PVRC Newsletter
September

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Meeting Info: http://www.pvrc.org/chapters.htm
Facebook: https://www.facebook.com/groups/PotomacValleyRadioClub/

President's Letter – Doug AA3S

The yearly Fowl-Fest was held August 23 at Seneca Creek State Park in Gaithersburg, MD and was well attended by PVRC and NCDXA members, as usual. This is one of several large, annual get-togethers for PVRC members and guests. See our website pvrc.org for much more information on related events at "Reference" in the navigation bar then "Events & Hamfests". Many thanks to Tim N3QE for organizing this event, Phil K3EW for making sure Tim was successful and to Vic W4VIC for sponsoring the special permit for the Park site. Photos of this event appear elsewhere in this Newsletter.

In addition to the superb food and weather, some highlights of this gathering were that four members were present to receive their new 5 Million Point Program plaque and six other attendees received new 5M endorsement stickers for their previously awarded plaques since they accumulated enough points to reach the next milestone. Plaque recipients were: AG3I Marty (Vice Director of the ARRL Atlantic Division), N0YY Rick, N2FT Steve and NW3L Dave.

There was a total of twelve PVRC members achieving 5 Million points for the first time this past contest season and the other eight will receive their plaques soon. Fifty PVRC Posse members earned endorsements for their plaques as a result of their accomplishments last contest season and those not in attendance will receive theirs soon. Three members present achieved 2 Million 5M Program points for the first time this past contest season and were recognized for that: Anie K3ANI, Jim W3RMO and Dick WN7S. They are well on their way to earning the 5M plaque.

Also notable was that three Chapter Chairs attended:

1- Steve N2FT of the Virginia Metro Chapter (Steve also received his 5M plaque!)
2- Rick N0YY of the Southwest Virginia Chapter (Rick is also a PVRC Vice President & he received his 5M plaque!)
3- Doug AA3S, also the Laurel Maryland Chapter Chair (received a 30 Million point endorsement)

Fred W3ICM was recognized for his high score in the 2024 CQ DX Marathon medium club category that PVRC won. Frank W3LPL had organized the PVRC effort for that competition and when the PVRC plaque arrived at his QTH earlier this year he offered it up for presentation to a deserving member of the PVRC team that contributed to that win. In July,

the PVRC Officers decided that Fred should receive that plaque and Fred did receive it in July.

Thanks to these and all the other PVRC members who participate so meaningfully for the benefit of all of us in PVRC. What a fun club this is!

Go PVRC!

Club Competition –

The current PVRC Contest Season continues this month with three 5M events (start times shown):

WAE SSB	PVRC Members Worldwide	8pm Friday 2025-09-12 EDT
ARRL September VHF	ARRL/CQ 250-Mile Circle	2pm Saturday 2025-09-13 EDT
CQWW RTTY	ARRL/CQ 250-Mile Circle	8pm Friday 2025-09-26 EDT

The WAE contest is comprised of three individual 5M events: CW was in August, this months' SSB and then the RTTY in November. PVRC has ben the winner of this Club competition since at least 2019. Let's do it again!

The ARRL September VHF club competition has been dominated by the Mt. Airy club almost every year since at least 2019. PVRC got our best finish in 2020 at second place. Put your thoughts about how to do better on our Reflector, please!

The CQWW RTTY club competition was won by us every year since at least 2019 except for 2023 when YCCC got it. If you have RTTY capability, give it a whirl during the weekend of September 26.

The last of the six events in the yearly PVRC sponsored NAQP Online Club Challenge (https://www.pvrc.org/NOCC.html) occurred in August. The Club Competition is won by the club with the highest aggregate score in the 6 events. PVRC was the top club in each of the six individual events this year. That was not the case last year, but PVRC had the highest point total in 2024, too.

As always, the PVRC Reflector is the way for members to keep up to date with PVRC events, ask questions, get answers - subscribe to the Reflector!

And In Case You Don't Get Enough Contesting Already…
Two State QSO Parties in September with Club Competitions, but are not 5M contests (yet):

1) Iowa: Saturday, September 20, 2025 from 9AM - 9PM US Central Time (1400Z, September 20 - 0200Z, September 21), http://www.w0yl.com/IAQP
2) Maine: 1200 UTC Saturday, September 27 to 1200 UTC Sunday, September 28, 2025. http://ws1sm.com/MEQP.html

Be radio-active! And then bask in the glow of being part of the winningest contest club outside of Europe.

FowlFest Fotos 2025 – Dave NW3L/Doug AA3S

5M Endorsement awardees from left: Bud W3LL 125 Million Points, Jim N3JT 40 M, Tim N3QE 150 M, Tom K3AJ 90 M, Doug AA3S 30 M, Tom NC3Y 15 M.

From left: Key Lime Pie and Cherry Crumble Pie, oh, also Ken K2KW who sponsored Steve N2FT into PVRC in 2023. Steve is Chapter Chair of the Virginia Metro Chapter (Steve also received his 5M plaque at this FowlFest!) <photo AA3S>

In Memoria, Jim Ahlgren W4RX – Frank W3LPL/Howie N4AF

From Frank W3LPL:

Jim -- one of PVRC's most accomplished competitive DX contesters as W4YHD during the 1950s and 1960s -- passed away peacefully on Wednesday July 30th. W3GRF W4KFC and W4YHD dominated the CQ WW CW DX Contest results during the 50s and 60s.

Ham radio was Jim's passion and PVRC an important place for Jim throughout much of his life. He started as a young teenager. In college in the early 50s, Jim was president of the MIT Radio Society W1MX and gave the keynote address at the Society centennial.

Jim chose a special place on Mount Weather to build his station. He spared no effort in building big antennas. There was no radio contest that Jim didn't like but his favorite was always the CQWW CW DX Contest.

RIP my good friend Jim.

From Howie N4AF:

Approximately sixty years ago I was a student at the old location of Geroge Mason in Baileys Crossroads. Near the campus was a five- or six-story office building sporting enormous yagi antennas on the top of the building. It turned out that was Jim W4YHD who was an engineer for an electronics firm located there.

Perhaps just because he was that brilliant, Jim later turned his talents to medicine and received a medical degree (Oncology?). Subsequently he changed his call to W4RX. Sometime later Jim purchased a site right on top of the Blue Ridge.- not far from the White House Camp Rapidan. I played a small part in helping with the erection of AB105 at W4RX. At one point he invited me to listen to 10m – I will never forget the JA callers when Jim sent out a CQ !!

Sometime later I operated W4SNU (SK) in CQWW- Frank was not that far from W4RX. I got smoked!

Jim was perhaps our last big gun using a bug. He later used electronic keying to CQ but I do not know that he ever switched to a keyer for a QSO.

I recall Jim telling me that the PVRC PJ9 crew reported he was the loudest on 80M, but would strongly suspect there were many bands where that held. Regrettably, although the QTH was outstanding, W4RX was beset by constant ice loading problems on his yagis- 40M comes to mind.

Farewell to another giant!

PVRC Olympics 2024/2025 Season Results – Jerome K8LF

Congratulations to the PVRC members who are being honored with PVRC Olympic awards for the 2024/2025 PVRC 5 Million program season. Once again, this year, the PVRC Olympics has seen an increase in awards, reaching a total of 107. For a clearer comparison, in 2018, only 60 Olympic medal awards were distributed to members.

My basic statistical analysis reveals some intriguing data. I find it noteworthy that the counts of bronze and silver medals have remained relatively stable compared to last year. In contrast, the number of gold awards has significantly increased. This year, we have 38 gold medal awards, up from just 24 gold last season. Another notable trend is the rise in the number of awards given to members for the first time in many years. Although I have only tracked this for the past three years, we have 19 new awards going to members who have not received any awards since 2022. Feedback from members indicates a preference for the updated challenge coin format of the Olympic medals
.
More members advanced in award levels than those who dropped levels, such as from silver to gold, etc. I would also like to highlight that many of our members narrowly missed out on a coin or could have advanced in level had they participated in the PVRC Reunion. Only three members benefited from the PVRC Reunion credit to elevate Olympic award level. Five members had a level just one credit short of achieving the gold level. Eight members had one credit short of silver, while 15 members did not receive a coin being just one credit short of bronze. The members who utilized PVRC Reunion credit included one member moving from bronze to silver and two members receiving a bronze Olympic coin due to the additional Reunion credit.

Like last year, we had one new PVRC member who earned gold in his first 5 Million season.

In conclusion, the PVRC Olympics continues to expand and remains popular among members. Once again, this year please submit a photo of yourself or a group holding your PVRC Olympic award medal for the 2024/2025 season. Olympic coins for the 2024/2025 season are expected to start shipping in late September.

73 Jerome K8LF

PVRC Olympics 2024/2025 awards

Gold	Silver	Bronze
K5VIP	W2CDO	ND3D
KB3Z	KA4RRU	N4RV
K3MM	K3AJ	N3UM
N3QE	K0ZR	N3MN
AA3S	AC5XK	N3DUE
W4VIC	W3KN	K3YDX
N4IW	N3CKI	AJ3M
K3WA	W3OU	WN7S
WT3K	NR4O	W4RN
N4CF	NN3W	W4RM
K4FTO	N8II	NN3RP
W3LL	N4TL	N4CWZ
NN4RB	KG3V	N3AC
N0YY	WA3AER	N2YO
W4WWQ	NR4M	N2FT
W3UL	N4YDU	K3KU
N3DPB	N4DJ	W4TG
N1WR	N3CW	W3URL
KB3VQC	KK4R	NX3Z
WA3EKL	NW3L	NS3T
K8LF	NC3Y	NC4SW
K4XL	K4QPL	KG4USN
N6DW	K4OV	K2EJ
K3TN	N4CW	K1BZ
W4NF		W7IY
N4MM		W4YE
N3RTW		W3TAS
N3KN		W3IDT
K4MI		KB4CG
K2YWE		K7SV
W1IE		K2WK
N4NTO		AC8Y
N3AM		WX3B
N1RM		WA4PGM
N1EK		WA4JUK
K4GM		WA3FAE
K0OO		W8KRZ
N4GU		W3ICM
		W2RU
		N3ALN
		N1LN
		KE4S
		KD4D
		W4YVA
		N3OC

PVRC Reunion 2026 Logging and Pre-fill Enhancements – Bill K3WA

The 2025 PVRC Reunion On the Air ended a month ago and it was sure fun! Conditions were not that great but what was great was working as many of you on the air as possible. Hope you all enjoyed it as much as I did. I'm already looking forward to 2026.

It took a lot of work to make this year's reunion happen. Tim, N3QE, spent a lot of time designing and coding a User Designed Contest (UDC) file for the Reunion. A UDC is needed to make it possible to use N1MM+ for Reunion logging. He posted the Reunion UDC on our website and it worked perfectly. Thanks Tim. Developing a UDC is not a simple task and the "how to" documentation is far from perfect.

One issue that arose was the lack of a call history file (CH) that we could use to prefill the log like we use for most contests.

The current PVRC CH file is one that I built to supplement an existing CH file for all other contests. It just tells us if someone in a PVRC member and his/her name. Works fine, but it was not written to prefill any log data.

So, I decided to build a CH file for the reunion that does. That turned out to be an adventure that required me to rewrite both the UDC and CH files.

Slowly but surely, it came around. I got it working so it would prefill all the PVRC reunion data fields, except one - "the call when joined" field.

I just couldn't get there. I reached out for help. First, I contacted Claude (AKA Dub) VE2FK who is the master class guru for CH files. He couldn't get there either. He suggested I contact one of our own, Nick NA3M, a PVRC member in our Northwest chapter. Nick is a member of the N1MM+ software team.

Nick agreed to help and help he did. Along the way he found and fixed a minor bug in N1MM+ that was in our way. And he found ways to make my UDC and CH files better.

Now, we have a PVRC reunion UDC and CH files that do everything we want. I filled the CH with data from our PVRC member database and with logs from K3MM, N0YY, and me.

So, we're ready to go for 2026. **But we do need your help**. We need more fill information. The PVRC database does not hold "call when joined" data. And the "year joined" data is not available for some of us.

Two requests.

- First, please check your roster on the PVRC website. If your "year joined" field is empty or incorrect, please either update your roster entry or drop me an email with your year joined and I'll take it from there.
- Second, if your call was different when you joined PVRC, please drop me an email with that original call.

Thanks and 73... Bill K3WA

Attributes of a Point Up Triangle Antenna – Alan WA3EKL

In the June 2025 issue of the newsletter I discussed the use of a point down triangle for Field Day or home use which requires two support points. I would now like to share with you what can be obtained with a single support point, a "Point Up, triangle."

First, a triangle hears better than a dipole or an inverted Vee. The triangle is more omni-directional in practice than those antennas. You can change the triangle's shape from an equilateral triangle to an isosceles triangle, the base side being longer than either one of the other two sides if you do not have a high enough support point; often the case with 80 meters. The effect on the pattern is minimal and you are only reducing the overall SWR bandwidth a little. This is because you have reduced the total square area of the loop. Why the loop hears better has too many theories to discuss here, but it does!

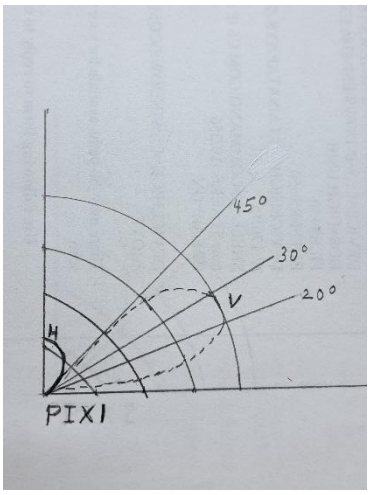
If we feed the point up triangle on one side corner, the impedance is about 115 ohms. This impedance has an advantage. We can make a ¼ wavelength matching transformer from a piece of 70 to 75 ohm coax, preferably polyethylene center insulator, such as is found in RG213, with a 0.66velocity factor. The formula for the ¼ wavelength coax line matching transformer is Zo = (square root) of (Zl x Zi). Zo = the impedance of the ¼ coax matching line you need. Zi = input impedance and Zl = Load impedance. The (square root) of 115 ohms x 50 ohms = 75.8 ohms. Close enough to 70 to 75 ohm coax.

Now we need to determine how long a piece of 75 or 70 ohm coax with a .66VF is needed for both 40 meters and 80 meters. The formula would be (246) x the (Velocity Factor of the coax line) / frequency in MHz = the length in feet

40 Meters:
246 x .66 / 7.150MHz = 22' 10 ½" including 2 inches for the PL259 end connectors.

80 meters: (four calculations depending on where you want to operate.)
246 x .66 / 3.550MHz = 45' 11" total including 2 inches the two PL259 end connectors
246 x .66 / 3.700 MHz = 44' ½" total including 2 inches the two PL259 end connectors
246 x .66 / 3.750MHz = 43' 5.5" total including 2 inches the two PL259 end connectors
246 x .66 / 3900MHz = 41' 9.5 "total including 2 inches the two PL259 end connectors

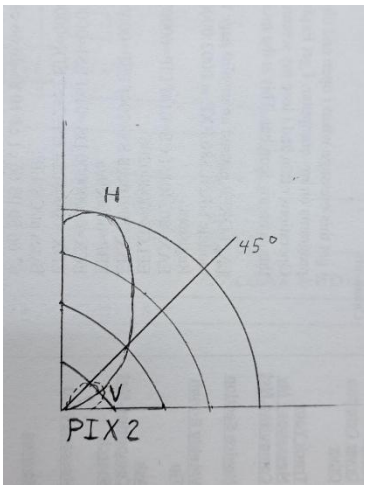
Now let us look at the pattern for a corner fed triangle close to ground. See pix 1.



PIX1

There is a major vertically polarized lobe between 20 and 30 degrees which is good for DX contacts plus one hop to the West Coast and two hops to HI and AK. There is also a very minor horizontal lobe at about 65 degrees. The corner fed, point up triangle is an excellent antenna for working DX on 80 meters both hearing and transmitting. However, there is something you can do with this point up triangle antenna to make it a very good Sweepstakes antenna and close-in to mid-range antenna also.

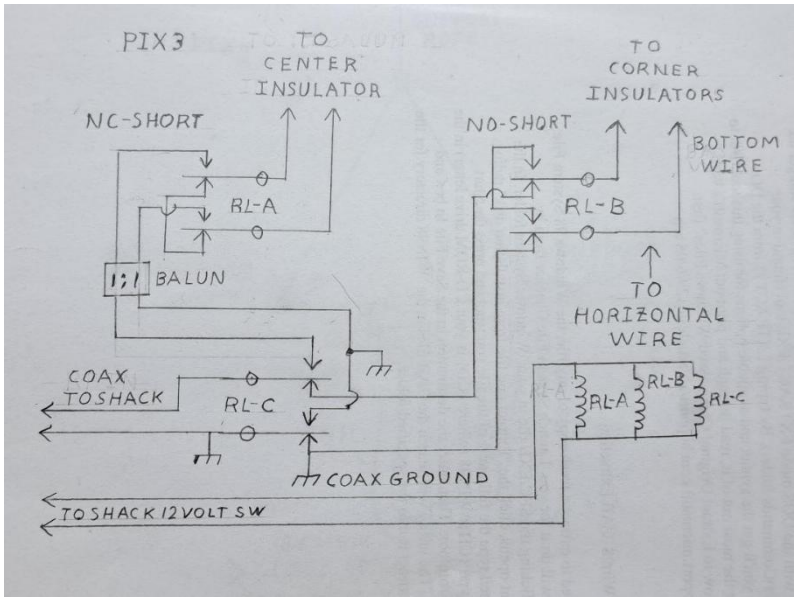
Now let us consider feeding the point up triangle in the center bottom horizontal wire. See pix 2 for this pattern. There is a high horizontal lobe good for close in contacts like Sweepstakes or Net Control Operation. There is also a very tiny vertically polarized lobe. I will admit I have never fed a point up triangle in the middle bottom. However, after reading numerous articles on the internet the consensus seems to be the feed point impedance is about 100 Ohms. If we put this value in the above equation for a ¼ wavelength coax matching transformer we get Square Root of 100 X 50 = 70.7 ohms impedance of the coax matching transformer. Again, close enough to 75 or 70 ohm RG11 or RG59 coax. We have already calculated how long the ¼ wavelength matching section for a 40 meter or 80 meter RG11 or RG59 must be.



If you have read this far and have read my previous loop antenna article in the June 2025 issue, you know I emphasize these loop antennas only perform and create these patterns close to ground! The base of a 40 meter loop only needs to be between 7 to 9 feet maximum off the ground. The base of an 80 meter loop needs to be 8 to 11 feet maximum off the ground.

If we design a system whereby we can take advantage of selecting either the corner feed point or the center bottom feed point with the click of a toggle switch then we have the potential for a very good communication antenna. I am proposing a simple to build system to accomplish this. All the parts needed for this system are listed at the end of this article. Here is my proposal:

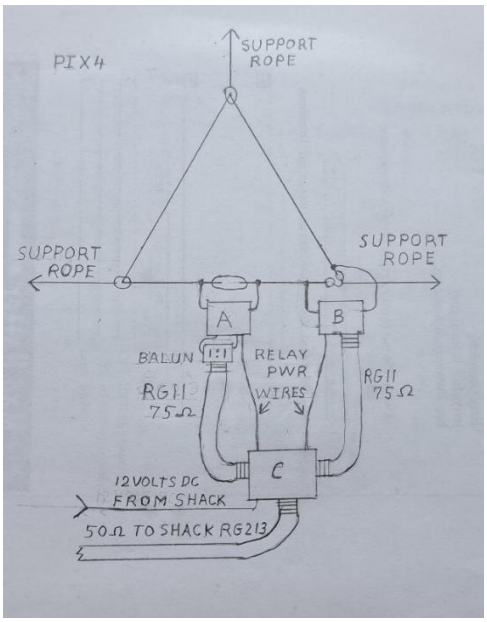
See Pix 3, for the Electrical schematic. All three relay are simple DPDT relays.
Note relay A, RL-A, wipers go to the center insulator. Its Normally Open contacts go to a 1 to 1 balun. Its Normally “Closed” contacts are shorted together.
Note relay B, RL-B, wipers go to the corner fed insulators. Its Normally “Opened” contacts are shorted together. Its Normally Closed contacts go to the Normally Closed contacts of Relay C, RL- C.



All three relay coils are in parallel and are activated at the same time to change from corner feed to center feed. The relays are in separate small plastic boxes with various wires and coax connectors to them. What is needed in each box and what is coming out of each box is explained below and in the parts list. See Pix 4, pictorial diagram for more detail.

Build the three relay boxes first per instructions below and using Pix 3 and Pix 4.

Building the Relay Boxes:



In Relay Box A solder a short jumper wire across the Normally Closed contacts. Insert two #16 stranded insulated wires into the box, connect and solder the wires to the two relay wipers terminals. The ends of these two wires ends will connect to each side of the center insulator eventually. Cut the wires so that they extend at least 18 inches from the box. Note: stranded wire is much easier to use and withstands much more bending before breakage. Insert two additional #16 wires, also extending 18 inches from the box, that are connected to the Normally Open relay contacts and solder them to those contacts. Their ends will attach to the 1:1 balun. When Relay Box A is NOT activated the signal on the antenna is shorted across the middle insulator. When the Relay Box A is activated whatever you are feeding into the balun is now feeding the bottom half of the antenna. See Pix 3 and Pix 4.

In Relay Box B solder a short jumper wire across the Normally Open relay contacts. Insert two #16 wires into the box and solder to the relays wiper terminals. Extend these wires at least 18 inches out of this box where they attach to the two insulators on the triangles corner. Make sure you attach one of wipers “Normally Closed contact” wires to the Ground side of the SO239 connector in this box. The “wiper wire” that is touching this Normally Closed contact MUST go to the triangles Horizontal base wire. Now in the box solder a short piece of #16 wire between the other wipers Normally Closed contact and the center conductor of the SO239 connector. This wipers wire goes to the Diagonal element insulator on the corner. See PIX 3.

Normally you will be feeding the triangle on its corner. Relay Box B which will have a ¼ wavelength of 75 ohm coax connected to it which becomes 50 ohms at the other end. The balun will be connected to the second set of wires coming out of Relay Box A. A second ¼ wavelength matching transformer will be connected to the balun. See Pix 4.

Side Note: I suggested 18 inches of wire so you would have some play. It is important to get both relay boxes A and B physically as close to the insulators as possible. The resonate frequency of the triangle is dependent on the total perimeter length. That now includes the length of the two wires that are being shorted out via a relay depending on which feed you are using. First make each pair of wires coming out of each box equal length. Second make both pairs from both boxes the same length so that the same additional length of wire will be inserted regardless of which relay is doing the shorting! (all 4 shorting wires out of both boxes are the same length) When the time comes to mount the boxes, mount Box B first to the corner insulators. Use an equal length of wire going to each corner insulator. Use that exact same length on the shorting wires coming out of Box A to mount it to the bottom center insulator. This assures you the same shorting length will be inserted on each mode and the resonate frequency should not be affected.

Relay Box C. This is the medium-sized plastic box. This box can be conveniently located wherever you want. The end of the 75 ohm coax coming from Box B and the end of the 75 ohm coax coming from the balun are connect to the two SO239 connectors on the medium plastic box which also has a DPDT relay, a third SO239 and three single pair relay power cables coming out of this box. Two of the single pairs go to the relay coils in Relay Box A and Relay Box B. If you need to extend the 75 ohm cables, use 50 ohm cables made up of multiples of ½ wavelength of 50 ohm cable per its velocity factor, not random lengths of 50 ohm coax. Also note in Box C is a common ground connection just like in Box B. The ground side of the SO239 connector going to Box B is connected to a Normally Closed relay contact. That contacts wiper is grounded to the SO239 connector that goes back to the shack. The Normally Open side of this same wiper goes to the SO239 connector that attaches to the 1 to 1 balun via the 75 ohm coax. This is to keep the coax shield common through out the system and ensures the shield from the shack gets to the bottom horizontal wire. This is also why you are using plastic boxes instead of metal boxes!!

A single pair 12 volt DC power cable from Relay Box C goes to your shack's 12 volt power supply and can be brought along with the 50 ohm coax cable back to the shack Switch Box. Back in the shack the 12 volt DC power can go through a fuse if you wish in the final small plastic box that will house the mode toggle switch.

In Relay Box C the + plus side of all three relay power chords will be soldered together. Also, all three relay power chords – minus or grounds will be soldered together. When you supply voltage through the toggle switch to the power line going out to Relay Box C, all three relays will activate at the same time. This will move the coax feed point to the center bottom of the triangle, short the corner insulators and will open the coax feed going from Relay Box C to Relay box B at both ends. Sending power (voltage) out the single pair feed, switches the corner feed point to center bottom feed point. Turning off the power switches back to corner fed.

At this point try to determine where you will be locating Relay Box C. Now run the DC relay power cables from Box C to Box A and Box B. Solder the cables on to the relay terminals or if you have incorporated small terminal strips in your boxes then hook them up. Also attach the extension power cable coming from your 12 volt DC power source, FD area or shack. All relay terminals should be soldered.

There are many ways to configure these relays. I chose "not" to send voltage down the power cable except when I wanted to switch to non-normal mode. I believe the normal mode will be the corner feed especially on the 80 meter version.

80 meter triangle perimeter length calculations:
3.700MHz center resonate point
Using the large BLACK farm egg insulators, with shorts across the wire coming out of the insulator, so the wire does not slip through the insulators use the below formula.
Formulas for Large Black Farm Insulators;
1030 / freq in MHz = Length in feet of loop perimeter.
1030 / 3.700 MHz = **278' 5'' of #12 insulated copper house wire.**

40 meter triangle at 7.150 MHz = 144 feet of #12 insulated copper house wire

Make Two of the ¼ wavelength 75 ohm matching section per dimensions previously calculated for the band you are setting up.

Build an 80 or 40 meter Triangle with an insulator in the center of the bottom horizontal wire and put it up.

At the corner where you are going to feed the triangle you will most likely have two insulators tied together; one holding the horizontal wire and one holding the sloping down wire. Both of those insulators are physically tied to a rope which goes to some support point. Hang Relay Box B from these two insulators with the two shorting wires. Make sure both of these two wires are the exact same length. Shorten the two wires to where the Relay box hangs comfortably below the lower horizontal insulator.

Now hang from the center insulator Relay Box A using the two shorting wires coming out of it. Make sure the shorting wires length is the exact same length that was used to hang Relay box B. Attach the 1 to 1 balun to other two wires from Relay box A. Attach one end of a 75 ohm one ¼ wavelength matching section.

Attach the other 75 ohm matching section to Relay Box B. Attach the other end of this 75 ohm matching section to an antenna analyzer. Use the analyzer to find the triangles resonance point, meaning no X only R. Now, shorten most likely, the perimeter of the triangle to where the resonance point is where you want it. I would take little equal amounts out of each diagonal side first depending on how low the bottom horizontal is. Go for Zero or minimal X and let R fall where it wants to. Lowering or raising the triangle a little will affect the R if needed. You should be able to get close be 1 to 1 SWR at resonance.

Attach the ends of both 75 ohm matching sections to relay box C to the correct SO239 connectors! Connect the Analyzer to the Box C with a short piece of 50 ohm coax and check the SWR again. Then activate the mode switch and see how close the SWR is on the center feed mode.

Final information: Feeding a point up triangle at the top point yields the exact same pattern as the bottom center feed. Also, you need to use a “current balun” at the center bottom feed to keep the pattern uniform. A balun transforms an unbalanced feed to a balanced feed. Voltage baluns have two windings. One winding attaches to the source and the other winding attaches to the load. A current balun also has two windings, however the source signal + goes through one winding, then through the load, then back through the second winding to the – side of the source. Current baluns are usually 1:1 baluns and have a broader frequency range.

I also highly recommend using polyethylene center conductor dielectric like what is in RG213 and not using any type of foam lead for the matching sections. RG11 or RG59 is difficult to find in polyethylene. Keep searching until you find some. It will be well worth it.

The system will require the following:

Three DPDT 12 volt DC relays, or what ever coil voltage you want to use
Suggested relay source: here. I like this one best because it uses silver contacts. I use similar Triple pole double throw 10 amp relays in my SB220’s and 221’s when the original relays die.

4 SO239 chassis mount connectors.
1 small plastic box for 1 DPDT relay with 4 wires coming out plus power wire (Box A).

1 small plastic box for 1 DPDT relay with 1 SO239 connector and 2 wires coming out plus power wire (Box B).
1 medium plastic box to mount 1 DPDT relay and 3 SO239 connectors plus 3 power wires (Box C).
1 small plastic box for toggle switch in station, if you want to mount the switch in a box.
a 1 to 1 Current balun of the power level you will be using. Buy it or build it.
a length of RG11 polyethylene dielectric
a length of RG213 which has a polyethylene dielectric
Some length of single pair shielded #20 wire depending on length from your station to Relay Box C, from Box C to Box A and from Box C to Box B.

PVRC Digital DXCC Standings – Frank W3LPL

Below are the Digital DXCC totals for PVRC members, transcribed from the ARRL DXCC data as of the 20th of each month or so. Thanks to Frank for the data each month to make this a regular feature. Please report any omissions or errors to Frank.

CALL	DXCC	CALL	DXCC	CALL	DXCC	CALL	DXCC
K3WC	353	K4SO	322	K0GD	278	W3DM	197
K4FJ	349	N4DB	321	W2YE	277	N4GU	192
W4PK	348	K5VIP	317	WS6X	274	K3WI	188
N2QT	345	K3SX	316	W8AKS	272	NR4M	186
K3SWZ	344	K1GG	313	W3DF	270	KE4S	186
W3UR	342	W4VIC	312	K3TN	270	N4XYZ	174
W4DR	341	N4MM	308	K3JT	265	K3KY	172
W3OA	338	N4TL	308	W3MR	265	K3PU	171
W3LL	332	KG4W	308	WB3AVN	263	KG7H	168
N4BAA	332	W2GG	307	K1AR	258	NA1DX	162
K1HTV	331	N3MN	305	W3LPL	258	KF7NN	161
N3NT	331	W3IP	296	N3KN	254	N4IW	159
K3WA	328	KA4RRU	295	N3QE	252	N3AIU	143
K5EK	328	K4WNW	295	K5RT	250	K4HQK	142
K4CIA	327	W3GG	293	W4JVN	249	NE3K	120
K3RA	325	W3FOX	292	N3ND	221	K3IXD	114
W0YVA	324	W3BW	289	N4NW	221	K4FTO	112
N3KK	323	W3US	282	AA4NC	219	N3COB	112
WX4G	323	N4JQQ	281	KU1T	210	W3MAM	107
K6ND	323	N3RC	280	N6DW	201	N4ZH	100

Membership News – Bill K3WA

Meet the new PVRC members:

- In the Central Virginia Chapter, Craig KE4CR
- In the Northwest Chapter, Bill N3TCR

Chapter leaders please remember to complete the Meeting Attendance Report. Members can check and update their roster details via the Roster Lookup.

Upcoming Contests – from WA7BNM

September 2025	
+ All Asian DX Contest, Phone	0000Z, Sep 6 to 2400Z, Sep 7
+ CWOps CW Open	0000Z-0359Z, Sep 6
+ CWOps CW Open	1200Z-1559Z, Sep 6
+ CWOps CW Open	2000Z-2359Z, Sep 6
+ WAE DX Contest, SSB	0000Z, Sep 13 to 2359Z, Sep 14
+ ARRL September VHF Contest	1800Z, Sep 13 to 0300Z, Sep 15
+ North American Sprint, CW	0000Z-0400Z, Sep 14
+ North American Sprint, RTTY	0000Z-0400Z, Sep 21
+ CQ Worldwide DX Contest, RTTY	0000Z, Sep 27 to 2400Z, Sep 28

RED – scores count towards PVRC 5M Awards or Challenge Program

Editor's Last Word – John K3TN

Thanks to NW3L. AA3S, N4AF, W3LPL, K8LF, K3WA and WA3EKL for contributions to this issue of the PVRC newsletter. For me the month of August was a blur of chaos monkey (5 and 3.5 year-old grandkids) activity and a bit of radio-activity. Seemed like half the summer I've had the antennas disconnected for storms, at least until we switched back to drought mode…

The quality and usefulness of the PVRC newsletter depends on contributions from members. If you have photos from club meetings, screenshots of new contest software, or writeups on station improvements, pictures of awards/blings or contest war stories, send them in any format to jpescatore at aol dot com.

From the PVRC Treasurer – Ted WA3AER

PVRC has chosen not to implement an annual dues requirement. We depend on the generosity of all our club members to finance our annual budget. In addition, active PVRC members are expected to participate and submit logs for at least two PVRC Club Competition contests per year.

When contemplating your donation to PVRC, each member should consider the benefit you are receiving from PVRC and its many opportunities for your personal growth in our wonderful hobby, then donate accordingly.

Direct donations to PVRC via Credit Card or PayPal may be made by clicking this "Donate" button and clicking the next Donate button that appears on your screen:

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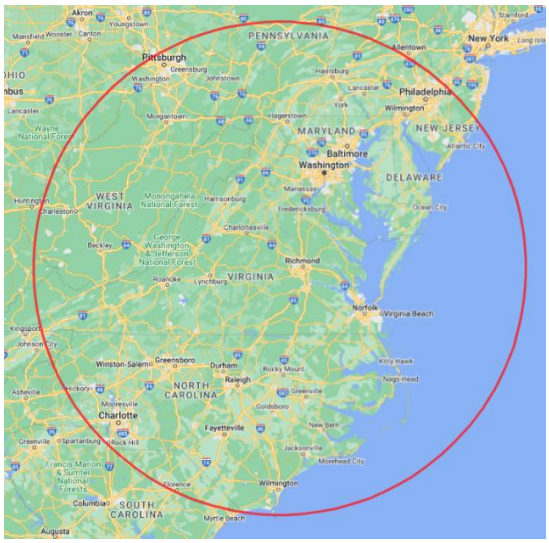
Donations to PVRC are not tax deductible

Eyeball QSO Directions

The latest info on local club meetings and get togethers will always be sent out on the PVRC reflector and posted on the PVRC web site.



Now a Word From Our Sponsors

PVRC doesn't ask for dues, but the Club does have expenses. You can also support the Club by buying from the firms listed who advertise in the newsletter!

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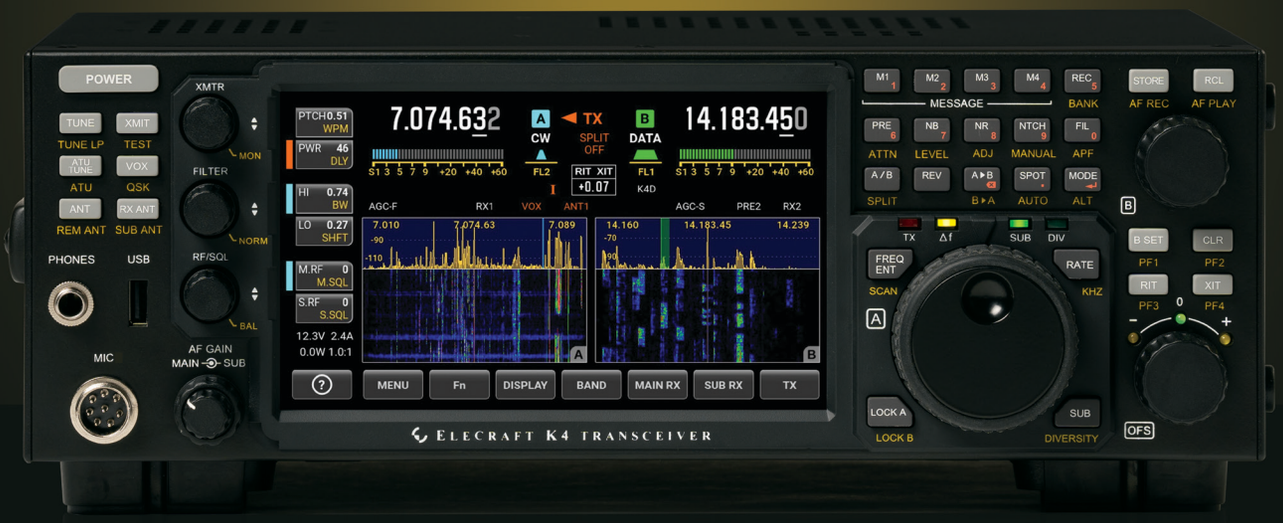
ELECRAFT K4

High-Performance Direct-Sampling SDR



A direct-sampling SDR you'll love to use

Our new K4 transceiver harnesses advanced signal processing while retaining the best aspects of the K3S and P3. It features a 7" touch display, plus a rich set of dedicated controls. Per-VFO transmit metering makes split mode foolproof. Band-stacking registers and per-receiver settings are versatile and intuitive. Control usage information is just one tap away thanks to a built-in help system.

Modular, hybrid architecture adapts to your needs

The basic K4 covers 160-6 m, with dual receive on the same or different bands. The K4D adds diversity receive, with a full set of band-pass filters for the second receiver. (Thanks to direct RF sampling, there's no need for crystal filters in either the K4 or K4D.) The K4HD adds a dual superhet module for extreme-signal environments. Any K4 model can be upgraded to the next level, and future enhancements–such as a planned internal VHF/UHF module–can be added as needed.

Single or dual panadapter, plus a high-resolution tuning aid

The main panadapter can be set up as single or dual. Separate from the main panadapter is our per-receiver *mini-pan* tuning aid, with a resampled bandwidth as narrow as +/- 1 kHz. You can turn it on by tapping either receiver's S-meter or by tapping on a signal of interest, then easily auto-spot or fine tune to the signal.

Comprehensive I/O, plus full remote control

The K4's rear panel includes all the analog and digital I/O you'll ever need. All K-line accessories are supported, including amps, ATUs, and our K-Pod controller. The USB display output supports its own user-specified format. Via Ethernet, the K4 can be 100% remote controlled from a PC, notebook, tablet, or even another K4, with panadapter data included in all remote displays. Work the world from anywhere–in style!

K4 KEY FEATURES

- Optimized for ease of use
- Modular, upgradeable design
- 7" color screen with touch and mouse control
- ATU with 10:1+ range, 3 antenna jacks
- Up to 5 receive antenna sources
- Full remote control via Ethernet

The K4 interfaces seamlessly with the KPA500 and KPA1500 amplifiers

'The performance of their products is only eclipsed by their service and support. Truly amazing!' **Joe - W1GO**

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FTDX10 | *HF/50MHz 100 W SDR Transceiver*

• Narrow Band and Direct Sampling SDR • Down Conversion, 9MHz IF Roofing Filters Produce Excellent Shape Factor • 5" Full-Color Touch Panel w/3D Spectrum Stream • High Speed Auto Antenna Tuner • Microphone Amplifier w/3-Stage Parametric Equalizer • Remote Operation w/optional LAN Unit (SCU-LAN10)

FT-991A | *HF/VHF/UHF All Mode Transceiver*

Real-time Spectrum Scope with Automatic Scope Control • Multi-color waterfall display • State of the art 32-bit Digital Signal Processing System • 3kHz Roofing Filter for enhanced performance • 3.5 Inch Full Color TFT USB Capable • Internal Automatic Antenna Tuner • High Accuracy TCXO

FTDX101D | *HF + 6M Transceiver*

• Narrow Band SDR & Direct Sampling SDR • Crystal Roofing Filters Phenomenal Multi-Signal Receiving Characteristics • Unparalleled - 70dB Maximum Attenuation VC-Tune • 15 Separate (HAM 10 + GEN 5) Powerful Band Pass Filters • New Generation Scope Displays 3-Dimensional Spectrum Stream

FT-710 Aess | *HF/50MHz 100W SDR Transceiver*

• Unmatched SDR Receiving Performance • Band Pass Filters Dedicated for the Amateur Bands • High Res 4.3-inch TFT Color Touch Display • AESS: Acoustic Enhanced Speaker System with SP-40 For High-Fidelity Audio • Built-in High Speed Auto Antenna Tuner

FT-891 | *HF+50 MHz All Mode Mobile Transceiver*

Stable 100 Watt Output • 32-Bit IF DSP • Large Dot Matrix LCD Display with Quick Spectrum Scope • USB Port Allows Connection to a PC with a Single Cable • CAT Control, PTT/RTTY Control

FT-3185RASP | *Heavy-Duty 85W 2M FM Transceiver*

• Massive Heatsink Ensures Reliable 85W RF Power • Super-DX Function Increases Receiver Sensitivity & Weak Signal Reception • 221 Memory Channels • Large 6-Character Alpha-Numeric Display

FTM-150RASP | *2M/430MHz FM True Dual Band Xcvr*

• Dual Receivers Allowing (V+V, U+U, V+U, U+V) Operation • 55W VHF & 50W UHF • Heavy Duty Heat Sink w/Funnel Air Convection Conductor • Front & Main Body Speaker for 6W High Quality Audio

FTM-500DR | *C4FM/FM 144/430MHz Dual Band Xcvr*

• Front Firing Acoustically Enhanced Speaker System • True Dual Band Operation, C4FM/C4FM Digital D-D Dual Receive • 2.4" High-Resolution Full-Color Touch Panel Display • Built-in High Precision GPS Receiver • Wireless Operation Capability with Optional Bluetooth® Headset

FT-70DR *C4FM/FM 144/430MHz Xcvr*

• System Fusion Compatible • Large Front Speaker delivers 700 mW of Loud Audio Output • Automatic Mode Select detects C4FM or Fm Analog and Switches Accordingly • Huge 1,105 Channel Memory Capacity • External DC Jack for DC Supply and Battery Charging

FT-5DR *C4FM/FM 144/430 MHz Dual Band*

• High-Res Full-Color Touch Screen TFT LCD Display • Easy Hands-Free Operation w/Built-In Bluetooth© Unit • Built-In High Precision GPS Antenna • 1200/9600bps APRS Data Communications • Supports Simultaneous C4FM Digital • Micro SD Card Slot

FT-65R | *144/430 MHz Transceiver*

Compact Commercial Grade Rugged Design • Large Front Speaker Delivers 1W of Powerful Clear Audio • 5 Watts of Reliable RF Power Within a compact Body • 3.5-Hour Rapid Charger Included • Large White LED Flashlight, Alarm and Quick Home Channel Access

FTM-6000R | *50W VHF/UHF Mobile Transceiver*

• All New User Operating Interface-E2O-III (Easy to Operate-III) • Robust Speaker Delivers 3W of Clear, Crisp Receive Audio • Detachable Front Panel Can Be Mounted in Multiple Positions • Supports Optional Bluetooth® Wireless Operation Using the SSM-BT10 or a Commercially Available Bluetooth® Headset

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IC-7300 | *HF/50MHz Transceiver*

• RF Direct Sampling System • New "IP+" Function • Class Leading RMDR and Phase Noise Characteristics • 15 Discrete Band-Pass Filters • Built-In Automatic Antenna Tuner

IC-7610 | *HF/50 MHz All Mode Transceiver*

• Large 7-inch color display with high resolution real-time spectrum scope and waterfall • Independent direct sampling receivers capable of receiving two bands/two modes simultaneously

IC-R8600 | *Wideband SDR Receiver*

10 kHz to 3 GHz Super Wideband Coverage • Real-time Spectrum Scope w/Waterfall Function • Remote Control Function through IP Network or USB Cable • Decodes Digital Incl P25, NXDN™, D-STAR • SD Card Slot for Receiver Recorder

IC-PW2 | *HF-50 MHz 1kW Linear Amplifier*

• 1kW Output Full Duty Single Operator Two Radios (SO2R) • Built-in Automatic Antenna Tuner • Detachable Controller with Touch Screen Display • 2x6 Automatic Antenna Selector - 2 Radio Inputs & 6 Antenna Connections

IC-705 | *HF/50/144/430 MHz All Mode Transceiver*

• RF Direct Sampling • Real-Time Spectrum Scope and Waterfall Display • Large Color Touch Screen • Supports QRP/QRPp • Bluetooth® and Wireless LAN Built-in

IC-7100 | *All Mode Transceiver*

• HF/50/144/430/440 MHz Multi-band, Multi-mode, IF DSP • D-STAR DV Mode (Digital Voice + Data) • Intuitive Touch Screen Interface • Built-in RTTY Functions

IC-2730A | *VHF/UHF Dual Band Transceiver*

• VHF/VHF, UHF/UHF simultaneous receive • 50 watts of output on VHF and UHF • Optional VS-3 Bluetooth® headset • Easy-to-See large white backlight LCD • Controller attachment to the main Unit

ID-5100 AD

VHF/UHF Dual Band Digital Transceiver

• Analog FM/D-Star DV Mode • SD Card Slot for Voice & Data Storage • 50W Output on VHF/UHF Bands • Integrated GPS Receiver • AM Airband Dualwatch

IC-V3500 | *144MHz FM Mobile*

• 65W of Power for Long Range Communications • 4.5 Watts Loud & Clear Audio • Modern White Display & Simple Operation • Weather Channel Receive & Alert Function

ID-50A | *VHF/UHF D-STAR Portable*

• High Visible LCD with Backlight Function • Find Nearby Repeaters with the Built-In GPS • Easy D-STAR Settings for Beginners • Voice Recorder Function • Share Pictures in DV Mode

IC-V86 | *VHF 7W HT*

• 7W OutputPower Plus New Antenna Provides 1.5 Times More Coverage • More Audio, 1500 mW Audio Output • IP54 & MIL-STD 810G–Rugged Design Against Dust & Water • 19 Hours of Long Lasting Battery Life • 200 Memory Channels, 1 Call Channel & 6 Scan Edges

IC-T10 | *Rugged 144/430 MHz Dual Band*

• Disaster Ready - Excellent Fit for Your Emergency Bag • Loud Audio - New Speaker Design • Long Bettery Life - Up to 11 Hours • FM Broadcast & Weather Channels

ID-52A Plus version also available!

ID-52A | *VHF/UHF D-STAR Portable*

• Bluetooth® Communication • Simultaneous Reception in V/V, U/U, V/U and DV/DV • Enriched D-STAR® Features Including the Terminal Mode/Access Point Mode • UHF (225~374.995MHz) Air Band Reception

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