



February 2011



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k1rx@arrl.net

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Secretary:

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The monthly newsletter for the Port City Amateur Radio Club

PCARC can be found on the web at <http://www.w1wqm.org> and <http://www.yahogroups.com/group/pcarc>

Presidents QSO - By Mark K1RX

Hello all,

Hope you are enjoying all the snow we have gotten this last month! What a pain! Had to make a fix to a cable buried in the snow this last week which was not too difficult to do except for the trip. Had to climb through 3 ft of snow for about 250 feet - oh my legs are killing me! Obviously have put off any antenna work and so far everything is hanging in there.

We have a nice February meeting planned - no business just fun! Our meal is being catered by Chipotle (we are moving up big time)! Thanks to Mike, W1GEK for making that happen. I believe we had a good turn out for the VE session this past Saturday - that's to all our VE's that provide such a valuable service!

This past week at my place had a fair amount of ham traffic. A friend over in Plaistow came over several mornings to try to work some remaining Zones on 80 M to close out his Worked All Zones award. He managed a couple new ones and a few new countries for his effort - arriving at 5:45 AM and leaving at 7 AM just after sunrise. He is one dedicated DXer and I must be just as crazy to let him in and make coffee!

This month marks our second year at sponsoring the NH QSO Party - the club station is going to be on the air, passing out the bonus points and you are encouraged to get on from your home station and add to the activity level. Let's make this event BIG!

See you all on February 2, 2011 for a great meeting (7 PM) and good eats (6 PM)!

73, Mark, K1RX

Treasurers Report - By Dick W1MSN

As of January 31, 2011

ASSETS		Ordinary Income/Expense	
		Income	
Current Assets		Member Contributions	
Checking/Savings		50/50 Raffle	41.00
TD Bank North	5,417.68	Dinner	91.00
Total Checking/Savings	5,417.68	Total Member Contributions	132.00
Total Current Assets	5,417.68	Membership Dues	180.00
TOTAL ASSETS	5,417.68	Total Income	312.00
LIABILITIES & EQUITY		Expense	
Equity		Food Costs	
Opening Bal Equity	2,489.79	Dinner	74.30
Retained Earnings	1,568.40	Total Food Costs	74.30
Net Income	1,359.49	Miscellaneous	27.00
Total Equity	5,417.68	Rent	600.00
TOTAL LIABILITIES & EQUITY	5,417.68	Total Expense	701.30
		Net Ordinary Income	-389.30

Next Club Meeting February 2nd 2011

Electronics Today - By Igor Kosvin N1YX

I am really disappointed lately by the size of our club newsletter, so I decided to pick a slack. I am sure everyone can share something interesting about their life and the hobby. I am blessed to do something very interesting in my professional life, so I decided to write few monthly installments of this blog. I am not a writer and I am not having too much of a spare time, so I don't know for how long I will be able to do this and to draw your attention without embarrassing myself. I also hope that the chief editor W1GEK will correct my English blunders, after all English is my third language. So, formalities out of the way, here is my first installment of Electronics Today.

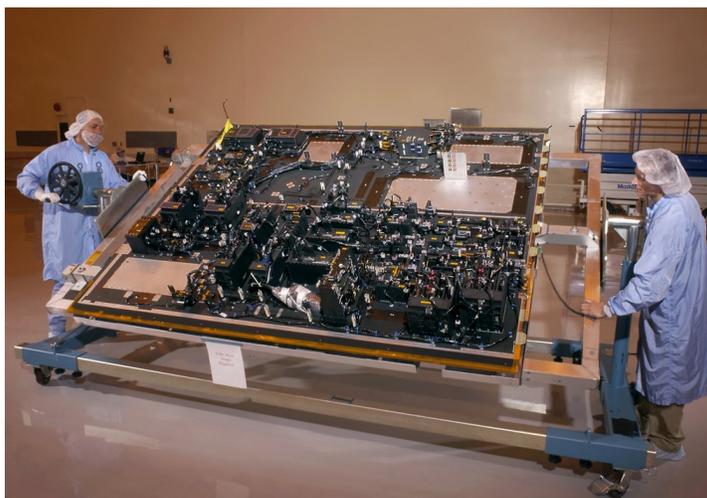
Electronics in Space

We all know that Space is generally not a very inviting place. We know it is very cold or very hot (depends on where the Sun is) and mostly empty. So empty, that it is considered very deep vacuum. It is not easy to launch anything to Space because of the Earth gravitation and the density of the atmosphere. Once in Space, object experience so called "zero gravity", which mostly create major inconvenience to life forms from Earth. But not many of us realize another very powerful condition in Space – the radiation. It is silent, relentless and deadly. All these conditions present tremendous challenge not only for life organisms, but also for equipment. Designing electronics for space is one of these challenges. Electronics in Space not only has to withstand all these conditions, it also has to be failure proof. In most cases electronics in space cannot be serviced or repaired, it is just economically prohibitive. So, how you design electronics for Space?

Use special components. Well, not exactly that special, but specially made for space. What that means? First, use materials that are inherently capable to withstand radiation and do not change over time. So, generally, no plastics are used in Space. Semiconductors that here on Earth are encapsulated in plastic, are enclosed in ceramic and metal cases. To ensure that components not only withstand radiation but perform under radiation, components go through very extensive tests under radiation, heat and cold.

Protect your equipment. Sometimes conditions become just too extreme for the components. So, we try to protect them by hiding them from the elements. First - temperature. Not many materials can perform at absolute zero and at over 400 °F, so electronics in space need to be continuously heated when ambient is cold and cooled when the ambient is hot. People don't realize, but most of the energy generated in solar batteries of satellites used for cooling and heating of the electronics. Even with all the heating and cooling, the temperature swings inside satellite payloads is substantial - usually from -40 °C to +85 °C. Second - radiation. Outer "skin" of satellites payloads is usually pretty thin - 0.08" of aluminum or so. Not much protection. So, the most critical components have "shields", metal brackets that are mounted on top of them to reduce flux of ionizing radiation. Metals used are: silver, tantalum, etc.

Test and inspect. This is as important as anything else we covered above. Inspections are at every step of assembly. Clean rooms are used to avoid FOD (Foreign Object Debris). Tests are extensive, at all working modes, in vacuum, under temperature changes, under vibration, mechanical shock and so on.



Satellite Payload Assembly



Satellite module



Typical Space component

Port City Amateur Radio Club

Port City Amateur Radio Club
P.O. Box 159
Greenland, NH 03840-0159

2m Repeater: 145.150 PL: 123.7
440 Repeater: 444.40 PL: 100
Web site: <http://www.w1wqm.org>

Serving Seacoast NH for over 50 years



Amateur radio is an exciting hobby that can provide a lifetime of enjoyment. Radio amateurs or "hams" communicate around the neighborhood and around the world using state of the art equipment and antennas.

**Affix
Stamp
Here**

Next License Exam Session - By Deuce N1YI

Date: 04/30/2011

Sponsor: Port City ARC

Time: 2:30 PM (Walk-ins allowed)

Contact: George F. Rinalducci (603) 231-1392

Email: N1YI@COMCAST.NET

VEC: ARRL/VEC

Location: Piscataqua Fish & Game Club
198 Tuttle Lane
Greenland NH 03840-9999