

PAARAgraphs



The Official Newsletter of the

Palo Alto Amateur Radio Association, Inc.

The Friendliest Club Around

Celebrating 86 years as an *active* amateur radio club—Since 1937<http://www.paara.org/>

Falling from the Sky: Chasing WX Balloon Transmitters

Beau, K6EAU, Rikke, KN6KZF,
Steve, K6WW

Beau, Rikke, and Steve will share their experiences and antics of chasing WX balloons. There are thousands of balloons launched twice a day, at the same time, from sites all over the world, carrying radiosondes to capture and transmit weather data to ground stations. During their roughly two-hour flight, their diameter grows to over 25' and they rise to above 100,000 feet when they burst and drop back to earth. Since the radiosonde transmits a tone on UHF, just under the ham band, for about 8 hours, chasing and recovering the payload has become the ultimate t-hunt.

Amateur Operators KN6KZF & K6EAU (a.k.a. Rikke & Beau) enjoy cruising the air waves as a conveniently socially distanced hobby. They have enjoyed reaching out from lighthouses, mountain tops, national parks and even via the International Space Station. Combining the fun of geocaching, balloons and radios has led to a great way to spend time together and get outdoors both launching and recovering various devices. Most recently that involved running Ground Control for Parachute Mobile Mission 42 while 3 skydivers made successive jumps to make both VHF and HF radio contacts while descending from over 10,000 feet under chute.


Steve Wilson, K6WW, is a native Californian who has lived in the SF Bay Area for the last 33 years. Steve's godfather, Alan Young (SK K6KLL), a for-

(Speaker — Continued on page 4)

This meeting will be a Hybrid Meeting Zoom and In Person

Time: January 6, 2023 07:00 PM Pacific Time
Please check <https://www.paara.org> for
Zoom Details

Upcoming Events

Jan 6***	PAARA General Meeting, 7:00 PM
Feb 3	*** Zoom & IRL Meeting
Mar 3	
Jan 18	Board Meeting, 7:00 PM.
Feb 15	Everyone welcome! Zoom Meeting,
Mar 15	eMail President for details!

President's Corner

January 2023

Happy New Year! I hope everyone had a wonderful holiday season! Hard to get a grip on it being 2023 already! In case you missed it, we had 34 people at the December Dream to Reality meeting! That's the largest in-person turnout of the year. I hope we can



have that many and more at all our in-person meetings in 2023. I wish to congratulate Uncle Frank, AF6XX, for taking home the Dream to Reality grand prize of the Elecraft KX3 Radio! He was smiling ear to ear when leaving for home. By now, I hope he's spent plenty of time working on and getting to know his new radio.

Have you started the New Year off right with an Amateur Radio-related resolution? Was your resolution a new radio or antenna? Mine is to upgrade my IC-7100 to a more capable radio, more discriminating front end, at some point this year. Maybe you'll commit to upgrading your license in 2023? How about making it a point to make at

(President — Continued on page 4)

**Trip report:
Roadside ham radio operations and
Railfanning at the Tehachapi Loop
Connie, KN2EFI**

Back in October I was in Tehachapi on personal business. I took time out one afternoon to visit the Tehachapi Loop in order to do some casual railfanning plus roadside ham radio in order to try out my portable setup.

The Loop is a helical track structure enabling heavy freight trains (Union Pacific) scale the steep mountain pass between Bakersfield in the central valley and Mohave in the east. (https://en.wikipedia.org/wiki/Tehachapi_Loop)

The freights are fun to watch on the Loop as they circle around and over themselves. There is a spiffy new viewing platform on the side of the road above it, with some space for parking on the other side.

The location is lovely as well, on a mountain-side with a view up and down the pass. Several red-tailed hawks accented the whole experience as they rode the thermals and soared around hunting just above the viewing platform.

its own stubby little screw-in tripod legs. I also had my Uniden 436HP handheld scanner with all of Radioreference programmed in (<https://www.radioreference.com> is a rich reference even for hams), scanning just the railroad related frequencies. Railroad operations voice channels are in a band around 159-161 MHz. Intra-train automation is around 452.9 and 457.9 MHz. PTC--GPS based traffic management--is around 220 & 221.

While waiting for train action on the Loop, I popped my hatch, connected my rig, set up my antenna and operated with 20 watts on 20m for a little while out of the back of my car on the side of the road across from the platform.



Fig. 2 — Roadside ops Setup



Fig. 1 — View from platform of scenery and train crossing itself

The ham equipment I had with me were a Xiegu G90 HF portable radio and no-name 6Ah LifePo battery, Wolf River Coils "take-it-along" vertical antenna -- an end-loaded vertical with

My intention was to time how long it would take to set everything up and get on the air without rushing, and indeed to see whether I could ac-

(Tehachapi — Continued on page 3)

(Tehachapi — Continued from page 2)

tually make contacts. This was a successful proof of concept in that it took me about 10 min from popping the hatch on my car to starting to operate. The antenna is very simple and takes only about 5 min to set up including assembly and throwing radials out on the ground. Tuning is done by hand-moving a simple clip up and down the coil. I had previously roughly tuned it for several bands and marked the locations on the coil with a Sharpie. Even though the little Xiegu G90 radio has an internal antenna "tuner," its builtin SWR scanner indicated a good match so I didn't need any additional tuning.

I made a quick couple of 20m QSOs including one with a POTA station in Colorado. At that point though the first train horn sounded in the distance while my scanner simultaneously started to bloop that it was hearing a "head of

train" device within range. (You generally don't have to wait more than 20 min.) With the scanner I listened in on Union Pacific rail operations staff chatter and occasional bleeps and bloops from the trains themselves and local track sensors while several freight trains came through. (Picture 4 and Picture 5)

Spectators appreciated being able to hear the railroad ops radio chatter while watching the trains circle back on themselves. At one point the current group were starting to head back to their cars when we heard operations staff on the radio indicate that a southbound train was being held for a northbound train to come through. So most everyone stayed to watch a few more trains running the Loop in opposite directions in succession. Afterwards I hung out and chatted with a few people about their travels and my radios.

(Tehachapi — Continued on page 4)



(Tehachapi — Continued from page 3)

All told I had a very enjoyable and successful "mission." If you are ever travelling near Tehachapi it is definitely worth checking out the Loop. A few conclusions I have drawn from this trip are that I do like the vertical for my typical kind of portable roadside ops. I am also very happy with my Xiegu G90 as my first HF rig. Finally, radios and antennas never fail to facilitate conversation even with laypeople.

PS: get lunch at the Keene Cafe -- it's open again and the food is really good diner food. I definitely recommend their apple pie.

73, Connie KN2EFI

(Speaker — Continued from page 1)

mer broadcast engineer, got him into the hobby in 2001 when Steve got his Technician license. He upgraded to General in 2010 and Extra in 2016. He's a former ARES Emergency Coordinator for Fremont and former President (2014-2016) and current Vice President (2023) of the South Bay Amateur Radio Association (SBARA). He's also a member of the Parachute Mobile support team.

A Cheap Tablet with a Big Benefit

Rob Fenn, KC6TYD

I recently watched a YouTube review of a tablet and was very impressed so I bought one. After using it for a few weeks, I think you might find this tablet to be useful as well. The tablet is an Evolve III, Maestro and has an 11.6" screen. It comes with Microsoft 10 Pro installed. It runs on a Quad Core Celeron N3450, 4GB RAM, and 64GB hard drive. 2 standard USB ports, 1 HDMI port, a mini-SD card slot and earphone jake. So, you might be asking what's so great about these specs. Well, nothing; it's the price. It's currently selling for \$95 on Amazon. At one point Micro Center, located in the LA area, was selling it for \$60. What a deal! But here is why I think hams will love this tablet: it runs on 12 volts! That right, 12 volts. Now you can be in the field and not have to worry about having 110 volts or a generator nearby. Simply grab your favorite battery, solar setup, radios, and head to the park.



(President — Continued from page 1)

least one new contact every month? Or, attend a Hamvention like Quartzfest or the DX Convention? Whatever it is, I hope you'll share your resolution along with whatever Amateur Radio Christmas present you received with us during the January meeting.

Speaking of the January meeting, we need to give a big shout-out to Connie, KN2EFI, who will be our zoom technician in January as Ben isn't able to attend the meeting. Everyone attending the January meeting via zoom should be thankful she volunteered to operate the equipment in Ben's absence.

I want to thank last year's board for all their service and dedication to PAARA. I also thank them for continuing their support of PAARA by running again for continued service in 2023! If it wasn't for their support of the club, we wouldn't have the dynamic and active club we all enjoy. Please take a moment and thank them for all their hard work. I hope everyone will consider volunteering to assist in one of the PAARA activities that we do during 2023. Without volunteers, we can't have the fun activities PAARA is known for. I also want to thank Clark, KK6ISP, for running another great election.

On a sad note, Doug Teter, KG6LWE, a long-time PAARA member, lost his beloved wife of 39 years, Maureen, after a courageous battle with cancer. She passed away at home with Doug at her side on the 10th. She's finally at peace. Good thoughts are with you Doug and your sons Ian and Angus.

If you've been following my column, you'll know that I'll be at Quartzfest in January again this year along with a few other PAARA members. I hope you'll consider joining us for a week-long fun time in the AZ desert. I don't think I mentioned that there aren't any costs for camping on the BLM land nor admission costs for Quartzfest. If you can't make it to Quartzfest, hopefully, you'll consider the DX Convention on April 21~23 in Visalia. It would be wonderful to have a large PAARA presence there. Registration and information can be found at <https://www.dxconvention.com/>.

I look forward to seeing a room full of smiling faces at the January 6th meeting.

73, Jim K6SV

Get on the air to keep the airwaves alive!

A clear look for a 9:1 UnUn case

Rob Fenn, KC6TYD

I was surfing YouTube and came by a video by Mike Hannah, W9XAX, about a 9:1 UnUn, (Unbalanced to Unbalanced) matching transformer he made and then enclosed it in epoxy resin. I thought that was a cool twist for a case so I gave it a go. There's not a whole lot of parts needed. 2 bolts, washers, and wing nuts; a chassis mount SO-239, a toroid, and 3 equal lengths of wire. Of course, I can't forget the main ingredient, deep casting resin.

Using a very popular 9:1 UnUn diagram, by John, M0UKD, I wound up the T-130-2 toroid, attached the wires to the bolts and SO-239.

I'll be using a random wire as my antenna, which will attach to one of the bolts and a counterpoise that will attach to the other bolt.

To give the effect that the UnUn will be floating in the middle of the case, I poured a small amount of resin into a silicon mold and allowed that to dry. Once dried, I scuffed up the surface, which allows the second pour to adhere better, and placed the UnUn in the center of the mold. Due to the stiffness of the wires it was tricky bending them in such a way to keep the bolts perfectly vertical.

For the second pour I filled up the mold just to the level of the SO-239 flange and let the resin dry. The particular brand



Fig. 1 — 9:1 UnUn



Fig. 2 — In Mold

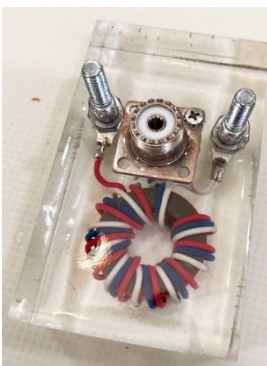


Fig. 3 — Dry

of resin I was using takes 2 days to completely cure

After I removed the UnUn from the mold I discovered that the surface tension of the resin wicked up along the inner walls of the mold creating a cupping effect. I didn't like the way this looked so I sanded the edges down a bit and scuffed up the surface. This time I didn't need the mold and simply drizzled resin over the surface of the UnUn just short of the point it would drip over the side. Time to let it dry again.

For this project I wanted to add an eye bolt so I could hang the UnUn. I drilled a hole in

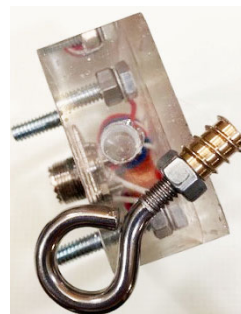


Fig. 4 — Eye Bolt

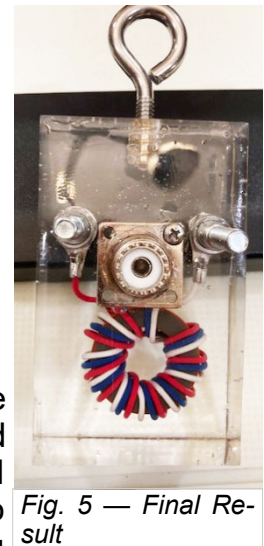


Fig. 5 — Final Result

the top surface of the UnUn and then screwed in a wood insert nut. I applied some resin to the nut before screwing it in hoping that it would add more strength when it dried.

Ok, time to take it for a test drive. Using a Bongo Tie I hung the UnUn from a mast, about 7 feet above the ground right outside the window, and then made a slopper configuration with the wire by throwing the other end over a tree branch. I discovered that the left bolt was just close enough to the SO-239 that if I screwed on the coax PL-259 first the wing nut could not make a full revolution. No problem, I'll just hook up the long wire first.

I'm happy to report that my new UnUn worked just fine and made crystal clear contacts. I'll be sure to bring it to next meeting so you can check it out.

PAARA



1st Prize Nano VNA-H4 with touch screen



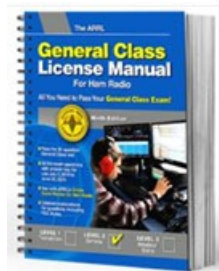
2nd Prize Nitecore NB 10000 GEN 2 Power Bank



3rd Prize EDCFANS Utility Knife



4th Prize ARRL General Class License Manual



5th Prize RoadPro RPSP-15 5 Watt Speaker



December Raffle Winners

Left to Right

- 5th Karen, KK6NGA — Power Pole Connectors
- 3rd Raul, K6RDL — Gerber 17-tools in one
- Eric Swartz, WA6HHQ, Elecraft
- 1st Frank, AF6XX — Elecraft KX3
- 4th Clark, Ai6ISP — Crimp Tool
- 2nd Keith, K1OKS — Heil Heritage Mic

Palo Alto Amateur Radio Association, Inc.

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Station Trustee K6OTA...	Ron Chester, W6AZ	
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Webmaster	Shrikumar, KA6Q	
	webaron@gmail.com	
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VE Exams

Redwood City Main Library, Community Conference Room, 4th Saturday 10:30 am each month and De Anza Park, Sunnyvale, 2nd Saturday 10:30 am each month except November and December. See website for details and exceptions: <http://amateur-radio.org> or Contact Al, WB6IMX@att.net

Electronics Flea Market

Sponsorship by **A.S.V.A.R.O.** — Association of Silicon Valley Amateur Radio Organizations

Second Saturday of month, March-September, 6am-12 noon

Contact: <http://www.electronicfleamarket.com/>

PAARA — Palo Alto Amateur Radio Association

Meets 1st Friday 7:00pm each month at Room H-6, Cubberley Community Center; Net 145.230 - PL 100Hz Mondays at 8:30. See our website at <http://www.paara.org> for more information or contact: Joel Wilhite KD6W, KD6W@ARRL.NET, 650-325-8239

FARS — Foothills Amateur Radio Society

Meets 4th Friday each month at 7:30pm

Contact: <http://www.fars.k6ya.org>

NCDXC — Northern California DX Club

Meets 3rd Thursday 7:30pm each month,

Repeater for member info 147.360, Thursday 8:00PM

Contact: <http://ncdxc.org> or Mike Gavin W6WZ, (650) 851 8699

50 MHz & Up Group

Meets 1st Thursday each month at 7pm in the Summit Room at the Sunnyvale Sports Basement, 1177 Kern Ave, Sunnyvale

Contact: <http://50MhzandUp.org>

San Mateo Radio Club W6UQ.ORG

Meets, 3rd Friday, January through November

Tuesdays & Thursdays, [Directed] Net, 7pm, N6ZX 145.370Hz -600KHz

PL107.2Hz

Contact: <http://W6UQ.org/calendar>

SPECS

Southern Peninsula Emergency Communication System

Meets each Monday 8:00pm on Net 145.27, 440.80 MHz

Contact: <http://specsnet.org> or Tom Cascone, KF6LWZ, 650-688-0441

SCARES

South County Amateur Radio Emergency Service

Meets 3rd Thursday 7:30pm each month, Belmont EOC, Belmont City Hall, One Twin Pines Lane, Belmont CA 94002. Net is on 146.445 [PL 114.8] & 444.50 (PL-100)

7:30 Monday evenings. Contact: President Gary D. Aden, K6GDA 650-743-1265

(D), 650- 595-5590 (N)

Web: <http://k6mpn.org> E-mail: pres@k6mpn.org

SCCARA

Santa Clara County Amateur Radio Association

Operates W6UU & W6UU/R, repeater 146.985-pl

Nets: 2m, 7:30pm Mon; 70cm, 10M (28.385) 8PM Thur.

Meets 2nd Mon each month @ 7:30 PM.

ARRL/VEC license testing contact 408-507-4698

SVECS — Silicon Valley Emergency Communications

Operates AA6BT repeater (146.115 MHz+)

contact: <http://www.svecs.net> or Lou Stierer WA6QYS 408 241 7999

TEARS — The Elmer Amateur Radio Society

Dedicated to operational training, knowledge building & FCC exam testing.

KV6R repeater under construction.

Contact: AA6T@ARRL.NET

Most members are Extra Class or VE's. See QRZ dot com/kv6r for class info

WVARA — West Valley Amateur Radio Association

W6PIY six-meter repeater on 52.58MHz. Normally, six-meters is linked with 147 and 223, while 441 and 1286 repeaters are linked.

VHF: 52.58 (-500) 151.4 ctcss UHF:

147.39 (+600) 151.4 ctcss 441.35 (+5.0) 88.5 ctcss

223.96 (+1.6) 156.7 ctcss 1286.20 (-12m) 100.0 ctcss

Meetings are 2nd Wednesday of every month except July, August and December.

Contact: <http://wvara.org>, Bill Ashby N6FFC, 408-267-3118, president@wvara.org

American Red Cross, Santa Clara Valley Chapter

Contact: <http://santaclaravalley.redcross.org> or Scott Hensley KB6UOO, (408) 967 7924 shensley@Novell.com

(Please send changes to [PAARAgaphs editor](#))



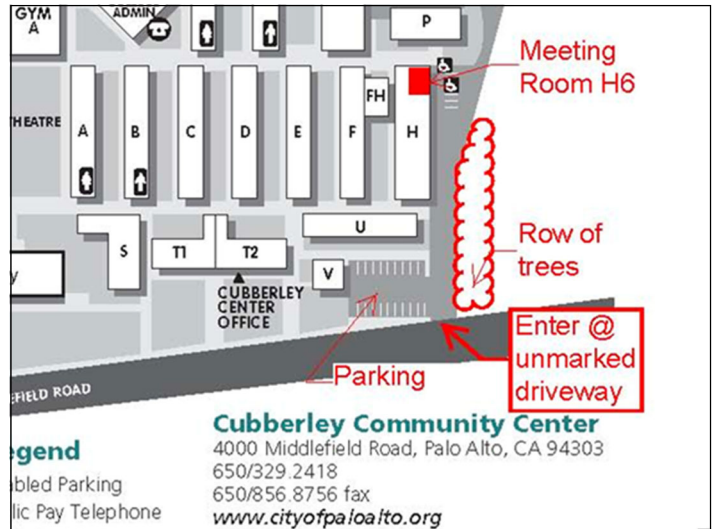
PAARA Weekly Radio Net

Info and Swap Session
 every Monday evening at 8:30pm
 on the N6NFI 145.230 MHz repeater

Week Control Operator

1 st	Doug - KG6LWE
2 nd	Doug - KG6LWE
3 rd	Ric - N6AJS
4 th	Rob - KC6TYD
5 th	Rob - KC6TYD

If you're interested in trying out at Net Control, Contact Doug, KG6LWE. It's good practice, and lots o' fun! Give it a try.



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Email: KARLDRESDEN@juno.com

Palo Alto Amateur Radio Association P.O. Box 911, Menlo Park California 94026-0911

Club meetings are on the first Friday of each month,
 7:00pm at the Room H-6, Cubberley Community Center.

Radio NET & Swap Session every Monday evening, at
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Scroll to the bottom of the page
 and fill out the info. All badges will
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The cost for a badge is \$25.00.

PAARAgaphs Ad Rates

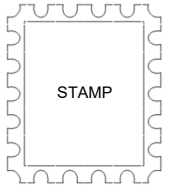
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- Not-for-profit ads by association members for ham-related items and wants. No cost for business card-size ads (additional space at \$2.50 per business card size per issue).
- For Profit organizations and/or individuals: \$5-business card size, \$14.00-quarter page, \$25-half page, \$50 full page or back cover per issue.

These fees may be reduced or waived in exchange for a valuable consideration that is given to the Association or its general membership. Such consideration must be in addition to any existing arrangements with the association. The PAARAgaphs editors reserve the right to reject any ad deemed to be not in the best interest of the Association.
 All fees payable in advance by the year with "scanner-ready" copy or text-only ads. **Give payment and copy to Walt Gyger, K6WGY.**

PAARAgaphs — January 2023

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 PAARAgaphs Newsletter
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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-4000XD | 2M/40 Mobile

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



FTDX10 | HF/50MHz 100 W SDR Transceiver

- Narrow Band and Direct Sampling SDR • Down Conversion, 9MHz IF Filtering Filters Produce Excellent Shape Factor • 5-Full-Color Touch Panel w/30 Spectrum Stream • High Speed Auto Antenna Tuner • Microphone Amplifier w/2-Stage Parametric Equalizer • Remote Operation w/optional LAN Unit (SDI-LAN10)



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

- 50W Radiote Output Power • Real Dual Band Operation (V-X, U-H, V-L, U-H) • 2-inch High-Res Full Color TFT Display • Band Scope • Built-in Bluetooth • WIRES-X Portable Digital Noise Filter Mode with RH-200



FT-70DR | CAFM/FM 144/430MHz Xcvr

- System Fusion Compatible • Large Front Speaker delivers 700 mW of loud audio output • Automatic Mode Select detects CFM or FM Audio and Switches accordingly • Huge 1.05 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 Tracking 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-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 With- in a compact Body • 3.5-Hour Rapid Charge-In- cluded • Large White LED Flashlight, Alarm and Quick Home Channel Access



FTDX101D | HF + 6M Transceiver

- Narrow Band SDR & Direct Sampling SDR • Crystal Routing Filters Phenomenal Multi-Signal Receiving Characteristics • Un- parallelized - 70dB Maximum Attenuation VC-Tune • 15 Separate (HAM 10 + GEN 5) Powerful Band Pass Filters • New Generation Scope Displays 3-Dimensional Spectrum Stream



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

- Ultra-Compact/Portable • Multi-Color Easy to See LCD • 208 Memory Channels/10 Memory Groups • Built-in Electronic Keyp • Internal Battery Operation Capability • Two Antenna Connectors • Built-in High Stability Oscillator $\pm 0.5\text{ ppm}$



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

- All New User Operating Interface E20-III (Easy to Operate-III) • Robust Speaker Delivers 3W of Clear, Crisp Receive Audio • Detachable Front Panel • Mounted in Multiple Positions • Supports Optional Bluetooth® Wireless Operation Using the SSM-BT10 or a Commercially Available Bluetooth® Headset



• RETAIL LOCATIONS - Store hours 10:00AM - 5:30PM - Closed Sunday
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 • ONLINE - WWW.HAMRADIO.COM

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