

# PVRC Newsletter

## September

Newsletter Editor: John K3TN [jpescatore@aol.com](mailto:jpescatore@aol.com)

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

Meeting Info: <http://www.pvrc.org/chapters.htm>

Facebook: <https://www.facebook.com/groups/PotomacValleyRadioClub/>

### President's Letter – Doug AA3S

The ARRL changed their club qualification circle from 175 to 250 miles, new ARRL contest rules [here](#). As long as PVRC has 11 or more logs submitted to the subject ARRL contests, then the 250-mile circle applies! This rule change can hurt us, or it can help us if we are careful to recognize potential consequences and act accordingly.

The ARRL Sweepstakes has been an important must-win contest since PVRC's beginnings in 1947. Both legs of Sweepstakes are in November, it will be here before you can ask "QRZ?" The brand-new larger circle for ARRL contests allows many more participants for the clubs that compete with us. If our newly qualified participants do not enter their Sweepstakes points for PVRC then we can expect to lose (think FRC/SMC).

**Important** - check to see if you are in the PVRC Roster correctly for status of being in or out of the 250-mile circle. If you were correctly in the previous CQ 250-mile circle then you should be in the new combined 250 mile circle. If you have questions please contact Tim N3QE and copy me; Tim can use your property LAT/LONG to calculate where you should be regarding the circle.

On the flip-side of this issue, having more PVRC members eligible for VHF/UHF contests may allow us to be more competitive than we have in the past (the Mt.Airy club has dominated the ARRL VHF contests). Go PVRC!

#### PVRC Officers:

President:	AA3S	Doug Hart
Vice President:	K3WA	Bill Axelrod
Vice President:	K8LF	Jerome Svinicki
Secretary:	N3QE	Tim Shoppa
Treasurer:	WA3AER	Ted Bauer

#### Trustees:

K3MM, N3OC, K2AV, N1RM, W3LPL, N3KN, W2RU, W3LL, N4RA

#### PVRC Charter Members (all SK):

W3GRF, W4AAV, W4KFC, N0FFZ, W4LUE, W7YS, VP2VI/W0DX, W3IKN, W4KFT, W4RQR, W4MKM, W4BFO, W4CC, W4IA

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**Club Competition – Doug AA3S**

The NAQP Club Competition & Plaque is sponsored by PVRC (since the NCJ contest sponsor does not want to):

- In the recent NAQP RTTY, SMC obviously made an effort to win, but PVRC met the challenge and won that event (#4 of 6 this season).
- Similarly in the August NAQP CW (#5 of 6) there was stiff competition, but PVRC prevailed!
- In the very recent NAQP SSB (#6 of 6) the Florida Contest Group tried hard, but again PVRC came through! Fantastic turnout by PVRC in the 2023 NAQP events.
- --clearly PVRC's initiative to find a way to maintain a club competition in the NAQP was the right thing to do!

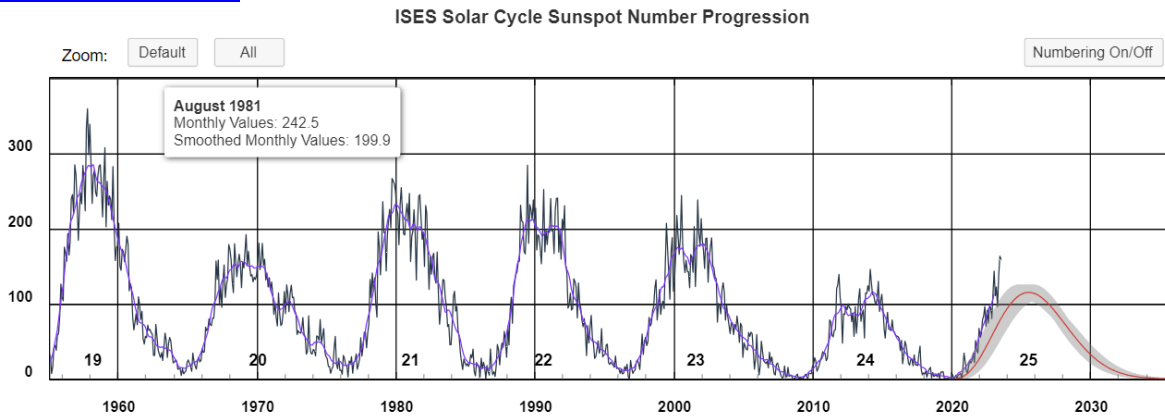
At least two State QSO parties in September have Club Competitions that PVRC could win:

- [Tennessee QSO Party](#) - 1800z Sunday, September 3 until 0300z Monday, September 4, 2023. PVRC won in 2022, can we repeat?
- [Maine QSO Party](#) - 1200 UTC Saturday, September 23 to 1200 UTC Sunday, September 24, 2023.

If you have tips for either of these contests, please post on our Reflector! **September has three 5M contests, one has no circle. Use our [5M calendar](#) to start your planning for these!**

**Comparing Solar Cycles Since Cycle 19 – NOAA Space Weather Center**

[From NOAA SWPC:](#)



## Annual NR4M Pigfest 23 September – Steve NR4M

Announcing the NR4M Pigfest for 2023 will be held on 23 September this year, from noon till 'whenever'.

As in past years, there will be a ton of food. Unlimited hamburgers, Brats, Kosher chicken breasts, pulled pork, dry rub ribs and cherry-chipotle glazed ribs. Drinks will include sodas, iced tea, water and beer. Let me know if anyone has any special dietary needs.

The cost is \$10, paid in advance. This allows me to better judge how much food is needed. Bring a side dish, or dessert to share with others. This is **not** mandatory; just a suggestion.

This year, Chuck, K4QS, will be keeping track of who is coming. Please contact him directly at Chuck Stover <k4qs1@yahoo.com> or by phone @ 540-848-1452, or QRZ for mailing address. He can accept PayPal, check, or cash. If you use PayPal, please use 'friends and family', otherwise service fees really decimate the bottom line \$\$.

The event will be held, rain or shine, in the large air-conditioned garage of NR4M located at 6480 Governor Almond Road, Locust Grove, VA 22508. This is about 30 minutes off of I-95 at the Fredericksburg exit. All family members are invited.

As in past years, there will be a raffle of ham radio related items.



## PVRCers Competing at WRTC: Tim N3QE and Rich NN3W

Time N3QE and Rich NN3W in their distinctive World Radio Team Championship QTH



## W2SC Competing at WRTC - Tom W2SC

First, congratulations to the other PVRC teams. A strong showing by our club representatives.

This year's WRTC was going to be different than previous years on a number of dimensions. Rather than identical tents, the stations would be located in existing structures, many of which were small B&B hotels. Also, they were trying to mitigate the impacts of cheerleading by automatically spotting the stations on SSB. This made the setup a bit more complicated and increased the dependency on a reliable Internet connection. On top of that the Italian organizers had to deal with Covid, the war in Ukraine and catastrophic floods that rendered a significant number of sites unusable just months prior to the competition.

My partner and Team Leader was Randy, K5ZD. We had done two WRTCs together previously, but he had been an organizer and a judge in the last two. I operated those two events with Dave, N2NL, and had a great time. This time, Randy qualified and I was honored that he selected me. It is always a pleasure to team with such fine operators.



We had one of the furthest west stations and had a little mishap with the tolls on the drive out, but we easily found the place. Our QTH would be a small, multi-building hotel. The tower was on one end and had the expected antennas. What was especially notable was that the 40-meter inverted V was only about 2/3 of the way up the 10 meter tower. We wondered if it was a mistake, but it was the same for everyone. It is hard to believe that we made over 1200 Q's with that antenna. The coax was laying in grass, so we were not sure whether our operation position was inside, or outdoors at a nearby covered porch. The site manager and referee arrived shortly after us and sorted out the rooms. We had three bedrooms on the second floor, with A/C, and a window facing the antennas, where we brought in the cables. It also included meals prepared by the owner in the kitchen and dining room that was below us. The accommodations were very comfortable to rest and operate.

The station assembly was mostly uneventful as we had a conventional setup with a triplexer, filters, automatic band switch, and an auto-tuner for 80. I used my station controller from Barbados, which was overkill for this station, but it did the band switching and had four Winkeyers inside.





When we got the station assembled, we turned the radios on to find a relatively high noise level on 10 and 15. Not catastrophic, but not what we had hoped. The SWR curves on the antennas were exactly as expected and the ATU worked fine on 80. The next issue is that we had a fair amount of interstation interference from 40 to 20 and 20 to 10. I had a dummy load to test the triplexers and filters, which looked fine. It had to be something in the antenna or the buildings. The buildings were north of the tower, so we were beaming through them most of the time. There was not much we could do to remedy the situation as it was an operating hotel with other guests. The advantage of existing buildings is that they provide a lot of infrastructure. The downside is that they add many more unknowns. We were a bit discouraged, but it was hardly insurmountable. We were also getting reports from other stations ranging from luxury hotels with pools, to situations much more problematic than ours. All in all, we had a comfortable room with A/C and the station issues were frustrating, but likely did not impact the outcome very much. They were most forgotten once the contest started.

Just hours before the contest we discovered a bad keyboard (it added an "f" when you pressed enter) and one keyer had an RFI problem. Amid some tension, we swapped in a spare and we were ready. Other than losing the internet a couple of times, there were no station issues during the contest.

Warming up before the contest, the bands seemed subdued, mostly with weak signals. At the start of the contest, we got off to a slower start than in Germany. We had OK rate on 20, but it was hard to run on the other bands. As the day wore on and the sun went down, things got a lot better. The bands were runnable everywhere we went, on both modes. We were both feeling pretty good at this point and, looking at the score history, we were doing reasonably well. However, Sunday morning was a real struggle. 20 was OK, but we couldn't do much on 10 and 15. It was just spotlight propagation on those bands and we could not get any runs going. Many of our competitors had very good hours to close the contest but we could not really run until the very end. Ultimately, we were competitive with the average of the top three on 20-160, but were about 400 behind them on 10/15. Just half of those Q's, and related mults, would have made a big difference in the rankings.

The worst part of WRTC is tearing down the station. We were tired, hungry, and the adrenaline had worn off. We got everything back in the boxes, but not nearly as neat or as enthusiastic as when we arrived.

After all the log checking, we moved up a few places to number 8. We were actually doing better at various points during the contest, but lost some ground in those final hours. Nonetheless, we were pleased with the outcome and were the top North American team.

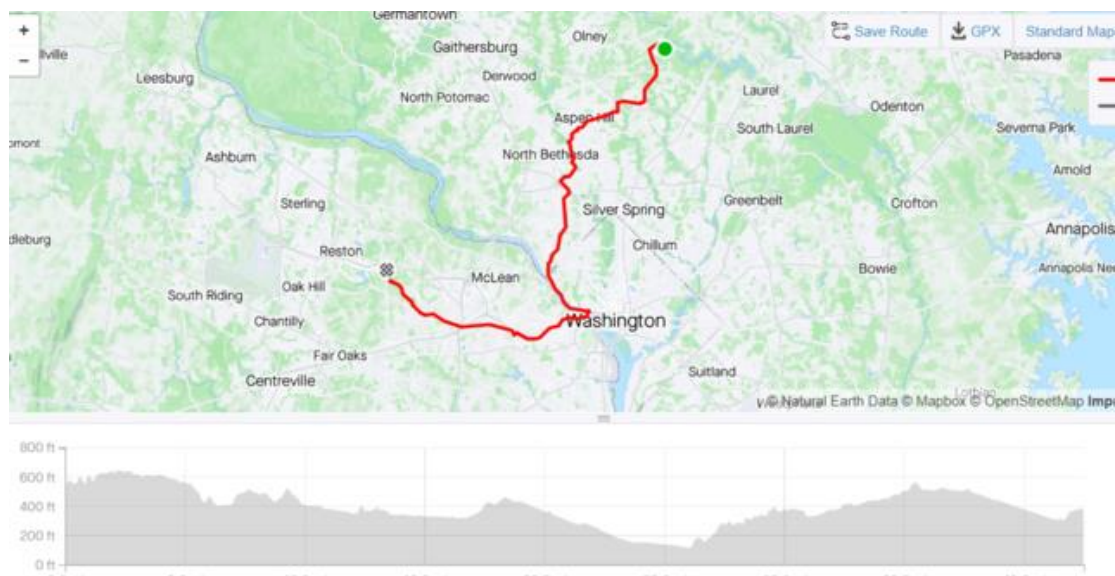
Thanks to the Italian OC that persevered through tremendous hardships to put on the event. We all owe them a huge debt of gratitude. Thanks to all the stations that called us with our weak signals. Thanks to the referees for the necessary, but tedious, job of monitoring the full 24 hours.

WRTC is a competition, but it is also an amazing social event. I arrived at the airport waiting for my luggage. I did not have any ham identification and a person came along and gave me an enthusiastic "Hi Tom." It was Andy, RW7K. Only at WRTC would that happen. It was a pleasure to see so many people I "knew" but never met. I'm already looking forward to participating in some capacity at WRTC UK in 2026.

### John<sup>2</sup> (N3AM and K3TN) Trade Paddles for Pedals for a Day

Early one Saturday morning John N3AM and John K3TN biked down to K3TN's daughter Lauren's house in Vienna VA. K3TN started at his house in Ashton MD and rode about 12 miles south to meet N3AM who started at his house in Glenmont MD and rode about 6 miles to the meeting point at the Rock Creek Trail at about 0830 on a very humid, but largely VE smoke-free morning.

K3TN's wife had driven his car down to his daughter's house in Vienna to go with Lauren, her husband and two grandkids on a trip to Sesame Land and DiggerLand in PA. The Johns would use K3TN's car to carry the bikes back home.



No radios were used (let alone harmed) during this ride, but the pictures below were taken within a kilometer of the long-gone Electronic Equipment Bank ham store and just a few kilometers from the Vienna Community Center where the Winter Frostfest hamfest was held for many years.



John K3TN

John N3AM



K3TN's and N3AM's bikes in Vienna

It ended up a 42 mile ride for K3TN and a 36 mile ride for N3AM. No major climbs but a lot of short steep up and downs - about 1600 feet of climbing, some of which was schlepping bikes up stairs to get onto the Key Bridge to get over the Potomac River. Most of the riding was on Washington DC area trails: Rock Creek, Capital Crescent, Custis, Washington and Old Dominion.

We reached Lauren's house, used the facilities and changed out of our sopping wet shirts, put the bikes on the back of K3TN's Subaru Outback and motored over to Herndon for a fine bagel sandwich lunch at the Bagel Cafe before fighting the traffic around the Beltway on the way home.

We both made a few CW QSOs in what was left of the RAC Canada day contest when we got home. (N3AM photos)

### 2023 PVRC Scholarship Fund Drive – Ted WA3AER

You may be unaware that we have a Scholarship Fund. It is managed by the ARRL Foundation. This year we funded two \$2500 scholarships, which were posted in the July Newsletter. For next year our goal is to fund two \$3000 scholarships.

Last year, through your generosity, PVRC funded WRTC teams to the tune of just over \$4000. With your generosity this year, we would like to collect a similar amount to bridge the gap in our remaining PVRC Scholarship funds and get a head start on the following year.

Remember: Your contributions to the PVRC Scholarship Fund are tax-deductible because the ARRL Foundation is a 501(c)3 entity. Both Frank W3LPL and I encourage

you to donate to our scholarship fund to assist student Amateur Radio operators pursue their higher education goals.

If you are required by the IRS to make annual RMD (Required Minimum Distribution) withdrawals from your IRA(s), you can shelter your RMDs from taxes and possible increases in Medicare premiums by making donations direct from your financial institution to qualified charities such as the PVRC Scholarship Fund administered by the ARRL Foundation. RMD distributions to such qualified organizations as the ARRL Foundation are called Qualified Charitable Distributions (QCDs), and these **must be made directly from the financial institution to the charity** (e.g., ARRL Foundation PVRC Scholarship).

Otherwise, there are several ways to make your contribution to the PVRC Scholarship Fund: (in each case **specify that you are donating to the PVRC Scholarship**)

1. Complete the ARRL online form by downloading it and mailing it with your check to the ARRL;
2. Call the ARRL Fund Director, Kevin Beal, and give him your credit card number; or
3. Send your donation to the PVRC Treasurer via PayPal, noting your donation is for the PVRC Scholarship Fund. **NOTE:** Payment via this option may not be tax deductible. Consult your tax advisor.

For Option 1, the link to the ARRL Web page with the downloadable donation form:

<http://www.arrl.org/arrl-foundation-donation-form>

For Option 2, here is Kevin's contact information: Kevin Beal, K8EAL

Email: [kbeal@arrl.org](mailto:kbeal@arrl.org)

Phone: 860-594-0317

For Option 3, the PayPal payee is the same as for your other donations to PVRC (like your annual donation): [treasurer@pvrc.org](mailto:treasurer@pvrc.org). **Please** remember to note your donation is for the PVRC Scholarship Fund. Also remember that PayPal reduces your contribution by collecting a transaction fee. For example, PayPal collects \$3.38 (3.4%) on a \$100 donation. Their rate structure is not linear; the rate increases to almost 8% for low dollar donations and decreases somewhat for higher dollar donations.

I would like to suggest that you use option 2 if you are not donating using your RMD. Why? You/we get the most bang for your buck contributed – no diminishment from PayPal fees or possible loss in USPS. And, if Kevin gets enough calls, he/ARRL could get motivated to automate option 1 so that your donation could be made online sooner than later. I have made overtures to have option 1 automated, but I believe having their phone ring off the hook will emphasize the value of proceeding with it.

Thank you, in advance, for your support of the 2023 PVRC Scholarship Fund Drive. We will end the drive on December 15, 2023.

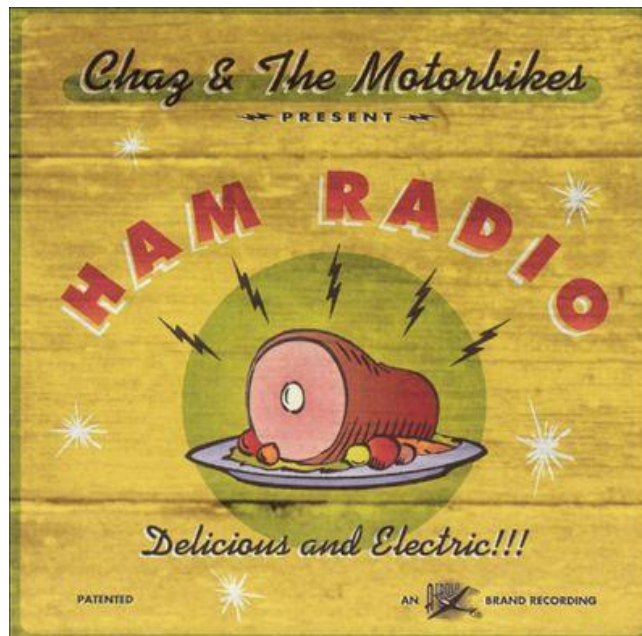


Radio Birthday Cakes – Dennis N8IVN, Tyler K3MTR



(L) I recently had a "special" birthday. Linda, my XYL, always attempts to make memories for our various events. Attached is a picture of the cake she had made for the occasion. Not only was it accurate, it was very tasty! Note the Heil headphones that I store atop the AL-80B - Dennis N8IVN

(R) My MIL is, of course, aware of my interests and has a knack for finding all sorts of cool stuff. She found this antenna cake birthday card – Tyler K3MTR





## Phasing Lines and Foam Lead – Alan WA3EKL

This is one man's story of my attempt to build a phasing harness for my latest 2 meter antenna array. Before I tell you my story I want to say that my two major suppliers of my amateur radio needs have been The RF Connection in Gaithersburg MD and DX Engineering. In no way whatsoever is this article intended to shed a poor light on DX Engineering, in fact quite the opposite. I have been a loyal customer of theirs for years and will continue to do so. I can only give you an outstanding report of the excellent help I received from their engineering department every time I contacted them on this issue. I also want to thank Frank, W3LPL for his donation to my project and Fred, AI3Z for helping test my theory as to what the actual problem was and confirming it.

For the past five years I have been using a 2 element, horizontally phased, omni directional array consisting of two M2 two-meter loops. They have worked very well. I also have a pair of 6-meter phased loops and four loops on 432 all of which are omni directional, phased and horizontal. I have no room to turn any more antennas, that is why I am using the omni directional arrays! All the loops are "square loops" which actually produce a medium leaf "four leaf clover pattern" even though they are advertised as omni directional. The 4-element version will produce 14.8 dBi gain off the two side lobes over a single loop.



All three array's phasing lines are made with 75 ohm, RG11, old style PE center (not foam) insulator. The RG11 that I constructed the phasing lines for was purchased from the above two suppliers. I had no problem building phasing harnesses with this type of coax for my three previous antennas or cutting them to  $\frac{3}{4}$  wavelength and tuning each array to resonate with various antenna analyzers. I build my own phasing lines because I am a builder, it is less expensive. The two-meter array uses a  $\frac{1}{4}$  -  $\frac{3}{4}$  phasing line system and the other two arrays use all  $\frac{3}{4}$  -  $\frac{3}{4}$  wavelength phasing lines.

I recently decided to replace the 2-element array with a 4-element array of square loops made by FreqTester whom I highly recommend. When I tried to purchase the old style RG11 it was unavailable. So, I purchased a length of RG11 "gas injected foam lead" from DX Engineering.

The old style RG11 velocity factor VF is .659 or .66. The foam lead is rated at .82 VF. Formula:  $983.571 \times .75 \times .82 / \text{freq in MHz} = \text{length in feet for a } \frac{3}{4} \text{ wavelength phasing line. } 983.571 \text{ is one wave wavelength times } .75 \text{ gets you to } \frac{3}{4} \text{ wavelength.}$

Theory: If you have a  $\frac{1}{4}$  wavelength of 75 ohm transmission line or odd multiple ( $\frac{3}{4}$ ,  $1\frac{1}{4}$ , etc) whatever the impedance is at one end will be doubled or halved at the other end. So we have two antennas with 50 ohm impedance each. Now we attach a  $\frac{1}{4}$  or  $\frac{3}{4}$  wavelength piece of 75 ohm coax, per the VF, of the line to each antenna. At the other end of each piece of coax we should see 100 ohms. When you attach both of those ends into a "T" connector you are paralleling the two 100 ohm impedances. 100 ohms in parallel with 100 ohms should give you 50 ohms again. If you have another pair of antennas below the first set then you create another 50 ohm point. You now have a 4-element array with two 50 ohm points that need two  $1\frac{1}{4}$  phasing lines, because  $\frac{3}{4}$  lines won't be long enough between the two 50 ohm "T" connectors. Those two  $1\frac{1}{4}$  wavelength lines need to go to another "T" connector to get you back to 50 ohms again. If you are planning on building one of these arrays, you will definitely need four  $\frac{3}{4}$  wave length lines because  $\frac{1}{4}$  lines will not be long enough when you calculate in the velocity factor. You will also need two  $1\frac{1}{4}$  wavelength phasing lines for the final two lines. This all assumes a  $\frac{5}{8}$  wavelength spacing between elements.

I cut four lines to the exact same  $\frac{3}{4}$  length and two lines to  $1\frac{1}{4}$  length then soldered on all twelve PL259 connectors. I connected everything up on the 4-element array and hung it with a rope out of a tree so the bottom loop was at least 8 to 10 feet off the ground. I attached a 2 wavelength line of RG213 that resonated at 144.250 so I would be sure that whatever I was measuring at the end of the feed line was the actual antenna impedance and SWR.

First measurement indicated an SWR of at least 2:1 and the actual resonance point of the array was around 130 MHz. I said something must be wrong! I rechecked all my calculations, which were correct, and the phasing line lengths were correct. I had left the gamma matches at where the manufacturer had set them because antennas were supposed to resonate at 144.200 MHz. Then I began adjusting the gamma matches but could not get the SWR to reduce nor could I move the resonant frequency very much. The Impedance was about 25 ohms not 50 ohms. After 8 hours of negative results, I gave up for the day and started the next morning. I first removed all the phasing lines then took the resonate piece of RG213 and attached it to a single loop. I tuned the gamma match for resonance at 144.200. Then repeated the process for the other three loops. Now I knew all the antennas were correct. I re- attached the phasing lines, checked again and got almost the same results as before; resonant out of the bottom of the band and high SWR I began to suspect the coax phasing lines.

At this point I sent a note to DX Engineering's engineering department. They asked for more specifics which I gave them and we agreed I should cut the phasing lines shorter which I did and still no joy. At that point I sent a note to Frank W3LPL who basically said

the impedance of that foam lead could be anything from 60 to 90 ohms and who knows what the velocity factor is.

I now began seriously testing the foam lead and conversing with Frank about it. Using a RigExpert 230 Stick Antenna analyzer which Frank said was a very good instrument I found a dummy load that was flat at 50 ohms all the way up to 200 MHz and flat in the 144 MHz range I would be testing. Now I knew I had good instrumentation to check the coax with. I found the coax to have a VF of .73 which was considerably off from the stated VF. I then re-cut the lines using the .73 velocity factor and re-assembled the array again. You guessed it still way off resonance and SWR way too high. I have now spent at least a week trying to tune the array.

I had one last Idea. Since you can adjust a gamma match to almost any impedance, why not adjust each individual gamma match so the impedance is 100 ohms at the end of each  $\frac{3}{4}$  phasing line on each loop; which I did. I still did not get 50 ohms at the "T" connectors, nor did I get 50 ohms at the final "T" connector.

At this point I had destroyed at least 12 PL259 connectors and soldered on new ones.

I again started another sequence of communications with the engineering department at DX Engineering. I told them of my findings of the coax I had just purchased, my exact setup and instrumentation and they agreed my numbers and setup was all good.

I suggested that when foam lead was first introduced the VF was around .82 to .85 but "that" foam lead, although being efficient, was very hygroscopic. Then gas was injected into the foam which made it much less hygroscopic and tougher. Maybe no one bothered to actually measure the VF again and the actual VF of gas injected foam is .73 or maybe they just had a bad run of coax. The engineering department said they would definitely check into it.

I respectfully asked if they would refund or replace the twelve PL259 connectors, I had destroyed in attempting to tune my array with this coax. To my surprise not only did they replace the PL259 connectors, DX Engineering refunded two thirds of the amount I paid for the coax.

Frank, W3LPL, came to my rescue and gave me a length of the old RG11 he had. I used the .66 VF in the formula, cut the phasing lines and reassembled the array. In 45 minutes the entire array was tuned to resonance at 144.200. I had tried to tune the array with the foam lead for two and one half weeks - never again. Quoting Frank, "Never use foam lead for phasing lines." To that I will add this: especially at VHF frequencies and above.

Near the end of this process, I learned from a lifelong friend and an excellent electronic design engineer who has designed circuits and antennas from DC to Micro waves the following. He said gas injected foam lead is very efficient, but most people don't know about it's one hidden flaw. In time the gas leaks out of the foam thus changing the characteristics of the coax both impedance and the velocity factor!

**From the Wayback Machine: Buz Reeves K2GL – via Frank W3LPL**

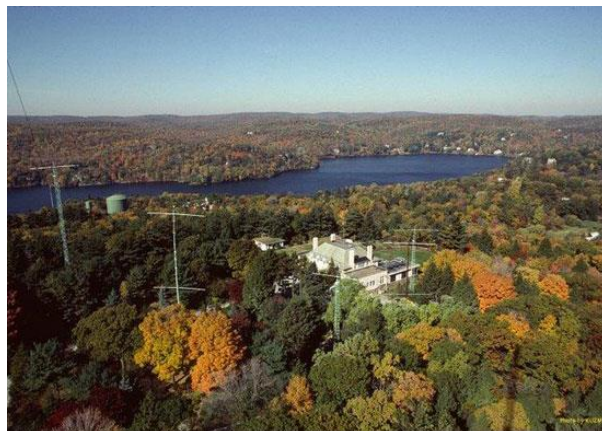


Standing L-R: Bob N1XX, Frank W1WY, Yuri VE3BMV/K3BU, Doug KR2Q

Seated L-R: Howard W6AXX, Randy K5ZD, Frank W3LPL, Carl K3RV, Dick K3DI, Mike KC8C (Photo via KR2Q)

The occasion was Buz K2GL's 80th birthday at his restaurant in Tuxedo NY. Among other things, at this event Buz was the first contestee inducted into the CQ Contest Hall of Fame.

K2GL owned one of the winningest multi-multi DX contest stations of all time from the 1950s through the mid-1980s. Buz died less than months after his 80th birthday and four weeks after his winning multi-multi entry in the 1986 CQWW CW.



**PVRC DXCC Challenge Standings – Frank W3LPL**

Below are the DXCC Challenge totals for PVRC members, transcribed from the ARRL [DXCC data](#) as of the 20<sup>th</sup> 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
W4DR	3203	W3BW	2554	N3KN	2028	WB2ZAB	1522
W3UR	3178	N4TL	2553	W3IP	2016	AA4FU	1519
W3LPL	3169	N4QQ	2541	W3FOX	2002	K4HQB	1518
K4CIA	3137	K5VIP	2506	W0YVA	2001	K1RH	1508
N2QT	3106	WS6X	2493	K5RJ	1961	KU1T	1501
W4PK	3038	W4VIC	2489	N3KS	1906	N3AIU	1487
N4BAA	3009	W3OA	2460	K4EU	1871	W8AKS	1466
N4MM	2987	W2GG	2436	N3ND	1867	N3HBX	1428
W3DF	2986	N4GG	2407	W3XY	1865	WA3EKL	1420
WX4G	2973	WA2BCK	2377	KM3V	1849	N8II	1390
K1HTV	2964	N3RC	2371	K3AJ	1818	W4PRO	1377
K4SO	2954	W2YE	2334	W3KB	1815	W9GE	1364
K5EK	2937	K0GD	2314	W3DM	1791	AK3E	1348
N3NT	2929	K1ZZI	2314	W2CDO	1770	KG4USN	1337
W3LL	2923	W3YY	2297	KE4S	1758	NR4M	1332
W0VTT	2922	K4WNW	2278	N3OC	1749	W3NRJ	1325
W3KX	2904	K3TN	2269	N4GU	1738	ND3F	1319
K2PLF	2903	KA4RRU	2256	K4QE	1726	N1SZ	1317
KG7H	2896	NW4V	2219	N4XYZ	1720	K4ZA	1313
K1AR	2872	K4FJ	2214	W4GP	1710	N1EK	1278
N4DB	2855	K1EFI	2190	KF7NN	1698	N3RR	1199
AB3CV	2842	N4ZH	2188	N3MK	1674	W4NF	1105
K3WA	2830	W3MR	2180	NE3H	1668	K3IXD	1090
KG4W	2820	N4JQQ	2173	K3WI	1652	NE3K	1073
K3WC	2739	K2BA	2153	K3STX	1647	N3COB	1049
K3RA	2685	N3QE	2147	W3UL	1637	W4ZV	1047
WB3AVN	2669	W3TN	2130	WB4DNL	1620	W3OU	1046
N3MN	2657	K3PU	2107	K3KY	1606	K4ZW	1044
K5RT	2656	KN4KL	2079	W3US	1604	K4NTO	1042
K1GG	2636	W3GG	2071	KE3X	1588	K4VX	1021
W4FQT	2622	N4NW	2068	NA1DX	1579		
N3KK	2575	AA4NC	2061	N4ZR	1574		
K3JT	2560	K3SX	2048	N3AO	1527		



**Membership News – Tim N3QE**

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 2023**

+ All Asian DX Contest, Phone	0000Z, Sep 2 to 2400Z, Sep 3
+ INDEXA Worldwide QSO Party	0000Z, Sep 2 to 2400Z, Sep 10
+ CWOps CW Open	2000Z-2359Z, Sep 2
+ WAE DX Contest, SSB	0000Z, Sep 9 to 2359Z, Sep 10
+ ARRL September VHF Contest	1800Z, Sep 9 to 0300Z, Sep 11
+ North American Sprint, CW	0000Z-0400Z, Sep 10
+ North American Sprint, RTTY	0000Z-0400Z, Sep 17
+ CQ Worldwide DX Contest, RTTY	0000Z, Sep 23 to 2400Z, Sep 24
+ Worked All Provinces of China DX Contest	0600Z, Sep 30 to 0559Z, Oct 1

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

**Editor’s Last Word – John K3TN**

Thanks to Tom W2SC, Alan WA3EKL, Ted WA3AER, Dennis N8IVN, Tyler K3MTR for contributions to this issue of the PVRC newsletter.

The fall contest season is now upon us. The CW Sprint always kicks things off for me, though health issues last year made my high-speed data entry skills rusty, even though my CW ear seems to have held up. Then come the blur of CQ WW DX contests, Sweepstakes, ARRL 10M and 160M, etc. I have also hit the age where waves of grandkids and niece/nephews invade on weekends, and I can’t find a NR/NB setting on my K3 that even puts the tiniest of dents in that QRM!

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 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.

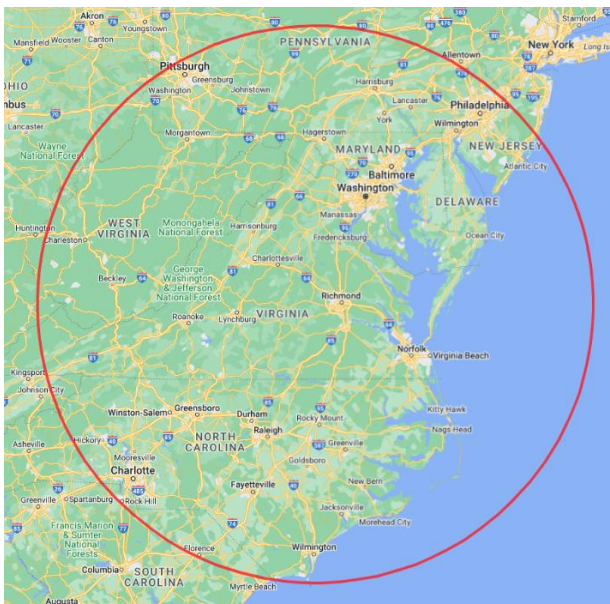
Direct donations to PVRC via Credit Card or PayPal may be made by clicking this "Donate" button and clicking the next Donate button that appears on your screen:



**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**

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# Emergency Preparedness Begins at DX Engineering!



## Equipment Cases

Protect your sensitive equipment! DX Engineering boasts three rugged options to keep your gear safe: virtually indestructible Gator Equipment Rack Cases for transporting everything you need in your Go-Kit; high-impact resin NANUK cases now available in more size and color options, including units that perfectly fit RigExpert Antenna Analyzers; and iPortable units that combine a travel case with a DC power distribution point, speaker, and rack shelving. **Enter "Equipment Case" at DXEngineering.com. Gator cases from \$199.99; NANUK cases from \$39.99**



## Shortwave Radios, Weather Radios, and Home Emergency Products

Choose from six models of high-performance, feature-rich, and stylish Eton Elite Series shortwave radios, including the Elite Satellit model, which combines HD quality AM, FM, SW, LW, and Air coverage; 1,700 memory channels; and high dynamic range for detection of weak signals. Also available are rugged AM/FM/NOAA weather radios featuring hand-crank, solar, and battery power; the dependable Blackout Buddy flashlight/nightlight; the Road Torque Self-Powered Spotlight/Emergency Beacon; the Clipray Hand-Crank Clip-On Flashlight/Phone Charger; and more. **Enter "Eton" at DXEngineering.com. Portable radios from \$49.99; Accessories from \$19.99**



## Bioenno Power Batteries, Chargers, and Solar Products

Turn to DX Engineering for state-of-the-art LiFePO4 (Lithium Iron Phosphate) batteries from Bioenno Power—a company recognized for producing reliable, longer-lasting power solutions for portable ops. Choose from Bioenno's 12V LFP series (capacities from 3-20Ah; maximum discharges from 7-40A) and AC to DC LiFePO4 Battery Chargers. Bioenno offers customers its True Lithium Capacity Assurance policy, meaning they individually inspect and quality-check every battery before shipment. Also available are lightweight, foldable solar panels (28W to 120W) and Solar Charge Controllers. **Enter "Bioenno" at DXEngineering.com. Batteries from \$49.99; Solar panels from \$104.99**



## SWR/Wattmeters

Measure forward and reflected transmitter power with SWR/wattmeters from top brands, including Ameritron, Coaxial Dynamics, Daiwa, Diamond, Elecraft, Metropwr, Monitor Sensors, and Palstar. Choose from models with true peak and average readings, watt ranges up to 5kW, amplifier bypass for high SWR, high SWR audio alarms, remote sensors, and more. Choose from two Daiwa Economy Series HF/VHF Bench Meter models (up to 200 watts or 1,500 watts maximum power). From Moonraker comes a range of compact VSWR/power meters with power handling up to 400 watts. **Enter "Wattmeter" at DXEngineering.com. From \$43.99**



## Multi-Band Off Center Fed Dipole Kit

Take advantage of the proven effectiveness of the OCF dipole with this sturdy yet lightweight DX Engineering kit (DXE-OCF-KIT) featuring a power rating up to a legal limit of 1.5kW. It includes two lengths of premium 14 AWG stranded copper wire (48' and 113') that can be trimmed based on the desired coverage (80M-10M); Maxi-Core 20<sup>®</sup> 4:1 dual-core balun; balun mounting bracket with end insulators; and stainless steel hardware. **Enter "DXE-OCF" at DXEngineering.com. Antenna packages from \$217.46**



## REZ HF Antenna Systems

DX Engineering now carries the precision-made and easy-to-deploy Ranger 80 portable antenna system. Made in the USA and CNC-machined from premium materials, the durable Ranger 80 features an adjustable coil for fine-tuning from 80M-15M (power handling 200W SSB/100W Digital) with the included seven-section military whip (9.3' extended, 17" collapsed). The system comes fully assembled and includes a water-resistant MOLLE backpack to keep everything organized. Additionally, you receive a pre-assembled radial expansion kit and stainless steel ground spike and hardware. Kits also available with REZ heavy-duty tripod. **Enter "Ranger 80" at DXEngineering.com. Antenna packages from \$550.00**



## Expedition Portable Ham Radio Antenna

As the exclusive North American distributor of innovative DX Commander antenna systems, DX Engineering is pleased to carry the company's 40M-6M Expedition model—an excellent choice for worry-free SOTA, POTA, and EMCOMM operations. The antenna's telescopic fiberglass pole (maximum 30') collapses for easy transport just about anywhere. The system includes high-quality pole, plates, spreaders, fork connectors, EzyClamps, paracord for guying, shock-cord, wire, and hardware. **Enter "Commander Expedition" at DXEngineering.com. Antenna packages from \$349.00**



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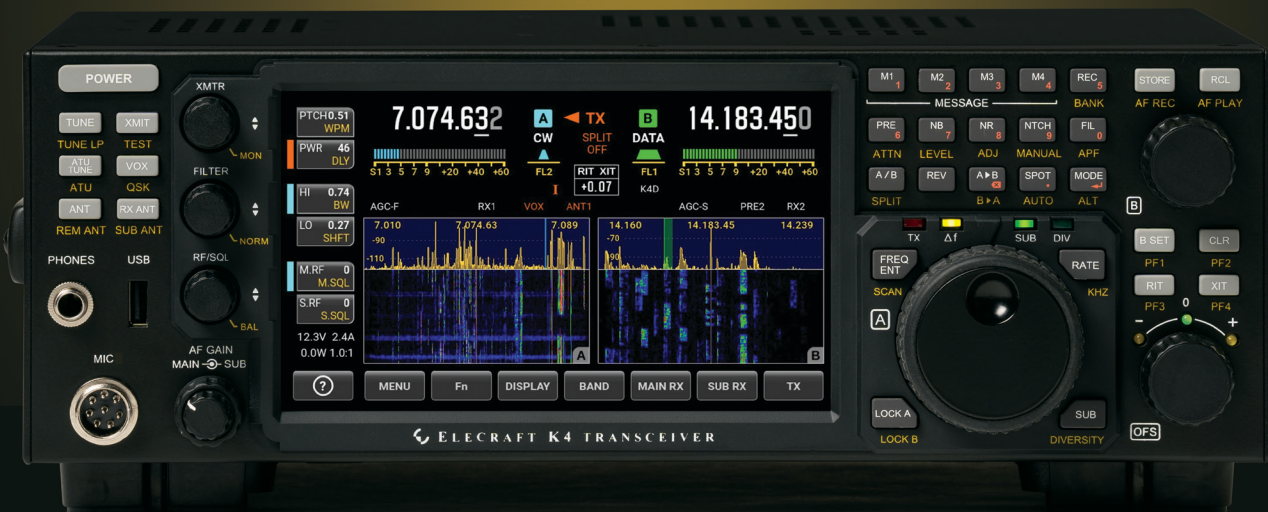


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# ELECRAFT K4

## 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

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### IC-9700 | All Mode Tri-Band Transceiver

• VHF/UHF/1.2GHz • Direct Sampling Now Enters the VHF/UHF Arena • 4.3" Touch Screen Color TFT LCD • Real-Time, High-Speed Spectrum Scope & Waterfall Display • Smooth Satellite Operation



### IC-718 | HF Transceiver

• 160-10M\*\* • 100W • 12V operation • Simple to use • CW Keyer Built-in • One touch band switching • Direct frequency input • VOX Built-in • Band stacking register • IF shift • 101 memories



### 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



### IC-7851 | HF/50MHz Transceiver

• 1.2kHz "Optimum" roofing filter • New local oscillator design • Improved phase noise • Improved spectrum scope • Dual scope function • Enhanced mouse operation for spectrum scope



### 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-2300H | VHF FM Transceiver

• 65W RF Output Power • 4.5W Audio Output • MIL-STD 810 G Specifications • 207 alphanumeric Memory Channels • Built-in CTCSS/DTCS Encode/Decode • DMS



### 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-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-V86 | VHF 7W HT

• 7W Output Power 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-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-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

**NEW**



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

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



### 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-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

### 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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## FTDX101MP | 200W HF/50MHz Transceiver

- Hybrid SDR Configuration • Unparalleled 70 dB Max. Attenuation VC-Tune • New Generation Scope Display 3DSS • ABI (Active Band Indicator) & MPVD (Multi-Purpose VFO Outer Dial) • PC Remote Control Software to Expand the Operating Range • Includes External Power With Matching Front Speaker



## 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



## FTM-300DR | C4FM/FM 144/430MHz Dual Band

- 50W Output Power • Real Dual Band Operation • Full Color TFT Display • Band Scope • Built-in Bluetooth • WIRES-X Portable Digital Node/Fixed Node with HRI-200



## FT-2980R | Heavy-Duty 80W 2M FM Transceiver

- 80 watts of RF power • Large 6 digit backlit LCD display for excellent visibility • 200 memory channels for serious users



## FTM-200DR | C4FM/FM 144/430MHz Dual Band

- 1200/9600bps APRS® Data Communications • 2" High-Res Full-Color TFT Display • High-Speed Band Scope • Advanced C4FM Digital Mode • Voice Recording Function for TX/RX



## 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-E20-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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