#641 Dec 2025

JUG

Publication of the Northern California Contest Club

NCCC

55 Years of Contesting Excellence

Inside This Issue

NCCC MEETING
https://nccc.cc/meetings.html
ZOOM 9 December 6 PM

"10 meter Contest"
Jim, K9YC

President's Report

David West, KO6M

Greetings!

The second full weekend of December is almost here, which means one thing:

It's time for the ARRL 10-Meter Contest!

Which is an NCCC focus Contest!

This year's contest runs **December 13–14, 2025** (0000 UTC Saturday through 2359 UTC Sunday, which is a departure from some of the other ARRL contests so mark your watches!), and it's shaping up to be one of the most exciting 10-meter weekends in recent memory.

Why 10 Meters Matters — Right Now

We're past the peak of Solar Cycle 25, and some operators are already talking about how things may begin to slowly wind down over the next couple of years. But if CQWW CW this past weekend taught us anything, it's this:

10 meters still has plenty of life — and serious gusto — left.

According to the reports, many of you reported that **10 meters was your second-strongest band** for QSOs, with solid runs into Europe, South America, Japan, and the Pacific. For a band that often gets unfairly written off during the "downhill" side of a solar cycle, it continues to perform like a champ. Which keeps it fun and exciting.

A Great Gateway to HF

For as long as I can remember (which isn't long) I've considered 10M the gateway band because: , HF-like behavior (simple antennas work extremely well), real HF DX potential (thousands of miles on F-layer propagation), and don't forget that Technician Class licensees can operate SSB from 28.300–28.500 MHz, giving newer hams a rare opportunity to jump into a major HF contest with very little equipment. It's one of the best "first HF experiences" you can offer to anyone in the club.

Propagation on 10 meters follows the sun, and Northern California is in a prime location for long-haul paths. From my notes, this is what we typically see:

Europe: ~7:30 AM – 10:30 AM (start checking around 6:00, make the coffee and then start the run) . Often opens earlier on high-SFI days, often peaking around sunrise. Remember to check the online scoreboard or DXmaps: if the East Coast isn't working 10m to EU, we definitely won't be.

South America: Late morning through mid-afternoon. South Americans are very reliable and often the strongest DX of the day. I mean, this isn't even a note from a different article, we've all seen this first hand. I would go so far as saying South America LOVES 10M!

Asia / Japan / Pacific ~2:00 PM – 6:00 PM. JA openings have been exceptionally strong in Cycle 25; even modest stations are working Asia. We expect this performance, let's use it to our advantage.

Domestic / Short Skip: Late morning

Sporadic-E can give 300–1200 mile hops that fill your log quickly. This can happen at any time. Sporadic E is what should keep you at the radio. The key is to check often — and don't hesitate to call CQ even when the band sounds quiet. All it takes is 2 people for the QSO, be half the solution!

Even though Solar Cycle 25 may be beginning its slow descent, 10 meters is still performing like a top-tier band, as proven by last weekend's CQWW CW results. The openings are strong, the DX is plentiful, and even simple stations are putting impressive numbers in the log.

Whether you're an experienced contester, a casual operator, the ARRL 10-Meter Contest is one of the most fun, accessible, and high-reward events of the year. Shoot, I need to get my radio replaced just for this contest! Let's get a strong NCCC presence on the air —and see what 10 can do this year.

73 and KB!
David. KO6M

Upcoming State/Province QSO Parties

Thanks to WA7BNM

https://contestcalendar.com/stateparties.php

The next State/Province QSO Party is Vermont, in Feb 2026

State/Province	Dates/Times
Vermont	1 Feb 0000Z to 2 Feb 2400Z

Larger Contests on the Horizon

ARRL 10	13 Dec 0000Z to 14 Dec 2359Z
OK DX RTTY	20 Dec 0000Z to 2400Z
RAC Winter	27 Dec 0000Z to 2359Z
Stew Perry TBDC	27 Dec 1500Z to 28 Dec 1500Z
ARRL RTTY Round-Up	3 Jan 1800Z to 4 Jan 2400Z
NAQP CW	10 Jan 1800Z to 11 Jan 0559Z
NAQP SSB	17 Jqn 1800Z to 18 Jan 0559Z
CQ 160 Contest	23 Jan 2200Z to 25 Jan 2200Z

Weekly CW (1 hr) Events

ID	DAY	UTC	EXCH	WPM	SPONSOR
SST	Fri	2000 - 2100	Name+SPC	<20	K1USN
	Mon	0000 - 0100			
MST	Mon	1300 - 1400	Name+QSO#	20-25	ICWC
	Mon	1900 - 2000			
	Tue	0300 - 0400			
CWT	Wed	1300 - 1400	Name+CWO# or Name+SPC	20->∞	CWops
	Wed	1900 - 2000			
	Thu	0300 - 0400			
	Thu	0700 - 0800			

Thursday FT4 NCCC Sprint

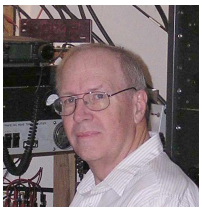
The Northern California Club is again pleased to sponsor our weekly FT4 Sprint, aka FT4NS (NCCC Sprint). This contest is held every Friday UTC between 0100Z and 0130Z (Thursday evening in North America). Non-North American stations are welcome to participate. No logs are necessary; please submit your score to 3830scores.com using the "NCCC FT4 Sprint" template. FT4 NS Sprint Rules are posted at: https://www.ncccsprint.com/ns.html See you on the screen! Frequencies: 1839, 3575, 7047.5 (also 7080), 14080, 21140, 28180, 50318.

Tube of theMonth

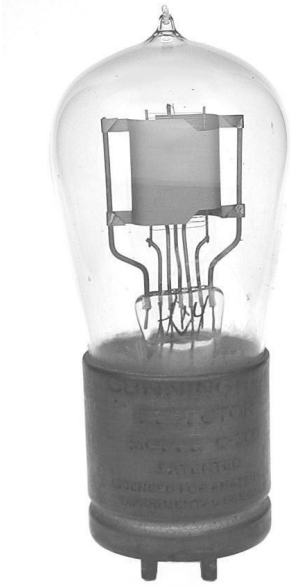
Norm Wilson, N6JV

Visit the Tube Museum at *n6jv.com*

UV201



The Radio Corporation of America (RCA) was formed in 1919. They were a holding company that had bought the patents for the De Forest audion and the Flemming valve. They had no manufacturing capabilities and wouldn't until 1930. Their plan was to have General Electric and Westinghouse contract out tube construction and RCA would handle distribution and advertising. They had a potential legal problem with the Justice Department in that this arrangement was obviously a monopoly. Before WW1, De Forest had been suing Elmer Cunningham for making the Audiotron. Cunningham resumed production after the end of the War and was taken to court by RCA. It seems that Cunningham impressed RCA with his potential capabilities and a deal was made. General Electric would make the tubes in two versions. RCA would sell tubes under their own name and a second line of tubes from the same production line would be sold to Cunningham without any mention of RCA in the marking. They had created their own competition.



In November 1920, GE delivered the first tubes. The UV201 was a high vacuum triode for use as an amplifier or oscillator and the UV200 was a gas filled triode intended as a detector. The tubes were physically identical. RCA would use the UV number and the tubes sent to Cunningham would be marked C301. The amplifier tube used up to 135 volts at 3 ma on the plate and had a tungsten filament rated at 5 volts drawing 1 amp. The detector used 45 volts on the plate and had the same filament. During the first year of production, a worker at GE grabbed the wrong spool of wire used to make filaments and made some tubes with thoriated tungsten. In testing, the tubes worked properly while only drawing .25 amps. This was a major improvement and the new tubes were marked UV201A or C301A. Sales improved. After a few years the UV short pin tubes were replaced with the long pin UX bases. This was an improvement in the electrical contacts and made the tubes easier to use in production radio sets.

How the NCCC won the 1981 CQWW

Ed Radlo, AJ6V

"Hallowed by tradition, revered by DX contesters, loaded with trophies and wild action for participants from 160 to 10 meters……." This was how CQ's DX Editor, Hugh Cassidy, WA6AUD (SK) aptly described the CQ Worldwide DX Competition. Winning the CQWW for the second time in 1983 was a great thrill for the NCCC, but not as great as when we won it the first time, in 1981. This article explains why.

The club championship trophy, awarded to the local club compiling the highest aggregate phone/cw score, had been routinely won by an established club from the East Coast of the U.S.A., where proximity to lots of European multipliers, a populous geographical base, and years of tradition and experience are potent advantages. Thus, when the NCCC, a relatively young (né 1970) club from the San Francisco Bay Area, decided to make a run for the roses in 1981, Larry Brockton N6AR, CQ's contest co-chairman, told our contest coordinator, Gary Caldwell WA6VEF (now VA7RR), that the CQWW is a "big boys contest", and the NCCC wasn't even qualified to compete in the same league as the "big boys". True, the NCCC had won the ARRL Sweepstakes six years in a row. But the conventional wisdom in 1981 was that a West Coast victory in the CQWW would require planning on the scale of the Normandy Invasion, luck equivalent to working the Heard Island DXpedition on the first call, and secrecy that would be the envy of the CIA and KGB.

Their brains blown by overexposure to the hot California sun, a small group of compulsive overachievers arm twisted the NCCC BoD in January 1981 into agreeing that the impossible should be attempted, using the argument that striving for a seventh straight SS title would be tantamount to dragging the proverbial dead horse around the periphery of the coliseum.

No-nonsense Bob Vallio, N6KB (now W6RGG) was club president and set the proper tone of determination. Human dynamo WA6VEF was the contest co-ordinator, and, as a result of his contribution, later became the first person to ever win NCCC's Contester of the Year award twice. Rich Smith, N6KT, who has won numerous international phone contests, was the vice president/contest chairman.

A big break occurred in the spring of 1981 when Ken Ruddock, K6HNZ (SK), orchestrated a California version of the Camp David Peace Accords. For years, the Northern California DX Club (NCDXC) and the NCCC had sapped each other's strength in DX contests. Ken persuaded the NCDXC Board to pass a resolution encouraging joint members of the two clubs to submit their scores on behalf of the NCCC for the 1981 CQWW; in return, these members would submit their scores on behalf of the NCDXC for the 1982 ARRL DX Test. Furthermore, those joint members submitting scores for the NCCC would still be eligible for the trophies that NCDXC awards to top CQWW scorers. Inter-club rivalries thus swept aside, with few exceptions most Northern Californians chose regional pride over personal idiosyncracy, and enlisted in the cause of the NCCC. This regional cooperation extended to the two meter spotting net, where for both weekends, the better coverage NCDXC repeater was used in lieu of the NCCC machine.

The political jigsaw was fitting together, but the work was just beginning. Applying lessons learned in the local silicon mines, club members labored diligently to improve their stations. Many members decided to venture forth on DXpeditions, and began studying the complexities of foreign languages, customs regulations, licensing

procedures, and international airline tariffs. A total of 22 DXpeditions, many of them multis, were launched by the NCCC for this one contest. This willingness to travel was critical to our success, as our margin for victory was to be only 600K.

Domestic planning likewise continued apace. Personalities and abilities had to be matched with the fancy hardware at the big gun stations. Enthusiasm had to be generated and timed to reach a feverish plateau just before the phone weekend, while secrecy had to be preserved to catch the competition off guard. WA6VEF injected us with precise doses of adrenaline by means of a series of "secret inserts" sent (by snail mail – this was 1981, remember?) only to local club members as part of the monthly club bulletin, the Contest Jug.

Before you could say "5903", it came: the phone weekend. Nine NCCC DXpeditions gave members the chance to be personal international emissaries of goodwill. When the final QSO was logged, Rich Smith, operating N6KT/HK0 from San Andres in less-than-ideal zone 7, earned himself the fourth place position in the world single-operator all-band category with 6.8 mega points. N6BT, N6TU, and KC4BH earned 11.3M for the club as they helped push KG6RE to the world number two multi-multi spot with 18.8M; while K6HNZ, W6TPH, and K6SSJ made K6HNZ/CT3 a household word for a world fifth place finish in the same category with 13.1M from Madiera.

WA6VEF played VE7WJ to the tune of 3.3M; WB6EXW, KB6JK, and WA6AHF enjoyed their visit to Niue as ZK2ZZ, earning 3.0M in the process; and K6KLY, N6DOK and K6WJ produced 2.5M in between the Dos Equis south of the border way. KS6H earned 2.1M for the club at VP2VHL in the British Virgins; DX Hall of famers Lloyd Colvin W6KG (SK) and Iris Colvin W6QL (SK) had 2.0M worth of fun in Barbados as 8P6QL; and WB6FCR (now F5VHJ) tacked on another 0.9M as J6LIR on sunny St. Lucia.

Back in the (SF) Bay Area, the KN6M "Contest Machine" came through with 7.3M in the multi-multi category for the number five position in the USA, beating out fellow big guns N6RO (5.3M), AI6V (4.8M), and K6RU (4.3M). N7GM, N6RZ, K6ZM and W6OWQ each tallied about 1.5M in the M/M Column.

Domestic multi-singles were paced by K6MYC operated by N6IG and N6AMG (2.7M); K6XV (1.9M); W6GO (just Jay plus the repeater for 1.5M); and KV6H (1.3M). AA6T (now KH6LC) and K6HIH produced another .8M each.

Domestic single ops pulling in over a Meg were WA6IQM operating W6BH (1.8M); and WA6HCI operating W6MSF (1.1M). KD6NH finished with .9M, while N6JV and KB6ZA scored .6M each. All in all, 68 phone scores were submitted on behalf of the NCCC.

Now the excitement was uncontainable. Club members were determined to do relatively even better in the Morse madness. The club launched a budget-busting thirteen DXpeditions to four continents for CW. When the smoke from the blown finals and fried transformers cleared, we were pleased to learn that we had broken three records! Tom Schiller, N6BT/AH0 from Saipan, in a tougher zone than his competition, came up with 4.2M for a world fourth place in the single-operator all-band category, setting a new record for the continent of Oceania. Rusty Epps, W6OAT, contributed to the world high M/S score of 8.1M at P41E on Curacao, which set a South American record. Veteran operators K6RU, AA6AD, and W6VG produced a lofty 5.2M as ZK2RU on Niue for a new Oceania multi-multi record.

N6TU and N6OP finished off the Dos Equis left by the previous group, but still managed 3.5M at XE2BC. W6SZN, N6TV, and AA6G managed to pull their eyes away from the wahines on Bora Bora long enough to

capture 3.3M as FO0KP. WA6VEF, not satisfied with his first place finish in the 1981 ARRL Phone Sweepstakes from KV4FZ, tacked on 2.9M from J6LZA in St Lucia using a broken antenna. Lloyd W6KG and Iris W6QL moved to Trinidad for 1.8M from 9Y4KG; AJ6V enjoyed Guadeloupe, then slid over to Montserrat for 1.1M as VP2MEV; and N6RA withstood 100 MPH winds for 1.1M from FC0FOO on Corsica. WB6SHD (now NH6V) contributed .7M from AH6BK, N6OM had a ball as VP2VHX, and K6BR operated portable KP4.

Domestically, N6RO, assembled by world-class CW op Ken Keeler, led the Inter-club Multi-Multi competition with 5.2M. In second place at 4.5M was W6XX, a big station put together practically overnight thanks to the hard work of W6XX, K6HNZ, W6TPH, and friends. 3.8M of AI6V's score and 3.6M of KN6M's score were added to the club coffers, while K6XO made 2.9M, and K6ZM led the two transmitter multi-multi subclass with 1.3M.

Domestic multi-singles contributing over a meg to the keg were N6IG operated by N6IG and N6NE (2.4M); K6XV (1.5M), W6OWQ (1.2M), K6SG (1.0M) and K6HIH (1.0M). .8M of N6MG's score and W6BIP's .8M helped as well.

N6GG turned in a remarkable 1.1M all by himself, beating WA6HCI operating W6MSF (.9M) and W6SX (.8M) in the domestic single-op all-band category. N6JV, W6OKK, and W6ISQ each contributed .7M. All told, 67 CW stations were activated by the NCCC.

After duping and submitting logs, there was nothing for club members to do but heed the admonition in the final passage of The Count of Monte Cristo: "Wait and hope". When it finally came, the news of our success provoked astonishment, then joy, then a deep sense of satisfaction, for the impossible had happened. The NCCC had won the 1981 CQWW, the first time ever for the North American West Coast! The final tally was NCCC 160.4M, YCCC 159.8M, FRC 155.5M. It was the biggest upset in the history of club radiosport! Champagne glasses clinked as the sun laid itself to rest over the Farallons.

With permission from author and copyright holder, Ed Radlo, AJ6V. Previously published in the Jan/Feb 1985 National Contest Journal, and in the May 2022 NCCC Contest JUG. Minor revisions have been made by the author for this re-publication.

ARRL 10 meter Sign-ups

Exerpted From N6WM Notice

Former VP/CC Chris, N6WM, posted a plea for sign-ups for NCCC's "Unlimited Club Entry" in the upcoming ARRL 10 Meter Contest. He points out that for the unlimited category of club competition, we need at least 50 logs submitted by club members and there is no upper limit. Hence, if there ever was a real example of "*Every log – every QSO and mult count*s," this is it. All members are urged to get on and make as many QSO's as you can of course, but no log is too small. To help keep track of potential logs, please drop an email to the club's reflector with your plans. And, Chris also reminds us that ARRL 10 is one of the only [perhaps the only] contest in which the Mexican States are also multipliers.

See *https://www.arrl.org/files/file/Contest%20Rules%20PDFs/2012/2012-10M-Rules.pdf* for a complete multiplier list.

Nifty Outdoor Cord Protectors

Jack, W6FB

The Christmas decorating season is on us, and the local home centers are full of things just tempting us (or our better halves). If you can somehow resist the desire to buy that cute inflatable Mini Highland Cow decoration, you might find there are actually some items of use to our outdoor needs. The thing in common for much of this stuff is that they are to be deployed outdoors, and that includes all the power cables that may be run in the rain . The items that caught my attention are the green and orange "Cord Protect" plastic boxes marketed by the Twist and Seal company. There are three of these, made for protecting the connections between power and extension cords.

The items are best described as cylindrical boxes that hinge on one side, with latches to keep them closed. These are pictured below. The smallest is best used for two-wire thin extension cords. The wire ends are really too small for coax cable, although they might be of use for a control cable. It is the two larger ones that I found to be of interest.

The smaller of the two of interest is 6-5/8" in length, and 2-1/4" in diameter. It will hold a single RG-213 size cable with PL-259s and a bullet adapter quite well. But the real question is how well it seals the coax on the ends. The ends are made of rubber, with a 3/4" flat area for the cable to pass. Both top and bottom are flat, and the rubber seems to be able to mold its way around the cable to form a decent seal. I don't yet know how good of a seal since I have yet to test the box in rain (it seems to have stopped raining here as soon as I bought these protectors, but that will change). As the picture shows, the PL-259s and bullet fit perfectly in the open area, and the rubber pieces seem to protect the cable pretty well.

As I continued shopping in the local Lowes, I strolled down the extension cord aisle and found the bigger box. This one is much larger in size, and should hold the largest cables we work with. As the picture shows, the entire PL-259/adapter assembly fits quite well between the rubber end pieces with room to spare. This box could probably hold much bigger connectors with no problems at all. The manufacturer shows this box holding large extension cables, on the order of #12 gauge wire. I would call this one the "Tim the Tool Man Taylor" version of the protectors, it should hold anything you have, although it might be a bit large for the available space. Again, the question is how well does it protect from rain. The picture below shows the seal around the coax. There does appear to be a small opening for moisture to intrude,

but we really won't know until the protector is used out in the rain.

Noting that it is the time of year that these are generally sold, you should be able to find them at a local home improvement store sometime soon. Pricing is fairly good - the smallest was about $4.98, the mid-size at $6.58 and the orange Maxx at $13.68. If they do the job we need to (keeping rain and critters out), then those are great prices. They are also available from the manufacturer for slightly more. ,,,,,,,,See the web page for details (https://twistandseal.com/).

If anyone has tried these, please let us know your experience. In the mean time, I have some feedlines for some new 40 and 80 meter antennas that will try them out.

ARRL Club Newsletter Contest

ARRL has announced a Club Newsletter Contest to coincide with the "Year of the Club" in 2026. Requirements are submittal of current and previous eleven issues and a 500 word essay describing the goals and history of the club and it's newsletter. This is our essay submitted along with the Dec 2024 – Nov 2025 issues.

"The JUG", the monthly newsletter of the Northern California Contest Club (NCCC), began publication in January 1971, shortly after NCCC was formally founded in 1970 in the Santa Clara Valley area, already becoming Silicon Valley. At a meeting of the NCDXC, Jim Neiger, N6JT, and Rick Hilding, K6VVA, decided a contest club was needed. Jim has recorded NCCC's beginnings at *nccc.cc/history.html*. The newsletter's name derives from the jugs of California wine that often accompanied the very early NCCC gatherings. The first archived issue of the JUG is labeled #2. Issue #1 has been lost. Since then the JUG has been published monthly with only a handful of missed or combined months. The Nov 2025 issue, #640, is the latest. A complete source of all issues can be found at .nccc.cc/newsletter.html.

The JUG's purpose is to inform, inspire, and connect our membership and broader community through publicizing contests, sponsoring NCCC internal competitions and events, and providing engaging stories, practical insights, and technical information about amateur radio and contesting in particular. Over the decades, NCCC members have spread across the country and, thanks to the Internet, the JUG has a nationwide reach, with worldwide readers as well.

Most of the JUG content is provided by NCCC members, many of whom are technology professionals, and over the years, the JUG has presented a very eclectic content with a primary focus on contesting and competition, but also including technical and operational information, historical insights, interesting personal stories, construction articles, and events. Many NCCC members have been members of various DXpeditions and the JUG has carried their stories too.

Given its age, the JUG's style and distribution have evolved dramatically over the period from before personal computers and the Internet to the present. Initially, it was typewritten and mailed. Those early issues leaned toward bulletins announcing meetings, events, upcoming contests, and contest results. As publishing technology advanced along with the skills of its editors, the JUG migrated to word processors and publishing tools, saw increased use of photographs and graphics, and eventually began publishing in Adobe PDF format, first via email and ultimately on the NCCC website, where it resides today.

Style, formats, and typography have also evolved over time. The original typewritten text/hand drawn graphic pages, some posted to VHF packet radio bulletin boards of the day, gave way to full color pages with embedded photographs/graphics. Size has also grown over the years. The appearance of the JUG has reflected the capabilities of available publishing tools in the current PDF/Internet era The JUG is published in a single column format with no page jumps since it is almost universally read on-screen. Editors of the JUG are drawn from member volunteers.

All issues of the JUG have been digitized and archived at the Digital Library of Amateur Radio Communications ("DLARC", a function of The Wayback Machine). as well as on the NCCC website.

Editor Notes

A little smaller issue for December. Ed, AJ6V, reprises a Dxpedition from nearly 45 years ago in which an NCCC Team "Took The Gavel" in the 1981 CQ Worldwide DX contest bringing us to the last issue of The JUG for 2025. It's been a good year for radio and radiosport. CQP Chair Dean, N6DE, has begun publishing the results of the 2025 CQP, which, as usual, was a huge success again.

Best Wishes to all for the holiday season and 2026. Cycle 25 as been a bit grumpy as we passed the peak, the good news is that some downslope grumpiness has foretold of a double peak in some past cycles. We can all hope.

HV Farads For Sale

Planning to shunt-load a tower? Build a big tube amp? Design a QRO phasing network? Then check this list of vacuum variable and high-voltage (a.k.a. doorknob) capacitors. Suggested prices are VERY reasonable **and are negotiable**. All proceeds go to Garry Shapiro, NI6T, who is very ill. Photos available on request. Please contact me off-list.

Gary NA6O *gwj@me.com*

Vacuum Variables, $100 ea

Jennings GCS-100-7.5S 5-100 pF, 7500 V. Small gear on end of shaft
Jennings USLS-465-5DI542, 5-465 pF, 5 kV at max cap.
Jennings USL-500, 7-500 pF, bare shaft.
Jennings USL-500, 7-500 pF, with full gear train with limit switches, 24 VDC motor, and 15-pin connector. Very nice assembly! $120 for this one.

High-Voltage Ceramic Doorknobs $5 ea

4ea Sprague 500p 20kV doorknob
5ea 100p 5kV N750 doorknob
2ea 1500p 20kV N4700 doorknob
1ea 200p 7.5kV doorknob
1ea Sprague 715C .011 6kV doorknob

Other High-Voltage Capacitors $1 ea

5ea 1500p 6kV disc ceramic
8ea 3300p 3kV disc ceramic
3ea 4700p 4kV disc ceramic
1ea .002 10kV disc ceramic
1ea Sprague Vitamin Q .005 6.5kV cylindrical, glass
1ea Plastic Cap Corp HG70-502 .005 7kV cylindrical, glass
2ea Sangamo type A2 600p 2500 WVDC flat transmitting mica

About NCCC

Officers and Directors, 2023-2024 Contest Season
President: David West, KO6M
Vice-President/Contest Chairman: **VACANT**
Secretary: Victor Denisov, N6DVS
Treasurer: Nian Li, WU6P
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QSL Mgr [K6CQP/N6CQP/W6CQP]: Dean Wood, N6DE
NAQP Teams: **VACANT**
NA CW Sprint Teams: Bob Vallio, W6RGG
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radiosport.world/ladder
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NCCC Membership Information

If you wish to join NCCC, please fill out an application for membership, which will be read and voted upon at our monthly meeting. To join, you must reside within club territory which is defined as everything in California north of the Tehachapi's up to the Oregon state line, and part of northwestern Nevada (anything within our ARRL 175-mile radius circle centered at 10 miles north of Auburn on Highway 49).

Life Memberships

Life memberships are $250.00 Contact secretary.nccc@gmail.com. Members who have reached 80 years of age have and been an NCCC member for 20 or more years are eligible for Honorary Life Membership ("80/20 Rule"). Contact secretary.nccc@gmail.com

radiosport.world/ladder

JUG Articles Wanted!

Please consider submitting an article! The preferred format is plain, unformatted ASCII text MS Word (.doc/.docx) are acceptable, Pictures should be as high a resolution as available. Please do not spend time formatting your submittal, the templates will re-format everything. Send your material to *k6dgwnv@gmail.com*

Northern California Contest Club Reflector—Guidelines

The NCCC email reflector is devoted to the discussion of contesting. Topics include contests, station building, dxpeditions, technical questions, contesting questions, amateur radio equipment wants/sales, score posting, amateur radio meetings/ conventions, and membership achievements. Postings may not include personal attacks, politics, or off-subject posts. Such postings will be considered a violation of the Guidelines

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Twitter: "NCCCKB"

NCCC Lands' End Store

We are pleased to announce that the new NCCC Land's End store is online! You can choose from an array of shirts, jackets, and hats and apply your choice of custom-embroidered NCCC logos: A plain one, or one that also says Fifty Years. And, you can personalize your item by adding your name and/or call sign. The store is open 24/7 and items are shipped directly to you. No more waiting for everyone else to make up their minds on a group purchase.

https://business.landsend.com/store/nccc/ or from the NCCC website: http://nccc.ccc/members/lestore.html
Thanks to W6TCP for helping to set this up. Instructions for purchases from Lands' End NCCC Store

1. Go to https://business.landsend.com/store/nccc/
2. Click on Men's or Women's link, then choose item(s)
3. Pick color, inter quantity of each size you want to order.
4. Click Apply Logos and Personalizations. This will display the logo choices. Try them out. It will show you what they look like on your chosen fabric color.
5. Select a location for logo (left side, ride side, back, etc)
6. Click Apply Logo.
7. Optionally, click Add Personalization to add your name or call sign ($8.00, 10 character limit)
8. Click Add to Bag and Continue Shopping or.

   Start Secure Check out. Account creation and credit card required.

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 Video output can mirror the K4 screen or display a high-res Panadapter only screen. 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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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-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-7300 | *HF/50MHz Transceiver*

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

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

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

IC-R8600 | *Wideband SDR Receiver*

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

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

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

IC-7100 | *All Mode Transceiver*

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

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

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

ID-5100A Deluxe

VHF/UHF Dual Band Digital Transceiver

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

IC-V3500 | *144MHz FM Mobile*

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

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-V86 | *VHF 7W HT*

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

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

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

ID-52A | *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

5 Ways to Shop!

- **RETAIL LOCATIONS – Store hours 10:00AM - 5:30PM - Closed Sunday**
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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 ModeTransceiver*

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-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

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

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

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

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

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

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

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

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

5 Ways to Shop!

- **RETAIL LOCATIONS – Store hours 10:00AM - 5:30PM - Closed Sunday**
- **PHONE – Toll-free phone hours 9:30AM - 5:30PM**
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