



# *PVRC Newsletter*

## *October 2018*

**Newsletter Editor:** John K3TN [jpescatore@aol.com](mailto:jpescatore@aol.com)

**Website:** <http://www.pvrc.org>

**Meeting Info:** <http://www.pvrc.org/chapters.htm>

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### **President's Letter – Bud W3LL**

**H**ello, PVRC – This is transition season for PVRC as we move from summer to the fall. A great time to be a member. It's also a transition period in our expanding awards program.

The PVRC Olympics Program ended for the 2017/2018 year in a spectacular fashion. Created by our Treasurer Tom K3AJ who wrote the rules, designed and procured the gorgeous Olympic medallion/coin and adjudicated the results. With the end of the Olympics season for this year, we transition to awarding those coins by our chapter chairmen.

I had the privilege to see those smiling faces at the NW meeting as Chairman Jim WX3B placed the black ribbon holding the coin over the heads of the silver, bronze and gold winners. The revised 2019 Olympic rules can be found thru our PVRC Website homepage.

We're also transitioning from the end of the 5M 2017/2018 season toward 5M award presentation time. Certificates for those on the ladder toward their 5M goal, plaques for those reaching the 5M plateau and endorsement plates are being awarded to hard working members by chapter chairmen. Again, I had the opportunity to see this in action at the September NW meeting. Nothing like seeing happy members receiving presents at holiday time.

The NAQP Club Cup Challenge transitions to an end for this year with a well-deserved congratulation to SMC for retaining the trophy. But there is a positive outcome for PVRC in this competition. Everyone came out in force to achieve record breaking participation levels in this six-inning challenge. We congratulate all who gave points to PVRC.

With every challenge there is also a learning experience. Ours is the need to improve individual score contribution. Our Contest Champions did an outstanding job in raising the level of participation. Their next task, and yours, is to raise the level of our scores - especially in SSB and particularly in RTTY segments of these events.

The transition from summer to fall brings out the end of summer BBQ events, particularly Fowlfest and the Galactic Pig Fest at NR4M. Steve, host of the Galactic Pig Fest, thanked everyone for their help and participation – Steve’s letter is [here](#).

Transition also means my transition from PVRC president. I had the pleasure of awarding President Leadership awards to both Secretary Tim N3QE and to VP Jay W3MMM at the NW meeting. I’ll be presenting two President Leadership awards at the Annapolis Kentmorr Crab Bash & Dinner. In addition, I’ll also be attending the October Laurel meeting for a President’s Leadership award presentation.

Transition also means the birth of an award. This month VP Jay W3MMM introduced the Inter PVRC Sweepstakes Awards. A new Triple Header program rolled out to increase participation at the Chapter level as well as offer a little in-house competition. Created by our VP Jay W3MMM, who wrote the rules and will design the trophies and adjudicate the results. Full details available [here](#).

While we’re on the topic of awards and trophies, VP Jay W3MMM took on the task of creating a spectacular PVRC Trophy Room commemorating all our past wins and losses in various contests throughout the history of PVRC. A must see look at our homepage. Those PVRC virtual championship banners are now virtually hung from our virtual website rafters! - check them out [here](#). It’s also available on the Contesting Pull Down menu at the top of the page.

Secretary Tim updated the Prospective Member Map. Tim’s creativity knows no bounds. The Google map has pins that display, when your cursor is placed over it, the Callsign of someone who submitted contest scores and is not a member of PVRC. A great recruiting tool for all of us to use. I discovered two nearby testers that I intend to recruit. We can find this map from our PVRC website homepage.

VP Dan, who brought you PVRC Logo shirts and jackets, is now offering a group buy for the MORTTY V3 Kits at \$18 each. RTTY is default preload if none specified.

If you like the look of our homepage you can thank Bob K4NTO. I asked Bob a few months back to be a fly on the wall during our bi-weekly Officers Call to capture important items for inclusion on our PVRC website. As you can see Bob took the task to heart.

Speaking of awards, we recently received an award from NCCC for the 2017 California QSO party, Club Competition, Large Category, Non-California, Potomac Valley Radio Club. We’ll be making this presentation soon to the deserving PVRC member.

Transition also means a change in a chairman position. I appointed Anthony WM3T to succeed Bud W2RU as chairman of the Roanoke – Blacksburg Chapter of PVRC. This relieves Bud to pursue his challenge to the ARRL Roanoke Division Director. We wish all the best to Bud in this important endeavor.

Transition also occurs during our annual election season. I had the pleasure at the September NW meeting to nominate: President - K3AJ Tom Valenti, Secretary - N3QE Tim Shoppa, Treasurer - K2YWE Dan Zeitlan and Vice President 1 - W3MMM Jay Horman along with a list of trustees to include all seventeen (17) presently serving. Remaining is an open nomination to fill one VP position.

Transition also means moving from the sometime doldrums of summer to the Fall big time WW contests. This month we have CQWW RTTY, and CQWW SSB. Let's get another two wins to hang in Jay's virtual Trophy Room.

Also, coming up is the week long W3ADO On Air Naval Academy callsign activation organized by Frank W3LPL. It will take place from Friday Sept 28 at 0700Z through Friday October 5th at 2359Z. W3ADO on the air operation will be during the international Enigma Reloaded event from PVRC member home stations -- not from the Naval Academy. Modes are CW, SSB and any digital.

From "The Daily DX] Vol. 22 No. 181 - September 24, 2018"

### **"ENIGMA RELOADED" EVENT"**

The "Enigma" was a German WWII code machine. The idea is to work these stations, each paired with an existing enigma cipher machine. See [www.enigma-reloaded.it](http://www.enigma-reloaded.it) All the bands 160-10 are being used, including the WARC-79 bands, SSB, CW and digital modes. Spotting is allowed but the Activating Stations may not spot themselves. Others are encouraged to spot them.

The exchange is RS or RST. There is a scoring system, one point for a contact with one of the "Activating Stations" per day, per band, per mode. Some of the stations will not be on all modes. Multiply your total contacts by the number of different "Activating Stations" you work. European stations need at least 16 valid contacts for the award certificate. Others need just eight QSOs. Some "Activating Stations" will have multiple operators at multiple locations, in shifts. One example, K3CWO will have various members of the CWOps Club, CW only.

I've used up my word count for this month's column so now it's on to the Sports Pages written by Ghost Writer Tom K3AJ.

### **Sports Pages 10/18**

It was tough slogging in the September VHF contest this year. No discernable E-skip on 6M in most of PVRC land, no real tropo to speak of and wet weather all conspired for low QSO counts and scores. Participation seemed to suffer as well. Nevertheless, three multiops with a number of PVRC ops and 16 SO entries were reported. Team W3SO scored a second-place finish in Limited Multiop HP with 435 QSO/72K. WA3EKL (@N3DPB) also played in that category with 95/3.1K. It was interesting that they made 28 QSO in 18 grids using an omnidirectional antenna and 100W on 2M. Team W3RFC also played as a multiop with 93/4.8K in MO HP. Among SO's, W3IP and N3HBX were almost tied for top PVRC score with about 29K each. K3AJ noted that well over half his QSO's in a very limited time effort were on FT8. K3ZO still sticks with SSB/CW exclusively and he made more QSO than K3AJ. K3CCR (N3UM op) slugged it out with some long dry spells between QSO, and only made 1 QSO each on 903 and 1296 owing to wet trees. W3EKT always hits the VHF contests hard and he scored 166/15.9K for a nice effort in SO LP and a top 10 finish. In SO 3Band LP W3LL (112/4.6K) and N3ALN (74/1.9K) both made the top 10.

WAE SSB didn't generate a big turnout with a couple of M/S entries and 11 SO's. But not much different than last year with 10 SO's. 40M and 20M were the money bands with few QSO on 15M and 10M and noisy conditions on 80M. KD4D (at N3HBX) made

the usual big effort in M/S (with an all-star PVRC team of K3RA, KD4D, KE3X, N3QE, N8II, N8IVN, NN3W) taking the top spot in the US with a score of 1.6M. Team WA3EKL (at N3DPB) made 452 QSO/197K also in M/S. By far the top PVRC SO score was by EA5DFV (no circle in WAE!) who had a top 10 world finish in SO HPO with 447K. NR3X (N4YDU), K4XL and K1IMI (N4CW) had top 10 US finishes in SO HP.

A decent turnout in the YO DX Contest found N2YO at NR4M putting up the #2 US score in SO Mixed HP with 552 QSO/381K. K1IMI (N4CW) scored a #2 in the US in SO CW HP with 334/141K. K3WI and K000 also made some Q's in this one.

A dozen PVRC'ers played in the MD/DC QSO Party. N3QE put up the top PVRC score (and the top reported score overall as well) with 60K. N3UM and W3GB at K3CCR put up an impressive effort with 49K. W4GO/M was the top mobile entry with 36K. WR3R made 81 QSO for 7K in QRP. Other PVRC entries with 100 or more QSO were by K3AU (K2YWE), KS3O, K3MAW, KG4USN and W3FA.

Thanks for reading and hope to work you in the contests this month.

73, Bud W3LL

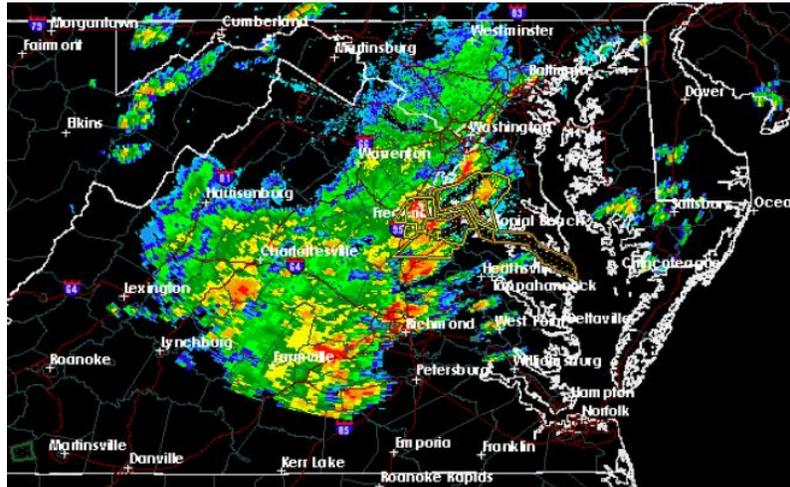
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Treasurer:	K3AJ	Tom Valenti	W3GRF, W4AAV, W4KFC, N0FFZ, W4LUE, W7YS, VP2VI/W0DX, W3IKN, W4KFT

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**PVRC Website: <http://www.pvrc.org>**  
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## Storm Damage at K4GMH – Mike K4GMH

On Sunday, 12 August 2018, a micro-burst with winds over 80 MPH plus rain hit my QTH outside of Fredericksburg (south Stafford County) Virginia, which caused considerable damage. Unfortunately, the QTH was at the center of the damage area including destroying the tower and all the antennas.



The tower, 130 ft Rohn 45, was doing okay in approximately the first half of the storm. No movement of the tower was seen looking at it through the kitchen window. Unfortunately, about then, a neighbor's tree was blown over on the tower's northwest set of guy wires. About that same time, another tree fell on top of the house, followed a few seconds later by the tower's mast coming to rest on the that tree. Now all I could see out the kitchen window was limbs and branches from the tree and a twisted antenna element. Although the mast sticking out of the tower came to rest on top of the tree on the house, the actual top of the tower had smashed into the whole house generator. Yes, you guessed it: commercial power then went out.



The whole house generator still started even after the tower smashed it. Unfortunately, it didn't provide any electricity. Had to go outside in the wind and rain to shut off the gas going to the generator to get it to stop. The good news is the commercial power came back on after being out for less than seven hours.

When the power came back the downstairs AC had stopped. A limb had penetrated the outside unit and stopped the cooling fan. Again, very fortunate the removing of the limb allowed the fan to start working and once more had AC.



The "Tower Top" picture shows a tree on the house roof, wiped out generator, the tower top, the remains of a 4-element SteppIR, a 40m Moxon and the bent 2-inch dia., 1/4 inch wall, chromoly steel galvanized mast. The tree saved much more damage to the house by absorbing the falling top of the tower rather than the house.

At the time of the tower being destroyed it was decked out with a pair of 40m Moxons, one at 140 ft and the other at 70 ft, a 4 element SteppIR at 130 ft and an 80m inverted vee with the apex at 120 ft and the ends at 80 ft. Only "pieces and parts" of the antennas remain.

Next tower will be a crank up as still too many trees that would have to be cleared to safely put up a guyed tower.

Here's hoping your Sunday was better than mine.

## Colonial Capital Chapter Presents Award to Will K4MI – Bill NR4C

The Colonial Capital Chapter had their annual Awards and Dinner meeting on September 12th. PVRC awards were passed out to those in attendance.

Below is a photo of me (Bill NR4C) passing Will (K4MI) his Five Meg Plaque (note the Olympic Bronze medal around his neck). We are all very proud of Will and his accomplishments - and thanks to PVRC for making this possible.



## PA0WV Weak Signal Copying Pitch Test

Wim PA0WV has posted an interesting audio file where you can determine where your CW copying “sweet spot” is from both a pitch and a volume perspective. From Wim:

Interesting is to investigate how a minus 12 dB S/N ratio can be detected in noise with a bandwidth of 300 up to 2800 Hz. Lower pitch should have a better detection because the human mind has a built-in filter about one octave wide.

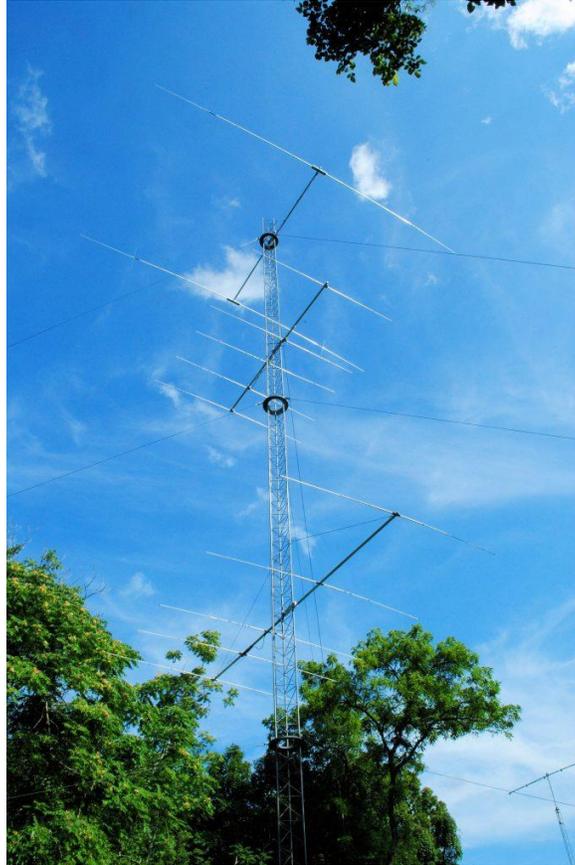
For that reason, I present a Morse wav file (**not** MP3 because these are compressed and mask weak signals.) The file is 8000 16-bit samples/s and 320 second duration. So may take some time for downloading 4.6 MB. It starts at 350 Hz and after each word space the pitch is increased 50 Hz.

The speed is 12 wpm, so that every ham has the opportunity to report decoded text and it is easier to decode slow code in noise. Remember when it is hard to decode: play with the loudness in order to find the best result.

The audio file is [here](#).

## New Tower and Antennas at W4AAW – Mike W4AAW

Here's a picture of our new rotating tower two - known as T2 - with the stack of two five element yagis for 10M and a 40M yagi at 92 feet.



## Two 40 Meter Broadcast Intruders Gone - Southgate Amateur Radio News

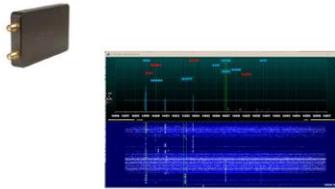
The IARU Region 1 Monitoring System (IARUMS) reports that two long-time broadcast intruders on 40 metres are gone. IARUMS Coordinator Wolf Hadel, DK2OM, said in the August IARUMS newsletter that Radio Hargeisa in the Republic of Somaliland on 7,120 MHz, and Radio Ethiopia on 7,140 MHz, departed the band during the last week of August. "We did not miss them," he commented.

IARUMS did report increasing military traffic on 7 and 14 MHz, "especially on digital modes from Russia and China." In addition, a wideband over-the-horizon (OTH) radar in China has caused serious problems on 20 meters, while an Iranian radar on 28,860 MHz "could be heard under sporadic E conditions." German telecommunications authorities have filed a formal complaint.

Hadel said a Russian Navy system believed to be in Moscow appeared on 7,182 MHz on F1A, a 200 Hz shift, identifying as RDL. German telecommunications authorities were notified. Reports of amateur band intruders can be submitted via the IARU Region 1 Monitoring System Logger [here](#).

**The \$200 Approach to Adding a Panadapter - via Tom N1MM**

\$200 Panadapter



There are different opinions on how much value a panadapter display adds to a contesting station, especially when you look at return vs investment. I've been using a P3 with my K3, great for working split pileups but I don't think contesting return would have justified the cost.

Tom N1MM did a presentation to the Yankee Clipper Contest Club on a less expensive way to add those capabilities, his presentation is available [here](#).

**Membership News – Tim N3QE**

Since June 2018, PVRC has added 10 new members. Please welcome:

- Jonathon KM4REH, Sharon KM4ZZZ, Bruce W6SFG, and Mike KD7PUF in Rappahannock Valley Chapter.
- Ben KC3LNK in the Laurel Chapter.
- Cher KC3CHL, Ross AB3TT and Tyler K3MTR in the Annapolis Chapter.
- Brian, KZ4P in the Blue Ridge - Purcellville Chapter.
- Mike WA3MJZ in the Northwest 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**

- Oct 6 – Oceania DX SSB
- Oct 3 – CA QSO Party
- Oct 13 – Oceania DX CW
- Oct 20 – Worked All Germany
- Oct 27 – CQ WW SSB

**Logs Due This Month**

- Oct 3 – All Asian DX SSB
- Oct 11 – SARTG RTTY
- Oct 16 – ARRL UHF

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

**From the PVRC Treasurer – Tom K3AJ**

PVRC has chosen not to implement an annual Dues requirement. We depend on the generosity of all of our club members to finance our annual budget. In addition, active PVRC members are expected to participate and submit logs for at least two PVRC Club Competition contests per year.

When contemplating your donation to PVRC, each member should consider the benefit you are receiving from PVRC and its many opportunities for your personal growth in our wonderful hobby, then donate accordingly.

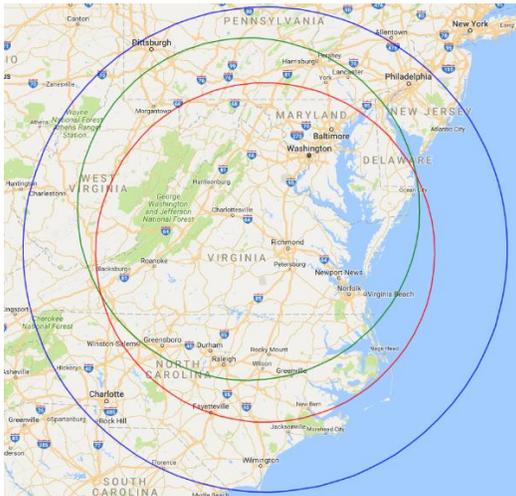
Direct donations to PVRC via Credit Card or PayPal may be made by clicking this "Donate" button and clicking the next Donate button that appears on your screen:



**Donations to PVRC are not tax deductible**

**Eyeball QSO Directions**

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



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

**Red: ARRL HF Circle**  
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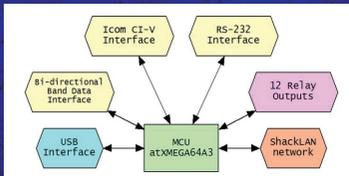
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The automatic amps can drive an antenna switch of up to 10 antennas and select up to ten bandpass filters applies to all automatic models

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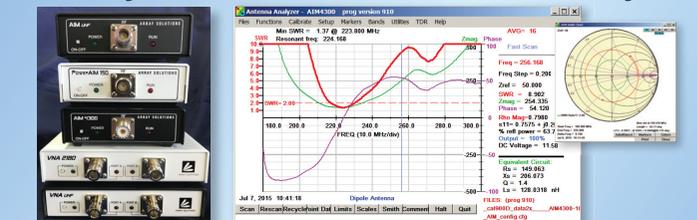
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- 100W on HF/50/144MHz, 75W on 430 (440) MHz, 10W on 1200MHz\*1 • Double superheterodyne with image rejection mixer



## IC-7200 | HF Transceiver

- 160-10M • 100W • Simple & tough with IF DSP • AGC Loop Management • Digital IF Filter • Digital Twin PBT • Digital Noise Reduction • Digital Noise Blanker • USB Port for PC Control



## IC-R8600 | Wideband Software Defined Receiver

- 10 kHz to 3 GHz Super Wideband Coverage • P25, NXDN™, dPMR™, D-STAR Mode • Large Dot Matrix LCD Display w/ Quick Spectrum Scope • SD Card Slot • Remote Control Function



## 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-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



## 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-7700 | HF/50MHz Transceiver

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



## 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-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-R30 | Digital/Analog Wideband Xcvr

- 100 kHz to 3.3 GHz Super Wideband Coverage • P25 (Phase 1), NXDN™, dPMR™, 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-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+U/U+U+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



**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 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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**\*FREE 1 OR 2 DAY DELIVERY TO MOST OF US!**



## TS-990S | 200W HF + 6M Transceiver

- World's first dual TFT display • 200W output on all bands
- $\pm 0.1$ 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!**



## 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-D74A

2M/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!**



## 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!**



**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.



## The SDRplay RSP FAMILY

### THE WORLD'S FAVORITE SDR RECEIVERS

- Continuous SDR coverage from 1kHz to 2GHz (NO GAPS!)
- Now includes the new RSPduo 14-bit Dual-Tuner SDR
- RSPduo can simultaneously receive on 2 totally independent 2MHz spectrum windows, anywhere between 1kHz & 2GHz
- All RSPs can receive, monitor and record up to 10MHz spectrum at a time
- Visualise all the signals in multiple bands simultaneously
- S/W pre-sets for all the bands from the new LF2200m to 23cm
- Excellent dynamic range for challenging reception conditions
- Built-in High performance Front-end Filters
- Use as a stand-alone general coverage receiver, or as a high resolution Panadapter
- SDRuno Windows SDR software provided free-of-charge
- Also works with other platforms and popular SDR Software
- The perfect gift for newcomers & returners to the radio hobby
- Calibrated S meter/RF power & SNR measurement with SDRuno
- Only needs a computer and an antenna
- Backed by the biggest and best SDR support community



## 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!



## 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

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*All US Towers shipped by truck; freight charges additional.*

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## 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!

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