



PVRC Newsletter

May

Newsletter Editor: John K3TN 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 – Mike N4GU

With the arrival of May, spring seems to be getting serious about returning. Here in North Carolina, we are desperately looking forward to the end of pollen season. I'm tired of yellow cars and being unable to sit out on the screened in porch. It also makes it hard to work on antenna projects outside. We're also seeing a dampening of the COVID outbreak. Easter weekend we had the RARSfest hamfest return for the first time in three years. It was great to see so many friendly faces in person. For lunch we had our second annual (!) joint PVRC-CDXA luncheon. The first one was the last year of the hamfest before COVID. Sadly, we did not have a lot of out-of-town representation from CDXA but we did have lots of PVRC'ers, in and out of towners. All of us had a good time.

We're also seeing more chapters return to in-person meetings. As before, we leave it to each chapter's discretion when to return to in-person meetings. I believe we will see a hybrid of in-person and Zoom meetings for at least the rest of this year. Virtual meetings will continue to count toward membership for the rest of this year. The virtual meeting has been a boon to maintaining camaraderie within the club during these last two plus years. While nothing can replace face-to-face meetings, I believe that virtual meetings serve a useful purpose and they should continue in one form or another.

May has two events of significance. The first is Hamvention, May 20-22. For contesters, it's a jam-packed weekend. It starts on Thursday with Contest University. Our own W3LPL will be presenting at least four talks during the event. Every night of the weekend, the Contest Super Suite will be open in the evenings, starting on Wednesday. PVRC is sponsoring the pizza party there on Friday night. Friday evening, the Spurious Emissions band is returning to play in the Contest Super Suite. If you've never seen them, you are in for a treat. Sadly, they will be missing one occasional member, Will, AA4NC (SK). There is the Contest forum at Hamvention on Saturday as well as the Contest Dinner Saturday night. I look forward to seeing many of you there. We'll sleep after we get back.

The next weekend, May 28-29, is the WPX CW contest. This is the last HF contest in our current 5M and Olympics contest season. Last year we won the US club competition of WPX. We'll need a strong showing on CW to repeat. Please put it on your calendar.

Looking ahead a bit, the first weekend of June will be the PVRC Reunion. We will change the timing a bit to avoid conflicts with the inaugural running of the ARRL International Digital Contest. Details will be announced soon.

The war in Ukraine continues. Most contest sponsors have now rejected contest entries from Russian and Belorussian stations. The one conspicuously quiet contest sponsor to date is the ARRL. There have been no international ARRL-sponsored contests since the war began, so they have not been forced into a decision. The new International Digital Contest in June will be the first. If nothing is announced before Dayton, I suspect the League will be forced to announce a decision on accepting Russian and Belorussian entries then. If you feel inclined, contact your Division Director and Contest Advisory Committee representative to make your views heard. This is significantly more effective than online forums.

<u>PVRC Officers:</u>		<u>Trustees:</u>
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Did You Know? – W3IKE

PVRC has a member loaner radio and power supply. Cliff Bedore W3CB, who now lives in Michigan, bought an Icom IC-746 from the Ed Bruns W3EKT estate and donated it to the Club as a loaner radio. Also, donated by Frank Donovan, W3LPL was an Astron RS-35M to power the radio. The radio is in great shape with a 35 amp power supply and ready to go. Just contact Ike Lawton, W3IKE/K3ZQ at 410-693-2723 in Annapolis if you have a need to borrow the radio.

Also, don't forget if you have some excess gear just laying around PVRC will gladly take a donation of the equipment, sell it and donate 100% of the proceeds to the ARRL Foundation to support their college scholarship fund. Contact Ike Lawton, W3IKE/K3ZQ at 410-693-2723 in Annapolis if you have equipment to donate.

N3AM Station Elecraft K4D/KPA1500 Upgrade – John N3AM

A month or so ago the Elecraft K4D transceiver I ordered at Dayton arrived and after following the excellent [setup checklist](#) put together by Bob N6TV, I swapped out the K3S for the K4D. The next new toy to arrive was the Elecraft KPA1500 amp.

I finished reading the manual and swapped out the amplifiers on the desk the next day. I spent quite a while setting every ATU segment from 160-6m and made some CW Q's. The first thing that struck me was the dead silence of the amp while keying CW - love those PIN diodes (same scheme that I had with my Alpha 87a). After a few Q's the amp warmed to the point that the fans came on - and even with my Heil boom set on it was quite noticeable. My Sony CW headphones have a better seal, so it won't be a problem. I installed the KPA1500 Utility program and saved my settings. Firmware was already current.

Tonight I had fun with 20m SSB contacts into 9K, 9H and various EU stations up in the wee hours there. Conditions were excellent. The fans never ran during the SSB Q's, but perhaps contest operating will be a different deal. Running the K4 with ESSB/compression set to 25 out of 30, I crashed pileups and got some unsolicited compliments on the audio.

Oh, and I love the way the amp switches the K4 power automatically, so I have the radio TX set for 100W output when the amp is in STBY, and around 30W when the amp is in OPER mode.

I'm still getting used to how small the RF deck is on my desk. See below and try to find the amp 😊

Bottom line - FB amp!



Hints and Kinks on Managing and Analyzing N1MM Logs – John K4HQB

When a contest is in the bag, I generate a Cabrillo file and save it for reference in the “Contests” folder on my PC. Then I open the Cabrillo file and copy its QSO data, which I paste into a new Excel spreadsheet. I use that spreadsheet for data analysis, sorting the variables this way and that—how many I worked in each section, state, country, etc.; identifying which ones I failed to work; analyzing the best times for working certain parts of the world; and so forth. I save those spreadsheets for future reference.

One perpetual nuisance, however, has been analyzing time during each of my many brief sessions within a contest, as well as identifying which time periods were the most productive. The “nuisance” is UTC; I greatly dislike having to mentally subtract 5 hours (EST) or 4 hours (EDT), since a calculator is no help. Time is configured on a base of 60 instead of the usual 100 so I make errors, ending up with a headache. I solved this problem by developing a set of formulas that perform the subtraction for me and yield EST or EDT. Two are needed for each contest (see table below). I insert a new “column e” to the right of the UTC “column d” and label it EST (or EDT), then paste the formulas into it. I also highlight them in red, which keeps me from mistakenly picking up a UTC time. Gone are the subtraction errors—and my headache.

Converting UTC to EST or EDT with Excel Equations

Eastern Daylight Time (EDT)

UTC 0400 to 2359: =(d1-400)
 UTC 0000 to 0359: =(d1+2000)

Eastern Standard Time (EST)

UTC 0500 to 2359: =(d1-500)
 UTC 0000 to 0459: =(d1+1900)

where Excel column “d” holds the UTC time.

We all have some favorite configuration tricks or N1MM commands, FKeys, Macros, etc. I have a bunch and was putting together an article for the PVRC newsletter and figured I'd solicit the club for additional input.

Got some you use that you'd like to share with the club? Examples:

- Little known keyboard shortcut commands you use.
- How you configure the Bandmap/Avail Mult Q/Check/Info/Multiplier/etc. windows.
- How you manage N1MM logs.
- If you do any M/S, or M2, how you set up N1MM.

N3JT in Ireland – Jim N3JT

Over the years my travels have taken me to a variety of places, and I have always endeavored to link up with at least one CW friend on every trip. In most cases I even get to operate using my own call sign, which is great fun if I can work some of the guys back home.

Nina and I headed to Ireland on April 2 on a Gate1 tour, which included visits to Dublin, Galway, Connemara National Park, Cliffs of Moher, Bunratty Castle, Killarney, Ring of Kerry, Killarney National Park Cahirciveen, Sneem, Blarney Castle (no, I did not kiss the stone though I climbed the castle and saw where people do so!), Waterford (with a tour of the crystal factory), Kilkenny (my favorite town on the tour) and back to Dublin. In Dublin we visited the National Gallery, Museum of Ireland – Archaeology, and EPIC Ireland. That's a lot of stuff to see in just over a week! It also made it challenging to meet up with EI6FR, Declan, but he came to our hotel and shared some time with us the last evening of our tour. How I got to operate as EI/N3JT and spend a longer, second evening with Declan came about in an unplanned way, however.



With Declan EI6FR

The United States requires a negative COVID test the day before departure from Ireland. The tour company arranged for that test in our hotel. I and two others of our group of 16 people had developed slight colds along the way, not a surprise given the cold and rain we experienced. When I got the call an hour after the COVID test asking me to return to the testing room I knew there was trouble. I had tested very clearly positive as did those other 2 people in our group. Nina tested negative. Because I could identify the onset date of my symptoms, I was required to remain in Ireland, at the same hotel, for only 3 more nights. During that time, I could go out as long as I wore an N95 mask. Meanwhile, Nina headed home, taking my laptop and all her own luggage with her. That left me alone and rather stressed, to be honest. The tour guide promised I would be contacted the next afternoon at 2 pm (9 am EDT) by the tour company about flights home in 3 days. No such call came so I spent a huge amount of time on the telephone with Gate1 trying to orchestrate new flights. The phone bill would have been horrific had I not subscribed to a global calling plan for this trip, allowing me to make an unlimited number of calls to the United States. In the end, I was booked on a different routing than Nina back to Florida, via Philadelphia rather than London.

My trip insurance might or might not cover most of the COVID related expenses I incurred, including the flight home. I may not know that until after this article is in print. The insurance agent I talked to from Ireland was very difficult to understand and seemed to suggest that the insurance would not cover the flights home, whereas the customer relations person at Gate1 was more optimistic. I was even told at one point I should have called the airline to cancel so I would not be a “no show” but of course I had been told by my Gate1 tour manager to do nothing except wait for the call the next day from Gate1 headquarters (which never came).

The 3 extra days in Dublin turned into a fun adventure. I was a bit tired and coughed occasionally but I was able to walk unlimitedly and go about life essentially normally. I bought two miniature bottles of whiskey and carried one with me at all times. If a cough came on I sipped the whiskey and that stopped the cough instantly. Apparently, alcohol temporarily paralyzes the cough nerve. During all of this I didn't even lose my appetite. According to the health department people, I was no longer contagious. The extra 3 days were to be certain of that.

The first of the 3 days I visited the Guinness Warehouse, the 7-story brewery in Dublin where beer is brewed and distributed. While I generally think that if you've seen one brewery you've seen them all, this was special in terms of its size, the variety of exhibits and the enormous company store. This is where I learned that a pint of Guinness contains 30 million bubbles. No, I did not count them to be sure. It also explains why you can draw a diagram in the foam atop a pint of Guinness and it remains there for a long while.



Guinness Warehouse

EI6FR arranged with EI5EM, Tony, for me to visit the Hurdy Gurdy Museum of Vintage Radio in Howth, where Tony is manager, and to operate the club station, EI0MAR. To get there I took 3 trains, finding out later the easier way would have been by but one train that was accessible not far from my hotel! On arrival, I was to wait in the car pickup area adjacent to the train station at 1:00 pm for a gray car driven by EI5EM, whom I had not yet met. At 1:00 pm, a gray car driven by a likely EI5EM approached where I was standing. I waived at the driver, who waived back, opened the door and started getting into the passenger seat. I said, “Tony?” only to find out this was not Tony. This fellow was simply pulling in to park his car in a handicapped spot. Oops. A minute later Tony pulled up in his gray car and away we went.



Hurdy Gurdy Museum of Vintage Radio

The station is housed in one of the many Martello towers built around 1803 to repel attack by Napoleon's forces. This one, in Howth (pronounced hoh-th), a lovely little village along the coast, hosts the Museum. It is chock full of old radios, including a spark gap transmitter. In 1903 Lee de Forest conducted wireless experiments from the tower and soon after the Marconi company used it for experiments receiving maritime wireless transmissions. The station consists of an Icom 7300 and whip antenna atop the building. The station overlooks the sea, so it does well for low power and a modest antenna. Tony is a fine CW operator, so he enjoyed copying over my shoulder! Anyway, I was on the air on Tuesday, April 12 at around 13z but no band was open to North America. My first contact was with Andy, IK5VLL; and then some other Europeans. But around 14z the band opened westward and I worked N3AM, W1RM, W4ZYT, W1EQ, WT3C, W2NR, N3IQ, W1UU, K1ESE, W4CI, K1JD, W5ZR, K9VKY, KF3B, K1EBY, VE3TM, KR2Q and others.



EI/N3JT operating at EI0MAR

My host had to leave at 15z so we shut down shortly before that. Tony left me at the train station and drove off. It was then I learned that the station was closed because of power line issues so I took a bus into Dublin, found my way to the Luas tram line and back to my hotel. I was getting pretty good at this!

On the third day I went to the Dublin Castle, which is built over Viking ruins. It is a great place to see, as is the adjoining Chester Beatty Library, which contains a remarkable collection of early Middle Eastern and Asian artworks and books, some dating back to the 3rd century BCE. I walked the 2 miles back to my hotel, ate a light takeout meal and at 7 pm met up again with Declan. We chatted about all manner of ham radio issues for nearly 2 hours, sipping Guinness outside in the lovely spring air. We bade farewell and I readied for my trip home the next day.

My return journey went without incident except for when I presented my certificate of COVID recovery at American Airlines, where I was told I also needed the original positive test result. That seemed silly to me given the certificate contained the date of testing and the date of completion of isolation. The latter is calculated from the date of onset of symptoms. Fortunately, I was able to find the email containing the test result, which while not as detailed as the agent preferred (I'll never know what more he could have wanted) was deemed sufficient.

Interestingly, Ireland is a country that has preclearance to the United States. That means you have your hand luggage inspected in the usual way by Irish officials but then pass through U.S. Customs and a second hand luggage inspection by U.S. TSA inspectors. At that point you are considered in the United States so that on arrival at a US port (in my case Philadelphia) there is no Customs or even luggage inspection. That certainly helps when there is a tight domestic connection. I arrived in Miami about 10 pm EDT, missed the last commuter train and took a taxi (Internet in the airport was not working so no Uber) home for \$102.50.

The trip was great, notwithstanding the noted distractions. Ireland has a lot of history, enormous beauty thanks to plenty of rain, and no end of interesting eating places (including pubs). I am not a beer drinker but I really did enjoy the Guinness and some other stouts while there. They just aren't the same here at home for some reason! As noted, Nina and I agreed that Kilkenny was the nicest of the towns because it is quaint, well preserved, and has a beautiful 12th century castle. But I also noticed something about the people. Everywhere I've travelled folks have been friendly and helpful, but in Ireland they take that a step further. For example, when I sought directions walking to the Guinness Warehouse from my hotel (4 miles) following a hotel map rather than my Google Maps, people I approached took out their phones, figured out where I should go in the complicated streets of Dublin and wished me well. One gets the feeling it is just a very friendly place. Ham radio, as always, makes that an even more meaningful adventure. Put it all together and Ireland is among the places we should all visit at least once!



EI/N3JT Operation Location

PVRC DXCC Challenge Standings – Frank W3LPL

Below are the DXCC Challenge 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
W4DR	3191	K3JT	2495	W0YVA	2001	N3MK	1497
W3UR	3158	N4QQ	2494	K5RJ	1961	N4ZR	1491
W3LPL	3147	WS6X	2493	N3KS	1906	N3AIU	1461
K4CIA	3124	W2GG	2436	K4EU	1871	W8AKS	1432
N2QT	3093	K5VIP	2431	N3ND	1867	K3WC	1430
W4PK	3038	W4VIC	2412	K3SX	1836	N3HBX	1428
N4MM	2987	N4GG	2389	W3FOX	1816	N8II	1390
W3DF	2970	W3OA	2344	W3KB	1815	W4PRO	1377
WX4G	2949	W2YE	2334	W3DM	1791	W9GE	1364
K1HTV	2936	WA2BCK	2316	K3AJ	1783	AK3E	1348
K5EK	2928	K1ZZI	2314	KE4S	1758	WA3EKL	1340
N3NT	2907	N3RC	2302	W2CDO	1742	NR4M	1326
K2PLF	2903	W3YY	2297	N4GU	1738	W3NRJ	1325
W0VTT	2895	W2GPS	2255	N4XYZ	1720	KM3V	1319
KG7H	2893	KA4RRU	2234	W4GP	1710	ND3F	1319
K4SO	2873	K3TN	2223	KF7NN	1698	N1SZ	1317
K1AR	2869	NW4V	2219	K4QE	1685	K4ZA	1313
W3LL	2866	K4FJ	2214	NE3H	1668	KG4USN	1292
N4DB	2850	N4ZH	2188	K3WI	1652	W3US	1268
W3KX	2844	K1EFI	2186	W3UL	1637	N3RR	1199
K3WA	2811	K2BA	2153	N3OC	1608	K3IXD	1090
KG4W	2795	N3QE	2147	K3KY	1606	NE3K	1073
AB3CV	2744	W3MR	2128	KE3X	1588	N3COB	1049
WB3AVN	2663	W3TN	2125	K3STX	1579	W4ZV	1047
N3MN	2657	N4JQQ	2121	NA1DX	1564	W3OU	1046
W4FQT	2622	K3PU	2107	WB4DNL	1553	N1EK	1040
N3KK	2575	W3GG	2071	N3AO	1527	K4ZW	1038
W3BW	2550	N4NW	2068	WB2ZAB	1522	K4VX	1021
N4TL	2504	AA4NC	2061	AA4FU	1519	K1RH	1000
K1GG	2500	N3KN	2006	K4HQK	1518		
K5RT	2548	K4WNW	2004	KU1T	1501		

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](#)

May 2022	
+ ARI International DX Contest	1200Z, May 7 to 1159Z, May 8
+ CQ-M International DX Contest	1200Z, May 14 to 1159Z, May 15
+ His Maj. King of Spain Contest, CW	1200Z, May 21 to 1200Z, May 22
+ Baltic Contest	2100Z, May 21 to 0200Z, May 22
+ CQ WW WPX Contest, CW	0000Z, May 28 to 2359Z, May 29

Editor’s Last Word – John K3TN

Thanks to W3IKE, N3AM, N3JT, K4HQB, and W3LPL for contributions to this issue of the PVRC newsletter.

The quality and usefulness of the PVRC newsletter depends on contributions from members. If you have photos from club meetings, screen shots of new contest software, or brief writeups on station improvements or contest war stories, send them in any format to jpscator@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.

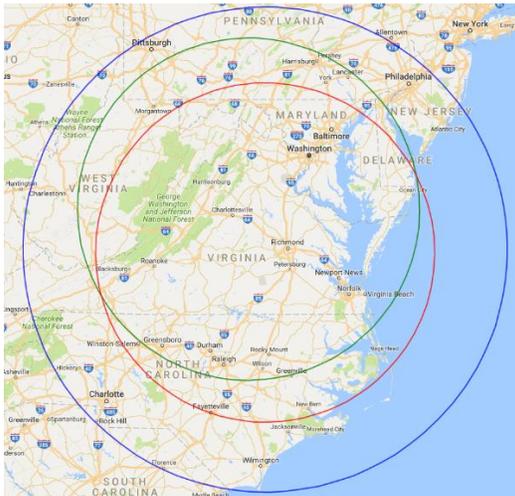
Direct donations to PVRC via Credit Card or PayPal may be made by clicking this "Donate" button and clicking the next Donate button that appears on your screen:



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](#).



Green: ARRL VHF Circle
175 mile radius
Around 38.075N,
78.171W

Red: ARRL HF Circle
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77.858482W

Blue: CQ HF Circle
250 mile radius
Around 37.43168N,
77.858482W



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This active Ethernet device directly integrates Acom power amplifiers to the Ethernet networks. Specifically designed for remote control use with the 600S, 700S, 1200S, and 2000A with Remote Control Unit, the eBox receives commands via a web browser-based, user-friendly interface and forwards them to the amplifier. The eBox is compatible with all popular operating systems and web browsers. "P" models include universal wall supply with Euro-U.S. plug adapter.

Enter "eBox" at DXEngineering.com.

Radio Society of Great Britain Radio Today Guides

Andrew Barron, ZL3DW, takes you far beyond what you'll find in the factory instructions for the Icom IC-705, IC-7300, IC-7610, and IC-9700, and Yaesu FTdx101 and FTDx10. These RSGB paperbacks are packed with insights to help you set up the rig, use the array of controls, operate in different modes, troubleshoot, access deeper menu layers, take advantage of firmware upgrades, and more. Also available is HF Data on FT8 & PSK by Rob Walker, G3ZJQ.

Enter "RSGB Today Guide" at DXEngineering.com.



DU4000AL Automatic Antenna Tuner



The DU4000AL offers unique advanced automation and display features for a 4kW HF antenna tuner. It comes with 1.8 to 30 MHz coverage; an intuitive-to-operate 5-color, 5" touch screen that provides control, status, and metering functionality for all station operations; complete tuning memorization of four rear panel antenna ports plus direct voltage control of an external 8-port antenna switch and stack match switching; and the capability to be interfaced with all types of transceivers.

Enter "DU4000AL" at DXEngineering.com.



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Hear more clearly with this audio DSP unit that cleans up noisy signals and delivers more intelligible audio across all bands. Select from eight noise-cancelling levels via a rotary switch (8 to 40 dB). Other features include tone reduction up to 65 dB, 5W audio amplifier, and audio bypass feature which routes the signal directly through to the loudspeaker when the unit is switched off. The In-Line Module works on most radios and receivers. Patch cable included.

Enter "In-Line 5W" at DXEngineering.com.



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NanoVNA-F V2 Vector Network Analyzer

Used for recording a variety of RF measurements from 50 kHz to 3 GHz (S parameters, VSWR, Smith chart, phase, group delay, and more), this versatile device features a 4.3" IPS LCD display, 5000mAh large-capacity lithium battery for up to a continuous 7 hours of operation, RG405 phase-stable cable, SMA connectors, standard USB port for easy charging, simple firmware upgrades, frequency accuracy of <math><0.5\text{ppm}</math>, and a sturdy aluminum alloy case. Calibration kit, cables, adapters, and stylus included. Also available is an upgraded version with a four times faster sweep speed. Enter "NCE V2" at DXEngineering.com.



RHEA Speakers

RHEA-2 and RHEA-3 Speakers make a great-looking and even better-sounding addition to any shack. Manufactured with high-end acoustic materials and matched with a high-quality 8 ohm driver, they deliver a rich, balanced sound that is perfect for hours of listening. The speakers (7.3" W x 4.3" H x 10.82" D) are sized to match a range of Icom, Yaesu, Kenwood and Elecraft rigs, but will also work with other transceivers with similar dimensions. The RHEA-3 accepts two audio inputs selected by a front panel switch. Enter "RHEA" at DXEngineering.com.



KSP3 Speaker for Elecraft K3 and K3S



The 30W KSP3 Speaker uses a robust Neodymium driver that's capable of handling higher power levels, providing a clearer and more balanced sound, improved CW signals, enhanced SSB clarity between 1 and 3 kHz, and a wider bass range for more pleasant listening. The speaker (5.98" x 3.70" x 10.28") is sealed and wrapped in a new multi-density box and includes high-grade acoustic foam for superb sound. Its built-in stand matches K3/K3S elevation angles and works with many other similar-size transceivers. Enter "KSP3" at DXEngineering.com.



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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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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



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

Rugged Construction in an Ultra Compact Body • Stable 100 Watt Output with Efficient Dual Internal Fans • 32-Bit IF DSP Provides Effective and Optimized QRM Rejection • 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-400XD | 2M/440 Mobile

• Color display-green, blue, orange, purple, gray • GPS/APRS • Packet 1200/9600 bd ready • Spectrum scope • Bluetooth • MicroSD slot • 500 memory per band



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)



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

• 50W Reliable Output Power • Real Dual Band Operation (V+V, U+U, V+U, U+V) • 2-inch High-Res Full Color TFT Display • Band Scope • Built-in Bluetooth • WIRELESS-X Portable Digital Node/Fixed Node with HRI-200

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-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

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

• Massive heatsink guarantees 80 watts of solid RF power • Loud 3 watts of audio output for noisy environments • Large 6 digit backlit LCD display for excellent visibility • 200 memory channels for serious users

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



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-818ND | HF/6M/2M/440 All Mode Portable Xcvr

• Ultra-Compact/Portable • Multi-Color Easy to See LCD • 208 Memory Channels/10 Memory Groups • Built-in Electronic Keyer • Internal Battery Operation Capability • Two Antenna Connectors • Built-in High Stability Oscillator ±0.5 ppm

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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