

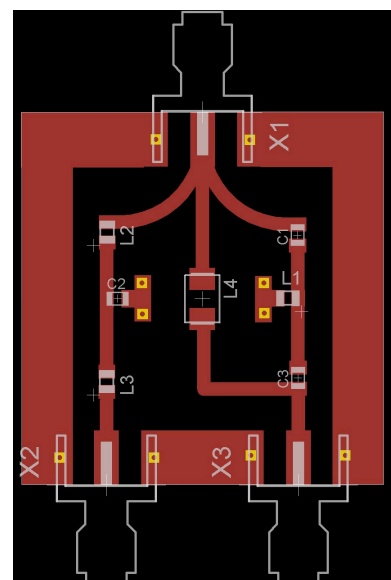


Diplexing GPS and VHF signals

by John Worsnop G4BAO

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Editor's corner

Last call for the AGM and Martlesham Round Table.
The booking system is open.

73 de Martin G8BHC

Subscription Information

The following subscription rates apply.

UK £6.00 US \$12.00 Europe €10.00

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

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

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

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

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

PLEASE QUOTE YOUR CALLSIGN!

Payment can be made by: PayPal to

ukug@microwavers.org

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

Articles for Scatterpoint

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

Please send them to

editor@microwavers.org

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

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

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

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

Pages

Spreadsheets: Excel, OpenOffice,
Numbers

Images: tiff, png, jpg

Schematics: sch (Eagle preferred)

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

Thank you for your co-operation.

Martin G8BHC

Reproducing articles from Scatterpoint

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

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

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

UKμG Chip Bank – A free service for members

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

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

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

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

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

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

The Chip Bank will be at the Martlesham RT.

Mike G3LYP

UKμG Project support

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

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

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

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

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

UKμG Technical support

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

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

Please understand that you, as a user of this service, must expect to fit in with the timetable and lives of the

volunteers. Without a doubt, the best way to make people withdraw the service is to hassle them and complain if they cannot fit in with YOUR timetable!

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

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

We welcome **Dr David Kirkby G8WRB** as a new member of the Tech Support team. David has offered to cover Essex, Hertfordshire and London.

The current list is available at www.microwavers.org/tech-support.htm

Ofcom News

GB2RS news and this Notice linked below cover the forthcoming change to UK licences including the final removal of the PSSR segments in 2.3/3.4GHz. The RSGB page has links to a new ofcom notice and an Ofcom sample licence which should take effect in April

<http://rsgb.org/main/blog/news/rsgb-notices/2015/03/13/notice-variation-amateur-radio-licence/> <http://rsgb.org/main/blog/news/rsgb-notices/2015/03/13/notice-variation-amateur-radio-licence/>

Please note that compared to the pre-Xmas Ofcom statement, the finalised version of the frequency schedule has a number of changes (explained in Annex-B of the Ofcom notice) including Primary status being restored to the 75.875-76.0 GHz segment - following some deft work by guess who:)

best regards

Murray G6JYB

Public Sector Spectrum Release of 3.5 GHz online map

Ofcom has published an [interactive map](#) showing pre-cleared access to part of the 3.5 GHz band. This is now available for non-operational testing and development purposes. Ofcom expects this spectrum, which is in the 3510 to 3570 MHz band will be used for research and development purposes for 4G mobile. Stakeholders can apply for a licence online and, as the spectrum is pre-cleared, the time taken to issue a licence will be between 3 to 5 days.

FCC: Radar applications in the 76-81 GHz band

Source: ARRL

The FCC is seeking comment on issues involving expanded use of various radar applications in the 76-81 GHz band, which Amateur Radio shares with other services. The band 77.5-78 GHz is allocated to the Amateur and **Amateur Satellite services** on a primary basis, and to the **Radio Astronomy** and Space Research services on a secondary basis.

www.arrl.org/news/fcc-seeks-comment-on-radar-sharing-schemes-that-could-displace-amateur-radio-at-76-81-ghz

YL becomes XYL

Source: [432 and above EME news](#)

We are pleased to report that Guy (F2CT) and Corine who helped lead the wonderful EME2014 Conference and are frequent attenders at MMRT were married on 31 Jan!! Congratulations to the newly weds.

UK Microwave Group AGM

Sunday 26th April 2015



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

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

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

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

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

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

John Quarmby G3XDY by 10 April 2015 by email to

secretary@microwavers.org.

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

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

73 John Quarmby G3XDY,

General Secretary UK Microwave Group

DKARS Magazine

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

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

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

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

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

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

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

73 on behalf of the DKARS

Peter de Graaf PJ4NX and PA3CNX, Secretary DKARS

Martlesham Microwave Round Table

25th & 26th April 2015

Organised by the UK Microwave Group and Martlesham Radio Society

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

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

The booking system for the Round Table and the Saturday evening dinner is now open at

<http://mmrt.homedns.org> Payment by PayPal only.

The hotel for this year's event is the Cameo Hotel Copdock, as last year. We have agreed a special rate of £61 single and £67 double/twin room including full English breakfast. The hotel can be contacted on 01473 209988 to make bookings at these rates.

More details of the hotel can be found at: <http://www.cameohotels.com/>

The dinner will be held at the Cameo Hotel. The three course dinner with coffee will be £24, payable by Paypal. Full menus will be on the booking web site.

The provisional programme for the event is as follows:

Saturday 25th April

10:00	Truck Stop Breakfast
12:00	Doors Open
Refreshments available from 12:00 (sandwiches, drinks, biscuits & cakes)	
13:00	Welcome & opening
13:15	Talks
16:55	Close
19:30	Meet for Dinner at 20:00 at the Cameo Hotel Ipswich

Sunday 26th April

09:00	Doors Open
09:50	Welcome and Opening
10:00	UK Microwave Group AGM, Trophy Presentations
10:45	Refreshments & Judging of the Project Competition
11:00	Talks
12:30	Lunch Break (sandwiches, drinks, biscuits & cakes)
13:15	Talks
14:45	Refreshments
15:00	Talk
15:45	UKuG Contest Forum - John G3XDY
16:30	Close

MMRT – The Programme

The programme is not yet quite finalised. However, it will include the usual two days of talks, measurements, chat, dinner on the Saturday and the best microwave Fleamarket in the UK!

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

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

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

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

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

In memory of our friend John, G4EAT, his fellow millimetre aficionados G8CUB and G0FDZ will be taking the 3:00 slot occupied by John, last year's MMRT.

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

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

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

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

This will be another MMRT to remember.

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

SK – John Wood, G4EAT

I'm sad to report the sudden death of John Wood, G4EAT last week at the age of 59. There was a family funeral on Monday the 9th of March at 15h00 at St John The Baptist Church in Danbury, the Church directly behind John's house.

John was a very well known microwaver and it would be probably easier to list the awards and records he hadn't won rather than those he had. I'm hoping the UK Microwave group can come up with a fitting long - term tribute to John, and we will be discussing that in Committee in due course. If anyone has any memories of John they wish to share please post them here and send them to me for RadCom and Martin for Scatterpoint to scatterpoint@microwavers.org"

John Worsnop G4BAO

Reflections

Absolutely devastating news! I'm so sorry to read this. The UK has lost yet another outstanding microwaver.

I've known John for many years and must have well over a hundred QSOs with him in my logs for most microwave bands, including 24GHz. He was always trying to push the DX boundaries on the higher microwave bands using his very well located home station rather do do what many of the rest of did and go portable for an easier time!

I have many happy memories of contacts with him.

My sincerely condolences to his family.

Peter Day, G3PHO

Very sad news.

I first met John in San Francisco where I was visiting a company he worked for, where I found out about his microwave interests.

We used to meet regularly at RAL and other events.

My condolences to his family.

David G6FEO.

Sad news for me as well. John was one of my rare partners in UK for microwaves testing. RIP John

73 Dom/F6DRO

This is sad news. I cannot believe this .

It was always a pleasure to meet John.

I will miss him ... RIP

John Lambo PA7JB

So sad to read.

John will be missed a lot on the european uW scene.

I worked him so many times and even on 24..

RIP John.

Maurice F6DKW

Being one of John's locals QSO's were generally of the face to face variety. however that does not leave me any the less utterly shocked at the sad news.

My sincere condolences to his family.

Rest in peace John

Geoff Blake, G8GNZ

Just back from the funeral of John, G4EAT. He had an excellent turn out of ham radio friends. Condolences to Yvonne and his daughters.

Sam Jewell G4DDK

Tribute to John G4EAT at Martlesham

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

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

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

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

Chris G0FDZ

AMSAT-UK Colloquium 2015 – Call For Speakers

This is the first call for speakers for the AMSAT-UK Colloquium 2015 which will be held from Saturday, July 25 to Sunday, July 26 2015 at the Holiday Inn, Guildford, GU2 7XZ, United Kingdom.

AMSAT-UK invites speakers, to cover topics about micro-satellites, CubeSats, Nanosats, space and associated activities, for this event.

They are also invited to submit papers for subsequent publishing on the AMSAT-UK web site. We normally prefer authors to present talks themselves rather than having someone else give them in the authors' absence. We also welcome "unpresented" papers for the web site.

Submissions should be sent ***ONLY*** to G4DPZ, via the following routes:

e-mail: dave at g4dpz dot me dot uk

Postal address at <http://www.qrz.com/db/G4DPZ>

AMSAT-UK also invite anyone with requests for Program Topics to submit them as soon as possible to G4DPZ. Invitations for any papers on specific subjects will be included in the future call. Likewise if anyone knows of a good speaker, please send contact and other information to G4DPZ.

REAST talks on 10 GHz Terrestrial and 24 GHz World Record

Justin Giles-Clark, VK7TW

The YouTube videos below are of three talks given by Rex Moncur, VK7MO at the Radio and Electronics Association of Southern Tasmania (REAST) Digital Amateur Television, Experimenters nights. The power point presentations on which these talks were based are also included to allow reference to some of the detail that does not come through clearly on the Youtube videos:

1. 24 GHz EME World Record - March 2014

<https://www.youtube.com/watch?v=XfReoQOWqUo>

2. Extended 24 GHz EME World Record and 10 GHz Terrestrial World Record - January 2015

<https://www.youtube.com/watch?v=Kb3lHMxKqN0>

3. Attempt at Extending the 10 GHz Terrestrial World Record and a Detective Story - February 2015

<https://www.youtube.com/watch?v=9mo-Kf7-omI>

Charlie G3WDG has provided some evidence to support the conclusions of the Detective Story in the YouTube videos below:

<https://www.youtube.com/watch?v=PyqUab1l7Ns>

<https://www.youtube.com/watch?v=7AMliCl6UEQ>

https://www.youtube.com/watch?v=k5GR_Tle96A

I have updated the information on each YouTube video to include a link to the powerpoint presentation on the REAST site and added Charlie's other youtube references and has created a VK7MO channel that puts it all in one place under one URL:

https://www.youtube.com/playlist?list=PL3CjXD2naPB2_EP-thetpNnOW84YoE4DR

73, Justin, VK7TW

This month I 'ave mostly been building...

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

John G4BAO

.....rebuilding my transverter interface to go with my new Elecraft K3 prime mover. The interface now includes a G4DDK Anglian 28 to 144 MHz transverter to drive the microwave transverters, and a converter to tune 128MHz to receive on the US 2304 EME band. I can now select all the transverters automatically from the K3 band switch. I can also select the option of receiving on 2304 MHz for EME while transmitting on 2320, with the same radio.

As part of the interface testing I managed to blow up my 24GHz preamp, which will please Tony G4CBW because it means I can replace it with one with a better noise figure and maybe hear him next time we try!

I'm waiting for the weather to improve to get down my masts and replace this preamp and also fix my faulty 23cm TX feeder so I can get back on the band. Currently just QRV on 13, 3 and 13 EME.

On the subject of EME on 13, in one day's activity I worked, on JT65c, JW (Svalbard) as well as OK, IK, DF (on JT65 and CW) PY, PE, YO. The JW was running just 100 Watts to a 1.5m dish.. Now who says the GHz bands can't be used for world - wide DX with a sensible- sized system on your patio? I now have 33 "initials" in 12 DXCCs on 3 continents via 13cm EME.

[Do we mention the K3 white smoke escape? Ed.]

Sam G4DDK

Mainly continuing work on the GB3MHZ/3cm beacon re-build.

The 1GHz PLL has been boxed and is currently on soak test.

The DDS has been connected to the rest of the indoor unit and is currently being integrated.

Started to resurrect the EME dish and mount. Plans are in hand for 3cm operation. Still waiting for the PA0 3cm LNA to appear.

4BTV HF antenna installed and working well!

Great coffee get together with local amateurs G3NYK, G4FAW, G4FSG, G4HUP, G8BHC this morning (8 March). Joined by WB0DBS for a truly international chat.

Chris GW4DGU

has delivered the 1.3GHz 200W PA design mentioned last month to the manufacturer. For his own station, Chris has been developing hardware for the new positioner for his 2.4m dish. Also, he has been investigating the application of SIW (Substrate Integrated Waveguide) structures for microwave filters. SIW filters have the potential to give vastly better performance than microstripline and stripline filters on built on similar materials.

Two Square Awards for G4NBS

Congratulations go to Tony Collett G4NBS who has recently received squares awards for 1.3GHz and 2.3GHz.

On 1.3GHz Tony added the 65 square sticker to his existing award with new ones that included SM7GVF(JO77), DH2SAV (JN48), and OK1MAC (JN79). The 2.3GHz award was Tony's first claim for the band so he received a certificate and 10 squares sticker. Amongst the cards there were some nice contacts with the likes of DB6NT (JO50) and OE5VRL/5 (JN78).

It is perhaps time to remind readers that the UK Microwave Group has several awards available. As well as squares awards up to 24GHz, these are the Firsts awards for the first contacts between countries on each band, and the joint UKuG-SOTA distance awards for portable operators. Full rules can be found online at: www.microwavers.org/awards.htm. Awards are free for UKuG members.

John Quarmby G3XDY
UKuG Awards Manager

Scatterpoint Editor would love to receive news from EMEers!

G3LTF:

Peter sends his Feb report – I do not have a great deal to report this time as we were away on holiday for 2 weeks. I did not expect to be QRV in the DUBUS 13 cm CW contest but arriving back home on 1 March mid-day, and realized I could get some moon time in. After a 2 hour sleep I got the feed in the dish and the PA and PSU in place at the dish and was pleased to find that it all worked! I QSO'd 21 stations in 3 hours operating time: UA3PTW, OH2DG, OK1DFC, OK1CA, S59DCD, ES5PC, SP6OPN, OK1KKD, OK1ULQ, SP3XBO, HB9Q, DF3RU, UA4HTS, SM3BYA, F5JWF, DF3FI, DL7YC, OZ5G, WA9FWD (X band), PY2BS and VE4MA. CWNr were PE1LWT and YO2BCT, both with good signals, maybe I wasn't quite netted. I could not listen on the JA frequency as I had not yet altered my RX converter, thinking I wouldn't need it this time... this was dumb! I think I was called by a very QRP station that I could see faint traces of on the SDR; if so, I'd like to know who it was? I know that my ears were not at their best after a long flight. I'm now working on a new 23 cm receive converter. My next job will be to retune the JA band converter to 2400 MHz. I hope to make some interesting sun noise recordings during the coming solar eclipse, 22 March - probably on 13 cm. It will be 84% obscured here. Like everyone else, I am deeply saddened by the passing of K4QI, a real OT EMEer, an excellent CW op and a contributor to the NL of many good designs.

G3WDG:

Charlie, during Feb, made more contacts on 10 and 24 GHz -- On 10 GHz, I worked VK7MO from QE49 for a new VK grid and also WA3LBI for a digital initial - both QSOs were on JT4F. Weak SSB was also copied from Jim. He would have been readable probably without the CP to linear loss as he is on CP. On 24 GHz during the midweek activity periods organized by JA1WQF, we worked JA1WQF on JT4F and had a partial on CW, JA4BLC for initial #11, JA6CZD, F1PYR and DL7YC #12, all on CW. We were running the VK1XX Doppler control software that we normally use on JT4 to keep the receiver on frequency and found this of great assistance in finding stations in the first place and not having to tune the receiver manually during the QSOs. With Mitsu's arrangement of sked stations operating on the same TX frequency and doing their own Doppler compensation on RX, it was easy to listen to other stations' skeds simply by entering the station's calls into WSJT and having the rig then set to the correct RX frequency. We found this to be a better mode of CW operating than sked stations netting their echoes on their QSO partner, where the differential Doppler shifts make it more difficult for a SWL station to find the generally weaker signals on 24 GHz. Initial count on 24 GHz is now 12.

G4DDK:

Sam plans to be return to EME after a few years of doing other things on 3 cm -- I have obtained a 30/40 W 10GHz GAN power amplifier and I'm waiting for a PA0 10G Hz LNAs. My intention is to use my 2.3 m TVRO dish. It is rated for 1-12 GHz, so it should be OK on 10 GHz. G3WDG has persuaded me that is is worth sticking with linear pol for the time being and that suits the feeds that I have available and 0.4 f/D dish. I am particularly interested in digital modes, although not averse to using CW where possible.

GW4FRE:

Dave (formally WW2R and G4FRE) is now settled back in the UK -- The EME gear has survived shipment from TX, including my 1 m offset dish. I am working on putting it all together to get QRV from GW0FRE (IO81kq). I plan to be first on 10 GHz. The QTH has excellent moonrise and moonset views! Station will be generator powered as it is located on a hilltop!

PRESS RELEASES

GEMINI 23 - 1296MHz 200W solid state amplifier

Roger Banks - GW4WND



Linear Amp UK (part of The DX Shop Limited) is proud to announce the 23cms version of the popular Gemini range of solid state amplifiers is now in production.

Housed in the same chassis as the rest of the range the Gemini 23 RF section has been designed from the ground up to meet new standards in performance.

With an RF section designed exclusively for us by world renowned RF engineer Chris Bartram GW4DGU (of Mutek fame), Gemini uses the latest NXP BLFG13L-250P LDMOS device for high performance and maximum ruggedness.

A lot of hours have been spent designing the output filter network to provide the highest standard of harmonic rejection with minimal insertion loss. The Gemini 23 incorporates a LPF providing >70dB rejection of the 2nd and higher harmonics. A band stop filter active above 4GHz enhances this further. No other amateur 23cms amplifier can match this performance although it does come at the cost of very slightly lower power output and efficiency than less well considered designs. Excellent rejection of harmonic products is increasingly important, particularly with the current and planned intensive use of the 2.6GHz band by mobile phone systems.

This, combined with built in protection for overdrive, High SWR and over temperature ensures solid reliable clean signal performance at high outputs for long periods.

The 1296 MHz Gemini 23 incorporates a front panel switchable 13.8v preamplifier supply on receive. This can be selected by the operator to be either an output voltage on the rear panel or a coax bias-T feed as required.

GEMINI 23 is a complete turnkey solution incorporating an integral 50V linear power supply so no external PSU is required.

Specifications

Frequency coverage	1275-1305 MHz
Power output @ 1dB compression	>180W
Power output @ saturation	>210W
Input power	8W
Spurious outputs	<-70dB wrt 200W
Input return loss	>20dB
Efficiency (RF)	>45%
RF Device	1 x NXP BLFG13L-250P
Protection	Overdrive, SWR, Over Temperature
Relays	Coaxial Output, on board input
Metering	RF output
Power requirements	230V AC 50/60Hz
Dimensions mm	270w x 300d x 120h
Weight	10kg

Price £1299.00 incl VAT

Orders currently being taken for early April onwards

Regards es 73
Roger Banks - GW4WND
Director

The DX Shop Limited

01588 620126

<http://www.thedxshop.com>

8 way Distribution Amplifier DA1-8HL

Dave Powis G4HUP

Many of us use 10MHz reference signals to lock our test equipment, transceivers and transverters – often this is from a GPS controlled source. With several items to feed this signal to, a Distribution Amplifier becomes the next item in the chain, producing replica outputs from the source signal.

There comes a time when 4 ways are not enough! So now there is the DA1-8HL – a Distribution Amplifier producing 8 outputs, for replicating your 1MHz, 5MHz or 10MHz timing source. An internal Low Pass Filter restricts the frequency range, but this could be bypassed if a higher frequency is required for distribution.

The DA1-8HL has a nominal 0dB gain per channel, so each output is at the same level as the input signal ($\pm 0.5\text{dB}$). There are independent attenuator positions provided at each output, so levels can be reduced if needed for particular needs – by default these are set at 0dB attenuation.

The DA1-8HL is housed in an extruded aluminium box, 109 x 80 x 45.5mm, and has input and power connections on the front panel, and 8 outputs in two banks of 4 on the rear panel. The attached photo shows the prototype during testing.

It is available as a full kit or an assembly kit (where all SMD work is completed), and can be supplied with or without the housing, if you want to build it into another unit.

For further information and ordering, see Dave's website at <http://g4hup.com>



Nanowaves

625nm communication

By Norbert Wrede DC6UW
norbert.dc6uw

Hello, I am Norbert DC6UW from northern Germany (JO44VJ) and am searching for new ideas and especially for other hams from northern Germany or southern Denmark that may have joined the Yahoo UK Nanowave Group. We were very encouraged from the results of British hams here and started something similar. Equipment is a 35x38cm fresnel and a PT54 Phlatlight. Rx is a very small diode with OPA380 transimpedance amplifier. We use AM or 25kHz FM modulated subcarrier to overcome QSB and

flutter. Third mode is a 2,5Hz blinking for identification of the station. Actually Tx beam is 1,6 deg and Rx 0,9deg. Rx uses 10nm narrow optical filter for daylight operation. Rx and Tx are motor driven into the focus point, so only one fresnel required, but no QSK !

Rx has a wide range AGC and a "spreaded"; S-meter for easy adjustment of the beam. It can indicate the DC-component from daylight and the AC-component from signal. Turntable has an incremental transducer and a μ P for indication of AZ angle. A known reference (tower, windmill etc) position in the telescope can be fed to the μ P and then you have true azimuth indication enabling a "blind date" if there was no visible contact before.

Backtalk is done on 70cm with the MC Micro from Motorola below the turntable.

Nice toy, but we miss activity (and some high enough distant hills !)



Diplexing GPS and VHF signals

John Worsnop G4BAO

For many years now, the GB3CAM 24GHz beacon (1) has been running atop it's 30m high water tower at Wyton in Cambridgeshire (IO92WI). The beacon consists of an outdoor unit with a multiplier from 124 MHz to 24GHz and a GPS antenna. A long coax feed of FSJ4-50 runs from the outdoor unit down through the old Water tank to the indoor unit on the 2nd floor level of the tower.

To minimise the cabling it was decided to run the DC supply, the 5V for the GPS antenna, the 124MHz drive and the GPS signal all via the common LDF4-50 feeder. This required diplexers and Bias tees for the top and bottom of the cable run. This simple circuit combines both functions and shows the PCB layout that was eventually used.

A pair of these are connected "back to back" via the coaxial feed.

Circuit description

The circuit was designed using a freeware diplexer design circuit from Tonne Software. (2).

C1, C3 and L1 form a high pass filter which allows the 1.5GHz GPS signal to pass from the GPS port X3 to the common port X1 and down to the GPS receiver via a second diplexer which divides it off to the GPS receiver. It is also DC bypassed by L4 to allow the 12V DC feed to pass to the beacon outdoor unit where it powers the beacon direct and is regulated down to 5V to power the GPS antenna.

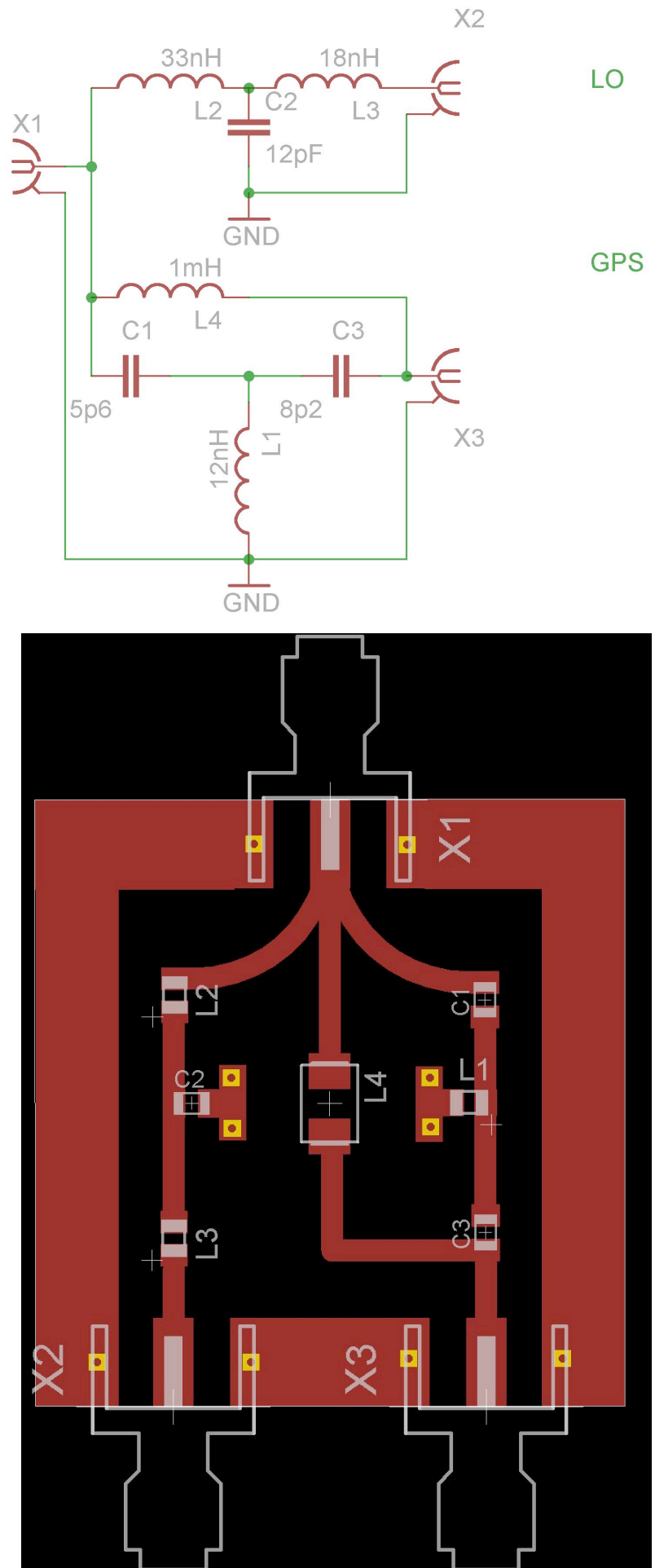
L2, L3 and C2 form a low pass filter that allows the 124MHz drive signal to pass from the indoor unit to the coax, and the second diplexer takes that signal and divides it off from the GPS signal and on to the beacon multiplier at the "top end" of the coax run.

PCB layout

The PCB layout is deigned to fit in to a small 35x35mm tinplate box and is fitted with SMA connectors. The only component that takes significant current is L4 and that must be capable of carrying the full DC current of the outdoor unit. in the case of GB3CAM which only runs 100mW out at 24GHz, a suitably rated 0805 SMD inductor is used.

References

1. GB3CAM. - <http://www.earf.co.uk/GB3CAM.htm>
2. Diplexer design software. - <http://www.tonnesoftware.com/diplexer.html>





Activity News : February 2015

By Bob Price G8DTF

Please send your activity news to:

scatterpoint@microwavers.org

Introduction

Martin RH G8BHC

Some of you may be aware that Bob was subject to an attack recently and his car stolen. Consequently Activity News has understandably dropped down his list of priorities. We wish him well.

Beacons & Reverse Beacons

From David GM6BIG, Beacon Keeper

The entire GB3CSB beacon cluster was off the air due to feeder damage but some quick repairs restored all beacons back on, 23,13,9 and 3cm.

Mark GM4ISM provided some local checks to confirm all is OK.

Some more distant reports via beaconsport would help confirm all is now well.

Thanks for all the email's of support, offers of help and hard cash !

Restore's some of my faith in the human race...

February 23cm UKAC

From Bob G8DTF IO83

The evening started OK with G8OHM (IO92) and GM4CXM (IO75). I worked 13 relatively local QSOs in IO83. QSOs with G3VKV and M0GHZ in IO81 square. IO92 added G0VTL/P, M1MHZ, G4KIY, G2XV/P and G4CLA. Only GW8REQ/P was found in IO82. I found G4NBS and G3PYE/P in JO02. Only G3TCU/P and G8CUL in IO91 and just M0PCF/P in IO93.

From Mike G8CUL IO91

Conditions for the February 1.3GHz UKAC event seemed to continue on from January, again seemingly poor with lots of deep QSB on most stations. However, our best Dx was DK2MN at 570km out of a total of 46 QSOs, down on the January QSO total, but with a higher overall claimed score. A pleasant surprise was a QSO with F6DKW near Paris who was an easy copy – that direction not overly good from IO91JO. Gerard, F8BRK, was again down on signal strength but he has had to revert to his yagi array since his 2.6m dish fell 23m to the ground in November!

February SHF UKAC

From Bob G8DTF IO83

13cm

Quite a busy night! Only 4 stations in IO83 G3UVR, G4JLG/P, G8PEF/P and GW8ASD. I also worked 4 stations in IO93 G8EOP, M0ORO, G8SFI/P and M0UFC/P. In IO92 I worked G8OHM and G4ODA. In IO91 I worked G8CUL, G4BRK and G0MJW. In IO81 I worked G3VKV and G4WLC/P. I also worked G3UKV in IO82 and the best DX of the evening was with Ray GM4CXM in IO75.

9cm

I managed 4 relatively local QSOs with G4MVU, G4JLG/P and G8PEF/P plus M0UFC/P just over the border in IO93. Halfway through I had a problem with the PTT cable, but soon got that sorted. I had an attempt with Neil G4BRK, but nothing heard either way. I think I need more antenna gain and upgrade the transverter.

From Mike G8CUL IO91

The 2.3GHz UKAC event this month seemed better than in January despite the Martlesham beacon being down in strength. Best Dx this month was PA0BAT at 529km out of a total of 18 QSOs. An interesting 'T7' signal was heard from G4BAO which although copyable on CW made for interesting copy on SSB! I hope you can get it sorted soon John! Both JO02 Johns were well down in signal strengths and Frank, PE1EWR was non-existent whereas all 3 were big signals last month. It just goes to show how much things can change. I normally only work 1 station on CW (Ray, GM4CXM who always kindly slows down for me!) but this month it was 2½ QSOs where we reverted to CW – the ½ with G3UVR where we switched modes back and forth!

Monday Nights

Other Activity

From John G3XDY JO02

Some nice conditions on the evening of 11th Feb gave the following DX:

SP4MPB	KO03HT	1.3GHz	1311km
SM7LCB	JO86GH	1.3/2.3/3.4GHz	1100km
SM0DFP	JP90JC	1.3GHz	1403km
SM7GEP	JO77IP	1.3/2.3GHz	1061km
SM1HOW	JO97GL	1.3GHz	1259km
SM7GVF	JO77GA	1.3GHz	1019km

SM0DFP was in a new square for me on 1.3GHz.

The 1.3GHz UKAC/NAC on the 17th gave some quite good results on aircraft scatter with 3xOZ, SK, and GI/GU in the log, but something didn't seem quite right, with a poor VSWR reading. A check at the end of the contest showed 100W of reflected power, and investigation the following morning found the phasing harness connector for the lower group of antennas was full of water and was acting as a dead short. It would appear that the effective transmit power was about 40W, and receive was down almost 10dB too, so the amount worked was quite surprising.

The SHF UKAC on the 24th was notable for very poor tropo conditions. Mid range contacts in the order of 200-300km were very difficult on any band, with many regular contacts failing. On the other hand DF9IC in JN48IW was a good signal by aircraft reflections on both 2.3 and 3.4GHz, and PA0BAT (JO31FX) was worked quite easily on all four bands, so it appeared that the gear was working OK.

...and finally

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

Please send your reports to

Scatterpoint@microwavers.org, remember the deadline is the 1st of the month.

73 Bob Price G8DTF

UKuG Microwave Contest Calendar 2015

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

www.microwavers.org/?contesting.htm

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

Events calendar

2015

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

2016

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

2017

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