



PVRC Newsletter

February 2014

President's Letter – Ken KE3X

As I sit here in the shack with a warm sweater to fend off the 15-degree night creeping through my coax entry port, I can't believe January is almost over. What a jam-packed month to kick off the year, with five contests in the books already: a pair of NAQP's, ARRL RTTY Roundup and VHF contests and the CQ 160 CW coming this weekend. Clearly a month with something for everyone!

This Month's Articles

In this newsletter you also find 'something for everyone' including a report from Howie, N4AF on the ARRL Centennial kickoff from North Carolina. Quite amazing that their team of 15 operators logged over 26,000 QSO's from W1AW/4 in a single week. That certainly bodes well for the upcoming operations from VA, MD and DC coming later this year. If you have not signed up for an operating slot yet, time to get cracking and 'be the DX'. Also this

month we have profiles of the Array Solutions Shared Apex Loops, with material contributed by Brian, N3OC and Roger, K1DQV.

NAQP Challenge Update

With 2 of the 6 NAQP Challenge events already logged, below you'll find a look at the early results between the three clubs, using scores posted to 3830.

Granted, this doesn't count scores not yet posted to 3830, and we'll have to wait for the official preliminary results to be posted to the NCJ webpage - but clearly PVRC is making a serious challenge this year to bring the NAQP Challenge Cup to the East Coast. Outstanding effort everyone! Hard to believe only two years ago we had just a couple of NAQP teams and this year we fielded 12 teams on each mode, including a team of 'PVRC Expats' on CW.

Needless to say, the NAQP RTTY event has traditionally been a NCCC

stronghold, so we'll look forward to a great turnout in RTTY as well. It would be great to see some traditional CW and SSB stations 'crossing over' to a new mode of RTTY on February 22nd. I remember last year's ARRL 2013 RTTY Roundup was my first RTTY contest ever from my station, and I could not figure out how to get the soundcard to feed correctly into the microphone jack of my transceiver. So in true 'ham' fashion, I improvised a solution by hanging a hand microphone in front of my computer speaker and sent RTTY the 'old fashioned way' via Sideband and made 179 QSO's! The goal for NAQP RTTY this year is to get my station configured in a more permanent fashion, and contribute my Participant Multiplier to the club Challenge score.

PVRC Chapter Challenge

When forming teams for the NAQP CW event, the suggestion was made "How

about forming teams by PVRC Chapter?" Well that idea was a smashing success, and we had stations coming out in droves to join the fun. Already we see an intense battle brewing between NC East and Northwest, with Rappahannock taking over the 3rd spot. Below you'll find the current Chapter totals after the first two events, using 3830 scores as a guide.

Well, that will do it for this month. Coming up in February is another full slate of winter events including CQ WPX RTTY, ARRL DX CW, CQ 160 SSB and NAQP RTTY. If you have interesting stories or pictures to share for the March Newsletter, send them to our fearless editor John, K3TN.

See you in the pileups ... and Go PVRC!

Ken KE3X

NAQP Challenge Update

<u>Club</u>	<u>CW Scores</u>	<u>SSB Scores</u>	<u>Combined Scores</u>	<u>CW Operators</u>	<u>SSB Operators</u>	<u>Challenge Totals</u>
PVRC	4,310,739	3,267,229	7,577,968	68	66	508,767,366
NCCC	5,401,333	2,178,644	7,579,977	51	49	382,221,539
SMC	3,010,799	2,006,450	5,017,249	46	41	220,761,204

PVRC Chapter Challenge

<u>Chapter</u>	<u>CW</u>	<u>SSB</u>	<u>Combined</u>
North Carolina East	1,355,502	737,763	2,093,265
Northwest	623,018	1,183,921	1,806,939
Rappahannock Valley	546,253	335,128	881,381
Central Virginia	331,082	267,921	599,003
Southwest Virginia	332,002	230,211	562,213
Downtown DC	340,040	79,391	419,431
Central	273,691	45,078	318,769
Tidewater	39,897	266,396	306,293
Annapolis	211,056	50,318	261,374
PVRC Expats	257,119	-	257,119
Laurel	21,791	2,773	24,564
Southern Maryland	16,368	3,398	19,766
Eastern Shore	4,532	-	4,532

W1AW/4 NC Operations – Howie N4AF

NN1N contacted us in mid-2013 about putting together two weeks of NC activity in the 2014 ARRL Centennial operation of W1AW/4. Since this was a once in 100 year opportunity, we leapt at the chance!

I took the first week in January and N4YDU took the third week in September. The January activity was a lot of fun. We had fifteen contributors, and had operations on 160M-10M all modes 24/7:

AA4FU AA4NC K2AV K4OV K4QPL K7BV N2COP N2TU N4AA N4AF N4YDU W3GQ W3OA W4MPS W4TMO.

We were helped by the first week in January being a time when a lot of folks were on leave for the holidays but, perhaps, hurt by the Centennial not being yet understood as part of a yearlong operation to activate all 50 states.

Pileups were brisk, with it being necessary to work split at times. My impression was that we satisfied a lot of 5BWAS needs, with the possible exception of Asia, where the band openings were much shorter.

At the end of a week, we ended up with something over 26,000 QSOs logged with over 14,000 unique calls.

Band	CW		Digital		Phone		All		Countries
	QSOs	%	QSOs	%	QSOs	%	QSOs	%	
160	646	2.5			264	1.0	910	3.5	20
80	1101	4.2	258	1.0	767	2.9	2126	8.1	50
40	3736	14.3	612	2.3	3116	11.9	7464	28.5	97
20	2478	9.5	773	2.9	3233	12.3	6484	24.7	99
15	1879	7.2	655	2.5	1674	6.4	4208	16.1	94
10	1268	4.8	262	1.0	314	1.2	1844	7.0	74
30	969	3.7	94	0.4			1063	4.1	55
17	1102	4.2	210	0.8	101	0.4	1413	5.4	52
12	463	1.8	194	0.7	48	0.2	705	2.7	48
All	13642	52.0	3058	11.7	9517	36.3	26217	100.0	

Full graphical breakouts can be found [here](#).

Easy Way to Pull Ground Rods Out of the Ground

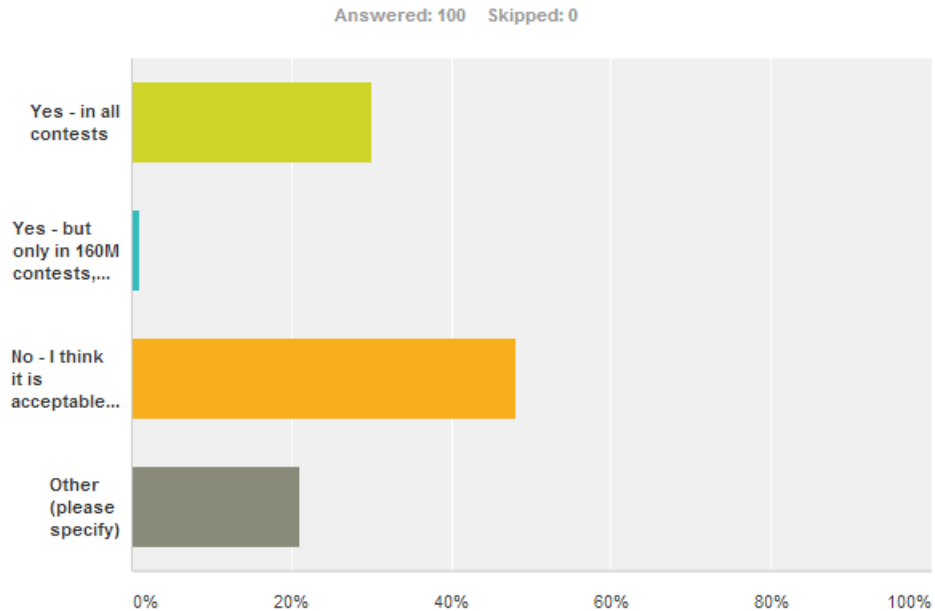
(From N0AX and the ARRL January [Contest Update](#))

If there's anything harder than getting ground rods into the ground, it's getting them out of the ground. Greg W8WWV invented this "K8AZ Ground Rod Puller" complete with [YouTube video](#) demonstration. This looks a lot easier than how I usually do it! (Thanks, Tom K8AZ)

Survey Results: Does Streaming Contest Audio Live Violate Contest Ethics?

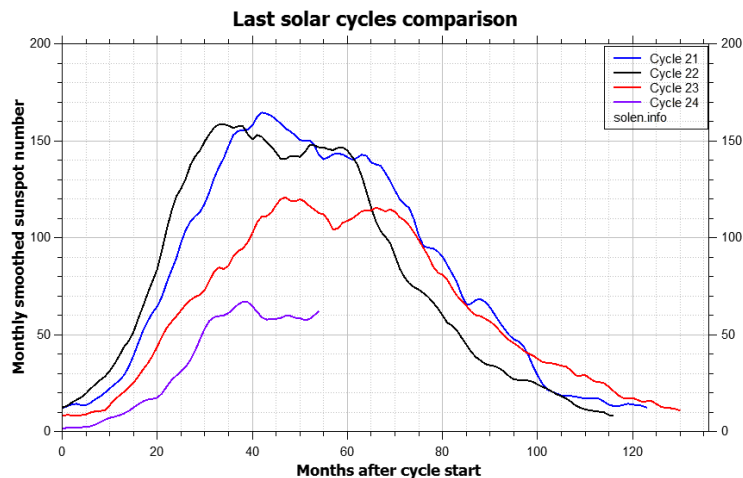
Before the recent Stew Perry Top Band Distance Contest, a contester planned on streaming his audio onto the Internet and on CQ-CONTEST invited all to listen. This caused a small firestorm (not uncommon on CQ-CONTEST). Some felt that providing receiver audio over the Internet during the contest would enable others to cheat. The contester decided not to stream his shack audio.

I put out a survey asking: Do you think Internet streaming of receive audio during a contest violates contest ethics? Here are the results, with a little over 100 responding:



Basically, almost half felt it is not an issue but a third did. Of those who said “other” the most common suggestion was to add some delay, from seconds to minutes, so that no one could use the stream to cheat in anyway. That’s a good idea, but probably would need some work to implement.

Solar Cycle 24 Has Been a Wimp – But 25 May Make It Look Good



SAL-30 Shared Apex Loop by Array Solutions Review – Brian N3OC

I recently received one of the first shipping SAL-30 receiving antenna systems from Array Solutions, just in time for the 160 meter contest season. I wanted to try it out and vet it for possible use in Antigua at V26B.

The SAL-30 is the larger 30 foot tall version of the Shared Apex Loop (SAL) series. They also come in 12 and 20 foot versions. The smaller versions retain their pattern at higher frequencies, where the SAL-30 loses its pattern at around 8 mhz, but develops more signal on the low bands than do the shorter versions. The shorter versions have been around for a while, and I wanted to wait for the big one as I primarily wanted to use it on 160 and 80 meters.

My station has directive transmit antennas on 80 meters, and I have short beverages (350'). So on 80 meters what I already have was going to be tough to beat. However, on 160 my transmit antenna is quite noisy, and the short beverages don't perform that terribly well.

To understand how low band receive antennas rank, it may be useful to refer to a quantitative measurement called RDF, which stands for receiving directivity factor. It is simply a ranking of the modeled directivity of a particular receive antenna. The higher the number, the better the antenna should be expected to perform. You can read more about it at W8JI's web site. Here is a summary of the RDF of some commonly used receive antenna systems. I didn't list them all; rather, I summarized the list into some general categories so you can see where the SAL-30 ranks:

- Short beverage (1/2 wavelength) - 4.5**
- Vertical omni (i.e. your transmit antenna) - 5.0**
- Ewe, flag, pennant etc. - 7.4**
- K9AY loop - 7.7**
- Phased short beverages - 7.9**
- SAL-30 - 8.0**
- Full sized beverage (1 wavelength) - 8.6**
- Two phased verticals - 9.1**
- Four square - 10.7**
- Very long beverage (1.75 wavelengths) - 11.2**
- Very long phased beverages - 13**

Again, I skipped a bit and summarized on the above table so you can get a general picture of where commonly used receive antennas rank. Google it for the exact numbers and more detail. We can see from the above that the SAL-30 should perform about the same as a single full size beverage, but not as good as high-performance receive antennas like four squares and phased extra-long beverages. This will set our expectations when evaluating the SAL-30.

The SAL-30 consists of four receive loops, all supported from a single 34 foot mast. The mast is constructed from nine of those surplus 4-foot military fiberglass poles you have seen at hamfests before. Array Solutions includes plastic spacers to thread the loops and guy wires through that are located at every other mast junction, and also provides rope and guy anchor stakes to guy the mast with.

The SAL-30 installs on a 60' diameter footprint, and needs to be sited away from other antennas and metal objects like towers. I have mine in my front side yard, which immediately got on the XYL's radar. She was good with it as long as I take it down after the season is over. It can be a deer trap, and I suggest adding one extra fiberglass section to the bottom to get the base of the loops about seven feet off the ground. It is harder to put up that way, but may be worth the effort and I will do that next year. So far I have not trapped any deer. K1DQV raised his up an additional four feet by using a short section of 3" PVC pipe buried about a foot down in the ground with a post-hole digger and went with the nine sections of mast it came with. Either way works, but it is probably a good idea to consider raising it a little higher if deer are in the area. I will keep my fingers crossed for a few more weeks that they don't get in mine. The rut is over, and they seem pretty calm and not moving too much right now.

The outdoor box contains the phasing and combining circuitry, a preamp, and a delay line. There is provision in the outdoor box for a bandpass filter but the components are not stuffed on the circuit board for that. They provide the values if you want to add that yourself. The delay-line is pre-cut for the size of loop you order (12, 20 & 30) and you provide your own feedline. All cables are RG-6 so you can use inexpensive RG-6 quad cable from Home Depot.

All control signals are sent over the single feed line from the indoor box to the outdoor box. The indoor box also contains a preamp and matches the 75-ohm coax to your 50-ohm radio. The antenna covers eight directions. Directions that are in-line with a loop are covered by a single forward loop and its opposite loop through the delay line, while directions in-between the loops are covered by a pair of forward loops and a pair of opposite loops. The indoor box is software upgradable, and compatible with their Shack-LAN series of control boxes and can be remotely controlled via USB or four-wire cable from a PC.

An interesting part of the SAL-30 design is that the loops are closed, and the signal is magnetically coupled via a transformer with a ferrite pickup on each loop. This allows the pickups to be moved along the lower part of the loop and optimized for the best F/B ratio without cutting and splicing the loop. (You might also think that having a closed loop results in a quieter antenna, but W8JI debunks that as a myth on his web site.)

Putting up the 30-foot version isn't the simplest thing as the loops and their guy wires are fairly heavy. I have put up or helped put up two of these now (N3OC & K1DQV) and found erecting the assembled mast from the horizontal position on the ground to the vertical position can be precarious. In fact, on my first attempt, two of the masts cracked at the junction as there is just too much horizontal stress on them if you are not very careful.

Most of the fiberglass masts came built with a fiberglass reinforcing ring over the female end, to help keep the fiberglass from splitting. Fiberglass is very weak in that regard, but strong in vertical compression. Some of the tubes these days seem to not have that reinforcing ring, and sure enough, the two that broke on my first attempt didn't have the reinforcing ring at the end of the tube. When I contacted Array Solutions about this, they said they recommend assembling the masts vertically, adding a section at a time to avoid this problem.

What I recommend is that you do is put a hose clamp over any of the tubes you have or get that don't have the reinforcing ring to help strengthen it to avoid this. Luckily I had some of the tubes in stock that were the better tubes with the ring in them, and I was able to recover

from my original problem. If you do raise them from the horizontal to the vertical position, you need plenty of help and a step ladder so that the tubes can be supported as they transition from horizontal to vertical without stressing the joints.

The antenna performs just exactly as the RDF suggests it will. The F/B will vary, and seems to be anywhere from 15db to 30db, depending on the arrival angle of the signal. The lower the arrival angle is, the better the F/B appears to be. It is interesting to play with this - think listening to AM radio stations. Frequently, you will hear a station in one direction, and when you "flip" it 180 degrees, you hear a completely different radio station and no trace of the original station.

At my station, the SAL-30 was always better than my transmit antenna on 160 meters, and almost always a little better than my short beverages. But the SAL-30 gives me eight directions of coverage, which I don't have with the beverages. The beverages do seem a little quieter, but maybe that is just because they are producing less signal.

On 80 meters, where I have directional transmit antennas, the tx antenna can often be better for me, and my "short" beverages aren't so short on 80 meters. So the difference isn't as great for me on this band, but the SAL-30 still works quite well. It's just that my other antennas are a notch better than my 160 antennas so the difference does not appear quite as dramatic.

One slightly annoying thing is when you switch directions, and control signals are being sent over the coax, it blanks your receive for a few milliseconds. If you switch in the middle of a critical exchange like a grid square or a serial number, you might have to ask for a repeat. I suppose this is the trade-off for the convenience of control signals over the coax.

I used the SAL-30 this weekend in the TBDC contest, and was very happy with it. There were lots of stations I would not have been able to hear without it, including many weak US stations (loading up their tribanders?). It kept me busy constantly switching directions to find out who was calling from where, which did add fatigue. I will have to think about that some and maybe controlling it from the PC might be better.

Editor's note: Roger K1DQV adds the following comments and picture of his installation of the SAL-30:

Well, my findings on 160 are about the same as Brian's. My beverage to NE/SW is a bit better than the SAL but I only have 1 reversible beverage. The fact that the SAL covers 8 directions (where I can't have beverages) is a great advantage. Of my 450 Qs in the TBDC at least 50 were made using the SAL. Pulling out the low power and QRP guys stateside it was very helpful. After about 6 hours into the contest I said to myself "It's worth the cost."

My 160 TX ant is a Marconi T, cage 75' vertical, 75' horizontal, center connected, 32 120' radials.

On 80, the SAL is almost as good as my beverage and gives me 6 more directions! Central America (not Iowa,) Caribbean, and VE4/5/6/7 are very nice on the SAL. Long path to ZL,VK are all better on the SAL. I'm a happy low bander.

80 M Tx: Dual Delta loops-Phased/Reversible Vert-NE/SW, single Horiz Delta NW/SE.



K1DQV SAL-30

Membership News – Bud W3LL

Everyone must have been busy contesting in January - PVRC added no new members since the last newsletter.

Chapter leaders please remember to complete the [Meeting Attendance Report](#).

If You Feel 48 Hour Contests Are Too Short...

The ARRL is sponsoring the year-long “Centennial QSO Party” celebrating 100 years of the ARRL – details [here](#).

Working K1ZZ will be worth 300 times as many points as working K1ZZI and working K4RO will be worth 30 times as many points as working K3RO – QSO points table [here](#).

Upcoming Contests and Log Due Dates

Contests This Month

Feb 2 - NA Sprint CW
Feb 8 - CQ WW RTTY WPX
Feb 8 - PACC
Feb 14 – ARRL DX CW
Feb 21 – CQ WW 160 SSB
Feb 22 – NAQP RTTY

Logs Due This Month

Feb 6 – ARRL RTTY Roundup
Feb 20 – ARRL VHF

See WA7BNM's [Contest Calendar](#) for more detail and the latest information.

Editor's Last Word – John K3TN

Thanks to Brian N3OC and Roger K1DQV for the great write-ups for this month – anyone else out there tested out new gear or antennas?

I had planned on rolling out more radials for my 160M Marconi T vertical this winter, after the grass stopped growing. But this year the snow started before that happened – and doesn't show any sign of melting any time soon. Maybe the snow field will enhance the T's efficiency...

So, for my winter maintenance efforts I've focused more on upgrading my N1MM configuration, including the latest versions, .cty and master.dta files, improving my function key files, etc. Oh, and bringing all the Elecraft gear up to the latest firmware levels. Not a lot of dB in transmit or receive gain there but maybe a partial dB in efficiency gain.

Pictures, write-ups, anything you have for the next newsletter – send them to [jpescatore at aol dot com](mailto:jpescatore@aol.com).

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PVRC Website: <http://www.pvrc.org>

Eyeball QSO Directions

The latest info on local club meetings and get together will always be sent out on the [PVRC reflector](#) and posted on the PVRC [web site](#).

NW Region: Meetings are generally held on the third Tuesday of each month at the Golden Corral Frederick, MD
5621 Spectrum Dr.
Frederick, MD 21703
PVRC Meets in the BANQUET ROOM
(301) 662-5922

From Interstate 270 south of Frederick, MD
take MD Route 85, "Buckeystown Road" NORTH.
First right on Spectrum Drive.
Restaurant is in a couple of blocks. Most arrive about 6 PM for dinner and informal discussions. The meeting begins at 7:00 PM.

Contact: Jim [WX3B](#)

Central Region: Meets monthly the second Monday of each month, except June, July & August). The location alternates between the below MD and VA locations. Pre-meeting dinners start at 6:00 pm and meetings start at 7:30 pm.

VA LOCATION: Anita's, 521 E. Maple Ave, Vienna, VA. Tel: 703-255-1001. Meets at this location during the months of February, April and October.

Contact: Rich [NN3W](#)

MD LOCATION: Max's Café. 2319 University Blvd W, Wheaton MD 20902. Tel: 301-949-6297 People usually begin arriving at the restaurant around 6:30. Meets at this location during the months of January, March, May, September and November. Contact: Art [K3KU](#)

The Laurel, MD Region: Bill N3XL The PVRC get-together is held at the first [LARC](#) meeting each quarter at the clubhouse.

The Annapolis Crew: Dan K2YWE Meetings are held on the 4th Wednesday of each month at Broadneck Grill in Annapolis. We gather at about 5:30 PM and order dinner about 6. We break up usually before 8 PM. E-Mail [K2YWE](#) to be put on the e-mail reminder list.

PVRC-NC: The PVRC NC-East chapter meetings are held at [Manchester's Bar and Grill](#) on the 9100 block of Leesville Rd. in North Raleigh, with "QRM" beginning at 6:00pm and the dinner meeting following shortly thereafter. The meeting is held monthly on the 1st Thursday of most months, cancellations or changes usually announced on the [PVRC-NC website](#). [The PVRC NC-West Chapter](#) holds its meetings on the 4th Monday of each month at [the Mellow Mushroom](#), 314 W. 4th St., Winston-Salem, NC. Ragchew at 7:00pm, dinner meeting starts at 7:30pm. All contesters and interested guests are invited!

Central Virginia Contest Club: Ed NW4V Meets the first Tuesday of the month at St. Martins Church, 9000 St. Martin Lane, Richmond VA, (between W. Broad St. and N. Parham Road). Our meeting begins at 7PM.

Over the Hill Bunch: The group meets for lunch at noon alternately in Maryland at the College Park Holiday Hotel Route 1 and the Beltway or in Virginia at the Parkview Marriot near route 50 and the Beltway. Meetings generally are held on the last Wednesday of the month and are subject to change. Meetings are announced by E-Mail. All PVRC members, non-members interested in membership and guests are welcome. For information contact Roger Stephens, K5VRX, 703-658-3991 for Virginia meetings; or Cliff Bedore [W3CB](#) or get on 147.00 for Maryland meetings.

Downtown Lunch Group: Meets on the 3rd Wednesday or Thursday of the month in the downtown area of Washington, DC. Locations occasionally change, but are always Metro accessible. Details are sent out on the PVRC reflector. Feel free to contact Eric W3DQ or Brian WV4V for details and directions.

Southwest VA Chapter: The Southwest VA group meets each Wednesday at about 8:30 AM at Hardees at 20265 Timberlake Road in Lynchburg, VA. This is an informal gathering, but normally has about 10-12 attendees..Contact Mark Sihlanick N2QT, Tel: 434-525-2921

SOMD Region Meeting: The Southern Maryland Chapter meets at 6:30PM on the first Tuesday of even numbered months. We meet in the vicinity of Charlotte Hall, MD, with the specific location (usually a local restaurant) to be announced several weeks prior to the meeting (keep an eye on the reflector). These meetings are open to all PVRCers, guests, and those interested in joining PVRC. Contact Tom AB3IC for information: e-mail: GL1800Winger@verizon.net - cell: 240-434-3811

If you'd like to add or correct a listing, contact K3TN for inclusion in the Newsletter!

Now a Word From Our Sponsors

PVRC doesn't ask for dues, but the Club does have expenses. Please send contributions by snail mail to N3RR's address at QRZ.com. You can also support the Club by buying from the firms listed who advertise in the newsletter, or by getting your company to sponsor the newsletter!

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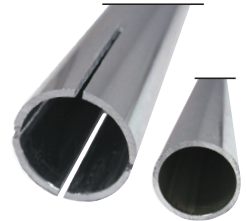
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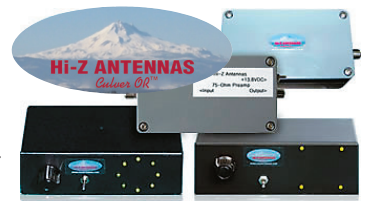
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