An Amateur Radio publication for the Microwave Enthusiast

scatterpoint

May 2012

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Rotating Beacon for Detection of Rain Scatter Reflection Points (Scatter points)

By Author: Jean Paul F5AYE

Translators: G4ALY / F6AJW

In this Issue

WANTED

Does anyone have, or know of a Floor Stand for a 37/42" TV/ monitor that they no longer need. The UK Microwave Group wants to display information/ presentations about microwaves at events around the UK and need a floor stand up to 6ft tall. If you can help then please contact Graham Murchie, G4FSG, at graham.murchie@btinternet.com or 07860 356775.

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

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Dave Powis	Trophies	G4HUP	g4hup@btinternet.com	daveg4hup

Editor's corner

A very pictorial and bumper edition this month, including the minutes of the AGM, MMRT report, rain scatter beacon , Finningley Round Table details, expedition reports, records. Hope you've been enjoying the rain scatter!

I'm anticipating the arrival of a Raspberry Pi at the end of the month and would be interested to hear from anyone using a microcomputer to control/monitor remote radio equipment (up the garden or across the world).

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

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

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

UK Microwave Group

Annual General Meeting – Sunday 29 April 2012

The AGM was held at 10:00am on Sunday 29 April 2012 at Adastral Park, Martlesham Heath, Ipswich during the Martlesham Microwave Round Table.

There were 30 members present at the AGM.

Apologies for absence from John, G4BAO, who is 10GHz, VHF and HF DXpeditioning with Camb-Hams on Mull. In his absence Graham Murchie G4FSG took the Chair.

AGM 2010 Minutes and matters arising

It was noted that the date of the AGM was moved, by approval of an EGM in April 2011, from November to April "for better weather".

Proposed change to Rule 4.1

Current wording is:

4.1 The affairs of the organisation will be run by a committee of up to 10 members. These will be Chairman, Secretary, Treasurer, Editor and up to 6 other members.

Secretary's comments:

Officers of a committee are generally considered to be Chairman, Secretary & Treasurer.

Para 4.1 does not state otherwise.

There is no explicit rule about one person holding multiple officer posts.

Scatterpoint Editor can be an existing officer, an elected member or a co-opted member.

The Committee propose Para 4.1 be amended to read:

4.1 The affairs of the organisation will be run by a committee of up to 10 members. These will be Chairman, Secretary, Treasurer (The Officers) plus Membership Secretary and up to 6 other members.

Agreed unanimously

Chairman's Report

Thanks to the Committee:–

Kevin Avery	G3AAF	Beacon Manager
Brian Coleman	G4NNS	Education Liaison
Bryan Harber	G8DKK	Membership Secretary
Martin Richmond-Hardy	G8BHC	Secretary and Editor
Sam Jewell	G4DDK	Spectrum Forum
Graham Murchie	G4FSG	Treasurer
Murray Niman	G6JYB	Webmaster and OFCOM liaison
John Quarmby	G3XDY	Contest Manager
<u>Corresponding members</u>		
Kent Britain	WA5VJB/G8EMY	- USA Liaison
Gordon Curry	GI6ATZ	Northern Ireland
Peter Day	G3PHO	Scatterpoint Editor to May 2011
Ray James	GM4CXM	Scotland
Robin Lucas	G8APZ	Beaconspot
Dave Powis	G4HUP	Trophies coordinator
Tony Pugh	GW8ASD	Wales

Standing down this year are:

Kevin Avery	G3AAF
Sam Jewell	G4DDK
Peter Day	G3PHO stood down as Editor earlier in 2011

Achievements since AGM 2010

EME2012 conference is on track to be the best ever. 123 delegates registered with 50+ partners.

As EME2012 is the responsibility of UKuG, this has meant a number of Committee members have put a lot of time in to this.

UKuG still in very good financial shape despite £6000 loan to EME2012 (see Treasurer's Report).

A number of committee proposals made to fund projects, we just need volunteers to make them happen!

Bernie Wright G4HJW mentioned some ongoing discussions about receiver beacons and light beacons.

Members leading UK nanowave and microwave EME activity

Pressure still on for more Beacon NoVs / New Applications despite Ofcom inertia

UKuG continues to work with RSGB, IARU and Ofcom at high level.

Group members well represented in RSGB books and RadCom.

Committee members have represented UKuG and talked microwaves at clubs and meetings, including King's Lynn, CUWS, Harwich, Colchester, Heelweg in the Netherlands and Örebro in Sweden.

UKuG representatives on RSGB Propagation Studies Committee and Contest Committee, as well as Spectrum forum. Thanks to Murray G6JYB for his work with Ofcom and RSGB Spectrum Forum.

Scatterpoint, has become a fully e-magazine under it's new editorship, with top-class technical articles from around the world.

Scottish and Finningley Round tables have increased the interest to the North and West of Stowmarket. ;-)

Finningley in particular has lead the way with its technical workshops thanks to Kevin G3AAF and Bernie G4HJW.

Future Challenges

Your Committee will be looking at:

- How to get more members involved in UKuG Activities. It can't be just the Committee.
- Funding Microwave projects
- A proposal is under discussion to award a "G3EEZ prize", a one-off bursary to fund large projects in the Microwave field.
- The idea of a "Web access Microwave SDR" network has been put forward, but so far no one has come forward to help.
- Expanding beginners and intermediate microwave workshops.
- Raising the profile of Microwaves in Clubs

Reports by Officers

Membership Secretary's Report

2011 396 members (55 new)

2012 402 members (21 new to date)

Yahoo Scatterpoint 46 pending full access

Treasurer's Report

Graham noted that

1. £6000 loaned to EME2012 will come back.

2. The newsletter printing and postage costs ceased with the on-line only version of Scatterpoint.

3. We are considering purchase of two 37" TV monitor for UKμG displays at exhibitions & conferences. One will be located up North and one down South.

The Treasurer proposed no change to the current subscription rate as declared on the UKuG web site: www.microwavers.org. So it is £6 or €10 or US$12 as the acceptable currencies the treasurer can transact via PayPal.

UK Microwave Group			Summary of Accounts 2011 Covering period 01/Jan/2011 to 31/Dec/2011
Item	**Income**	**Expenditure**	**Balance Notes**
Opening balance 01/Jan/11			5387.02
Subscriptions	2196.33		
Donations	5.60		
Beacons	0.00		
Interest	1.51		
Other income	12.80		sale of 'bits'
websites		205.94	
Newsletter printing & postage		427.12	
Beacons		75.00	
Trophies		66.63	
Other expenses		160.80	Display Boards
Sub-totals	**2216.24**	**935.49**	
Closing balance 31/Dec/2011			**6667.77**
P. G. Murchie G4FSG **Treasurer**			

Contest and Awards Report

- Entries in the 5.7/10/24GHz Cumulatives recovered from the dip in 2010, although activity appeared to be down on previous years.
- Entries in the Low Band events (1.3/2.3/3.4GHz) were well up on the previous year, particularly for the first event in March with over twenty entries.
- Potential changes to the contest programme will be discussed in the Contest Forum later today. There will be a further consultation on any proposals in November.
- 2 Firsts Certificates have been issued since the last AGM both to G4ALY for contacts with Spain on 5.7 and 10 GHz.
- The Microwave Squares Awards were re-launched in January 2011. To date 5 have been issued, 1.3/20 to G0EWN, 1.3/60 to G4NBS, 3.4/25 & 30 to WW2R, 10/5 to DL3MR, 10/10 to G0EWN.
- Re-launch of the Distance Awards is planned during 2012
- Formal links are now in place with the RSGB Contest Committee to coordinate microwave contests.

Trophies & Awards Presentations

The G3BNL Award was presented to Stuart Wisher G8CYW and team for lightwave developments

The G3EEZ Award was presented to G4NNS for his work raising the profile of 24GHz EME and also his outreach work on radio astronomy.

The Fraser Shepherd Award will be presented by the RSGB to Graham G4FSG in recognition of 30 years of beacon co-ordination, supporting research into microwave propagation.

Contest Trophies

G3KEU (5.7GHz) Telford & DARS G3ZME/P

G3JMB (10GHz) Steve Cooke G1MPW/P

G3RPE (10GHz) Telford & DARS G3ZME/P

G0RRJ (24GHz) Telford & DARS G3ZME/P

24GHz Award Chris Whitmarsh G0FDZ/P

G0RRJ Memorial Trophy Telford & DARS, winners of the 10GHz Cumulatives

No 47GHz entries (again)


G3BNL Award


G3EEZ Award


1


2


4


5

Contest Trophy Presentations

1 Mike G4NKC – G3KEU 5.7G
2 Dave G8VZT – G0RRJ 24G
3 Jim G8UGL – G3RPE 10G
4 Chris G0FDZ – 24GHz
5 Steve G1MPW – G3JMB


3

Election of Committee and Officers for 2012/2013

The following members have stood down and were thanked for their services over the years.

Kevin Avery	G3AAF
Sam Jewell	G4DDK
Peter Day	G3PHO stood down as Editor earlier in 2011

There being no other nominations, the Committee was re-elected en bloc.

Agreed unanimously

The Committee for 2012 are:

Officers & Membership Secretary		
John Worsnop	G4BAO	Chairman
Graham Murchie	G4FSG	Treasurer
Martin Richmond-Hardy	G8BHC	Secretary and Editor
Bryan Harber	G8DKK	Membership Secretary
Members		
Brian Coleman	G4NNS	Education Liaison
Murray Niman	G6JYB	Webmaster and OFCOM liaison
John Quarmby	G3XDY	Contest Manager
Corresponding members		
Kent Britain	WA5VJB/G8EMY	USA Liaison
Gordon Curry	GI6ATZ	Northern Ireland
Ray James	GM4CXM	Scotland
Tony Pugh	GW8ASD	Wales
Robin Lucas	G8APZ	Beaconspot
Dave Powis	G4HUP	Trophies coordinator

AOB

None.

The meeting closed at 10:30.

Did someone mention EME2012?

Martin Richmond-Hardy, Secretary

Sunday, 6 May 2012

WANTED

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Martlesham Microwave Round Table

Saturday & Sunday 28/29 April 2012

We began with breakfast with the Old Codgers – a warming fry-up on a cold, wet Saturday.

Then, if you have spare cash and are in need of a tinplate box or three, G3NYK can oblige.

The Light Brigade (Bernie G4HJW) are in action alongside Kevin G3AAF

...and one of their transceiver heads in the demo room.

A very attentive audience

At dinner
(the breakfast had almost worn off)

EME 2012 News

Cambridge 16–18 August 2012

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
Daniella 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 Miller 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 over 120 delegates already registered and with over 50 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.

The conference organising committee have negotiated a range of inclusive accommodation packages. You can find full details of these and the conference program at eme2012.com . We have recently added a lower cost option of “Standard” rooms which have wash basins but share their bathroom and toilet facilities. A two night package (C) in a standard room costs:– £15 for registration, which includes your copy of the printed proceedings and a DVD. £215 for accommodation including breakfast, morning and afternoon refreshments and buffet lunch on both days, and Friday dinner. The Gala dinner on Saturday is £45 – so a total of £275 gives you the whole conference experience, with only your bar bill to add ! Day passes are also available and these also include morning and afternoon refreshments and a buffet lunch. **But book by 1st June to avoid a price increase.** For security reasons, advanced booking is essential.

See you in Cambridge?

Nanowaves

NE group first contact on the 400nm Ultra-Violet band.

By Stuart Wisher G8CYW

If you have ever looked in on the UKNanowaves Yahoo group started last summer by Barry, G8AGN, (you should, if only in passing, several of us are now hooked!), the group description says:

"This group is dedicated to amateur experimentation and communication using nanowaves, e.g. visible light, infra-red and ultra-violet radiation".

Realising that although plenty of stations are now exploring possibilities using red light around 630nm, only the NE group and a few others have been exploring infra-red (IR) communication at 940nm and 850nm, but nobody has so far admitted to trying to employ ultra-violet (UV) rays as stated by Barry in the group description. This was Stuart's , G8CYW, cue to explore the possibilities for UV communications in his "skunk works", oh, all right then, shack.

It turned out that all that was required was to mount a readily available low power 5mm UV LED in place of the usual high power LEDs and increase the series resistor to something that would limit the LED current to 20mA, some two orders of magnitude below the 2A peak that had been usual before. It was thus that the QRP UV TX was developed. Since the UV LED had a much reduced response used as a photodiode, the old separate RX circuit was pressed into use. This was tested on the bench and found to work well enough to allow an outing to the Northumbria Amateur Radio Club, (NARC),to be planned to demonstrate this as we had done before with previous rigs.

Brian, G8KPD, Gordon, G8PNN and Stuart G8CYW travelled to the Northumbria Amateur Radio Club on Thursday 1st March to make our first real two-way QSO on the Ultra Violet band (400nm). We chose a short hop of some 250m from the club workshop, through the open door, across a road and along a grassy strip next to another road. Brian and Gordon were located with one rig in the club workshop and Stuart placed himself at the other end. I am sure the locals must have thought he was part of a night-time radar speed trap as all the traffic crept past the chap with the tripods and the black tubes on top located at the side of the road. Maybe they were just curious.

We were using the separate RX and TX set-up described earlier with 100mm glass lenses using all the gear previously used on visible and IR contacts except for the fact that the UV leds will not work on receive very well so we resorted to using separate receivers with SFH203 photodiodes operating at the upper limit of their frequency response. A small amount of visible violet light is also produced by the low power 5mm LEDs in use, and when Brian aligned his TX exactly on Stuart this looked bright from 250m away, but off axis, no-one would see anything.

Signals were first exchanged on FM at around 18kHz sub-carrier frequency which totally saturated the FT-817 used as an IF with the optical transverter. It is worth mentioning that the LEDs each had a 270 ohm resistor in series to keep the current down to 20mA. SSB on the same sub-carrier frequency was so strong as to give the receiver problems coping with the extreme signal strength. Because of this, we got a bit blasé about the aim of each TX and discovered that for UV, scatter is obvious, as Brian moved the workshop TX and scanned the beam around, bouncing the beam off first the workshop wall and then the doorway, no break in the signal was detected at Stuart's end, indeed, conversation mode was evident all through this. During all this Stuart could not see any visible beam emanating from the club workshop end.

We are now going to modify the mounts so that we can use the larger Fresnel lenses for some trials at greater distances. QRP on 400nm certainly looks worthy of further exploration.

It may be worthy of note that Stuart , G8CYW now has no less than four different rigs for nanowave communication, the IR band being best represented with LED transceivers for 940nm (6.5km worked) and 850nm (46km worked in daylight), the main rig for 630nm (red light, 117.6km worked at night and 46km in daylight) , these three rigs all use various Golden Dragon LEDs running at up to 2A peak on SSB effectively in class B operation, and reverse biased on receive. These are now supplemented by the 400nm QRP rig using the flea power 5mm LED on transmit as described above.

PS. If you are an RSGB member, see for Stuart's *More Adventures in Optical Communications* in May's RadCom, (pp 40 and 41) for an update on activities since the original articles were published last year.

Stuart G8CYW

Stuart has been awarded the Ostermeyer trophy for the Radcom articles (Ed.)

SHF Guernsey June 22-27

The Telford and District Amateur Society will again be visiting the Island of Guernsey and will be operating on.

HF 160 Meters to 10 Meters.

VHF 50MHz 70MHz 144MHz UHF 1.3GHz

SHF 2.3GHz 3.4GHz 5.7GHz 10GHz 24GHz.

We had great fun last year. More details on qrz.com under **gp3zme**.

You may follow the DX Expedition on twitter. 2W0ZJA will be tweeting updates, frequencies, etc. **twitter.com/#!/@2W0ZJA**
VHF talk back and ON4KST chat will also be used.

Locator Square of the camping site is IN89qk but members of the group may well move around the island looking for the best paths to UK EU etc.

Paul M0PNN

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

Microwave Field Day

Sunday 5th August

Please give publicity for a recently introduced contest aimed at clubs and portable groups which provides a good opportunity to introduce club members to the microwave end of the spectrum. Microwave Field Day was introduced by the UK Microwave Group last year; for 2012 we are looking to get a wider range of clubs involved.

Microwave Field Day takes place this year on Sunday 5th August 2012, from 0900 – 1700z (1000 – 1800 BST), on the 1.3GHz and 10GHz bands (23 and 3cm). There are open and restricted sections, the restricted section has power limits of 10W for 1.3GHz and 1W on 10GHz. Single band entries will be very welcome. Only portable stations can enter the event, but fixed stations are encouraged to come on and give points away and submit check logs.

The RSGB runs its 144 and 432MHz Low Power Contests on the same weekend, so a group can enter several events over one weekend for a small incremental effort.

The UK Microwave Group is keen to see more stations getting active on the microwaves and we think this event is a great way to get club members interested. Active microwavers are being encouraged to loan their stations to local clubs to get them started.

Complete rules can be found at:

http://www.microwavers.org/files/2012-mwrules.pdf

John Quarmby G3XDY

RAL 10 June 2012

Rutherford Appleton Labs, Didcot, Oxfordshire

By Mike Willis G0MJW

Harwell Amateur Radio Society are organising this years RAL Microwave Round Table. The date is the **10 June** at the RAL Recreational Society (the same place as last year). See the web site for directions.

Registration

There is a registration email rt@g3pia.org.uk – please indicate if attending to this address. We would like the names and callsigns for those attending so we can make up badges and plan the catering. If you want to do any testing it is a good idea to let us know beforehand so we can bring the right equipment.

Event Info

The event is to be held in the RAL Recreational Society building. This building has great facilities and it avoids the need to come onto site which has simplified the event organisation considerably.

Test Facilities

The test facilities are one of the main reasons for holding the RT at RAL. As usual what we can measure will depend on what equipment is actually available on the day.

Power Measurement, Spectrum Analysis and Signal generation to 24GHz

***** Remember to bring all the power supplies, leads and tools you need! *****

Refreshments and Lunch

There is a full licensed bar in the building. Refreshments in the form of tea, coffee, sandwiches and cake will also be available

The RAL Round Table - Sunday 10 June 2012	
1000	Doors open
1000-1200	Informal socialising/testing/surplus swap tables
1200-1245	Lunch:
1245-1330	Lecture 1: Mike Stevens, G8CUL – Low-cost processor evaluation boards for aerial elevation measurement and control
1330-1415	Lecture 2: Roscoe Harrison, M0BTZ – A beginner's experiences on constructing loop yagi antennas for the 23cm, 13cm and 9cm bands
1415-1430	Tea Break
1430-1515	Lecture 3: Doug Friend. VK4OE – Catching the Inspiration - Amateur Microwaves in VK
1515-1600	Lecture 4: Chris Bartram, GW4DGU – Latest designs for the Microwave Bands
1615	Event closes.

Finningley 14–15 July 2012

www.g0ghk.co.uk/

Sandtoft, North Lincolnshire

Main Gate open from 08:30 pm

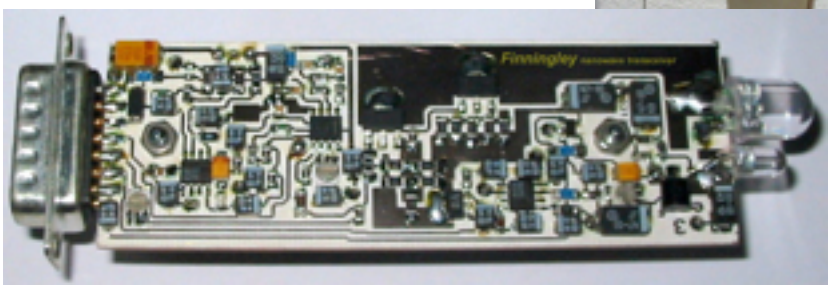
Camping / Caravans from Friday till Monday

Registration / Refreshments on arrival – Tea or coffee & Biscuits

Provisional Agenda

Saturday

- Introduction Kevin G3AAF & UK Microwave Group Chairman John Worsnop G4BA0
- Finningley Optical transceiver introduction & Background – Bernie Wright G4HJW (see page 17)
- SMD construction for beginners "Building the Finningley Optical Transceiver" – Kevin G3AAF
- Optical Transceiver Build session Supervision and testing Facility available both days.
- Update on Optical technology & operating – Stuart Wisher G8CYW
- Test Equipment available all weekend
- Noise Figure Measurement & test kit available all weekend 2 * HP 8970, HP 346A – G8FEK
- RFD 2305
- RFD 2315
- Talk on affordable Noise figure measurement in your Shack 10MHz – 10GHz G3AAF
- Demonstration of the Finningley Optical Transceiver across the FARS grounds. G4HJW / G0EWN
- Pre –Dinner drinks at The Reindeer pub, Sandtoft
- Evening dinner at the Reindeer



Sunday

- Test Equipment All day NF measurement..
- Optical Constructional project – Build & Test – prize for the best build standard!
- Antenna Test range – David Wrigley G6GXK & Tom Jones G4TWJ : 13cms – 24GHz
- (Fleamarket / Traders)
- Technical Talks 1 "Directional Couplers Bryan Harber G8DKK
- Technical Talk 2 TBD
- Technical Talk 3 TBD

Traders on Sunday

Bob G1EPL	Test kit
Garry Weston G6LJC	Microwave parts & cables
Kanga products G6YBC	Radio kits including the Finningley SDR
Dave Wood G4TIW	Microwave components & test kit
Chris Gill G8EEM	13cm Power Amps !
Alan Melia G3NYK	Schubert boxes, etc.
Sam Jewell G4DDK	LNAs, WA5VJB antennas
Dave Powis G4HUP	LC meters, distribution amplifiers, Direct Frequency Synthesisers, ERC Rotator Controllers.

625nm (red) optical transceiver –

this year's Finningley RT smd build excercise

By Bernie Wright G4HJW

The Finningley Round Table (see p.16) is being held over the weekend 14/15th July, and there will again be an smd soldering workshop available on the Saturday. For those just wanting to dabble, scrap boards will be provided to practice on, and there will be general advice on smd component replacement, both in terms of industry standard practice and short-cuts that may suffice within the average workshop.

As usual, for the more enthusiastic there will be a 'take home' project which this year is a nanowave transceiver, a prototype of which was recently used in combination with a 4" diameter telescope over a 65 km path between G8AGN/G0EWN and G3AAF/G4HJW. This transceiver is a little larger than the Finningley 80m SDR receiver of a couple of years ago, but as the photo shows, is of similar complexity. Continuous support for the build and test of this assembly will be available over the entire weekend. Optical QSO's across the club premises afterwards will probably be considered mandatory.

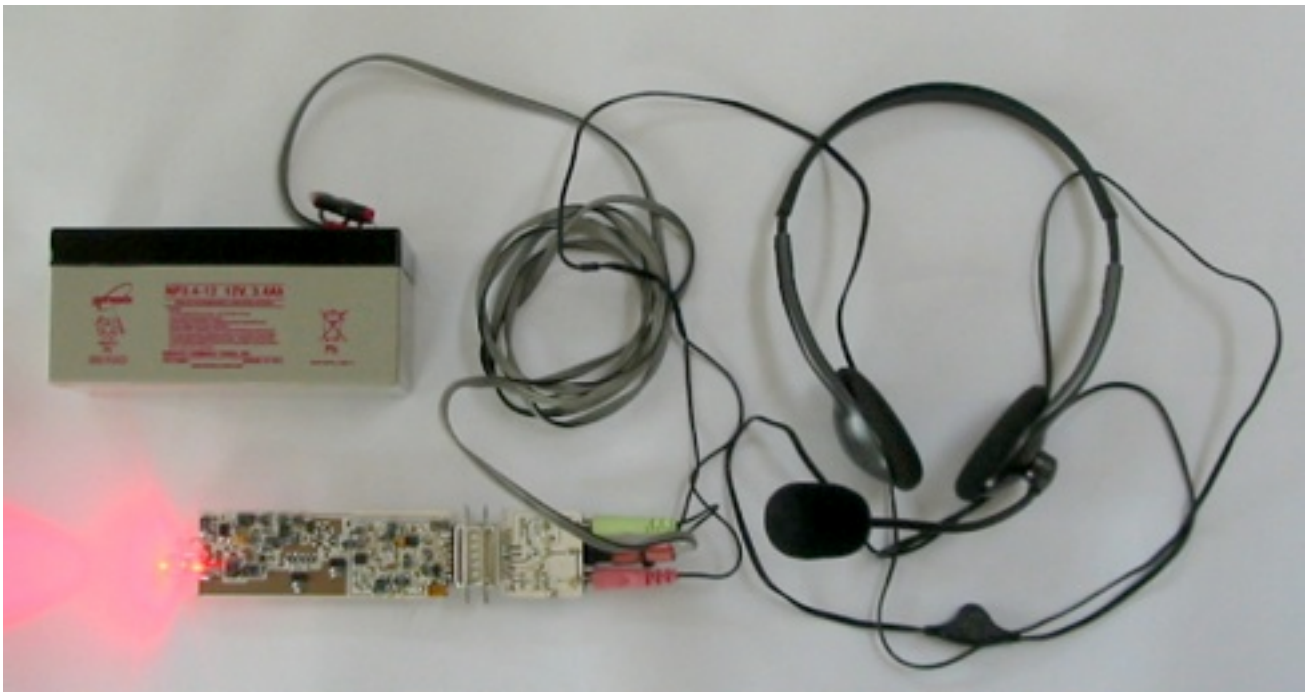
To keep the project relatively simple, the circuitry has been spread over two pcb assemblies, with the main board containing independant receiver and transmitter paths terminating in a 15 way D connector. Although this can be used 'as-if', a second interface/test board assembly is included with this providing muting of the transmit audio on receive (and the receive audio on transmit), and a switch to key the main board's1 kHz tx tone generator. Plus, two 3.5mm jacks allow baseband operation via a standard PC/Skype headset. Other configurations can be achieved either by wiring directly to a mating D connector, or by producing a dedicated interface pcb, as appropriate. An obvious example of this would be an interface board to allow sub-carrier operation.

Whilst the transmit power is modest (0.5W dc input to the LED), the receiver has good sensitivity. Thus, even if the builder has no interest in transmitting, it will be possible to monitor a wide variety of optical noise, including star light scintillation when used with a 4" diameter telescope, and for builders of the transceiver on-the-day, a suitable 4" telescope will be available 'at cost' (i.e., very cheap).

Details can be found at: http://www.earf.co.uk/nanotrx.htm

This web-site is gradually being built up and should be complete in time for the RT – so it may be worth re-visiting from time to time.

Bernie, G4HJW



Rotating Beacon for Detection of Rain Scatter Reflection Points (Scatter points)

Designed and constructed by: Groupe Hyper Savoyard (Savoie / France)

By Author: Jean Paul F5AYE Translators: G4ALY / F6AJW

Purpose

When weather conditions are favourable for Rain Scatter, this beacon will allow an amateur to accurately locate any area permitting RS on 10GHz.

The beacon makes one revolution in 60 seconds and is synchronized to the DCF77 transmitter (time signals on 77 KHz). At zero seconds, the beacon's beam is at zero degrees, at fifteen seconds 90 degrees and at thirty seconds at 180 degrees, etc. ....

Principle

Any one foreseeing the possibility of RS conditions (following an announcement on the weather forecast, for example) should direct his antenna to the assumed area with successive steps of 2 to 3 degrees every minute. If a reflection point does exist, the beacon signal will be heard.

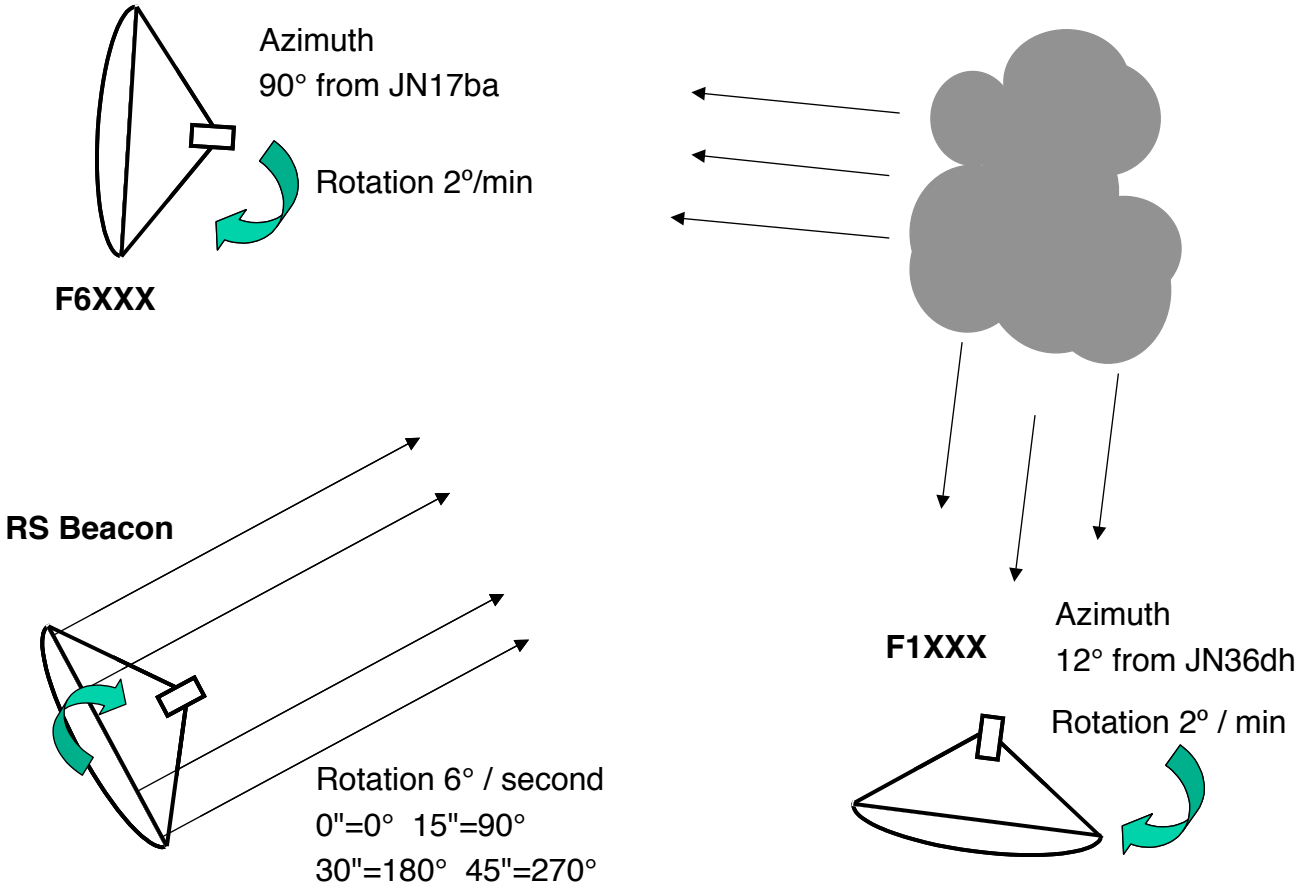
Using an accurate clock, synchronised to DCF77 or the internet and knowing the beacons beam direction and that of his own antenna will enable the user to locate the co-ordinates of the reflection point. These coordinates, shared with others, should allow many RS contacts.

Operation

1) Omnidirectional operation: The beacon will transmit in conventional operation using an omnidirectional antenna (slotted waveguide).

2) Directed operation: By using a mobile telephone it is possible to send an SMS to the beacon requesting operation in a particular direction. The beacon will then switch on the rotating antenna and orient it into the required direction for 10 minutes. Then it will return to omnidirectional operation.

New slot antenna 10368 MHz



3) Rotating operation: In order to locate a Scatter Point, by using a mobile phone, it is possible to send a text command asking for rotation. The beacon will then switch on the rotating antenna and will run for 10 minutes. Then it will return to omni operation.

Specifications

TX output power: 1 W

108 MHz OCXO

FSK 1KHz positive

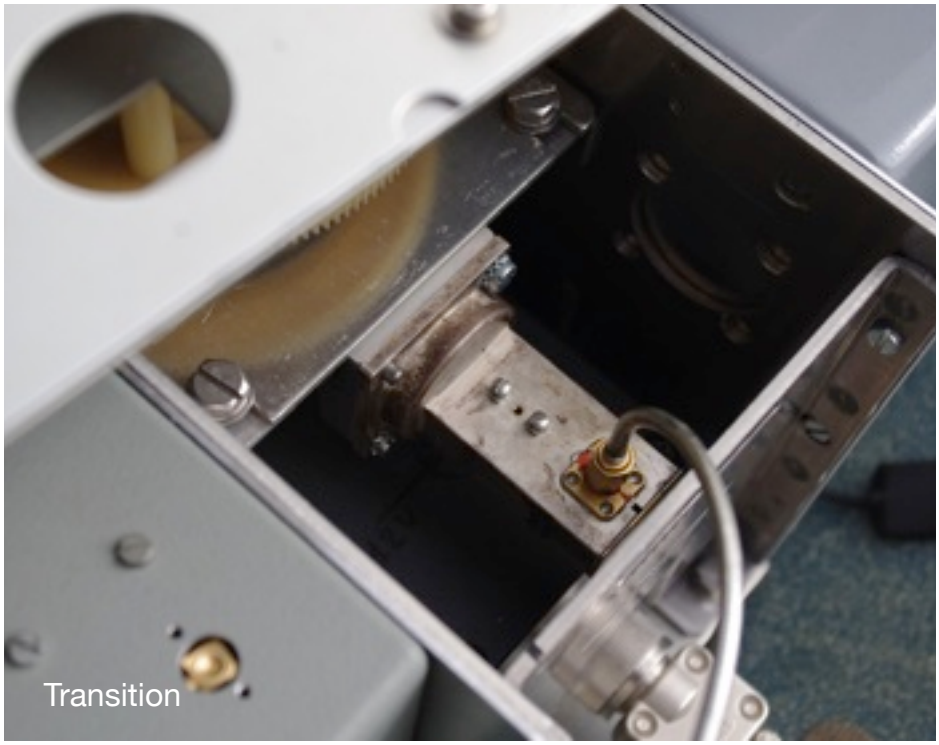
QRG: 10368, 8396 MHz

Hardware

Mechanical base : FURUNO Marine Radar

A new slotted guide adapted to the frequency of 10.368 GHz has been constructed (the former antenna designed for 9.5 GHz gives an unusable radiation pattern on 10.368 GHz).

The original speed-controlled DC motor has been replaced by a stepping motor with a “micro-steps” controller. A flexible mechanical coupling system attenuates mechanical vibrations generated by the stepping motor.


Transition

The control logic is performed on by two PIC 16F876. It allows the settings of parameters using a terminal and remote control via telephone (DTMF or SMS) through an associated GSM module.

The OCXO is DF9LN type, the multiplier is F6BVA design and PA is a former Qualcom amplifier.

GSM SMS command

Rotation RS mode: type ‘rs’

The beacon will start transmitting for 10 minutes and then return to omni.

Directed beam: type ‘cde’ and azimuth in degrees, eg 123 degrees: type ‘az123’

The beacon will start transmitting for 10 minutes then switch back to omni.

There is also a command to query the various parameters of the beacon.

Beacon location

It will be located on a moderately clear site on the eastern border of France

Work still to be done

- Flexible coupling to be strengthened.
- Implementation of the omnidirectional slot antenna used in standard mode.
- Replacement of switched power supplies by a serial regulated power supply (to prevent DCF77 reception interference).

Testing

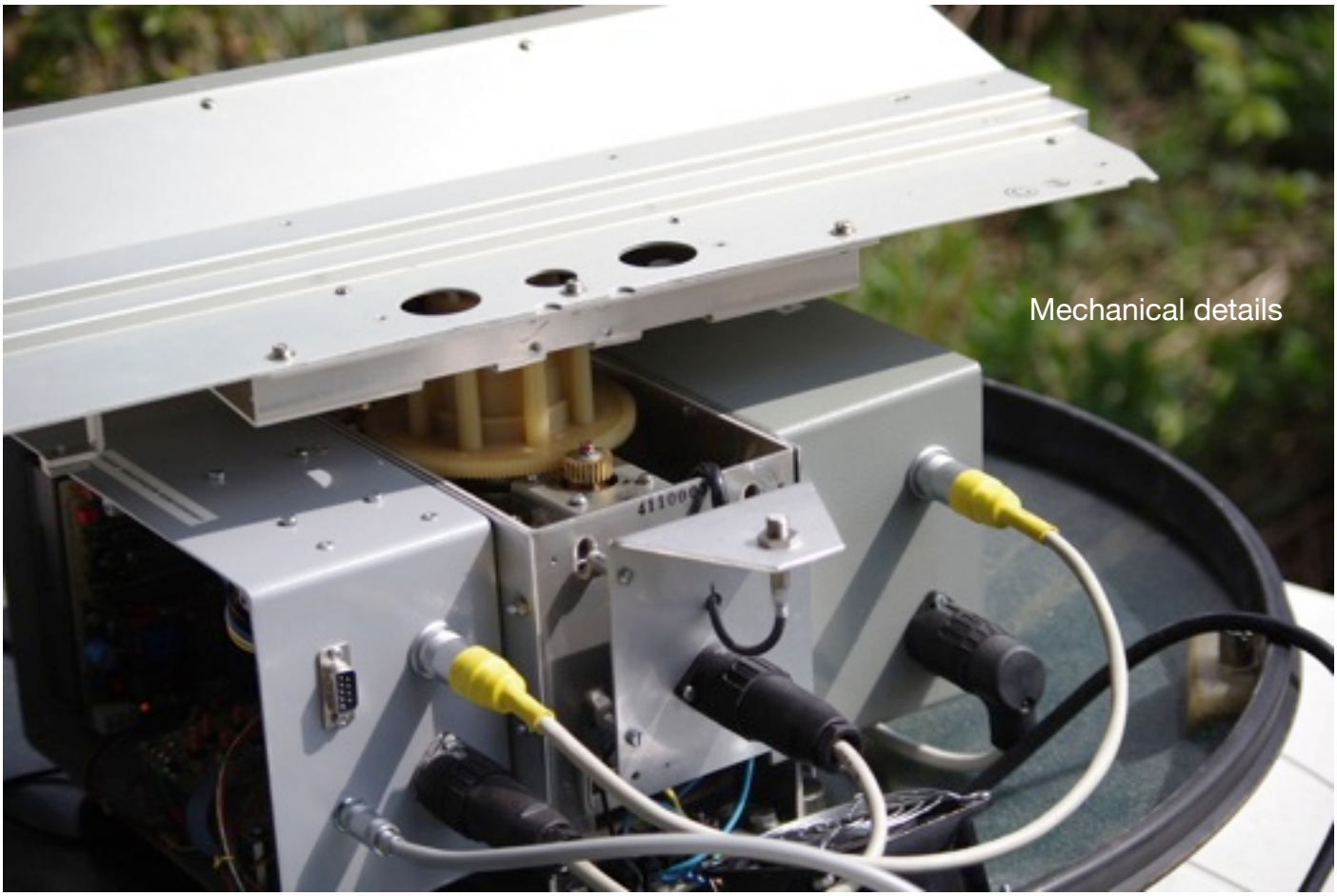
The first test (from a portable location) will start when storms develop on a mountain close to Geneva. These tests will determine the best location for a permanent site for the beacon.

Participants in this project:

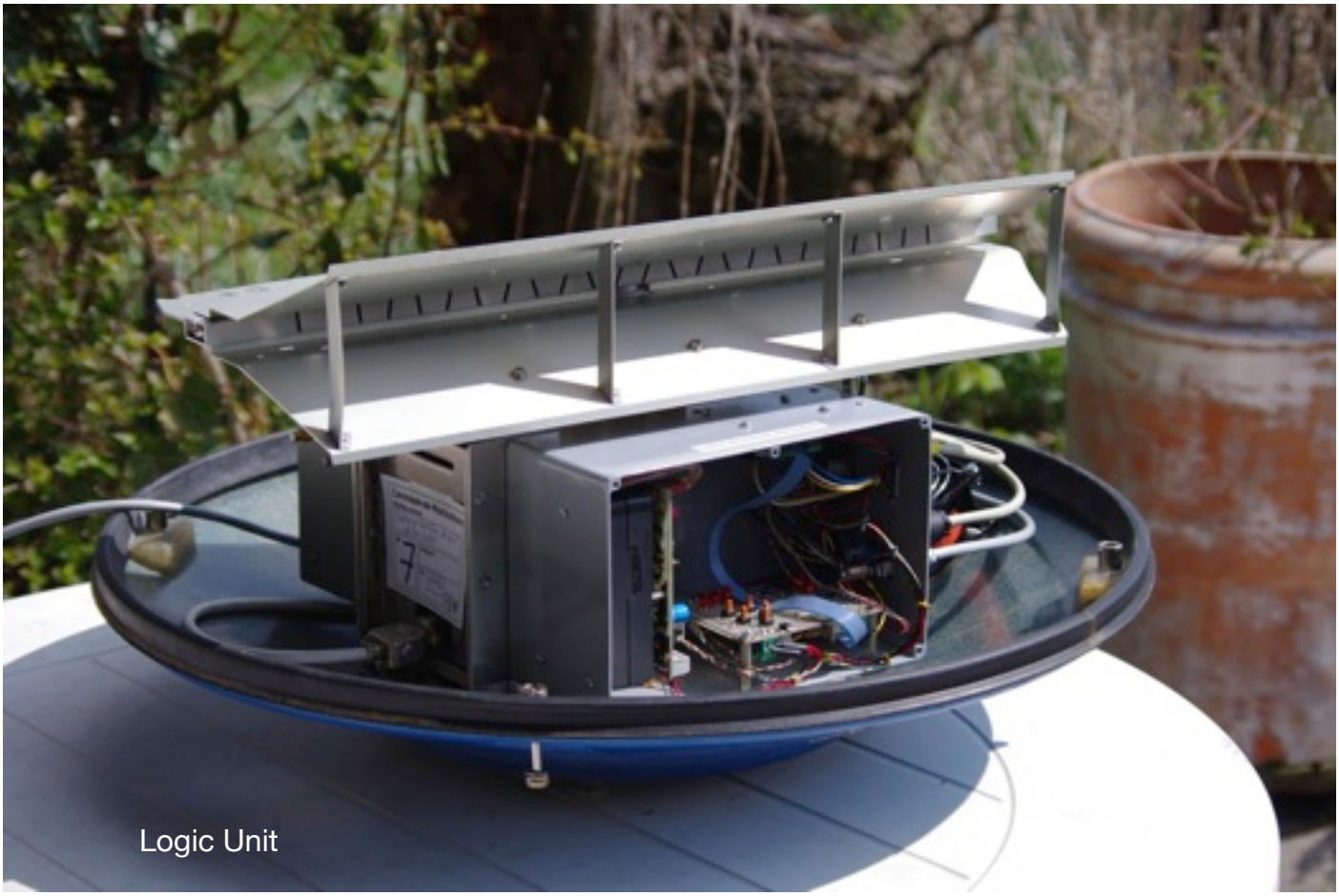
F1URI, F4CXQ, F5AYE, F5JWF, F5UAM

Author: Jean Paul F5AYE

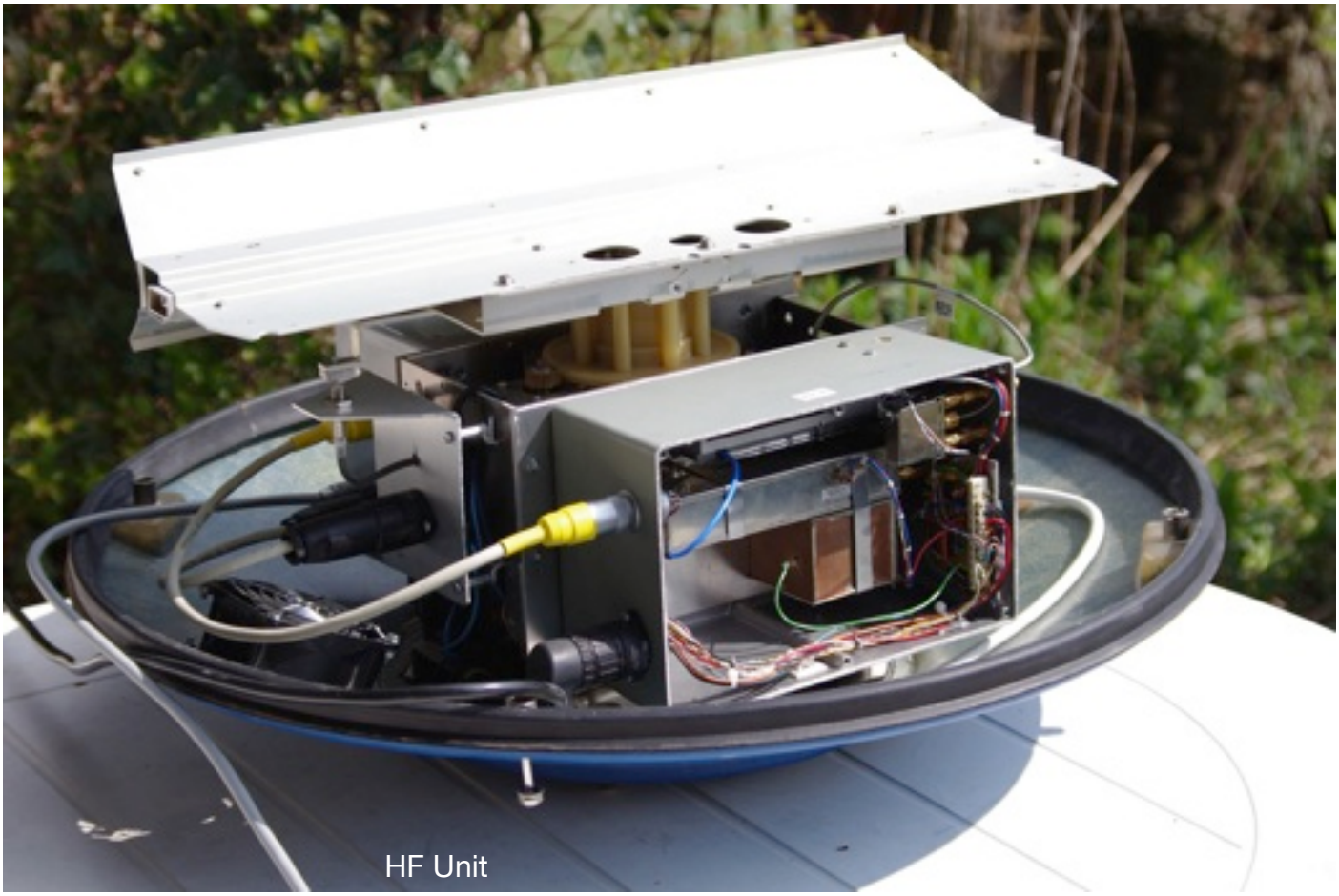
Translators: G4ALY / F6AJW



Mechanical details



Logic Unit



HF Unit

ON0EME Moon beacon

By Eddy Jespers ON7UN

Many of the active 1296 EME stations have noticed a signal at 1296 sending "***de ON0EME***" (4 times) followed by 10 seconds of pure carrier and 20 seconds of silence. What you hear is an automatic station tracking the moon when the moon is 10° or higher on its horizon, and stops when the moon is +10° before setting (License restrictions).

The idea started in Örebro Sweden during the EME meeting in May 2011. A discussion was going on how to promote our hobby. One of the idea's was a beacon transmitting a signal on the moon, encouraging people trying to receive the weak reflections.

An Idea was born. On our way back home we (***HB9BBD, ON4BCB*** and ***ON7UN***) further discussed the possibilities and we found that a lot of hardware was in our hands already to start this project. We started to look for a location, a high power license, started to search for equipment and started to build equipment. After about 11 months of intensive work, the baby was born and ***ON0EME*** was transmitting direction moon.

The total EIRP is about half a megawatt of power following the moon. Antenna is a solid 3.7m dish. The system is completely automatic and a the beacon starts when the moon is on the east side +10 degrees, by turning the antenna from the point where it stopped the moon cycle before (moon set in the west +10°).

We designed the beacon having following design criteria on mind: Frequency must be GPS locked and the transmit frequency must be 1296.000000MHz. Frequency accuracy is 3×10^{-11}. A second feature is that the timing of the beacon is also GPS controlled, the beacon will start transmitting at the minute. Further the amplitude of the signal is within +/- 0.2 dB amplitude, giving a very stable signal. Antenna pointing is being updated every 0.4° good enough for a 3.7m reflector.

We have complete remote monitoring and control of the beacon, measuring voltages, power, temperatures so complete housekeeping can be seen.

Users can check the operational parameters of the beacon on www.on0eme.org you can see if the beacon is active, if the moon is above our horizon, if the beacon is OK to transmit (+10° elevation) and even when the PTT is being send to the exciter.

Reports have been received from small stations receiving the beacon. Please post reports on "moon" or "moon-net" reflectors.

The beacon is located in the north of Belgium and having a good visibility to the moon both high and low declination for the complete moon cycle.

More about the beacon at the Swedish meeting in Örebro and at EME2012 in Cambridge.

Attached a picture of the moon beacon on its final location with, in front, its founders : HB9BBD , ON4BCB , ON7UN

The moon beacon on its final location with its founders :

HB9BBD , ON4BCB , ON7UN

King Island 10 and 24 GHz DXpedition

By Rex Moncur VK7MO

From 12 to 14 April Rex VK7MO and Eric VK7NFI visited King Island to activate three rare grid squares on 10 GHz. 24 GHz was taken just in case.

As shown in Fig 1 there are four grid squares on King Island, three of which QF10, QF20 and QE19 are only accessible from the Island. Eric was the pilot and provided his light two-seater aircraft to access the Island. There is only a small amount of room behind the seats so the 10 GHz system had to be specifically designed to fit the aircraft and used a small 47 cm plastic offset dish.

When the idea of taking 24 GHz came up and more room was required, it was necessary to push the seats hard forward such that it became a contortion exercise to fit into the aircraft as shown in Fig 2.

The visit had been planned for some weeks but had to be deferred due to poor weather. As it turned out, the weather was both perfect for flying and for radio propagation for the three days of the trip. Operations were conducted from QF10, QF20 and QE19 as shown in Fig 1.

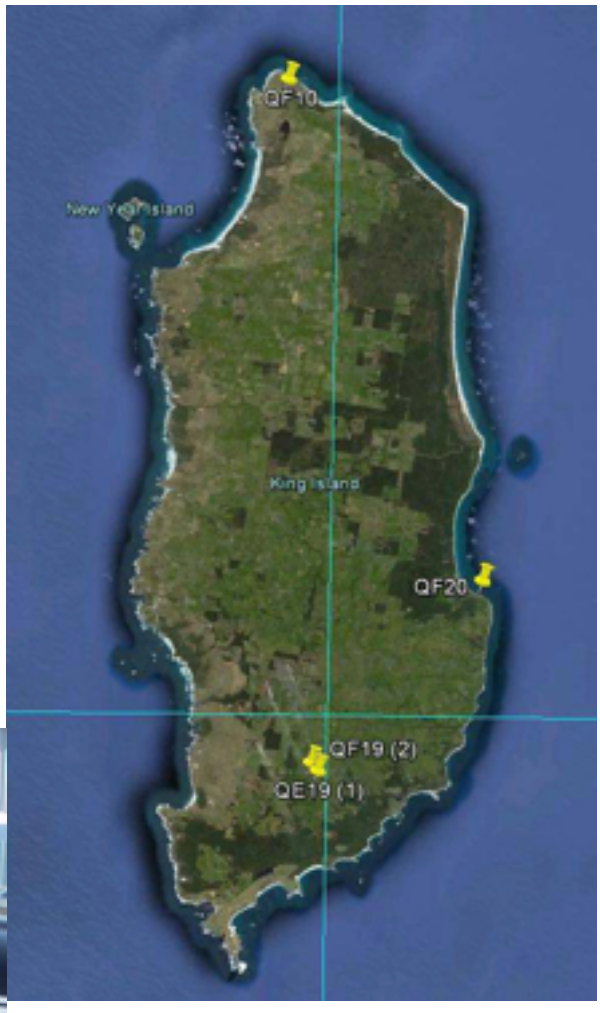


Fig 1: Operating locations in Grid Squares QF10, QF20 and QE19. Two locations were needed at QE19 to work either East or West.

Fig 2: Rex VK7MO after squeezing into aircraft with equipment behind the seats.

Equipment

10 GHz	24 GHz
DB6NT Transverter GPS-locked	DB6NT Transverter & Oscillator GPS-locked
DB6NT 3 watt PA	DB6NT 3 watt PA
47 cm offset dish and HB feed	47 cm offset dish and HB feed
FT817 IF	Same as 10 GHz
Small wooden tripod with Camera mount	Same as 10 GHz
Dell Netbook	Same as 10 GHz
Firefly GPS and antenna	Same as 10 GHz
2 x 20 Amp hour Gell Cells and charger	Same as 10 GHz

Fig 3: 10 GHz system at QF20, tripod stabilized with shopping bags full of rocks

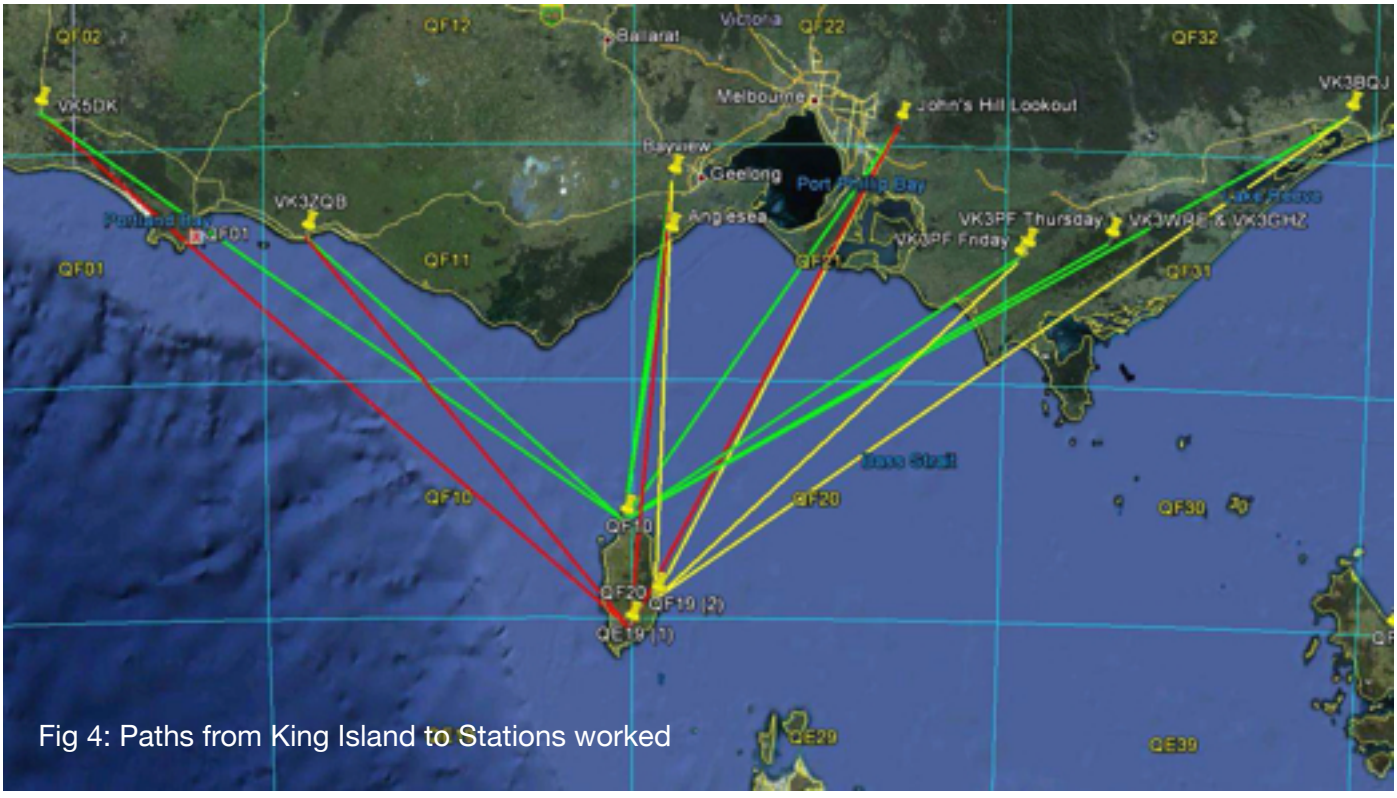


Fig 4: Paths from King Island to Stations worked

Paths of Propagation

Fig 4 shows the paths of propagation to the stations. The list of stations worked from each grid square was as follows: (* for stations at John's Hill lookout and # for stations at either Anglesea of Bayview).

QF10 10 GHz: VK3HZ*, VK3PY#, VK3AKK#, VK5DK,VK3ZQB, VK3HY*, VK3MQ*, VK3PF, VK3NX#, VK3BQJ, VK3TPR*, VK3WRE, VK3QM# and VK3ALB#. Best distance VK3BQJ at 393 km -13/-15 dB JT65c.

QE19 10 GHz: VK3HZ*, VK3MQ*, VK3TPR*, VK3HY*, VK3PY#, VK3AKK#, VK3QM#, VK3NX#, VK3ZQB and VK5DK. Best distance VK5DK at 372 km -12/-20 JT65c.

QF20 10 GHz: VK3HZ*, VK3NX# , VK3PY#, VK3AKK# , VK3QM# , VK3MQ* , VK3HY *, VK3PF and VK3BQJ. Best distance VK3BQJ 400 km -15/-17 dB JT65c.

Attempts were made on 24 GHz on 12th and 13th of April from QF10 and QF20 but nothing was heard or seen. On 14 April we returned to QF10 and started on 10 GHz to pick up stations not worked earlier. The Geelong group had moved a little closer, to Anglesea (132 km) and were giving reports of 5/9+60 dB which augured well for 24 GHz. As soon as VK7MO started TXing on 24 GHz, the Geelong group received the signal and reports were exchanged at 5/8 and 5/9 on VK3NX's system and 5/2 and 5/9 on VK3QM's system running 60 mW. The Geelong group then moved back to Bayview to extend the distance while we focused on VK3HZ at John's Hill lookout who was worked at -20/-18 dB on JT65c. At Bayview VK3NX was worked at 5/4 and 5/7 over 161 km. Stations worked on 24 GHz were:

QF10 24 GHz: VK3NX#, VK3QM#, VK3AKK#, VK3ALB# and VK3HZ*. Best distance VK3HZ 226 km

Overall the results were beyond expectations and Rex was ecstatic with the 24 GHz results as may be seen in the photo at Fig 5.

Fig 5: An ecstatic Rex VK7MO after the 24GHz QSOs with 24GHz dish and system

Fig 6: Eric VK7NFI – pilot, driver and assistant

The reasons why 24 GHz worked on the Saturday morning from QF10 but not at all from the same location on the Thursday evening are unclear. Analysis of the met data shows only about 5 dB difference in absorption loss so it appears there was some other explanation. The most likely is that a surface duct developed by the Saturday morning and significantly improved propagation.

Special thanks to Eric VK7NFI (Fig 6) for providing the light aircraft and assisting on the Island.

Rex Moncur VK7MO

Bodger's Guide #7 – Addendum

A simple PSU, control and sequencer for a large GaAs PA

John Worsnop G4BAO

Since the move of g4bao.com to a new server, you will now be able to download the files for the PA controller from last month's issue from:

www.g4bao.com/Scatterpoint/PA_controller/3cm_Mull.zip

Activity News

By John Worsnop G4BAO

Please send your activity news to:

scatterpoint@microwavers.org

Camb-Hams Mull2012 DXpedition

While not a Microwave DXpedition I managed to squeeze in a little microwave activity with the Camb-Hams from Saorphin Farm ***IO66vh*** on the beautiful Scottish Island of Mull last month. You can see a blog of the whole activity by following the link above.

The picture shows Rob M0VFC about to pump up the 20m mast with the 144MHz and 10GHz systems on “Flossie” the Camb-Hams radio van.

Thanks to the kind loan of a transverter and PA from UKuG Awards Manager G4HUP, I was able to put together a 10 watt 10GHz system and 60cm Sky dish to take with me on the trip. The site turned out to be a bit of a disappointment from a microwave point of view, being in a bit of a “bowl” but we did manage

one 10GHz QSO from Flossie on the 30th of April at 1826 with Alan ***GM0USI/P (IO75ur)*** at 128km for **what we believe to be the first QSO with IO66 square on 10GHz**.

Sadly we failed with ***GM4ISM (IO85ar)*** and a number of more distant stations.

On the 4th of May, the last day on the Island, we decided to man-haul the whole 10GHz system to a local hilltop. The hilltop activity was "entertaining", with very low temperatures and a howling wind. As you can see from the second photo, we "hung" the generator to stabilise the tripod, and tied it all to M0VFC to stop it all blowing away! Steve M1ACB volunteered to carry the generator, but regretted it about halfway up a boggy hillside! We worked Alan GM0USI/P again, this time 59 both ways on SSB and heard the faintest signal from GM4ISM, but no QSO resulted.

M0VFC (left) and the Author on the Mull Hilltop

Later that day we decided at the last minute to activate 1.3GHz and had SSB QSOs with Island resident, GM4PMK, plus (***GM0USI IO75uv)*** 128km, ***GM4CXM (IO75tw)*** 122km, ***GM8IEM(IO78hf)*** 220km, plus CW Aircraft Scatter QSOs with ***G4KUX (IO94bp)*** 430 km and ***G4CBW (IO83ub)*** for ODX on the band of 441km.

The latter two QSOs showed the real advantage of using 18wpm or faster Morse and 1 minute periods for Aircraft Scatter. I had no tropo signal from either station, but both QSOs competed in the 30 seconds either side of the minute mark changeover. I received reports in the last 15 seconds of my receive period, sent my RRs and report using the same aircraft in the first 10 seconds of my transmit period, sent BK then Nick and Tony were on-the-ball enough to enough to send RRRs to complete the QSOs in my transmit period. Great fun!

Notable tropo openings

On May the 2nd and 3rd there were good conditions across the North Sea to the East Coast of Scotland, North East England and beyond. At 1440 on the 2nd , ***OZ1FF (JO45bo)*** reported hearing beacons ***OY6BEC/B (IP62mb***) in the Faeroe islands, at some 1121km, and ***GB3CSB/B (IO75xx)*** at 760km. ***GM4CXM (IO75tw)*** was alerted and Kjeld and Ray made a nice tropo QSO. The OY beacon was heard again at 1825 by ***OZ1CTZ (JO46oe)*** but no QSOS were reported at that time. Later that evening, Nick

G4KUX (IO94bp) reports hearing ***DB0VC/B (JO54if***) 813km and Jim ***GM3UAG (IO87xj)*** heard ***SK6MHI/B (JO57tq)*** at 814km.

The following day, the 3rd, ***GB3MHL/B (JO02pb)*** was reported by ***SM6AFV (JO67)*** at 964km and OZ1FF again heard the OY beacon on 1.3GHz and the Scarborough 10GHz beacon ***GB3AZA*** . During the day, there were a number of 23cm QSOS between GM and OZ and most notably, Alan ***GM0USI/P (IO76xa)*** gave OZ1FF a new square on 10GHz at 760km.

From our Correspondents

Chris GW4DGU reports from SW Wales I finally managed to get over to IO71nx, near Trefdraeth, on Sunday 6th to run tests with ***GD0EMG*** and ***GM8BJF/P*** on 10 and 24GHz. As the 10GHz gear hadn't been used since last summer, and had been dismantled and stored since, I was a little apprehensive, but both stations were worked on 10GHz without too much hassle and acceptable reports. For what it's worth, these were both all-time new countries for me on 3cm!

I was impressed by Brian, 'BJF's, 1W/0.8m signal via troposcatter: I shouldn't be, but I'm always amazed by the distance which 1W can travel on 10GHz if aided by a suitable dish!

24 was a minor, self-inflicted disaster. After working Brian, I set-up the 24GHz gear; however, I couldn't find the power cable for the 24GHz transverter. Assuming I'd left the cable at home, I abandoned the band, and went-on to work ***GD0EMG*** on 10GHz with 559 reports both ways. While packing-up, I found the lead, but by then I was beyond the point of no return.

My most important activity hasn't been operating, but developing a talk for local clubs to give them an idea of what's possible on the microwave bands. I'm hoping to include practical demonstrations, where on a second evening; I take the members to a suitable site, and (hopefully!) make some QSOs. I'd be grateful if established microwavers could cooperate with these.

Hopefully I'll be active on 10GHz (and 24GHz if I can find anyone to work!) during contests this summer. I plan to use a number of sites in IO71 and IO72, and I'll be using KST as my main talkback resource. Hopefully not having a smallholding to think about will make it easier to get out!

Keith GW3TKH reports conditions as “very poor here for some while.” He only heard the usual 'G' beacons around the south & west via RS, but he did manage to work Ralph, ***G4ALY (IO70)*** on SSB on 3, 6, 9 & 13cm with some rain enhancement. Good signals both ways.

Alan GM0USI reports a busy portable month. During the Mull DXpedition I went out /P three times - twice to and work ***GS3PYE/P (IO66vh)*** on Mull from IO75ur and on Wed 2nd May, I popped up to my usual site at IO76xa - just behind the CSB beacons - about 1000ft asl. Ray, GM4CXM had alerted me to some tropo to the east reaching the western areas! Sure enough after a quick test with Tony G4CBW who was 58 - Kjeld ***OZ1FF JO45bo,*** 761km appeared on 3cm peaking 57 at 1930 but within 20mins he was endstopping. I also heard weak signals from ***DC9UW*** and some AS from ***OZ3ZW*** but no two way QSO.

Kjeld was a new country for me, my first station outside the UK on 10GHz and a new square for him too. I was running a 78cm triax dish and just under 3w.

GM0USI’s Portable setup

Nanowaves

Gordon G0EWN reports on a Nanowave Activity evening on the 21st of April.

Membership of the Nanowave reflector has been growing at a very steady rate; in just over 10 months membership has now passed 100. Many of the members say they have built or are busy building various designs and are ‘testing’ them. Despite this, other than the main northern groups and just a few others, no one seems to be out making contacts. If they are, there are certainly no reports of activity reaching the reflector. A few people cite lack of a QSO partner as the reason for lack of activity, so to try to remedy this situation, I proposed an ‘activity evening’ in April, to coincide with the New Moon. Barry, G8AGN and I stated we would try to make ourselves available for tests with newcomers or for DX tests during this period.

The response, however, was sadly very disappointing, only one person replied to the proposal: Bernie G4HJW. Bernie has built equipment, including a beacon and been carrying out both LOS and scatter tests on red light along with Roger G3XBM,who lives not too far away from him. However the flatlands of Cambridgeshire mean long distance tests are limited, so Bernie was quite interested in testing over a 65km path from Harpswell, near Gainsborough, Lincolnshire, to a site west of Sheffield. Bernie has been working on a SMT project for the Finningley RT and Bernie wanted to test the prototype on a real path.

A test was arranged for Saturday the 21st April, with Bernie and Kevin at Harpswell and Barry, G8AGN and myself, near High Bradfield, west of Sheffield. Both groups arrived on site at around 7.45pm to set up in the light. Just as Barry and myself were about to contact Bernie and Kevin on the 2m talkback frequency we spotted a bright red light on the correct beam heading. Barry turned on his TX and shortly afterwards we made contact via the talkback frequency. Bernie mentioned he was already receiving signals and it wasn't even remotely dark. Both TX units were of the high power Phlatlight variety.

Bernie’s photograph shows just how bright Barry's TX looked in the obvious daylight' conditions. As it became darker Barry and Bernie exchanged contact details to validate the 65km exchange for Bernie.

Bernie was using his *Finningley RX* it seems an excellent and very sensitive RX. He also turned on the TX side---Barry and I could also see this (just) with the naked eye. Considering this is just a large, high brightness red LED not a power LED like the Luxeon, Phlatlight or Golden Dragon it was remarkably bright. People who build up one of Bernie's Finningley Optical TRCVR should be able to make contacts of at least the same, if not longer distances.

It was a very successful testing session for Bernie Kevin was impressed and is also a convert. The weather on the evening was cold and windy in fact the test had been in question due rain and poor visibility but we were lucky and had a brief weather window for the tests. Once we had finished testing we packed away quickly Barry, Kevin and I to warm up and Bernie to start the long two hour drive back to Cambridgeshire. Look out for more details of the Finningley RT SMT project--a great project for anyone wanting to dip their toe in at nanowaves at very little cost,

Not many reports this month, but even in the wettest April for some time there has been something to keep microwavers interested.

73 John G4BAO

Postscript from From: M1CRO/p, Walton-on-the-Naze, Essex (JO01pu)

We were unable to have sufficient manpower on site to run seven bands in the May IARU (DC-daylight) contest this year, so for a change, the M1CRO/p group took part in just one contest - the 10GHz Trophy - which coincided with the first eight hours of the main contest.

The weather was cold and windy, with occasional showers. However, conditions were observed to be very much down on normal, and our first test with GD0EMG (IO74qd) failed to produce a QSO. The signals from PA6NL which are normally VERY loud, were rather weak, and we noted that some other local stations were unable to complete a QSO with PA6NL on their first attempt.

Later tests with DH8AG produced signals both ways, probably via aircraft scetter, but in the end, we had to settle for a one-way contact when Gerfried couldn't get our serial number.

UK activity on 3cm was very low indeed, and there wasn't much from France, Belgium or Holland either. The top five QSOs by distance were all in CW, with GD0EMG (IO74) 470km, DH8AG (JO31) 427km, DF0MU (JO32) 411km, G4KUX (IO94) 375km, and F6DKW (JN18)348km. Especially pleasing was an SSB QSO with G0BWC/p (IO83) at 323km.

The 8 hour session produced 19.5 contacts in 6 countries (G, DL, F, PA, GD and ON) with stations in 13 locator squares.

73,

Robin, G8APZ

UKuG Microwave Contest Calendar 2012

Dates, 2012	Time UTC	Contest name	Note	Certificates
27-May	1000 - 1600	1st 5.7GHz Cumulative		F, P,U,R,L
27-May	1000 - 1600	1st 10GHz Cumulative		F, P,U,R,L
27-May	1000 - 1600	1st 24GHz Cumulative		F, P,U,R
3-Jun	1000 - 1600	Low band 1.3/2.3/3.4GHz	3	F, P,U,R,L
24-Jun	1000 - 1600	2nd 5.7GHz Cumulative		F, P,U,R,L
24-Jun	1000 - 1600	2nd 10GHz Cumulative		F, P,U,R,L
24-Jun	1000 - 1600	2nd 24GHz Cumulative		F, P,U,R
22 -Jul	0900 - 1700	24GHz Trophy / 47 / 76/100-1000 GHz		
22 -Jul	1800 - 2400	>1THz (Lightwave)		
29 -Jul	1000 - 1600	3rd 5.7GHz Cumulative		F, P,U,R,L
29 -Jul	1000 - 1600	3rd 10GHz Cumulative		F, P,U,R,L
29 -Jul	1000 - 1600	3rd 24GHz Cumulative		F, P,U,R
5 -Aug	0900 - 1700	Microwave Field Day		P,L
26 -Aug	1000 - 1600	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
30 -Sep	1000 - 1600	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
25 -Nov	1000 - 1400	Low band 1.3/2.3/3.4GHz	4	F, P,U,R,L
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

Graham G4FSG and Steve M1ACB on the UKμG stand at the Foxton Rally, 15 April

Note the nice UkµG display boards

Contests & Activity Dates 2012

See page 33 for UkµG Contest calendar

May

1.3GHz Activity Contest	Arranged by VHFCC	22-May	1900 - 2130	RSGB Contest
1.3GHz EME	Arranged by DUBUS	26-27 May	0000-2359	DUBUS EME Contest
1st 5.7GHz Cumulative	F, P,U,R,L	27-May	1000 - 1600	
1st 10GHz Cumulative	F, P,U,R,L	27-May	1000 - 1600	
1st 24GHz Cumulative	F, P,U,R	27-May	1000 - 1600	
2.3GHz+ Activity Contest	Arranged by VHFCC	29-May	1900 - 2130	RSGB Contest

June

Low band 1.3/2.3/3.4GHz	F, P,U,R,L	3-Jun	1000 - 1600	Aligned with some EU events
1.3GHz Activity Contest	Arranged by VHFCC	19-Jun	1900 - 2130	RSGB Contest
5.7GHz EME	Arranged by DUBUS	23–24 Jun	0000-2359	DUBUS EME Contest
2nd 5.7GHz Cumulative	F, P,U,R,L	24-Jun	1000 - 1600	
2nd 10GHz Cumulative	F, P,U,R,L	24-Jun	1000 - 1600	
2nd 24GHz Cumulative	F, P,U,R	24-Jun	1000 - 1600	
2.3GHz+ Activity Contest	Arranged by VHFCC	26-Jun	1900 - 2130	RSGB Contest

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	

EME Activity weekends

May 26/27	ARI Contest “New Modes”	DUBUS contest 1.2GHz
June 2/3	EU 23&up Tropo	
June 9/10	ARRL VHF T-contest	
June 16/17	Apogee Day AM	
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

Events calendar 2012

May 18-20	Hamvention, Dayton	www.hamvention.org/
Jun-10	RAL Roundtable	www.ntay.com/hars/RAL2012.html
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	
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

Space for your notes & designs!