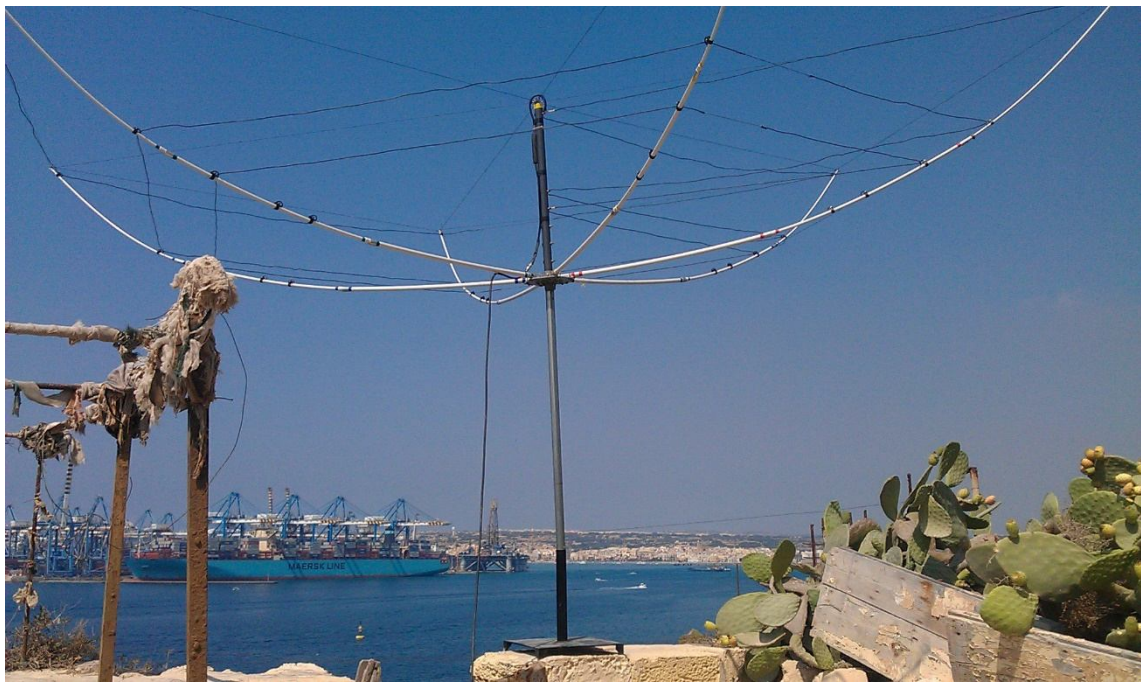MALTA AMETEUR RADIO

LEAGUE MONTHLY NEWS

LETTER

Reaching out to all members

ISSUE No: 068   February 2016

Roger Davies Barrett 9H5UG

Dear Members,

Welcome to the second edition of the MARL Newsletter since its resurrection. By now we have all recovered from the Christmas period and get back to our beloved hobby, amateur radio. Following on from issue 067 I would like to keep the format pretty casual and feel free to send me any inclusions that you think would be of interest to other members.

Featured in this month's issue I have some new projects for the homebrew lovers amongst us and a product review of the SDRPLAY.

I would like to thank all those that contacted me since the last issue and I have received plenty of interesting articles and info from various members.

Please excuse the lateness of Februaries Issue as I have had a few personal problems that delayed the putting together of all the info that was submitted

Please feel free to contact me on E Mail rogerdeebee@gmail.com as any feedback is welcome

1. PROPAGATION REPORT FOR THE LAST THREE MONTHS (Msida Malta)

QTH. 52A Church Street, Msida

Conditions:

Kenwood TS140S,

MFJ 969 ATU

Vertical Dipole with three radials,

Inverted V,

Delta Double Apex loop fed with twin feeder 300 Ohms.

Operator. 9H5UG

November December January 2016

The bands have behaved very predictably for the month of January with the daily cycle being as follows:

Early morning the 40M band has been quite active with some very good stations coming in including some East coast USA stations being heard here in Malta.

At around 07:00 UTC the 20M band begins to open up although with some QSB which is only to be expected. European operators tend to be concentrating on DX to VK and Pacific so beware, some will regard Malta as a nice QSO to add to their list whilst others will put you in your place and lecture you on what DX referrers to.

Several contests were run over the weekends and the 20M band bore the brunt of the traffic.

This band seems to stay consistent up till midday with the 17M and 15M bands overlapping the 20M band for popularity.

It has to be noted that local QRM was at a higher level during the late morning but seemed to be centralised around 14200 MHz

QSB was consistent across the whole band.

QSO Band Breakdown

56% of QSO,s on the 20 M band

8% of QSO,s on the 17 M band

14% of QSO,s on the 15 M band

19% of QSO,s on the 10 M Band.

It was noticeable that when the 10 M band opened up in the early afternoon 10:00 – 11:00 UTC the majority of the traffic was centred around 28.500 MHz and downwards till about 28.400 M Hz and these conditions stayed constant till early evening with relatively slow QSB drifting in and out as the afternoons progressed.

Towards the last week in Feb the 10M band opened up briefly for two days and even had the odd pile up now and again.

Most of the traffic was European and Russian users who were using Linear amplifiers to great effect.

DX News for March 2016

The big news for March is the **VK0EK** DXperdition to Heard Island in the sub-Antarctic, scheduled for approximately 18th March till April 10th. Heard Island is extremely remote and isolated island and therefor only activated   rarely.

The last operation from there was by **VK0IR** just over 19 years ago. Its therefor not surprising that it now ranks at number 5 on the *Club Log* worldwide most wanted listing ………………………(Extract from Practical Wireless March 2016)

Authors Note.

It must be stressed that these observations are very subjective and I do appreciate that on other parts of the Island conditions may well be different with different locations, antennas and height above sea level. The object is to share my experiences based on my observations here in Msida.

2. Club Activities for February 2016

M.A.R.L. Collaboration in Pico Satellite

This article was posted on the MARL Facebook page on the 21st Feb by Trevor Sammut so for those members that do not use Facebook I have summarized the article for you.

Almost 50 years after Maltese UN Ambassador Arvid Pardo established the international law principle that governs supranational jurisdictions, Malta is finally set to venture past the ultimate frontier of the "*common heritage of mankind*" –Space, the University of Malta said in a statement. In keeping with its mission to bring the nation to the technological forefront, the University of Malta, in collaboration with the University of Birmingham in the UK, the Malta Amateur Radio League (MARL), and the Italian Astrodynamics company, GAUSS Srl in Rome, is planning Malta's first space mission.
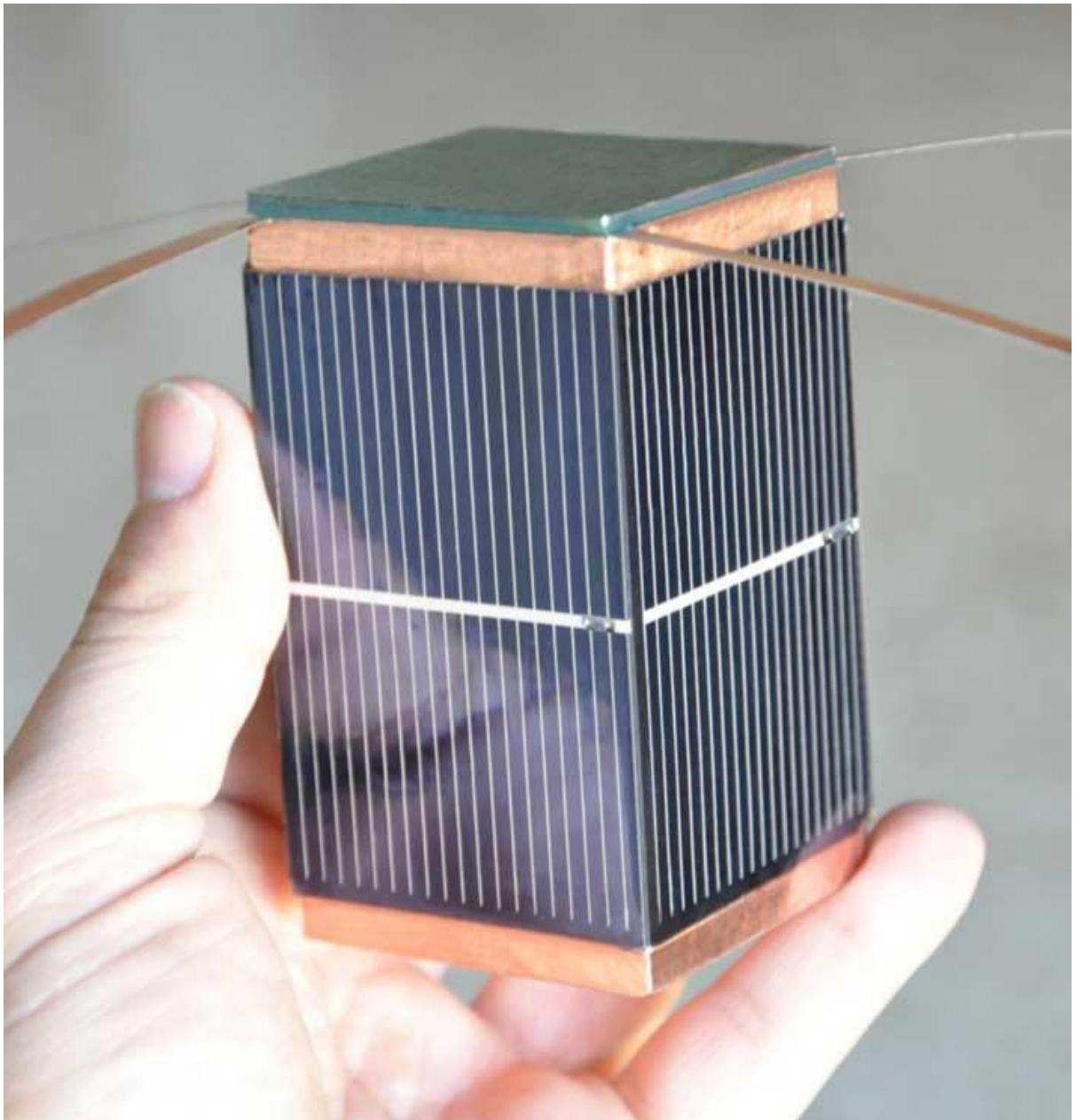
A miniature 5x5x5 cm, 250 gram device, referred to as a PocketQube pico-satellite, will be launched some time in 2018 into a sun-synchronous low earth orbit (LEO) and will be used to validate on-board equipment (commonly referred to as the payload) that will study the properties of an ionised region of the Earth's upper atmosphere (known as the ionosphere). Reducing the size and weight of satellites is a recent trend aimed at minimizing the cost of launching objects into space, which aside from the fixed costs, can reach upwards of €10,000 per kilogram in some situations.

The collaboration has brought together two Maltese post graduate engineering students – Darren Cachia in Malta and Jonathan Camilleri, a Ph.D. student at the University of Birmingham – who have joined efforts and are developing the satellite platform and the scientific payload respectively.

 "The challenge is to design a reliable space-grade device using low-cost commercial off the shelf components, such as the ones found in modern smart phones. Special software and hardware techniques are being developed to overlap the strengths and weaknesses of individual components, and improve the reliability of computation in the harsh radiation-filled environment of space. This relatively recent development brings space technology within the reach of University students and opens the door for civilian space research." says Mr Cachia, whose project was

awarded an Endeavour Scholarship and is part-financed by the European Union – European Social Fund (ESF).

This first launch will pave the way for a larger swarm of eight such satellites that will spread over a large geographical area and hence gain better coverage of changeable ionospheric conditions which affect radio communications. The mission is expected to last about18 months and will relay information back to Earth that will be accessible to anyone owning a simple ham radio set. Information will be made available in due course to allow schools and interested individuals to participate using inexpensive equipment.

An early mock-up demonstrating the typical size of a Pico-Satellite.

From my perspective I would like to know more regarding the kind of information that we can expect from these Fun Cubes and how much interactivity the Amateur Radio enthusiast can actually achieve with the equipment at hand. Could be a good project to design and build the necessary convertors needed to converse with these devices.

M.A.R.L. Annual general meeting was held on the 20th February 2016 and I presume that any radical changes will be communicated to all members by the Club Secretary in due course.

3. The Home Brew Section.

This month's home brew section I would like to include some items sent in by Paul Debono 9H1FQ who I gather love his Home Brewing.

As with all projects research can save you hours of expermementation and as I have always advocated "Why re-invent the wheel".

The mother of all Amateur Technical & Magazines links:ion

http://www.qsl.net/va3iul/ and

http://www.qsl.net/va3iul/Homebrew_RF_Circuit_Design_Ideas/Homebrew_RF_Circuit_Design_Ideas.htm

More Ham links:

http://www.amqrp.org/misc/links.html

Yaesu Manuals & Schematics:

http://www.ko4bb.com/getsimple/index.php?id=manuals&dir=Yaesu

ICOM manuals:

http://www.ko4bb.com/getsimple/index.php?id=manuals&dir=ICOM

Other brands manuals:

http://www.ko4bb.com/getsimple/index.php?id=manuals

SDR Phasing rigs homebrew projects:

http://yu1lm.qrpradio.com/

About Antennas

http://software.hamradioindia.com/antenna.htm

Where to buy !

https://youkits.com/

http://km5h.softrockradio.org/

http://w1npp.org/pages/projects.html

http://www.crkits.com/

http://www.futurlec.com/Radio.shtml?gclid=CLfFmL68oL0CFYWWtAod7VkAwQ

http://qrpme.com/

Download a complete repair guide on the earlier Kenwood Rigs:

http://www.jvgavila.com/man_ham/rtx/rtx_manual_index.htm

Kenwood Rigs repairs:

http://jvgavila.com/wb7.htm

http://www.k4eaa.com/

http://www.kkn.net/n6tr/850repair.html

Kenwood parts:

http://www.k4eaa.com/parts.htm

http://www.g4zlp.co.uk/unified/KenwoodCAT.shtml

These links were of great interest to me as I run a Kenwood TS140 and hopefuly should anything go wrong I would first try to fix it myself rather than go to a repair agent or as a last resort send it off for repair.

This month I would also like to include an article written by Paul regarding the use of PIC (Peripheral Interrupt Controllers). And how we can integrate PIC,s into our hobby.

Starting with PIC (Extract)

Paul Debono 9H1FQ

More and more amateur radio construction projects are being based on Peripheral Interrupt Controller, or better known as PIC. These miniature computers can be programmed to perform a thousand and one functions.

Revolution Education Ltd has come up with the idea of producing starter kits for the complete beginner. You will not only learn elementary applications of PIC,s but also the BASIC programming language in the same process. We are going to have a look at the complete beginner kit named PICAXE-18 Tutorial Pack. Code AXE050. And how we can program it to act as an electronic keyer.

The kit comes complete with PIC type PICAXE 18 (16f627A) ULN 2003 driver chip, to drive a motor, numerical display, light dependant resistor, input switches , battery holder, download serial port cable, a comprehensive CD containing step by step beginners tutorials, the required software editor and more manuals for further study.

 The kit may be seen here http://www.picaxe.com

Paul's article continues on to explain how the PIC can be used to generate Morse code dash and dot streams dependant on which input is switched.

Perfect for the home brew Morse key project.

The program is relatively easy to construct and does not require any pre-programming ability and can be utilised for controlling other Shack features such as receiver antenna selection etc.

Editor's note:

So having a cheap but efficient processor we will explore the applications that we can use PIC for. Personally I want to build an independent WSPR station that would not tie up my laptop or desktop PC. and think this along with a Raspberry Pie 2 would do the job. My son in law M0MHK in the UK has done this project and has a very successful WRSP station up and running using 10mW output power.