

# PVRC Newsletter

## April 2025

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

#### “Free Time”

Did it seem that you had a few more hours of “free time” in March? I think that I noticed it, but not enough free time to get my taxes done, of course (nothing to do with procrastination, right?), but enough to notice. Oh yeah, this March had a 4-week gap between 5M contests, essentially *one month of no 5M contests!* Did anyone experience withdrawal symptoms? With 33 contest events on our yearly 5M calendar, a large gap like this doesn't happen often; PVRC has a lot to keep us busy!

A couple of PVRC initiatives helped fill my PVRC “free time” and one of those involved planning our yearly PVRC Reunion on the Air. Last year's format for the Reunion resulted in a lot of activity and positive feedback. One of the suggestions (de W4VIC, Vic) involved having some sort of Zoom meeting associated with the Reunion events so that we could see each other as well and make radio contact. Rather than add Slow Scan TV mode to the Reunion (hi hi), it was decided to add one-hour meet-and-greet Zoom meetings before and after (but not during) each day's on-the-air operating time. Look for that to appear in the formal announcement of our 2025 Reunion in the next few weeks.

Like last year, there will be three-hour operating periods on each of three days; this year will be: May 30, June 1 and June 2. While you make contacts with PVRC members during the Reunion keep in mind that you may get called by non-members and this is an opportunity to let them know about PVRC and how they can learn more about us.

Try to arrange your schedule for some “free time” for our Reunion!

#### **5M and State QSO Party Club Competition**

**March happenings:** The *PVRC Posse* showed up for the ARRL DX SSB at the beginning of March! A casual count of the 3830 PVRC entries is over 100; and over 60 on the Contest Online Scoreboard (not a requirement for 5M credit in this contest). As I write this column, the second and last 5M contest for March has not occurred.

The Virginia QSO Party in mid-March has a club competition that can be won only by the club member scores of those who reside in Virginia, so those of us outside Virginia can only

help them by giving them QSOs with us. I see on 3830scores.com that PVRC had 34 entries from all states. Let's hope that is enough.

**In April:** The **CQMM DX Contest (5M, CW-only, Brazil sponsors)** is April 19-20, begins 0900 UTC. We won in 2023. In 2024 we scored higher than in 2023, but Frankford Radio Club won this US-club competition in 2024. Other clubs may be noticing how well we are doing and increasing their efforts - a good thing for Amateur Radio in general and for radiosport specifically. To participate in this 5M contest read the Rules; some highlights are:

- Self-spotting ALLOWED
- One contact per band per station for points
- Exchange: you send (not CWJF Members) RST and Continent (e.g. NA)
- *Multipliers: different PREFIXES of South American stations (like the WPX), this is the focus for higher scores; different DXCC but only once regardless of band.*
- QSO points: *10 points* for CWJF members, *QRP or YL stations!* More points for 80, 40 meter contacts and different continent... see Rules and 'point South and a bit East'.

### Three State QSO Parties have Club Competitions:

**Georgia** - two 10-hour periods: begins Saturday April 12 - 1800Z (2:00 PM EDST) until 0359Z. (midnight) and Sunday - 1400Z (10:00 AM EDST) until 2359Z. (7:59 PM EDST) Rules: <https://gaqsoparty.com/georgia-qso-party-rules/>

In 2023 and 2024 PVRC had the largest number of club logs submitted for a non-Georgia club, but we were way down rankings in points.

**Michigan** - PVRC won in 2023, third in 2024 (much improved scores from mid-west clubs, we got their attention?), begins April 19 Saturday: 1200 EDT (noon in Detroit, MI) to 2400 EDT (midnight in Detroit, MI) (=16Z Saturday until 04Z Sunday UTC). Rules: <https://miqp.org/index.php/rules/>

**Florida** - April 26 - 27, 2025. Begins Saturday 16:00:00Z (Noon EDT) - Sunday 01:59:59Z (Saturday 9:59:59 PM EDT) and again Sunday 12:00:00Z (8 AM EDT) - 21:59:59Z (5:59:59 PM EDT).

PVRC won in 2023, results not posted for 2024 (I'll guess that some other club tried hard to beat us...) Rules: <https://floridaqsoparty.org/rules/>

I would like a volunteer to maintain the "State QSO Parties with Club Competitions" chart.

Participate! 73, Doug, AA3S



**New Link for PVRC Scholarship Donations (2025) – Ted WA3AER**

PVRC has been provided with an online link for making donations to the PVRC Scholarships. It is:

<https://home.arrl.org/action/Donate/Donate-Now/CashProductId/2001472017>

With the introduction of this direct link to make PVRC Scholarship donations, the PayPal option for doing so has been retired.

This link will be included in the PVRC Scholarship options to appear in the upcoming, new PVRC Website. The other existing donation options – QCD (Qualified Charitable Donation) from one’s annual RMD (Required Minimum Distribution for us seniors) and phoning our ARRL Foundation contact will remain, along with sending your donation via USPS using the ARRL form. Those options are described on our current website and will appear on the new website as well.

Unless you are donating via QCD from your RMD, the new link is much easier and is highly recommended. Thank you for supporting our PVRC Scholarship program.

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## A Contest Within a Contest Within a Contest: A Story About NAQP SSB January 2025 - Rick NØYY

We are all living within the busiest part of the contest season. Big guns and little pistols are all busy scheduling, clearing “honey-do” lists, preparing for the actual contest, and thinking about goals. Multi-op? Assisted or unassisted? How do I beat last year’s score? There are many targets of opportunity.

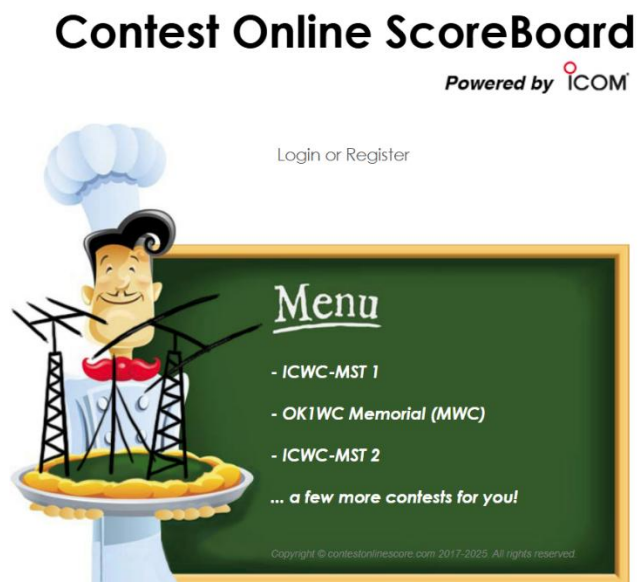
NAQP is interesting in that it attempts to “level the playing field”. Low power. No circle. Limited time. A domestic contest with an “easy” exchange. And a lot of fun talking to our like-minded friends – even if just to say hello.

So, a little background might be helpful here. The National Contest Journal (NCJ) sponsors a group of national QSO parties – CW, SSB, and RTTY held twice a year for a total of six events. From that basic structure the NAQP Challenge was formed as an annual competition between clubs throughout North America. Three of America’s premier ham radio contesting clubs: the Northern California Contest Club, the Potomac Valley Radio Club, and the Society of Midwest Contesters put together the structure for the NAQP Challenge. Logs for individual club members who submitted a log for any or all of the six North American QSO Parties were automatically included in the NAQP Challenge scoring for their club. **Scoring for the Challenge rewarded both high participation and high personal scores, which meant that both big guns and little pistols could contribute to the success of their club.**

The original Challenge ended with the 2021 calendar year as duties to adjudicate the results became more complex. That said, the NAQP Challenge was very popular and like a phoenix being reborn, a way of using the Online Contest Scoreboard resulted in simplifying the collection and ranking of scores to keep the NAQP Challenge alive. In 2023 PVRC launched their sponsorship of the NAQP Challenge.

The Contest Online Scoreboard (<https://contestonlinescore.com/>) was also maturing with larger participation. More clubs and individuals were embracing a new “toy” (or maybe more correctly a “tool”) that seemed to stimulate participation and create a source for “bragging rights” among the broad spectrum of contest clubs.

It was the NAQP Challenge that was the basis for the NAQP being retained in the PVRC 5M Award. Since the Scoreboard enables the collection of participants, scores, and club affiliation, use of the Scoreboard is necessary for the Challenge to be viable. Other clubs e.g. SMC, NCCC, FRC, TCG, etc. use this same structure to ensure that clubs – large and small – can use the results for their own benefits.



So, let's recap: NAQP is a North American contest that has six elements for its basic structure. The second "contest" within NAQP is the NAQP Challenge which is a club competition – enabled by the Contest Online Scoreboard which has a Clubs tab that scores and ranks the participating clubs.

But wait, the Scoreboard also has Team competitions! Teams can be formed by a maximum of 5 individuals for purposes of "competing" among like-minded, equipped, regional, etc. teams. Here's an example of how this happens.

Last year for NAQP CW 2024, a group of Elecraft K4 owner/users reached out to me to see if I would be interested in filling a vacancy on the PVRC K4 CW Commandos team. Sure – sounded interesting – what do you need from me? "Awww... not much – the other guys all have commitments so this will likely be a part time thing." Perfect! A way to get to know other Club members better and to use my score to help PVRC in the overall Team Competition.

And there you have the foundation for the Contest within a Contest within a Contest.

So now we've completed the history tour and the elements of a multi-tiered contest structure and now it's time to understand how this all plays together.

This past January the PVRC K4 CW Commandos joined together for the CW weekend. We pulled in another member again because of conflicts, etc. I had put the Team tab of the Scoreboard on my second screen to see how we were fairing against each other and for me, the teams above and below us on the Scoreboard. It was fun watching the five of us move up and down the list as we focused on our personal strategies. I was nearing a dinner break but was only 10 QSOs behind the guy ahead of me so I sat there and pushed. "Caught him – HA" and so it went for the duration of the contest.

Casually we talked after the contest and smiled at how the Team approach kept us focused. We agreed that we would do it again.

Two weeks later the PVRC K4 CW Commandos became the PVRC K4 SSB Sluggers and we added another K4 user to our ranks to fill out our team of five. Eh... it was a phone contest, I guess we'll muddle along. So, our team of similar equipment but with very different pre-event motivations was formed. And as usual one had a bad cold and could barely talk (remember this was a phone contest!), another had dinner commitments, another had a family commitment. And so it goes...

Saturday, January 18<sup>th</sup> arrived and at 1800UTC the starting gun fired and the strategies became apparent for each of us. Some focused on early multipliers, others jumped right into the "run 'em" approach, still others used both VFOs or a 2<sup>nd</sup> radio to run and fill gaps with S&P multipliers. I watched as my multiplier strategy caused me to be the low man on the team. Alright, let's get moving, I said and I jumped to a higher volume band. The rate increased and the score grew quickly based on the multipliers developed on other bands. Our positions changed as we took a dinner break or took the dog for a walk, or ...well you get the idea.

Our positions in the ranking of the five team members moved up and down during the 10 hours of the contest. The member with a cold just kept going. The other member delayed the family outing until Sunday. And we kept our butts in our chairs. When the dust settled

none of us were #1 in our respective category. **But**, we were #3 in the national Team ranking! Ahhhh... the bragging rights!

What started as a casual effort took on a different shape. We challenged each other – not with a phone call or text message, but just the listing of our call against our team members. We were building a better score – both individually and as a team – to support PVRC's Team Challenge effort.

I think Rick N1RM and Dana N6DW said it best in their after-contest notes to the Reflector –

*"...Thanks to my teammates for keeping me motivated on the scoreboard. It was great to work so many PVRC folks. The scoreboard looks like PVRC did very well once again. What a great turnout! – Rick N1RM" and  
"...I joined PVRC SSB Sluggers at the last moment, and I was glad I did. My teammates did a remarkable job."*

Everyone wins! The PVRC K4 SSB Sluggers, PVRC in the Club Challenge, and NAQP for all the entrants who all competed, learned, and have stories to tell!

So, form a team – maybe a chapter team or maybe multi-chapter teams. Maybe it will be HOA attic antennas. **Log onto the Scoreboard!** Learn from each other. Mentor others. Just get on the air and have fun!!!!

**Go PVRC!**

### From the Wayback Machine: Contest within a Contest – John K3TN

*Rick's article above reminded me of a CQ-CONTEST post Eric K3NA made 30 years ago, back in February 1995 after he and I manned 40M at W3LPL in the ARRL DX CW:*

This isn't quite accurate, missing 10 QSOs and 1 multiplier for W3LPL. But it gives an idea of how these two multi-multis compared during the course of the weekend. Highlights:

00z: K1KI gets off to a great first hour, leaving W3LPL 40 QSOs in the dust. But, strangely, W3LPL works five more multipliers that same first hour, establishing a lead in multipliers that K1KI would never catch up to. Through the rest of the contest W3LPL generally continued to increase its lead (with occasional backsliding), to end the contest 11 multipliers ahead of K1KI.

01-04z: During the next 3 hours W3LPL struggles to make up the difference in QSOs, gaining back about half the difference.

04-07z: But during the next 3 hours K1KI climbs back to nearly the same lead as before. Here after European sunrise K1KI is 38 QSOs ahead of LPL and only one multiplier behind (as close as it would get).

07-11z: In the next four post-dawn hours in Europe, W3LPL just blows by K1KI, from 38 QSOs behind to 40 QSOs ahead. Huh? I haven't figured this one out yet. Maybe there are more JA QSOs in the LPL log? (Tom?) LPL picks up 8 more multipliers than KI does, too.

11z-14z: K1KI catches up ten Qs and three mults. Everyone listens to the long-path Europeans and then goes off for a nap.

18z-00z: It's never too early to start hunting those Europeans. K1KI starts off at 1pm in the local afternoon and during the next six hours crunches inexorably from 25 QSOs behind to 78 QSOs ahead of LPL. At the end of the first day, this is their highwater mark in the race. (They're still four mults behind, though.)

At this moment K3NA and WB2EKK are chatting: "Gee, what a great day that was! Too bad we have to slug through another 24 hours of this stuff. We just had a great time, and the second day never changes the relative standings... so what's the point?"

In a way, they are right: W3LPL has 3174 QSOs and 456 multipliers. K1KI has 3114 and 422. But Eric and John don't know that they are way behind on 40m QSOs... and that Day 2 will be their salvation from complete embarrassment, leaving them only a little pink in the cheeks...

**Day 2:** 00-08z: Every hour W3LPL gains on K1KI. By the end of this period W3LPL has moved to a 9 QSO/9 multiplier lead.

08-10z: Another headscratcher... Yesterday W3LPL made 38 more QSOs in this period than K1KI. Today W3LPL makes 32 QSOs less! Maybe the coffee at K1KI was more effective? Or K1KI just worked all those JAs they missed the day before? Whatever the cause, KI pulls ahead in QSOs and stays there for the rest of the contest.

10-15z: W3LPL scrounges up 10 more Q's than K1KI. This was an amazing time, still working Europeans on the short path... eventually just Pacific... and then wrapping up with a QSO with UA6LTI on the very long path.

15z-18z: Snoozyville...

19z-00z: As on Saturday, K1KI pulls out more QSOs and finishes the contest 30 QSOs ahead of W3LPL: 1429 vs 1399. But LPL wraps up 12 more multipliers... and with each multiplier worth about 11 QSOs, the multipliers more than make up for the difference in QSO volume.

-- Eric K3NA

Final Results after Log Checking:

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**Top Five**

<b>WVE Multioperator, Unlimited Transmitter, CW</b>							
<i>Call Sign</i>	<i>Score</i>	<i>160</i>	<i>80</i>	<i>40</i>	<i>20</i>	<i>15</i>	<i>10</i>
W3LPL	9,035,820	150/57	723/95	1372/124	1705/130	1129/116	114/56
K1KI	7,578,852	96/44	497/81	1400/114	1736/123	1150/104	94/42
K3LR	7,079,718	88/42	561/92	1344/118	1306/116	1086/108	93/51
K1TR	6,976,725	57/35	731/87	1083/108	1699/116	1155/101	70/38
N2RM	5,703,456	139/48	540/81	1029/103	1267/115	800/97	97/47

**VP5M For Sale – Jim K4QPL (from the PVRC Reflector)**

*The following has gone out to team members, guests and other personal contacts who have had direct contact with me or through visits to our station in Turks and Caicos. I consider the PVRC community to also be a part of the VP5 experience over the years and of course I will always remain a part of PVRC.*

Dear DX'ers, Contesters and Friends: You are among a special group of hams that have meant so much to me over the ten years that we have owned "Harbour Rock", our vacation villa in Turks and Caicos. Many of you have been on contest teams using my contest call VP5M or on other teams using special event calls. The results in major contests for a "little pistol" station has been nothing short of amazing with numerous World and Regional plaques to show for it.

Others have brought family and friends for vacations and more casual operating under our motto of: "Don't just work DX, Be DX!". Still others for personal reasons have been unable to travel but have cheered us on with contest Q's, technical help, and encouragement.

But time waits for no one, and our family reluctantly recognizes this fact. We are listing this beautiful villa overlooking Grace Bay, Turtle Cove and the beautiful Caribbean. From a propagation standpoint, few island locations have such a good over-water takeoff to North America and Europe. More details are on QRZ and [www.harbourrockvilla.com](http://www.harbourrockvilla.com) .

There is nothing that would please us more than for one or more hams to take over the villa, the station and continue making VP5 a target for contest multipliers and DX. If you, or anyone you know, might be interested, please contact me directly. For serious interest, we can provide full info and put you in touch with our broker

At this point, we have no idea when it will sell or close. We cannot know if a new owner would want to leave the station basics in place. Regardless, we intend to remain in possession for all bookings at least through the end of May. I will continue to put "blocks" for the 25-26 contest season, but I can't guarantee availability right now.

Again, my heartfelt thanks and appreciation. Regardless, you will always be my friends, and I hope we can stay in touch, meet at hamfests or wherever. Who knows, maybe we will find a ham-friendly new owner and we can keep going back for vacations and contests.

Very 73,  
Jim Jordan K4QPL VP5M  
[K4qpl2@gmail.com](mailto:K4qpl2@gmail.com)





**PVRC 6 Meter DXCC Standings – Frank W3LPL**

Below are the 6M DXCC 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
N4BAA	181	KG7H	133	W3EKT	111
K1HTV	180	K4SN	131	K5ESW	111
W4DR	173	W3XY	126	K3AJ	110
W3BTX	172	N4TL	125	W4PK	109
AE3T	172	K5VIP	124	K3KO	108
W3UR	171	N4PY	123	W4VIC	108
W3LPL	167	NW5E	123	K6ND	107
AB3CV	158	N3NT	122	W2YE	106
K4SO	155	W0VTT	121	N4VA	106
W3IP	155	AK3E	120	K1GG	105
W3KX	153	K3XA	119	K1GG	105
N4MM	152	W3DF	119	N3DB	103
W3LL	151	N4JQQ	119	W3OR	103
N2QT	150	K3WC	117	K3ZO	103
K4CIA	149	N3MK	117	W4FQT	102
K3SX	147	ZP6CW	116	W3XO	100
WX4G	140	KM3T	114	W4TJ	100
K5EK	139	N4DB	113		
K2PLF	133	N3OC	112		

**Membership News – Bill K3WA**

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](#)

### April 2025

± Georgia QSO Party	1800Z, Apr 12 to 0359Z, Apr 13 and 1400Z-2359Z, Apr 13
± CQMM DX Contest	0900Z, Apr 19 to 2359Z, Apr 20
± Michigan QSO Party	1600Z, Apr 19 to 0400Z, Apr 20
± Helvetia Contest	1300Z, Apr 26 to 1259Z, Apr 27
± Florida QSO Party	1600Z, Apr 26 to 0159Z, Apr 27 and 1200Z-2159Z, Apr 27

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

## Editor's Last Word – John K3TN

Thanks to WA3AER, N0YY, K4QPL, W3LPL and K3NA for contributions to this issue of the PVRC newsletter.

Two of the pieces in this month's newsletter are about "Contests within the Contest." Today, the Online Contest Scoreboard is kind of like real-time 3830 reporting – claimed QSO/mult counts and unchecked log scores that do support real time comparisons of unverified scores.

Test efforts are underway to add real time QSO verification to the online scoreboards. To opt into the testing, in the N1MM Logger+ software, go to Config > Configure ports, modes... > Score Reporting and check the box next to "Include Real Time QSO Data for Real Time Scoring." This option is described in the N1MM help pages as "this will send QSO data to the real-time scoring website (experimental: performs log cross-checking in real time)."

It will take time, but real-time scoring could increase how quickly adjudicated scores come out, especially for smaller contests that don't have the people and/or software resources for fast log-checking turn around. There are many issues to iron out, like how much in-contest feedback is provided. For example, real time NIL feedback might tell me I really did NOT work BY4RB as a double mult and need to get back in the pileup (or at least delete the Q to avoid the extra penalty. But should that feedback even be allowed?

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 write-ups on station improvements or contest war stories, send them in any format to [jpescatore at aol dot com](mailto:jpescatore@aol.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.

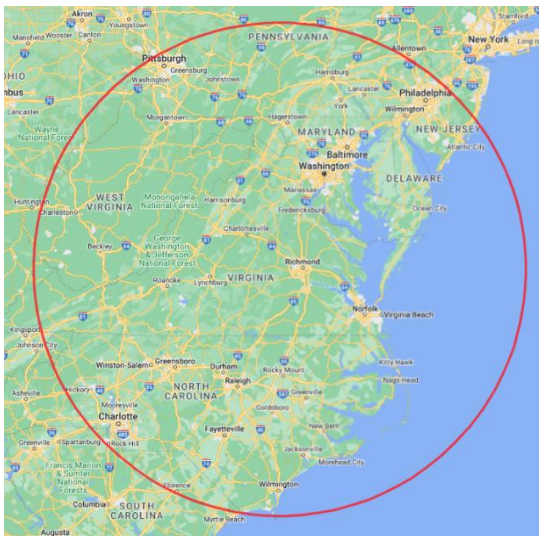
Direct donations to PVRC via Credit Card or PayPal may be made by clicking this "Donate" button and clicking the next Donate button that appears on your screen:



**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](#).



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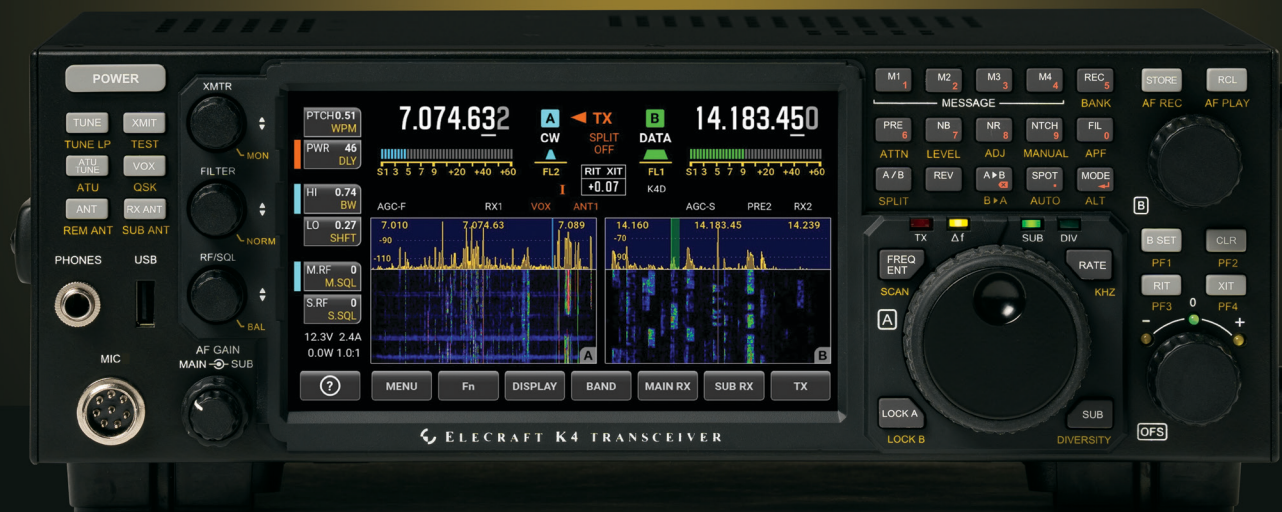
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# ELECRAFT K4

## 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

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

# ELECRAFT®

For complete features and specifications visit [elecraft.com](http://elecraft.com) • 831-763-4211

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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-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-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-7760 | HF150MHz All Mode Transceiver

• New Design-Remote Control Head & Separate RF Deck • Dual Independent Receivers, Spectrum Scope & Waterfall • 200 Watts Output 100% Duty Cycle • Flexible Remote Operation Capabilities



## 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



## 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-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



## 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



## 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

## 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

ID-52A Plus version also available!



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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 Field version also available!**

## 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-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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