Volume 4, Issue 3

Mid Sussex Matters

March 2016

Inside this issue:

This has taken around 30 years to get but well worth it in the end!

Please Do Not Forget It Is Your Magazine

I am hoping to go to print each month for this I need copy from any one of you however small and it **may or may not be** radio related.

Request for copy around 6th—10th with copy to me by the 15th[th] of each month. If there is no copy there will be no MSM simple as that. Best Wishes

Stella M6ZRJ, Editor of MSM

Part One: Surge Protected Sockets

Introduction

Recently we had a bad power surge on our telephone line. This 'took-out' the B.T. faceplate, the protection circuit to the telephone inside the surge protected sockets box and the telephone itself. This left me wondering whether the investment in the surge protection was of any value, and whether a rethink about the method of protection was necessary. I took apart another typical surge protected sockets box as shown in (**Photo. No 1** on next page) that had failed, and found the circuit as shown in (**Photo. No 3** on next page). (This is a typical circuit used with surge protected sockets**)**

Background information: Socket box

These sockets are protected against surges and spikes up to 230/250 Volt A.C. mains' supply, by a simple circuit contained within the sockets box itself.

On the back of the sockets box, as shown in (**Photo. No 2** on next page), are the following pieces of information:

B.S.1363/A; 'Plugs for rough use.'
B.S. 5733:2010 + A1:2014; 'General requirements for electrical accessories. Specification.'
Type 3 (Refer to B.S. 7671)
Uoc = 4kV; 'No load discharge voltage or Open-circuit voltage applied during Class III Test.'
Up = 1Kv; 'Surge Protection.'
Uc = Un = 230/250V A.C.; 'Mains Voltage.'
I_L= 13 Amp.
Portable Appliance Testing (P.A.T.):
'When operating correctly this socket will fail any high voltage test. THIS IS NOT A DEFECT.'

Components

Fuses (F1 and F2)

These fuses are non-resettable type, so once they have' blown' the circuit no longer functions. However there are available resettable types.

Varistors (VR1 to VR3)

A varistor or metal oxide varistor (MOV) is a special resistor that is used to protect circuits against high transient (short term) voltage. A varistor is able to short these surges and spikes, and keep them away from the main appliance.

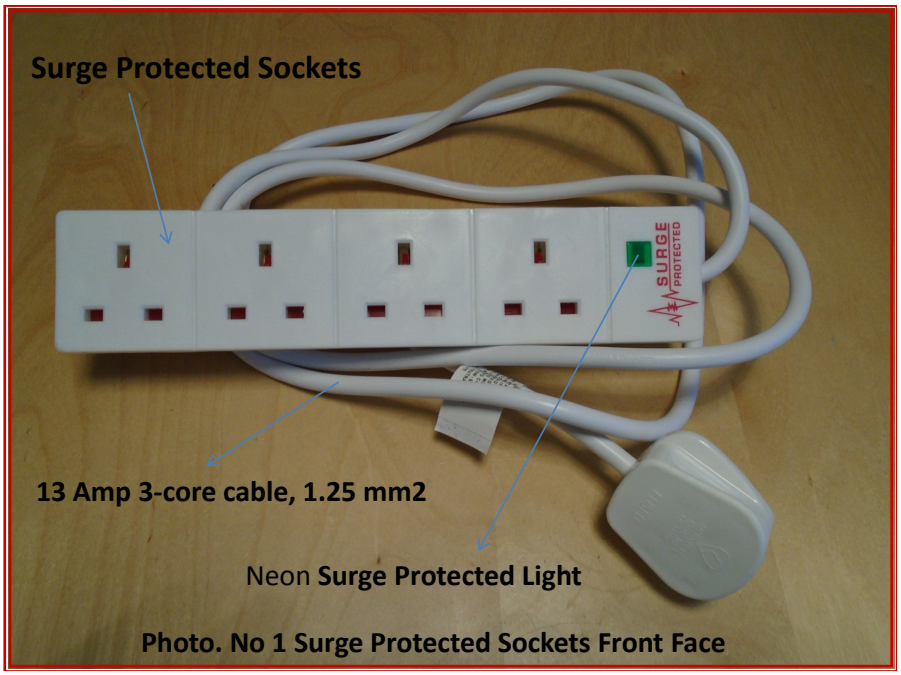


Photo. No 1 Surge Protected Sockets Front Face

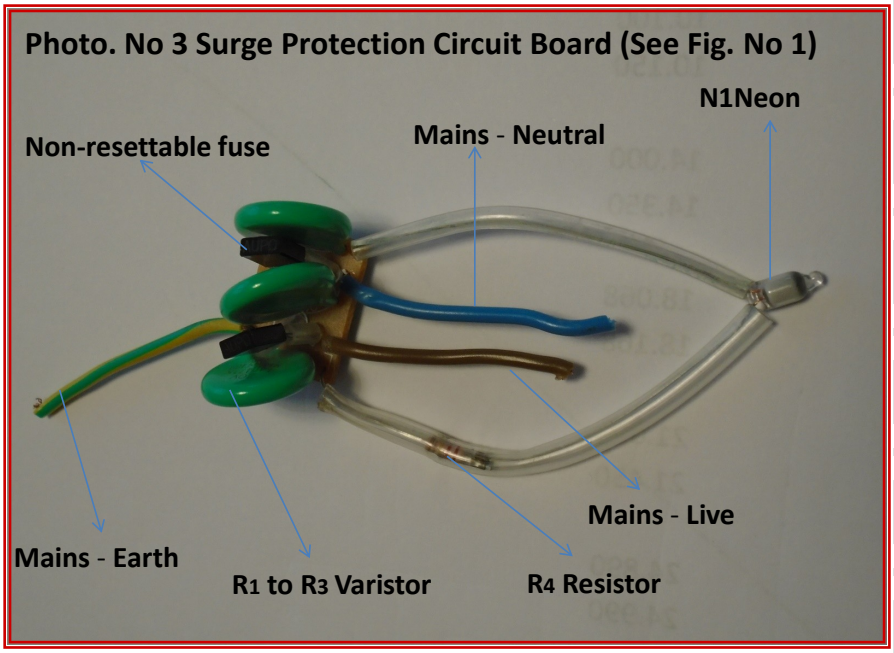


Photo. No 2 Surge Protected Sockets

Part Two Continued Next time

Me and the Space Man.

On Friday the 26th of February Major Tim Peake on the Space station was due to make contact with a school in East Anglia.

We were forewarned by e-mail of the time and frequency and following some chat on air it was thought that anyone could listen in.

I dug out my little Chinese handy and checked that it worked and had some battery power for a few minutes listening.

At the allotted hour I stood out in the garden to hear…nothing, just the sound of the local chip shop!

A quick check of the time, 14.34, and frequency 145.800FM, all OK still nothing.

5 minutes later still nothing.

Oh well next time, I thought, but left the handy on to see if there would be any QRM.

At 14.43 suddenly there was a voice coming out of the noise!

Within a minute or so I could hear Tim clearly and fully quietening. He was answering questions from the school kids, unfortunately I could only hear his side of the contact as the up frequency was kept quiet.

He answered questions about the station, technical stuff about his experiments (something to do with zero G manufacture of turbine blades) and his sleep.

He explained that in zero G they all slept like babies but strangely none of them had dreams!

By 14.48 the signal started to drop back into the noise and by 14.49 had completely disappeared.

If you want to hear him yourselves next time first check the schedules carefully and select the frequency, 145.800 and mode, FM. Don't transmit he works full split.

A rubber duck antenna is adequate and there is no sign of Doppler effects.

Good listening.

Chris, G4ZCS

Diary Dates for April and May 2016			
01-Apr	Friday	**UPSTAIRS**	Surplus Equipment Sale
08-Apr	Friday	Downstairs	Radio Night
15-Apr	Friday	Downstairs	Radio Night and Table Top Sale
22-Apr	Friday	Downstairs	Radio Night
29-Apr	Friday	Downstairs	Quiz and Cakes night
06-May	Friday	Downstairs	Ian Gledhill Talk - The story of The Crystal Palace.
13-May	Friday	Downstairs	Prep for Mills on the Air
14-May	**Saturday**	**OUT**	**Mills on the Air**
15-May	**Sunday**	**OUT**	**Mills on the Air**
20-May	Friday	Downstairs	Radio Night
27-May	Friday	Downstairs	Construction Contest

Mid Sussex ARS Net Times—all times local

Sunday	0800	3.740MHz^{+}/$_{-}$QRM
Sunday	1100	145.350MHz
Weekdays	1330	21.330MHz^{+}/$_{-}$QRM
Tuesday	2030	3.725MHz^{+}/$_{-}$QRM (SCARF)
Wednesday	2000	145.350MHz

GB3HY is now working on the new frequency:

Listen 430.900Mhz, Transmit 438.500Mhz, CTCSS 88.5hz

Stuart Conway, Myles McSweeney, Emma Shaw, Chris G4ZCS, Lee Brooks, Aharon Coward, Ryan Wright

From the Chair March 2016

Firstly I must apologise for not appearing in the last 2 issues of MSM due entirely to not noticing that our editor had changed the last date for submission (must take more notice in future) hopefully this will be in time.

AT LAST WE HAVE THE W.A.S AWARD CERTIFICATE.

Those of you who attended our meeting on Friday 11th March had your first chance to see this award which has taken 30 + years to obtain mainly due to Ken G3WYN and George G4PTJ who had the honour of working the final state, whether there had been a change in the rules or they had not been studied it was discovered late last year that members who lived less than 50 miles could work if holding a full license using the callsign G3ZMS. So congratulations all involved.

The 70cms repeater is now fully operational and this is thanks to The HY Repeater Group i.e. Gavin G6DGK who spent many hours attending meetings, writing numerous letters & many telephone calls,

Phil G4UDU in sourcing the up to date equipment and organising the installation work and testing and the background work undertaken by Gavin G4LYX and Phil M5BTB. So now use it! I understand it would appear to have a very good coverage so congratulations to all the group, I also know that the group is looking for donations so if you can please help.

On 11th March we had a return visit after many years by Amanda from the Sussex Bat Group who gave us an illustrated talk of their work with injured bats, returning them after nursing back to health and releasing them back into their natural habitat. She brought 2 bats with her for members to see close up and take pictures (no flash though) as they have very sensitive eyes. There are some pictures of the bats further on in the magazine.

Over the weekend 19th & 20th March we held our first Foundation course and exam so congratulations to all students that passed, (a picture of some of the students is on the page prior). Well done to the training team and we look forward to the new callsigns on the air.

Friday 1st April we see us holding our first Surplus Equipment Sale of the year in the main hall; doors open 6.30pm for set up, doors open 7.00pm for sellers to bring their goods in. Please note refreshments will available throughout the evening. Please also don't forget the raffle.

The mobile shack has had it's initial fit-out completed and will be used for the Windmills on The Air

Thanks to Kim G7AIE, Alan G8YKV & Rob 2E0KDT.

Time to close till next time.

Russell Nelson G7TMR

Hon Chairman

MSARS

I have just built this ZM-4 A.T.U. for my Yaesu FT-817ND.

Background:

The ZM-4 is an upgrade on the ZM-2 Kit of EMTECH, U.S.A... The following is some information from the Assembly Guide for the A.T.U. by Peter Zenker DL2FI:

The Z-Match

This Z-Match is based on a Bandpass design (**) with its parallel circuit. Due to its Bandpass characteristics, it also attenuates off-frequency signals. A separate S.W.R. meter is not needed during tuning, as the Z-Match uses a 50 Ohm Wheatstone Bridge. More information can be obtained for the QRP Web site. If anybody is interested in building one of these, they can always contact me.

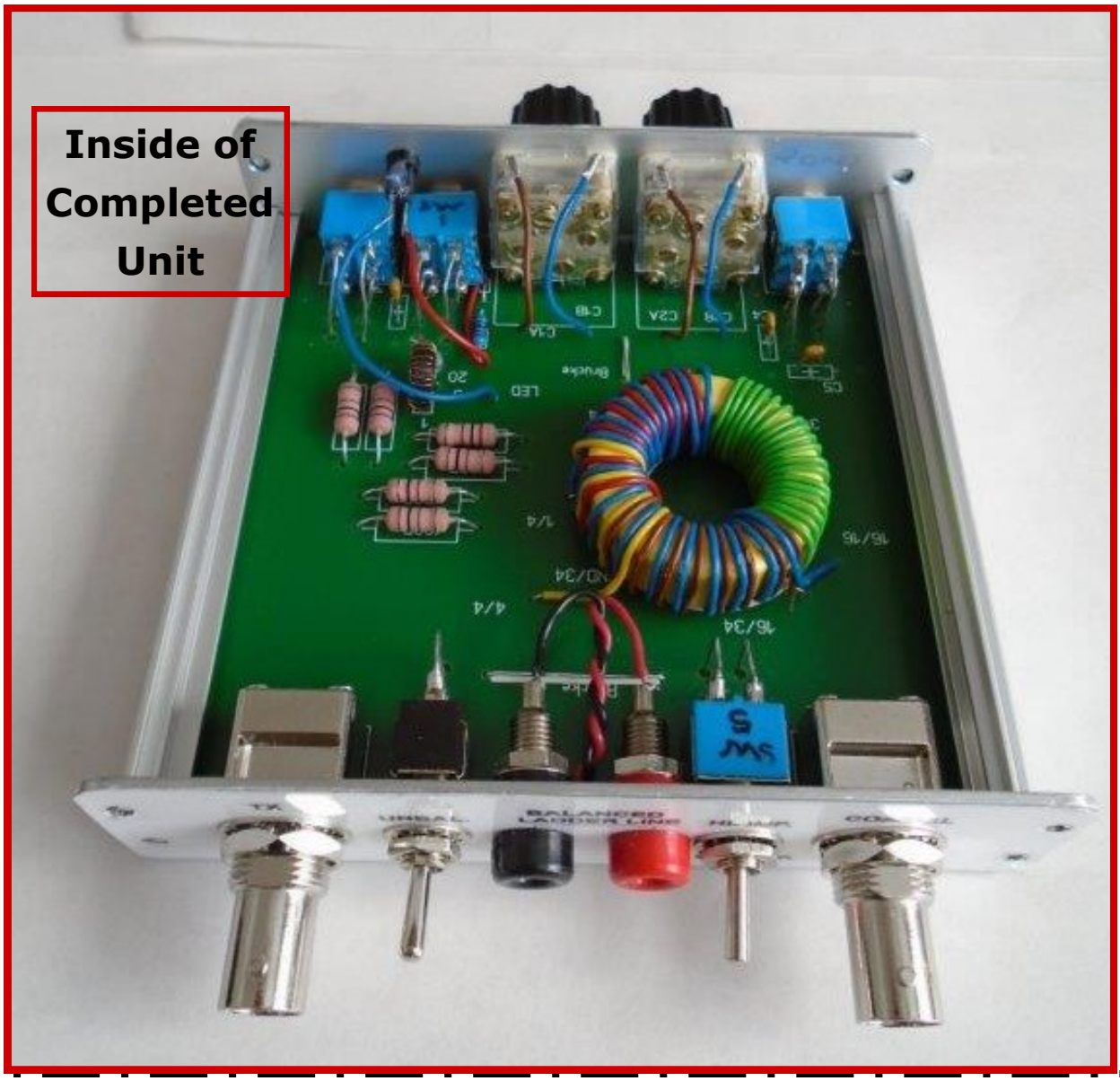
**Unlike a Low Pass Filter that only pass signals of a low frequency range or a High Pass Filter which pass signals of a higher frequency range, a Band Pass Filter passes signals within a certain "band" or "spread" of frequencies without distorting the input signal or introducing extra noise.

This band of frequencies can be any width and is commonly known as the filters Bandwidth.

73

Alex. Henderson m0tot


Rear Face
TX
UNBAL.
BAL.
BALANCED
LADDER LINE
C/P
WIRE
HI. IMP.
IMP.
COAXIAL


Inside of Completed Unit

Trailer Update.

Rob and I have spent some time in getting the Trailer / Mobile Shack usable over the past few weeks. It is almost complete, apart for the Chesterfield, chandelier and carpet we are still trying to source these from EBay!!!

In deciding what was required for fitting out it was agreed in Committee that we would have folding tables and the operators table would be 600mm deep and the loggers table would be 500mm deep, both 1 metre wide. There were 2 reasons for this: (1) the operators table needs to be deeper to allow for the radio and note pad, whereas the loggers position only needs to accommodate notepad, log sheets and if used a laptop and (2) it will give better access to get to the operators position, especially for a wheelchair user. It was also decided to have the minimum obstructions to allow a wheelchair to be manoeuvred to the positions. The height of the tables are the recommended height for a wheelchair user. As can be seen by the accompanying photos we have managed to get away with just one leg for the tables. The outer ends of the tables are held in position by hinged flaps, these are held securely by pins that pass through the table top into the flaps and also the leg is held similarly.

Provision for mains power and light has been made, two double sockets and a strip light have been fitted, and these are fed by a circuit breaker box in the front of the trailer. A 16A plug is attached to the front outside of the trailer for mains connection. **Please be aware that the earth is not connected to the incoming plug and an earth spike must be used for safety.** An earth connection is provided on the front of the trailer for this purpose.

On the front of the trailer is an IP65 box for 2 antenna cables to be routed into the trailer to keep everything waterproof, these can then be fed onto the table by a hole cut in it. This can also be used to feed the power cables down to the batteries when running without mains power.

An earth bar with fly leads will be fitted for radio earthing etc.

Two 12 volt lights have been provided over the tables for use when running on battery power.

Rob was given several sheets of thin ply which have been used to panel the operating side and the front insides. We will get some more and panel the other side so that maps etc. can be put up for information.

The floor will be painted with an anti slip paint for wet conditions.

One final thing, when exiting the trailer please mind your head on the roller shutter as it is quite low.

73’s

Alan G8YKV and Rob 2E0KDT

Here is another A.T.U.!

I found this kit on e-Bay for $20 (postage is free). Well for $20, one does not have much to lose. At least the parts are probably worth that amount.

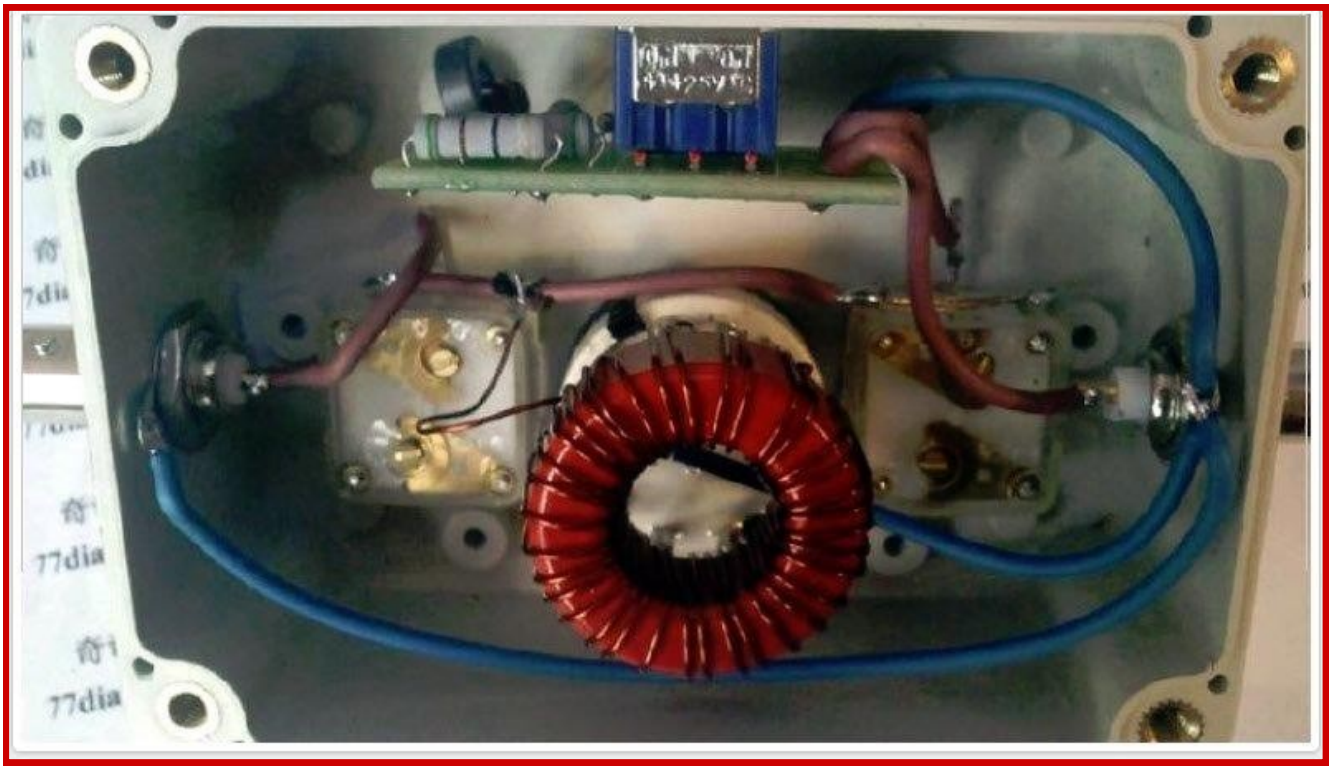
Having said that, this kit is not a toy. With patience and perseverance, it can be made to work. Having said that there are no assembly or operating instructions, the schematic is basic and difficult to understand and you are left to identify the components yourself; (There are more components than are needed for the actual construction). I discarded the masks for the top and front face of the unit, and made my own (The ones that came with the unit were creased). I used a larger box, and made my own circuit board, but these changes are not essential. When it was finally assembled, I connected it to the antenna analyser to check the S.W.R. across the H.F. Bands on my Windom antenna. By using the rotary switch and the tuning capacitors, at the front it was possible to achieve some satisfactory results. With the switch in the 'Tune' position the L.E.D. on top comes on if the unit does not 'see' 50 Ohms (This is done by a Wheatstone Bridge). To help with the construction, I used the videos on YouTube by 'Tinker' John Robertson W5CF.

If anybody is interested in this project, they can contact me if necessary.

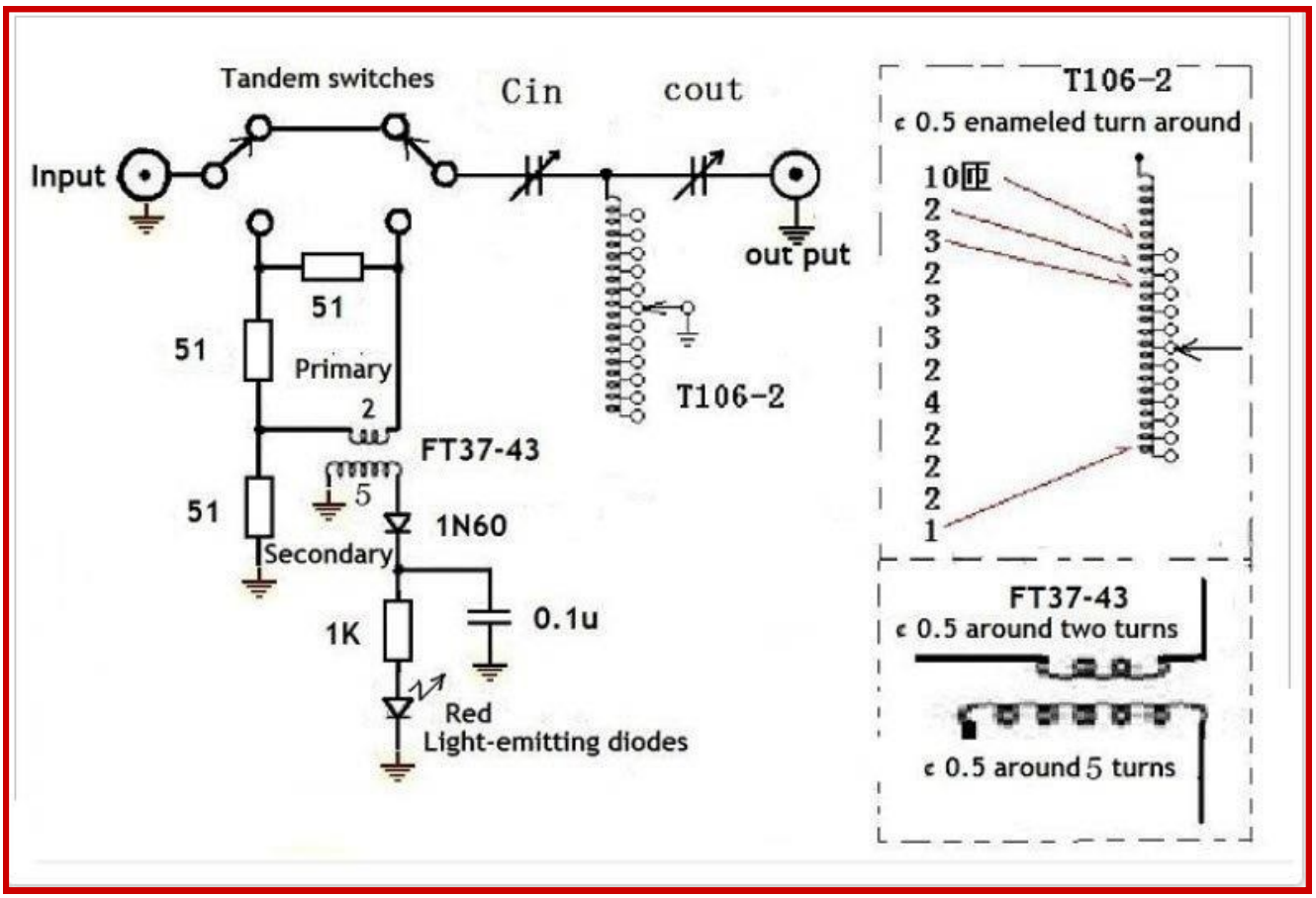
73

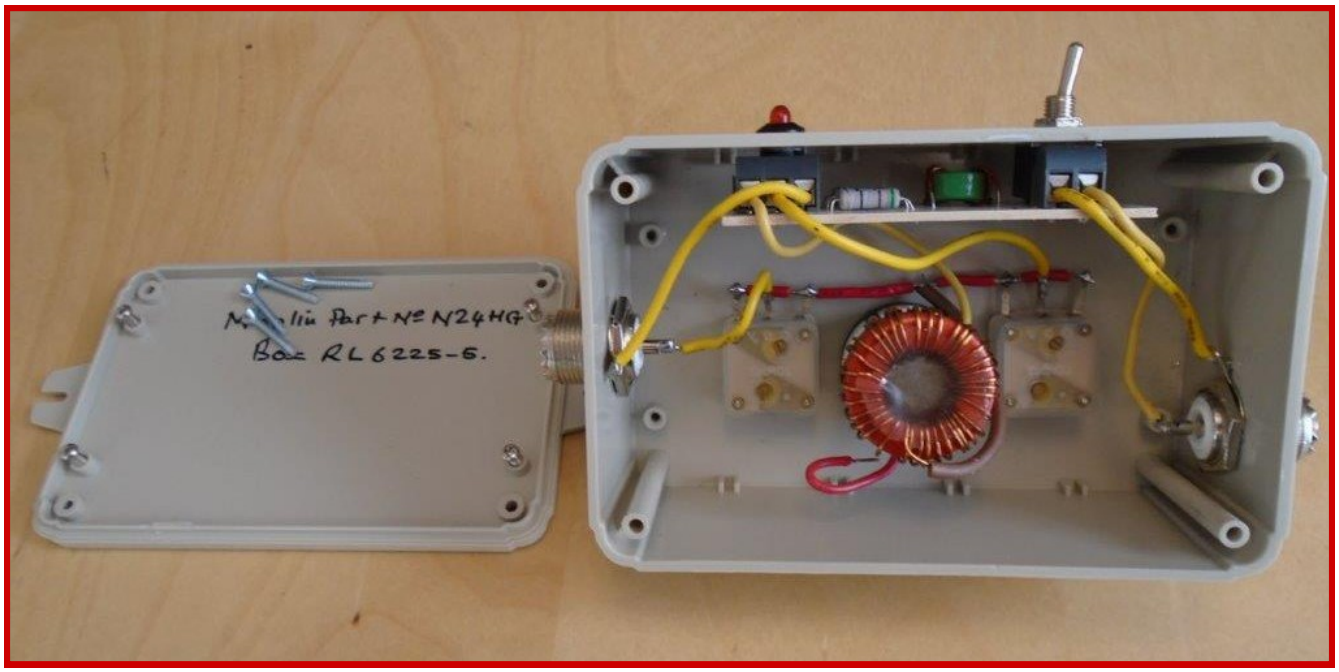
Alex.
Henderson
m0tot

QRP ATU Kit 1 to 30 MHz Front Face (web picture)



ABOVE: QRP ATU Kit 1 to 30 MHz Inside Case (web picture)
BELOW: QRP ATU Kit 1 to 30 MHz Schematic





ABOVE: New Internal Layout No2
BELOW: Checking Performance with MFJ-259 Antenna Analyser

Here are a few photos from the very enjoyable talk we had from Amanda Millar at The Sussex Bat Group

www.msars.org.uk

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(This will only work from a members email address registered with the society)

Our normal "QTH" is Cyprus Hall
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We meet most Fridays in the Millfield Suite
7.30pm till 10.00

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Newsletter—Editor Stella Rogers M6ZRJ
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Otherwise you can use Snail mail to my address at:
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If you have some great old pics that need to be aired I can share them with the rest of the club.
Best Wishes
Stella Rogers M6ZRJ