An Amateur Radio publication for the Microwave Enthusiast

scatterpoint

June/July 2012

Published by the UK Microwave Group

The Finningley Optical Transceiver Construction Project

As seen at Finningley Round Table

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

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Editor's corner

Back to a bumper issue for June/July. Big report with pictures on Finningley, technical article by Andy G4JNT, expedition and contest reports. Sadly though we have three Silent Keys: Joel F6FHP, Ed WA3BZT and Terry Stevens, G8DKS.

73 de Martin G8BHC

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

Schematics: sch (Eagle preferred)

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

Thank you for you co-operation.

Martin G8BHC

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) 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!)

Colour codes

Editorial & Events

Activity & Contests

Technical

Nanowaves (optical)

Commentary

Reproducing articles from Scatterpoint

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Silent Key – Joël Oulié F6FHP

In respect to his wishes, it is with great emotion and great sorrow that I have the sad duty to announce the discreet disappearance of our friend, Joël F6FHP.

Joel joined the Silent Key on Saturday, May 26th swept away by the illness of the century, which he knew he was reached for only three months and against which, however, knowing his days were numbered, he tried to fight with dignity.

A few days before his hospitalization occurred on May 21st, we spent an afternoon together in the maintenance of its long Yagi antenna 50MHz, certainly he was extremely weak but no less devoid of perfectionism and control.

Full OM, DX and experienced man, Joël F6FHP was an excellent operator and a very active emeritus technician internationally known and recognized (MS, EME, Tropo/ MW, etc. ..).

In accordance with his instruction Joël will be cremated in the strictest privacy by tomorrow, Thursday, May 31st 2012.

Responsible for making the link with his family, he agreed that I will pass all testimony in memory of Joël.

73S 'QRO, Sylvain F6CIS

Silent Key – WA3BZT

Edward J White had planned to attend EME2012 but cancelled on medical advice and died early July.

From his QRZ entry:

EME 4 2MPX20 GU78b 1.5 kW JT65B & CW

HF 160-2 mtrs 100% QSL

Ham since 1963 WN3BZT

NAVY MARS 1964 to 1989 NNN0IUO

USAFR/ANG 40 years Flight Engineer, C-97G, C-130A, C-5A,C-141A & B

Member of the Pack Rats and First State ARC, AWA, AMSAT, DUBUS, SVHFS

ARRL Life Member

Enjoys old radios and Military radios

Silent Key – G8DKS

From RadCom: “It is with great sadness that the RSGB has learned of the death of Terry Stevens, G8DKS, RSGB VHF Manager. Only recently Terry was representing the Society at meetings in Friedrichshafen. Our thoughts are with his family at this time. Meanwhile, David Butler, G4ASR has offered to step into the role until a permanent VHF Manager can be appointed.

RSGB Thanks to Sam

Sam,

On behalf of the RSGB Board, and I'm sure all the members of this Forum, we'd all like to thank you for all the hard work, help and dedication you've put in over many years representing UKuG not just on this Forum. I would also like to thank you for your wider contribution to the Society through your continuing support for RadCom and the RSGB Convention.

You've always been and I'm sure will continue to be a huge supporter of the hobby in general and microwave in particular and a shining example of how Radio Amateurs conduct themselves. That enthusiasm and example has gone a long way in helping define how Special Interest Groups can flourish alongside the Society, with the obvious mutual benefits.

We all wish you well for the future and I look forward to seeing you at some time in the future.

73,

Dave, M0OBW

President

WANTED

SSPA for 5.7GHz in the range 5W to 10W plus PLL VCO in the range 5 – 6GHz.

Contact Henri Rouit, F2HI at

henry.rouit (at) wanadoo.fr

For the avoidance of rainscatter

Thanks to Tom G4TWJ for the picture

MMRT Noise Figure Results

By John Quarmby G3XDY

29-Apr-12			Tcold =	296.00
Band	**Callsign**	**System**	**Gain (dB)**	**NF (dB)**
30MHz	G3XDY	MAV-11 Gain Block	10.2	4.00
144MHz	G4KUX	HA8ET XTRA-2 Contest Preamp	11.3	3.80
	G3XDY	MAV-11 Gain Block	10.4	3.70
	G4BAH	Landwehr 144MHz preamp	18.65	1.43
	G4BAH	Landwehr 144MHz preamp	18.8	1.25
	G3VZV	High Sierra Microwave 144MHz preamp	19.35	2.25
	G0MRF	SPF5043Z with SAW and LC filters (average of 8 tested)	10.35	2.18
432MHz	G3XDY	MAV-11 Gain Block	10.3	3.78
	G4DDK	G4DDK VLNA70	42.5	0.34
	G4BAH	Landwehr GaAs 435	16.55	1.10
	G8GTZ	SPF5043Z	6.03	0.94
1.3GHz	G4NNS	ATF54143	17.2	0.49
	G3XDY	MAV-11 Gain Block	8.1	4.75
	G4NKC	2 stage G3WDG preamp	34.4	1.38
		G4DDK VLNA	32.8	0.52
1.42GHz	G4NNS	G4DDK VLNA2 V3	36.5	0.22
		G4DDK VLNA No 1	34.9	0.25
		G4DDK VLNA No 2	33.9	0.22
2.3GHz	G4NKC	DJ9BV 2 stage preamp	39.94	0.54
3.4GHz	G4NNS	G4DDK VLNA	19.1	0.92
		G4DDK VLNA after tuning	20	0.68
	G3LYP	Transverter	12.4	6.75
		MGA86576 Preamp	24.8	1.75
		DEMI AT36077 2.3GHz preamp	12.3	0.60
		SPF5043Z	9.55	2.58
	G4NKC	2 Stage DJ9BV	38.6	0.76
	G3WDG	MGF4919G With lossy lid	17.45	0.38
		MGF4919G With metal lid	14.36	0.64
	G8CUB	C Band LNB modified	39.73	1.02
5.7GHz	G4NKC	DJ9BV single stage NE326	10.87	0.92
	G3WDG	MGF4919G With lossy lid	11.95	0.96
		MGF4919G With metal lid	12.05	0.64
	G8GDZ	Commercial LNAs (average of 6 tested)	15.48	2.25
10GHz	G3XDY	DK6JL Preamp	10.95	0.87
		DK6JL Preamp + DB Products Transfer Relay+adapters	10.3	1.20
	G4DDK	DB6NT MKU 10G3 Transverter	23.4	1.25
24GHz				

Noise Head Return Loss Tests		
Using Agilent 6GHz Scalar Network Analyser		
G4DDK HP346A		
Freq	Noise Off	Noise On
MHz	Return Loss (dB)	Return Loss (dB)
150	58.8	45.2
433	52.8	44.4
1301	37.9	36.0
2312	36.9	40.1
3392	37.1	40.0
5765	27.1	26.6
G3LTF HP346B + 10dB pad		
Freq	Noise Off	Noise On
MHz	Return Loss (dB)	Return Loss (dB)
150	63.9	45.4
433	57.5	46.3
1301	40.7	43.8
2312	34.5	36.2
3392	34.0	34.9
5765	27.5	26.9
G4NNS Noise Head		
Freq	Noise Off	Noise On
MHz	Return Loss (dB)	Return Loss (dB)
150	41.3	44.2
433	45.3	38.4
1301	28.4	27.3
2312	5.9	6.0
3392	24.6	24.3
5765	38.8	41.2

Beacon Co-ordinator

There are over 50 microwave beacons with around ten more awaiting approval from Ofcom in June 2012. The microwave beacon co-ordinator has a number of roles of which the key ones are listed below (in no particular order)

- General advice on what is needed to run a beacon
- Technical advice on building and maintaining beacons
- Vetting draft applications
- Allocating frequencies
- Allocating callsigns
- Advising potential beacon keepers about the commitment needed on a long term basis
- Liaising with the RSGB appointed licensing liaison person
- Occasional liaison with Ofcom (or equivalent)
- Periodic (every five to ten years) review of the status of all beacons
- Encouraging beacon keepers to upgrade/ repair their beacons
- Allocating UKuG funds for capital expenditure as appropriate
- Joint moderator of beaconspot.eu

Any detailed questions about the role should be directed to Graham, G4FSG. Expressions of interest in the role should be directed to John, G4BAO.

Noise Head Cal						
Freq	N (dB)	1	2			
1296	5.18	5.39	5.09	5.18	Martlesham Source	
1296	15.08				M source +9.90dB	G8GXK Source
10368	5.59				2.31db Transverter	
10368	4.13				3.47dB indcated	G8GXK source with 10dB pad
10368	15.33				-7.44dB indicated	

If… Motoring journalists wrote Amateur radio blogs…

J C (Worsnop) looks at something new in the pipelines.

It's often said that "good things come to those that wait." Well I've been hearing whispers from the far West of Wales of a slumbering giant that is stirring in to life again.

Back in the distant days when a web was something only spiders used, and mail was something delivered by a small grey haired man on a bike in a paramilitary uniform, a small company produced 1980s tech, radio add-ons with noise figures to liven up even the most profoundly deaf VHF rig and transform it with large signal handling to make your eyes water.

This dream factory that was once Mutek, closed many years ago, and its founder Chris Bartram GW4DGU went over to the "dark side" of professional wireless consultancy.

I had the pleasure of meeting Chris at Finningley this month and he hinted to me that, now he has produced a second generation of wireless gurus (his son Ben, who works for a Wireless outfit near Cambridge) he was returning to do some more Amateur Radio projects.

The whispers I've been hearing recently have been of a "New generation of 10GHz transverter," with a performance and a price to make 10GHz very affordable for people who don't own a mansion in Hampshire and a BMW M5.

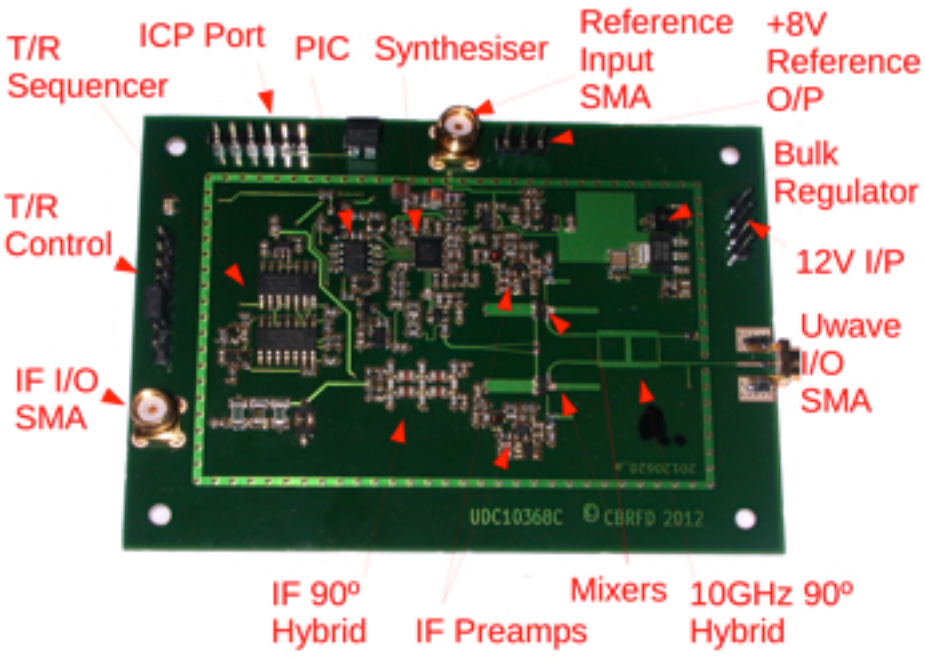
Well I had a sneak preview of this device the day before Chris' talk at Finningley.

In essence it's a single small PCB with a 10368/144MHz up down converter based on a 90 degree hybrid mixer with an on–board synthesised local oscillator, run from an external 40MHz reference. All the smarts required for TR switching and sequencing are provided on the board and a processor that controls the synthesiser

To make a complete transverter it will require an image filter, LNA and 40MHz reference. Chris tells me that he has an image filter available, and has already done a design for a simple reference and a linear PA to take it up to the 50mW or so required to drive a higher power PA. It all comes with fitted brass screens so little metalwork is required.

While this will not suit the type of Amateur who buys ready made patch cables and G5RVs in a bag, anyone who can connect some PCBs together and put them in a nice box should be able to put together a high spec 10GHz system with no tuning required for considerably less than you might do with certain silver boxes from Germany.

I will publish a full preliminary spec for the unit in next month's Scatterpoint, and I await the opportunity to hand Chris some fivers and get my hands on one. If you are interested, drop Chris an email at cbartram@theiet.org



GW4DGU 10GHz Up/downconverter

©Christopher Bartram 2012

EME 2012 News

Cambridge 16–18 August 2012

Book here [eme2012.com](eme2012.com)

The Presenters

Al Ward W5LUA	Introduction to EME on 24 GHz and higher
Alex Artieda HB9DRI	The IQ+ dual channel receiver – a practical implementation against Faraday rotation
Allen Katz K2UYH	Simple and low cost solutions for high gain on 70 and 23 cm using offset dishes
Brian Coleman G4NNS	Some simple hydrogen line astronomy
Charlie Suckling G3WDG	Application of GaN transistors to SSPAs for EME use
Charlie Suckling G3WDG	A novel 13cm receive converter
Daniela de Paulis	Visual Moonbounce: moonbouncing images as a new practice in moonbounce technology
Dave Powis G4HUP	Stresses on ropes and cables when raising and lowering towers
Dave Robinson WW2R	Control and monitoring of EME solidstate amplifiers
David Morgan	Detection of extra-galactic radio source Virgo A
Doug McArthur VK3UM	Inaccuracies that will lead to a deficiency in your EME systems performance or Why the other guy does better than you!
Doug Millar K6JEY	A Comparison of Wattmeter accuracies at 432MHz and 1296MHz
Eddy Jespers ON7UN & Walter Crauwels ON4BCB	ON0EME 1296MHz Moon beacon
Gaëtan Horlin ON4KHG	Ground gain
Gudmund Wannberg SM2BYA	The 2.3–2.45 GHz spectrum situation and current threats in Sweden, Europe and worldwide
Howard Long G6LVB	Taking software defined radio into the mainstream
Hannes Fasching OE5JFL	Gaining extra dBs from a small dish
Ian White GM3SEK & David Stockton GM4ZNX	Noise Figure measurements: A reality check
Ingolf Larsson SM6FHZ	Unexplored areas of 432MHz feeds
Ingo Gaspard DF1VH	Solid-state broadband un-cooled noise generator with noise temperature below room temperature
Jan Van Muijlwijk PA3FXB	PI9CAM history and restoration
Joe Taylor K1JT	MAP65: A wideband polarization-matching Receiver for JT65
John Worsnop G4BAO	Converting surplus 1900/2100MHz SSPAs
Manfred Ploetz DL7YC	For a few dollars - 40 more watts at 3400 MHz
Mike Watanabe JH1KRC	A brass bar and a rotation mechanism for MAB25 encoders
Murray Niman G6JYB	Frequencies for EME
Paul Marsh M0EYT	Amateur deep space reception – equipment and techniques
Paul Wade W1GHZ	Horns and septum feeds – Construction tolerances and sensitivity
Peter Blair G3LTF	How good were the systems of the 60s and 70s?
Sam Jewell G4DDK	An update on the VLNA
Zdenek Samek OK1DFC	EME DXpedition IS0/OK5EME
Zdenek Samek OK1DFC	Loop feed for 432 and 144 MHz

The organisers reserve the right to change the programme as necessary

With now nearly 180 delegates already registered and with over 60 partners accompanying them, it promises to be a great success. Our visitors are coming from all around the world. In addition to the presentations on EME and weak signal communications, there will be several on radio astronomy, a closely related subject, which we believe will reinforce the value of our wonderful science-based hobby – Amateur Radio .

The Conference Dinner will be held in the halls at Churchill College on the Saturday evening and we are proud to have pioneering radio astronomer and Nobel Laureate, Professor Antony Hewish FRS, as our end-of-conference dinner speaker. Another well-known speaker, Howard Long, G6LVB will be our speaker at the Friday evening dinner, when he talks about the development of the FUNcube Dongle, the low cost VHF/UHF receiver that has taken the market by storm.

A day ticket for 2 days will cost you £85 which includes a copy of the Proceedings (including a free DVD with lots of additional material), refreshments and lunch both days. The Conference Dinner on Saturday will be an additional £45

For security reasons, advanced booking is essential.

See you in Cambridge?

RG213 and RG214 Cable loss at Microwave Frequencies

By Andy Talbot G4JNT

Over the years I have acquired and made up a number of short RF patch cables from RG213/UR67 cable, as well as some longer ones made from the better, double braided, RG214. All have N connectors and generally serve as mast top links for turning loops and for general lab interconnections with test equipment.

Wanting something for a 10GHz turning loop now that I've finally got round to putting a small PA and LNA into a remote box, a few measurements were called for. The results were somewhat surprising. All three UR67 type patch cords were of the same length, just under one metre, and in spite of being from different batches of cable and age and condition, they showed similar results at all frequencies so only a mean value is shown for the agglomerate. The other three made from RG214 were all made up over the years ago, cut from the same original piece of cable but with a variety of types of clamp on N-connector. It was made by Thomson-Brandt according to the writing on the outer sheath. The three lengths are 1.25m, 2.2m and 2.8m. The connectors and centre pin of the longer one have a somewhat tarnished appearance as it has done significant service up the mast as the final turning loop on the VHF / UHF bands over the years.

Frequency GHz	RG213/UR67 1m (3 cables)	RG214 1.25m	RG214 2.2m	RG214 2.8m
10.368	13dB	2 dB	4 dB	5 dB
5.76	3 dB	1.2 dB	2.1 dB	2.6 dB
3.40	1.2 dB	0.9 dB	1.3 dB	1.8 dB
2.32	0.8 dB	---	---	1.1 dB

The results speak for themselves: Don't even consider UR67 or RG213 at 10GHz! The loss is so astronomically high at 13dB / metre we can probably assume the RF is just pouring out from the gaps in the single braiding. Leaky feeder antenna perhaps? On 5.76GHz, as a quickie non critical jumper lead perhaps you'll get away with it if you're desperate, but not for serious jobs.

But... the RG214 was surprisingly consistent over the various cable lengths and had significantly lower loss than expected after seeing the values for the short single braided cables. I didn't bother measuring the two shorter ones at 2.32GHz as the 0.2dB power measurement uncertainty would lead to insufficiently accuracy

Now, where did I put the rest of that reel of RG214 is?

Next month:

Transverter Head Unit Control & Switching Module

Andy Talbot G4JNT

SHF Guernsey June 22-27

By Martyn Vincent G3UKV (for Telford & DARS microwavers) and Paul M0PNN

uWave antenna layout

For the second year running, the Hardy Boys of Telford & DARS travelled to Guernsey, EU 114 for those who collect IOTAs. We had an horrendous outward channel crossing. Forecasts of Force 6 gave an indication, but the reality was more memorable. The Condor Sea Cat was more like a Sea Bronco, and as we lay prone and retching, the duty free bottles above and behind us were tottering and smashing at regular intervals in the ferry's 'duty free' shop. The sound of human misery was all around - including even some of the ship's crew.

Once set up on our chosen spot at IN89QK, things got moving. The HF boys had a very busy time, working all corners (?) of the globe, on the usual frequencies. Our tent was also a centre of hot (all right - tepid) activity, monitoring white noise and beacons, and the very occasional 'live' station. I have to say that interest in chasing /P stations seemed to have waned a great deal this year, but surely someone still wants to work a GU (or in our club-call case, a GP) as something a bit out of the ordinary?

In 2011, we had about 70 microwave QSOs, this year it was a paltry 28, on all bands from 23cm to 3cm. Only one station (John G4EAT) even suggested a 24GHz QSO attempt, but in the prevailing 'wet blanket' propagation conditions, it was a non-starter at 343Km.

Strangely enough, the most reliable gear turned out to be the ON4KST link and our AC generators (we had four on site!). It may be of interest to others out there to mention that whilst a dongle plus notebook was reliable, so too was a smartphone 'tethered' to a Notebook PC. This was a new concept to me, but it turned out to be completely reliable. The Notebook USB connects to the mini-USB port of the phone via cable, and keeps it charged, as well as providing a decent keyboard to use with 'KST. A 50MB (lasts up to 6 months) T-Mobile Euro booster for £10 seemed like reasonable value. We used about 16MB throughout the stay, which also included a bit of Internet 'surfing', so I have a bit of spare to use later this year on a family holiday!

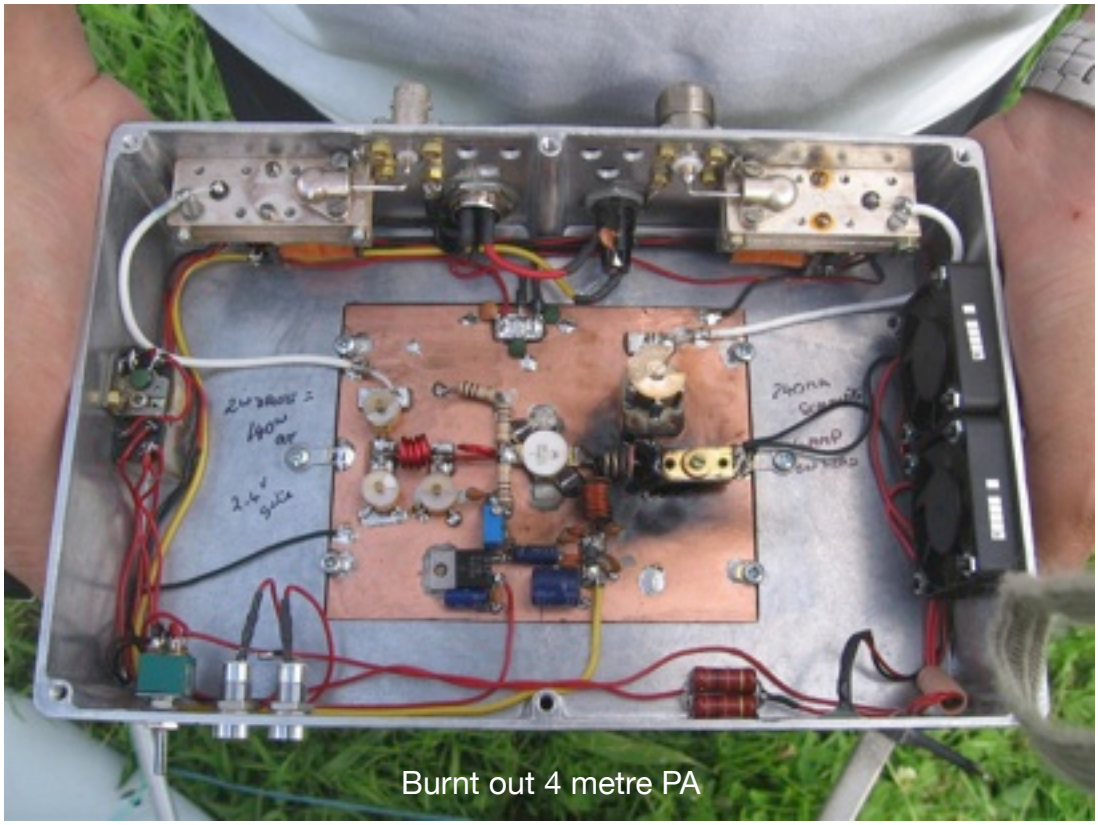
Anyway - back to radio matters...

By choice, 23cm was the 'poor man' of the bands. We had just 10 watts and a 23ele Tonna. Our first QSO was with George G8AIM (IO92FH), followed by Tony G4NBS (JO02AF - 362Km). The IC910 sat quietly on the table, whilst we gave much more TLC to the higher bands.

5.7 GHz produced 8 contacts, with F5LWX, F9OE/P, G4ALY, G4WYJ/P, G4WGE/P (both at JO01BB), G4EAT and M0GHZ..

3.4 GHz was even quieter, with just 3 QSOs (G4BRK, G3XDY (397 Km) and Ralph G4ALY.

10GHz, where one would expect a higher level of activity, was strangely under-used, and we had only 5 QSOs, including G4ALY (thanks again Ralph), G8KMH/P (at IO91JA) and G3FYX. We had a relay problem, so that TX power was in the milliwatt range, but even so, there were VERY few 3cm takers either on 2m SSB or 'KST throughout our stay. In fact interest by the French out-classed UK activity, but as we had screening to the east and south-east, we could only manage QSOs towards the Brittany direction.



Burnt out 4 metre PA

New (but faulty) C/O relay for 10G purchased at Dayton, Ohio

13cm turned out to be the saving grace of the microwaves. On the Tuesday (June 26th) UKAC, our 50+ watts and 90cm dish reached no less than 10 stations, the best ODX being Tony G4CBW (IO83UB) at 404 Km. Others included M0GHZ, G8OHM, G4BRK, G3XDY, G4ALY, G4NBS (whose persistance was most worthy when a simple DC connection gremlin at our end tested his patience somewhat), GW3TKH, G8NVI and G8CUL.

Compared to our previous visit in August 2011, conditions were generally poor, and activity lower. Thank heavens for beacons, including our own in Shropshire which were audible on 3.4 and 5.7 GHz at all times. The South Coast beacon cluster were monitored regularly on all bands from 13 to 3cm, and as in previous visits varied from in-audible (rarely) to S9+ (occasionally, daytime only), with the greatest fluctuation noted on 5.7 and 10GHz. The propagation shore-to-shore channel path (i.e. GB3SC..to IN89QK) bore little

relationship to longer distance propagation, but there is plenty of scope for more beacons in all areas. (if one could only get the NoVs; please note Murray G6JYB).

Anyone wanting a QSL, please see QRZ.com under the call sign GP3ZME/P, or contact me.(e-mail or QTHR). There were 10 of us in the group, the microwavers including Mike G4NKC, Jim G8UGL, Dave G8VZT and myself G3UKV.

Thanks to everyone who successfully (or otherwise) tried to QSO the group on whatever band or mode. We had great fun, and a smooth trip home on the not-so-fast Condor ferry.

73

Martyn Vincent G3UKV
(for Telford & DARS microwavers)

Paul M0PNN

Free range battery hen ?

Derek G4CQM has very kindly agreed to supply parts for the Antennas for the new GB3WGI 144MHz transatlantic beacon.

John G4BAO

www.g0ghk.co.uk/

Sandtoft, North Lincolnshire

The Talks

Saturday

10:00 Introductions & Welcome Kevin G3AAF & UK Microwave Group Chairman John Worsnop G4BAO

10:15 *Finningley Optical transceiver introduction & Background* – Bernie Wright G4HJW

10:30 SMD construction for beginners *Building the Finningley Optical Transceiver* – Kevin G3AAF.

10:45 "Optical Communication and Calibration" – Stuart Wisher G8CYW.

11:45 SMD Optical Transceiver construction & test session Supervision and testing facility

13:15 "Noise Generators & Noise Sources Applications – a practical approach" 100KHz – 11GHz Kevin G3AAF

14:00 Talk on Optical Receiver testing " Optical Photon Tube" Barry Chambers G8AGN

16:00 Demonstration operating Finningley Optical Transceiver's across the FARS grounds,(Weather permitting) Bernie G4HJW / Gordon G0EWN, Stuart G8CYW …All …

18:00 Pre-Dinner drinks at the Reindeer pub, Sandtoft

18:30 Evening dinner at the Reindeer Pub

Sunday

Test Equipment All day NF measurement.

Noise figure lab Manager Martyn G8FEK, Val & Gordon G0EWN

10:00 Antenna Test range David Wrigley G6GXK Tom Jones G4TWJ 13cms – 24GHz Results to be posted on the μWave reflector and web site.

11:00 *"Directional Couplers"* Bryan Harber G8DKK

13:15 *10GHz Transverters – a new novel approach,* Chris Bartram GW4DGU

15:00 *Getting Started on Microwave EME, Small dish operation*, Gordon Fiander G0EWN

How did it go?

From Stuart Wisher G8CYW

From my point of view, very well indeed. Thanks due to Kevin not only for organising such a splendid "do" but for allowing us nanowavers such a prominent presence in the proceedings. Last year when I made my fist appearance there, I was amazed at the facilities and welcome there, and went back to the NE optical communications group with such observations that "it was like I had died and gone to radio amateur heaven!", So this year six of us came down to a special welcome by Kevin and everyone could then see this for themselves.

Purely from my personal viewpoint, I particularly enjoyed contact with other prominent nanowavers and learned things (which is what it is all about), and newcomers who religiously stuck to their SMD construction under Bernie's supervision, thanks Bernie. At the start Bernie unloaded I think 30 lens and tube assemblies which were all taken by keen participants. We can look forward to a surge in optical comms activity as the nights draw in.

Once again thanks to all concerned, you made it a weekend to remember.

Stuart

From Bernie G4HJW

It went very well, thanks, though it is tiring when you are tied to the same room for most of the weekend. All the 31 telescopes were sold, yet with no one disappointed that they didn't get one. A further few kits went with no telescope requirement. So that's good. I'll re-group and finish off the remaining kits in the next few weeks.

Barry had his 'photon tube' test range there – very interesting.

Although I have found that these kits are on a par with my Clint clone front end, Barry was consistently measuring a poorer sensitivity on my boards, so will have to build up a more permanent range here to check. What he has done that is very useful is to write a program that takes multiple s/n measurements and takes the average (the algorithm is slightly cleverer than that though – it ignores some of the higher readings on the basis that there may be spurious signals present). It's all written up in the files section of the Nanowaves Yahoo group, so is accessible. I think Andy G4JNT had suggested some of the algorithm fine-tuning.

Bernie

From Gordon Fiander

I have already thanked Kevin personally for yet another excellent weekend RT. Almost all the organisation and setting up is down to Kevin's hard work.

Finningley must be one of the most relaxed and friendly events on the calendar and with a unique blend – Talks, testing, including antenna measurement, noise/power measurement (thanks to club member Martyn and his partner Val – Martyn is a talented and extremely knowledgeable professional RF engineer), optical test bench (a first at any event), network analyser (thanks to Bryan), fleamarket, practical construction/SMD work, onsite food (thanks to club members) off-site evening meal (Reindeer Pub), onsite camping and general relaxed ambiance. This year the event even attracted some of our continental friends. Attendance levels were high on both days.

One of the great features of RT weekends is catching up with friends who we perhaps only meet at such events or 'on air'. Thanks must also go to Bernie and his endless enthusiasm in almost single-handedly running the SMD construction project, not only designing the Nanowave TX/RX, but sorting professional PCBs (China) and kitting out the project and even constructing 30+ telescopes to mate with the electronics – a truly gargantuan effort. I felt bad when Bernie mentioned he was tied up in one room for more or less the whole weekend – a tremendous effort.

From a nanowave group perspective a couple of issues were raised. Barry mentioned the proposed award system and, having no response from the reflector, was bombarded by suggestions, which he has already acted upon. John G4BAO mentioned that the UK Microwave Group might fund the cost of the certificates. This would be great but in a way raised a another question – that of our link / position / relationship with/ within the UK Microwave group. At the moment the *Nanowave group* is only notional – there is no such group/organisation – so I will air my preference for resolving this anomaly. I would prefer that Nanowaves, i.e. all activity connected with what we are doing optically, come under/ within the UK microwave umbrella. I would not wish to see a separate group solely devoted to optical frequencies. Others may have a different opinion but, with proposed awards, this might be the time to formalise the situation. I'm for the Union.

Thanks again to Kevin and to FARS for hosting the event,

Best wishes all, Gordon G0EWN

From Lee G4TNX

Yet again the Finningley crew surpass themselves and give us all a great weekend. Even managing to get us some sunshine. To all involved a big thank you. (Wife still does not believe that I am going to use the 4" telescope to talk to people with)

Cheers, Lee G4TNX

From Martin G8BHC

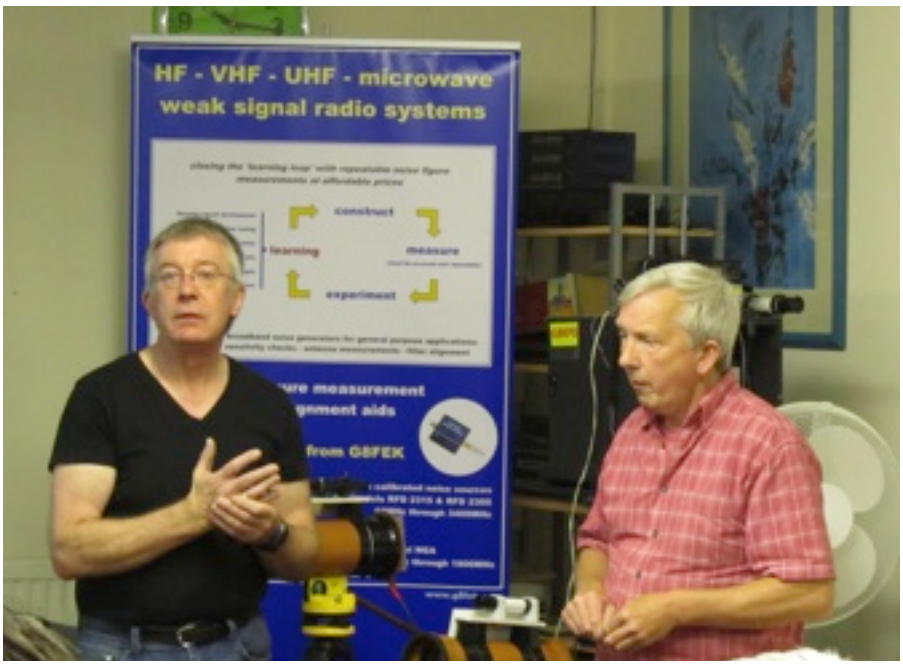
Kevin G3AAF (Finningley) & John G4BAO Chairman UKµG welcomed the assembled throng on Saturday morning. John drew attention to a new project being proposed by UK. More news of that elsewhere in this Scatterpoint.

Saturday was Nanowaves day with Bernie introducing the Finningley Optical transceiver and Kevin giving a very helpful tutorial on soldering SMDs.

Stuart Wisher G8CYW gave a history of path length achievements at different wavelengths (red & ultraviolet) in dark and daylight environments. He also showed a precision optical attenuator for box-mounted Fresnel lens systems.

I then went off to build one of the kits.

Continued P21



Kevin G3AAF and Bernie G4HJW ready to start

Chairman John G4BAO
describes
the new UKμG project

Bernie G4HJW with the collection of Optical Transceiver kits

Kevin introduces Stuart Wisher G8CYW

Stuart Wisher G8CYW and the precision optical attenuator

The Saturday dinner in *The Reindeer* was excellent and a good time to relax and chat.

The Sunday attendance was even greater than the Saturday. The three talks all gave food for thought and new projects!

Bryan Harber G8DKK outlined the construction and parameters of directional couplers. They don't all do what you might want them to do! The Watts have to go somewhere.

Chris Bartram GW4DGU gave an interesting tour through some myths of oscillator noise and frequency synthesis (with passing views on pipe cap filters) and described his design of a 10GHz up/down converter. This is aimed at getting beginners going on 10GHz.

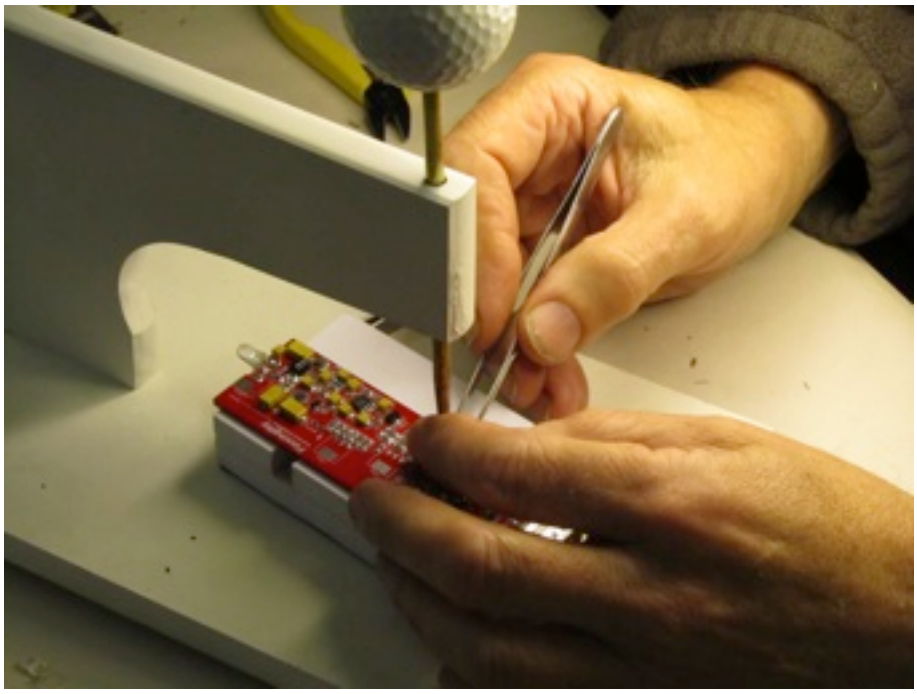
The final talk was by Gordon Fiander G0EWN on *Getting Started on Microwave EME, Small dish operation*. How small is small?

For me, Finningley was also good to put faces to names.

I hope this has whetted your appetite to book for Finningley next year. The shack and its facilities have to be seen to be believed! And there's an excellent pub within walking distance (hi-viz jacket recommended!)

73 Martin G8BHC

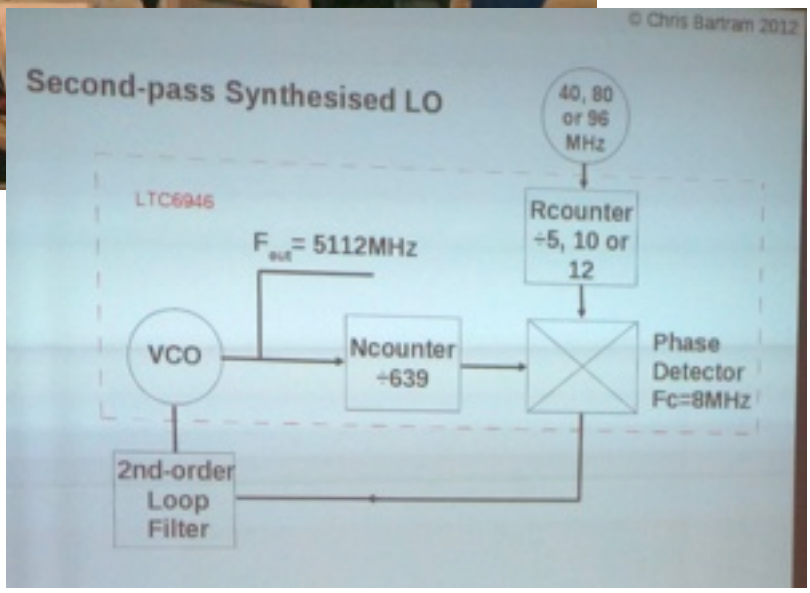
Eyes down for the construction project



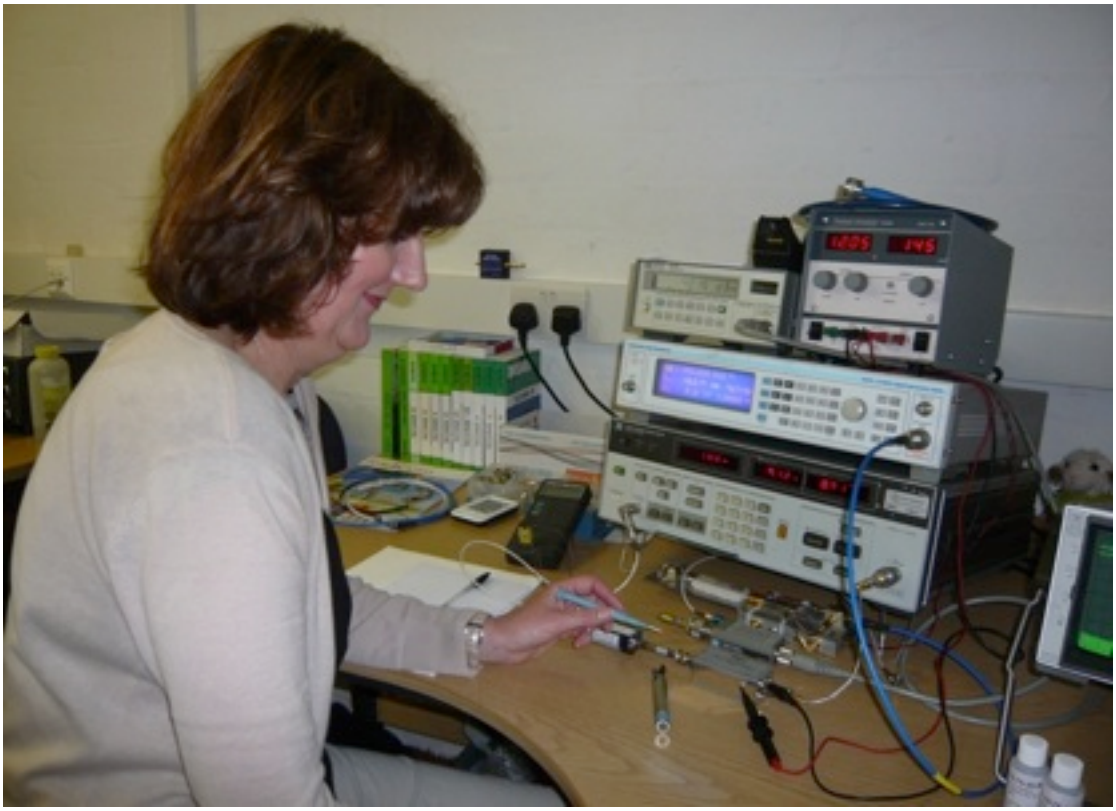
The Finningley patent SMD restrainer
(with the dual-pronged SMD chip launcher)

Brian Harber G8DKK reveals the mysteries and characteristics of directional couplers

Chris Bartram GW4DGU describes his novel approach to design of 10GHz transverters and dispels some myths about phase-locked-loop oscillators



… and for those of you who weren't scribbling notes – it's an LTC6946



NF lab – Val, Martyn's XYL

Some info on the testing from the RT weekend:

A selection of 144MHz, 432MHz and 2300MHz LNAs tested for Nick G4KUX, Dave G4MVU and Jeremie M0KWP.

Racal LF through 1.5GHz uW power meter plus homebrew power meter calibrated for G8ZHA.

3cm oscillator frequency alignment and power measurement for G7AVU.

Hottest NF over the weekend was seen from 144MHz homebrew LNA at under 0.2dB indicated (total uncertainties estimate +/-0.2dB), brought along by Jeremie M0KWP.

Kevin G3AAF

Gordon G0EWN
encouraging would-be EMEers

Finningley Antenna range results run by David Wrigley G6GXK & Tom Jones G4TWJ

Band: 2.32 GHz					
Antenna description	**Reading**	**Range**	**Total**	**Relative Level dB**	**Gain dBi**
Reference Horn	**-8.0**	**40**	**-48.0**	**0.0**	**12.7**
2.3/3.4 Ntype G4NKS	-4.4	40	-44.4	3.6	16.3
2.3/3.4 SMA G4NKS	-3.5	40	-43.5	4.5	17.2
Band: 3.40 GHz					
Antenna description	**Reading**	**Range**	**Total**	**Relative Level dB**	**Gain dBi**
Reference Horn	**-1.4**	**40**	**-41.4**	**0.0**	**12.7**
80cm Amstrad G3LYP	-9.0	20	-29.0	12.4	25.1
Horn G8LYP	-1.6	40	-41.6	-0.2	12.5
2.3/3.4 Horn Ntype G4NKC	-2.4	40	-42.4	-1.0	11.7
2.3/3.4 Horn SMA G4NKC	-1.2	40	-41.2	0.2	12.9
3,4/5.7 Horn Ntype G4NKC	-4.5	40	-44.5	-3.1	9.6
3,4/5.7 Horn SMA G4NKC	-5.5	40	-45.5	-4.1	8.6
Band: 5.76 GHz					
Antenna description	**Reading**	**Range**	**Total**	**Relative Level dB**	**Gain dBi**
Reference Horn	**-1.6**	**50**	**-51.6**	**0.0**	**12.7**
3.4/5.7 Ntype G4NKC	-2.1	50	-52.1	-0.5	12.2
3.4/5.7 SMA G4NKC	-3.2	50	-53.2	-1.6	11.1
Band: 10.368 GHz					
Antenna description	**Reading**	**Range**	**Total**	**Relative Level dB**	**Gain dBi**
Reference Horn	**-2.7**	**40**	**-42.7**	**0.0**	**17.2**
Horn G3AFF	-0.5	40	-40.5	2.2	19.4
Horn G8FEK	-3.9	40	-43.9	-1.2	16.0
Small Horn G0DJA	-6.4	40	-46.4	-3.7	13.5
Small sky dish G0DJA	-10.0	20	-30.0	12.7	29.9
Reference Horn	**-1.3**	**40**	**-41.3**	**0.0**	**17.2**
Horn GWDGU	-6.5	40	-46.5	-5.2	12.0
Azimuth -3dB +- 25deg (50 deg)					
Azimuth -10dB +- 60deg (120 deg)					
Band: 24.048 GHz					
Antenna description	**Reading**	**Range**	**Total**	**Relative Level dB**	**Gain dBi**
Reference Horn	**-3.5**	**50**	**-53.5**	**0.0**	**13.0**
25cm 'penny' feed dish G0DJA	-4.3	40	-44.3	9.2	22.2
34cm dish G4TWJ	-5.7	30	-35.7	17.8	30.8

Sunset over Finningley

April 2012 Lowband Contest Results

By John Quarmby G3XDY

Entries this year were a few down on 1.3GHz, about the same as last year on 2.3GHz, and up again on 3.4GHz. It is good to see the continuing development of activity on the latter band.

Conditions and activity were below par for most entrants, although G4BRK found the opposite to be the case. This year there was little activity evident from outside mainland UK, with only ON4IY appearing in a couple of logs on 1.3 and 2.3GHz

GM4CXM won 1.3GHz by a large margin, and was the best DX worked by nearly two thirds of the entrants on this band. Runner up was G3TCT/P with 18 contacts.

It was a closer fought battle on 2.3GHz, with G3TCT/P coming in ahead of G4BRK, both with 11 QSOs. It is noticeable that the average power levels used have been going up in recent years, with the majority now running around 60W. G0JMI/P was the only entrant running less than 10W.

3.4GHz provided G3TCT/P with another win, with GW3TKH/P as the runner up this time. G4BAO was the leading fixed station on this band. G4ALY provided many with their best DX on this band. G3TCT/P was also the leading low power station on this band.

The overall winner was the “Combe Gibberlets” group consisting of G3TCT, G3TCU, G3WBQ, G4SJH and G1EHF. Runner up and leading fixed station is Neil Whiting G4BRK, who was runner up on 2.3GHz. Third place is taken by Ray James GM4CXM, the leading station on 1.3GHz.

Certificates go to the overall Winner G3TCT/P and Runner-up G4BRK and to the following winners:

1.3GHz	GM4CXM, G3TCT/P, G8AIM (Radio talkback leader)
2.3GHz	G3TCT/P, G4BRK, G8AIM (Radio talkback leader), G0JMI/P (Low Power)
3.4GHz	G3TCT/P, GW3TKH/P, G4BAO, G8AIM (Radio talkback leader),

John G3XDY

UKuG Contest Manager

Perhaps you could consider doing something for UKµG in your area at your local rally? (Assuming you don't do so already!)

We have flyers & posters available for download.

Contact any committee member

April 2012 Low Band Contest Results

Overall

Pos	Callsign	Talkback	1.3GHz	2.3GHz	3.4GHz	Total
1	G3TCT/P	Unlimited	563	1000	1000	2563
2	G4BRK	Unlimited	405	965	610	1980
3	GM4CXM	Unlimited	1000	801	0	1801
4	GW3TKH/P	Unlimited	208	679	881	1768
5	G3ZME	Unlimited	325	901	525	1751
6	G4NBS	Unlimited	323	751	0	1074
7	G3VKV	Unlimited	309	338	320	967
8	G4BAO	Unlimited	0	0	805	805
9	G8AIM	Radio only	158	176	207	541
10	G8CUL	Unlimited	228	270	0	498
11	G3EEZ	Unlimited	0	0	480	480
12	G6ZME	Unlimited	65	0	307	372
13	G0JMI/P	Radio only	51	153	163	367

1.3GHz

Pos	Callsign	Talkback	Locator	QSOs	Best DX	Points	
1	GM4CXM	Unlimited	IO75TW	15	G3TCT/P 582km	5501	1000
2	G3TCT/P	Unlimited	IO91RF	18	GM4CXM 582km	3097	563
3	G4BRK	Unlimited	IO91HP	14	GM4CXM 517km	2229	405
4	G3ZME	Unlimited	IO82RR	11	GM4CXM 377km	1788	325
5	G4NBS	Unlimited	JO02AF	10	GM4CXM 503km	1778	323
6	G3VKV	Unlimited	IO81XW	11	GM4CXM 475km	1702	309
7	G8CUL	Unlimited	IO91JO	8	GM4CXM 525km	1252	228
8	GW3TKH/P	Unlimited	IO81LS	9	G4NBS 218km	1144	208
9	G8AIM	Radio only	IO92FH	5	GM4CXM 444km	869	158
10	G6ZME	Unlimited	IO82SM	4	G8CUL 134km	356	65
11	G0JMI/P	Radio only	IO91ME	4	GW3TKH/P 159km	281	51

2.3GHz

Pos	Callsign	Talkback	Locator	QSOs	Best DX	Points	
1	G3TCT/P	Unlimited	IO91RF	11	ON4IY 365km	1623	1000
2	G4BRK	Unlimited	IO91HP	11	GM4CXM 517km	1566	965
3	G3ZME	Unlimited	IO82RR	8	GM4CXM 377km	1463	901
4	GM4CXM	Unlimited	IO75TW	4	G4BRK 517km	1300	801
5	G4NBS	Unlimited	JO02AF	8	GW3TKH/P 218km	1219	751
6	GW3TKH/P	Unlimited	IO81LS	8	G4NBS 218km	1102	679
7	G3VKV	Unlimited	IO81XW	7	G4CBW 131km	548	338
8	G8CUL	Unlimited	IO91JO	5	G4CBW 179km	438	270
9	G8AIM	Radio only	IO92FH	3	GW3TKH/P 119km	286	176
10	G0JMI/P	Radio only	IO91ME	3	GW3TKH/P 159km	248	153

3.4GHz

Pos	Callsign	Talkback	Locator	QSOs	Best DX	Points	
1	G3TCT/P	Unlimited	IO91RF	10	G4ALY 271km	1525	1000
2	GW3TKH/P	Unlimited	IO81LS	9	G4BAO 230km	1344	881
3	G4BAO	Unlimited	JO02CG	6	G4ALY 366km	1227	805
4	G4BRK	Unlimited	IO91HP	7	G4ALY 237km	931	610
5	G3ZME	Unlimited	IO82RR	6	G4ALY 276km	801	525
6	G3EEZ	Unlimited	JO02CG	4	GW3TKH/P 230km	732	480
7	G3VKV	Unlimited	IO81XW	6	G4CBW 131km	488	320
8	G6ZME	Unlimited	IO82SM	4	G4BAO 184km	468	307
9	G8AIM	Radio only	IO92FH	3	G3TCT/P 139km	316	207
10	G0JMI/P	Radio only	IO91ME	3	GW3TKH/P 159km	248	163

June 2012 Lowband Contest Results

By John Quarmby G3XDY

The alternative attractions of the Jubilee weekend seemed to depress activity for this year's event, with the number of logs down on last year, although leading scores on 23/13cm were actually higher than last year, so it would appear conditions were a little improved.

Ray GM4CXM again holds onto the lead on 1.3GHz with an error free log. Last year the runner up was G3TCU/P, and this year Phil operated from home and achieved the same result. Close behind was Neil G4BRK. Best DX of the day was between G4BRK and DF0MU.

On 2.3GHz G$BRK pulled out a substantial lead over GM4CXM and was able to include two continental contacts in his log which boosted his points tally substantially. Third place goes to Martyn G3UKV.

Activity on 3.4GHz seemed particularly low, with all entrants recording just one contact each. Top slot goes to Neil G4BRK, with Keith GW3TKH as runner up, and Graham G3VKV and George G8AIM in joint third place.

The overall winner this year was G4BRK by a substantial margin. GM4CXM is runner-up, and GW3TKH is third.

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

73 John G3XDY
UK Microwave Group Contest Manager

Cheap smoke alarm paid for itself yesterday when a capacitor in my 8970 NF meter caught fire while I was gardening! Have you got a smoke alarm in your shack?

John G4BAO

June 2012 Low Band Contest Results

Overall

Pos	Callsign	1.3GHz	2.3GHz	3.4GHz	Total
1	G4BRK	577	1000	1000	2577
2	GM4CXM	1000	413	0	1413
3	GW3TKH	28	63	574	665
4	G3TCU	605	0	0	605
5	G3VKV	159	73	245	477
6	G8AIM	197	27	245	469
7	G3UKV	179	260	0	439
8	GM8IEM	141	0	0	141
9	G3TCT	140	0	0	140

1.3GHz

Pos	Callsign	Locator	QSOs	Best DX	Points
1	GM4CXM	IO75TW	16	G3TCU 584km	4910
2	G3TCU	IO91QE	10	GM4CXM 584km	2970
3	G4BRK	IO91HP	10	DF0MU 597km	2831
4	G8AIM	IO92FH	5	GM4CXM 444km	965
5	G3UKV	IO82RR	5	GM4CXM 377km	878
6	G3VKV	IO81XV	4	GM4CXM 475km	779
7	GM8IEM	IO78HF	2	GI6ATZ 428km	690
8	G3TCT	IO81QC	1	G3TCU 140km	140
9	GW3TKH	IO81JM	1	G4ALY 136km	136

2.3GHz

Pos	Callsign	Locator	QSOs	Best DX	Points
1	G4BRK	IO91HP	7	DF0MU 597km	2165
2	GM4CXM	IO75TW	2	G4BRK 517km	894
3	G3UKV	IO82RR	3	GM4CXM 377km	563
4	G3VKV	IO81XV	2	G3UKV 99km	157
5	GW3TKH	IO81JM	1	G4ALY 136km	136
6	G8AIM	IO92FH	1	G3VKV 58km	58

3.4GHz

Pos	Callsign	Locator	QSOs	Best DX	Points
1	G4BRK	IO91HP	1	G4ALY 237km	237
2	GW3TKH	IO81JM	1	G4ALY 136km	136
3=	G8AIM	IO92FH	1	G3VKV 58km	58
3=	G3VKV	IO81XV	1	G8AIM 58km	58

Activity News

By John Worsnop G4BAO

Please send your activity news to:

scatterpoint@microwavers.org

Many of you have been out and about this summer despite the foul weather we've been having. This month's column reports on plenty of activity on the Microwave bands from distant places as far afield as Corsica and North Norfolk.

East Suffolk Wireless Revival

The UK Microwave Group again had a display at the East Suffolk Wireless Revival at the A14 truck stop near Ipswich. This Annual event is organised by thew Felixtowe and District Amateur Radio Society (FDARS). This year we had the help of the Camb-hams who generously allowed us to use their Amateur Radio Demonstration vehicle "Flossie" to set up a 23cm demo station. Running 40 Watts with an IC910, a masthead G4BAO PA and G4DDK preamp to a 47 element Yagi on the 20m pump up mast, we were able to demonstrate 23cm, working down in to France and up to the North east of England. It was a rather cold and breezy day, and we learned that a tripod with a 60cm dish will not take much of a breeze to blow it over! Thankfully just a short length of flexible waveguide was damaged on my 24GHz portable system!

FDARS committee member Brian Marston 2E0BCM chatting to your columnist behind the UKμG stand by the Camb-hams mobile shack "Flossie"

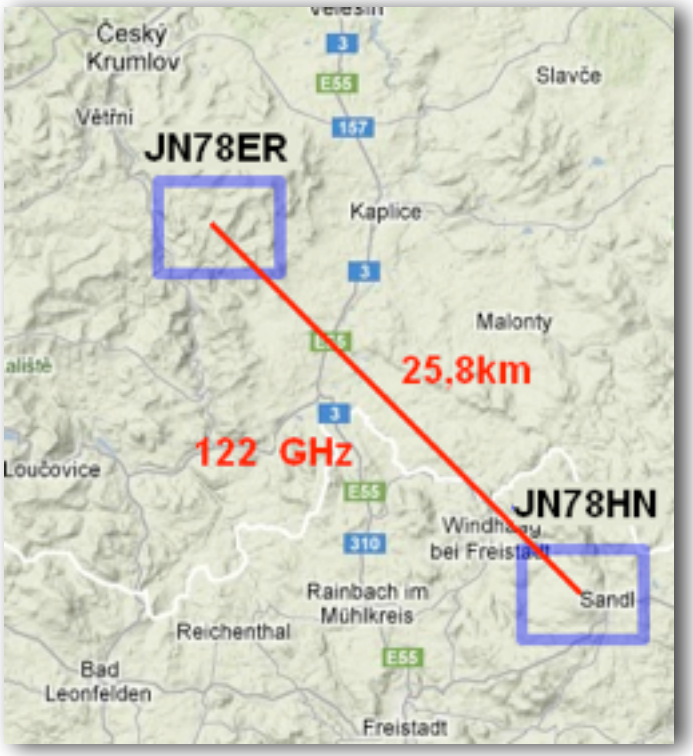
Gavin, M1BXF (left) from camb-hams shows a visitor round “Flossie”

Some notable “Firsts” this summer

OK to OE on 122 GHz

During the BBT contest a group of OE hams held a small EHF meeting with tests on 47, 76 and 122 GHz. The 122 GHz contact path was that used in 2008, when **OK1AIY** and **OE5VRL** made the first OK-OE QSO on 76 GHz. They used 144,525 MHz for talkback and antenna azimuth was optimised using equipment for 76 GHz. The first QSO on 122 GHz was achieved on CW with **OE3WOG/P**.

The next QSO was between **OE5VRL/5** and **OE/DL3MBG**. The QSO path between JN78ER and JN78HN is only 25,8km long however on 122 GHz you have several factors which must be taken into account like a bad weather. However this time the group were lucky, weather was excellent so were able to use optical orientation The QSO was made thanks to great cooperation as well as the excellent equipment of **OK1FPC** and **OK1UFL**.



Rudi, OE5VRL standing by his equipment for 122 and 76 GHz.

122GHz
OE3WRA

Andorra (C3) to France on 24GHz

On the 19th of June, at 14:23 Guy **F2CT** and Michel **F1FIH** operating /P from Andorra as **C37SHF** claimed a first 24GHz between C3 and F.

The 24GHz rig in the shelter of a service station, due to bad wx and is taken from F1FIH webpage http://f1fih.over-blog.com/pags/C37SHF_2012-7910566.html

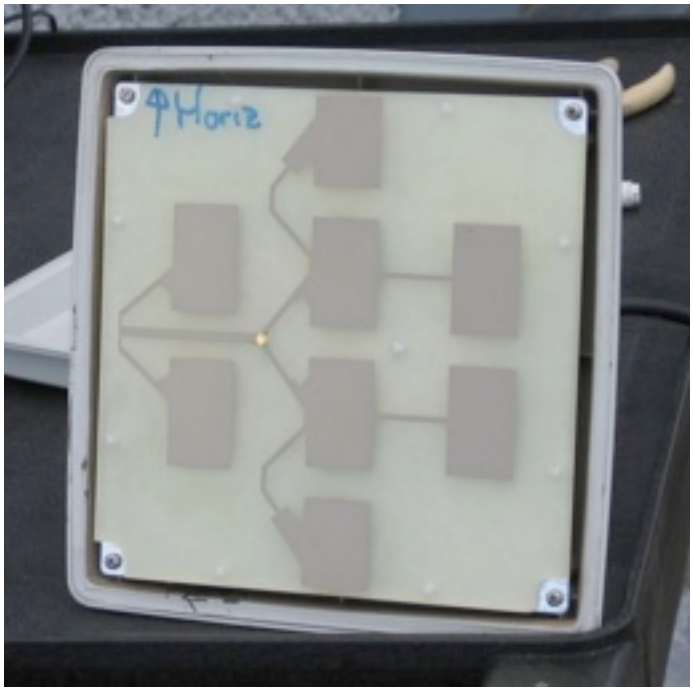
More terrestrial activations

3400MHz operation from the Island of Mull

After the May activation of Mull on 10GHz by the Camb-Hams, the 13th and 14th of June found David **GM6BIG** working on the Island again, at the same location as GB3HI 2m repeater at IO76dk.

David Writes:

"I was able to fix my 3400MHz transverter in time to take it with me and get a few skeds arranged to try it out. The antenna is small, just 7 inches square, very portable, but not ideal.



The polarisation of the patch antenna was unknown, so a quick test using a spectrum analyser sweeping into a 1/4 wave vertical made from RG58 was done at 3GHz. Rather off frequency but it clearly showed which way the antenna was polarised. Now I knew which way up the antenna should be, one less variable to deal with.

First test was with Mark **GM4ISM** in Larkhall, using the same small 7 inch antenna. I could just hear a carrier from him. Mark was also watching my carrier on a waterfall display, and could see reflections from aircraft. No stronger than the direct signal though. Next a try with Alan, **GM0USI** who had gone out portable to Eaglesham; Despite Alan using just a 4 foot dish and only 250mW on transmit, the first attempt was successful. I was receiving Alan's

250mW at 55, Alan was receiving my 15W 59+! The signals were strong with rapid QSB. Next a try with Ian **GM0UHC**, but sadly, nothing copied either way. Finally a test with Tony **G4CBW** IO83ub at approx 420km. Tony's carrier was stronger than Mark **GM4ISM**'s, with both slow and rapid QSB on the signal. A definite detection of signal both ways, but still not strong enough to exchange calls and reports. Had my CW (and operating skills been better - I must practice more), there would have been a good chance of a QSO. We tried again the following evening with exactly the same results, so the path appears to be consistent.

I am looking forward to another trip to Mull, hopefully with a little more warning; top of the list is a bigger antenna - of course!"

The view from the GM6BIG portable site on Mull

Alan's dish setup on the flat roof

3cm Operation from North Norfolk

Alan **GM0USI** took his 3cm portable equipment south of the border to Sheringham JO02ow on the North Norfolk coast for a week during July.

I managed to work him on SSB rain scatter, over the 100 km path to Waterbeach exchanging 57S. He also worked Sam **G4DDK** JO02pa at 102km , Simon **G3LQR** JO02qf at 80km and John **G3XDY** JO02ob at 97km down the coast in Suffolk. The Martlesham beacon **GB3MHX** JO02pb was in and out with nice peaks on rain scatter He also worked **PA6NL** JO21bx (224km) on RS through the hill and heard some other weak PAs on RS during the contest. Amazingly, the strongest signal was the furthest away, **G4CBW** IO83ub at 234km at 58 on SSB and FM! Just shows what a difference a bit of elevation makes on 3cms!

The picture shows the location of Alan's dish on the flat roof of his accommodation

Takeoff was of course super to the East but blocked from 100-170deg by the hill from which he took the picture.

Alan tells me that he will be active from the Isle of Whithorn for Microwave Field Day and the Mull of Galloway the following week

Rain scatter report from France

The evening of 28th June 2012 produced some exceptional rain scatter conditions across France. On 10GHz, Arie, **PA0EZ** JO22 worked **F1CNE** JN28 57s at 370km, and various stations in the Paris area worked into Germany. **F6DKW** JN18 heard the **DB0ANU** beacon JN59 54s at 611km!

Guy **F2CT/P** JN14 worked **DL7QY** JN59bd with signals up to 59 on ssb at 773km, and Willi **LX1DB** JN39co with "end stop" signals at 616km. Dom **F6DRO** JN03tj also worked LX1DB with 59s reports at 774km, and Dom noted the scatter point at 500km which is rather rare!

On 24GHz **F2CT/P** JN14 worked **LX1DB** JN39co at 616km. This is a remarkable distance for 24GHz and repeats the contact which the two stations had exactly four years ago to the day.

During this opening, John **G3XDY** JO02ob reports working **F1NPX/P** JN29, **F1RJ** JN18, **F1ISM** JN09, **F5DQK** JN18, **ON5TA** JO20 and **DL5EAG** JO31 on 10GHz and reports a new beacon heard, **F5ZFD** JN28tc, plus **LX1DB** and some other closer French beacons.

EME Reports

Two notable EME activations this month:–

The M&M DXpedition 2012 - TK/DL1YMK

For the ninth time in succession, the "Michael and Monika team" of **DL1YMK** and his XYL ran a multiband EME-DXpedition. They visited Corsica (TK) with equipment for five bands. As TK, politically at least, belongs to France, 9 cm was not licensed.

Monika and the dishes (photo from OK1DFC.com)

Michael writes:

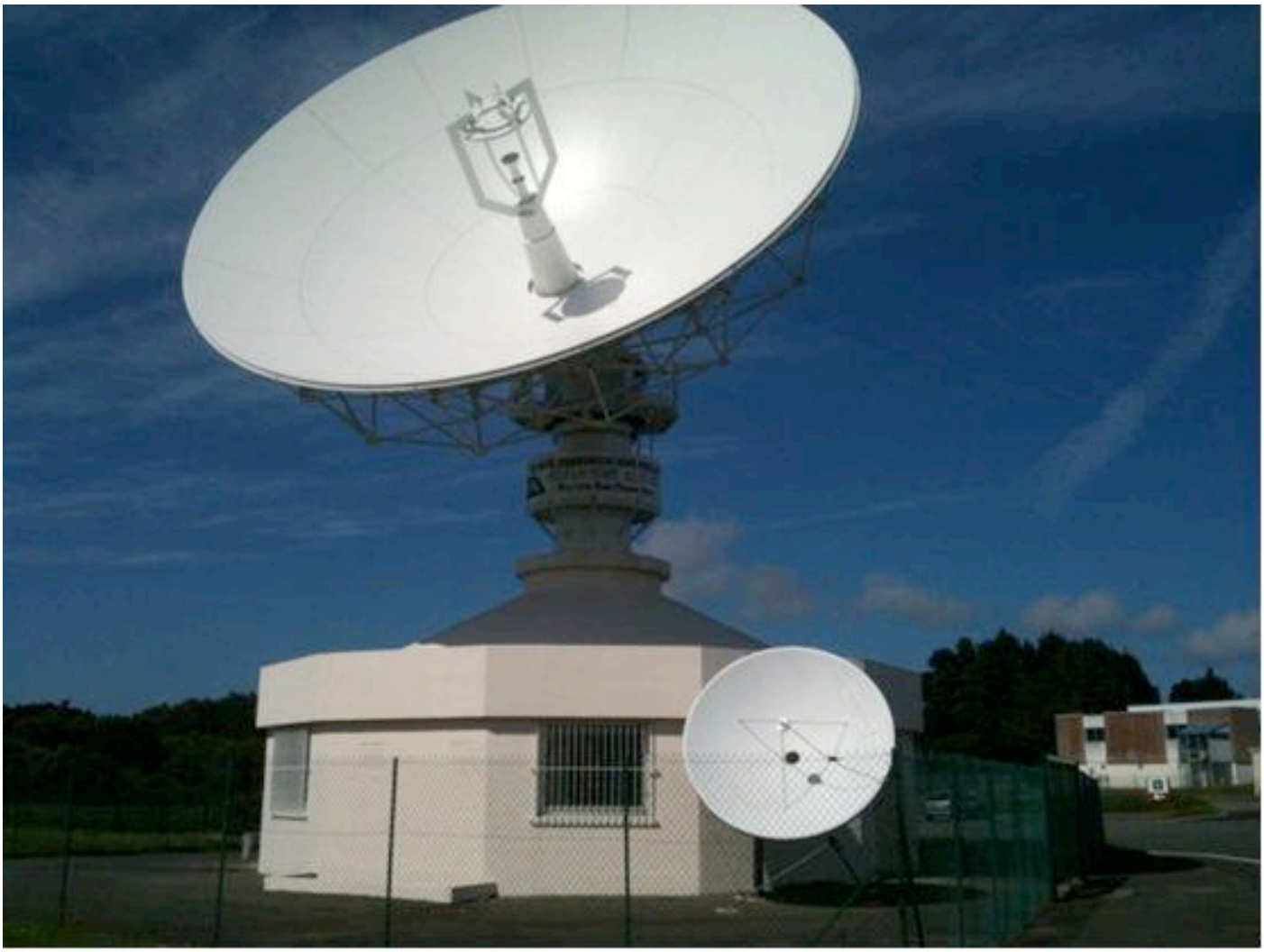
"During a fortnight of moonbounce activity we made 178 CW-QSOs with a total of 139 initials. On 23cm 29 different countries were worked, on 13cm 22 and on 70 cm 20 DXCC-entities were logged. As expected, our stressed dish is not really suited for 6cm, however, we managed to contact 5 initials. For the first time we used a second solid dish (1.8 m with 30 W at the feed) for 10GHz and were able to log 7 initials with our marginal set-up. We heard more stations than we were actually able to work, so consequently we need more power on that band.

Only 3 stations worldwide were in a position to work us on all five bands: **LX1DB** was a huge and rock-solid signal on all bands, **OK1KIR** (despite an exploded 70cm PA) and **F2TU**. We have received many mails during the DXpedition, stating many feed changes, repairing PAs and LNAs, just in order to work us on Corsica, so many thanks to all of you, who were on the moon for the DXpedition. A very positive side effect of our DXpedition was a significant increase in moonbounce activity on those bands, where we showed up. Consequently a large number of initials were worked by other active stations.
A special TK-QSL will be designed as usual by Monika. A warm *thank you* goes to Zdenek for hosting the special website, and also to **LX1DB** and **OK1KIR**, who with endless patience have produced beacon signals for us on the higher bands. On 23cm the **ON0EME beacon** operated by **ON7UN/ON4BCB** was most helpful.

TM8PB – The 13m Pleumeur Bodou PB8 dish

Between the 9th and 11th July, to commemorate the 50th anniversary of the first TV coverage of the Telstar satellite, a group of French Amateurs successfully activated the 13m Pleumeur Bodou PB8 dish.

I am indebted to Robin **G8APZ** for this translation.



F2CT writes:

“After months of effort and pooling of skills, the PB8 13m dish managed by the association ORPB (Radio Observations Pleumeur Bodou) was pointing at the moon. The level of solar noise (25dB), the lunar noise (5dB) and our echoes (18 to 24dB), allowed us to validate the quality of the illumination system.

The optimized C-band source covering the 4-6 GHz band was already equipped for right and left circular polarisation, so the connection of my 5.7GHz system was easy! Just 2 short coax links were enough to connect the PA output and the LNA via a protective relay.

The rest was just pleasure, even if the level of received signals was often far from that of our echoes. In fact, given the diameter of the reflector, only about 1/3 of the surface of the moon was "illuminated." Because of the inertia and the complexity of the servo system, it was not possible to optimize the position of the dish on the received signals. Only the lunar noise level viewed continuously with a 4GHz Spectrum Analyzer and optimisation of the level of lunar noise received by my "radiometer" on the IF of the 432 MHz transverter were used before the initial calibration of the automatic tracking”.

Here is the list of stations contacted:

CW: DL7YC; ES5PC; F1PYR; F2TU; F6DRO; G3LTF; G4DDK; G4NNS; JA6CZD; K2UYH; K5GW; LX1DB; OK1KIR; PA3DZL; PA7JB; VE4MA; W5LUA; WD5AGO; WA6PY;

SSB: F2TU; K2UYH; K5GW; LX1DB; W5LUA; WD5AGO

“Willi **LX1DB**, and Philippe **F2TU** were both available on the Wednesday morning to ensure the successful demonstration to the public and media of a super SSB QSO!

An anecdote to finish: we received a visit from 80 year old Mr. Jean Pierre Collin, a distinguished former Director of the site. How fortunate to have seen his eyes shine and his astonishment, when he heard his voice 2.5 seconds later, after a journey of over 800,000km!”

From our Correspondents

John G3XDY has been very active from his shack this summer and has sent me a comprehensive list of contacts on all bands from 23cms to 10GHz.

The highlights of his report include contacts on 1.3GHz during the UKAC contests and the UKuG low band event with OZ, SK, DL, OK, F, GI and GM, and on 2.3GHz with F and DL.

During the French 432/1296/2320 contest on 20th May despite rather poor conditions, John reports contacts with **F6APE** IN97 on 23cm and later that morning, **DF0MU** JO32 was worked on 10GHz with good rain scatter signals.

On the 25th June John worked **GP3ZME/P** IN89 assisted by rain scatter on the path, for a new DXCC on 3.4GHz. The following day he also worked the Guernsey activation on 2.3GHz. See the pages of this issue for a full report on this DXpedition.

Beacon news

I met Ted **G8AZA** at the Finningley Round Table this month and he informed me that the 10GHz beacon **GB3AZA** is suffering a keying fault. It is now QRT until repairs can be completed. Ted apologises for the interruption.

73 John G4BAO

EME Activity weekends

June 23/24	Ham Radio (DL) DUBUS contest 5.7 GHz
July 7/8	Eu VHF/UHF T-contest
Aug 4/5	ARRL UHF T-Contest
Aug 11/12	ES-T-contest
Aug 18/19	15th INTERNATIONAL EME CONFERENCE
	LY T-contest
Sept 1 /2	Eu VHF T-contest
Sept 8/9	ARRL VHF T-Contest
Sept 15/16	Weinheim
Sept 29/30	ARI Contest CW/SSB
Oct 6/7	Eu UHF T-contest
	ARRL EME uwave
Nov 3/4	Marconi Eu VHF CW T-contest
	ARRL EME I
Dec 1/2	ARRL EME II

Source: www.mydarc.de/dl7apv/moon2010/moon2010.htm

The RSGB 2012 VHF+ Contest Calendar is available at www.rsgbcc.org

Contests & Activity Dates 2012

Source: http://www.microwavers.org/?contesting.htm

July

VHF NFD (1.3GHz)	Arranged by VHFCC	7– 8 Jul	1400 - 1400	RSGB Contest
1.3GHz Activity Contest	Arranged by VHFCC	17 Jul	1900 - 2130	RSGB Contest
24GHz - 1THz Contest	O	22 Jul	0900 - 1700	New Format
>1THz (Lightwave) Contest	O	22 Jul	1800 - 2400	New Event
2.3GHz+ Activity Contest	Arranged by VHFCC	24 Jul	1900 - 2130	RSGB Contest
3rd 5.7GHz Cumulative	F, P,U,R,L	29 Jul	1000 - 1600	
3rd 10GHz Cumulative	F, P,U,R,L	29 Jul	1000 - 160	
3rd 24GHz Cumulative	F, P,U,R	29 Jul	1000 - 160	

August

1.3GHz Activity Contest	Arranged by VHFCC	21 Aug	1900 - 2130	RSGB Contest
Microwave Field Day	O,L	5 Aug	0900 - 1700	
1.3GHz Activity Contest	Arranged by VHFCC	21 Aug	1900 - 2130	RSGB Contest
4th 5.7GHz Cumulative	F, P,U,R,L	26 Aug	1000 - 1600	
4th 10GHz Cumulative	F, P,U,R,L	26 Aug	1000 - 1600	
4th 24GHz Cumulative	F, P,U,R	26 Aug	1000 - 1600	
2.3GHz+ Activity Contest	Arranged by VHFCC	28 Aug	1900 - 2130	RSGB Contest

September

1.3GHz Activity Contest	Arranged by VHFCC	18 Sep	1900 - 2130	RSGB Contest
2.3GHz+ Activity Contest	Arranged by VHFCC	25 Sep	1900 - 2130	RSGB Contest
ARRL Microwave EME	Arranged by ARRL			
5th 5.7GHz Cumulative	F, P,U,R,L	30 Sep	1000 - 1600	
5th 10GHz Cumulative	F, P,U,R,L	30 Sep	1000 - 1600	
5th 24GHz Cumulative	F, P,U,R	30 Sep	1000 - 1600	

October

1.3 & 2.3GHz Trophies	Arranged by VHFCC	6–Oct	1400 - 2200	RSGB Contest
432MHz & up	Arranged by VHFCC	6–7 Oct	1400 - 1400	IARU/RSGB Contest
ARRL EME 2.3GHz & Up	Arranged by ARRL	6–7 Oct		
1.3GHz Activity Contest	Arranged by VHFCC	16 Oct	1900 - 2130	RSGB Contest
2.3GHz+ Activity Contest	Arranged by VHFCC	23 Oct	1900 - 2130	RSGB Contest

November

ARRL EME 50-1296MHz	Arranged by ARRL	3–4 Nov		
1.3GHz Activity Contest	Arranged by VHFCC	20 Nov	2000 - 2230	RSGB Contest
Low band 1.3/2.3/3.4GHz 4	F, P,U,R,L	25 Nov	1000 - 1400	
2.3GHz+ Activity Contest	Arranged by VHFCC	27 Nov	2000 - 2230	

December

ARRL EME 50-1296MHz	Arranged by ARRL	1–2 Dec		
1.3GHz Activity Contest	Arranged by VHFCC	18 Dec	2000 - 2230	RSGB Contest
2.3GHz+ Activity Contest	Arranged by VHFCC	25 Dec	2000 - 2230	RSGB Contest

Key:
- F Fixed / home station
- P Portable
- L Low-power (<10W on 1.3-3.4GHz, <1W on 5.7/10GHz)
- R Radio talkback
- U Unlimited talkback

73 John G3XDY, UKUG Contest Adjudicator

UKµG Contest Portal: http://microwave.rsgbcc.org/cgi-bin/vhfenter.pl

Events calendar 2012

Jun 22-24	Ham Radio, Friedrichshafen	www.hamradio-friedrichshafen.de/
Jul 14–15	Finningley Roundtable	www.g0ghk.co.uk/
Jul 27 – Aug 12	Olympics Games, London, UK	
Aug 16-19	15th International EME Conference, Cambridge, UK	eme2012.com
Aug 29 – Sep 9	Paralympics, London, UK	
Sep 14–16	Amsat-UK Colloquium, Holiday Inn, Guildford, Surrey	www.uk.amsat.org/Colloquium/
Sep 14–16	57.UKW Tagung, Weinheim	www.ukw-tagung.de/
Sept 23	Crawley Roundtable (date confirmed)	
Sept 28–29	National Hamfest, Newark	www.nationalhamfest.org.uk/
Oct 6–7	British Amateur TV club convention and BiAGM, Basingstoke	www.batc.org.uk/club_stuff/convention/
Oct 12–14	RSGB Convention, Horwood House, Milton Keynes	www.rsgb.org/rsgbconvention/
Oct 18–21	MUD 2012, Santa Clara CA	www.microwaveupdate.org/ mud2012@pacbell.net
Oct 28 - Nov 2	European Microwave Week, Amsterdam RAI NB European Microwave Conference 2012 is 29th Oct - 1st Nov	www.eumweek.com/
Nov 3	Scottish Roundtable	www.rayjames.biz/microwavert

2013

April 6	CJ-2013, Seigy	cj.ref-union.org/
May 17-19	Hamvention, Dayton	www.hamvention.org/
Oct 8-10	European Microwave Week, Nuremberg	www.eumweek.com/

Don't forget that

Every Monday evening is Microwave Activity Evening