



FIVE AND NINE PLUS

THE OFFICIAL NEWSLETTER
OF THE
APPLEDORE AND DISTRICT
AMATEUR RADIO CLUB

Club Callsigns: **G2FKO and GX2FKO**
Web Site : www.adarc.co.uk

CLUB'S OFFICERS

President	Terry Adams	G4CHD	
Chairman	John Lovell	G3JKL	
Vice Chairman	Steve Smith	G6SQX	
Secretary	Darren Tofield	M6LQC	07831 641499 Email: dazztee@gmail.com
Treasurer	Ray Hunter	M0TLO	
Committee	Dave Cottle	G4XWQ	
	Mike Wogden	G4KXQ	
	Alan Fisher	M6CCH	
	Graham Bailey	G1ZTJ	
	Keith Luxton	G0AYM	
QSL Manager	John Lovell	G3JKL	
Web Master	John Lovell	G3JKL	
Exam Secretary	John Lovell	G3JKL	
Editor	Terry Adams	G4CHD	

April, 2018

EDITORIAL

This month's meeting **on April 16th** is the first in our new Club year. The topic is the Clansman Radio to be given by Chris (G0FJY) and promises to be a most enjoyable evening so see you all there!



Of course last month's Meeting was our AGM and full details including your new Officers and Committee are given on the next page.

As you can see from the list opposite, the Club Meetings program already has some entries but there are a number of dates for which we need speakers. So please contact a member of the Committee if you would like to give a talk and whether there is anything we can do to help.

Many thanks to Mike (G4KXQ) for the excellent article included in this month's Newsletter.

Finally, may I remind members who have not yet done so that their membership fees are due. Terry (G4CHD)

LOCAL SKEDS

Zepp Net: Mon, Tues, Thurs : 145.450 MHz
4pm
Wed via GB3DN - 4pm

2m Net: Mon/Tues/Wed : 145.450MHz
10.45 - 12.00 noon

6m Net: Wednesday, 8pm, 51.480 MHz FM

HF Net: Friday at 3pm 7.134 MHz ± qrm
If conditions poor - 145.450 MHz

70cm Net: Sunday, via GB3ND, 11am - noon
Available on Echolink node 221334

Top Band Net: Sunday 1.860 MHz
(LSB - 32W pep max) 9.30 - 10.15am
Contact Dave (G4XWQ) for details

CLUB MEETINGS

Meetings are held at the Appledore Football Social Club starting at 7.30pm for 8.00pm. Visitors are always welcome.

For further information, contact the Secretary, Darren (M6LQC) - details in the top panel.

April 16 th	Clansman Radio by Chris (G0FJY)
May 21 st	Spring Bring & Buy
June 18 th	TBA
July 16 th	Capacitance Loaded Antennas by Terry (G4CHD)
Aug 20 th	Summer Natter Night
Sept 17 th	Open Meeting - Exmoor Search & Rescue Team by Lionel Murphy
Oct 15 th	Talk (topic TBA) by Mike (G4KXQ)
Nov 19 th	Autumn Bring & Buy
Dec 10 th	Christmas Party (note - is 1 week early)
Jan 21 st	TBA
Feb 18 th	TBA
Mar 18 th	Club AGM
Apr 15 th	TBA

REPORT ON THE MARCH MEETING

Annual General Meeting (AGM)

With a good attendance, your Officers and Committee were duly elected as shown below with the Club now having a new Secretary and Treasurer. Mike (G4KXQ) and Alan (M6CCH) are now both elected onto the Committee after sterling work over the years as Treasurer and Secretary.

Terry (G4CHD)



President
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Chairman
John (G3JKL)



Vice Chairman
Steve (G6SQX)



Treasurer
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Secretary
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Committee
Dave (G4XWQ)



Committee
Mike (G4KXQ)



Committee
Alan (M6CCH)



Committee
Graham (G1ZTJ)



Committee
Keith (G0AYM)

CROSSWORD

Many thanks to Stuart (M1FWD) for this month's Crossword.

The answers are in next month's Newsletter. Good luck !

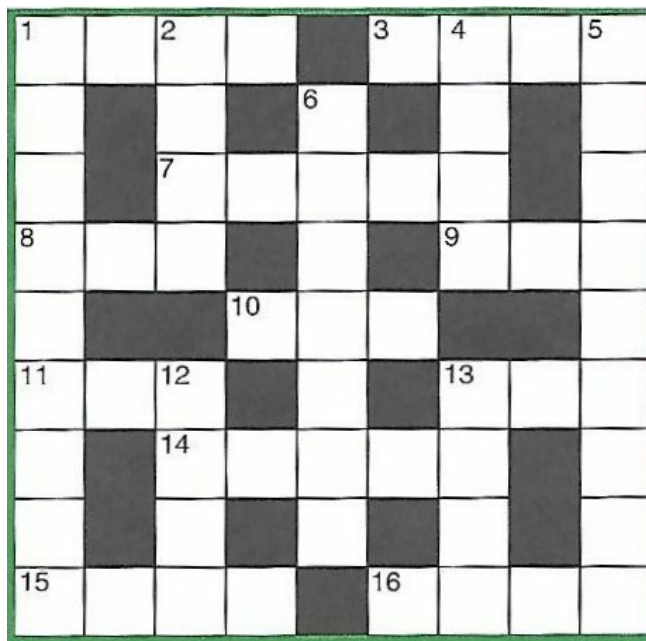


CLUES ACROSS

- 1) Idi ?, President of Five X-Ray (5X) land, 1971-1979 (4)
- 3) Former ruling dynasty of Bravo Yankee (BY) land (4)
- 7) Particularly in Ireland, an enjoyable time spent with others (5)
- 8) A span of historical time (3)
- 9) A capacity ? will reduce the amount of inductance necessary to resonate an aerial (3)
- 10) An atom or molecule with a net electric charge due to the loss or gain of one or more electrons (3)
- 11) ? Paulo, city in Papa Yankee (PY) land (3)
- 13) Point or direct at a target (3)
- 14) One of the segments of the corolla of a flower (5)
- 15) ? Ladies Dancing (at Christmas) (4)
- 16) British female singer, 1931-1989 (4)

CLUES DOWN

- 1) Zulu Delta Eight (ZD8) island (9)
- 2) Ancient empire centred in Oscar Alpha (OA) land (4)
- 4) Imperial unit of measurement equal to 2.54 cm. (4)
- 5) Tango Golf (TG) land (9)
- 6) Fox Hotel (FH) archipelago (7)
- 12) Amateur radio bands are said to be this when 'conditions' are good (4)
- 13) The Gaelic name for Golf Mike (GM) land (4)



Last month's answers :-

ANSWERS ACROSS: 1) ogee 3) boot 7) Nepal 8) aft
9) Colombian 12) ill 13) nurse 14) sect 15) lime

ANSWERS DOWN: 2) Greco 4) okapi 5) Titan
6) Fleming 9) coils 10) lilac 11) Assam

LOCAL REPEATERS

70cm Handy Cross Repeater/Echolink (#221334) Gateway (GB3ND)

User: Listen 433.35 MHz– Transmit 434.95 MHz
Access 1750 Hz Tone (Timeout 4.25 mins)/ 77 Hz CTCSS
Repeater keeper is Jeff (G4SOF)

2m Stibb Cross Repeater (GB3DN) <http://www.g0rql.co.uk/gb3dn.htm>

User: Listen 145.6375 MHz - Transmit 145.0375 MHz.
Access 1750 Hz Tone or 77 Hz CTCSS
Repeater keeper is Tony (G1BHM)

70cm Twitchen (nr South Molton) Analogue Repeater (GB3SF)

User: Listen 430.9375 MHz - Transmit 438.5375 MHz
Access 77Hz CTCSS
Repeater keeper is Steve (G6SQX)

APRS Digipeater (MB7VE)

Frequency 144.800 MHz
Repeater keeper is Steve (G6SQX)

SUDOKU PUZZLE

The aim is to enter a number into each cell so that **any column, or any row, or any block of cells contains all numbers from 1 to 9**

1		3			6	2		
	6				7	4		
	4			5	9		6	
				2				6
			9		5			
2				1				
	3		5	7			9	
		9	6				5	
		1	4			6		8

Terry (G4CHD)

IMMINENT RADIO RALLIES IN SOUTH WEST

15 APRIL 2018 - YEOVIL ARC QRP CONVENTION

Digby Hall, Sherborne, Dorset DT9 3AA
Doors open 9.30am to 3pm. Admission £3, regrettably only guide dogs can be admitted. There will be traders, a Bring & Buy as well as club stands. A programme of talks will take place, details on the website.

Supported by RSGB, RAFARS & BYLARA

See web site for further details :-

<http://yeovil-arc.com/QRPconvention.php>

7 MAY 2018 (Bank Holiday Monday) - DARTMOOR RADIO RALLY

Tavistock College, Crowndale Road, Tavistock PL19 8DD.
Doors open at 10.30am (disabled 10.15am). Admission £2, under 14's free when accompanied by an adult. Ample free car parking and on-site catering. Trade and club stands, usual Bring & Buy. Details from Viv Watson, G7AWG, 01752 823 427, vivwatsondrc@aol.com.

TALES FROM THE WORKBENCH

Mike (G4KXQ) is hoping to produce a series of articles under the above heading of which the **first is on the following pages**. I'm sure that Mike would welcome any feedback/queries that you may have.

That's it for this month - enjoy the read

Terry (G4CHD)

TALES FROM THE WORKBENCH

SARK 100

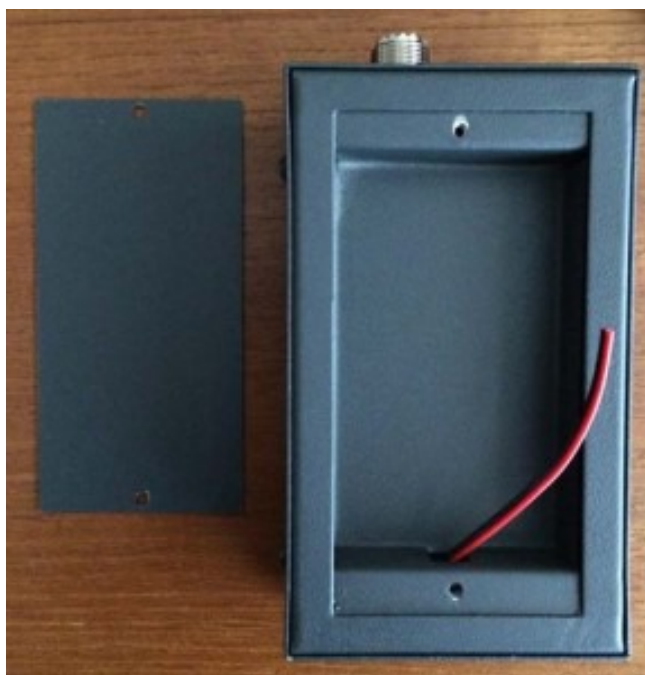
by Mike (G4KXQ)

It was my birthday recently. As usual Di asked me what I wanted as it seems I'm impossible to buy for. So as per normal anything technical I buy for myself. As I like playing with aerials I decided to buy an antenna analyser. I do feel the standard MFJ analysers are somewhat overpriced so I opted to buy a SARK100 model from Amazon at a cost of £60.00.

After a few days the package arrived. although I had to go and pick it up from Landkey post office as I had ticked the wrong box on the Amazon website.

The SARK100 is an older model developed by EA4FRB and originally sold as a kit. When this design was made obsolete and replaced by the SARK110, a graphic displayed based analyser, various firms in China cloned the design and now sell them on ebay or amazon. Their job was made easy as all the files, artwork and firmware freely available on the internet

The package I received was very basic. It was just the SARK100, no manual, no batteries, no power cord, no invoice, no packing slip etc... !



When I opened up the battery compartment it was just empty with a power wire inside with no plug on it.

After a bit of Googling I found out what battery is needed and also found a manual in PDF form. Any battery pack supplying between 12 and 15 volts would suffice so I decided to re-use an old FT-817ND battery pack. It's exactly what is needed and now spare as I've added a NiMiH Battery pack.

My first impression of the SARK was that it looked pretty simple. It's build like a tank though; feels very heavy and I have the idea that I can drive over it with my car and it would still survive!

One of the first things I did was to opening it up and checking the build quality. This was surprisingly good; no bad soldering or loose wires.



At first startup I found that the display is small, but very readable! Perfect for outside (sunny) conditions I think. The options are pretty simple, but sufficient for simple antenna checking and building. You need to select a band, after which you can do checks on this band.

The most used option by me was checking for the resonant frequency on a selected band. I think when you're building an antenna, this is what you want to know most; how far away am I, with my optimal SWR, from the required frequency and do I need to make the antenna longer or shorter (for wire antennas).

These are the specifications:

- Frequency Control: 1 – 60 Mhz
- Source impedance: 50 Ohms
- Stability: +/- 100 ppm
- Spectral Purity: Harmonics down >- TBD dB beyond 60 MHz
- Step Size: User configurable increments of 100 Hz, 1 kHz, 10 kHz, and 100 kHz
- Usable Measurement Range:SWR: 1.0 to 9.99
- Impedance: approx. 5 to 2000 ohms
- RF Output: Adjustable: 2.0 Volts pp (typ)
- Power supply: Powered by External: 12 to 15 Volts DC, 500mA
- Connectors: RF Out: PL
- USB: Mini-B receptacle
- External power: 2.1mm Power Jack (center pin positive)

And these are the things that can be measured:

- Measure antenna electrical parameters: SWR, impedance (resistance + reactance), capacitance, inductance
- Measure feedpoint impedance
- Measure ground loss
- Adjust antenna tuners and determine loss
- Measure inductors and capacitors
- Measure coax transmission line (SWR, length, velocity factor, approximate Q and loss, resonant frequency, and impedance)
- Measure and determine optimum settings for tuning stubs: SWR, approximate Q, resonant frequency, bandwidth, impedance
- Measure balun loss
- Measure inductor Q
- Measure magnetic loop resonance and SW

Does it work?

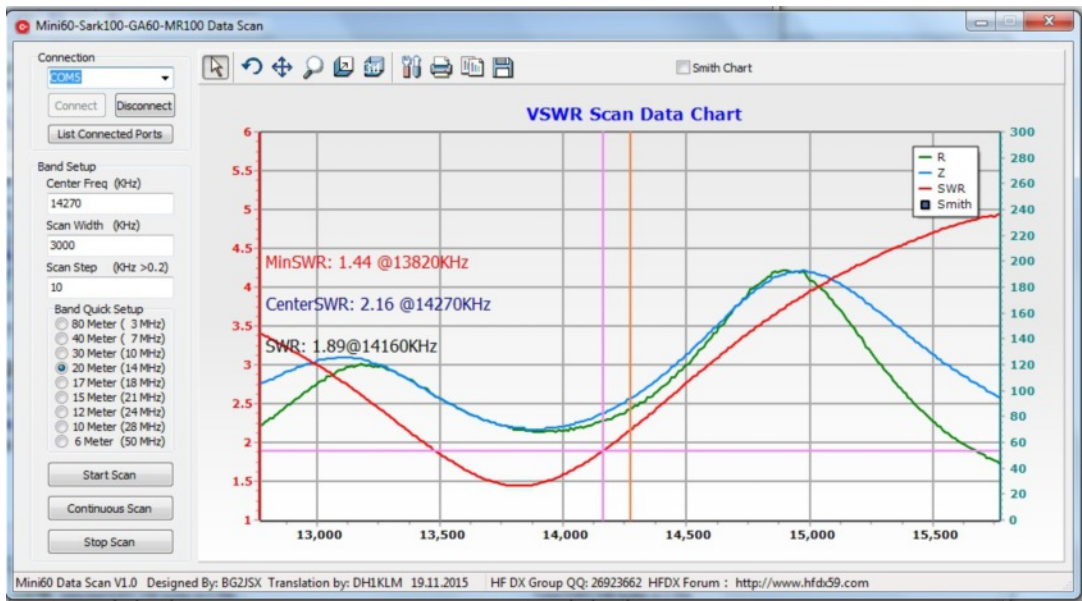
To test out the analyser I decided to characterise the various antennas I have connected to my rigs.

First up was my 20M dipole. As I suspected the antenna was slightly too long with resonance occurring at 13.76 MHz.

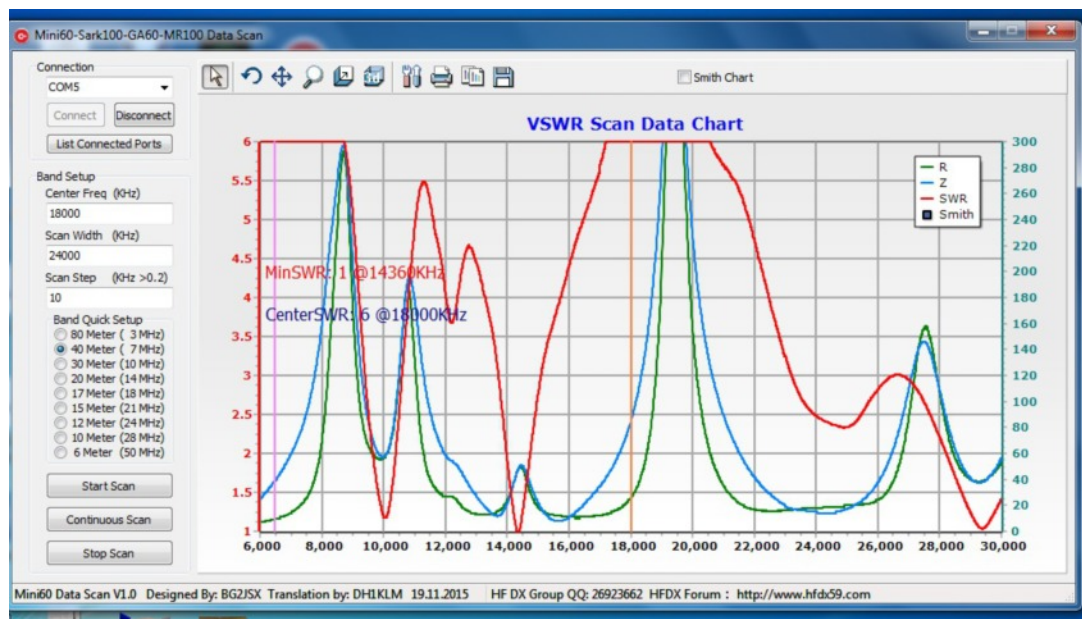


It looks like a bit of trimming is required.

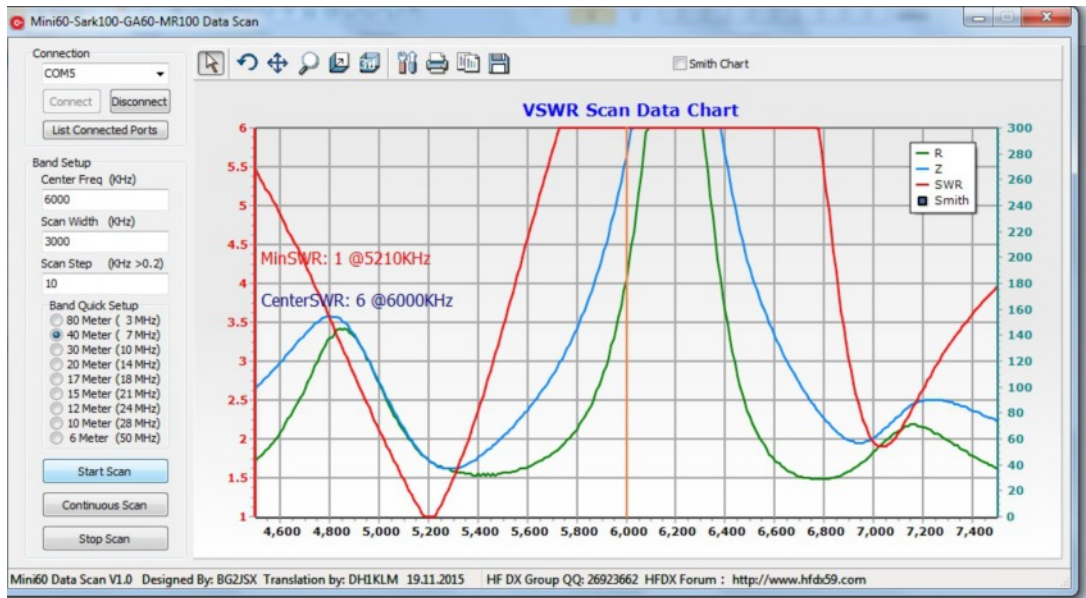
I then connected the analyser to my PC, loaded a piece of simple software and the results confirmed more or less with the swept frequency plot.



I then repeated the plots with some other antennas.



This was my loft fan dipole that was cut for 30M, 20M AND 10M



This was my outside fan dipole cut for 60M and 40M

Conclusion

All in all the instrument proved to be a useful addition to the shack test equipment collection. It will allow me to quickly evaluate the respond freq along with impedance quickly out in the garden whilst offering more sophisticated measurement facilities when connected to a PC. Of course the SARK cannot compare with a top end analyser such as the RigExpert. But you must remember that the RigExpert is around 200 pounds more expensive than the SARK!

Mike (G4KXQ)