G4ZTR informs me that the lightweight mast sections are now in production, at a special price until the end of September. Details can be found on the website www.aerial-parts.co.uk

Maritime propagation

On 19th August, EA3XU (JN11ck) worked IW5BSF/5 (JN53ev) on 10GHz with 59+ signals. The distance is 722km. Excellent!

...AND FINALLY

The Microwave Field Day, and the Telford DXpedition to Guernsey are covered in separate articles in this issue. The group were certainly very much in demand, but unfortunately not all who were chasing them managed to make contact! I was but despite several attempts on 3cm, it didn't go.

Is there really a pot of DX at the end of the rainbow, or was I dreaming!

It was four years ago this month that I offered to write this column. That time has passed very quickly, but I have now decided that it is time to pass the baton on, and so my last column will be the November/December one.

73, Robin G8APZ/F1VJQ

Please send your activity news to:

scatterpoint@microwavers.org

Events calendar

Sept 10	56.UKW Tagung Weinheim	www.ukw-tagung.de/
Sept 11	Crawley Roundtable	See page 5
Sept 24–25	ARI EME Contest 18 CW / SSB Bands: 144 MHz & up,UTC 00:00-24:00 www.contestvhf.net/ Enrico Baldacci	
Sept 30 – Oct 1	National Hamfest	www.nationalhamfest.org.uk/
Oct 7-9	RSGB Convention, Horwood House, Milton Keynes	www.rsgb.org/rsgbconvention/
Oct 9-14	European Microwave Week, Manchester	www.eumweek.com/
Oct 13-16	Microwave Update, Enfield, Connecticut, USA	www.microwaveupdate.org/
	Crowne Plaza Hotel, 1 Bright Meadow Boulevard, Enfield, CT 06082,. Rooms $99. Sponsored by N.E.W.S. Group. This is where the Eastern VHF/UHF Conference has been held for the past 10 years. Additional info email n2liv@arrl.net and w1ghz@arrl.net for details.	
Nov 5	Scottish Microwave Round Table	www.rayjames.biz/microwavert/
2012		
Aug 16-19	15th International EME Conference, Cambridge, UK	eme2012.com
Oct 29 – Nov 2	European Microwave Week, Amsterdam	www.eumweek.com/

Contests & Activity Dates

September

20-Sep	1900 – 2130 1.3GHz Activity Contest Arranged by VHFCC (RSGB Contest)
25-Sep	1000 – 1600 5th 5.7GHz Cumulative
25-Sep	1000 – 1600 5th 10GHz Cumulative
25-Sep	1000 – 1600 5th 24GHz Cumulative
27-Sep	1900 – 2100 2.3GHz+ Activity Contest Arranged by VHFCC (RSGB Contest)

October

1–2 Oct	IARU-Region-1 UHF/Microwaves October Contest
1-Oct	1400 – 2200 1.3 & 2.3GHz Trophies Arranged by VHFCC (RSGB Contest)
1/2-Oct	1400 - 1400 432MHz & up Arranged by VHFCC (IARU/RSGB Contest)
18-Oct	1900 – 2130 1.3GHz Activity Contest Arranged by VHFCC (RSGB Contest)
25-Oct	1900 – 2100 2.3GHz+ Activity Contest Arranged by VHFCC (RSGB Contest)

French Journées d'Activité (JA)

Activity dates cover all bands from **23cm** up.

24-25 Sept	Activity weekend 25th matches UKuG
29-30 Oct	Activity weekend

Duration of all JA is 1700 Saturday - 1700 Sunday

EME Activity weekends

24/25-Sep	ARRL Microwave EME (Arranged by ARRL)
22/23-Oct	ARRL EME (Arranged by ARRL)

The RSGB 2011 VHF+ Contest Calendar is available at www.rsgbcc.org