



SIGNAL



de N1NC

September 2015 Volume 24 Number 9

This Month's Program

This month meeting program not available at time of printing. See meeting note in the Presidents Letter.

President's Letter

Good Day, Members

There are a goodly number of items that I will be covering and some are requesting your input to the Club by e-mailing to nvarc_board@n1nc.org. The topics are:

BOARD OPENING
OCTOBER CARD SORT
TECH NIGHT
MEETING NIGHT
QSL OUTGOING BENEFIT RULES
CLUB BENEFITS
MENTORING / ELMERING
WEB SITE LIBRARY

BOARD OPENING

(note: I have not appointed a nominating committee because I want all the members to be able to talk to and solicit other members and obtain their agreement to be nominated. The "committee" approach I believe, is too constrictive.)

We have a Board Member opening to fill. Nominations should be submitted to the Board by e-mail or by nominating and seconding at the September meeting. Nominations will be reviewed at the September meeting and a slate and ballots prepared from this information. At the conclusion of the card sort in the October meeting, a Special Meeting will be called for the purpose of electing a Board Member. Ballots will be prepared by the Board to mem-

bers in good standing who are eligible to vote, i.e., those members who are current with their dues.

OCTOBER CARD SORT NIGHT

Stan can use some help with loading the sorting equipment for the October meeting. If you can help with this on Saturday, Oct. 12, after breakfast, look up Stan's telephone number in the Club Directory and give him a call.

TECH NIGHT

Tech night is the second Thursday of the month in the basement of the Community Center beginning at 7:30 pm and generally concluding at approximately 9:00 pm. The meeting is "open" from a formal point of view and activities and topics are decided by those attending. A possible topic, for example, is one presented by Bob Reif regarding "Connector College". Kit suggestions, trouble shooting of equipment, discussions re: ad hoc topics are appropriate. The tech night was a success under the leadership of Dan Pedtke, KW2T, and the benefits of continuing the Tech Night will hopefully continue with your participation.

MEETING NIGHT

The NVARC Club meeting is the third Thursday of the month in the first floor of Community Center with entry into the meeting area now at 7:15 pm. THIS IS A CHANGE. Do not disturb the meeting already in progress before 7:15 pm. Please help with the set-up of the meeting at 7:15 so we can start at 7:30 pm.

QSL OUTGOING CARD BENEFIT

Rod WA1TAC has assumed the QSL OUTGOING CARD submissions to the ARRL from Bob W1XP. The ARRL rules for submitting cards are:

- 1) The cards must be sorted by "Country Code". Use the DXCC Country Code listing from the ARRL site for determining the order.

- 2) 2) Submissions must be accompanied by proof of ARRL membership by using a copy of your membership card or the label from your QST magazine.

CLUB BENEFITS

The Board is putting together a list of current benefits associated with being a member of NVARC. I am soliciting from you the Benefits you believe have been valuable to you for inclusion in the list. You may also recommend additional ones not currently being offered.

MENTORING / ELMERING

Discussions about this topic raise the notion of asking members of the Club, who are comfortable with volunteering to help others, to offer topics they would be willing to support as an Elmer. The information will hopefully be useful to those wanting help with ham topics, activities, kit building, equipment operating, etc. Equipment ownership will be held confidential for security reasons. Send a note of your subject interest to the Board.

WEB SITE LIBRARY

The Club has a Library with available books on the Club site in the "Members" area.

THANK YOU for your participation. Look forward to seeing your responses and seeing you at our meetings.

Peter N1ZRG

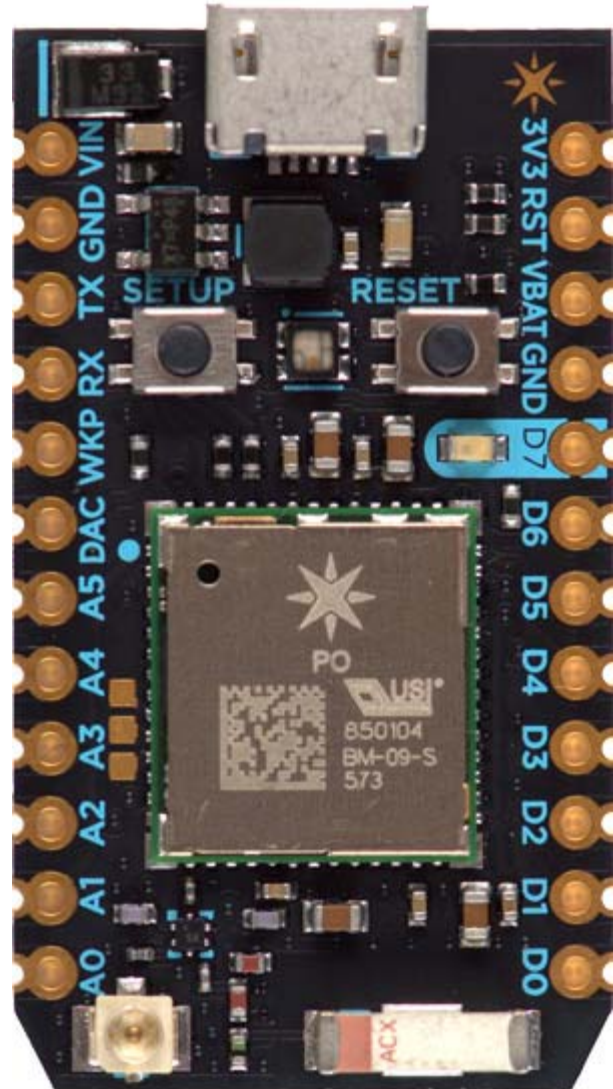
Last Month's Meeting

There was no August meeting.

Microcontroller Corner

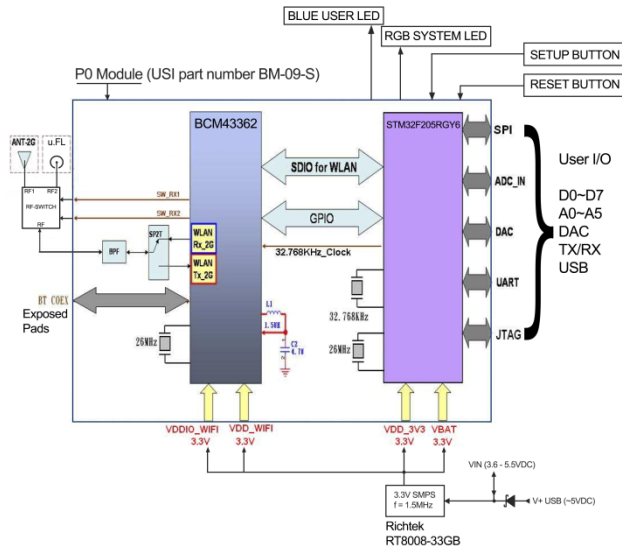
John KK1X

I got another "toy" in the mail the other day. I've been waiting for about six weeks or so for it to come it. It's called a Photon and is produced by Particle. You might remember Particle by their former name, Spark. Their web site is <https://www.particle.io/prototype>.



Remember the above picture is a 24 pin DIP package greatly enlarged--ed

Packaged as a 24-pin .600 inch DIP [photo 1], it has a USB connector for programming and power, a wi-fi antenna connector (to supplement the on-board wi-fi antenna), power and ground pins (3.6-5V in, 3.3V out). The package [photo 2] also contains a serial port (Tx & Rx) and a lot of IO (Input/Output). There are eight pins (D0-D7) used just for digital IO, and another eight pins (A0-A7) that can be used for digital IO or analog input (12-bit A/D converter). A6 can be used as a 12-bit analog output. A7 can be used as a wakeup pin (an external signal can "wake" the processor from a low-power standby mode). The serial port pins Tx and Rx can be remapped as digital IO or Pulse-Width-Modulated digital output.



The digital IO pins as inputs can tolerate a 5 volt high, though a 3.3 volt signal will be seen as a "logical one". As outputs the digital lines can put out a 0 volt or 5.0 volt signal (4.8 volts if powered by USB due to reverse-voltage protection diode). I didn't look deeply, but couldn't find source and sink current for the IO pints.

The analog input pins when used with a 3.3 volt reference can detect 4096 (2^{12}) voltage steps, each about 0.8 mV. Likewise, as an output, the analog output can output a voltage between 0 and 4096 steps. If you need a higher voltage swing, a transistor can act as an amplifier.

Oh, yeah. These things cost \$19. There's a Cellular version as well, but it won't start shipping until January 2016.

I've been busy this week, so I haven't really gotten to play with it much. I have been able to connect it via my Wi-Fi to "the cloud", where Particle has a server that allows my iPhone to control the board. I've so far controlled the LED already on the board (turned it on and off - wheee), and connected an LED that I've controlled by varying its brightness using the analog IO function. And I've connected a thermistor in a resistor-divider network and watched the voltage change as I heated the thermistor with a butane lighter.

Further plans for this week are to fix up the thermistor circuit so I can calibrate it, and monitor the outside air temperature via my iPhone. This could be the core to a pretty slick little weather station. I built one using an 8085 as a university project - it's SO much easier with something like this in my toolbox.

Ask questions when you see me, or email me at my callsign @arrl.net. I expect to keep playing with this, and I've already ordered another. I'll be writing more articles to follow up.

73,
John KK1X

Field Day 2015 Wrapup

de Bruce, K1BG

For the umpteenth year, the Nashoba Valley Amateur Radio Club participated in the annual ARRL Field Day at our site in the Heald Street Orchard in Pepperell. Between wind, rain, iffy band conditions, and a host of other issues that Murphy brought us, the NVARC field day team persevered. A total of 17 licensed radio amateurs plus several guests operated 3 stations for the complete 24 hour operating period. We had a total of 30 participants this year.

The three stations were an HF phone station (which made a few CW contacts), an HF CW station, and a combined HF/VHF station. As always, the stations were planned with interstation interference mitigation in mind.

The club made a total of 793 CW contacts plus 628 phone contacts for a total of 1410 contacts and 2197 QSO points. Because we ran only 100 watts of power, the club qualified for a multiplier of "2", resulting in a QSO score of 4394. Add to this 100 bonus points for each of the three stations for running on 100% emergency (generator supplied) power, plus any additional bonus points.

QSOs made by band are as shown below:

| Band | Mode | QSOs | Pts |
|--------------|-------------|-------------|-------------|
| 3.5 | CW | 69 | 138 |
| 3.5 | LSB | 58 | 58 |
| 7 | CW | 337 | 674 |
| 7 | LSB | 318 | 318 |
| 14 | CW | 292 | 584 |
| 14 | USB | 181 | 181 |
| 21 | CW | 86 | 172 |
| 28 | CW | 3 | 6 |
| 28 | USB | 4 | 4 |
| 50 | USB | 61 | 61 |
| 144 | USB | 1 | 1 |
| Total | Both | 1410 | 2197 |

Operators participating included K1BG, W1XP, KD1LE, AB1WQ, KW2T, N1NC, KA1NXH, KK1X, WA1RCH, KB1WAQ, WA1TLX, AB1CV, KD1SM,

WA1TAC, W1LK, K1NKR, N1ZRG, plus guest operators Tom and Aaron.

Thank You's go out to Dan KW2T, Jim AB1WQ Field Day Coordinators, John KK1X for providing dinner, Dan and Jim for providing breakfast and Leo K1LK for providing shelter. As always, thanks to Jim N8VIM for the power and networking, and thanks to the Pepperell Conservation for allowing us to use the site for the weekend.

Recent Scores

| Year | Score | Category | QSOs | Participants |
|------|-------|----------|------|--------------|
| 2015 | 4394* | 3A | 1421 | 30 |
| 2014 | 1351 | 1A | 500 | 12 |
| 2013 | 4700 | 1A | 1237 | 35 |
| 2012 | 5242 | 3A | 1307 | 65 |
| 2011 | 6022 | 2A | 1530 | 55 |
| 2010 | 5802 | 3A | 1311 | 57 |
| 2009 | 4842 | 2F | 1115 | 25 |

* Score includes 3A emergency power and QSO points.

Field Day Participants. Stan KD1LE, George KB1HFT, Larry W1ESR, Jim N8VIM, John KK1X, Rod WA1TAC, Ed N1YFK, Bob AB1CV, Skip K1NKR, Sam K1NKR harmonic, Gabe K1NKR harmonic, Zack (Groton), Peter N1ZRG, Pete (Groton), Jim AB1WQ, Alexia (AB1WQ XYL), Bruce K1BG, Dan KW2T, Ralph KD1SM, Mike KA1NXH, Kent KD1TX, Teresa (Groton), John WA1TLX, Lee 7J1AMJ, Jeanine N1QIT, Chuck WA1RCH, Greg KB1WAQ and Tom, Bob W1XP, Karen KA1JVU.

September Board Meeting Notes

Board meeting 9/3/2015
Ralph, Jim, John, Rod, Peter

Bob might send an email to the group to ask for Tech night interests

Call for nominations to go into newsletter.

Notice for Special Meeting for October meeting.

Still need a speaker for September

Can we compile & publish an Elmer list with specialties?

Peter will get QSL cards for the October sort

John

Strays

None this month.

August Treasurers Report

Income for August was \$30 from membership dues and \$10 for PowerPole connectors. We paid out no expenses in August leaving a net income of \$40.

Current balances:

| | |
|----------------|------------|
| General fund | \$3,119.09 |
| Community fund | \$4,636.41 |

As of 3 September we have 43 members who are current with their dues and 18 renewals outstanding. Thank you to those of you who hand in your dues before Ralph comes to you. Please check your renewal status on the roster circulated at the monthly meeting or ask Ralph.

If you are joining ARRL or renewing your membership please consider letting Ralph send in the paperwork for you. The Club will buy the stamp and will get a commission from ARRL. ARRL membership checks should be made payable to NVARC; Ralph deducts the Club commission before forwarding your paperwork to Newington. As an Special Service Club, the ARRL expects a majority of Club members to also be ARRL members.

Ralph KD1SM

Meeting Coffee Bar

Many thanks to Ken N3BGN for picking up the coffee "bar" at the meetings. There's been an incremental increase in socializing, and that's what we meet for.

Don't forget to leave a donation if you partake.

NVARC Club Net

The NVARC Club Net meet's every Monday evening at 8 PM on the 442.900 Pepperell repeater. Stop in and bring your input and questions. Recent nets have been run by George KB1HFT/NCS. Attendees; Stan KD1LE, Skip K1NKR, Larry W1ESR, Leo K1LK, Jim N8VIM, Bob W1XP, Peter N1ZRG Dan K1RAU.

Upcoming Contests

September
15 North American QSO Party SSB
22 Hawaii QSO Party
27 Peanut Power QRP Sprint

29-30 W/VE Islands QSO Party
 October
 10 Arizona QSO Party
 17 Worked All Germany Contest
 17 South Dakota QSO Party
 19-23 School Club Roundup
 November
 7-9 November Sweeps CW
 21-23 November Sweeps Phone
 28 CQ WW DX Contest CW
 28-29 EME 50-1296 MHz
 December
 4-6 160 Meter
 12-13 10 Meter
 20 Rookie Roundup CW
 26 Stew Perry Topband Challenge
 2016
 January
 2 ARRL RTT Roundup
 9 North American QSO Party CW
 16 North American QSO Party SSB
 29 CQ 160 Meter Contest CW

Flea Markets/Hamfests

September
 19 St Croix Valley ARC Hamfest Alexander ME
 20 Flea at MIT
 October
 16 NEAR-Fest Deerfield NH
 18 Connecticut State Convention Meriden CT
 18 Flea at MIT

Your Article

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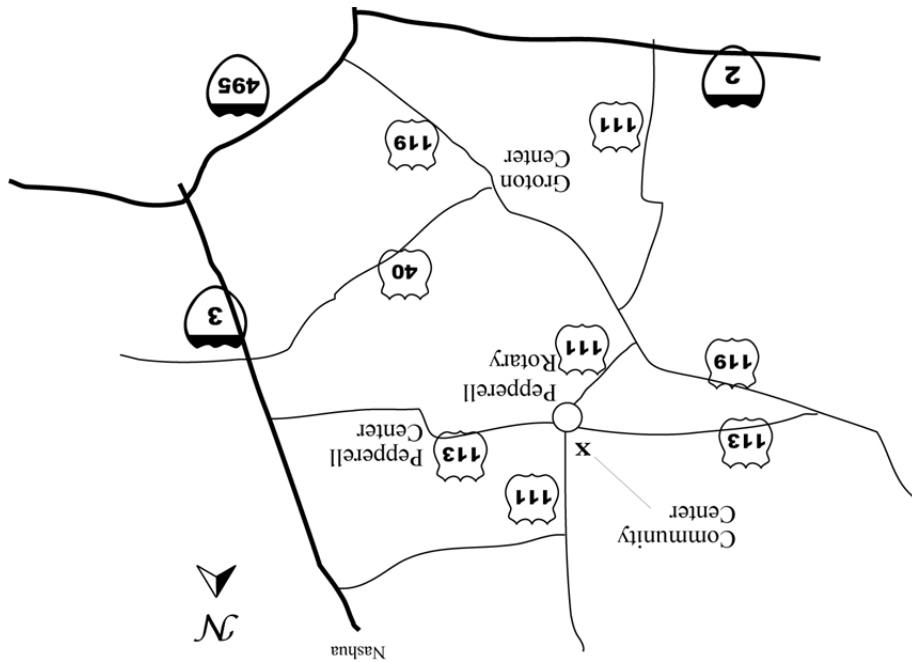
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 Vice President: Jim Hein N8VIM
 Secretary: John Griswold KK1X
 Treasurer: Ralph Swick KD1SM
 Board Members:
 Rod Hersh WA1TAC 2012-2015
 Bob Reif: W1XP 2013-2016
 Wolf Seidlich KA1VOU 2014-2017

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 PIO: Roland Guilmet NR1G
 Librarian: Peter Nordberg N1ZRG
 Property Master: John Griswold KK1X
 N1NC Trustee: Bruce Blain K1BG
 Annual membership dues are \$15; \$20 for a family
 Meetings are held on the 3rd Thursday of the month
 7:30 p.m. - Pepperell Community Ctr.
 Talk-in 146.490 simplex
 442.900 + 100Hz Repeater battery power
 147.345 + 100 Hz Repeater
 53.890 – 100Hz Repeater battery power
 This newsletter is published monthly. Submissions,
 corrections and inquiries should be directed to the
 newsletter editor. Articles and graphics in most IBM-
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