An Amateur Radio publication for the Microwave Enthusiast

scatterpoint

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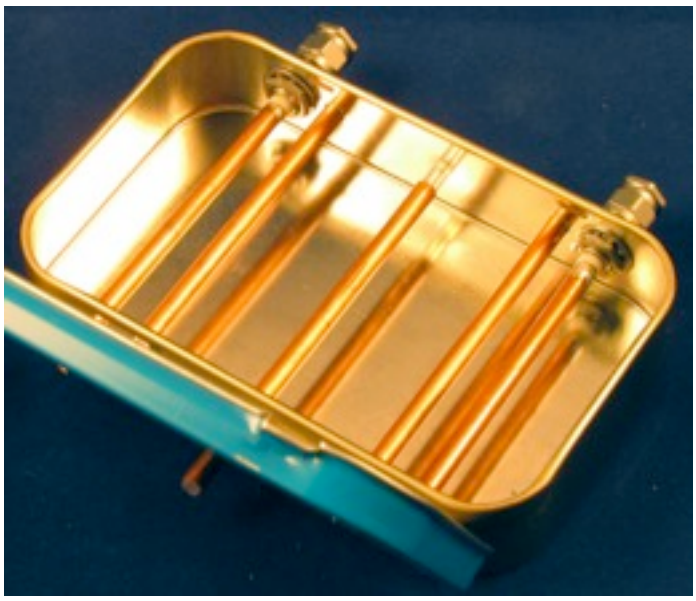
Altoids Tin Filters
By Paul Wade W1GHZ



In this Issue

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Editor's corner

Congratulations to Murray Niman G6JYB on his appointment as the new RSGB Spectrum Forum Chair.

There is now a vacancy for the post of RSGB Microwave Manager.

The next edition of Scatterpoint will be the September one.

73s 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

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Activity & Contests

Technical

Nanowaves (optical)

Sales and wants

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New Chair of RSGB Spectrum Forum

Dear Colleague,

I am pleased to be able to report that, at its meeting on Saturday, the Board endorsed the appointment of **Murray Niman G6JYB** as the new Spectrum Forum Chair with immediate effect. An advertisement will appear in the next edition of RadCom for a replacement Microwave Manager.

Best Wishes

Graham Coomber, G0NBI
General Manager
Radio Society of Great Britain

From Southgate News @SAR_News

Murray is no stranger to spectrum matters having held the post of RSGB Microwave Manager, since January 2007. He succeeds the former Spectrum Chair John Gould G3WKL who is now RSGB President.

Murray Niman G6JYB Appointed RSGB Microwave Manager 2006

http://www.southgatearc.org/news/december2006/new_rsgb_microwave_manager.htm

Murray is a tutor for the amateur radio courses at Chelmsford details at

http://www.g0mwt.org.uk/training

RSGB Microwave Manager

Following the recent appointment of Murray Niman G6JYB to be the overall Chair of the Spectrum Forum, the Society is now seeking applications for his previous role of Microwave Manager.

Whilst the full terms of reference can be found on the RSGB website , applicants should be knowledgeable in microwave operation and technology developments.
Candidates should ideally have experience in spectrum management matters, good communication skills and be able to develop good working relations with the groups represented on the Spectrum Forum as well as bodies such as Ofcom and IARU Region-1.

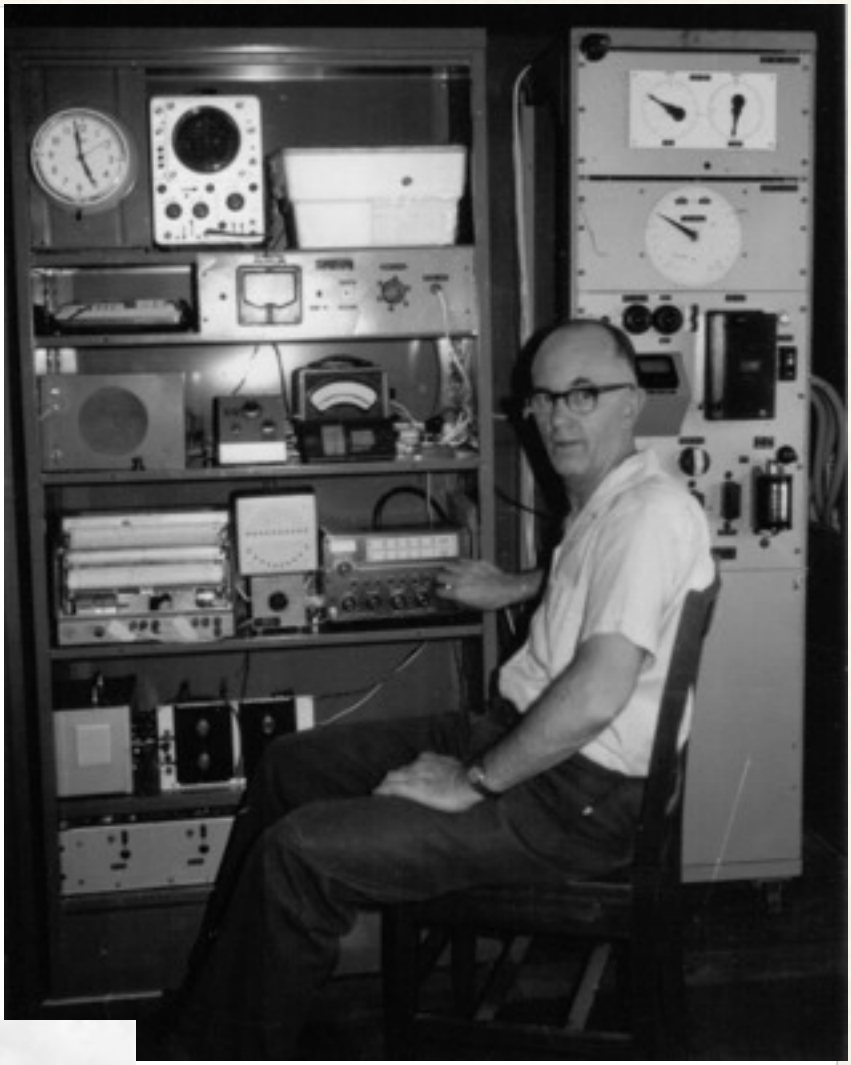
The successful applicant will join the RSGB Spectrum Forum and, as with all positions within the Society, will be required to subscribe to the Society's Code of Conduct and Ethos, which is detailed on the RSGB website here.

Candidates should apply with a short CV to Graham Coomber, G0NBI, RSGB General Manager, via email to graham.coomber@rsgb.org.uk.

Silent Key: Lyle Patison VK6ALU/VK2ALU

Old time EME operators were saddened this week to learn of the passing of Lyle Patison, VK6ALU.(formerly VK2ALU) Lyle appeared on the EME scene in early 1974 on 432MHz using the CSIRO 30ft dish located at Wollongong NSW giving many their first QSO with VK under the call VK2AMW. In 1984 he added a 1296MHz EME capability (I worked him in March 1985) again giving many stations a VK QSO.

Unfortunately the remote site was vandalised but Lyle being an indomitable Aussie he rebuilt it all and got back on. This was in the days when you built everything however, when this happened the second time he abandoned the remote site and built a remarkable 10GHz EME system with a 3.8m dish mounted on a trailer which he operated from home.



On August 18th 1996 Charlie G3WDG, using his 10ft dish and 35W, worked VK2ALU for a record breaking distance on 10GHz and a first VK-G QSO on that band. (Charlie notes that the variable pulse length drive system that Lyle used then to track the moon is the same that he uses today but with a pic replacing the 555 timers!) The year before that QSO Lyle visited the UK meeting many microwave enthusiasts including Charlie, Petra G4KGC, Barry G8AGN and Mike G3LYP. Many tributes have been paid to Lyle from his friends around the world and it seems fitting to end this note by remembering his wartime service here as a Lancaster bomber navigator, being shot down but parachuting to safety.

A true gentleman and friend has passed on.

RIP Lyle

Prepared by G3LTF with contributions from G3WDG.

Silent Key: Harold Groves G3UYM

It is with great regret that I have to report the passing of Harold Groves G3UYM. He was a very active microwaver for many years. Several years ago he offered to share 'his' site at Therfield with me. He was especially keen on 10, 24 & 47GHz. and was my first contact on 47.

Although having had to give up microwave /P due to ill health, he was still keen to follow activity. He came up to visit during my outing to Therfield earlier this year, where he was able to aid my poor CW reception.

Harold was able to continue Amateur operation to the last on 50MHz (JT6) and 14MHz CW.

Anyone wishing to attend his funeral next week, please email me directly. Harold you will be missed...

Roger G8CUB

Here are two images of Harold which I took with a 35mm slide camera back in the 1990s.

One is of him displaying his lovingly constructed 10 GHz transverter and the other is of him operating from his well-used hill at Therfield in the Chilterns.

Doug Friend, VK4OE

Finningley Antenna test results

David Wrigley G6GXK

Antenna range tests Finningley RT					
13 July 2014					
Band: 1.296 GHz				Relative	
				Level	Gain
Antenna description	Reading	Range	Total	dB	dBi
Reference Antenna	-4.2	-20	-24.2	0.0	10.0
G0DJA 4 x 23 element array	-5.5	-10	-15.5	8.7	18.7
G0DJA 23 element	-6.8	-20	-26.8	-2.6	7.4
G0DJA 23 element	-6.4	-10	-16.4	7.8	17.8
G0DJA 23 element	-8.2	-10	-18.2	6.0	16.0
G0DJA 23 element	-8.6	-10	-18.6	5.6	15.6
G4MVU ERA Yagi	-4.1	-20	-24.1	0.1	10.1
G4DHO PCB Log periodic	-9.0	-20	-29.0	-4.8	5.2
Band: 3.400 GHz				Relative	
				Level	Gain
Antenna description	Reading	Range	Total	dB	dBi
Reference Horn	-2.9	-40	-42.9	0.0	12.7
G4AAF	-9.0	-30	-39.0	3.9	16.6
Band: 5.760 GHz				Relative	
				Level	Gain
Antenna description	Reading	Range	Total	dB	dBi
Reference Horn	-8.0	-40	-48.0	0.0	12.7
G4DHO PCB LOG Periodic	-9.5	-40	-49.5	-1.5	11.2
Martin - Vertical stick Antenna	-2.0	-50	-52.0	-4.0	8.7
Band: 10.368 GHz				Relative	
				Level	Gain
Antenna description	Reading	Range	Total	dB	dBi
Reference Horn	-6.5	-30	-36.5	0.0	17.2
G0EHV Dielectric Feed Horn	-4.0	-40	-44.0	-7.5	9.7
G0EHV Compact Sky Dish	-2.2	-20	-22.2	14.3	31.5
G0EHV 22mm Feed	-6.5	-40	-46.5	-10.0	7.2
G0EHV Horn	-5.2	-30	-35.2	1.3	18.5
G0EHV open 22mm WG	-6.5	-40	-46.5	-10.0	7.2
M1EGI Beacon Antenna - lobe max	-7.5	-30	-37.5	-1.0	16.2
M1EGI Beacon Antenna - axis null	-1.6	-40	-41.6	-5.1	12.1

Erratum

The caption against my transmitter with the 4" dish in the June Scatterpoint said spuriously 76GHz, it should have been 134GHz, as it was a 134GHz 130µW Tx.

Roger G8CUB

Altoids Tin Filters

Paul Wade W1GHZ ©2014

w1ghz@arrl.net

Several years ago, I described a series of "*Multiband Microwave Transverters for the Rover - Simple and Cheap*" (www.w1ghz.org), with several later enhancements. These have proved popular; I hope they have gotten some hams on new microwave bands. I did warn that they were adequate for a simple QRP station, but would need more filtering when augmented with amplifiers.

My suggestion was for "real metal filters," but no concrete suggestions. Unless you are lucky with surplus finds, good filters are hard to make or expensive to buy. Even with some decent machine tools, filters take time and care, though the results are usually rewarding.

I was recently inspired by bad weather and too much broken equipment needing repair to try building some simple, inexpensive filters. The goal is a filter with good performance with minimal cost that can be built in a couple of hours with modest tools.

Filter design

Filter design software, no matter what the cost, yields a set of dimensions that meet some performance specifications. This is only half of the problem; the other half is making it realizable within practical limitations – can I build it? The practical limitations and capabilities could range anywhere from a shop with a 6-axis CNC machine to a drill and soldering iron on the kitchen table. Most hams are somewhere in between, but closer to the latter.

Since these transverters are QRP rigs, aren't we required to use an Altoids tin somewhere? Can we build a decent filter in an Altoids tin?

A good filter type for UHF and microwaves is the combline filter. I use a printed version in my LO boards. The combline filter uses parallel transmission line resonators less than a quarter-wave long, loaded by capacitance at the open end. This allows tuning over a range of frequencies by varying the capacitance. Typical electrical length of the resonators is between 30 and 60 electrical degrees a quarter-wavelength is 90 degrees.

Once the resonator length is chosen, the type and impedance of the transmission line resonators is estimated. Then the resonator spacing and required tuning capacitance may be calculated – usually by software except in very simple cases. If we are trying to fit into an available enclosure, like the Altoids tin, the choices may be limited and require some trial-and-error tradeoffs to fit.

Altoids filter

Figure 1 – 432 MHz Combline filter in Altoids tin

A simple way to make a transmission line resonator is a cylinder between two flat plates, known as slabline. For the cylinder, I use the outer conductor of common semi-rigid coax, 0.141 inches in diameter, such as UT-141. Then the inner conductor provides the capacitor, sliding out to adjust the capacitance – approximately 2.4 pf per inch. The outer conductor is soldered to the tin wall at one end, and the inner conductor to the other end after tuning, making a reasonably rigid assembly.

Several configurations of input and output connections are commonly used, but most straightforward is to tap the end resonators near the ground end. This configuration does not permit easy adjustment, but once the correct tap point is known, adjustment is not needed.

The minimum number of resonators for decent filter shape is three. More resonators provide better filter shape but make tuning more difficult, especially with limited test equipment.

A few trial calculations suggested that the lowest ham band frequency that would fit in an Altoids tin is about 432 MHz. The resonators are about 46 degrees long, and require about 4 pf to resonate. Lower bands would require more capacitance than the coax can provide. Calculated characteristic impedance of the semi-rigid coax resonators is 116 ohms. A lower impedance might be desirable, but would require larger, more expensive coax than the readily available 0.141 inch diameter.

Since I needed a 432 MHz filter for another project, I put one together – construction details below. The filter is shown in Figure 1, and the performance in Figure 2. Loss is about 1 dB, and bandwidth is about 36 MHz, with the common LO frequency of 404 MHz about 15 dB down. A narrower filter would be desirable, but would require wider spacing between the resonators, and there isn't room in the Altoids tin, especially with the rounded corners.

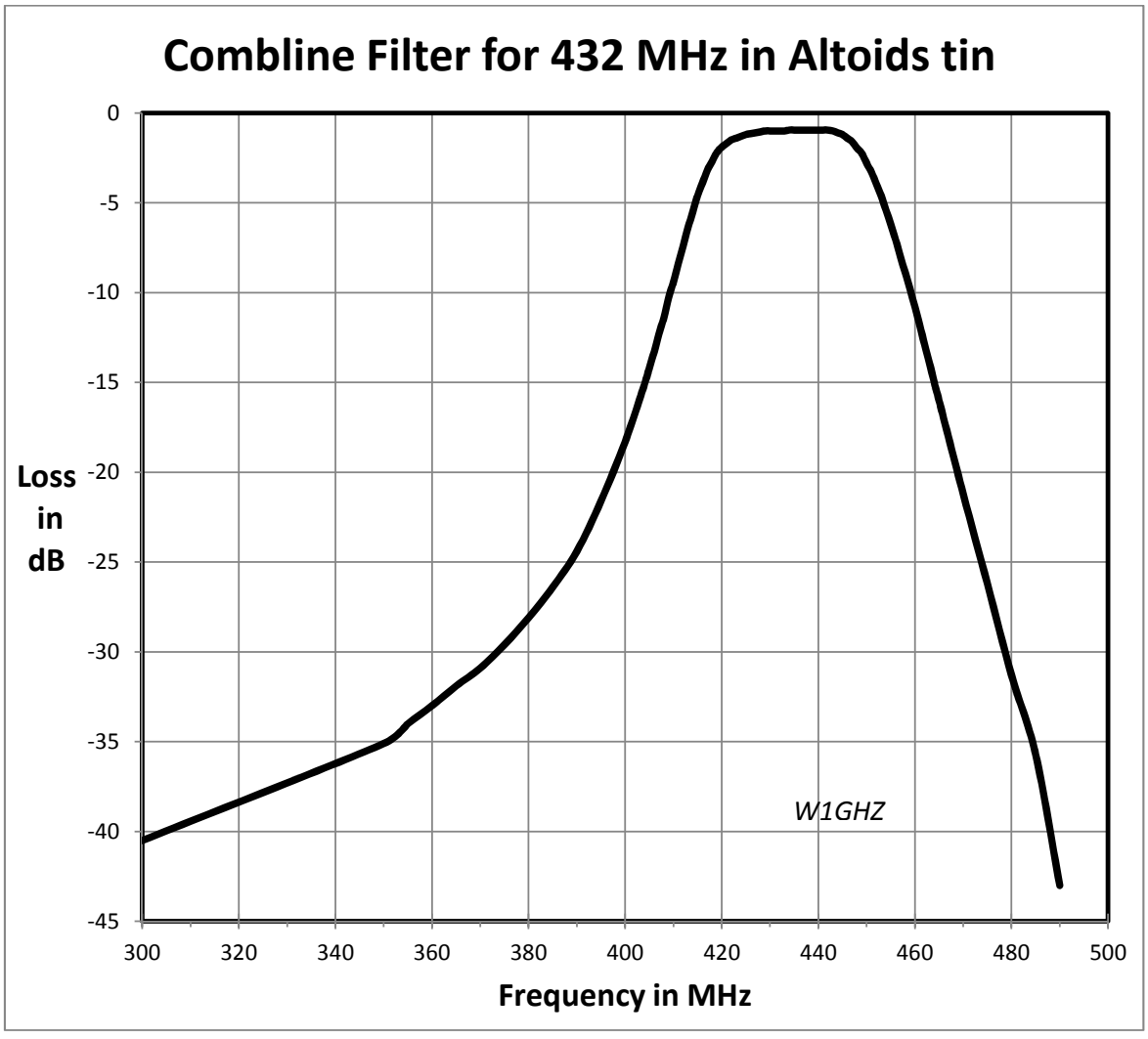


Figure 2 – Performance of 432 MHz Combline Filter

Tuning is a bit tricky, involving pulling one center conductor with a pair of pliers while holding the other two center conductors with other fingers so they make connection to the box. This is repeated for each conductor in turn until the desired performance achieved - then the inner conductors are soldered to the box. Tuning a filter is a series of tradeoffs, and is easier with a swept-frequency setup. The tuning starts around 300 MHz with the inner conductor only pulled out a small amount, perhaps 1/2 inch, but moves up smoothly to 432 MHz or a bit higher – this filter could be tuned to any frequency in this range, perhaps for an LO frequency.

902 MHz Filter

The 432 MHz filter demonstrates that the Altoids filter is feasible - now what about higher frequencies? Rotating the Altoids tin so the resonators fit the short dimension, as shown in Figure 3, makes the length about 57 degrees at 902 MHz. Much less capacitance is required, roughly 1.5 pf, so the inner conductor is nearly all the way out and tuning is much more finicky. The tuning starts about 600 MHz before the inner conductor is pulled out, so it could be tuned to any frequency in between, if needed.

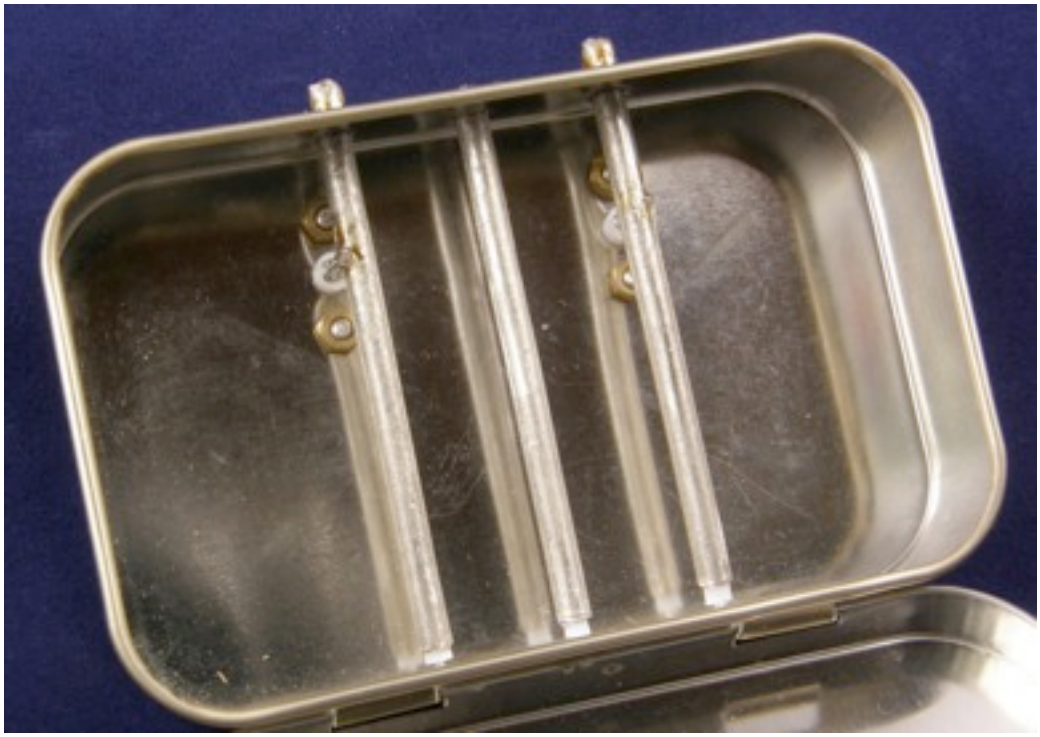


Figure 3 – 902 MHz Combline filter in Altoids tin

Performance is shown in Figure 4, with a loss of about 1 dB and a bandwidth of about 80 MHz. The filter shape isn't as pretty because I chose to improve the VSWR at 902 MHz rather than worry about loss over the whole bandwidth.

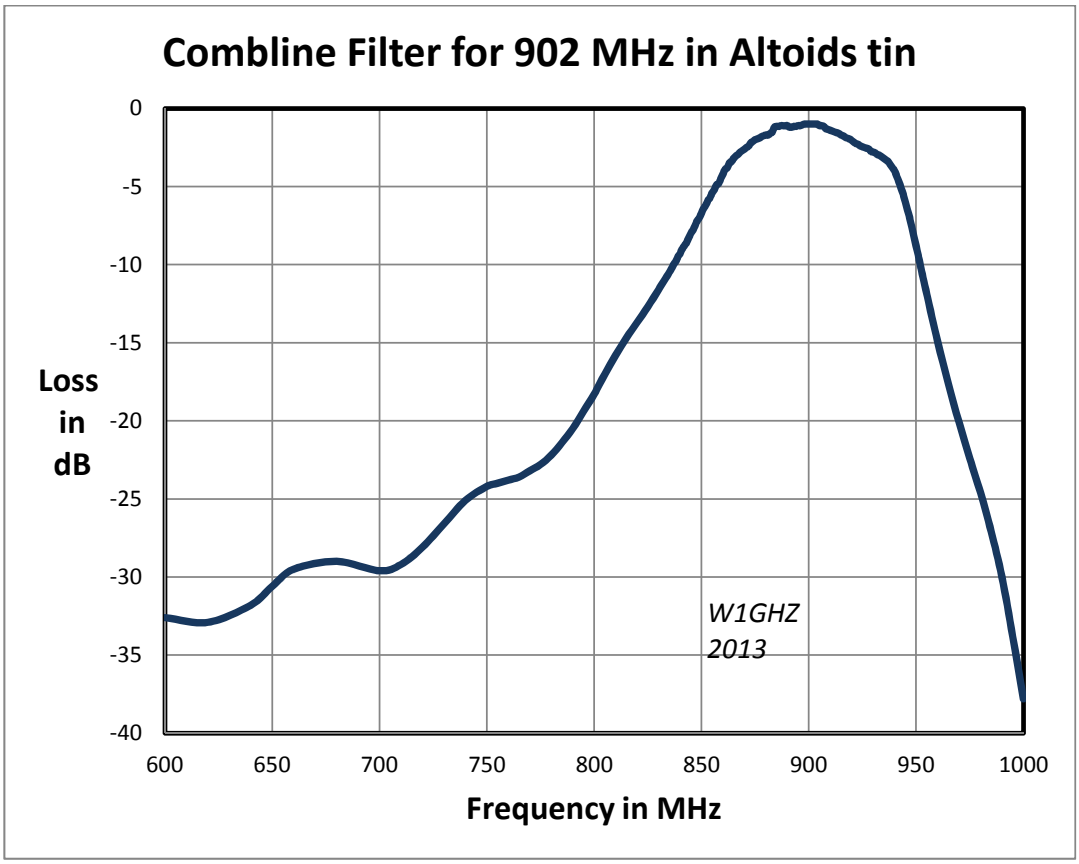


Figure 4 – Performance of 902 MHz Combline Filter

For the higher frequency, there is room in the Altoids tin make the filter sharper by increasing the spacing between resonators or to add an additional resonator. Either would make the tuning more difficult, and increase the loss – tinned steel isn't the highest Q material.

1296 MHz and 1152 MHz Interdigital Filter

The width of the Altoids tin is a quarter-wavelength at 1282 MHz, so resonators for 1296 MHz would be 90 degrees long unfortunately, this will make a bandstop filter rather than bandpass. Instead, we can flip the center resonator to make an interdigital filter, so that the center resonator grounded at the opposite the grounded end of the adjacent resonators.

I made two interdigital filters with tapped inputs, one for 1296 MHz and one for 1152 MHz for the LO frequency. Both were difficult to tune, especially at 1296 where the resonators are close to ½ wavelength long and only a tiny bit of additional capacitance is possible. The best tuning resulted in a lumpy passband shape and very poor input and output VSWR. The high VSWR resulted in high loss, since most of the power is reflected. The performance curves are included in Figures 5 and 9.

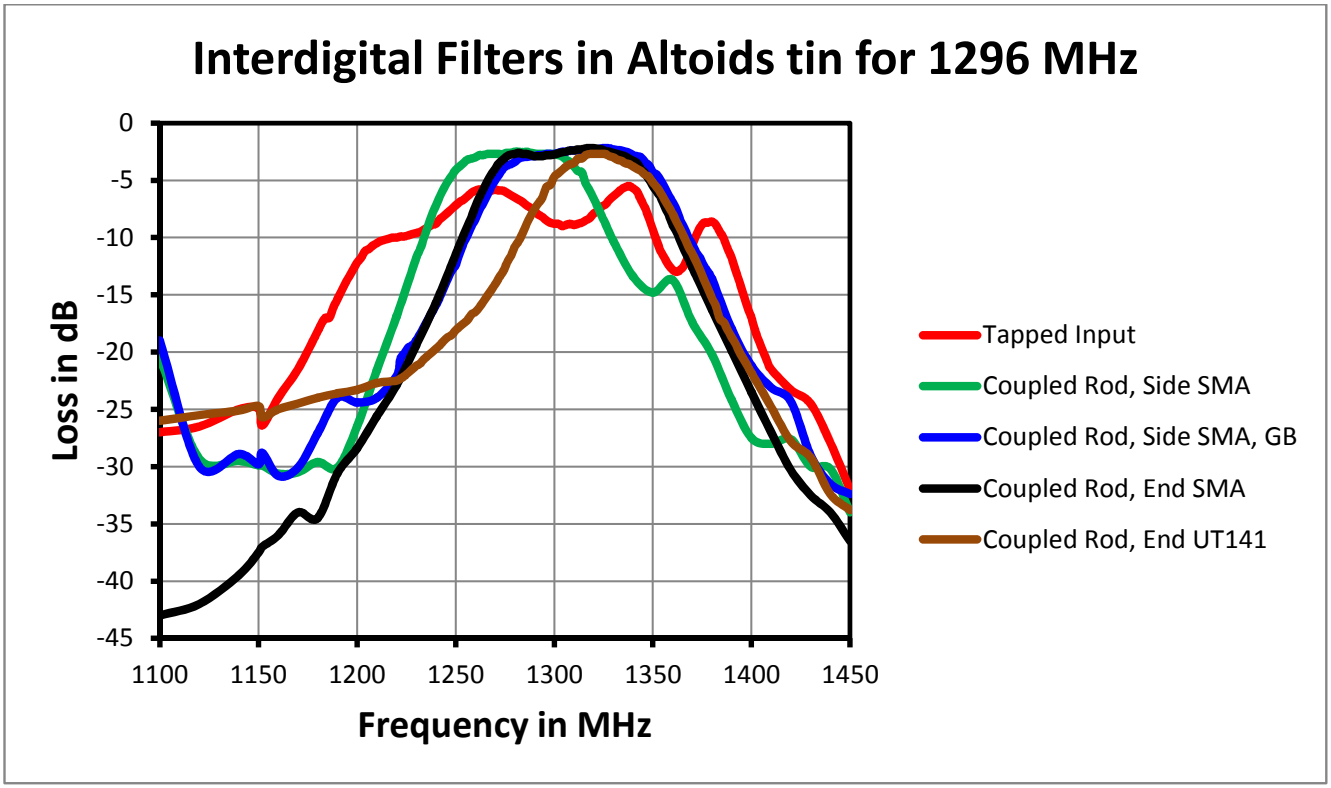


Figure 5 – Performance of 1296 MHz Interdigital Filters

When I made the printed filters for my Cheap and Simple Rover Transverters, I found that side coupled inputs and outputs provided better performance than tapped input and output. There is room in the Altoids tin for additional rods for coupling, and the semi-rigid cable is inexpensive, so I calculated the spacings for side coupling rods and built a couple. The first attempt, in Figure 6, mounted the SMA connectors in the bottom of the box with a wire up to the open end of the coupling rod from the side. Performance of this version, also included in Figures 5, is much better, with good filter shape and improved VSWR. An additional advantage is that very little tuning is needed – the resonators are just about ½ wavelength without capacitance, so only a short stub of center conductor is left to provide mechanical support.

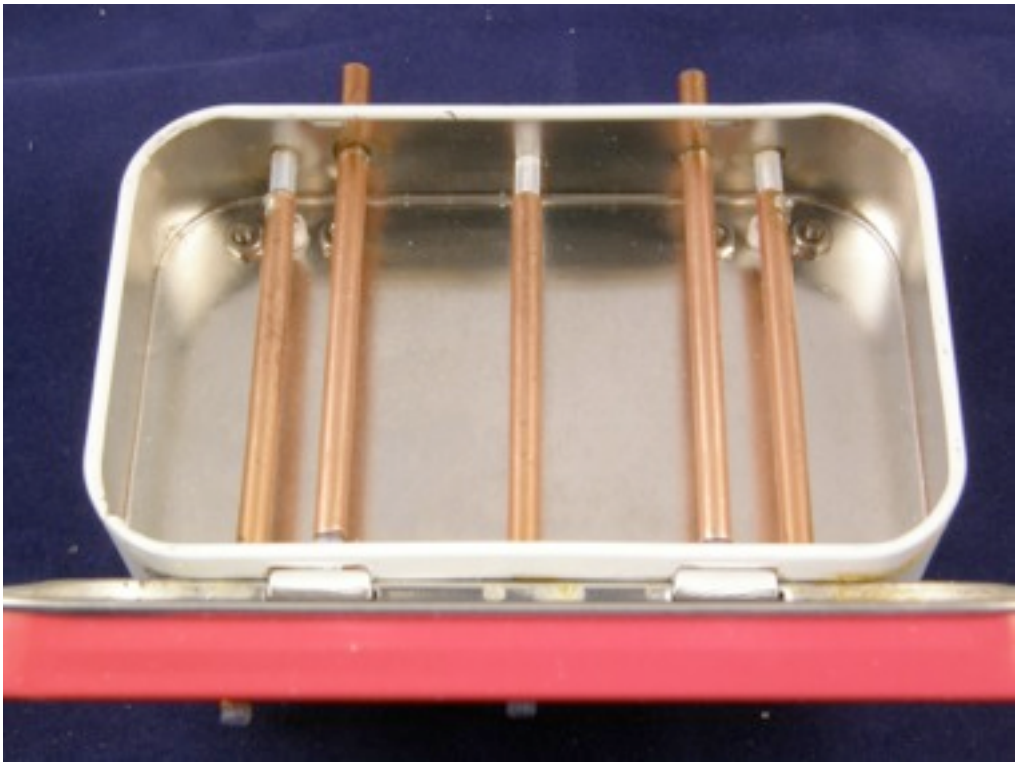


Figure 6 – Interdigital filter with coupled-rod input and side connectors

The 1296 MHz filters in Figure 6 with the side SMA connectors show limited out-of-band rejection in Figure 5, only about 30 dB. I wondered if stray coupling was occurring between the SMA connectors. One solution is to put the SMA connectors in line with the rods, as shown in Figure 7. Figure 5 shows a nice filter shape for this version with much better out-of-band rejection. Rejection of the 1152 MHz LO frequency is better also. This one also requires no tuning – the rods are resonant near 1296 MHz.

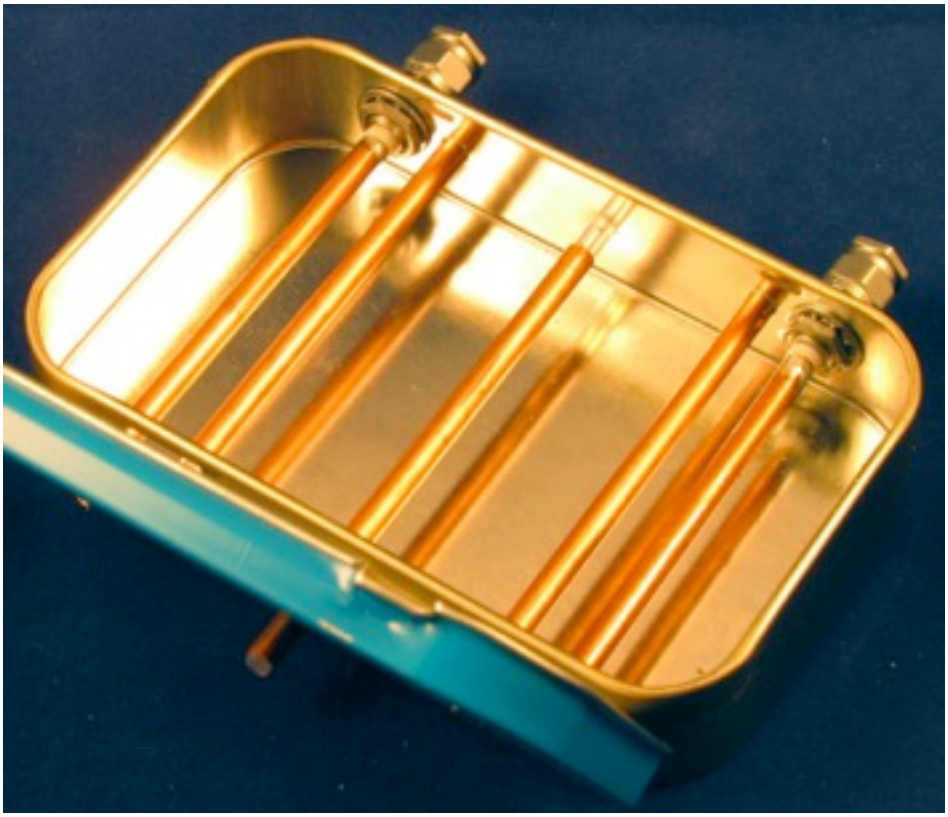


Figure 7 - Interdigital filter with coupled-rod input and end connectors

At the recent 2014 Eastern VHF/UHF Conference, I got a chance to measure the filter in Figure 7 on a modern, calibrated VNA provided by Greg Bonaguide, WA1VUG, of Rohde & Schwarz. The results, shown in Figure 8, are even better than my home measurements, with a clean response curve and loss slightly less than 1 dB.

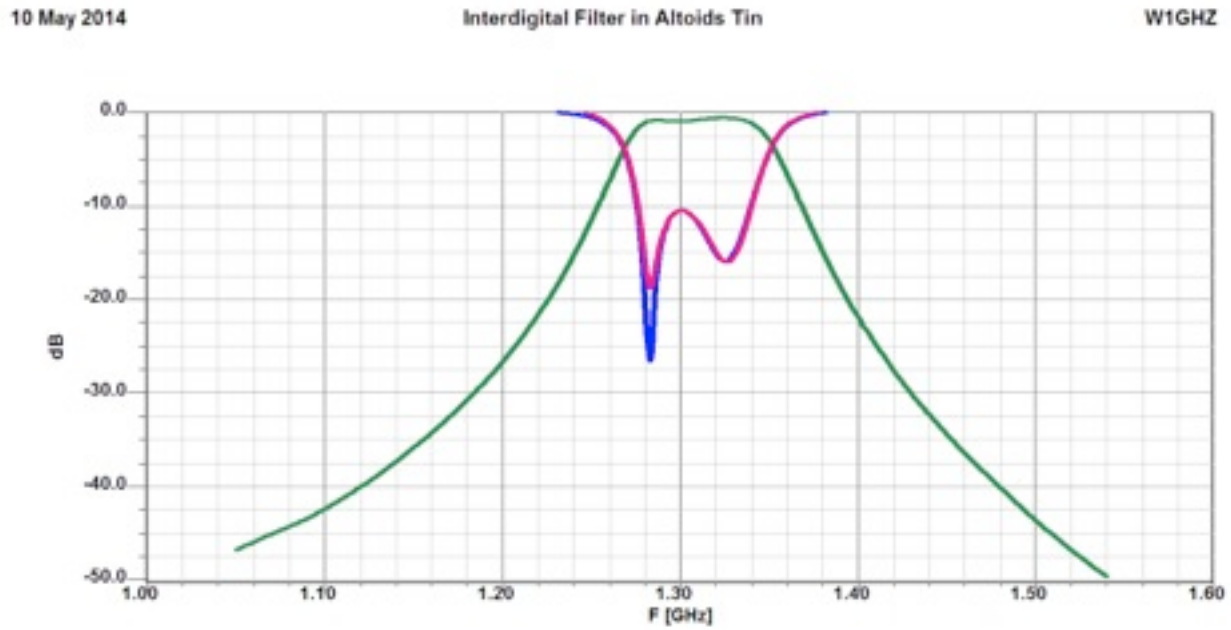
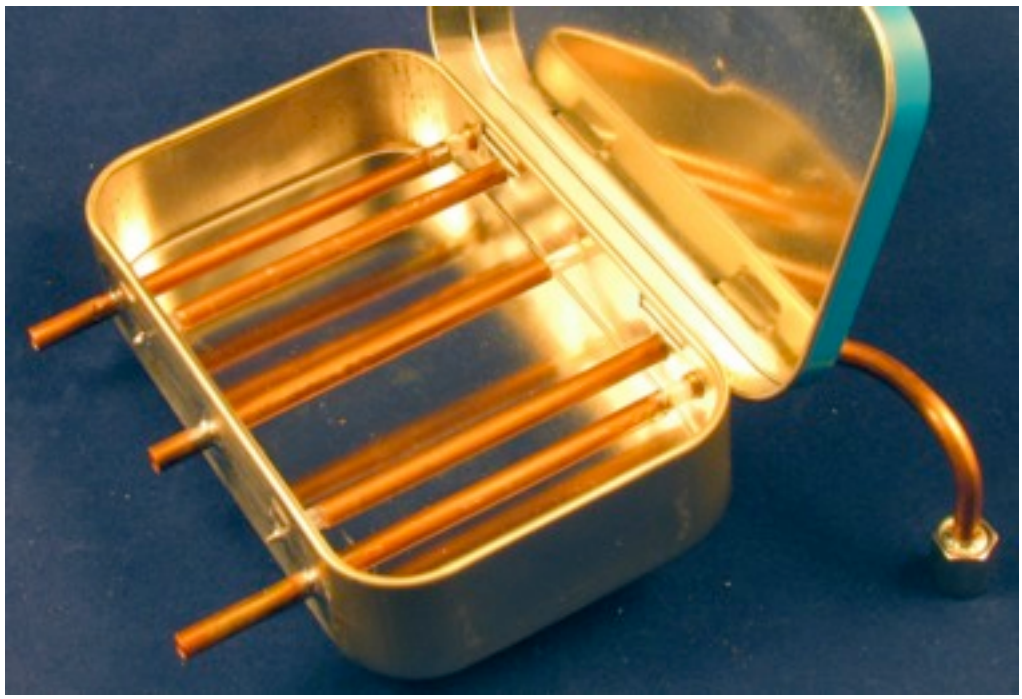


Figure 8 – Performance of filter pictured in Figure 7

I used male SMA connectors for the version in Figure 7 since they were the only ones I had on hand that fit in the space, and I only had two. Male connectors are fine for connecting directly to another module, but most short cables have male connectors, limiting options. Since we are already soldering semi-rigid cable to the box, why not use cable for the input and output, connecting directly to adjacent modules, as shown in Figure 9. With no tuning, this one is centered slightly high in frequency in Figure 5 – I cut the resonators slightly too short so the response is about 2 dB down at 1296 MHz. The center frequency could be moved down by adjusting the center conductor, but I soldered them without testing thoroughly.

Interdigital filters for 1152 MHz are identical to the 1296 MHz filters, except that part of the center conductor is left inside the outer conductor to provide capacitance to lower the resonant frequency. It should be possible to tune these interdigital filters as low as 750 MHz with the center conductor. The curve in Figure 9 labeled “Coupled Rods” is for a filter very similar to the one in Figure 7.

Figure 9 - Interdigital filter with coupled-rod input and semi-rigid cable end connections



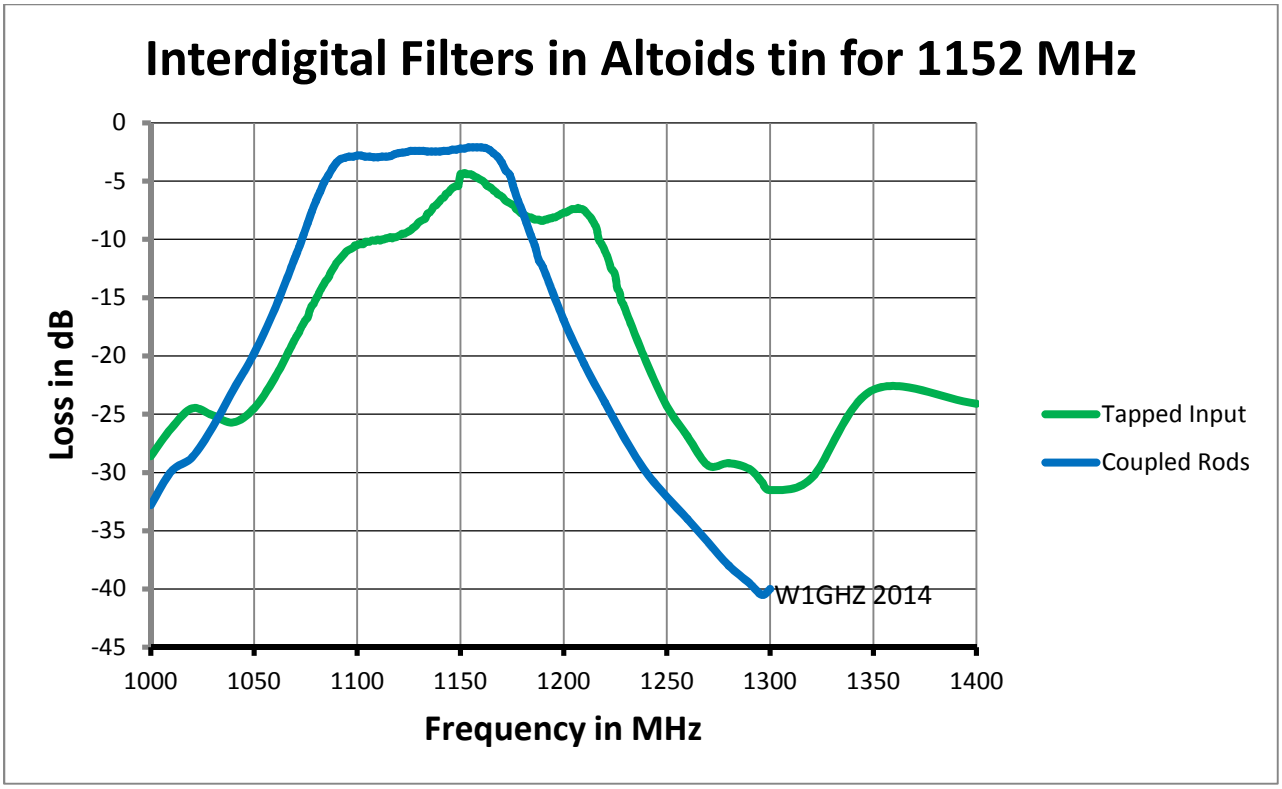


Figure 10 – Performance of Interdigital Filters tuned to 1152 MHz

Filter Construction

The Altoids tin is made of very thin steel, easily soldered with a medium-sized iron, but the paint must be removed first. I use an abrasive wheel (Scotch-Brite Paint and Rust Stripper) in a drill or drill press, which removes paint quickly without tearing up the metal. Then it is a matter of marking and drilling the holes. I mark them with a cheap caliper used as a scribe, prick the hole location with a scriber, then drill a very small hole, #60 or 1 mm at each location. Then I use brad point drill bits which make a clean hole in thin metal. Sets are sold for woodworking (www.woodcraft.com), but only two sizes are needed for these filters: 9/64" for the semi-rigid coax and 5/32" for the SMA connectors.

Figure 11 – Preparing semi-rigid coax with miniature tubing cutter

For the semi-rigid coax, the best tool is a miniature tubing cutter. As shown in Figure 11, the tubing cutter is used to nick the outer conductor just enough so it snaps instead of bending. Nick it again about a half-inch away, snap it again, then pull the short section of outer conductor off with pliers. Make a cut all the way around the Teflon at the desired location the goal is to leave enough to push the exposed Teflon against the

wall of the box and control the length of the resonator. Next, pull off the end of the Teflon, leaving a short length of inner conductor exposed. Then clamp the coax in a vise with V-jaws (which also straighten any small bends in the coax) and pull on the inner conductor with pliers (Figure 12) until it starts to move, but leave it in the coax for tuning. Trim the end of the inner conductor slightly to remove any burr.

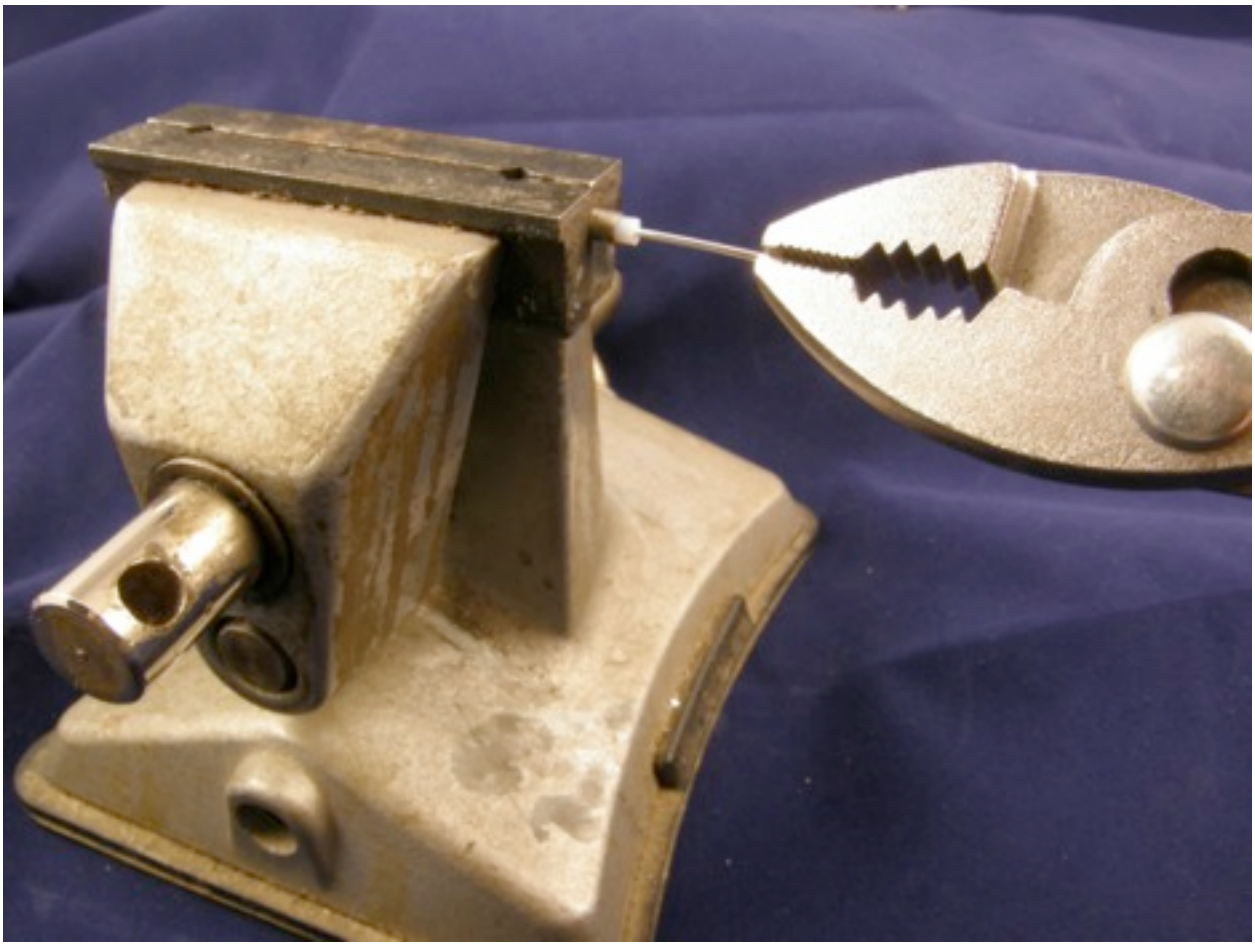


Figure 12 – Pulling out center conductor of semi-rigid coax

Install the SMA connectors in the Altoids box, then add the input and output wires and push them aside. Now it is time to install the resonators. The 0.141" diameter coax is a very tight fit in the 0.140" diameter holes, but the thin metal gives enough so it slides in tightly and stays put.

At the far end, guide the inner conductor through the small hole and adjust for the desired resonator length. When all three resonators are in place, apply a bit of paste flux around them on the outside of the box only, and then solder them in place at the ground end only.

For the comb filters, solder the input and output wires to the resonator tap points with small dab of paste flux. Clean up flux and close the lid, and the filter is ready for tuning.

For the interdigital filters with coupling rods, remove the center conductor completely, then pull the Teflon out enough so that one end of the semi-rigid coax is empty. Inset the empty end toward the connector, apply a small dab of paste flux, and solder the open end to the connector or input cable.

Connect the filter to a detector and a signal generator, preferably a swept-frequency setup. Of course, if you have a network analyzer, that's even better. Tuning is a matter of pulling (or pushing if needed) one center conductor with a pair of pliers once the center conductor is started, as shown in Figure 12, it becomes easier to move and the vise is no longer necessary. While tuning one resonator, hold the other two center conductors with other fingers so they make connection to the box. Repeat for each conductor in turn until the desired performance achieved - then the inner conductors are soldered to the box. For fine tuning and final compromise, VSWR may be more sensitive than loss.

Dimensions

432 MHz combline filter: resonators are 16.7 mm center to center, input and output taps at 19.5 mm from ground end. Resonator length = 2 mm less than Altoids long dimension.

902 MHz combline filter: resonators are 17 mm center to center, input and output taps at 11 mm from ground end. Resonator length = 2 mm less than Altoids long dimension.

1296 MHz interdigital filter: resonators are 21.2 mm center to center. Coupling rods are 8.8 mm center to center from outside resonators. Center resonator length = 4.3mm less than Altoids short dimension. Outside resonator length = 3.7mm less than Altoids short dimension. Coupling-rod length as needed to reach connector, roughly same as outside resonator.

Summary

These simple filters are easy to build and cost very little, even if you have to buy the Altoids. The 1296 MHz version will work with no tuning required. The filters can help clean up your signal, reduce birdies, and sweeten your breath at the same time.

Acknowledgement

Thanks to Ken, W1RIL, who provided me with a large bag of Altoids tins.

Paul Wade W1GHZ w1ghz@arrl.net

Editor's note

Tins of Altoids mints are marketed in the UK by Wrigley and can be obtained (pack of 12 tins for £16.99) via Amazon. For those in UK/Europe who don't have a craving for the US radio constructer's drug of choice, Marks & Spencer Curiously Strong Mints come in an almost identically-sized tin.

Internal dimension of an Altoids tin are [NB opinions on the interweb differ!]

- Inner: 2.24" (56.9mm) x 3.6"(91.5mm)
- Height bottom section: 0.83" (21.28mm)
- Height top section: "0.36 (9.26mm)

You can also purchase the slimming version (no mints) from www.adafruit.com/products/97

Incidentally, BeagleBone, a single-board computer made by Texas Instruments, is deliberately shaped with rounded corners to fit inside the tin. {http://en.wikipedia.org/wiki/Altoids#Altoids_tins]. The Raspberry Pi missed a trick as they didn't round the corners.

Martin G8BHC

ESWR 22 June

East Suffolk Wireless Rally

UKμG stand inside the main building with "Ed".

Join The Codgers here at the Orwell Crossing for breakfast on the last Saturday every month.

VLF – nanowaves

Photo by Steve M1ACB

UKµG Chip Bank – A free service for members

The catalogue is now on the UKµG web site.
See www.microwavers.org/?chipbank.htm

Non members can join the UKuG 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!

Mike G3LYP

UKµG Technical support

While many of you will have taken advantage of the "test equipment rooms" that we run at the Round Tables, sometimes that project just cannot wait for the few occasions per year when we hold them. 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 UKuG 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

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

UKµG Project support

The UK Microwave Group is pleased to encourage and support microwave projects such as Beacons, Synthesiser development, etc. Collectively UKuG 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 UKuG Secretary, after which they are reviewed/agreed by the committee:

http://www.microwavers.org/proj-support.htm

Activity News : June

By Bob Price G8DTF

Please send your activity news to:

scatterpoint@microwavers.org

This month we have the usual reports from the month's contests as well as an update on the Martlesham beacons and the TDARS expedition to GD.

There has been no activity from G8DTF this month, as both 3cm and 13cm systems have failed.

Beacon News

From John G3XDY JO02

Martlesham Beacon News

The 1.3, 3.4 and 5.7GHz beacons at Martlesham are now running under their new callsign GB3MHZ. The opportunity has been taken to update the beacon exciter for 1.3GHz, which is now RDDS locked to a 10MHz standard. The long running maintenance work on the 1.3GHz antennas is near completion, all that remains to be done is to install four new feeder cables from the power splitters and it will be back at full power. It is also planned to take the 10GHz beacon out of service shortly to completely upgrade the outdoor unit which should result in an improved signal level. Announcements will be made on Beaconspot and the ukmicrowaves Yahoo group when changes occur.

GT3ZME/P Expedition

From Martyn G3UKV (GT3ZME/P) IO74

June 26-30 Telford & DARS mini expedition to the Isle of Man

The group of 9 members worked most bands from 80m up to 3cm. However, whereas on HF/VHF/UHF over 1000 QSOs were completed, the scene at microwave was quite disappointing. Use of and difficulties with KST, plus unfavourable propagation were the main challenges.

The expedition clashed with Friedricheshafen, 6 metre and 4 metre contests, but there seemed to be a lack of effort and desire to work the island, even though it's not exactly a rare entity.

We were QRV on 3, 6, 9 and 13cm for most of the time, but had virtually no requests for skeds, even though we put out a couple of notices via the ukmicrowave reflector prior to travelling.

Also, the roaming charges from IoM are expensive, and despite blocking updates on the smart phones and laptops in use, EE seemed to cost us dearly – over £60 actually between several phones.

We also suffered the usual sporadic loss of connection, and it always seemed to be at the wrong moment, just as we had been meeped, or done the meeping.

Just 4 stations called us on 2m SSB – which in every case was beneficial to both parties. Quick response: instant feedback: adaptability: successful outcome. WHY-o-WHY have so many ops dropped it? As portables generally prefer 2m talkback over 'KST, I would emphasise the advantages to microwave newcomers it is likely that your best DX will come from working a portable, as they usually have the advantage of height and good coverage.

Enough grumbling.

Reports:

13cm Worked G4BRK with help from R/S. Heard G3XDY, and he heard us via A/S – but no QSO. Beacons GB3ZME on 2320.870MHz - <539

9cm. Heard PA0BAT via A/S – but no QSO. Also tried G4BRK, G3VKV but nil. Beacons GB3OHM (539) and occasional snatches of GB3ZME.

6cm. G4CBW, G8KQW/P and G8ACE/P (Cotswolds). Failed with G3VKV, G8CUB/P, G4BRK. Beacon GB3OHM <539

3cm. G4BRK, G4CBW, GM4ISM (one way – Alan with 50W!), GM8OTI/P (IO74NP), G4NKC/P (Brown Clee), G4KUX, G4WLC/P, GM0USI/P (IO76XA), M0DTS/P (IO84MJ), G8KQW/P and G8ACE/P (IO81XW), G4ODA (hrd, too weak for QSO). Failed with G3VKV, G3XDY, G8CUB/P, F6DKW, M0HNA/P, G3PHO, G4LDR. Beacons GB3NGI (<569), GB3MAN (S2-3).

24GHz: No takers or beacons!

Dishes for 6/9/13 and 1.2/3cm are visible, also the 2m talkback antennas for those taking advantage of it. The sea is visible on the right hand side, and visible in all required directions from the site IO74PD52. Site ~420m ASL.

European Microwave Contest

From John G3XDY JO02

June has been an interesting month with some good RS conditions on 10GHz. Unfortunately I missed some of the best conditions with transverter problems that occurred during the microwave contest on the first weekend in June, but I'm back fully QRV again now.

June 7th - European Microwave Contest

Some nice RS about but then the 2m transverter went US in the middle of it!

5.7GHz

F4CKC/P, F5KMB	JN19
DK2MN, DF0MU	JO32
DG5FEB/P	JO40
F6KRK/P	JN08

10GHz

F4CKC/P, F5KMB	JN19
DK2MN, DF0MU, DL2YDS	JO32
ON4SHF/P	JO20
F6DKW	JN18
DG5FEB/P, DH6FAE/P	JO40
DL4BBU, DK0PU,DF7JS	JO31
DJ5BV, DJ6TA	JO30
DL0GTH	JO50 684km
DK2ZF/P	JO43 603km
F6KRK/P	JN08

June Low Bands Contest

From Martin GM8IEM IO78

I was disappointed that there was so little GM activity – Alan, GM0USI, appeared for a short while, but our one attempt at a QSO via aircraft scatter failed. We've exchanged many times in the past, but this time the aircraft wasn't in the optimum position. No sign of my only regular tropo contact, Gordon, GI6ATZ, either. Having undertaken some tests with Tony, G4CBW (IO83UB, 607 km), at the end of May, we confidently expected to exchange details via aircraft scatter, and we did so on the second attempt. I was also delighted to have a first QSO via AS with Barry, G4KCT (IO93LW, 548 km) on our first attempt. We were both pleasantly surprised that it was so easy! I contacted all the other stations for which AirScout predicted a common volume through ON4KST, though no suitable aircraft

appeared during the contest – thanks to all who were willing to try. Maybe we'll be successful next time.

Aircraft scatter is almost the only way I can get out from here on 23cm – my horizon towards much of the UK is at +2 degrees, which makes tropo difficult, and there is no "local" activity. I think I will try EME before too long!

From John G3XDY JO02

June 8th - UKuG Low Band Contest/ EU Microwave Contest

1.3GHz - contacts over 600km (all by aircraft reflection)

DF0YY	JO62
DJ6OL	JO52
DF9IC	JN48
SK7MW	JO65
DH9NFM, DL3YEE,DL0GTH	JO50
OE2CAL	JN67 974km
DJ8MS	JO54
F8KCF/P	JN25

OE2CAL was an interesting contact, it looked like it was unlikely to work based on his home station location, but he uses a remote station on a mountain just east of Salzburg which has an excellent take off to the UK and offers a good common volume for aircraft reflection.

From Tony G4NBS JO02

Sorry to say very little to report from me due to family commitments and holiday....

The only activity in June for me was the Low Band Activity at start of month, and this was only at the last minute as a sore throat meant change of plans allowing me to be at home!

Didn't think conditions were up to much with little heard from continent most of the time. Also no CQ calls due to my throat but still made 20 QSO on 23cm. Aircraft were behaving as had 5 DL's in log helped by A/S - DG3YMT (JO31) found by S&P at just the right time (not heard before or after QSO!), DK0PU (JO31), DF0MU(JO32), DF9IC(JN48) and DL0GTH (JO50) best at 765km, also F4CKC/P (JN19) and F6KRK/P (JN08).

13cm continues to intrigue. With the lower power and less aerial gain compared to 23cm I have had little success on A/S, often hearing only very weak signals for seconds even though planes look to be in the right place. Once again absolutely nothing heard from DF0MU or DF9IC despite good QSO's on 23cm so I wasn't expecting anything when DL0GTH (at 765km) suggested a try having just completed on 23cm. I detected something on his first call and at that time his 23cm signals were just audible as well. Despite my poor CW we completed straight away and I was left listening to him calling CQ on both bands simultaneously with no takers! He genuinely peaked 58 on 23cm and 559 on 13cms. Unfortunately I wasn't recording the QSO.....

F4CKC/P was stronger with me on 13 than 23 and was a new Square (No33). Ended up with 12 complete QSOs, plus a failure with G3VKV despite all info being received both ends, just no Rs. At one time I received all his info on a burst of SSB. Trouble is the QSO started on CW..... and my rig doesn't swap modes easily.

Lastly just a comment re SHF UKAC to say my absence isn't a protest against the late start, merely clash of dates so far. Hopefully I will be around for July & August sessions.

June 23cm UKAC

From G3XDY JO02

Enlivened by a little tropo, DC6UW (JO44) was 59++ but most other signals were only just above normal. A total of 31 locator squares were worked with 66 QSOs in 9 countries.

From Eddie G0EHV/P IO84

Conditions for the UKAC were slightly up, but still a lot of weak ones, headphones were worth their weight in gold! I made 42 QSOs from my portable site in IO84 on the moors in County Durham, activity is certainly on the increase with a few new calls in the log.

Best DX was a hard QSO with PE9GHZ at 538 km, the take off in that direction is not the best.

Again I spend some time in "DX" mode to connect to an O2 cell site some 20 Km away to get a mobile phone connection for KST which was not very reliable!

From John G4BAO JO02

Busy on 23/13 and 3 in the UKAC contests. On 23cms in June I managed my best score yet. 45 QSOs in 16 UK squares plus 6 continental squares, with ODX being DC6UW (JO44VJ) 59 both ways on SSB 678km and DK2MN (JO32MC) on CW at 466km.

June SHF UKAC

From John G3XDY JO02

There were good activity levels on 10GHz band under fairly normal conditions. Best on the higher bands was PA0BAT (JO31), on 9cm a difficult QSO with DF9IC, and on 13cm the best were OZ1FF and DF9IC.

From John G4BAO JO02

On the 23rd on 3cm I had a 59+ FM QSO via rainscatter with G4BRK (IO91HP), but sadly the RS

conditions didn't stick around until the Tuesday UKAC, where, working "the usual suspects" 7 QSOs in 3 squares still enabled me to (at the time of writing) win the Open section. Nice to hear and work G4DDK on this band, welcome back Sam!

In 13cm UKAC I worked 11 QSOs in 6 squares, ODX being G3UVR at 252km. On 13cm EME I had a JT65C QSO with John PA7JB.

5.7/10/24GHz Cumulative 29th June

From G3XDY JO02

In and out of the shack for this one, with lots of activity apparent on 10GHz, but I failed to make any QSOs on 5.7GHz despite several attempts. There was some rainscatter around, but not in the right place to make a QSO with GT3ZME/P. It was nice to work some new stations such as G1IKV/P and G0PEB/P.

From Rob G0PEB/P

I had a successful day in the 10GHz contest today. Thanks to everyone for the contacts and to the ones I missed due to my limited setup. I enclose a link to a photo of the equipment used on my first time out on 10GHz. G0PEB/P 10GHz Contest 29th June 2014

From Steve G1MPW

Steve G1MPW was out for the first time this year on 10GHz from a car park at Epsom Downs race course ...and got there just in time ...15 mins later the car park was full to overflowing with competitors taking part in a "Race for Life " sponsored run.

Screened to the south it wasn't ideal, but the take of North was ok ... he managed 8 QSOs, the best DX being G3LRP at 267 Km. The 3G connection was a bit flaky despite a strong signal ...kept trying to connect to the data service. KST2me (by Bo OZ2M) proved its worth again enabling messages to him to be highlighted – makes life much easier – and he urges anyone not using it to give it a try ...it's free and the author emails the required key very quickly.

Time to find a better site for next month!

G0PEB/P entering the UK Microwave Society 10GHz contest 29th June 2014.

FT-817 & DB6NT Mk3 transverter, including GPSDO. Antenna : 60cm dish with Penny feed. Power O/P :- 200mW. Best DX : G3XDY @229km

Location: St Boniface Down, Isle of Wight IO90JO.

From Barry G4SJH IO91

10GHz Cumulative Session 29th June 2014

The Combe Gibberlets were at it again this month this time in the 10GHz Cumulative session from Combe Gibbet (IO91GI). The reduced team of two operators (G4SJH and G1EHF) activated the new group callsign M0HNA/P for the first time on 10GHz. Activity on 5.7GHz had been planned (and was set up), but unfortunately equipment failure kicked in so that band is saved for the next outing.

On 10GHz after a slow start (Thames Valley paragliders forced use of a slightly new location) good activity levels were found on 10GHz with 18 stations worked even if conditions seemed average. Best DX was G4KUX at 360km and great to work some new stations on the band. The M0HNA/P station sits in the restricted section with only 0.7watts fed to a 90cm offset satellite dish side mounted. A GPS disciplined frequency control gets us to within a 1kHz or so of the dial frequency. The transverter is an original G3WDG unit from quite a few years ago helped by a G4HUP synthesiser. A picture of the 3cm transverter and antenna pointing north from the Gibbet attached.

Looking forward to more sessions later in the year and there is a chance we can get on 24GHz too eventually.

From John GM8OTI

Here's a note from the recent 10GHz contest.

John Cooke GM8OTI was out for the second round of the UK Microwave Group's 10GHz contest. Operation was fom the Mull of Galloway IO74NP, where from the south side of the car park there was a good take off for the southern half of the horizon.

Only two contacts were made over a couple of hours or so, but quite a few visitors to the station (including Barry GM3YEH) allowed for a bit of microwave publicity.

Photo – Isle of Man in background (2m talkback antenna pointing at it) but the dish is looking at the GB3NGI beacon!

The contacts were with the Telford and District Amareur Radio Society operating as GT3ZME/P from the Isle of Man (57km) and with Tony G4CBW near Stoke-on-Trent (245km). Equipment was a home brew transverter with 1W PA and 40cm dish antenna.

From John G8ACE IO81

Below are some pictures of Sunday's activity in the 6, 3, 24G contest on the 29th June.

Only G8KQW appears in pictures with some of him standing at his 6 and 3cm gear. One picture has my Quickstarter on the tripod with 60cm offset and 47GHz rig also on the tripod in the foreground 6cms hidden behind.

Operation was Cleeve Common IO81XW where we both worked over 20 stations on 3cm around 10 on 6cm and two on 24G with one non-contest contact on 47GHz of around 75km.

I used a different app to take some other pictures and looks like you need to save individually, which is hopeless in the sun as you cannot read anything on

the phone screen. Anyway they are not on my SD card now. Rather irritating, a variation on trying to use KST in the sunshine.

So that was Ian G8KQW and John G8ACE on Cleeve Common 28 June.

The path and path profile are on the next page.

...and finally

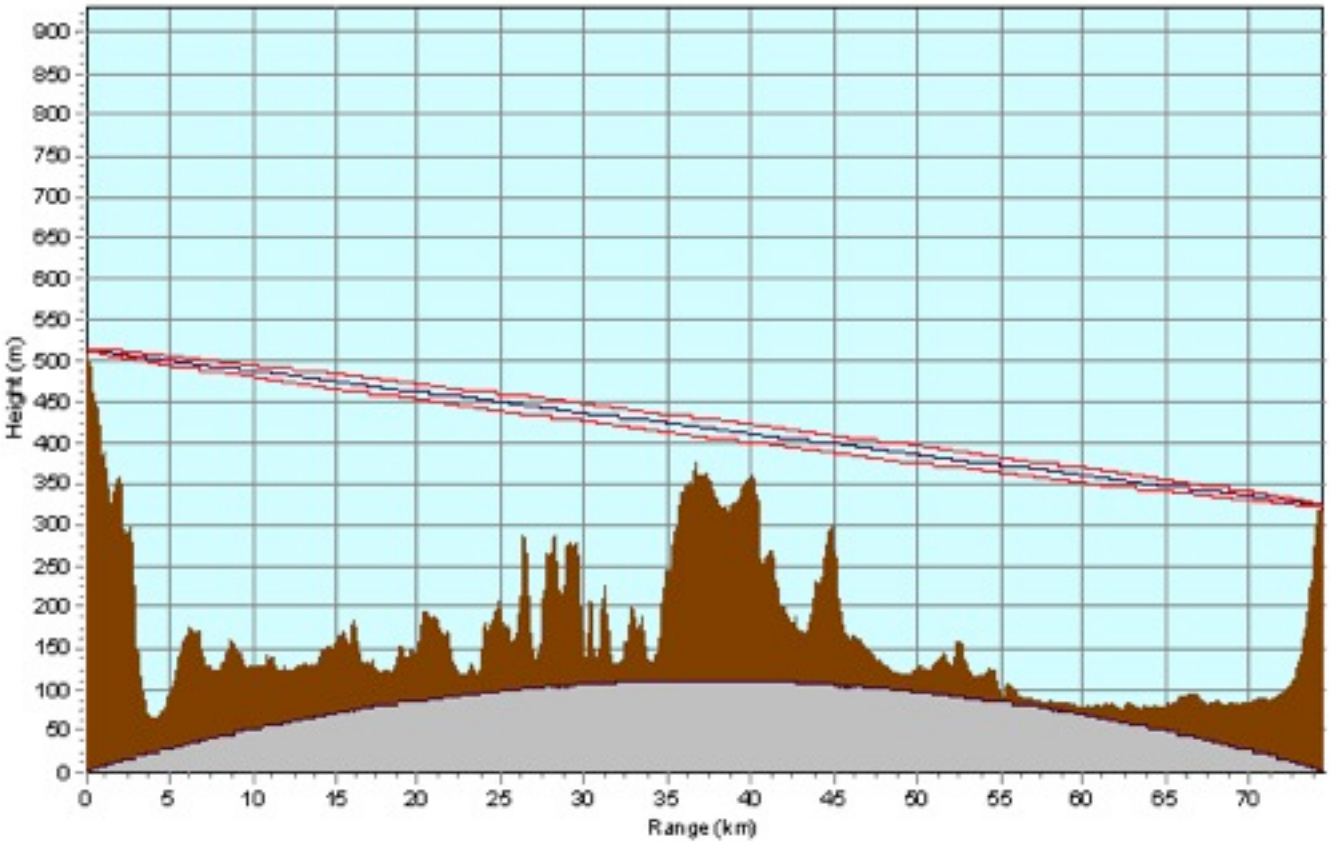
I want to encourage you get on the air as often as possible and report your activity to clearly document use of the amateur microwave bands. This means not just DX, but also local activity with low power or WB equipment.

Please send your reports to Scatterpoint@ukmicrowavers.org, remember the deadline is the 1st of the month.

73

Bob G8DTF

Path and path profile for 24G with non-contest contact on 47GHz of around 75km. Ian G8KQW and John G8ACE on Cleeve Common 28 June



Journées d'Activité

Robin G8APZ

Here are the dates for 2014 provided by Jean-Paul F5AYE (JN36dh).

All are Sat/Sun weekends apart from the scatter tests via Mont Blanc.

1296 GHz and up

26/27 July
30/31 August
27/28 September
25/26 October

73 Robin, G8APZ

The latest EME calendar is available from DL7APV's website

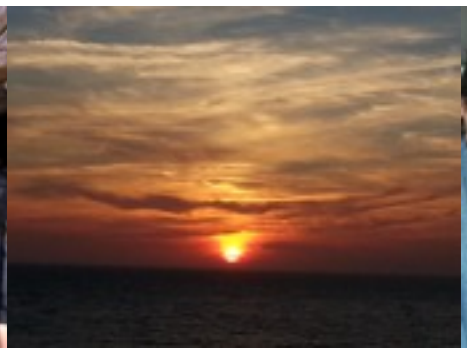
TK Cap Corse 2014 SHF DXpedition

JN42QX – JN43QA 2014 - June 21 – July 6th

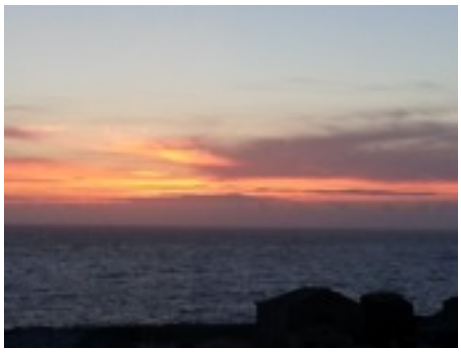
By Michel F1FIH and Guy F2CT

After our first SHF DXpedition to Cap Corse during one week in June 2013 with bad tropo and RS conditions, we decided to come back to Cap Corse but for two weeks.

We chose the same location near Centuri Haven .


144MHz and 1296MHz high power setup were put up at the main house, with a very nice take off from QTF 230 to QTF 350, overlooking the Mediterranean Sea , 40 m asl.


For the 13/6/3/1,25cm bands we had to go to the portable location at 600 m asl and use the wonderful rover system built by Michel F1FIH on his 4x4 pick-up .


The wonderful 4-bands F1FIH Rover

During our stay we had the great pleasure to welcome some friends Yannick F1NSR, Pat TK5EP and Laurent TK4LS.

Corine YL F2CT Pilar YL F1FIH TK5EP Franco and the BIG Paella!

The traffic

This year we were very lucky with both nice tropo and RS conditions

JN42QX

144MHz

22-06-2014	F1EYB	JN23KK	369km
22-06-2014	F6HTJ	JN12KQ	531km
22-06-2014	F5BUU	JN03PO	658km
22-06-2014	F4DRN	JN23MT	363km
23-06-2014	F6DKW	JN18CS	850km
23-06-2014	F4CWN	JN03KN	691km
23-06-2014	F5BUU	JN03PO	658km
23-06-2014	F6DRO	JN03TJ	630km
23-06-2014	F1EYB	JN23KK	369km
23-06-2014	F5SZR	JN03AM	758km
23-06-2014	F5ICN	JN03BF	752km
23-06-2014	F1VL	JN03RX	649km
23-06-2014	F5DQK	JN18GR	830km
25-06-2014	F1EYB	JN23KK	369km
29-06-2014	I8KRO	JM88AR	733km
29-06-2014	F1HQM	JN23LV	371km
29-06-2014	IW1HRW	JN44CB	153km
29-06-2014	I8YZO	JM78WO	732km
29-06-2014	IK0GHB	JN61GO	303km

TK5EP F2CT

F2CT & TK5EP

F1FIH

1296MHz

24-06-2014	F5ZAN	JN12LL	527km	bcn	
24-06-2014	TK5ZMV	JN41JS	143km	bcn	
24-06-2014	F5ZWX	JN23XE	279km	bcn	
24-06-2014	F1EYB	JN23KK	369km		
24-06-2014	F1ZAK	JN23MM	357km	bcn	
24-06-2014	IQ0AH/B	JN40QW	228km	bcn	
24-06-2014	F1VL	JN03RX	649km		
26-06-2014	F6DKW	JN18CS	850km		
26-06-2014	F5BUU	JN03PO	658km		
27-06-2014	F5ZWX	JN23XE	279km	bcn	
27-06-2014	I1KFH	JN45FG	266km		
28-06-2014	EA3XU	JN11CK	615km		
28-06-2014	ED5YAE	IM98WR	928km		
28-06-2014	F6HTJ	JN12KQ	531km		
28-06-2014	F5ICN	JN03BF	752km		
28-06-2014	F5NZZ	JN33AD	272km		
01-07-2014	**F1PYR/P**	**JN19BC**	**881km**	**ODX**	
01-07-2014	IK2OFO	JN45PB	232km		
01-07-2014	F5DQK	JN18GR	830km		
05-07-2014	F1RJ/P	JN12MQ	518km		
05-07-2014	F6HTJ	JN12KQ	531km		
05-07-2014	F5ZWX	JN23XE	279km	bcn	
05-07-2014	IQ1KW	JN34OP	255km		
05-07-2014	F4CWN	JN03KN	691km		

2320MHz

28-06-2014	F1PYR/P	JN19BC	881km		
28-06-2014	IK2OFO	JN45PB	232km		
28-06-2014	**DL7QY**	**JN59BD**	**689km**	**1st TK/DL Tr**	
29-06-2014	**S51ZO**	**JN86DR**	**686km**	**1st TK/S5 Tr**	
29-06-2014	**OE5VRL/5**	**JN78DK**	**717km**	**1st TK/OE Tr**	
02-07-2014	F5DQK	JN18GR	830km		
02-07-2014	**F6DWG/P**	**JN19AJ**	**909km**	**ODX**	
05-07-2014	F6HTJ	JN12KQ	531km		
05-07-2014	I0FHL	JN52VD	219km		
05-07-2014	F5BUU	JN03PO	658km		
05-07-2014	IQ1KW	JN34OP	255km		
05-07-2014	EB5EA	IM99UG	908km		
05-07-2014	F5ELL/P	JN13RH	482km		

5760MHz

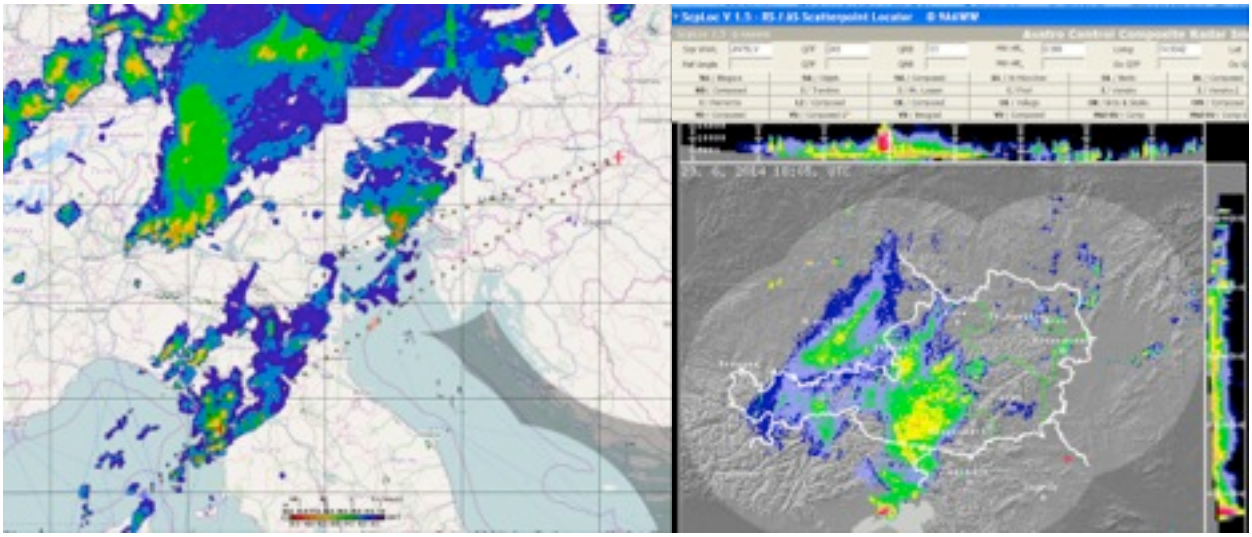
28-06-2014	IK2OFO	JN45PB	232km		
29-06-2014	**S51ZO**	**JN86DR**	**686km**	**1st TK/S5 Tr**	
29-06-2014	**OE5VRL/5**	**JN78DK**	**717km**	**1st TK/OE Tr**	**ODX**
05-07-2014	IQ1KW	JN34OP	255km		
05-07-2014	F6HTJ	JN12KQ	531km		
05-07-2014	F5ELL/P	JN13RH	482km		

10GHz

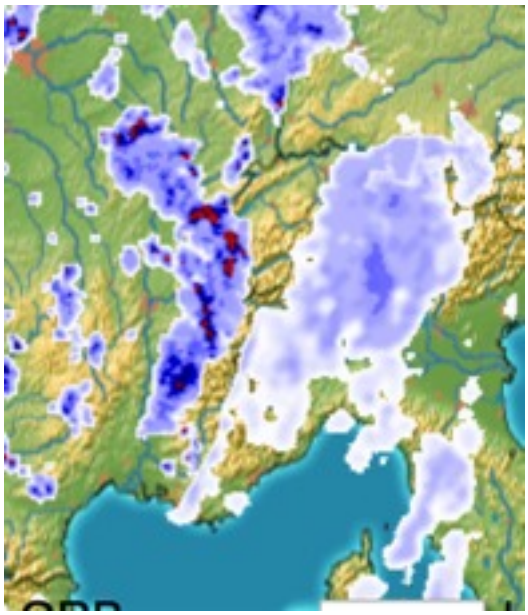
22-06-2014	**DL3IAE**	**JN49DG**	**705km**	**1st TK/DL Tr**	
22-06-2014	**LX1DB**	**JN39CO**	**776km**	**1st TK/LX Tr**	
22-06-2014	DL7QY	JN59BD	689km		

Map on 22-06-2014

25-06-2014	I6XCK	JN53QO	177km	
25-06-2014	IQ5FI/B	JN53SR	195km	
25-06-2014	IQ0REF/B	JN62HJ	274km	
25-06-2014	IK0HWJ	JN61HT	297km	
25-06-2014	**S51ZO**	**JN86DR**	**686km**	**1st TK/S5 Tr**
25-06-2014	I3EME/B	JN55WT	373km	
28-06-2014	TK/F6BVA	JN41JN	165km	
28-06-2014	IK2OFO	JN45PB	232km	
29-06-2014	OE8XXQ/B	JN66UO	529km	
29-06-2014	**9A4ZM**	**JN64WU**	**417km**	**1st TK/9A RS CW**
29-06-2014	S59GS	JN75NP	545km	
29-06-2014	S54M	JN86CM	668Km	
29-06-2014	**OE5VRL/5**	**JN78DK**	**717km**	**1st TK/OE RS CW**
29-06-2014	9A1Z	JN86DL	671km	



29-06-2014	S51ZO	JN86DR	686km		
29-06-2014	IV3NDC	JN65RV	459km		
30-06-2014	F5HRY	JN18EQ	835km		
02-07-2014	I4XCC	JN63HW	284km		
02-07-2014	IK3GHY	JN65DM	366km		
02-07-2014	9A3JN	JN85EL	623km		
03-07-2014	**3A/F5BOF**	**JN33RR**	**176km**	**1st TK/3A Tr SSB**	
03-07-2014	F1DFY/P	JN23XI	281km		
04-07-2014	**F6DKW**	**JN18CS**	**850km**	**ODX RS SSB**	
04-07-2014	F5DQK	JN18GR	830km		
04-07-2014	**HB9AMH**	**JN37QD**	**490km**	**1st TK/HB RS SSB**	
04-07-2014	DL3IAE	JN49DG	705km		
04-07-2014	DL7QY	JN59BD	689km		
04-07-2014	F6DKW	JN18CS	850km		



Map on 4-7-2014

05-07-2014	IQ1KW	JN34OP	255km		
05-07-2014	I1KSC	JN44MJ	160km		
05-07-2014	F6HTJ	JN12KQ	531km		
05-07-2014	I0FHL	JN52VD	219km		
05-07-2014	EB5EA	IM99UG	908km		
05-07-2014	F5ELL/P	JN13RH	482km		

24GHz

03-07-2014	**F1DFY/P**	**JN23XI**	**281km**	**ODX**	

JN43QA

24-06-2014	IK2OFO	JN45PB	228km		
24-06-2014	DL7QY	JN59BD	684km		
24-06-2014	I4XCC	JN63HW	282km		
24-06-2014	DK1MAX	JN58SP	648km		
24-06-2014	9A4ZM	JN64WU	414km		
24-06-2014	F6HTJ	JN12KQ	532km		
24-06-2014	**F6DWG/P**	**JN19AJ**	**906km**	**RS CW**	**ODX**

Map on 24-06-2014

Summary:

12 DXCC

9 first ever terrestrial qsos: DL (2 bands) HB LX OE (3bands) 3A 9A S5 (3bands

Rigs

144MHz : K3/TVT/SSPA 1kW/9el

1296MHz : K3/TVT/SSPA 300W/80cm offset

2320MHz : 70W/1,2m offset

5760MHz: 30W/1,2m offset

10368MHz : 15W/1,2m offset

24048Mhz : 5W/1,2m offset

QSL:

via F1FIH : Michel Laborde , 10 rue Caravelle 30137 Bellegarde

via F2CT : Guy Gervais , 16 avenue du Prince de Galles F 64600 ANGLET

See you next year from TK

Best wishes and 73 from Michel F1FIH and Guy F2CT

Contests

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

www.microwavers.org/?contesting.htm

May 5.7GHz Contest 2014

Activity and entry levels are a big concern on 5.7GHz.

Congratulations go to Roger G8CUB/P as the sole entrant and winner on this occasion.

May 10GHz Contest 2014

A little rain scatter added to the interest for this event, but activity levels were modest.

Congratulations go to Nick G4KUX as the overall leader and Stewart G0LGS/P as leading portable and restricted section entrant.

May 24GHz Contest 2014

Peter's G3PHO/P rover operation gave him and his QSO partner G3ZME/P a commanding advantage on this band. Congratulations go to them both.

Commiserations go to G8CUB/P who lost his single QSO to a logging error.

June Low Band Contest 2014

Continental activity boosted QSO totals and scores for many entrants in this event. However, UK activity was poor, so stations away from SE England had a hard time building a good score.

On 1.3GHz DL0GTH provided some good aircraft reflection DX for several entrants, and a sprinkling of other continentals were in many logs. Scotland was represented by GM8IEM in the far north west who took advantage of aircraft reflection for both his QSOs.

After a close fought battle Keith G4KIY is the winner by a small margin over Tony G4NBS, with M0HNA/P as the leading portable station.

2.3GHz was won by Tony G4NBS, with an exceptional aircraft reflection QSO with DL0GTH at 765km. M0HNA/P were runners up with the same number of contacts but only one continental, F4CKC/P in JN19.

Unusually there was a dead heat for the top spot on 3.4GHz, with G3UKV and G4LDR ending up with identical scores. Leading portable station was M0HNA/P in third place. No contacts outside the UK were reported on this band.

The overall table is led by the Combe Gibberlets M0HNA/P, who scored consistently well to take the lead with two third places and one second spot. Overall runner up is Neil G4LDR who was joint leader on 3.4GHz.

Congratulations to all the winners and runners up mentioned above.

73

John G3XDY UKuG Contest Manager

May High Band Contests 2014

5.7GHz May 2014						
Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX km
1	G8CUB/P	IO92XA	4	543	GW3TKH/P	208
10GHz May 2014						
Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX km
1	G4KUX	IO94BP	8	2005	G3XDY	353
2	G0LGS/P	IO81XW	13	1899	G4KUX	302
3	G4WLC/P	IO91DV	11	1676	G4KUX	307
4	G8CUB/P	IO92XA	12	1581	G4KUX	317
5	G4BAO	JO02CG	10	1225	G4KUX	298
6	G3ZME/P	IO82QL	8	1106	G4KUX	246
7	GW4HQX/P	IO81LS	5	547	G4EML/P	205
8	G6ZAC/P	IO90SV	5	501	2E0NEY	137
9	G4EML/P	IO90SV	5	501	2E0NEY	137
24GHz May 2014						
Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX km
1	G3ZME/P	IO82QL	4	356	G3PHO/P	98
2	G3PHO/P	IO93FB	4	356	G3ZME/P	98
3	G4BAO	JO02CG	1	33	G8CUB/P	33
4	G8CUB/P	IO92XA	0	0		0

June 2014 Low Band Contest Results					
Overall					
Pos	**Callsign**	**1.3GHz**	**2.3GHz**	**3.4GHz**	**Total**
1	M0HNA/P	711	838	696	2245
2	G4LDR	483	691	1000	2174
3	G4NBS	991	1000	0	1991
4	G3UKV	343	397	1000	1740
5	G4KIY	1000	656	0	1656
6	G4BRK	303	558	595	1456
7	GW4WLC/P	0	460	0	460
8	G3UVR	171	234	0	405
9	GM8IEM	201	0	0	201
10	GD1MIP	73	0	0	73
1.3GHz					
Pos	**Callsign**	**Locator**	**QSOs**	**Best DX**	**Points**
1	G4KIY	IO92WN	17	DL0GTH, 783km	5749
2	G4NBS	JO02AF	20	DL0GTH, 765km	5700
3	M0HNA/P	IO91RF	21	DF0MU, 549km	4087
4	G4LDR	IO91EC	11	DL0GTH, 872km	2779
5	G3UKV	IO82RR	12	G4ALY, 276km	1973
6	G4BRK	IO91HP	10	PA0EHG, 415km	1742
7	GM8IEM	IO78HF	2	G4CBW, 607km	1155
8	G3UVR	IO83KH	5	M0HNA/P, 291km	984
9	GD1MIP	IO74TI	2	G4KCT, 222km	421
2.3GHz					
Pos	**Callsign**	**Locator**	**QSOs**	**Best DX**	**Points**
1	G4NBS	JO02AF	12	DL0GTH, 684km	2638
2	M0HNA/P	IO91RF	12	G4KCT, 304km	2211
3	G4LDR	IO91EC	9	F4CKC/P, 348km	1824
4	G4KIY	IO92WN	8	PA0BAT, 453km	1731
5	G4BRK	IO91HP	9	F4CKC/P, 377km	1472
6	GW4WLC/P	IO81LS	9	G4NBS, 218km	1213
7	G3UKV	IO82RR	7	M0HNA/P, 216km	1047
8	G3UVR	IO83KH	3	G4NBS, 245km	617
3.4GHz					
Pos	**Callsign**	**Locator**	**QSOs**	**Best DX**	**Points**
1=	G3UKV	IO82RR	4	G4LDR, 192km	582
1=	G4LDR	IO91EC	5	G4ALY, 195km	582
3	M0HNA/P	IO91RF	4	G4BEL, 134km	405
4	G4BRK	IO91HP	4	G3UKV, 145km	346

Low Band Championship 2014						
	After four events, the best three events count towards the total					
Overall						
Pos	Callsign	3/2/14	4/13/14	5/4/14	6/8/14	**TOTAL**
1	M0HNA/P	0	2692	3000	2245	7937
2	G4LDR	1833	2245	1083	2174	6252
3	G4BRK	2113	1602	1777	1456	5492
4	G3UKV	1788	0	1208	1740	4736
5	G4NBS	1879	0	0	1991	3870
6	G4KIY	0	697	0	1656	2353
7	G4BAO	1456	0	0	0	1456
8	G8OHM	0	0	1302	0	1302
9	G(W)4WLC/P	521	0	299	460	1280
10	G8DTF	0	1233	0	0	1233
11	GW3TKH/P	0	766	444	0	1210
12	G0RUZ	0	537	0	0	537
13	G3TCT	527	0	0	0	527
14	G3UVR	0	0	0	405	405
15	GM8IEM	0	90	0	201	291
16	G4DZU	154	0	0	0	154
17	GM3HAM/P&GM4BYF/P	0	0	131	0	131
18	GD1MIP	0	0	0	73	73
1.3GHz						
Pos	Callsign	3/2/14	4/13/14	5/4/14	6/8/14	TOTAL
1	M0HNA/P	0	1000	1000	711	2711
2	G4NBS	1000	0	0	991	1991
3	G4BRK	816	498	575	0	1889
4	G4LDR	439	436	150	483	1358
5	G4KIY	0	305	0	1000	1305
6	G3UKV	320	0	152	343	815
7	G4BAO	685	0	0	0	685
8	G8OHM	0	0	577	0	577
9	G0RUZ	0	537	0	0	537
10	G3TCT	527	0	0	0	527
11	GW3TKH/P	0	227	183	0	410
12	GM8IEM	0	90	0	201	291
13	G8DTF	0	267	0	0	267
14	G3UVR	0	0	0	171	171
15	G4DZU	154	0	0	0	154
16	GD1MIP	0	0	0	73	73
17	GM3HAM/P	0	0	67	0	67
2.3GHz						
Pos	Callsign	3/2/14	4/13/14	5/4/14	6/8/14	TOTAL
1	M0HNA/P	0	1000	1000	838	2838
2	G4LDR	986	809	232	691	2486
3	G4BRK	1000	776	575	558	2351
4	G4NBS	879	0	0	1000	1879
5	G3UKV	468	0	830	397	1695
6	G(W)4WLC/P	521	592	299	460	1573
7	G4KIY	0	392	0	656	1048
8	G8DTF	0	966	0	0	966
9	GW3TKH/P	0	539	261	0	800
10	G4BAO	771	0	0	0	771
11	G8OHM	0	0	725	0	725
12	G3UVR	0	0	0	234	234
13	GM4BYF/P	0	0	64	0	64
3.4GHz						
Pos	Callsign	3/2/14	4/13/14	5/4/14	6/8/14	TOTAL
1	G3UKV	1000	0	830	1000	2830
2	G4LDR	408	1000	701	1000	2701
3	M0HNA/P	0	692	1000	696	2388
4	G4BRK	297	328	597	595	1520

SOTA/UKµG Joint Microwave Award

Chris DGU drafted these rules, which I believe are as we have adopted them for the distance awards.

Final design of the certificate is being worked on, but the start date for contacts for the award is 1st July 2014.

The SOTA Awards manager is Barry Horning GM4TOE, 5 Main Street, Tomintoul, Ballindalloch, AB37 9EX

The awards web site is at: http://www.sota.org.uk/Awards

73 John G3XDY

SOTA/UKuG Joint Microwave Award

Draft Rules

1. The award will be based on contacts on any microwave band between 23cm and 24GHz
2. The Award will be based on distance. It will start at a basic level of 50Km. Endorsements will be available in 50Km steps.
3. Endorsements may be claimed for activity on each band.
4. An Activator may claim this award based on ACTIVATING the hill. Normal QUALIFYING criteria will apply for claiming this hill for other SOTA awards.
5. For the purposes of this award the Activator may activate the hill as frequently as wished over a year but may only claim it once per calendar day.
6. Chaser rules will apply as normal for the usual SOTA awards but Chasers may also claim for the microwave distance award. One station MUST be on a SOTA summit.
7. There will be a special category of the Summit to Summit Award, where both ends are on qualifying SOTA summits, but will be based on the distance between them, not just the fact they were on SOTA summits (such contacts can also be included in the regular S2S award).
8. The award will be jointly awarded by SOTA and UK Microwave Group. It will be administered by SOTA with oversight from UkuG.

UKuG Microwave Contest Calendar 2014

Dates	Time UTC	Contest name	Low Band#	Certificates
3 -Aug	0900 - 1700	Microwave Field Day		F, P,L
31 -Aug	0600 - 1800	4th 5.7GHz Contest		F, P,L,R
31 -Aug	0600 - 1800	4th 10GHz Contest		F, P,L,R
31 -Aug	0600 - 1800	4th 24GHz Contest		F, P,R
28 -Sep	0600 - 1800	5th 5.7GHz Contest		F, P,L,R
28 -Sep	0600 - 1800	5th 10GHz Contest		F, P,L,R
28 -Sep	0600 - 1800	5th 24GHz Contest		F, P,R
23 -Nov	1000 - 1400	Low band 1.3/2.3/3.4GHz	5	F, P,L,R

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

Events calendar

2014

July 12–13	Finningley Round Table	www.g0ghk.co.uk/
July 12–13	Gippsland Technical Conference, VIC 3842 Australia	www.vk3bez.org/gippstech.html
July 25–27	AMSAT Colloquium, Holiday Inn, Guildford	www.amsat-uk.org/colloquium/
July 23 – Aug 3	Commonwealth Games, Glasgow	www.glasgow2014.com/
August 23 – 26	EME2014, Pleumeur-Bodou near Lannion	www.eme2014.fr
Sept 6–7	European Conference on Amateur RA, Bad Münstereifel- Eschweiler, Germany	
Sept 12–14	59.UKW Tagung, Weinheim [*note date correction*]	www.ukw-tagung.de/
September 21	Crawley Round Table	www.microwavers.org/cra-prog.htm
Sept 26–27	National Hamfest	www.nationalhamfest.org.uk/
Oct 6-9	European Microwave Week, Rome	www.eumweek.com/
Oct 10-12	RSGB Convention	www.rsgb.org/rsgbconvention/
Oct 18-19	Microwave Update, Rochester, New York	www.microwaveupdate.org/
Nov 1	Scottish Round Table	www.gmroundtable.org.uk/

2015

Jan ??	Heelweg Microwave, Westendorp Netehrlands	www.pamicrowaves.nl/website/
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 26 – 28	Ham Radio, Friedrichshafen	www.hamradio-friedrichshafen.de/
Sep 28 – Oct 2	European Microwave Week, Paris	www.eumweek.com/

2016

May 20 – 22	Hamvention, Dayton	http://www.hamvention.org/
Jun 24 – 26	Ham Radio, Friedrichshafen	www.hamradio-friedrichshafen.de/
Oct 4 – 7	European Microwave Week, London	http://www.eumweek.com/