



PVRC Newsletter

February 2021

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 – Dan K2YWE

Well Done and Thanks, Tom!

K3AJ will be a hard act to follow. Tom spent his time as PVRC president always steering the club in directions that benefitted the membership. He worked hard at being inclusive and maintaining an overall unity of purpose in spirit and activity despite the wide geographic area and breadth of interests that are embodied in our club. That is, after all, what amateur radio fraternity is about. When we found ourselves forced into unprecedented physical isolation during his second term, Tom made certain that measures were swiftly taken to smoothly make the necessary transitions in the club's activities and business.

Tom will tell you that the achievements and well-being of PVRC during his tenure as president were due to the work of the officers, trustees, and a host of members other than himself. That has some truth in it, but I can tell you firsthand that it was his leadership that inspired and guided all of those that contributed. Tom is the kind of individual that typifies Dwight D. Eisenhower's definition of leadership as "the art of getting someone else to do something you want done because he wants to do it." Tom was a pleasure to work with. Among the accomplishments of PVRC during Tom's time as president were:

- A much-needed By-Laws update through a rigorous and inclusive process
- Successful nomination of W3ZZ to the CQ Contest Hall of Fame
- Creation of three new Chapter Challenge awards, two in memory of K3LP and W4MYA
- Continuous improvements to the PVRC Olympics program
- Creation of the W4KFC Clark Memorial ARC
- Establishment of the ARRL PVRC Scholarship Fund
- Online meetings that strengthened membership ties despite physical isolation
- Club-wide online events as substitutes for and expansions of physical ones
- A widely inclusive online annual election at a time when in-person voting was not permissible
- Maintenance of active PVRC chapters and rejuvenation of two that were inactive
- Continuance of the prestige of PVRC as a premier contest club through many individual and club wins including two back-to-back NAQP Club Challenges.

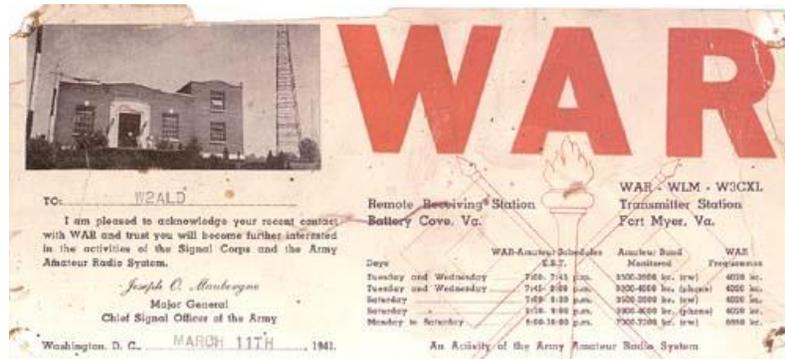
Continuing with the relay race metaphor that Tom made in his January newsletter column, I am proud to carry the PVRC baton for the next leg in our club's never-ending race. Tom left PVRC in a solid position and I will work hard to keep the club out in front and grow our lead, knowing I can rely on the support of our creative and hard-working officers, the guidance of our trustees, and a membership dedicated to the success of PVRC.

We all look forward to the transition back to in-person activities closer to the norms of the past. In the months ahead as we move in that direction, it is my objective to do so as smoothly as we did in the other direction and to maintain the momentum of PVRC as a leader in the contest community.

73 and Go PVRC!
Dan, K2YWE

PVRC Officers:		Trustees:	
President:	K2YWE	Dan Zeitlin	K3MM, N3OC, K2AV, K7SV, W3LPL, N3KN, N4ZR, W2RU, W3LL
Vice President:	N4GU	Mike Barts	PVRC Charter Members (all SK): W3GRF, W4AAV, W4KFC, N0FFZ, W4LUE, W7YS, VP2VI/W0DX, W3IKN, W4KFT
Vice President:	AA3S	Doug Hart	
Secretary:	N3QE	Tim Shoppa	
Treasurer:	W3MMM	Jay Horman	

Newsletter Editor: John K3TN jpscator@aol.com
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PVRC on Facebook: <https://www.facebook.com/groups/PotomacValleyRadioClub/>



PVRC's early meetings were held at Signal Corps of the Army WAR facilities, Arlington VA – Frank W3LPL (QSL courtesy of W1GUP)

New Year's Resolutions from Gil Gildersleeve W1CJD



The resolutions are mostly (other than 3 and 5) still appropriate today: (1) No haywire; (2) Get beam rotator working; (3) Clean up TVI; (4) Clean up oil burner QRN; (5) Install TR switch; and (6) Install ant patch panel.

Periodic Table of 2021 Contests (clickable) – EA3O

PERIODIC TABLE OF MAJOR AMATEUR RADIO CONTESTS

2021

Start Day (UTC) → 1 → 3 → End Day (UTC)
 Start Time (UTC) → 1900Z → 2300Z → End Time (UTC)
 Contest Name → Major Contest of weekend

Multimode: off-the-air, CW, Digital, SSB, VHF/UHF

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2 ARRL RTTY Roundup	3 NA Sprint CW	7 ARRL DX SSB	7 SP Polish DX	1 7QP/IN/DE New England QSO Parties	2 SEANET Contest	3 Marconi Memorial HF	4 NAQP CW	8 CWops CW Open	2 California QSO Party	3 ARRL SS CW	5 ARRL 160
9 NAQP CW	10 WPX RTTY	14 NA Sprint RTTY	10 JIDX CW	8 CQ-M DX	12 ARRL June VHF	10 IARU HF	11 WAE CW	11 WAE SSB	9 Oceania CW	13 WAE RTTY	11 ARRL 10
16 NAQP SSB	17 ARRL DX CW	20 Russian DX	17 CQMM DX	18 King of Spain	15 All Asian VHF	19 CQ VHF	18 NAQP SSB	22 WA/NJ/NH QSO Parties	16 Worked All Germany	20 ARRL SS SSB	18 RAC Winter
16 ARRL January VHF	18 CQ 160 SSB	26 WPX SSB	24 Florida QSO Party	25 Contest University Dayton Hamvention	20 ARRL Field Day	26 RSGB IOTA	25 WW Digi	29 CQWW RTTY	23 CQWW SSB	27 CQWW CW	18 HAPPY HOLIDAYS
29 CQ 160 CW	31 CQWW SSB			29 WPX CW	30 CQWW SSB						

K3RA Starts a Free Extra Class Course on Zoom

RoI K3RA is starting an Extra Class course on Zoom beginning Thursday, January 28, and running for 11 sessions. Sessions will start at 6:30 and run 3 hours. There is no charge for the course. Those wishing to sign up should email RoI [here](#).

State QSO Parties and the PVRC Olympics – Mike N4GU

A reminder that the Olympic [rules](#) have changed for this season and one of the ‘extra’ tasks is to operate in two or more of the state QSO parties within PVRC-land (MD/DE/VA/WV/NC). Only the Maryland QSO Party has passed (Olympic season runs July – July), so you still have four more chances to pick up those two contests for the ‘extra’ credit. The schedule and links for them are below.

North Carolina	2/28/2021
Virginia	3/20/2021
Delaware	5/1/2021
West Virginia	6/19/2021

Editor’s Note: Believe it or not, several State or Province QSO party are just days away – MN, NC, SC, VT and BC happen in February! In addition to the State QSO Party Challenge that premiered last year, there will be a Worked All QSO Party award in 2021 – rules [here](#). John K3TN

Video Interview of K4QPL and K3TD NCQP Effort – Marc W4MPS

[Here](#) is an interview W4MY and I did with Jim K4QPL (L in photo) and Tad K3TD (R) describing their equipment and mobile operating techniques in our North Carolina QSO Party, which is coming up again on Feb. 28. This is Part 1 of a series we hope to be doing, interviewing NCQP’s top finishers.



Hamcation QSO Party – February 13



Since the 2021 Orlando HamCation has been postponed, the Orlando Amateur Radio Club and the Orlando HamCation have announced they will hold a HamCation QSO Party. It will be a 12-hour QSO Party on the weekend of HamCation from 10:00 am EST Saturday to 10:00 pm EST Saturday, February 13, 2021. Details [here](#).

Obviously not a contester – via Frank W3LPL



PVRC Galactic Virtual Event 6 February – Mike N4GU

This year the Richmond FrostFest has been cancelled due to Covid-19, which means the Galactic Luncheon held at the same time is also cancelled. But we don't want to let the tradition of gathering with our fellow club members from North and South and East and West to slip by. So, we are announcing the first ever Galactic Virtual Event!

We can't have lunch together but fix your own lunch and join us on the same date, February 6 at 1:00 PM for a club wide GoToMeeting gathering. There are some outstanding presentations in the works such as a review of Cycle 25 propagation predictions from Frank, W3LPL, and an update on WRTC 2022 by Mark, KD4D. There will also be time for general 'deep discussions' after the presentations.

Who: All of PVRC!

When: Saturday February 6, 1:00 - ? (1800Z-?)

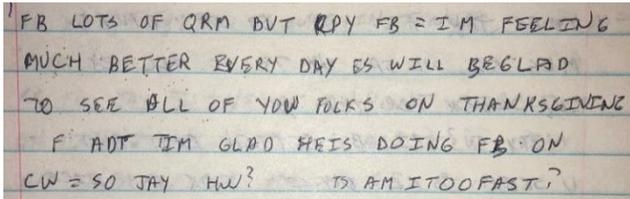
Where: <https://www.gotomeet.me/PVRC/virtual-galactic-event>

Central VA Chapter Members Hoisting the K3LP Cup



Central VA chapter members showing off the K3LP David Collingham Cup presented to the Chapter for greatest increase in logs for SS in 2019. Clockwise from lower left: Sam W4PK, Ed N3CW, Dave N3AC, Daryl N8AID, Rick NN4RB.

What Matters Most to PVRcers, Final Installment – Jay W3MMM

What Matters Most?	
If they could only save one thing, what would PVRc members grab?	
<p style="text-align: center;">K4TMC - Henry</p>  <p>In one hand I would grab my Elecraft K3 Gator Case Go-box. It has the K3, a SP-3, MFJ Power Supply, Heil HC-4 mic, PC mouse PTT switch and writing pad. See the attached picture for recent deployment at the family beach house. Sadly, I would have to leave behind the K2 and KX3.</p> <p>In the other hand I would have my trusty Thinkpad laptop which has all of my personal data.</p>	<p style="text-align: center;">WA3EKL – Alan</p> <p>Easy answer. My wife first then one of my K3's because that is what we need to communicate with if the system goes down.</p>
	<p style="text-align: center;">W2RU - Bud</p> <p>That's easy — my first logbook! In 2nd place: My 1957 Walter Ashe catalog.</p>
	<p style="text-align: center;">W3MMM – Jay</p>  <p>My first notebook from 1982 has my first CW novice QSO's in it, back when I would write each letter I heard. Included in that notebook are conversations with my Grandfather Court Snell, SK, ex KI2T. We'd chat in very slow CW every Sunday at 4pm. The notebook has his voice, coaching and encouraging me, as written by my nervous 14 year old hand.</p>
<p>Email W3MMM.Radio@Gmail.com to add your story!</p>	

WC4J Remote – Jack WC4J

With a ton of help from Mike KA4RRU and the members of PVRC I have managed to overcome the limitations of moving into a condo. My remote is fully functional now and 90% ready to get on air in contests.



In its current configuration the primary station is a IC-7000 controlled by RemoteHams or ICOMS BA1 software, using a microHAM band decoder, Top Ten 6-way switch and multiple antennas onsite. It will be capable of 500W once I put the ICOM 2KL inline - I am only waiting on a way to remote switch power on and off. The second station is a TS-480HX which is on a 124ft doublet fed with 150ft of 600ohm ladder line to a MFJ-993 tuner. This station is primarily used on AFMARS.

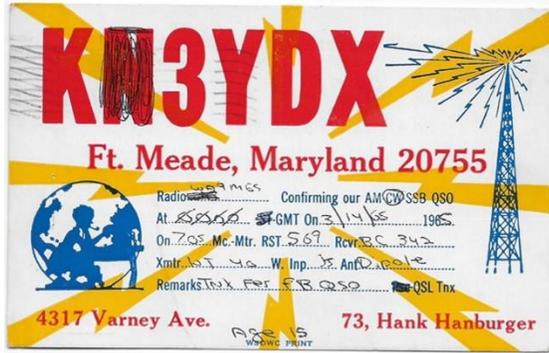
Co-located with my remote is a full BPQ32 BBS/Node with chat on 6m 2m 220 440 used by the surrounding ARES groups. There is an APRS DIGI-gate on 2m and 6m with plans for rx on 30m and ISS frequencies. This system runs over 2 internet connections: a Verizon 4G and a Broadband connection Data Stream provided in the area via over the air mesh network. Both connections have static IP to allow direct access even though AnyDesk remote control software is deployed. The PC is a DIY using a ASUS motherboard, AMD FS 8350 4 core 8 thread @4ghz, 16GB RAM, 1TB solid state drive for boot and 1tb hard drive for storage, running Win 10 PRO as the operating system. Rig interface is done using 2 Timewave Navigators.

I am looking forRG-213 to replace some long 8x runs if you see any good deals.



Meet the PVRCer – Hank K3YDX

(Editor's note – this is a new feature I'll try to run regularly in the newsletter, randomly picking out PVRCers that are active in contests. I'll be reaching out to the Chapter leads for suggestions, as well. If you'd like to volunteer to be a subject, email me. John K3TN)



Your Call: K3YDX

First Year Licensed: 1963 as KN3YDX while living on Ft. Meade, MD

Previous Calls: K3HH (K3error/K3lottadits), K3YDX/KH6

QTH and PVRC Chapter: Pittsboro, NC - NC East Chapter

Favorite Contest and Why: SS CW. Like this one as a SOLP unassisted entry because of the challenge associated with operating in an effort to find needed sections on my own and improve my CW skill set.

Least Favorite Contest and Why: If I have to pick it would be one of the DX events because of my lack of antennas and competitive commitment to going all out.

Favorite part of Ham Radio other than contesting: The high quality, intelligence, and helpfulness of the people I have met through amateur radio associations and clubs.
Favorite thing to do other than Ham Radio: Sports related activities including baseball, football (Go WFT-formerly the Redskins), golfing, and some hiking. *(Editors note: Hank's brother Chris was a linebacker for the Redskins with a celebrated 14-year career from '65 to '78)*

Anything else you'd like to say? Being uneducated formally in the field of electronics and radio I would like to say thank you to all the people in my past and present who have been of assistance to me in understanding aspects of amateur radio leading to my enjoyment of the hobby and my association with

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	3185	WS6X	2493	K4WNW	2004	N4ZR	1491
W3UR	3152	K5RT	2447	W0YVA	2001	K3WC	1430
W3LPL	3138	W2GG	2436	N3KN	1990	N3HBX	1428
K4CIA	3116	N4TL	2406	K5RJ	1961	N3AIU	1415
N2QT	3085	K5VIP	2400	N3KS	1906	N8II	1390
W4PK	3038	K1GG	2397	N3ND	1867	W8AKS	1390
N4MM	2981	N4GG	2377	W3KB	1815	W4PRO	1377
W3DF	2939	W4VIC	2357	K4EU	1795	KF7NN	1377
WX4G	2934	W3OA	2344	W3DM	1791	W9GE	1364
K1HTV	2924	W2YE	2334	K3SX	1772	AK3E	1348
K2PLF	2903	WA2BCK	2316	KE4S	1758	KM3V	1319
K5EK	2900	K1ZZI	2312	N4GU	1738	ND3F	1319
KG7H	2881	W3YY	2297	W2CDO	1729	N1SZ	1317
N3NT	2871	N3RC	2294	N4XYZ	1720	N3MK	1317
W0VTT	2863	W2GPS	2255	W4GP	1710	K4ZA	1313
N4DB	2849	KA4RRU	2234	W3FOX	1704	NR4M	1224
W3LL	2827	NW4V	2219	K4QE	1682	WA3EKL	1204
W3KX	2798	K3TN	2212	NE3H	1668	KG4USN	1199
K3WA	2796	K4FJ	2211	K3WI	1652	N3RR	1199
KG4W	2782	N4ZH	2188	W3UL	1627	K4HQB	1198
K1AR	2754	K1EFI	2180	K3AJ	1616	W3NRJ	1188
AB3CV	2695	K2BA	2153	K3KY	1606	N3OC	1183
N3MN	2657	N3QE	2147	K3STX	1579	K3IXD	1090
WB3AVN	2655	W3TN	2125	KE3X	1571	W3US	1082
W4FQT	2622	W3MR	2114	NA1DX	1564	N3COB	1049
N3KK	2575	K3PU	2107	N3AO	1527	W3OU	1046
W3BW	2546	N4JQQ	2080	WB2ZAB	1522	W4ZV	1046
K4SO	2499	W3GG	2071	AA4FU	1519	K4ZW	1038
K3JT	2495	N4NW	2068	WB4DNL	1506	NE3K	1036
N4QQ	2494	AA4NC	2061	KU1T	1501	K4VX	1021

Membership News – Tim N3QE

PVRC did not add any new members in the latest reporting period.

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

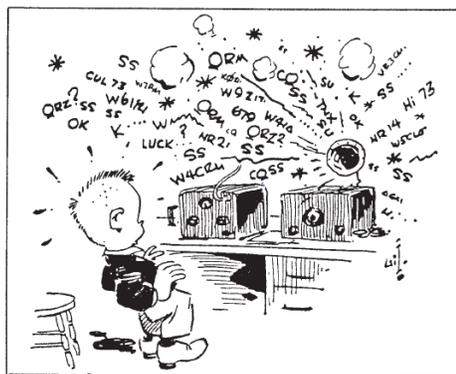
Upcoming Contests – from [WA7BNM](#)

February 2021	
+ North American Sprint, CW	2300Z, Feb 6 to 0300Z, Feb 7
+ CQ WW RTTY WPX Contest	0000Z, Feb 13 to 2359Z, Feb 14
+ Dutch PACC Contest	1200Z, Feb 13 to 1200Z, Feb 14
+ YLRL YL-OM Contest	1400Z, Feb 13 to 0200Z, Feb 15
+ ARRL Inter. DX Contest, CW	0000Z, Feb 20 to 2400Z, Feb 21
+ CQ 160-Meter Contest, SSB	2200Z, Feb 26 to 2200Z, Feb 28
+ REF Contest, SSB	0600Z, Feb 27 to 1800Z, Feb 28
+ UBA DX Contest, CW	1300Z, Feb 27 to 1300Z, Feb 28
+ North American QSO Party, RTTY	1800Z, Feb 27 to 0559Z, Feb 28

Editor’s Last Word – John K3TN

Thanks to Mike N4GU, Hank K3YDX, Frank W3LPL, Rol K3RA, Sam W4PK, Ed N3CW, Dave N3AC, Daryl N8AID, Rick NN4RB, Jay W3MMM and Jack WC4J 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 suggestions for how I can make the newsletter more interesting or useful, let me know. 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.



March, 1959

More from Gil Gildersleeve W1CJD

From the PVRC Treasurer – Dan K2YWE

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.

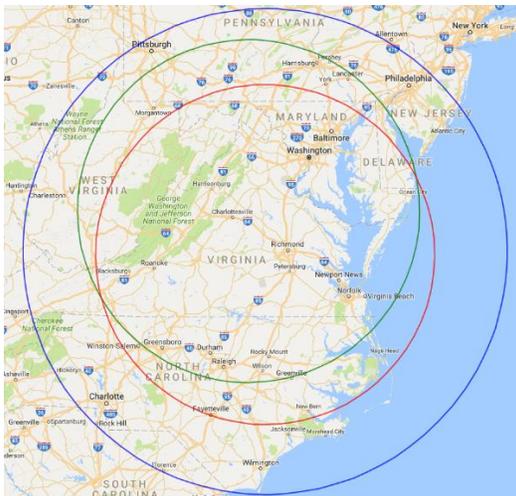
Direct donations to PVRC via Credit Card or PayPal may be made by clicking this "Donate" button and clicking the next Donate button that appears on your screen:



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
175 mile radius
Around 37.43168N,
77.858482W

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



Now a Word From Our Sponsors

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



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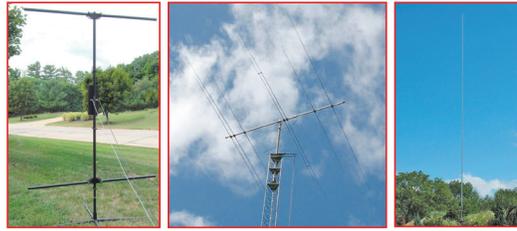

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DX ENGINEERING



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Our in-house team of Hams designs and engineers DX Engineering branded equipment, from vertical antennas to advanced design thrust bearings, baluns to receive antenna phasing systems, radial plates to coax connectors. DX Engineering also produces Butternut vertical antennas, Clifton Laboratories products, TransWorld portable HF antennas, and Comtek gear—all backed by the best support staff in the industry. Enter “DXE” at DXEngineering.com for details.



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ACOM has built a reputation among serious HF contesters and DX chasers for its high performance Amateur Radio gear. Nowhere is this more evident than with ACOM's stunning line of RF power amplifiers, including the 1200S 1,000W HF+6 and 2100 1,500W HF linear amplifiers. Enter “ACOM” at DXEngineering.com.

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These solidly built manual and automatic desktop antenna tuners from HA8DU feature exceptional-quality switches, capacitors, inductors, and other components. HA8DU L- and T-type tuners deliver 1.8 MHz to 30 MHz coverage and smooth tuning in a rugged, reliable unit that will make a long-lasting addition to your station. Enter “HA8DU” at DXEngineering.com.



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Ciro Mazzoni
Radiocomunicazioni

Loop Antennas

Exclusive

DX Engineering carries HOA-friendly Loop Antennas by Italy's **Ciro Mazzoni**. The 78" diameter MIDI Loop covers 80 to 20 meters. The popular 39.8" diameter BABY Loop and the Stealth Loop are great for working 40 to 10 meters when you have limited space. The Stealth Loop features a typical SWR of 1.3:1 and measures 54" x 19.6" x 10.2", making it easy to hide. All three antennas include the ATU 2.0 Automatic Tuning Unit. Enter “MZZ” at DXEngineering.com.



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Exclusive

Proven in stations around the globe, OptiBeam's German-engineered, handcrafted directional monoband and multi-band Yagi and log cell Yagi antennas deliver the highest possible gain, cleanest radiation patterns, optimum band coverage, and power handling without compromise. Many popular models are in stock and ready for fast shipment. Enter “OptiBeam” at DXEngineering.com.



EAntenna and WiMo Products

EAntenna is well known for its lineup of rugged HF and VHF antennas, including Yagi, log periodic, rotatable dipole, and vertical models.

These antennas combine cutting-edge computer modeling optimization with robust mechanical and electrical designs to deliver high performance at a budget-friendly price. EAntenna products are now manufactured by WiMo, Germany's largest Amateur Radio supplier. Also check out WiMo's APRS modules, QRM Eliminator, and other gear. Enter “EAntenna” or “WiMo” at DXEngineering.com.



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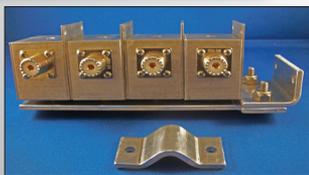
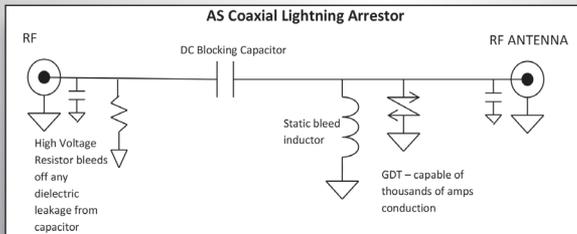
Array Solutions Lightning Arrestors Coaxial, Ladder Line, Single wire, Control Line protection for Rotators, Switches, and Antenna Motors

AS-300 Series arrestors are known for their reliability and performance. They feature easy mounting to plates, ground rods with our stacking bracket and also a convenient screw lug. The stacking bracket can be used on plates as well to save precious room in arrestor enclosures.

- Available in SO-239, Type-N, and 7/16 DIN connectors
- DC blocked, DC pass is available as a custom option
- Unique static bleed system with a UL approved Gas Discharge Tube, also ITU K 12 tested. This system usually prevents the GDT from ever firing unless a direct hit is taken. Saves your radio from static build up on large antennas.
- Models available for 3 kW, 5 kW, 10 kW and higher, details on website. Lower power available.
- FM low power broadcast model AS-303D FM
- Model AS-309H high-power single wire or ladder line arrestor, also DC block with static bleed
- Control line Arrestors for 8, 12, and 16 wires – 65V sparkover.
- Models for HF, VHF to UHF – Extremely low loss and Low VSWR



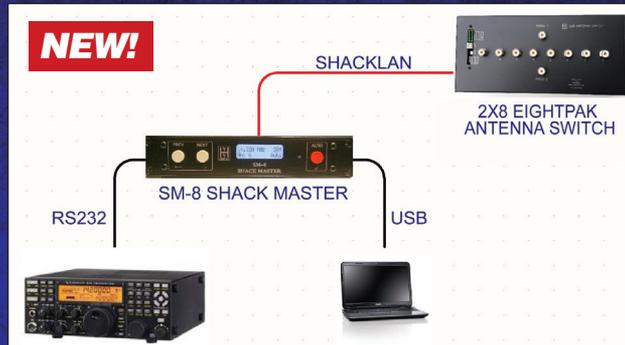
AS-303U



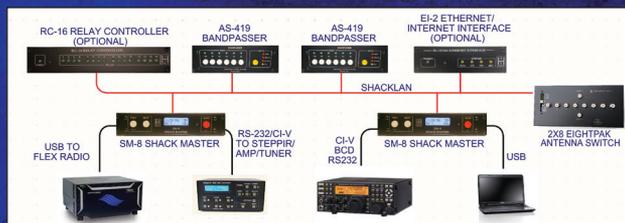
Hamation Station Automation

Hamation remote and Local Station Control products allow you to automatically or manually select antennas, bandpass filters, and control accessories. Accessories can be StackMatches, Antenna switches, antenna phasing systems, SteppiR controller, turning radios on and off, etc. All of this can be done directly from the Ethernet as well!

Wiring are simple phone cables that daisy chain to all the devices. Wireless control is also available to your tower-located switches. Call us to learn how to set up simple or complex systems. Below is a simple basic system that can switch antennas as you change bands. We can interface to any radio CAT port, not just RS232.



A more complex system could be a SO2R contest station as shown.



The Shared Apex Loop Array™!

Capture the whole band or the whole HF spectrum at once with the Shared Apex Loop Array 2nd Generation. Can be remote controlled over the internet or in your station. 8 directions of directivity.



The Shared Apex Loop Array™ is a revolutionary receiving antenna that will change the way that you listen to the radio! The patented design provides performance in a size and over a wide range of frequencies that will please both the rag-chewer and DXer alike.

Three models to choose from:

- AS-SAL-30 - optimized for VLF, BCB, 1.8-10 MHz
- AS-SAL-20 - optimized for BCB, and 1.8-30 MHz
- AS-SAL-12 - optimized for 3-30 MHz



OM Power Amplifiers Sales and Service



Switches for Six Antennas



5kW - DC to 6m
RATPAK – 1x6

Choice of Multiple Controllers

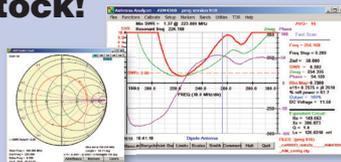
SIXPAK – 2x6



VNAuhf Back in Stock!

Vector Network Analyzer

5 kHz - 1.3 GHz \$1295



StackMatch

The original, not the imitations. For phasing 2, 3, 4 and even 6 antennas. Also it can be used to combine vertical and horizontal polarized antennas to diminish fading.



PowerMaster II



RF Power and SWR meter. Couplers for 3 kW, 10 kW or higher available for HF/6 m. VHF and UHF couplers for 1.5 kW. You can connect up to 5 couplers to the display to monitor RF power on different TX lines.



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Array Solutions' products are in use at top DX and Contest stations worldwide as well as commercial and governmental installations. We provide RF solutions to the DoD, FEMA, Emcomm, UN, WFO, FAA and the State Dept. for products and installation of antennas systems, antenna selection, filtering, switching and grounding. We also offer RF engineering and PE consulting services.



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IC-9700 | All Mode Tri-Band Transceiver

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



IC-718 | HF Transceiver

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



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-7851 | HF/50MHz Transceiver

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



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

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



ID-4100A | VHF/UHF Dual Band Digital Xcvr

- Compact, Detachable Controller for Flexible Installation • DV/FM Near Repeater Search Function • Apps for iOS™ and Android™ devices • Wireless Operation with VS-3 & UT-137 Bluetooth® Headset & Module • MicroSD Card Slot



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-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-R30 | Digital/Analog Wideband Xcvr

- 100 kHz to 3.3 GHz Super Wideband Coverage • P25 (Phase 1), NXDN™, dPMRTM, D-STAR Mode • 2.3" Large LCD Display & Intuitive User Interface • MicroSD Card Slot for Voice & Data Storage • USB Charging & PC Connection



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-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

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

This device has not been approved by the F.C.C.



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NEW

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



NEW

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) • **This device has not been approved by the FCC.**



NEW

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 • WiRES-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



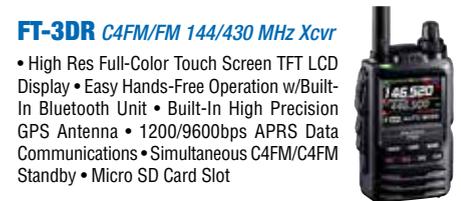
FT-991A | HF/VHF/UHF All Mode Transceiver

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-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-3DR C4FM/FM 144/430 MHz Xcvr

- 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 • Simultaneous C4FM/C4FM Standby • Micro SD Card Slot



NEW

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



FTM-7250DR | C4FM/FM 144/430MHz Dual Band

- 50 Watt Mobile • System Fusion-II Compatible • Operates Advanced C4FM Digital & Conventional FM Modes • 3 Watt Powerful & Clear Audio with Front Speaker



FT-65R | 144/430 MHz Transceiver

- Compact Commercial Grade Rugged Design • Large Front Speaker Delivers 1W of Powerful Rugged 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



FT-60R | 2M/440 5W HT

- Wide receiver coverage • AM air band receive • 1000 memory channels w/alpha labels • Huge LCD display • Rugged die-cast, water resistant case • NOAA severe weather alert with alert scan



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