SURREY RADIO CONTACT CLUB

80th Anniversary Year - Founded in 1935

JULY 2015 – No: 875

CLUB NET 1.905 MHz Sunday 9:30am
CLUB NET 145.35 MHz +/- 25kHz Friday 8:00 pm

CLUB Internet WEB Site: http://www.g3src.org.uk

Hon. Sec. John Kennedy G3MCX
22 Croham Park Avenue
SOUTH CROYDON
Surrey CR2 7HH
020-8688 3322
E-Mail: secretary@g3src.org.uk

MONTHLY MEETINGS 1ST AND 3RD MONDAYS 7.30 FOR 7.45pm

Meetings at Trinity School, Shirley Park, Croydon CR9 7AT

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SPECIAL 1st MEETING: Sunday 12 July. 80Th Anniversary Garden Party at QTH Sandra and John G3MCX.

2nd MEETING: Monday 20 July. Fix-it, Move-it-On and Informal Chat. led by John G8MNY.

NOTE: There is no meeting on Monday 6 July.

SRCC Committee 2014/15

Chairman & Club Meetings	G4FDN	Pat McGuinness	020 8643 0491
Vice-Chairman and Web Master	G4FYF	Steve Jones	020 8406 0919
Secretary & Communications	G3MCX	John Kennedy	020 8688 3322
Treasurer & Membership Records	G4FFY	Ray Howells	01732 357474
Contest Co-ordinator, Newsletter Editor	G8IYS	John Simkins	020 8657 0454
Chief Fund-raiser, Liaison, Recycling, Equipment	G4DDY	Maurice Fagg	020 8669 1480
Committee Member	M0LEP	Rick Hewett	01689 851472

Dear Members & Friends,

Hello and welcome to the July 2015 issue of the Newsletter, edited by John G8IYS.

I spent the first weekend of June in the pleasant company of Quin G3WRR, Alun G4WGE and John G4CZB (former member of the defunct Purley Radio Club) in the field-site of Northampton RC – courtesy of aforementioned G4CZB, with the Flying Ducks Team in HF (CW) NFD. Given that I am CW blind and deaf, I confine myself to latrines and culinary duties (non-concurrently). I believe that from all angles the four of us enjoyed ourselves and the claimed score was very respectable. I learn more about HF every time and how essential is an analysis of the type and orientation of a single antenna (covering 3.5 – 28 MHz) and the optimum timing of operation on each band to maximise our score. The only downside was the recurrence of the left flasher and brake light connection problem between my car and trailer tent. I now know what and where the problem lies, but have yet to effect a cure. Getting all the way home from Northampton to Sanderstead without turning left was somewhat of a challenge but I arrived unscathed.

THIS MONTH'S MEETINGS

Special First Meeting: Sunday12 July. 80th Anniversary Garden Party at QTH of Sandra and John G3MCX – start 12 noon.

Admission is by ticket only. If you have not yet purchased one or more then it may just

be possible to squeeze you in, provided you contact the Hon Sec without delay. We can make no promises at this late date since we have been advertising this event for months and orders have been placed with suppliers for food and drink. Act now and avoid disappointment.

Second Meeting: Monday 20 July. Chat and Fix-it Evening.

As usual, this will be a mix of repair activity, technical/operating advice and informal chat.

There may be even more examples of ingenuity in modifications to the LCR Component Tester.

LAST MONTH'S MEETINGS

First Meeting: Monday 1 June. Theory, Technical aspects & Upgrade possibilities of the Component Tester – this year's Construction Project. Report by Quin G3WRR.

The lecture, at which 19 members were present, was was largely presented by our Chairman Pat G4FDN, with inputs from Steve G4FYF, Gareth G4XAT and John G8MNY on practical construction aspects.

Pat opened by explaining how the component tester had been selected as the 2015 SRCC Construction Project:. Steve G4FYF had been looking for a bezel or case for LEDs for a (different) construction project, and Pat had found a suitable project case on the website of the firm *Bang good*. Steve subsequently bought the LCR tester kit for which the project case had been designed, suggested this as a suitable construction project for 2015, and this was agreed.

The kit is produced in China based on German IPR using an ATMEL ATMeg 328 microcontroller (as used in Arduino). The designer was Karl-Heinz Kübbeler, based on earlier work described in the 2011 Embedded Projects Journal by Markus Frejek. The current hardware & software (which is open source) has now progressed beyond the version purchased as the SRCC kit (of which 12 have been purchased by SRCC members with a couple more in the pipeline).

Key aspects of the tester specification are as follows:

Resistance 0.1 – 50M Ω
Capacitance 30pF – 100mF (yes, milliFarads not microFarads!)
Inductance 0.10mH – 10H
ESR 0.01 Ω +

In addition, a number of parameters of a wide range of semiconductor types can be measured. The usual test time is 2s although large capacitance and inductance values take longer. Operating current during tests is 25mA (quiescent current being 0.02 µA).

Pat presented the tester circuit diagram and microcontroller architecture, but in summary:

- The main functional areas of the overall design are:
    - Voltage regulation
    - Test switch and LED
    - Oscillator and microcontroller
    - LCD display
- The architecture of the 8 bit microcontroller (which is about 10 times as powerful as the device used in last year's project) consists of:
    - Functional control
    - Display control
    - Clock and frequency definition
    - Input / output definition and connectivity
    - Algorithmic determination and calculation.

Pat then explained the microcontroller's Input / Output (I/O) system as this is central to the way in which the tester operates:

- each port is physically implemented as a pin
- pull-up resistors associated with each port can be enabled or disabled (and are disabled in the tester application)
- each port can be set in software to:

- input or output
- digital or analogue: in the latter case a 10 bit analogue / digital (A/D) converter (allowing 1024 discrete levels) is connected

- when set to output, the pin can be connected to either V_{CC} or ground direct or via a 680Ω or 470kΩ

- one port is associated with the TEST button to tell the microcontroller to conduct a component test

- a separate data port is also provided to allow the microcontroller to be programmed (eg. to configure specific features). This requires a complier and programmer not provided with the kit.

Pat explained that the tester uses the above capabilities to test components by:

- applying a set of conditions (defined in the software) to 3 pins

- reading consequential conditions (eg. pin voltages)

- using these results to determine the type of component and, in the case of passive components, its value.

The detailed way in which this works for semiconductors was beyond the scope of the presentation, but a simple example based on resistor measurement was used to illustrate the principle. Suppose a resistor under test is connected in series with (say) the 470kΩ resistor and the series pair connected between V_{CC} and ground: if the voltage at the junction of the two resistors is then measured and compared with V_{CC} (this being done in the software), it is a simple matter of applying Ohm's Law to determine the value of the resistor. The same principle can be extended slightly to measure the reactance of inductors and capacitors at a given frequency, and – knowing the reactance and the frequency – to derive their values.

That concluded the presentation *per se* but a discussion, largely involving those who had already built the kits, took place. The following points arose:

- A number of ingenious mechanical variations had been discussed at the previous FIXIT session

- Steve G4FYF felt that the PCB was of good quality, but fitting it into the case was a bit of a challenge. He had found the test button clearance rather tight, and had opened up the hole slightly: and rather than using the test block provided, he had opted for flying leads instead

- Gareth G4XAT had purchased a number of kits for the Trinity School Upper VI, and these had been put together in about 50 minutes each. He had found no particular problem with the test switch (preferring a recessed switch to avoid accidental operation). He noted that although the values of the 680Ω or 470kΩ comparison resistors were precise, the colour coding was not and recommended measurement! He also recommended the Design Spark package from RS if you wish to design your own case

- John G8MNY had added a resistor and diode to his, in order to charge the battery, and also a reset switch to minimise the impact of a number of crashes his had experienced. He also recommended cautious use of a hot soldering iron to enlarge holes, and to profile the case to minimise the risk of lugs breaking off

- To measure capacitance values lower than 30pF, it was suggested that the capacitor under test could be connected In parallel with a small (but in excess of 30pF) capacitor and the required value obtained by subtraction.

Thanks Quin for a very comprehensive account. Ed.

A supplementary observation from G4FYF: A displayed message "Unknown or damaged part" whilst testing may be a bit misleading. If

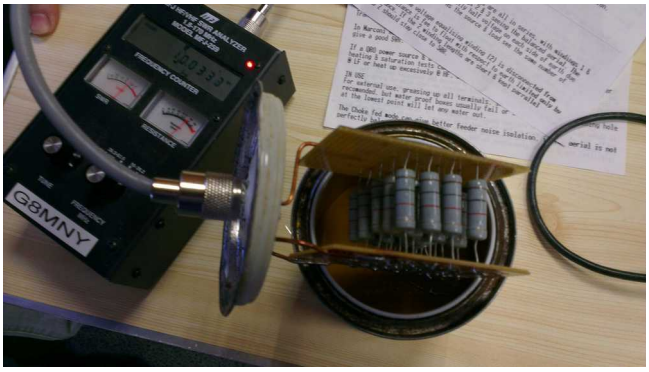
connected properly, it is more likely that the parameters of the component being tested are outside the measurement range of the instrument.

Second Meeting Monday 15 June 2015 Chat and Fix-it led by John, G8MNY. Report by Hon Sec John G3MCX and Steve G4FYF.

This was another well supported second meeting with plenty of discussion and fix-it activity. It was good to see that Alan George 2E0DIS had brought in his home-brew Dummy Load. This is exactly what these meetings are designed for. Our Vice Chairman, Steve G4FYF assisted Alan in checking it. Steve has written a report , which follows.

Gareth G4XAT and John G8MNY were busy working on filters. Pat G4FDN, our Chairman, demonstrated a Vector Network Analyser. Members subs were paid and more Garden Party tickets were sold.

Alan, 2E0DIS, brought along his nicely constructed home-brewed HF dummy load. It consists of a parallel arrangement of 20×2 W resistors mounted on Veroboard, housed in a tin once containing water-based varnish, but now containing transformer oil, and terminated with an S0239 connector.



The innards of Alan 2E0DIS's Dummy Load

Alan tested its performance using John's, G8MNY, MFJ antenna analyser. Below 7 MHz it was looking good, virtually 1:1 SWR, but gradually worsened as frequency increased to 30 MHz.

Maurice, G4DDY, was on-hand to offer advice that may improve performance. We await 'till next time to see how things turn out. That's home-brew for you – deep joy when a nice end product results, deep frustration when it doesn't play properly!!

Maurice G4DDY giving Alan helpful hints

Chairman's Blog by Pat G4FDN

Club 80th Anniversary Garden Party 12 July:

I hope by the time you receive this, all members who can attend will have bought tickets for themselves, and family and friends, for what we hope will be a great social day and an enjoyable event for all. However, if you have been dithering on whether to come or not, and now want to, you will need to contact our Treasurer Ray G4FFY, or in his absence, our Hon. Secretary John G3MCX, to check if there are any tickets left. Don't delay!

Welcome to new member Dave Chapman G3NGK, of Hayes, Bromley: Dave has been a benefactor to the club several times in the past with donations of equipment. Dave has a very wide range of test equipment, including audio and video generators, digital storage oscilloscope, LF to UHF signal generators and a spectrum analyser with tracking generator. He would be quite happy to try and help occasionally if anyone in the club has a technical problem that might require the use of such equipment.

Outstanding Membership Subscriptions: we have, for the last two months, been including with the newsletter, reminders for those concerned, that they have not paid the 2015/16 membership subscription. This has, as result, reduced the numbers outstanding, but not completely.

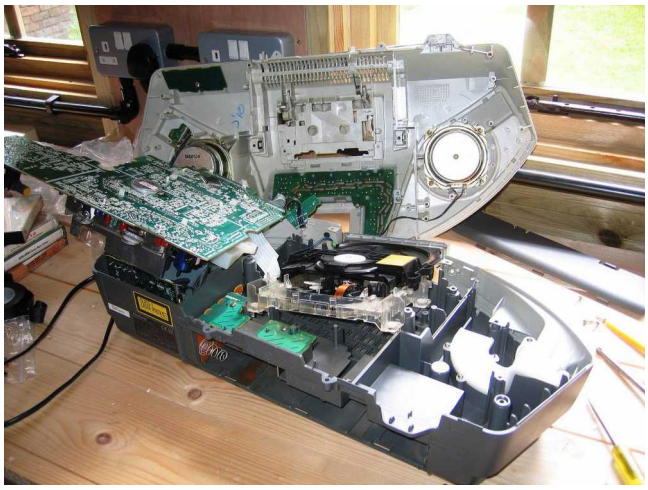
It is probably timely to remind, that with the exception of Honorary Members, membership is conditional on continuing to pay the club subscription. However, the club does not withdraw services immediately when a sub is due, and the club has been giving a more than generous grace period for these to be paid. However, if your subscription hasn't been paid, you cannot vote in AGMs or be elected to a committee position, because you are not a member at that point. A person whose membership has ended has no right to club services, such as the newsletter, meetings, equipment sales, component bank, or other club activities, etc. Nearly every year, some people let their membership expire, unfortunately, despite reminders, and have then had to re-apply for membership. Where members have re-joined, this is announced in the newsletter. The RSGB and ARRL are much more 'efficient' in the withdrawal of services and enforcing re-application to membership. However, the club committee believe members appreciate the discretionary flexibility SRCC provides in this regard, but we request that it is not abused –we do not need the extra work of chasing late payers.

The tools that don't work when you most need them!: In my workshop, I keep a 'boom box' or 'ghetto blaster' for music or news entertainment when I'm working there. It is a Panasonic RX-ES25. It has an AM/FM radio, CD player and cassette player, and is mains or battery powered, with remote control, and has very nice sounding integrated speakers with plenty of volume, so much so the XYL occasionally says "isn't that a bit loud?"

Recently, the CD player stopped working and reported 'No Disc' when a disc was inserted. I suspected that it was probably a dirty laser lens, but on inserting my lens cleaning CD: the drive wouldn't spin the disc! - why? - because the drive didn't detect the laser reflection off the disc, therefore it thought there was no disc present so the control logic says no disc then no spin! A real 'Catch 22' situation, which means the CD cleaner disc can only work if the laser lens is not sufficiently dirty to prevent disc detection otherwise you are b*****d.

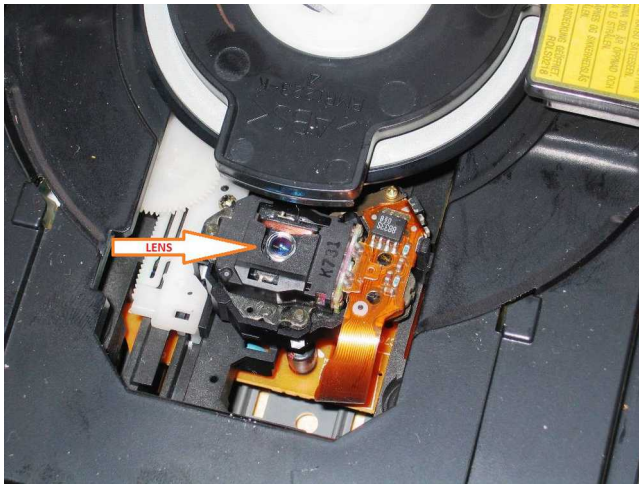
CD Cleaning disk showing brushes which are used to 'sweep' the lens over the laser

So there was no alternative but to strip it down to do a manual clean. This was quite a disassembly job as the picture below shows:



The picture above shows the view from the rear with the CD player drive shown in the middle in black in a clear Perspex frame.

The picture below shows the lens behind which the laser sits.



It was only necessary to clean the lens with isopropyl alcohol on a cotton bud. On re-assembly the CD player worked first time.

A few future mods are planned to the Panasonic including Bluetooth receiver, external audio in, sockets to allow the internal speakers to be used from external sources, and a Li-ion battery pack and charger. It should keep me busy.

Which is best: crimp or solder?: I'm sure this will attract some editorial comment as to which is best, and it follows on from my piece last month on Anderson PowerPole DC connectors. Having done a bit of research, I think the industry literature comes down on the side of crimping, but it has to be done correctly, which means using the right tool with the correct size crimper for the said connector. So a poorly crimped connector done incorrectly or with the wrong tools will by definition be a poor connector.

Picture above of correctly crimped Anderson PowerPoles

For a good soldered connection, the connector should be designed for soldering. In the Anderson PowerPole case, they only supply crimp connectors and advise that if they are soldered, a fracture at the cable exit point is more likely because of the increased rigidity of the cables because of the solidified solder.

Regarding coaxial connectors and crimping versus soldering there is a well written paper here:
http://www.rfcoaxconnectors.com/Technical_CrimpvsSolder.htm
that both textually and diagrammatically gives the pros and cons of both approaches and I found it interesting and informative to read.

Club Nets: interest has been stated in having a weekly 4m FM net but it is not clear yet if there are sufficient numbers to warrant. My own experience on 4m FM is that there is more local activity on 4m than 2m these days. I certainly seem to get out further on 4m than I do on 2m. If you are interested in participating in a weekly net please email myself or the Hon. Secretary, and the club may run a trial. It would probably be on a mid-week evening so as not to clash with the Sunday Top Band net or the Friday 2m net.

SRCC nets do not have net controllers and none have ever been appointed. Whoever is on frequency first calls CQ SRCC and takes it from there. The order of stations is flexible, as is the duration of the net, so if you can't make it at the start, then joining any time is OK. Finish times are flexible as well, with on average most nets lasting around an hour. If you keep a logbook, as most long established stations do, you won't

have trouble in recalling people's names, callsigns, or who goes next.

Sign off: Looking forward to seeing as many of you as possible at the Party on the 12th July.

Editorial Comment on PowerPoles: I fully accept that for DC and low frequency connectors, then a well made crimped joint is superior to a well-made soldered joint – particularly so when the lead is likely to be flexed regularly adjacent to the connector. One of the key negatives is the cost of a quality crimp tool ie a positive locking one where it will not release until the appropriate crimping pressure has been applied. This is a decision criterion when the number of times it is likely to be used is taken into account, along with cost. So too is the environment in which the connector will be employed ie waggled about a lot though regular connects and disconnects or just lie in place undisturbed.

As Pat says, the jury is divided when it comes to crimped coaxial connectors. I think that the international jury is just about in favour when the cable has a flexible (braided) outer conductor. However, when terminating a semi airspaced coaxial cable with a solid outer conductor (I do not mean a thin foil outer, I mean around 0.5 mm plus) then the compression needed to achieve a sound cold weld is such that a steel ferrule must be placed inside the outer to resist the crushing force. This not only disturbs impedance continuity, thus producing signal reflections – particularly important in digital transmission – but the dissimilar metals (copper and steel alloy) in contact will, in time, degenerate to an inefficient diode and thus promote the generation of 2nd, 3rd , etc harmonics. Ed.

Brooklands Centenary Radio Event 20 June: Report by Rick M0LEP.

I seem to have taken plenty of photographs around the museum, but only one afterthought of the SRCC set-up just before we dismantled it but nothing showing folk actually operating...

John G8MNY, Kim G6JXA and Steve 2E0DIZ arrived early to set things up, and had the station pretty much up and running before I arrived (having been somewhat misled by my GPS) about an hour late.

In the morning, GX3SRC/p worked mainly on 20 metres. Conditions were not great, with a fairly high local noise level. We worked 22 stations and ten countries.
In the afternoon, we were asked to operate under the event callsign GB1BM and established a spot on 40 metres. Our station, being well away from the museum buildings, had only about S4 noise level on 40 metres, while the station inside the museum building was experiencing something closer to S6-7 of noise. We worked 62 stations on 40 metres, including at least 3 other museum ones, mostly in the UK, but with a few from the Netherlands and Germany, and one from Denmark.

View of GX3SRC/P station – minus operators

Note of thanks from Peter G3ZPB re Brooklands Event

Hi All,

I would like to express my thanks to John G8MNY, Kim G6JXA, Steve 2E0DIZ and Rick M0LEP for all their help and operating at Brooklands Museum on 20th June.
Due to lack of experienced operators from the museum and the high noise level within our building, I took the decision in mid-afternoon to suggest the 'SRC station use the museum's callsign. In retrospect, a bad decision - I should have taken it much earlier!!! We worked 4 stations in the morning; the 'SRC group worked 62 stations in 2 hours during the afternoon!.
Our full logs are available on a number of websites including eqsl.cc, hrdlog.net and qrz.com. I regret to say I was so involved in the organisation of the day's events, that I omitted to take any pictures of either station.

73. Peter, G3ZPB, GB1BM.

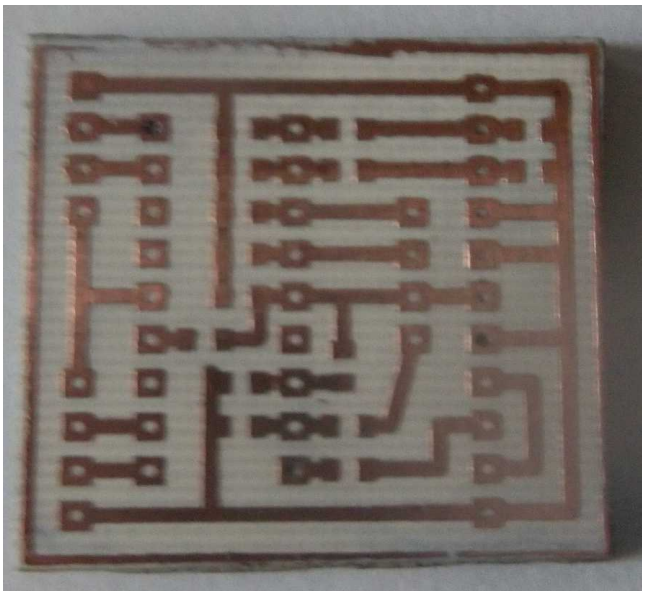
Simple PIC Keyer - Steve G4FYF

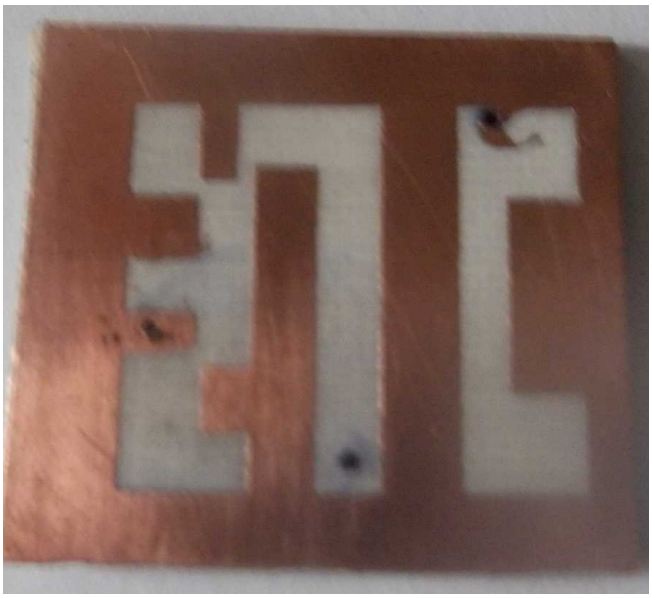
Last month, I mentioned that I would look to knocking up a small keyer to go with the BangGood 40 metre QRP kit. Searching over Internet, I found several electronic keyer projects. But, in my opinion, best of all was DL4YHF's PIC-Keyer. It is very simple for building, originally using a PIC16F84 micro controller that is easy for programming with simple programmer and PC. With two memory blocks and macros you can set it just as you need. Following KISS philosophy it has only two buttons and a potentiometer. It is so small that it will never take too much space at a table. He replaced the PIC16F84 with the newer PIC16F628 that required minimal circuit change and associated modified and assembled, code is provided on his website.

Features:

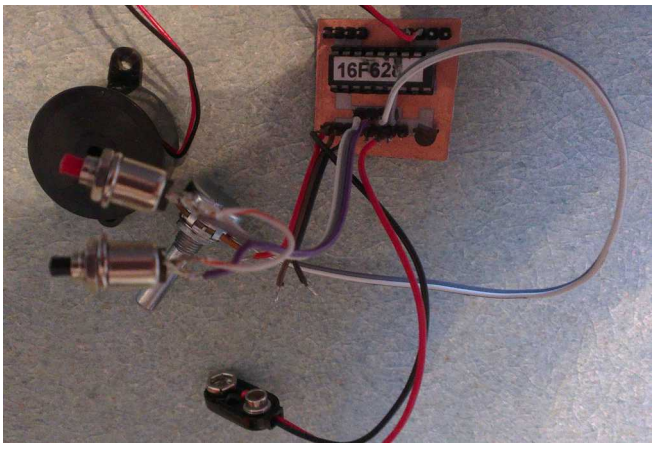
- variable CW speed, adjustable via pot from 20 to 300 letters per minute (4 - 60 words per minute)
- two message-memories (50 - 64 letters), each controlled by a push-button
- command mode only required for setup and more complex features
- special modes like "endless" calling loop and automatic contest number generation
- very low power consumption: 50 - 200 uA at 2.4 V supply when active, < 1 uA in standby mode
- simple circuit, can be built on PCB with less than "half matchbox size"
- dash/dot-memory can be turned on and off ("Iambic mode A" and "B")
- Controller is clocked by a built-in RC-oscillator with only 50kHz clock frequency
- passive piezo speaker can be connected for side-tone generation
- originally designed for a PIC16F84, but firmware also available for PIC16F628.
- optional, adjustable 'transmit delay' for the beginning of an over (between PTT- and Morse keying output)

I designed and etched a PCB (3 x 3 cm) as per my presentation last month. For no particular reason, (apart from a challenge and just happening to have a piece of double sided PCB of the right size!), I did a double sided board.





The PIC, switching transistor and connecting pins were mounted on the top and surface mount components are soldered to the bottom, track, side.



The photo above shows the completed board with fly leads for testing prior to mounting in an enclosure.

It is powered by a single 2032, 3V button cell. Recorded messages saved in ‘message 1’ are stored in EEPROM and won’t be lost if power is disconnected. Those saved to ‘message 2’ are stored in the PIC’s internal RAM and will be lost by battery disconnection. However, given the power consumption in the stand by condition is less than 1uA there is no real need to turn the unit off.

Simple to construct, a PIC and a handful of resistors/capacitors, the only serious consideration was thought to fit it all, sensibly/logically into a small box that as ever, cost more than the rest of the bits!!

It turned out like this in a box 6 x 7 x 3.5 cm:

One of the more useful ‘command modes’ is to enter a “T” (Tune) via the key. This effectively sends a continuous tone thereby switching the transmitter on permanently (well, 30 seconds) for tuning purposes.

Comprehensive details of the circuit design, operating manual, and PIC code are on DL4YHF’s website:
http://www.qsl.net/dl4yhf/pic_key.html

OFFERED BY G3NGK (QTHR).

I am offering (either singly or both together) TWO Kenwood TM451E 70cm FM Mobile Transceivers, brief specification as follows:-

Main Band: Full TX/RX, 410MHz – 470MHz. Units have been modified to transmit over the FULL frequency range by Kenwood supplied procedure.

R.F. Power Output: 35 Watts High Power, 10 Watts Medium, 5 Watts Low.

Sub-Band 1 FM RX only:136MHz - 174MHz..

Sub-Band 2 FM RX only: 800MHz.- 999.975MHz.

For more information on these transceivers, check out the following two web-sites:-

http://www.rigpix.com/kenwood/tm451e.htm

http://www.radiomanual.info/schemi/TM251_user.pdf

Both units are offered with a car mounting bracket and a User Instruction Manual. I also have ONE original copy of the full TM451E Service Manual. I have been using these transceivers for quite a few years and they have given excellent service and are still fully functional. Anyone wishing to inspect them or requiring more information is welcome to call me on (020) 8462 2178 (located in Hayes, Bromley.)

I am not expecting payment for these the transceivers, but am offering them on the condition that whoever takes them will, after confirming that they fully meet his/her expectations, make a sensible monetary donation by cheque to the Alzheimer’s Society, either sending it directly to them or to me to forward on. 73 – Dave G3NGK (dave@minda.co.uk)

VHFNFD 2015

This year, the dates are Sat 4 to Sun 5 July, 1500 clock to 1500 clock each day. The combo team of North East Surrey Contest Group will be on the air again from the top field at Warren Barn Farm, Woldingham.

We be operating on 6m, 4m , 2m and 70cm, using respectively the callsigns: G4ALE/P, G4ALE/P, G4WGE/P and G8IYS/P in the Restricted Section ie 100W to a single antenna on each band.

The teams are drawn from the Addiscombe RC, SRCC and independents. Operator's and Supporter's callsigns are: Mike, G3VYI, Peter G3SJX, Steve G3UFY, Jim G4WYJ, Alun G4WGE, Denis G0OLX, Andrew G1KAG, John G8MNY, Peter G3ZPB, Peter G7PWV, Ray G4FFY, Steve G4FYF, Quin G3WRR, John G8IYS, John G3MCX and Pat G4FDN.

Visitors are welcome, but please call John G8IYS in the days of run-up to secure directions and on the day to gain entry to the field. This is for security reasons and will help maintain good relations with the farmer. Access is bard to casual arrivals. Tele numbers are Home: 020 8657 0454 and Mobile: 07777 675273.

There will be no opportunity for casual operating, but learning through doing is perfectly OK for the erection of masts, laying out power cables, feeders, antenna testing and general setting up of the stations. All we ask of newcomers and old hands alike is that, in the interests of safety, all instructions from the person controlling lifting operations are obeyed. Furthermore: Parking must be in the places appointed and all safety tape cordons must be complied with.

There is considerable scope for learning contest operation by going to the RSGBCC website and selecting a contest of your liking. If you do like this experience, then please contact John G8IYS subsequently and we all will do our best to meld you into the team for a future occasion.

It would be good to work any and all members on any and all of the bands mentioned, but please understand that it is not in the spirit of the contest just to work your own club.

73. John G8IYS VHF Contest Organiser.

DONATED CLUB ITEMS FOR SALE

Heathkit SB200 Linear Amplifier. Tested to full-UK legal output. and fully working. Covers 80, 40, 20, 15 and 10 meters ie non-WARC. Specification says 1200 W out for 100 W in !! 2 x 572B Valves in parallel. In-built PSU. Lots of info available on the web. **£200. Bargain.**

Nevada TM1000 High Power ATU with manual. Fully functional, but damaged centre knob – not very elegantly repaired with a Jubilee clip - should be simple to replace/do a better job of repair. **£80.**

Both items currently lodged at QTH G8IYS in Sanderstead. Could bring to Club meeting or phone to arrange collection. 020 8657 0454.

FUTURE SRCC MEETINGS

6 Jul 2015	No Meeting
12 July	SRCC 80th Anniversary Celebration Garden Party
20 Jul 2015	Fix-it, Move-it-On, Advice Clinic
3 Aug 2015	The Crystal Palace Story
17 Aug 2015	Fix-it, Move-it-On, Advice Clinic
7 Sep 2015	TBC
21 Sep 2015	Fix-it, Move-it-On, Advice Clinic
5 Oct 2015	Autumn Surplus Equipment Sale
19 Oct 2015	Fix-it, Move-it-On, Advice Clinic
2 Nov 2015	Short Talks Evening
16 Nov 2015	Fix-it, Move-it-On, Advice Clinic
7 Dec 2015	SRCC Construction Contest
21 Dec 2015	Informal pre-Xmas Social and sampling of various tinctures

OTHER CLUBS' MEETINGS

	Wimbledon & District ARS
25 Jul	Summer camp Start
31 Jul	Summer camp BBQ
	Contact Jim Noon M6AVV - 020 8337 4940. email jamesanoon@hotmail.co.uk Web site:- http://www.gx3wim.org.uk
	Meetings are at 8pm on the 2nd and final Friday of each month at Martin Way Methodist Church, Merton Park (corner of Buckleigh Avenue), SW19 9JZ.
	Sutton & Cheam RS
16 Jul	The Rosetta Mission with Prof David Southwood.
	Meeting at Vice Presidents Lounge, Sutton United Football Club, Gander Green Lane, Sutton – 8pm.
	Sec: John G0BWV 020-8644 9945
	Bromley & District ARS
21 Jul **1.**	Toilet-roll Xtal Sets – everything home-made, except wire and detector..
2.	Normal Meetings 7.30 for 8.00 pm @ Victory Social Club, Kechill Gardens, Hayes, Bromley, Kent.
	Contact: Andy Brooker G4WGZ 01689 878089
	Crystal Palace R & EC
03 Jul	Keep it Dry – the effect of moisture on equipment with Prof Billingham.
	All Saints Church Parish Rooms, Beulah Hill from 7:30pm. Bob G3OOU 01737 552170 (Meet normally monthly on 1st Friday) http://www.g3oou.co.uk/
	Dorking & DARS
28 Jul	South Downs Evening.
	Contact: David Browning M6DJB. Email: djb.abraxas@btinternet.com
	73. Garth Swanson, retiring.
	Meetings held 7.45 pm at The Friends Meeting House, Butterhill, Dorking, RH4 2LE. Web site:- www.ddrs.org.uk
	Coulsdon ATS
13 Jul	Operating Evening.
	Meetings held 8 pm on 2nd Monday each month @ St. Swithun's Church Hall, Grovelands Rd, Purley. Steve Beal G3WZK. Secretary@ catsradio.org. Tel: 01883 620730.
	Crawley ARC
Jul 22?	Sorry, I cannot get into their website for info. Other club newsletters say July 29 TBA. Hon Sec: Phil Moore M0TZZ Contact: secretary@carc.org.uk for more info. Formal meetings held every third Wednesday each month at: Hut 18, Tilgate Recreational Centre, Tilgate Forest, Crawley West Sussex. Directions check at carconline.blogspot.co.uk
	Horsham ARC
21 Jul	Four Square Beam Antenna by Garth Swanson G3NPC..
	Meetings held at 8 pm on 1st Thursday each month at: Guide Hall, 20 Denne Road, Horsham, West Sussex, RH12 1JF. Contact: www.harc.org.uk. Hon Sec Alister Watt email: g3zbu@hotmail.com

Sign Off. That's all folks

73. John G8IYS Editor.

Just an afterthought, given a bit of space at the tail-end, and I am not going to re-set several previous pages to incorporate!

4m NET. Chairman Pat G4FDN has floated the idea of a 4m SRCC Net. This could be any day any time, probably FM. Anyone interested is invited to contact Pat. Personally, I have two ex-PMR 4m FM 25W mobiles – neither of which I have yet fired-up. (or should that be "upfired" given the use by BBC of that dreadful word "upcoming"? I think they mean "forthcoming", but I know the difference between "whence" and "whither". It must be the Brummie-Anglo-Saxon in me - but I drift) and a mobile antenna. I also have a multimode transverter on the bench and all the parts for a 140 W Linear Amplifier and a 50v switch-mode PSU. Pity that wallpaper scraping takes precedence.... Tarra. John G8IYS.