

PVRC Newsletter

April 2018

President's Letter – Bud W3LL

Hello, PVRC - This month I attended the MD Metro chapter meeting chaired by Art K3KU. What was unique was having all five officers including the ARRL Atlantic Division Director Tom W3TOM in attendance. Maybe we all showed up to honor Tim N3QE for whom I had the pleasure of awarding the 20 For 20 Plaque for the most QSO's in the event. Congratulations Tim!!!

Speaking of chapters: I'm sorry to report that for continuing health issues Mike W4AAW requested to step down as chairman of the Purcellville Blue Ridge Lunch Group. A year ago I was skeptical that a sustainable chapter could be formed around a premier remote contesting station. We tracked the in-circle member growth along with accomplishments over many months before concluding the group could be a significant contributor. The results are obvious, Mike proved me wrong. Congratulations Mike on your accomplishment! Looking back to the old days (old for me) I remember Mike as a consummate raconteur at the NW meetings, holding his own with the legend of Gene W3ZZ who was raconteur supreme.

Mike nominated Rick Miller N1RM for chairmanship of the chapter. Rick accepted the nomination after receiving and agreeing to the Duties of A PVRC Chapter Chairman. I'm happy to announce that I've appointed Rick N1RM as chairman of the Purcellville Blue Ridge Lunch Group effective 07 April 2018. Mike will chair his last meeting as chairman of the Blue Ridge Lunch Group at their 06 April meeting.

Let's stay with the chapter topic. I was having trouble visualizing the location of our chapters and more specifically vacant areas within the circle. Tim N3QE came to the rescue by creating a circle map with pincushions in the location of each chapter. Hover the mouse over any pincushion and up pops the name of the chapter. You might remember a similar map which included the location of our potential members. Hover the

mouse over the pincushion and up pops info on the likely candidate. Tim also reformatted the chapter webpage and updated chapter info. You may notice some changes in the chapter names. For simplicity we separated out those chapters which were represented in two different locations, giving names more representation to their location.

PVRC Reunion On The Air QSL cards are now being received. Here's one comment from a recipient that makes it all worthwhile: "Dear Ullis, I just want to let you know that the PVRC special event station QSLs that you sent, all arrived here safely today. I especially enjoyed looking at all the old pictures on them; everyone looked so young and handsome, and all those cool old radios. Thank you so much for sending them all to me! Also please tell the ops thanks for taking the time to contact us from their special event stations! 73 and 88, Barb, N9NM."

Let's again recognize WRTC-2018 PVRCers who are among the competitors and referees: KE3X, KD4D, N4YDU, N3KS, KU1CW (out-of-area) and NN3W. I hope you worked them in the WPX contest.

Here's an update on the NAQP CUP Challenge after the February NAQP RTTY contest. SMC came in first, NCCC second, and PVRC third. Why: SMC had the most participants at 91 so it comes as no surprise that they took first place since participation usually counts for the most. What makes these results different from other recent Challenge events is that PVRC had the second most participants (88) to NCCC's third most total (66). Typically, this result should have put PVRC into second place. However, NCCC had HUGE logs from their top 5 scorers (WK6I, N7MH, N6WM, K6MR, N6IE), four of which were joined by K9YC as NCCC Team #1 to take first place in the team competition. The top 5 scorers from NCCC were all bigger than the top scorer from the other 3 clubs.

As a result, NCCC pushed past PVRC to take second place and the February RTTY contest becomes one of those rare occasions where big logs trumped high participation. Not surprisingly, NCCC also wins the All Star Overlay, their second Overlay win of the year. All is not lost. PVRC is still ahead in "Irish Points": PVRC 265 SMC: 250 NCCC: 205 CFWCG: 165

April means thoughts of going to Dayton. Kayren and I have been going consecutively since 2002 with one exception when we were on a cruise to Alaska. As always we'll be staying at the Crowne Plaza, home of contesters, where K3LR hosts CTU, the Super Suite, Topband and Contesting dinners. Did you know each year, for as long as I can remember, PVRC hosts the Super Suite Friday night pizza party? Always choices to be made. Do we attend CTU again for the fourth time or, on Friday evening travel to the Marriott and attend the DX dinner. Or maybe the Collins Collectors Association at the golf club? One thing is for sure, I'll be walking down to the Spaghetti Warehouse on Thursday evening to attend the RTTY dinner. Did you notice that Pizza and Spaghetti are my motivators? Let's not forget Hamvention's new venue. A refreshing change. If you haven't seen it since the move from the Hara Arena last year it's worth the treat. April also means decommissioning the 80M 4-SQ to accommodate the 6-meter 6M7 antenna and rotor onto one of the 80M 4-SQ towers. This always happens right after the WPX contest – or after the snow melts.

Did you ever sit back in your easy chair sipping a good wine and in your reverie think about the esoteric such as the concept of PVRC and its chapters? What does it mean to you? Here's what I came up with when I did so. The concept of PVRC is not that of a federation of states but rather a a cloud encompassing the whole. We can extend that thought to what is a PVRC chapter. They're those transitory locations which connect PVRC to terra firma. Chapters can be imagined as your local Recruitment Center. You remember those places where you can go to become a member of the armed forces or, in this case PVRC after two trips to the center. A chapter can be likened to your local Voting Precinct or your local meeting hall, be it VFW or American Legion, where you can go to commiserate with likeminded friends and maybe share a meal or drink. Think about it. I'll leave you with that thought to expand your concept.

Now onto the Sports Pages.

There were certainly some interesting aspects to ARRL DX SSB this year. We are now solidly entrenched in the bottom of the sunspot cycle. 20M and 40M were the money bands. 80M and 160M were OK, but not great. 15M provided a short EU run on Sunday. 10M? Enough said. And to top it off, PVRC land was buffeted by very high winds and power outages were an issue for some. Those reporting antenna damage including N4RA, K3ZO, K3ZJ, W3LL and K4XL. Others decided not to rotate any of their antennas. As K3ZO said – "The show must go on" and turnout was pretty good, with only a few less entries than 2017 from PVRC.

Team W3LPL came up short against arch-rival K3LR, continuing the recent pattern of success in CW and falling short in SSB. There were several notable other multiops PVRC efforts. An era ends as team W4RM made the top 10 in M/2 in their last entry before dismantling the station, despite some antenna damage and power outages. Team WA3EKL continued their string of multiop efforts with 1245 QSO/1.1M in M/2. VP5V with K4OV and N1BA operating from K4QPL's place posted a win in M/S LP with 4909/3.3M. KH6J (with PVRC ops W0CN and WH7Z) took a top ten spot in M/S HP with 4829/3.5M.

The top PVRC SO score was by K3ZO with 1382/1.0M in SO HP – imagine what Fred would have done if his 40M and 80M antennas hadn't been trashed. K3ZJ wasn't far behind in that category with 1074875K, and WB2ZAB was next with 1064/561K. K3WI using only wires broke 500K in SO Unlimited HP. Congratulations to LP maven N8II for what looks to be the #1 US score in SO LP at 799/527K in only 14 hours! New contesteer and PVRC member W3RCO made a showing and N3ND reports his 5 hours was most ever for him in an SSB contest (it's an acquired taste, they say). W3LL edged out W2FU in a SOSB 80 HP contest played out via on-line contest scoring for the top US score.

The Russian DX Contest is a good one – with lots of different ways to play, and a good warm-up for WRTC competitors as well. To that end, KE3X and KD4D (WRTC competitors) did a M/2 from N3HBX taking the top US spot in that category with 1232 QSO for 2.2M. Team WA3EKL operated as K000 with seven operators and made 287 QSO for 279K in M/2. Among the SO's, W3LL took the top US spot in SO SSB HP with 464/327K. N4AF was the top PVRC SO with 633/678K in SO CW HP.

PVRC activity in the CQ WPX SSB contest featured some big multiop efforts. Team WA3EKL/N3DPB used KG4USN in a M/2 entry with seven operators posting 2001 QSO for 3.7M. Also in M/2, team KD4D (at N3HBX) with five ops appears to have the #1 us

score with 4601/12.4M. WX3B with a team of twelve, including some new and return ops, appears to have repeated as the top US M/M entry with 4022/10.2M.

Among the SO entries, N4RV made the top 10 in SO (A) AB HP despite still fighting some residual antenna damage with 1404/2.2M. KB1RI and K3WI both made the top 10 US in SO (A) AB TB (Tribander/wires) with 1109/924K and 647/585K respectively – and K3WI is actually wires only for now. N4YDU (operating as NR3X) put up the top PVRC SO score in SOAB HP from his home station with 2255/3.5M for a top 10 US finish in that category. K3ZO just missed the top 10 in SOAB HP with 1503/2.8M – sticking with it despite being limited by his damaged 80M and 40M yagis. K3ZJ made the top 10 in SOAB HP TB with 723/710K. The redoubtable N8II once again took a high finish (#2 US) in SOAB LP with 764/845K. Congrats to W4BBT for a fine “Rookie” overlay effort in SOAB LP and both N3WD and K4FTO slogged it out with wires only for decent finishes in SOAB LP TB. Although not yet a PVRC member, 15-year-old Mason, KM4SII, known by several PVRC NC members, did extremely well in SO (A) AB HP Rookie with 2064/2.2M using the W5FMH remote station and call KJ5Y. Let’s hope he can join us soon! W3LL took the top North America spot in SOSB 80 HP with 731/847K.

That’s it for another month. 73, Bud W3LL

<u>PVRC Officers:</u>		<u>Trustees:</u>
President:	W3LL Bud Governale	K3MM, N3OC, WX3B, W4ZYT, N4NW, K2AV, K4ZA, W3TB, K3ZO, K2PLF, W3LPL, N4MM, N4ZR, W3MSH, N4NQY, W2RU, K3WRY
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Secretary:	N3QE Tim Shoppa	
Treasurer:	K3AJ Tom Valenti	
Newsletter Editor: John K3TN jpescatore@aol.com		
PVRC Website: http://www.pvrc.org		
PVRC Meeting Info: http://www.pvrc.org/chapters.htm		

April QST Features PVRCers' VHF Antenna Arrays



Mike W3IP's mountaintop VHF antenna farm (W3IP photo via K3YDX)



Andy K1RA and Terry W8ZN (shown) had a FB array as K8GP/rover (K1RA photo)

PVRCers' Shacks – Alan N3ALN

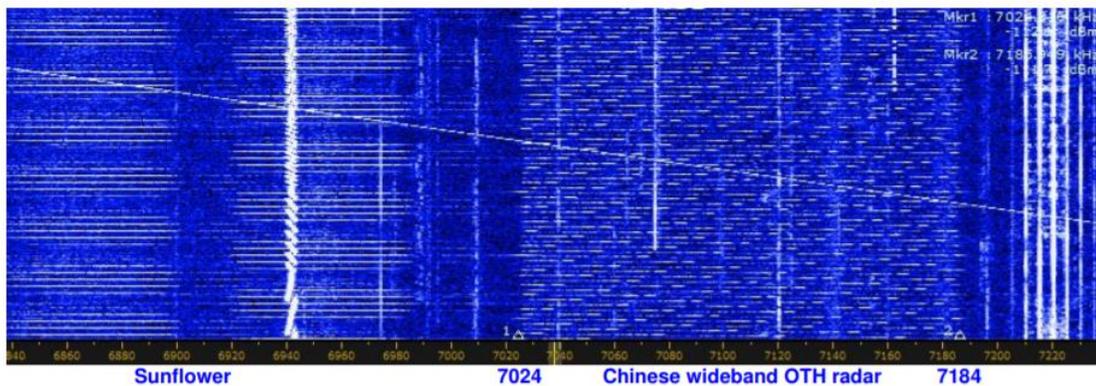


Alan N3ALN in his screen-ful Olney MD shack.

Chinese Over the Horizon Radar QR Ming 40M – IARU Monitoring Team

1. Chinese wideband OTH radar on 40 m-band

Date: Feb. 15th Time: 1538 utc – parameters: FMOP – 10 sweeps/sec – covering 160 kHz
Below 7000 kHz (left): Far East coastal radar “Sunflower”



From the [IARU Region 1 Monitoring System Newsletter](#)

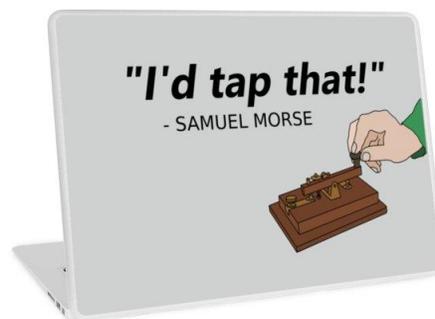
North American CW Weekend – Don W4ZYT

The North American CW Weekend **1-3 June 2018** **Fairview Park Marriott** **Falls Church Virginia** **by Don Lynch, W4ZYT**

The 2018 CW Weekend will take place June 1-3 at the Fairview Park Marriott in Falls Church, Virginia. The weekend is open to all hams or others with an interest in CW or Morse code communication - FOC, CWOPS, SKCC, the Morse Operators Society, and FISTS. It is predominantly a social event and provides a great opportunity to connect with old friends, make new ones, and enjoy eyeball QSOs with folks you have worked on the bands for years.

We'll begin with an informal pizza dinner on Friday evening, followed by a brunch Saturday morning hosted by Jim N3JT and Nina KE4PSV at their home in McLean. Dinner will follow that evening at Clyde's in Tyson's Corners. There will be a hospitality suite with refreshments at the hotel Friday and Saturday evenings. Sunday morning, many attendees meet informally at the hotel for a leisurely breakfast before heading home or on to other activities. It is likely Frank, W3LPL, will make a tour of his world class station available to those interested on Sunday afternoon.

There will be a modest registration of \$ 15 per person or \$ 25 per couple to cover refreshments and the hospitality suite. Further information is available from Don [W4ZYT](#)



Strange Aurora-Like Arc Sighted Over Alaska - [Spaceweather.com](https://spaceweather.com)

On Saturday (24 March) night, something happened at the edge of space over Alaska. More than 200 km above Anchorage, a hot ribbon of ionized gas sliced through Earth's magnetosphere, creating a luminous arc that rivaled the Moon in brightness. Sanjana Greenhill witnessed the apparition:



"We noticed this perfect arc developing across the sky," says Greenhill. "It didn't seem like the aurora since it wasn't moving much. The arc got brighter and then faded and then got brighter again. And then it dawned on me, this is STEVE!"

STEVE is an aurora-like phenomenon that researchers are only beginning to understand. For many years, northern sky watchers reported the form occasionally dancing alongside auroras. It was widely called a "proton arc" until researchers pointed out that [protons had nothing to do with it](#). So members of the Alberta Aurora Chasers group gave it a new name: "[Steve](#)" (since upgraded to STEVE, an acronym for 'Strong Thermal Emission Velocity Enhancement').

Full article at [Spaceweather.com](https://spaceweather.com)

Membership News – Tim N3QE

Since December 2017, PVRC has added 6 new members. Please welcome:

John K4BC and Greg KC3JCQ in the Colonial Capital chapter.

Jim WS6X in the Rappahannock Valley chapter.

Daryl AC3BU and Jerry AB3SX in the Laurel chapter.

Stuart WB3FBL in the Purcellville - Blue Ridge chapter.

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

Upcoming Contests and Log Due Dates

Contests This Month

- Apr 7 – SP DX
- Apr 8 – NA SSB Sprint
- Apr 14 – Yuri Gagarin DX
- Apr 14 – JIDX
- Apr 14 – YU DX
- Apr 28 – Helvetia DX

Logs Due This Month

- Apr 1 – RU DX
- Apr 15 – NA SSB Sprint

See WA7BNM's [Contest Calendar](#) for more detail and the latest information.

Editor's Last Word – John K3TN

To eliminate the need for Chapter Chairmen to send changes to two places, the Newsletter will no longer carry Chapter meeting information – the [PVRC web site](#) is the place to look.

See you in Dayton! A friend of mine who moved to Columbus years ago (Rick WA3UOO) and I will be bicycling from Cleveland to Xenia during the week before, and then biking into the Hamvention from his sister's QTH in Xenia – we beat the traffic last year biking in!

Thanks to N4RV, N3CW and W4ZYT for inputs this month. The PVRC newsletters is only as good as the content you provide – send photos, war stories, rants, whatever you have to jpescatore at aol dot com.

From the PVRC Treasurer – Tom K3AJ

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:

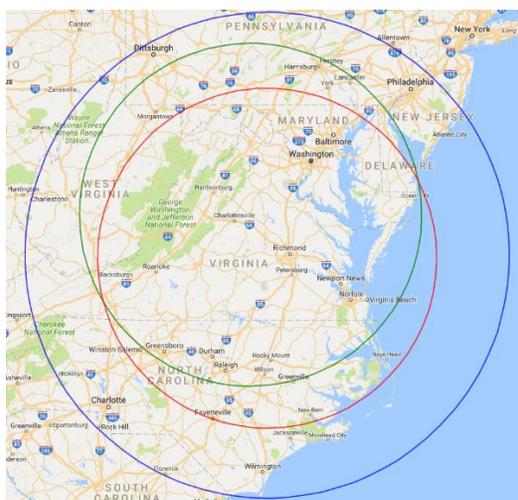


Donations to PVRC are not tax deductible

Eyeball QSO Directions

The latest info on local club meetings and get together will always be sent out on the [PVRC reflector](#) and posted on the PVRC [web site](#).

Since having the listings in the newsletter meant the chapters had to notify two places when times/dates changed, the PVRC newsletter will no longer list the meetings.



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
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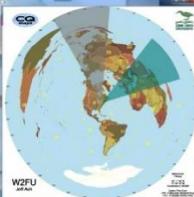
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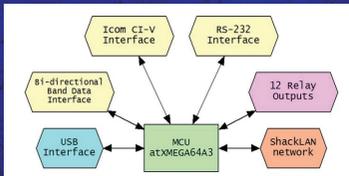
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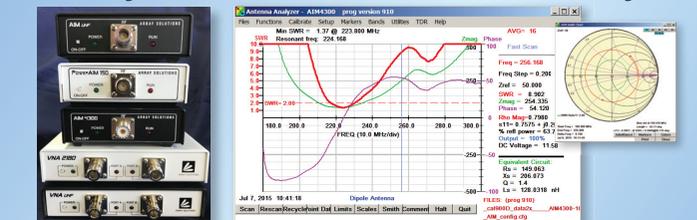
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IC-7700 | HF/50MHz Transceiver

- The Contesters' Rig • HF + 6m operation • +40dBm ultra high intercept point • IF DSP, user defined filters • 200W output power full duty cycle • Digital voice recorder



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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-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-V80 | HD 2 Meter FM Transceiver

- Tough construction • 750mW loud audio • Powerful 5.5W of output power • IP54 and MIL-STD-810 rugged construction • Built-in CTCSS/DTCS • WX channel & weather alert function



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-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-51A PLUS2

VHF/UHF D-STAR Portable

- RS-MS1A, free download Android™ application • New modes for extended D-STAR coverage • Terminal Mode & Access Point Mode allow D-STAR operation through Internet • DV & FM repeater search function • Dplus reflector link commands



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FTDX5000MP Limited | 200W HF + 6M Xcvr

- Internal Power Supply • Two Totally Independent Receivers
- Super Sharp "Roofing" Filters • High Performance Yaesu Custom- designed 32-bit Floating Point DSP • True Analog Meter Precision



FTDX3000 | 100W HF + 6M Transceiver

- 100 Watt HF/6 Meters • Large and wide color LCD display • High Speed Spectrum Scope built-in • 32 bit high speed DSP /Down Conversion 1st IF



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



FTDX1200 | 100W HF + 6M Transceiver

- Triple Conversion Receiver With 32-bit Floating Point DSP • 40 MHz 1st IF with selectable 3 kHz, 6kHz & 15 kHz Roofing Filters • Optional FFT-1 Supports AF-FFT Scope, RTTY/PSK31 Encode/Decode, CW Decode/Auto Zero-In • Full Color 4.3" TFT Display



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



FT-857D | Ultra Compact HF/VHF/UHF

- 100w HF/6M, 50W 2M, 20W UHF • DSP included • 32 color display • 200 mems • Detachable front panel (YSK-857 required)



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



FTM-100DR | C4FM FDMA/FM 144/430 MHz Xcvr

- Power Packed System Fusion Transceiver • High Audio Output Power • Rugged Powerful Transmitter • Integrated 66ch High Sensitivity GPS • 1200/9600 APRS Data Communications



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-2DR C4FM/FM 144/430 MHz Xcvr

- Analog/C4FM Dual Monitor (V+V/U+U/V+U) • System Fusion compatible • 1200/9600 APRS Data Communications • Integrated 66ch High Sensitivity GPS • Wide Band Receiver • Snapshot Picture Taking Capability With Optional MH-85A11U



NEW

FT-65R | 144 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 Flash-light, 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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TS-990S | 200W HF + 6M Transceiver

- World's first dual TFT display • 200W output on all bands
- ± 0.1 ppm TCXO ensures both high stability and reduced power consumption • Triple 32-bit DSP's dedicated to main/sub receivers and band scope • Main receiver employs full down conversion, new mixer & narrow band roofing filters • Third order intercept point (IP3) +40dBm for highest level of RX performance (main receiver)

Call For Special Price!



TM-D710G | 2M/440 Dualband

- V+V/V+U/U+U operation • Built-in GPS • Built-in TNC for APRS & DX-Cluster operation • 50W 2M & UHF • 1,000 memories • Dual receive • Green or amber backlight colors • Latest APRS firmware w/new features • Sky Command II remote functions

Call For Special Price!



TS-480SAT/HX | HF + 6M Transceiver

- 480HX 200W HF & 100W 6M (no tuner) • 480SAT 100W HF & 6M w/AT • Remotable w/front panel/speaker • DSP built-in

Call Now For Low Price!



TS-590SG | HF/50MHz Transceiver

- Equipped with 500 Hz/2.7 kHz roofing filter as standard • ALC derived from TS-990S eliminating spike issues • Antenna output function (shared with DRV connector) • CW - morse code decoder function • Improved 1st mixer • New PFB key with multi-function knob • New split function enabling quick setting • LED backlight with selectable color tone



TM-V71A | 2M/440 DualBand

- High RF output (50W) • Multiple Scan • Dual receive on same band (VxV, UxU) • Echolink® memory (auto dialer) • Echolink® Sysop mode for node terminal ops • Invertible front panel • Choice of green/amber for LCD panel • 104 code digital code squelch • "Five in One" programmable memory • 1000 multifunction memory

Call Now For Your Low Price!



TH-D72A 2M/440 HT w/extended RX

- 5W TX, RX 118-524 MHz, VxU, VxV, UxU
- APRS w/built-in 1200/9600 TNC • Built-in GPS, Built-in USB, digipeater • Echolink® compatible, • Mil-Spec STD810

Call For Special Low Price!

TH-D74A M/220/440 HT w/D-STAR!

- D-STAR compatible • APRS ready w/built in GPS • Color weather station information • Built-in KISS mode TNC • High-performance DSP voice processing • Standard compatibility for Bluetooth

Call For Low Price!



TS-2000/2000X | HF/VHF/UHF Transceiver

- 100W HF, 6M, 2M • 50W 70CM • TS-2000X 10W 1.2GHz
- Built-in TNC, DX packet cluster • IF Stage DSP • Backlit front key panel

Call For Special Price!



TM-281A | 2 Mtr Mobile

- 65 Watt • 200 Memories • CTCSS/DCS • Mil-Std specs • Hi-quality audio

Call For Special Low Price!



TH-K20A | 2M Handheld

- 2M 5.5W • VOX • CTCSS/DCS/1750 Burst built-in • Weather alert

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ACOM-1000

- HF and 6 Meter 1KW Amplifier • Match 3:1 SWR with No Tuner • User Friendly QSK Operation • LCD Message Display
- Single 4CX800a Tube • Vacuum Antenna Relays

Call For Additional ACOM Products!



The SDRplay RSP FAMILY

THE WORLD'S FAVORITE SDR RECEIVERS

- Continuous SDR receiver coverage from 1 kHz to 2 GHz
- Now includes the new improved RSP1A entry-level SDR
- 14-bit ADC Technology (not an 8-bit dongle!)
- Only needs a PC and an antenna
- Visualize all the signals in multiple bands simultaneously
- See up to 10 MHz spectrum in one go
- Use as a stand-alone Receiver or high-resolution Panadapter
- Built-in High performance Front-end Filters
- SDRUno Windows SDR software provided free-of-charge
- Also works with other platforms and popular SDR software
- Raspberry Pi3 supported with SD Card Image
- Superb review of RSP2pro in October 2017 QST magazine
- Backed by the biggest and best SDR support community
- Excellent value starting at \$99.95



MA-40

- 40' Tubular Tower

Call For Latest Pricing!

MA-550

- 55' Tubular Tower • Handles 10 sq. ft. at 50 mph • Pleases neighbors with tubular streamlined look

Call For Latest Pricing!

All US Towers shipped by truck; freight charges additional.



TX-455

- 55' freestanding crank-up • Handles 18 sq. ft. @ 50 mph • No guying required • Extra-strength construction • Can add raising and motor drive accessory • Towers rated to EIA specifications • Other models available at great prices!



218XATC-PL-(length) RG8x (240UF) w/PL259 Connectors Each End.

Weather-Proof Heat Shrink Tubing.

- Stranded Center Conductor.
- 95% TC Braid + bonded 100% Foil Shield.
- Very Flexible, Light Weight, and Smaller than RG8 sizes.
- Non-Contaminating-UV Resistant-Direct Burial-Black Jacket.



233/2-G4-(length).

- Unique design (Nickel Grommets 4" Spacing) allows for easy attachment to a vehicle's body or truck bed to create a "ground-plane".
- Good option as a "buss-bar" in the shack.
- 1/2" wide tinned copper 38x48x8/384 10ga 53 Amps.
- Stocked in 1.5', 3', 5', and 10' foot lengths.

REMOTE RIG



RRC-1258 MkII-S-Set

This set of interfaces allows remote control of your Amateur Radio Station via Internet in a user-friendly and cost effective way! RemoteRig gives you control of the radio coupled with crystal clear TX & RX audio and sending CW with your own Paddle!

New! Now Stereo Version for Dual Receiver radios.

Works with all Computer-controllable radios from: **Alinco - Elecraft - ICOM - Kenwood - Yaesu**

For radios with detachable front panels no PC is required for: TS-480HX/SAT; TS-2000 (RC-2000 req'd); IC-703/Plus; IC-706 series; DX-SR8T; IC-2820H; IC-R2500

Just simply insert your control box in place of your front panel interconnect cable, place the body of the radio on the remote end and you are on the air as if you are there! Extra Controller and Remote interface units sold individually for multiple sites/users.

Now includes 12V power supply, \$12.95 value!

Available exclusively from all HRO locations!

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