October 2026

17th Edition

SWR Magazine 1:1

ISSN: 3068-7233



QYT HF-98

A TOOL FOR EXPLORING THE SPECTRUM

DMR

MUCH MORE THAN JUST A MODE

FROM A 4:1 BALUN

TO A MULTIBAND ANTENNA

AUTOMATED MULTIBAND ANTENNA

IS THE TRADITIONAL SHACK DISAPPEARING?

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Introduction

On the cover

Autumn arrives with its colors, cooler afternoons, and an atmosphere that invites us to slow down and listen. On our October cover, a radio and computer sit on an outdoor table, surrounded by the warm tones of a landscape that seems to have been set ablaze in orange.

The image represents much of what we enjoy as ham radio operators: stepping outside the shack, taking our gear into the field, and finding in nature another place from which to explore the world through radio waves.

Among leaves, antennas, signals, and technology, autumn reminds us that ham radio does not always have to happen within four walls. Sometimes, all we need is a table, our gear, and a good place from which to start listening.



Photo by: qrper.com

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SWR Magazine
Connecting Passions, Inspiring Operators
Published by the Caribbean Amateur Radio Group (CARG)
Editorial Board
Publisher, Technical Editor: Juan R. Montijo, WP4OV
Editor-in-Chief: José Candelaria, NP4ET
Publication Details
Format: Digital Magazine
Frequency: Monthly
Language: English
ISSN ISSN: 3068-7233, English Edition

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Contact
info@swrmagazine.org
publisher@swrmagazine.org



Photo by: qrper.com

"Ham radio reminds us that, no matter how great the distance, there is always a frequency capable of bringing two voices together."

DXE-3X10 SkyHawk

Efficient HF Directional Performance Without the Hassle



The DX Engineering DXE-3X10 SkyHawk is a Yagi-style directional antenna designed for the 20, 15, and 10-meter bands, specifically aimed at HF operators looking for solid performance for DXing and contesting. Its computer-optimized design provides more than 7 dBi of gain on all three bands, along with an excellent front-to-back ratio that significantly improves directivity and rejection of unwanted signals.

One of its biggest strengths is its construction. It is lightweight, wind-resistant, and produces virtually no torque on the mast, making it ideal for installations on moderate-height towers without requiring complicated support systems. It also uses corrosion-resistant materials and stainless-steel hardware, ensuring long-term durability.

In practical terms, it is a true "plug-and-play" antenna. No fine-tuning is required after assembly, making installation easier even for amateur radio operators with limited experience with directional antennas.

In short, the SkyHawk 3X10 is an excellent choice for anyone looking to step up to an efficient, reliable, and relatively easy-to-install triband beam, offering a very attractive balance between performance and complexity.

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EDITORIAL

A NEW CHAPTER FOR SWR



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Contributors:

Vitaliy Konyukhor K6VIT
José Sanabria, WP3NZ
Michael Foerster W0IH
Christopher Krstanovic AI2F
Abimael Padró, KP4RY
Yanira Maldonado, WP4QOE
Julio Mercado, WP4PUX

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As we reach this edition of SWR Magazine, I want to take a moment to thank everyone who made this project possible.
Thank you to our editors and contributors for their time, knowledge, photographs, and articles. A very special thank-you goes to our subscribers and readers, who have been the reason we continue with each edition and have shown us that there is still a strong interest in sharing our passion for ham radio.

To our sponsors, my sincerest thanks. Your support has been essential in allowing SWR to continue reaching the ham radio community.
For me, this has been a wonderful and deeply rewarding experience. However, at this stage of my life, due to important personal reasons, particularly the demands of my work, I have decided to step down as Editor-in-Chief.

And there is one more, simpler reason: I have realized that, although I truly enjoy talking and writing about ham radio, I enjoy actually being on the air even more.
But SWR Magazine continues. The project is now in the hands of Juan R. Montijo, WP4OV, who will continue moving the magazine forward. I sincerely hope you will continue to support him and stay with SWR in the upcoming editions.
I take with me my gratitude for everything we have experienced and, above all, the satisfaction of having shared this wonderful adventure with all of you.
Thank you for reading, for your support, and for being part of SWR Magazine.
We'll meet again somewhere on the air.



Photo by: KD9UDV

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WORLD NEWS

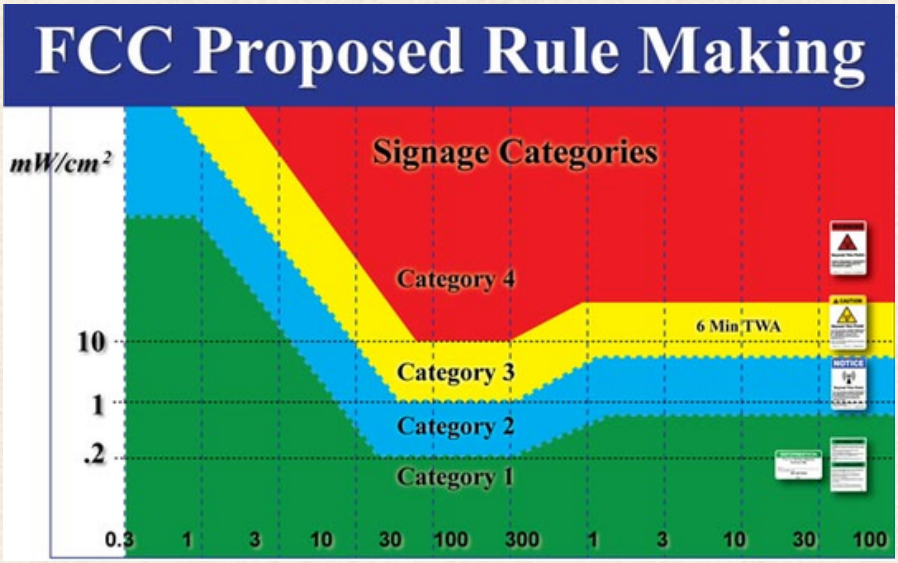
Artificial Intelligence Comes Directly to Ham Radio

The SpaceX Transporter-18 mission, scheduled for October 1, 2026, will carry several projects related to ham radio into space, including the small satellites UNNE-1B, ERMINAZ-2, and HADES-L. These satellites will incorporate communication systems, telemetry, beacons, and various digital modes for experiments from low Earth orbit.

The launch represents a new opportunity for ham radio operators around the world to participate in space communications and explore technologies that expand the possibilities of the hobby beyond terrestrial communications. The arrival of these new satellites demonstrates how closely ham radio remains connected to space exploration and the development of new communication technologies.

Source: AMSAT

New FCC Investigations into RF Exposure



The Federal Communications Commission (FCC) and the U.S. Department of Health and Human Services (HHS) have initiated new proceedings related to the safety of radiofrequency (RF) exposure. Both proceedings began on September 17 and seek to gather scientific and technical information about the potential effects of exposure to electromagnetic fields and wireless technologies. The ARRL clarified that these investigations do not change the current RF exposure rules that amateur radio operators must follow. However, the proceedings could lead to regulatory changes in the future if authorities determine that the existing rules require review. The FCC investigation focuses on specific issues related to RF exposure, while the HHS initiative has a broader scope and is seeking evidence regarding the potential effects of electromagnetic fields and radiofrequency radiation, including exposure associated with modern wireless technologies.

Public comments on the HHS proceeding are due by October 21, while comments related to the FCC proceeding must be submitted by October 22. The ARRL recommends that amateur radio operators stay informed and continue complying with current RF safety and exposure-assessment requirements while these proceedings are underway.



From a 4:1 Balun

TO A MULTIBAND YAGI

By: Jose M. Candelaria NP4ET

There is something special about building an antenna with your own hands. It is not simply a matter of saving money or having an antenna that is different from everyone else's. It is the satisfaction of taking a piece of wire, some tubing, a few pieces of aluminum, and, with knowledge, patience, and plenty of experimentation, turning them into a tool capable of carrying our signal to places we may have never visited.

My story of building antennas began practically the same day I earned my General-class license.

That day, I attended a hamfest where, in addition to celebrating my new license, I discovered one of the great temptations of ham radio: the components that can become projects.

Among the things I found was a 4:1 balun. I bought it, and instead of putting it away in a drawer for some future project, I went home with an idea in mind.

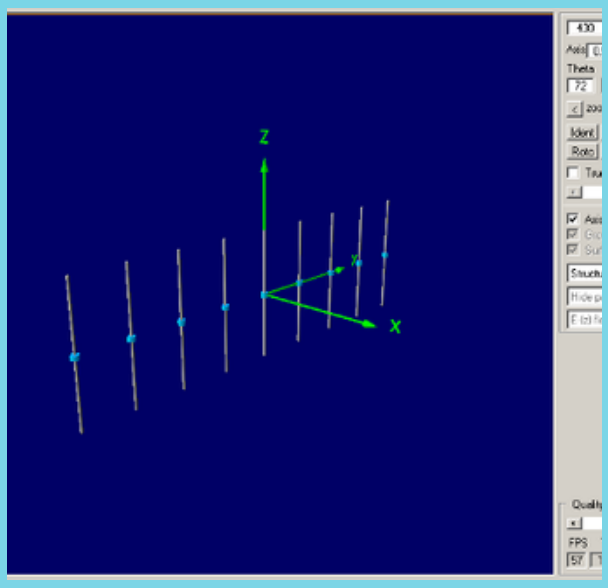
I Wanted to Build My First Carolina Windom.

That same day, I got to work. I measured the wire, prepared the connection points, installed the balun, and put the antenna up. It was not a commercial antenna or a perfect laboratory project. It was something much more important to me: it was an antenna I had built myself.

And when the contacts started coming in, I understood something that is still part of the way I enjoy ham radio today: an antenna does not have to be perfect to teach us something.

Over time, I wanted to experiment more. My next adventure was a Hex Beam built using PVC tubing and wire. On paper, it might have seemed like a simple project, but in practice, it turned into one of those experiences that fuels a ham operator's curiosity even more.
The results were incredible.
That homemade antenna showed me that behind every design there is a combination of theory, geometry, materials, dimensions





height, and surroundings. It also taught me that many times, an idea that begins as an experiment can end up working far better than expected.

But my curiosity didn't stop there.

The time came to move from building antennas by following existing designs to trying to understand them on a deeper level. I began studying 4NEC2, a program that allowed me to enter the world of electromagnetic modeling.

At first, learning how to use it took time. I had to understand segments, conductors, geometry, impedance, radiation patterns, and the interaction between the different elements. Little by little, I began modeling antennas and experimenting with different dimensions.
Then I started doing it for friends.
One modification here. One element there. Change a length, alter the spacing, observe how the radiation pattern changed or where resonance appeared. Each simulation became another question, and each question led to a new experiment.
And it was precisely during that stage that one of the people who has had the greatest influence on my journey as an antenna builder came into the picture.

My friend Héctor, KP4T, is someone I deeply admire. He is the person who taught me much of what I know about building antennas and amplifiers. His knowledge, but above all his willingness to share it, represents one of the most important values of our hobby to me: knowledge becomes even more valuable when it is shared.

On one occasion, Héctor gave me about three aluminum rods.
To some, they might have been nothing more than a few aluminum rods. To me, they were the raw materials for a new project.
With them, I built a three-element Yagi for 20 meters.

That antenna marked the beginning of a new stage. I was no longer working only with wire and materials that were easy to find. Now I was experimenting with aluminum elements, dimensions, element spacing, and electromagnetic behavior.
Over time, I decided to add another element.
The Yagi went from three to four elements for 20 meters.
But, as often happens in ham radio, once you start experimenting, a new question always comes up:

What if I could make it multiband?

The answer was another project.

The antenna eventually evolved into the Yagi I have today: four elements for 20 meters, four elements for 15 meters, and five elements for 10 meters.
When I look at that antenna today, I don't see just aluminum mounted on a mast. I see a story.

I see that first 4:1 balun I bought at a hamfest. I see the wire from my first Carolina Windom. I see the PVC tubing from that Hex Beam. I see the hours spent studying 4NEC2 and the models I built for my friends. I see the three aluminum rods Héctor, KP4T, gave me



, and I remember that first three-element Yagi.

And I also see everything I learned from one project to the next.

To me, that is one of the most extraordinary things about ham radio. A ham operator does not have to limit themselves to simply using technology. They can study it, modify it, build it, and, above all, experiment with it.
An antenna can begin as a drawing on a piece of paper, become a computer model, and eventually turn into a collection of wires or aluminum tubing in the backyard. Then comes the most exciting part: connecting it to the radio, listening to it, measuring it, and discovering whether what worked in the simulation also works in the real world.

And when it doesn't work, another lesson begins.

Because in ham radio, an unexpected result does not necessarily mean failure. Many times, it means that we have just discovered something we don't understand yet.
That experimental mindset is, in my opinion, one of the great treasures of our hobby. We don't need a professional laboratory to create. Sometimes all it takes is a little material, a few tools, knowledge, curiosity, and the willingness to give it a try.

My first antenna was born from a 4:1 balun I bought at a hamfest.
Today, I have a multiband Yagi built from a few aluminum rods that a friend gave me.

Between those two antennas are years of learning, mistakes, simulations, measurements, conversations, and countless hours on the air.
But above all, there is something that has remained unchanged since that first day:
the desire to experiment. Because perhaps that is one of the best definitions of the spirit of a ham radio operator: looking at a problem and thinking, “How can I build it?” Looking at an antenna and asking yourself, “What would happen if I changed this?” And looking at a piece of aluminum and already beginning to imagine the next antenna.
And then going back to the workshop and starting all over again.







THE EXPERIMENTER'S SPIRIT

We don't always need to buy the antenna we want. Sometimes, we need to build it.
A piece of wire can become a Windom. Some PVC tubing can be transformed into a Hex Beam. A few aluminum rods can eventually become a Yagi.
But the most important thing is not the antenna we build, but everything we learn while building it.
Ham radio gives us the freedom to experiment, make mistakes, modify, try again, and discover things for ourselves.
Because every antenna built with our own hands carries something more than RF: it carries knowledge, creativity, and the spirit of someone who never stopped asking: “What would happen if I gave it a try?”

The Chinese SDR That Bets on a New HF Experience



QYTHF-98

A Tool for Exploring the Spectrum

QYT Information and Images

In recent years, the ham radio market has undergone an interesting transformation. HF transceivers that were once dominated almost exclusively by the major Japanese manufacturers now share the market with a new generation of equipment from China, many of them incorporating technologies that, until recently, were reserved for higher-priced radios.

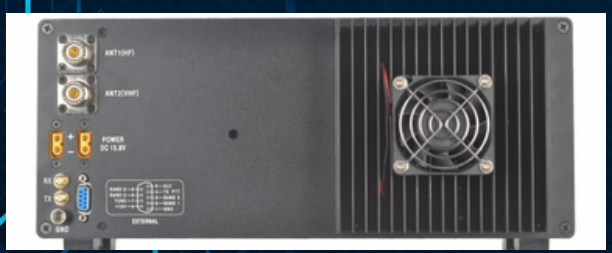
One of the models beginning to attract attention is the QYT HF-98, a new SDR transceiver from QYT that combines a large touchscreen, spectrum analysis, Wi-Fi connectivity, and a series of digital tools designed for both the traditional operator and the ham who uses digital modes.

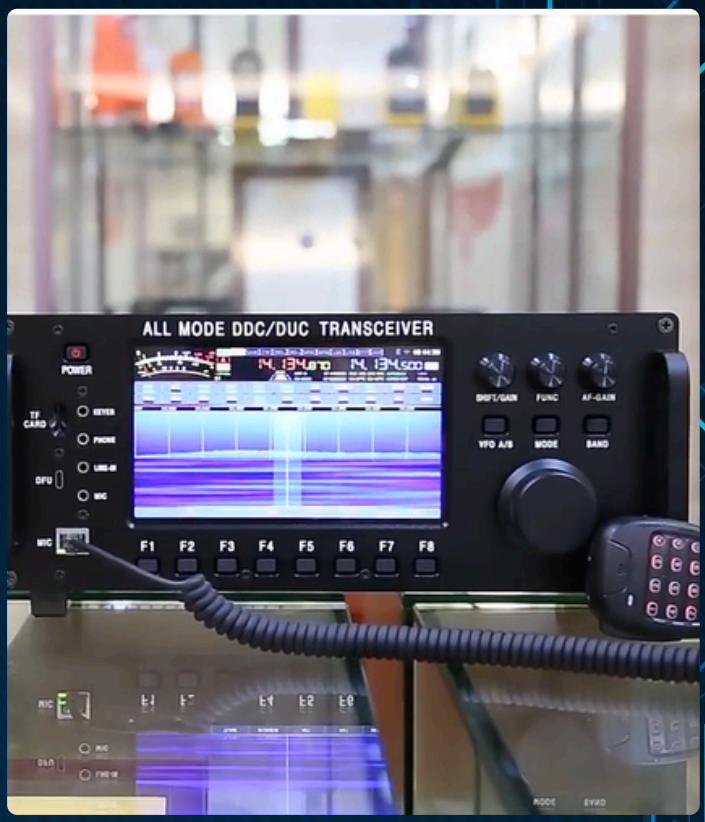
A Display That Becomes Part of the Radio

One of the first things that catches your attention about the HF-98 is its 7-inch capacitive touchscreen. QYT incorporates a panoramic spectrum display with a 3D waterfall, along with a dashboard-style interface.

This represents a significant change from the traditional concept of an HF transceiver, where the display was primarily used to show frequency, mode, and a few basic parameters.
On the HF-98, the spectrum plays a much more important role. The operator can monitor band activity and use analysis tools directly from the radio's interface.

For those who enjoy exploring a band before getting on the air, this feature can be particularly appealing.





Designed Around SDR Technology

The HF-98 is designed as an SDR transceiver, and many of its functions rely specifically on digital signal processing.
Among the tools announced by QYT are digital noise reduction (DNR), a noise blanker, automatic and manual notch filters, spectrum analysis, and SWR measurement. It also incorporates digital recording and signal analysis functions.

The presence of notch filters is particularly interesting for stations that have to deal with interfering signals. Instead of relying exclusively on external filters, the operator has signal-processing tools built directly into the transceiver.

Configurable Bandwidth

Another detail worth noting is the ability to modify the audio processing through configurable filters.

According to QYT, the HF-98 allows the high-

pass filter to be adjusted between 0 and 2700 Hz, and the low-pass filter between 100 Hz and 20 kHz.
The wide range of these settings shows that the design of the radio is not limited simply to reproducing the traditional audio concept of an HF transceiver. The platform appears to be designed to give the operator greater control over the received and processed signal.



CW, SSB, and Digital Modes

The HF-98 also places an emphasis on CW, SSB, and FT8, reflecting the direction in which modern ham radio is evolving.
QYT incorporates a CAT interface through a virtual COM port, with compatibility that the company describes through the emulation of interfaces from radios such as the Yaesu FT-450 and Kenwood TS-2000. Connections for CW, RTS-PTT, and DTR-CW are also included.
This can make it easier to integrate the radio with a computer and the various software programs used by ham operators.
For those who enjoy FT8, contesting, automatic contact logging, or computer-controlled stations, this connectivity will be one of the aspects worth watching most closely once the radio reaches the hands of users.



THE NEW GENERATION OF HF
The QYT HF-98 reflects an increasingly visible trend in ham radio: transceivers where software, the display, and digital signal processing play a role just as important as the hardware. Waterfall displays, spectrum analysis, digital filters, Wi-Fi, and computer connectivity are all part of a new way of interacting with an HF radio.

Wi-Fi: A Feature That Changes the Concept

Perhaps one of the most interesting features of the HF-98 is its Wi-Fi connectivity.
QYT specifies that the transceiver supports operation over a wireless network and that the firmware can be updated through USB, an SD card, or Wi-Fi.

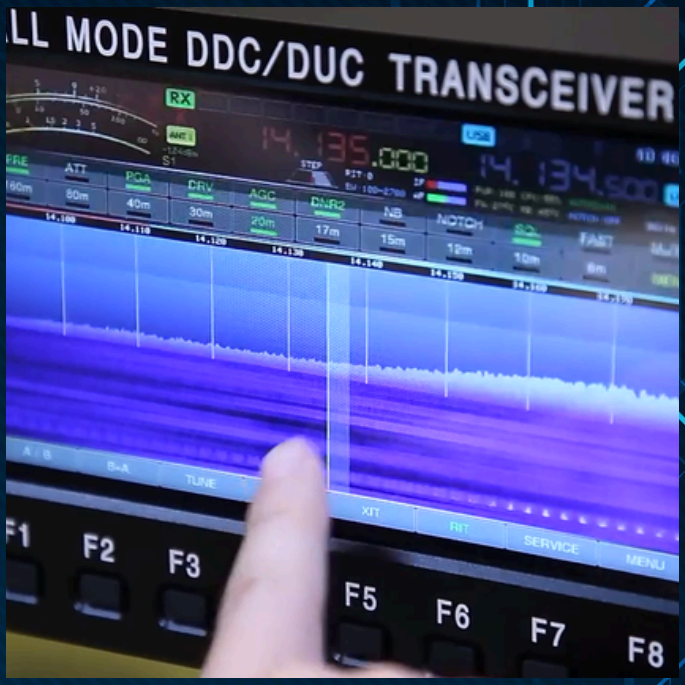
The ability to update the firmware in several different ways is particularly relevant in an SDR. Unlike a traditional analog transceiver, where many of its features are determined by the hardware installed at the factory, an SDR can receive new functions and improvements through software.

This makes the firmware a fundamental part of the overall experience with the radio.

More Than Just a Waterfall

The HF-98 also incorporates spectrum analysis and SWR analysis functions, along with an integrated power/SWR meter. QYT also includes an SSB/FM scanning mode.

This allows the radio to become an interesting tool not only for making contacts, but also for observing what is happening across the band.
For the ham operator who experiments with antennas, searches for weak signals, analyzes interference, or simply enjoys exploring the spectrum, these tools can be quite useful.



A Different Look at the HF Radio

The HF-98 is interesting precisely because it does not seem to be trying to compete solely through a list of specifications.

Its approach revolves around the digital interface.
A large display, panoramic waterfall, digital signal processing, Wi-Fi connectivity, CAT, analysis tools, and firmware updates place the radio within a generation of transceivers in which software is beginning to become just as important as the physical controls.
QYT, headquartered in Quanzhou, Fujian, China, already has experience developing radio communication equipment, particularly mobile and handheld radios. The HF-98 represents a much more direct entry by the company into the world of HF SDR transceivers.

What We Still Want to Know

As with many new radios, there are still important questions that need to be answered.
The publicly available information from QYT does not fully detail some of the parameters we normally look for in an HF transceiver: complete receiver specifications, the exact transmit frequency range, output power, sensitivity, dynamic range, performance in the presence of strong signals, and detailed transmitter characteristics.

For that reason, it will be especially interesting to hear from the first ham operators who are able to test the HF-98 under real-world conditions.
The theory and advertised features are one thing. How an SDR performs when faced with a band filled with strong signals is another.
And that is where much of the real interest in this radio will lie.



Where Is Ham Radio Heading?

The QYT HF-98 represents a trend we are seeing more and more often: HF radios that rely increasingly on digital processing, larger displays, network connectivity, and deeper integration with computers.
For the operator who got started in the days of large analog dials, it may seem like a radical transformation.
For those entering ham radio today, it is probably simply the natural evolution of the transceiver.

What will be interesting is to see how these new radios perform once they leave the promotional photographs behind and make their way into real stations, contests, POTA activations, homebuilt antennas, and bands crowded with signals.
The QYT HF-98 is, without a doubt, a model worth keeping an eye on.
Ham radio continues to change, and this time, innovation is not coming only from the traditional laboratories. It is also coming from a new generation of manufacturers that is bringing SDR technology to an increasingly broader audience.
And we are only beginning to discover just how far this new generation of HF radios can go.



ECHOES OF THE CODE

The Unexpected Restoration Story of Two WWII J-38 Morse Keys

BY CHRISTOPHER S. KRSTANOVIC, AI2F



Two restored straight keys become the visual payoff of a story that began with equipment nearly headed for the landfill.

THE J-38S THAT ALMOST WENT TO THE LANDFILL

I never had any interest in collecting antiques, and certainly not old Morse keys.

That changed while helping the widow of a Silent Key sell some of her husband's amateur radio equipment. Most of the desirable gear disappeared quickly, but one item sat on the table unnoticed: a vintage Vibroplex “Lightning Bug” semi-automatic key. It was missing its distinctive red jeweled bearing cap, and apparently nobody wanted it.

I couldn't bring myself to throw it away.

After giving it a careful cleaning, I decided to keep it as a reminder of a different era of amateur radio. Maybe I'd even put it next to my modern Vibroplex iambic paddle and use it from time to time.

The rest of the contents of the shed were far less glamorous. Box after box was filled with a lifetime's accumulation of tubes, switches, capacitors, hardware, and mysterious assemblies that only their original owner could probably identify. Most of it was headed for the landfill.

While digging through the boxes, though, I came across three old straight keys. All had solid brass frames.

FROM FORGOTTEN OBJECT TO LIVING HISTORY

DISCOVERY → IDENTIFICATION → HISTORY → RESTORATION



Before restoration: decades of oxidation, grime and worn finishes made the surviving keys easy to overlook.

One was mounted on a black base marked “J-38” and looked to be in decent condition. I recognized the designation and thought it might make an attractive display piece for the radio shack.

After cleaning it up, I tried sending a few characters with it.

To my surprise, it felt wonderful.

The solid, positive action immediately brought back memories of learning Morse code during my Army days.

Unfortunately, my excitement was short-lived.

When I removed the key from its base, I found one word stamped into the underside of the frame:

JAPAN.

That wasn't what I had hoped to see.

Also, it just looked too... new, I suppose.



JAPAN.

A little research revealed that Japanese copies of the famous J-38 appeared after World War II and were widely distributed by the 1960s. These JJ-38-style keys commonly used a ball-bearing pivot at the end of the lever, a feature visible on this one.

Although the “JAPAN” key now looked quite respectable after polishing, it had little historical value for me.

I was older than it!

About that time, club activities took over and the project was forgotten. The remaining two keys stayed exactly where I had dropped them — on the corner of my workbench.

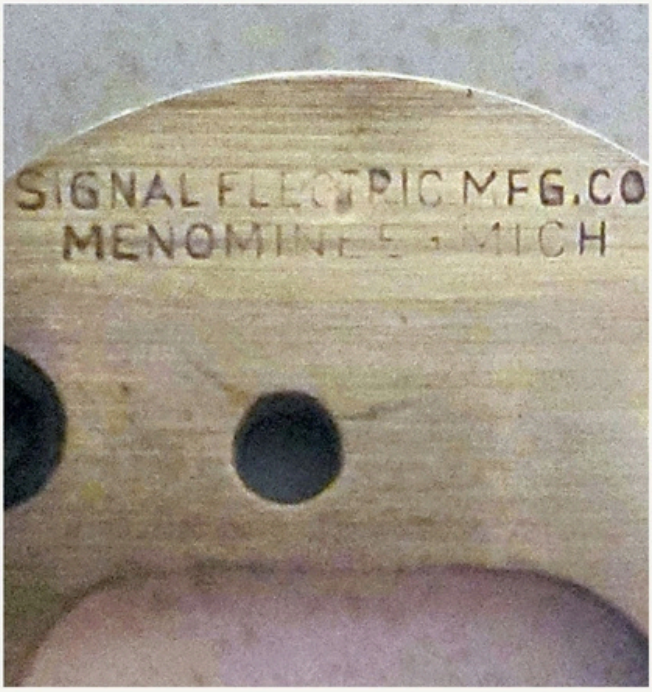
A couple of weeks later, I noticed them again.

They looked just awful.

Years of oxidation had left the brass almost dark brown, and both keys were buried under a thick layer of dust and grime.

Still, I could just make out some lettering on one of them.

Under a microscope, I was able to read "... MICH." stamped into the top of the unpainted brass frame. On the underside was the number 0691, although I have not been able to establish exactly what that number represents.



The surviving marking identifies Signal Electric Manufacturing Co., Menominee, Michigan.

"More importantly, 'MICH.' was better than 'JAPAN'."

More importantly, "MICH." was better than "JAPAN."

I carefully disassembled both keys.

What emerged from beneath decades of dirt changed the project completely.

A CONNECTION TO MENOMINEE

The markings identified one of the keys as a product of the Signal Electric Manufacturing Company of Menominee, Michigan — a company with deep roots in American electrical and communications manufacturing.

The company's history reaches back to 1892, when its predecessor, the Menominee Electric and Mechanical Company, was established. In 1919, the business was reorganized and renamed Signal Electric Manufacturing Company.

Signal Electric later became one of the manufacturers associated with the J-38 during the World War II period. Surviving Signal Electric J-38 examples with wartime contract markings confirm production during that era, including documented examples associated with 1942.



Documented comparative example: a Signal Electric J-38 associated with a 1942 wartime order. This is not Christopher's restored key.

That was enough to make me pause.

This wasn't simply an old Morse key.

More than eighty years ago, a key like this may have sat on a military desk somewhere in Europe, North Africa, the Pacific — or perhaps somewhere far less dramatic.

It may have belonged to a radio operator handling routine traffic. Perhaps another carried urgent messages from a remote station.

I'll never know this particular key's story.

And that is part of what makes it fascinating.

Rather than speculate too much, I decided its next chapter should begin with a proper restoration.

LEARNING AS I WENT

I had never restored anything like this before, so I was learning as I went.

Fortunately, collectors have documented many approaches to cleaning and restoring vintage telegraph keys, and I began working carefully through decades of oxidation, dirt, corrosion and worn finishes.

Since the keys were already disassembled, I started with the brass frames.

As I worked, I found myself learning more about the history of the J-series keys themselves.

The U.S. Army Signal Corps used "J" designations for numerous telegraph and radio keys, and surviving documentation extends those designations well beyond the J-38.

But the J-38 became one of the most recognizable.

It is particularly associated with military code training. Signal Corps documentation describes Code Practice Equipment EE-81 equipped with multiple J-38 hand keys and headsets, allowing groups of students to practice transmitting and receiving Morse code.

The familiar J-38 arrangement included rear binding posts that allowed a headset to be connected in series with the key and line. Other details found on surviving examples include the circuit-closing lever, cord-retaining provisions and, on some keys, inspection or treatment markings.

The basic design was straightforward, rugged and remarkably effective.

Perhaps that helps explain why so many remain usable today.

BRINGING THE BRASS BACK

By this point, the brass frames were beginning to shine beautifully.

I polished each one several times, with every pass bringing out a little more luster and depth in the metal. Once I was satisfied with the appearance, I cleaned the surfaces and applied a thin protective wax coating.

I wasn't trying to make the keys look new.

That was never the point.

Next came the steel levers.

Much of the original black finish had disappeared and surface rust had begun to develop where the steel was exposed. I decided to remove the active rust and restore the black finish, carefully protecting the contacts and threaded areas while refinishing the lever.

FUNCTIONAL RESTORATION, NOT MUSEUM CONSERVATION.

The article deliberately frames the process as Christopher's experience—not as a restoration manual.



Restoration focused on returning the keys to functional condition while preserving visible evidence of age and use.

Then came the small hardware — screws, springs, nuts, washers and adjustment parts.

Some of the cleaning methods I used were more aggressive than a museum conservator would choose, particularly for historically significant artifacts. This was my first project of this kind, and I approached it as a functional restoration rather than museum conservation.

Anyone restoring a historically valuable key should research the materials and cleaning methods carefully before beginning.

Eventually, every piece was ready for reassembly.

And that was when the project really became rewarding.

A SECOND CHANCE TO SERVE



The restored brass retains small imperfections—part of the history Christopher wanted to preserve rather than erase.

The finished keys exceeded my expectations.

The photographs don't quite capture it, but the polished brass has a beautiful warm glow — almost golden.

No, they don't look brand new.

And I wouldn't want them to.

They still carry enough small imperfections to remind you that they've lived long and useful lives. Rather than appearing over-restored, they look to me like well-cared-for pieces of equipment that have been given a second chance to serve.

The only thing missing is another appropriate J-38 base for the second key. Perhaps one will eventually turn up. If not, I may mount it on a simple polished stone base instead.

Look closely at the two keys and you'll also notice that they are not identical.

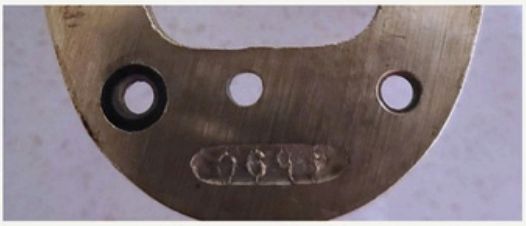
One carries the Signal Electric marking. The other has no manufacturer identification that I can find, although it also carries a four-digit number on the bottom.

Its meaning remains unknown to me.

That uncertainty doesn't bother me as much as it once might have.

As an engineer who has spent a lifetime designing products for manufacturing, I find details like these fascinating. Small changes in machining, castings, hardware, construction and assembly techniques can tell part of the story of how a product was manufactured and how it changed over time.

Looking closely at these two keys, the subtle differences are every bit as interesting to me as the restoration itself.



The four-digit underside marking remains unidentified; the article does not assign it a production or contract meaning.

HISTORY HIDING IN ORDINARY PLACES

So the next time you walk past a rusty old gadget sitting on a one-dollar table at a hamfest, or open a dusty box from a Silent Key's attic that smells like it hasn't been touched in decades, don't dismiss it too quickly.

There may be a small treasure hiding inside.

At the very least, you may find yourself holding a genuine piece of history — and that's something money alone can't buy.

I never imagined that helping clean out a shed would lead me into restoring vintage Morse keys. While I don't see myself becoming a serious collector, I have to admit that I thoroughly enjoyed the experience.

This article was never intended to be a restoration manual. There are collectors and conservators with far more experience who can offer better advice on techniques and materials.

My goal was simply to share the enjoyment of discovering two forgotten Morse keys, learning something about their history, and returning them to the purpose for which they were built.

Had I not looked a little closer, these keys would almost certainly have ended up in the trash.

Instead, they reminded me that history often hides in the most ordinary places, waiting for someone willing to take a second look.

We will never know exactly where these keys served or who used them.

But by restoring them — and, more importantly, putting them back on the air — we become part of their story ourselves.

And now, after more than eighty years, these old J-38s won't spend the rest of their lives hanging on a wall or, worse, going to the dump.

They're going back on the air — even if only occasionally.

After all, that's what they were built to do.



ABOUT THE AUTHOR

Christopher S. Krstanovic, AI2F, is a longtime amateur radio operator whose interests include HF operation, antenna design, practical radio engineering and astronomy. With an academic background in physics and electrical engineering, his professional career has included corporate engineering and technology entrepreneurship. His engineering experience continues to influence the way he approaches amateur radio — including, apparently, the occasional Morse key that was supposed to be headed for the landfill.



Fotos de: Reddit

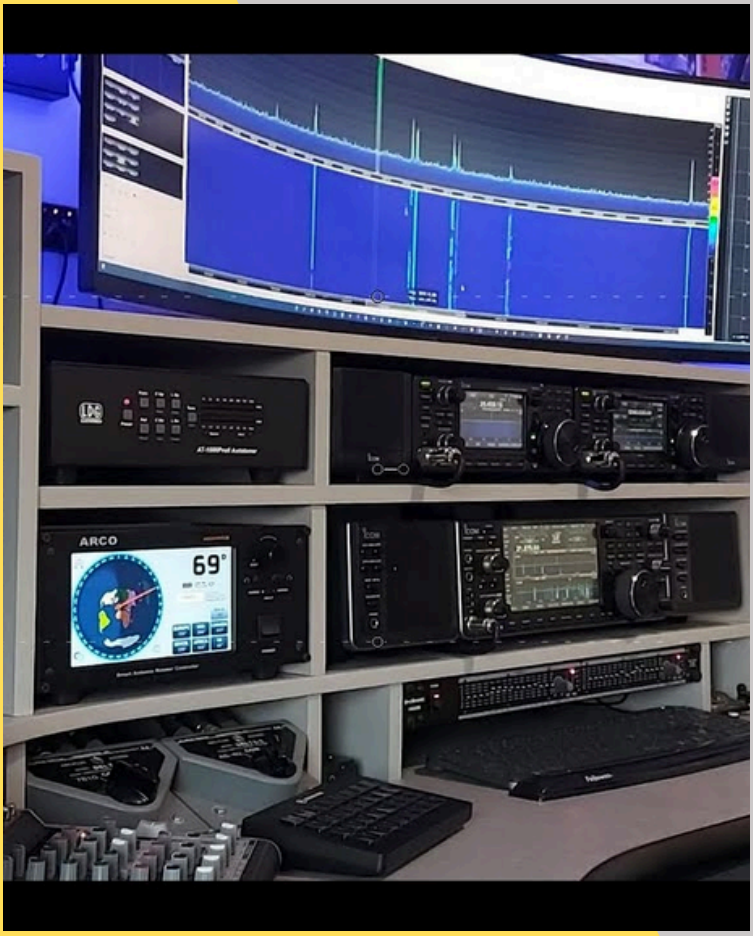
By: SWR Editorial Team

IS THE TRADITIONAL SHACK DISAPPEARING?

DEL DIAL Y LOS CABLES AL SDR, LA COMPUTADORA Y LA OPERACIÓN REMOTA

Ham radio no longer necessarily requires a dedicated room. A station can be at home, on a mountain, in a park, or even operated remotely from another location.

What defines a shack is not necessarily the place itself, but the connection between the operator, the equipment, and that signal traveling through the air.



For decades, the image of the ham radio operator has been closely associated with a very particular place: the shack.

A room, a corner of the house, or perhaps a table in the garage. On it, a transceiver, a power supply, an SWR meter, a CW key, a microphone, and a collection of cables that only its owner seemed to understand. On the walls, maps, QSL cards, awards, and photographs from previous activities.

For many ham operators, that image still represents the essence of the hobby.
But something is changing.
Today, we can find stations where the main attraction is no longer a transceiver filled with buttons and knobs, but a computer. The waterfall occupies much of the screen. Logging is done automatically. FT8 can operate with practically no intervention. The rotor can be controlled from a software program, and some stations can be operated from hundreds or even thousands of miles away.
So an interesting question arises:

Is the Traditional Shack Disappearing?

The answer may be simpler than it seems.
It is not disappearing. It is evolving.

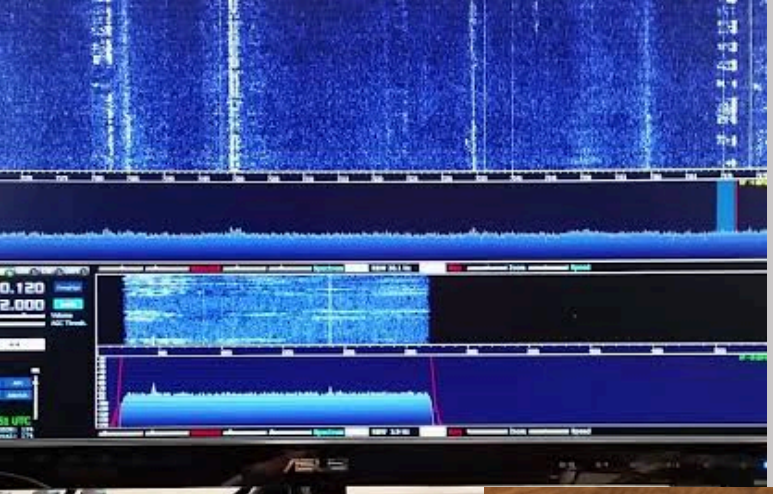
The Shack We Knew

For much of the history of ham radio, operating meant being physically in front of the equipment.
The relationship between the operator and the radio was direct. You turned one knob to change frequency, another to adjust the volume, watched a meter to check power or SWR, and used a key to transmit in CW.
The equipment had a strong physical presence.
Even the accessories were part of the experience. The sound of a relay, the movement of a needle on the meter, the glow of the tubes, or the heat coming from an amplifier were all elements that made the operator feel like they were interacting with a machine.
The shack was, quite literally, the place from which radio was operated.
But technology began to change that relationship.

When the Computer Arrived

The computer did not come into ham radio to replace the operator. At first, it was simply a tool.
It was used to keep the log, calculate frequencies, control a rotor, or make certain tasks easier.
Over time, however, the computer began communicating directly with the transceiver.
The concept of CAT, serial ports, USB interfaces, and later network connections made it possible to control many radio functions directly from software.









THE SHACK ON A SCREEN

An SDR can turn a computer into the interface for an entire station. Frequency, spectrum, waterfall, filters, digital modes, and logging can all coexist on a single screen.

The station still has antennas, cables, and physical equipment, but much of the operator's experience now takes place within the software.

The operator no longer needed to physically touch every control.
And then SDR appeared.

The Radio Began to Become Software

The arrival of software-defined receivers and transceivers transformed the concept even further.

In a modern SDR, much of what was traditionally handled by dedicated circuitry can be processed digitally.

Filters, demodulation, noise reduction, spectrum displays, and other functions can all be closely tied to software.
The screen began to replace some of the physical elements that had defined the shack for decades.
It was no longer simply a matter of knowing what frequency the radio was on.
Now the operator could observe an entire section of the band.
A waterfall could display signals appearing and disappearing in real time. A panadapter made it possible to observe activity around the operating frequency.

The filters could be adjusted through a graphical interface.

In 2026, this technology continues to expand. The ARRL has maintained educational activities specifically focused on SDR and its possibilities within amateur radio stations.

When the Screen Replaces the Dial

For a generation of ham operators accustomed to large analog dials, an SDR can seem almost like a computer that happens to transmit and receive radio signals.

But for many new operators, that interface is precisely what they expect to find.
The screen makes it possible to visualize information that we could previously only imagine.

We can see multiple signals simultaneously. We can identify patterns of activity. We can zoom in on a portion of the spectrum. We can change filters and parameters without having to physically locate a particular knob.

The radio stopped being simply a device that generates and receives RF.
Now it is also a tool for observing RF.
And that changes the operator's experience.

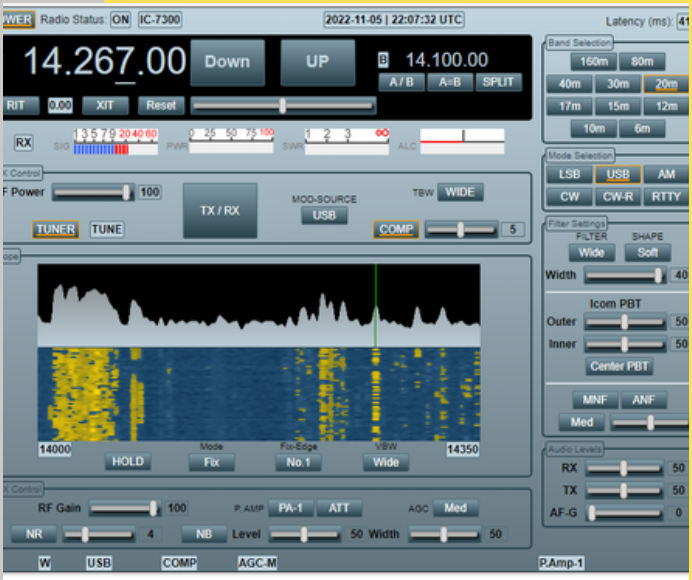
The Shack Began to Automate

The evolution did not end with SDR.
The next step was automation.
Today, there are stations capable of automatically controlling different elements of the system: transceivers, antennas, rotors, amplifiers, logging, and digital-mode software.

The ARRL itself has shown examples of highly automated stations. At W1HQ, for example, systems based on Raspberry Pi and Node-RED have been used to integrate different station functions.
This creates a situation that would have seemed strange to a ham operator several decades ago.
The operator can sit in front of a screen and control an entire station without physically touching much of the hardware.
The shack is still there.
But more and more functions are hidden behind the software.

FT8 and the New Concept of Operating

Digital modes took this transformation even further.
With FT8 and other digital modes, the computer can perform a significant portion of the work that previously required the operator's constant involvement.





The software receives the signal, decodes it, displays the available contacts, and can communicate with the transceiver to change frequency and transmit.
This does not mean that ham radio has stopped being a human activity.
It means that the relationship between the operator and technology has changed.
For some, the satisfaction comes from completing a contact using an extremely weak signal. For others, it comes from experimenting with propagation, antennas, system configuration, or digital signal processing.
The activity is still ham radio, but the tools are different.

The Shack Can Now Be Somewhere Else

And here we come to one of the most important changes: remote operation.

Today, it is possible to control a station located somewhere other than the place where the operator is physically located.
The ARRL maintains specific resources for remote operation and recognizes this operating method within its activities and contests, subject to the applicable regulations.
There are many reasons for using a remote station.
A ham operator may live in an area with excessive electrical noise. They may have restrictions on installing antennas. They may have limited property. Or they may want to operate a station located in a place with better radio conditions.



They may also simply want to experiment.
In a remote station, the transceiver, computer, antennas, and accessories can all be located in one place while the operator is somewhere else.
Then an even more interesting question arises:

A Station That Fits on a Screen

Remote operation takes the concept of the shack to another level.

A laptop can become the interface for a station that is physically located far away.

The operator can view the spectrum, change frequency, select the mode, control certain functions, and log contacts from a different location.
The ARRL has documented precisely this evolution, and in 2025 described remote-station projects using different hardware and software architectures. It also noted the growing interest among ham operators in using remote stations because of noise, space limitations, antenna restrictions, and the ability to operate stations located in more favorable locations.

In 2026, ARRL activities themselves continue to show examples of remote operation, including contacts with a remotely controlled station in Bonaire during activities related to HamSCI.
The technology is no longer experimental for just a few.
It is becoming a tool available to many ham operators.

But We Still Need Antennas

Here we encounter a reality that no software can eliminate.
No matter how sophisticated the SDR may be, we still need an antenna.
We can have a fully automated station, a computer with multiple monitors, and a high-speed Internet connection.
But in the end, the signal has to enter and leave the physical world.
The antenna remains one of the fundamental elements of the station.
And perhaps that is why ham radio retains something that other technology-based activities have lost.
Even though the shack has become digital, we still need to experiment with wire, coax, connectors, towers, rotors, radials, dipoles, verticals, Yagis, and all kinds of antennas.
RF still has to travel.

The Shack Also Left the House

There is another important transformation.
Not every ham operator wants to remain seated in front of the radio.
POTA, SOTA, Field Day, and other activities have turned the outdoors into another type of shack.
A backpack can contain a transceiver, battery, controller, cables, and an antenna.
A tree can become a support.
A picnic table can become an operating station.
And a computer or phone can become part of the control and logging system.
The 2026 ARRL Field Day brought together more than 31,000 ham operators across the United States and Canada operating from remote locations.



It is a good demonstration that ham radio does not necessarily need a dedicated room to exist.
Sometimes, the shack can be a mountain.
Or a park.
Or a beach.

So, What Is Left of the Traditional Shack?

A lot.
Perhaps more than we think.
There are still ham operators who enjoy turning on an old transceiver, turning a knob, and searching for a signal through the noise.
There are still operators who build their own equipment.
Old radios are still being repaired.
Antennas are still being built with materials available at home.
There are still those who prefer writing a contact down in a logbook rather than letting a program record it automatically.
And all of that is still ham radio.
The arrival of SDR did not eliminate the superheterodyne receiver.
The arrival of electronic logging did not eliminate QSL cards.
The arrival of FT8 did not eliminate CW.

Remote operation did not eliminate the pleasure of sitting in front of the radio, either.
Technology simply added new possibilities.

Two Shacks, One Passion

There is no single model of a shack. It can be a collection of vintage radios, a modern SDR, a remotely controlled station, or a backpack with a QRP transceiver.
They all have something in common: an antenna, a signal, and the desire to communicate.

The Shack of the Future

It is difficult to know what the shack will look like ten or twenty years from now. We will probably see more automation, more advanced SDRs, greater connectivity, and artificial intelligence integrated into different functions.
Perhaps we will be able to control a station from a phone or select a band and let the system configure part of the operation.
But something will remain: the curiosity, the excitement of hearing a weak signal, making a DX contact, or seeing an antenna we built with our own hands actually work.
That is what turns a collection of equipment into a shack.

The Shack Has Not Disappeared

Perhaps the question is not whether the traditional shack is disappearing, but what a shack means in modern ham radio.
It can be a room filled with radios, a computer connected to an SDR, a remote station, or simply a backpack used to operate from the field.
The shack has changed because ham radio changes as well. From its beginnings, it has been a community of people who experiment, build, learn, and search for new ways to communicate.
The shack of the future may have fewer cables, fewer knobs, and more screens.
But as long as someone continues to watch the spectrum and wonder what signal just appeared through the noise, the essence of the shack will remain alive.

By: SWR Editorial Team

JOTA: When Scouts Connect Through the Airwaves

During JOTA, a voice traveling across the airwaves can be a young person's first step into a world of science, friendship, and adventure.



Every year, during a weekend in October, the airwaves take on a special meaning. At stations around the world, young voices can be heard asking about the name, country, city, and experiences of other Scouts who, perhaps thousands of miles away, are doing exactly the same thing.
It is Jamboree-on-the-Air, known worldwide as JOTA, an international activity of the Scouting movement that uses ham radio to connect young people from different countries without the need to travel.

In 2026, JOTA-JOTI will take place from October 16 through 18, during the third full weekend of the month. The event brings together Scouts, Guides, leaders, ham radio operators, and volunteers in an experience that combines communication, technology, friendship, and learning.

An Idea Born in 1958



The history of JOTA began in 1958, when British ham radio operator Les Mitchell, G3BHK, proposed using ham radio as a way to connect Scouts from different parts of the world.
The idea was simple, but revolutionary for its time: if young people could not travel to participate in an international Jamboree, they could meet each other through the airwaves.
Since that first JOTA, millions of Scouts have participated in radio contacts with other groups around the world. Over the decades, an experience that began primarily with voice transmissions evolved into an activity capable of incorporating CW, digital modes, amateur television, satellites, repeaters, and other technologies.
JOTA demonstrated something that ham radio operators have known for more than a century: an antenna can become a window to the world.

Much More Than Making Contacts



At first glance, JOTA might seem like just another event for filling up a contact log. But that is not its purpose.
JOTA is not a contest.
The goal is not to accumulate as many QSOs as possible, but to create an experience centered on communication and learning. A Scout may sit in front of a microphone for the first time, hear a voice coming from another country, and discover that behind a radio signal is a person with different interests, dreams, and experiences.
That first contact can spark a curiosity that remains with them for many years.

For some young people, JOTA may be their first encounter with ham radio. For others, it may be the gateway to electronics, communications, propagation, antennas, satellites, computers, or even science and engineering.
And for the ham operator on the other side of the microphone, it can be an opportunity to share a passion and help shape the next generation of operators.





A Truly Global Activity

One of the most interesting aspects of JOTA is its international reach.
Participants can communicate with other Scouts in their own region, from other states or countries, and, when propagation conditions allow, with stations located in very distant places.
Radio removes many of the physical barriers that normally separate people.
A group gathered at a small campsite can talk with Scouts in Europe, Asia, Africa, or the Americas without leaving the place where they are.
According to information published by the ARRL, large numbers of Scouts and Guides participate in JOTA each year around the world. In 2023, reported worldwide participation exceeded 1.3 million young people, making it one of the largest gatherings within the Scouting movement.

Ham Radio as an Educational Tool

JOTA also represents an extraordinary opportunity to demonstrate that ham radio is about much more than talking into a microphone.
Before making a contact, young people can learn how a transmitter works, what an antenna does, why a signal can travel great distances, and how propagation conditions can change throughout the day.

A JOTA station can become a small communications laboratory for a few hours.

Some groups also incorporate activities related to electronics, antenna building, digital communications, signal hunting, satellites, and other technology-based experiments.
In this way, radio becomes more than just a means of communication and becomes an educational tool.

The Role of the Ham Radio Operator

Behind many JOTA stations is a ham radio operator who dedicates their time, equipment, and knowledge to making the experience possible.
Most of the Scouts who participate do not have their own station or a ham radio license. That is why clubs and individual operators play such an important role.
The ham radio operator prepares the station, installs the antennas, checks the equipment, and, above all, creates an environment where young people can feel comfortable in front of the microphone.
A good JOTA station does not need to be the most powerful or have the largest antenna.
What truly matters is allowing a young person to discover the magic of hearing a voice coming from somewhere else on the planet and knowing that voice is there because of a signal that came from their own station.

JOTA and JOTI: Two Ways to Connect



With the arrival of the Internet, the Scouting movement also developed Jamboree-on-the-Internet, JOTI.
Today, both events are part of JOTA-JOTI, a worldwide experience that uses both radio waves and the Internet to connect participants.
Radio and digital technology are different, but they share the same purpose: bringing people closer together.
In 2026, World Scouting has established the theme "A Peaceful and Inclusive World," incorporating activities and experiences focused on dialogue, coexistence, and participation.

An Invitation to Ham Radio Clubs

JOTA can also be an opportunity for ham radio clubs.
There is no need to wait for a Scout group to come knocking on our door. Clubs can reach out to Scouting organizations in their communities and offer a station, a demonstration, or an educational activity.
A table, a transceiver, a power supply, an antenna, and an operator

willing to teach may be enough to inspire a new calling.
Perhaps one of those young people will eventually earn their ham radio license.
Perhaps years later, they will build their first antenna.
Perhaps they will become an engineer, technician, scientist, or simply another ham operator who fondly remembers that first time in front of the microphone.





October Brings the Voices Back

When October 2026 arrives and stations begin calling "CQ Jamboree," we will not simply be listening to another ham radio activity.

We will be listening to a tradition that began in 1958 and continues to use one of humanity's most fascinating technologies to do something profoundly simple: bring people together.
Because some signals carry only information.
Others carry friendship.
And some, like those of JOTA, can also carry that first spark of curiosity that stays with a young person throughout their life.
From October 16 through 18, 2026, the airwaves will once again become a vast Scout camp without borders.


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Ham radio reminds us that distances can be measured in miles, but connections are measured in moments. Every signal carries with it a voice, a story, and the possibility of discovering that, even when we are far apart, we are never truly disconnected.
F150
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PLATINUM
4X4
Ford
Photo by: stationproject.blog

ON THE AIR

HAM RADIO CONTESTS THIS MONTH

📻 OCEANIA DX CONTEST – PHONE

Dates: October 3, 2026, 06:00 UTC to October 4, 2026, 06:00 UTC
Modes: SSB
Participants: Worldwide, open to all ham radio operators
Exchange: RS and serial number
Note: One of the major DX contests in October for working stations in Australia, New Zealand, and other Oceania entities. For Caribbean stations, it can be a good opportunity to work the Pacific on the HF bands**.**

🌐 ARL WORLD WIDE RTTY CONTEST

Dates: October 17, 2026, 00:00 UTC to October 18, 2026, 23:59 UTC
Modes: RTTY
Participants: Worldwide, open to all ham radio operators
Exchange: RST and operator age
Note: 2026 marks the first edition under the organization of JARL, after the Japan Amateur Radio League officially took over the contest formerly known as the JARTS Worldwide RTTY Contest. The contest takes place on 80, 40, 20, 15, and 10 meters.

🌐 OCEANIA DX CONTEST – CW

Dates: October 10, 2026, 06:00 UTC to October 11, 2026, 06:00 UTC
Modes: CW
Participants: Worldwide, open to all ham radio operators
Exchange: RST and serial number
Note: The CW version of the Oceania DX Contest once again focuses activity on stations in Oceania. It is an excellent opportunity for those who enjoy CW and looking for long-distance DX contacts.

🏅 WORKED ALL GERMANY

Dates: October 17, 2026, 15:00 UTC to **October** 18, 2026, 14:59 UTC
Modes: CW and SSB
Participants: Worldwide, open to all ham radio operators
Exchange: RST and serial number
Note: One of the traditional European contests. Stations outside Germany aim to work as many German stations as possible, while German stations seek contacts with stations around the world. The contest operates on 80, 40, 20, 15, and 10 meters.

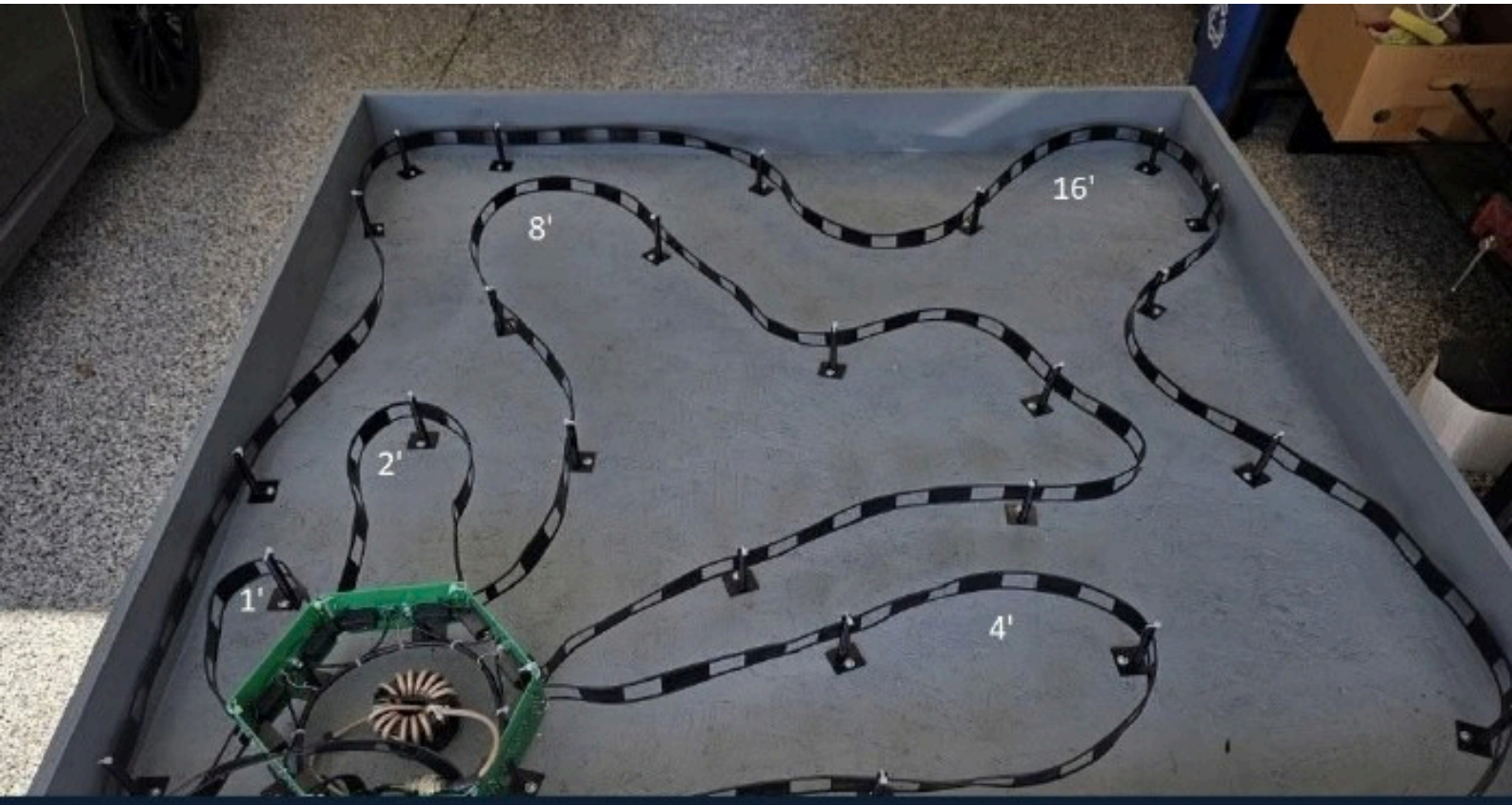
📡 SCANDINAVIAN ACTIVITY CONTEST – SSB

Dates: October 10, 2026, 12:00 UTC to October 11, 2026, 12:00 UTC
Modes: SSB
Participants: Worldwide, open to all ham radio operators
Exchange: RS and serial number
Note: This contest focuses activity on stations in the Scandinavian countries. It is an opportunity to work Northern Europe on 10, 15, 20, 40, and 80 meters, depending on propagation conditions.

📻CQ WORLD WIDE DX CONTEST – SSB

Dates: October 24, 2026, 00:00 UTC to October 25, 2026, 23:59 UTC
Modes: SSB
Participants: Worldwide
Exchange: RS and CQ Zone
Note: The CQ WW DX Contest is described by its organizers as the largest ham radio contest in the world, with more than 35,000 participants. Stations aim to work as many DXCC entities and CQ Zones as possible on 160, 80, 40, 20, 15, and 10 meters.

EVERY CONTEST IS AN OPPORTUNITY TO TURN A RADIO CALL INTO A CONNECTION THAT CROSSES BORDERS, DISTANCES, AND INVISIBLE BOUNDARIES.



AUTOMATED NO-TUNE

An Arduino-controlled approach to automatically selecting feedline length for remote multiband operation

BY MICHAEL FOERSTER, W0IH

Our local club, the Winona Amateur Radio Club, has an ICOM IC-7300 available to members through RemoteHams.com. The station previously used an off-center-fed dipole and a tuner. It worked reasonably well, but I wanted a multiband antenna system that required as little intervention as possible from a remote operator, particularly on portions of 80 meters.

That objective brought me back to an antenna concept that had intrigued me for years: Cecil Moore, W5DXP's NoTuneTuner.

WHAT IF THE FEEDLINE LENGTH ITSELF COULD CHANGE AUTOMATICALLY?

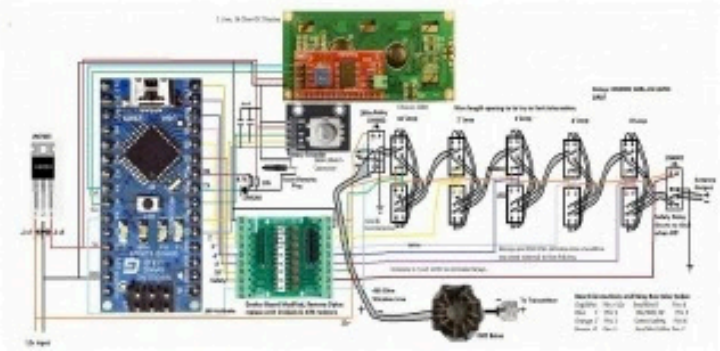
CONCEPT → PROTOTYPE → MEASUREMENT → ANOMALY → INVESTIGATION

FROM W5DXP TO AUTOMATION

W5DXP described feeding a 130-foot doublet with 90 feet of 450-ohm Window-Line through a 1:1 current balun. Five additional sections—1, 2, 4, 8 and 16 feet—could be selectively inserted, changing total feedline length from about 90 through 121 feet in one-foot increments.

Changing line length changes the impedance presented at the input. At suitable lengths, favorable conditions can be found on multiple amateur bands without a conventional tuner. Window-Line is useful here because of its relatively low loss even with significant standing waves.

W5DXP used knife switches. From what I was able to determine, computer-controlled relay switching had been discussed, but I did not find an implementation that did what I wanted for our remote station.



Michael's submitted NoTuneTuner system diagram: controller, relay switching and selectable Window-Line.



Controller



Inside the enclosure

AUTOMATING THE IDEA

The basic idea is straightforward: determine the radio's operating frequency, look up the feedline length previously calibrated for that frequency, and switch the appropriate sections automatically. I used an Arduino Nano, a two-line 16-character I^2C LCD and a rotary encoder with pushbutton control. The Nano communicates with the IC-7300 through CI-V.

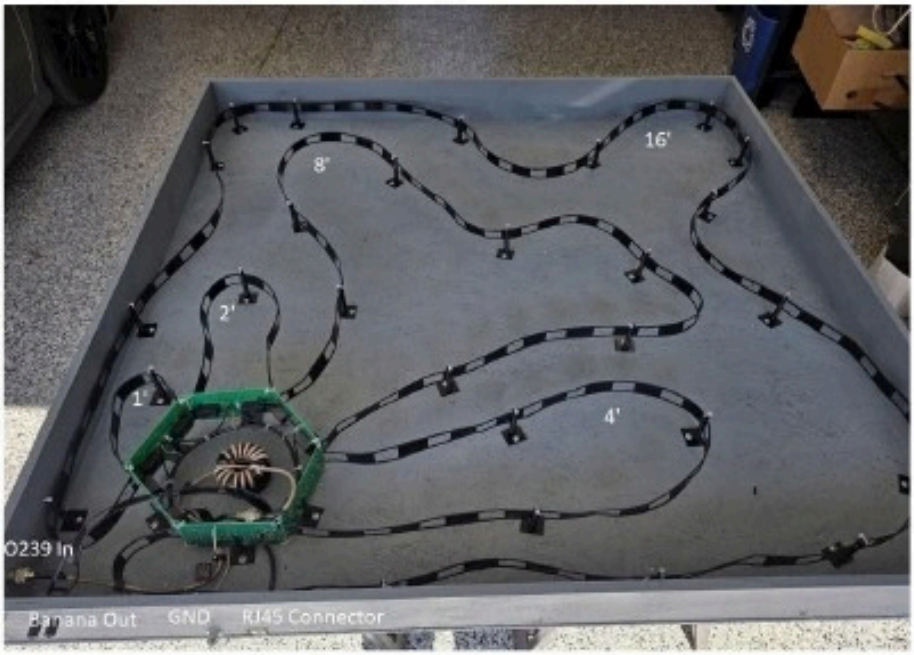
This is not a conventional automatic tuner. It selects a feedline length that has already been measured and calibrated for the installation.

NOT A CONVENTIONAL TUNER

It selects a calibrated transmission-line configuration.

The controller also monitors transmit state so relay changes are inhibited while the radio is transmitting.

BUILDING THE TRAIN-TRACK



The compact "train-track" stores the five selectable Window-Line sections around the relay boards.

One practical question remained: where do you put 1-, 2-, 4-, 8- and 16-foot sections of Window-Line?

I developed what I began calling the train-track: a wooden structure approximately 4 ft × 4 ft × 3 in. The relay boards sit in a tight circle, with the Window-Line sections looping around them while maintaining as much spacing as practical. I designed and 3D-printed standoffs for the line and boards.



10 turns of RG-400 on a #31 ferrite core, with 3D-printed support components.

For relay control I used 24-gauge CAT5 cable and RJ45 connectors. With all relays energized through a 30-foot test cable, I measured less than 0.3 volt of drop on the common +12-volt supply.

The Nano cannot drive the relay loads directly. I adapted a junk-box driver board to handle the approximately 70-mA loads. Because both Window-Line conductors must be switched, each selectable section uses two DPDT relays. I chose OMRON G2RL-24 12-volt relays.

SAFETY **When power is removed, a safety relay grounds the antenna system; two 100 kΩ resistors bleed static.**

TEACH IT. RUN IT. THEN QUESTION THE NUMBERS.

Setup Mode is entered with a long press. The controller reads radio frequency; the encoder selects line lengths from 90 through 121 feet; a short press stores the frequency/length pair in EEPROM. A ten-second press clears calibration. A RigExpert antenna analyzer gave me a more precise way to identify minimum-SWR points than the radio's broad low-SWR indication.

In Run Mode, the controller follows the radio and selects the closest stored line. Manual Mode remains available if communications are unavailable.

THEN THE NUMBERS DIDN'T BEHAVE.

The train-track itself was adding the electrical equivalent of approximately three feet of Window-Line.

With only the nominal 90-foot feedline I could obtain a very low SWR. Connecting the train-track also produced a low SWR, but the frequency shifted. Even with all selectable relays in their normally closed positions, the assembly itself was contributing electrical length. I shortened the fixed feedline to about 87 feet so the complete system represented the desired 90-foot starting point.

AHA! THE FOUR INCHES I HADN'T COUNTED

The relay-board layout included conductor length I had not fully counted. Once I accounted for the missing path and adjusted the physical sections, the frequency steps became considerably more consistent.

NOMINAL	FINAL PHYSICAL
1 ft	1 ft 5 in
2 ft	2 ft 5 in
4 ft	**5 ft 6 in**
8 ft	**9 ft 9 in**
16 ft	16 ft 2 in

THE VALUE OF AN UNRESOLVED RESULT

OBSERVATION

Two relay combinations still produced unexpectedly large frequency shifts, especially combinations involving the 4-foot section.

TEST

I increased spacing between several Window-Line sections. No measurable change. Adding another one-foot section made the large shift disappear.

CONTROL

I built a second 90-to-121-foot set with banana connectors and suspended it in a straight line over the driveway. Those measurements showed no unusual jumps.

RESULT

REAL ANOMALY. REAL INVESTIGATION. NO FORCED EXPLANATION.

The control experiment associated the anomaly with something about the compact train-track configuration, but it did not establish the precise physical mechanism. Because the effect did not significantly interfere with amateur-band operation, I stopped the investigation there.

THEN IT RAINED

During a scheduled 75-meter contact, rain pushed SWR to about 3.5:1 with the normally correct line length. In Manual Mode, selecting a feedline length approximately three feet shorter brought it down to about 1.5:1.

3.5:1 → 1.5:1

ON-AIR RAIN EVENT

A later driveway spray/wax test was a separate experiment; it did not directly reproduce the original rain event.

ARRIVAL: THE FINAL CLUB INSTALLATION

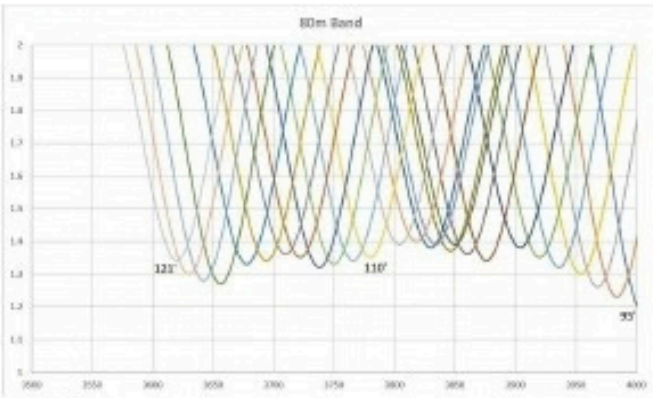
The final doublet was installed at the club remote station as an inverted-V with its center approximately 75 feet high. The Window-Line drops mostly vertically, with about 12 feet routed into the shack. The train-track was mounted on the wall.

And then I calibrated everything again. The frequency/line-length relationships were re-measured after permanent installation and the new values entered into the controller. Calibration is installation-specific.

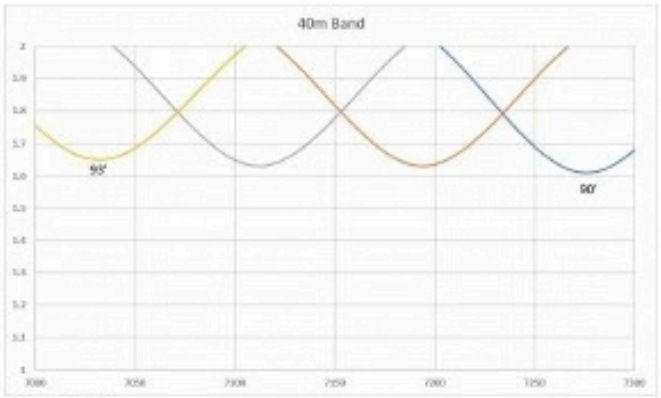


The IC-7300 and No-Tune controller in operation at the remote station.

FINAL CLUB / WITOKA PERFORMANCE



80 meters



40 meters

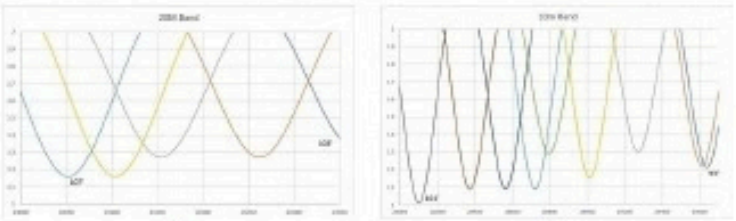
The final data show useful matching behavior across most intended HF bands, but not every result was below 2:1. That matters: the system works because it is calibrated and understood, not because every frequency produces a perfect number.

REPRESENTATIVE

30 m	10100 kHz	1.03:1
30 m	10150 kHz	1.40:1
17 m	18068 kHz	2.38:1
17 m	18168 kHz	1.92:1
60 m	5405 kHz	2.56:1

WHAT WORKED - AND WHAT COMES NEXT

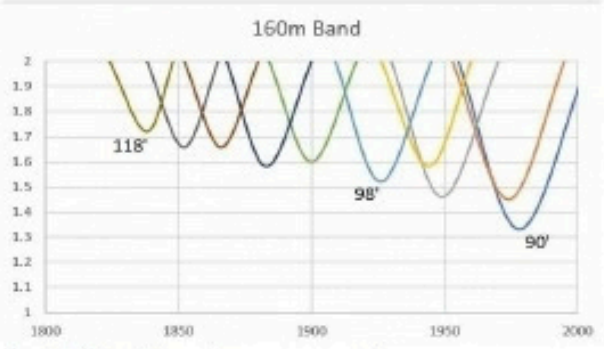
FINAL PERFORMANCE



20 m 10 m

The complete final dataset includes 80, 40, 20, 15, 12 and 10 meters, plus measurements on 60, 30 and 17 meters. Some portions of the spectrum match extremely well; 60 meters and portions of 17 meters remain higher. Lower-band behavior might be improved by adding another selectable section, but that would introduce its own design tradeoffs.

160 METERS



Final Witoka 160-meter measurements.

Taking a cue from Karsten Bink, OZ1DB, I added a relay configuration that shorts the Window-Line conductors and feeds the result through a high-voltage capacitor, allowing the antenna to operate as a top-loaded vertical against a ground counterpoise. Line length can still be varied on 160 meters.

There is no dedicated radial field, so I did not expect this to equal a full-size 160-meter antenna. An informal 220-mile comparison was encouraging, but it was not a controlled efficiency measurement.

BACK TO THE ORIGINAL GOAL

I wanted a practical remote multiband antenna system that did not require the operator to manipulate a tuner after every frequency change. The IC-7300 provides frequency information, the controller selects the calibrated feedline configuration, and the operator can move around the bands with little additional intervention.

A USB camera running ContaCam gives remote users a browser view of the radio and controller. That closes the loop: this is why I built it. The measurements document impedance matching and practical system behavior, not a direct measurement of radiation efficiency.

WHERE I'M GOING NEXT

I have already started a second-generation home version with legal-limit operation, a different relay architecture with greater conductor spacing, and an M5Stack/ESP32 graphical controller. The larger lesson is simpler: automatic feedline-length selection can be practical, but physical transmission-line details matter enough that measurement and calibration are essential.

The unexpected results were not distractions from the project. In several cases, they were the part that taught me the most.

6 METERS
51.600 MHz
1.13:1
One point o/coverage.

SWR PROJECT RESOURCES
W5DXP - original reference
OZ1DB - related implementation
Source + Gerbers - from author



ABOUT MICHAEL FOERSTER, W0IH

Licensed since 1969, Michael is a practical builder and experimenter whose work combines electronics and software experience with antenna development, Arduino/microcontroller projects, station automation and remote operation. His approach is visible throughout this project: build it, measure it, question the unexpected result, and refine the system.

SWR PRO / LESS NOISE. MORE SIGNAL.

DID YOU KNOW?

WHY IS 599 THE MOST COMMON SIGNAL REPORT?



A signal report should describe what an operator actually hears. So why does 599 appear again and again, especially in CW contests and DX contacts? The answer is part technical standard, part operating tradition.

THE SHORT ANSWER:

599 is the highest conventional RST report for a CW signal. Over decades of contesting and DX operating, it also became a fast, familiar exchange, even when the actual signal wasn't literally a perfect 599.

RST stands for Readability, Strength and Tone. In the modern system, 599 means R5, S9 and T9.

R	5	READABILITY
S	9	STRENGTH
T	9	TONE

FROM SIGNAL REPORT TO OPERATING CONVENTION

Developed in the 1930s, RST gave operators a standardized way to describe signals. But operating habits evolved. In contests, DX contacts and busy pileups, speed matters, and 599 became a familiar, efficient report.

On CW it became even shorter: 5NN, using N as a shortcut for 9. What began as signal information had acquired a second role: an operating convention recognized almost instantly around the world.



599 → 5NN
Same report. Shorter in Morse. Faster to send.

QUICK FACTS:

RST
Readability • Strength • Tone

599
R5 • S9 • T9

5NN
N commonly substitutes for 9 on CW.

NOT ALWAYS LITERAL
In fast operating, 599 may be conventional rather than an exact signal report.

Sources: QST/ARRL historical RST material and CQ World Wide DX Contest documentation.

KLM Multi-2700

When the Future Arrived at the Shack



There was a time in ham radio when turning on a transceiver was also like opening a small window into the future.
There were no color displays, digital memories, menus, waterfalls, or spectrum displays stretching from one end of a monitor to the other. There were knobs, switches, analog meters, and the distinctive glow of the indicators of that era. And yet, some radios seemed to be several years ahead of their time.

One of them was the KLM Multi-2700.
Introduced during the second half of the 1970s, the Multi-2700 was a 2-meter transceiver that did not want to be just another FM radio. KLM designed it as a true multimode station, capable of operating NBFM, WBFM, AM, USB, LSB, and CW. For a ham radio operator of that era, this was much more than a list of features: it was an invitation to explore.
The radio incorporated a 600-channel PLL synthesizer with 10 kHz steps, along with a continuously tunable VFO covering 144 to 148 MHz with 1 kHz readout. It also offered RIT, VOX, audio compression, a noise blanker, power and FM deviation meters, independent filters for SSB and FM, and an integrated AC/DC power supply.
But perhaps one of its most fascinating features was its connection to the OSCAR program.
The Multi-2700 incorporated a receiver for the 10-meter link used by the OSCAR satellites of that era and could operate transceive between 2 and 10 meters. For those who looked toward the sky searching for signals coming from a satellite, that capability made the radio something very special.

Nostalgia Corner

We Have to Remember the Era.

Today, we can select a frequency with a keypad, enter an uplink frequency and a downlink frequency, and let the radio do much of the work. In the 1970s, working a satellite required knowledge, patience, and a good dose of experimentation.
The Multi-2700 attempted to put some of that technology within the reach of the ham radio operator.
And it did so with an appearance that, today, is impossible not to look at with a certain sense of nostalgia.



28 Pounds of Ham Radio.

That was approximately how much the radio weighed, enclosed in a cabinet nearly 15 inches wide. The catalogs of the time advertised a minimum output of 10 watts and proudly highlighted a phrase that, today, seems almost naïve:
“NO TUNING!”

To us, it may seem like a simple feature. Back then, it wasn't necessarily so.
The price was not small either. Advertisements from the time listed it at around $695.95 to $799.95, depending on the publication and the time. It was a considerable investment for a ham radio operator in the late 1970s.

But that is precisely where part of its charm begins.
The Multi-2700 was not created to become a decorative collector's piece. It was conceived as an advanced communications station for its time. And some of those radios were actually used to explore OSCAR satellites and experiment with 2-meter SSB.
Decades later, stories from ham operators who remember those days can still be found.
One owner who wrote about the radio recalled buying his Multi-2700 new in 1976 and using it to work OSCAR-10. Another ham operator said that, after selling his many years ago, he eventually regretted it and went looking for another one. They are small stories, but they say a great deal about the relationship some operators developed with these machines.

Because that is what makes ham radio different.
A transceiver can be technically outdated and yet still have a story.
Perhaps someone learned SSB on it.
Perhaps someone else heard a distant station on 2 meters for the first time.
Maybe their first satellite contacts were recorded in a paper logbook alongside a date, a frequency, and a callsign that today belongs to another generation.



And perhaps, in some shack, one of these radios is still waiting for someone to slowly turn its dial once again.
The Multi-2700 also reminds us how much technology has changed. That machine, which in 1977 might have seemed futuristic, can seem large and simple today when compared with a modern SDR. Yet it had something that no specification can measure: it represented the possibilities a ham radio operator could imagine at that moment.
It was an era when opening a copy of 73 Magazine or QST could awaken the desire to build, experiment, and hear something that had never been heard before. Catalogs were windows into other worlds, and photographs of new radios could remain in the imagination for months as someone saved money for their next transceiver.
The KLM Multi-2700 belonged precisely to that era.
An era of analog technology, experimental satellites, homebuilt antennas, and entire nights spent waiting for a signal to appear through the noise.
Today, when a Multi-2700 is powered on again after decades, it may not be the most practical way to operate on 2 meters.
But perhaps that was never the point.
Some radios survive not because they were the best equipment of their generation.
They survive because they tell a story.
And when a light comes on across their front panel after so many years, for a moment we are not simply listening to a radio signal.
We are listening to a small fragment of the history of ham radio.

SWR MARKETPLACE

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PRODUCTOS –INNOVACIÓN – SERVICIOS – COMUNIDAD


The airwaves carry more than just signals; they carry voices, dreams, and friendships.
Ham radio turns distance into connection and silence... into a conversation.
Photo by: Qrper

July 17 EVENTS AND ACTIVITIES SCHEDULED FOR OCTOBER 2026

SPECIAL EVENTS

📍 Conventions, Hamfests, and In-Person Events

- **AWA Conference – October 1–2, 2026 –** Henrietta, New York, United States – Antique Wireless Association. A conference dedicated to the history of radio and electronics, featuring exhibits, vintage equipment, presentations, and activities for ham radio operators interested in the technological evolution of communications.
- **Hamfest Chattanooga 2026 – 16–17 de octubre de 2026** – Ringgold, Georgia, Estados Unidos – Chattanooga Amateur Radio Club. Encuentro de radioaficionados con venta e intercambio de equipos, componentes y accesorios, además de actividades y oportunidades para reunirse con otros operadores. El evento figura como hamfest de ARRL.
- **Texoma Hamarama 2026 – October 24, 2026 –** Ardmore, Oklahoma, United States – Central Oklahoma Radio Amateurs (CORA). A regional hamfest that brings together ham radio operators, vendors, and electronics enthusiasts, offering an opportunity to purchase equipment, exchange knowledge, and connect with other members of the community.
- **Stone Mountain Hamfest, ARRL Georgia State Convention – October 30–31, 2026 –** Lawrenceville, Georgia, United States – Alford Memorial Radio Club. An ARRL state convention that brings ham radio operators together for activities involving equipment, electronics, training, and fellowship, along with the traditional hamfest activities.
-

📍 On-the-Air / Special Operations

- **Jamboree-on-the-Air (JOTA) – October 16–18, 2026 –** Worldwide – Scout stations from around the world. An international activity in which millions of Scouts and Guides have the opportunity to communicate through ham radio. Stations can participate from clubs, private stations, or campsites, using the internationally recommended frequencies for JOTA.
- **N4N – Sapelo Island Special Event – October 8–11, 2026 –** Sapelo Island, Georgia, United States – N4N. A special activation from Sapelo Island by a team of ham radio operators who will operate on 80, 40, 20, 15, and 10 meters using SSB, CW, FT8, and FT4. The activity commemorates the 16th anniversary of the group's first activation of the island in 2010.

📬 DO YOU HAVE A HAM RADIO EVENT AND WANT IT FEATURED IN OUR MAGAZINE?
SEND US THE DETAILS AT INFO@SWRMAGAZINE.ORG, AND WE'LL BE HAPPY TO PUBLISH IT.



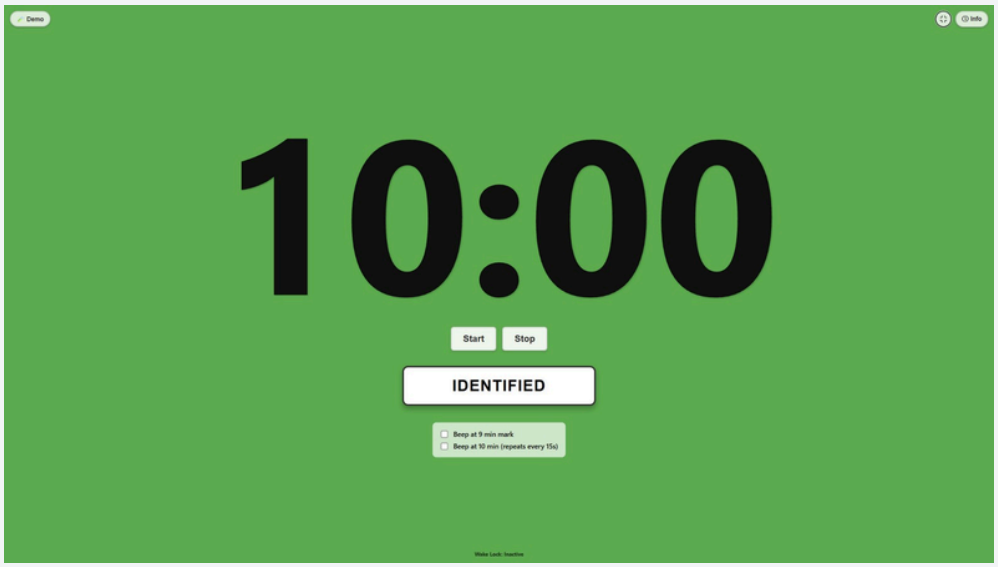
EG9MM — Melilla, North Africa | November 12–15, 2026

EG9MM — Melilla, North Africa | November 12–15, 2026
A team traveling from Madrid is preparing an amateur radio expedition to Melilla, the Spanish autonomous city on the North African coast, from November 12 through 15, 2026. The operation will use the special call sign EG9MM.
The team plans to update its QRZ.com page with additional information, photographs and videos as th expedition develops. Operators interested in following the activity should look for EG9MM on the air and consult the EG9MM listing on QRZ.com for the latest expedition details.
Information provided to SWR Magazine by Daniel Cialdella.

THE NET CONTROL ID TIMER

Asimple,purpose-builttool thathelpsone NetControl operator keep station-identificationtimingvisible withouttaking attention away from the net.

By Vitaliy Konyukhov, K6VIT



READY TO GO

TheNetControl ID Timer in its normal green state, with the large countdown designed to remain easy to read alongside the operator’s primary logging setup.

I got my first HT, a TIDRADIO TD-H8, on July 24, 2025. That same day, I made my first contact on the Maricopa County New Ham Operator’s Net. The community was welcoming, and I quickly became more involved. By September, I had upgraded to Amateur Extra, and on October 16 — less than three months after getting licensed — I stepped up to run that same net as Net Control. Running a net keeps you busy. Between logging, reading the script and routing traffic, there is already plenty competing for your attention. Then there is station identification. FCC rules require an amateur station to transmit its call sign at the end of each communication and at least every 10 minutes during a communication.

I wanted a simple way to keep track of that 10-minute interval while I was running the net.

THE PROBLEM WASN'T THE RULE. IT WAS THE DISTRACTION.

Atfirst, I tried using awall clock or a basic timer app on my phone. Both were frustrating. Watching a clock distracted me from the notes I keep for the net. Phone timers required too many taps to reset, and the screen always seemed to go to sleep right when I needed to check the time.

I just wanted something that worked without getting in my way.

With my professional background in computer science and system administration, I decided to build exactly what I needed. I used Google Gemini Pro AI to assist with some of the HTML and JavaScript development. The result is a simple, web-based Net Control ID Timer that I host on my website.

During a net, I run the timer on a tablet next to my main logging computer. Because it runs in a standard web browser, there is no software to install. In my setup, its screen-wake feature keeps the timer visible while I'm using it, so I don't have to keep waking the tablet just to check the time.

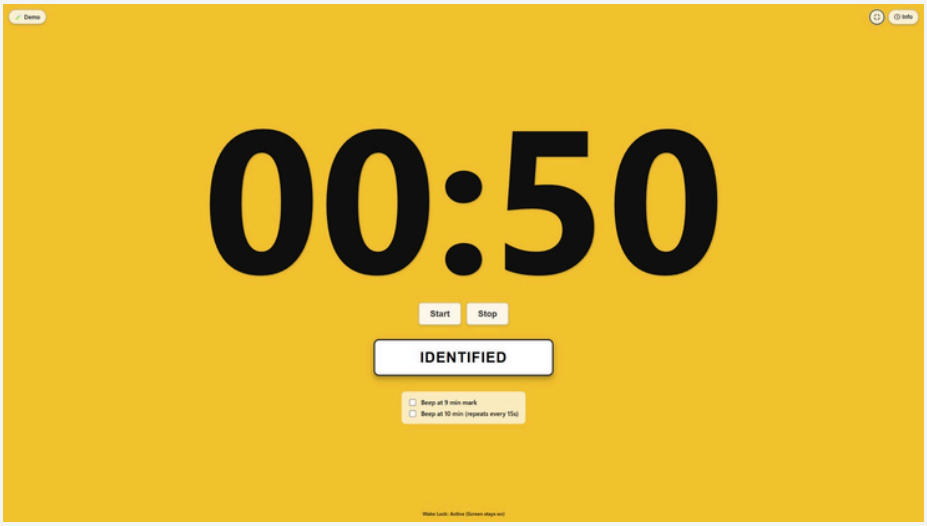
The interface is intentionally simple. A large countdown dominates the screen, and color provides the warning without demanding my attention.

"I just wanted something that worked without getting in my way."

PURPOSE-BUILT, NOT OVERBUILT

The timer runs in a standard web browser, stays visible in Vitaliy's operating setup, and uses a large countdown plus color-coded states to reduce the attention required while running the net.

A WARNING YOU CAN SEE WITHOUT CHASING A CLOCK



NINE-MINUTE WARNING

Afternineminutes, the interface changes to yellow, providing a peripheral visual warning while the operator remains focused on the net.

The timer starts in green. At the nine-minute point, the background changes to yellow, giving me a warning that I can notice in my peripheral vision without having to look away from the net script or my logbook. If the timer passes 10 minutes, the display changes to red and continues counting into the overdue state.

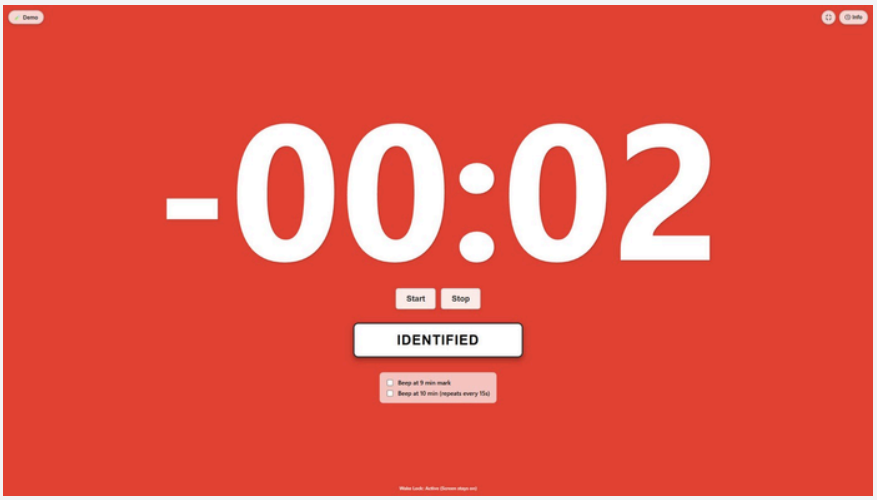
There are optional audio alerts as well.

Once I identify with my call sign, I tap the large IDENTIFIED button. The timer resets to 10 minutes, and I can get right back to running the net.

GREEN → YELLOW → RED

The interface itself carries the visual story.

WHEN THE WINDOW PASSES



OVERDUE

Ifthecountdown passes 10 minutes, the interface changes to red and continues into negative time. Pressing IDENTIFIED resets the timer for the next interval.

The timer is not a substitute for understanding the FCC station-identification requirements, nor does a countdown by itself determine compliance. It is simply the operating reminder I wanted beside me while serving as Net Control.

I originally built it just to make my own nets run smoother, but I have since shared it with the other Net Control operators on our team and posted it on my QRZ page.

It is a simple tool, but it solves a very real operating problem.

TRY THE TIMER

konyukhov.eu/id

FCC §97.119 — Station Identification

ABOUT THE AUTHOR

Vitaliy Konyukhov, K6VIT • Tempe, Arizona. Amateur Extra; M.S. Computer Science (Cybersecurity), Arizona State University; professional System Administrator and regular Net Control operator.

By: Yanira Maldonado, WP4QOE

Frecuencia Femenina

WHO WILL YOU LEAVE YOUR FREQUENCY TO?

I often hear a concern within amateur radio: "We need to bring in new people because someday there may be no one left."
But perhaps we are asking the wrong question.
We should not only ask how many new radio amateurs are arriving. We should ask:

Who are we leaving what we know to?

Over the years, we accumulate experience. We learn about antennas, propagation, equipment, contests, CW, digital modes, emergencies... Knowledge that often cost us time, money, mistakes, and even frustration.
But there is something no piece of equipment can store: the experience of those who came before.
And that experience has an expiration date if it is not shared.
We can preserve photographs of our stations. We can keep QSL cards, awards, equipment, and hundreds or thousands of contacts in a log.
But the true legacy of a radio amateur should not be measured only by what was achieved while sitting in front of the station. It should also be measured by what was left in others when we stepped away from it.
Perhaps that is why the future of amateur radio does not depend only on bringing in more licenses.
It depends on someone being willing to say to the person coming behind:

"We worry about who will come into amateur radio tomorrow. Perhaps we should also worry about who will receive what we know today."

"Come. I'll teach you what took me years to learn."

We do not need to know everything in order to do that. Each of us knows something that someone else has not yet discovered.
And if every radio amateur decided to pass that knowledge on to just one person, perhaps we would worry a little less about who will occupy our frequencies tomorrow.
Because someone would already be prepared to do it.
So this time I do not want to ask how many contacts you made, what equipment you have, or how many years you have been in radio.
I want to leave you with a much harder question:
If tomorrow your station fell silent, who would continue transmitting

what you know?

Perhaps that is one of the answers that will define the future of amateur radio.



Allow Us to Present Miss Kathleen Parkin, Expert Radio Operator at Fifteen Years of Age. She has made her own apparatus.

Robust, Practical, Versatile

IS THE ICOM IC-9100 STILL RELEVANT TODAY?



All-in-One

By: SWR Editorial Team

A Radio That Refuses to Disappear

In a world where modern transceivers come with touchscreens, SDR, wireless connectivity, digital interfaces, and an impressive number of features, the Icom IC-9100 might seem like a radio from another era. However, years after its launch, it remains a very interesting option for many ham radio operators.
The reason is simple: the IC-9100 was designed to provide an extremely versatile station, and that is precisely what it can still do very well.

One Radio, Many Possibilities

One of its greatest attractions remains its ability to operate on HF, 50 MHz, 144 MHz, and 430 MHz. For the ham operator who enjoys exploring different bands and modes, having so many possibilities combined into a single radio represents a significant advantage.
It can also be used in different modes such as SSB, CW, AM, FM, and digital modes. This allows the same radio to become part of a station dedicated to DX, local communications, experimentation, or even satellite operations.

Can It Compete with Modern Radios?

Here, we have to be realistic. The IC-9100 does not have the display or user experience of the latest SDR transceivers. Some current radios offer better interfaces, connectivity, and much deeper integration with computers and digital systems.
But that does not mean the IC-9100 has become obsolete.
A significant part of ham radio still depends on the same elements as always: receiver sensitivity, selectivity, antennas, propagation, and, above all, the skill of the operator. In that area, the IC-9100 still has a lot to offer.







Beyond HF

One of its most interesting features is precisely that it is not limited to the traditional HF bands. Its VHF and UHF capabilities allow it to be used for local communications and to experiment with modes that require higher frequencies.
For a ham operator who wants a single station capable of covering different areas of the hobby, this versatility remains appealing.

It Has Limitations, Too

We should not make it out to be a perfect radio. Its design belongs to an earlier generation, and some of its controls may feel less intuitive to those accustomed to modern interfaces. In addition, anyone looking for the latest SDR features and connectivity will find more recent alternatives.
But those limitations do not eliminate its usefulness. On the contrary, for many operators, its ability to bring so many functions together in a single transceiver remains precisely its greatest attraction.

Is It Worth It in 2026?

The answer depends on what we are looking for. If we want the latest transceiver available, with all the modern features, we should probably look toward newer equipment. But if we are looking for a radio capable of covering HF, 6 meters, 2 meters, and 70 centimeters in a single unit, the IC-9100 remains an option worth considering.
Especially on the used market, a unit in good condition can become an excellent station for experimenting and discovering different areas of ham radio.
The relevance of a transceiver does not depend solely on when it was manufactured. It depends on what it can still do.
The IC-9100 does not have the largest display or the newest technology. But it has something that has not gone out of style: the ability to put a ham operator on the air and open the door to different bands from a single shack.
And as long as we continue searching for signals across the bands, the IC-9100 will still have a place in ham radio.



WHEN I DISCOVERED THAT HAM RADIO COULD ALSO GO DIGITAL

A New Way of Understanding Digital Radio

Por: Abimael Padro KP4RY

DMR combines digital radio and TDMA to make more efficient use of each channel. With concepts such as Color Code, Time Slot, and Talkgroup, it allows communications to be organized in a different way from traditional FM radio.

I remember the first time I heard about DMR. To be honest, I thought it was simply another one of those digital technologies that appear in ham radio and, after a while, fade away.
I came from traditional radio. Frequencies, CTCSS tones, repeaters, antennas, and the distinctive sound of a clear FM signal coming through. It was a world I understood and enjoyed.
Then DMR came along.

At first, everything seemed unnecessarily complicated. Color Code, Time Slot, Talkgroup, contacts, zones, and something called a code plug. You could have the radio in your hand and still feel like you didn't really know how to make it talk.
And that was precisely what caught my attention. I wanted to understand it.

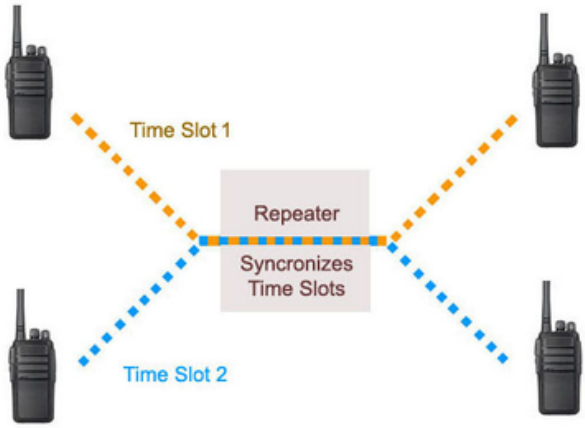
DMR: When Radio Becomes Data

DMR is a digital radio system that uses TDMA to divide a 12.5 kHz channel into two time slots, allowing the available spectrum to be used more efficiently.
To communicate properly, it is necessary to understand parameters such as Color Code, Time Slot, and Talkgroup. These elements determine how the radio connects and with whom it can establish communications.
Rather than simply programming a frequency, DMR requires configuring a small digital network. That combination of radio, technology, and connectivity is precisely what makes this mode different.

The First Time

My first experience with DMR was a mix of curiosity and frustration. Programming a DMR radio was not like programming a conventional radio.
With an analog radio, I could enter a frequency, set the correct tone, and start listening. With DMR, I had to think differently.
It wasn't enough to know the repeater frequency. I had to understand which Time Slot to use, what the Color Code was, and, above all, which Talkgroup I wanted to listen to or use.
The first time I successfully made a digital contact, the feeling was different from that of my first FM contact.
Not because it was better.
It was simply different.
And perhaps that was when my interest in DMR really began.





Discovering That a Frequency Could Contain So Much More

One of the things that surprised me the most was understanding the concept of Talkgroups.
In analog radio, we are used to thinking of a frequency as a place where a conversation takes place. In DMR, that idea changes.
A Talkgroup makes it possible to organize different communication groups within a digital infrastructure. Time Slots allow the same 12.5 kHz channel to be shared between two simultaneous communications using the TDMA system.
The theory was interesting.
But hearing it actually work was something else.
Suddenly, I could be listening to a local conversation and, with the right configuration, participate in communications that connected me with operators far beyond my area.
It was one of those moments when you remember why you got into ham radio in the first place.
The technology had opened another door.

The Famous Code Plug

If there is one thing that probably everyone who starts with DMR remembers, it is the code plug.
At first, it seemed like just another complication.
Then I understood that it was precisely what made it possible to organize all that information.
Frequencies, repeaters, Talkgroups, contacts, and settings could all be organized

inside the radio. DMR documentation often points out that the learning curve is steeper than with a conventional FM radio, precisely because so many of these new concepts come into play.
Over time, what had seemed complicated began to make sense.
And I discovered something that ham radio has taught me many times:
what seems difficult almost always becomes simple once you understand how it works.





Not Everything Went Perfectly

I also learned that DMR has its own particularities.
An incorrect programming setup can leave you listening to silence even when you are on the correct frequency. The wrong Color Code, an incorrect Time Slot, or a misconfigured Talkgroup can make you think the radio is broken.
It isn't.
It is simply doing exactly what we told it to do.

That was one of the best lessons DMR taught me.
Modern radio requires the operator not only to know how to listen and transmit, but also to understand the system they are using.

Beyond the Technology

Over time, my interest in DMR stopped being solely about the technology.
I began paying more attention to the people.
That is something that can easily happen when you discover digital systems: behind all those numbers, codes, and settings, there are still ham radio operators.
People who get up early to talk on the radio.
People who try new equipment.
People who help others program their radios.
People who spend hours explaining what a Time Slot means or why a particular Talkgroup is not working.
And that's when I realized that DMR had not changed the essence of ham radio.
It had simply changed some of the tools we use to practice it.

Would I Go Back to Analog Radio?



Yes.
And that is precisely what makes it interesting.
I don't think we have to choose between one technology and the other.
I still enjoy a simple FM conversation. I still enjoy listening to a repeater and recognizing a friend's voice. I still enjoy a good antenna and a clean signal.
But I also enjoy picking up a DMR radio, selecting a Talkgroup, and discovering who is on the other end.
To me, that is one of the great virtues of ham radio.
There is always something more to learn.
When I thought I already knew quite a bit about radios, DMR came along to remind me that I could still start over as a beginner.
And perhaps that is one of the reasons we are still here.
Not just to talk.
Not just to listen.
But for that feeling of discovering something new and thinking:
“What else can this radio do?”
That question, after so many years, still seems to me like one of the best reasons to remain a ham radio operator.

DMR
DIGITAL MOBILE RADIO

ORLANDO HamCation®

OFFICIAL COMMUNITY ANNOUNCEMENT
For SWR Magazine readers

HAMCATION 2027 AWARDS

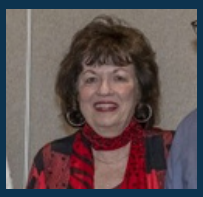
NOMINATIONS NOW OPEN

Recognizing Outstanding Service to Amateur Radio

Each year, HamCation recognizes amateurs whose service, mentoring and response have strengthened the radio community. Nominations for 2027 may be submitted for candidates in the United States and worldwide.

Open to nominations from the USA and worldwide

THREE AWARD CATEGORIES



Carole Perry Educator of the Year Award

Honors an individual who has made an outstanding contribution to educating and advancing youth in amateur radio.



Gordon West Ham Ambassador of the Year Award

Recognizes an amateur who represents and inspires others, embodies the amateur radio spirit and contributes meaningfully to the community.

Amateur Radio Hero Award

Recognizes selfless service by an amateur who provides skills, equipment and time for communications duty during a disaster or moment of need.

NOMINATION DEADLINE

NOVEMBER 1, 2026

Nominate at hamcation.com/award

Scan for criteria and nomination forms

JOTA-JOTI 2026

OPENTHERADIO.OPEN A WORLD.



For one weekend in October, amateur radio becomes much more than a hobby.

It becomes a doorway.

From October 16-18, Scouts and Guides around the world will take part in JOTA-JOTI 2026 - Jamboree on the Air and Jamboree on the Internet, recognized by World Scouting as the world's largest digital and radio Scout event.

More than 2 million **young people from over 170 countries participate annually.**

Every year, JOTA-JOTI connects young people across borders, languages and cultures through amateur radio and the Internet. More than two million young people from over 170 countries participate annually, making this a truly global event.

And amateur radio operators have an important role to play.

BRING RADIO TO THEM

If there is a Scout group in your community, consider reaching out.

You don't need to organize a major event. A radio club can invite a local Scout group to the shack. A few operators can bring portable equipment to a Scout meeting or campsite. An individual amateur can simply help put a young person behind a microphone and let that first contact happen.

Because sometimes all it takes is one QSO.

THEN COME THE QUESTIONS.

For a young personwho has grown up surrounded by smartphones, social media and instant Internet communication, the realization that a voice can leave an antenna and be heard hundreds - or thousands - of miles away can still be remarkable.

Then come the questions.

How does the signal get there?

Why does an antenna work?

What is a satellite?

Can I build this?

That curiosity can open doors far beyond amateur radio - to electronics, communications, engineering, coding, physics, astronomy and other areas of science and technology.

JOTA-JOTI gives us an opportunity not simply to explain amateur radio, but to let young people experience it.

AND WHEN YOU HEAR THEM...

During JOTA weekend, youmayhearvoices on the bands that are hesitant.

An unfamiliar callsign procedure.
A forgotten phonetic.
A pause before answering.
Perhaps even a mistake.

Remember who may be holding that microphone.

That young Scout may be making a radio contact for the very first time.

Be patient. Slow down. Help when help is needed. Make the contact enjoyable.

There will always be another opportunity to teach perfect operating technique.
Theremaynot beanother opportunitytomakethatyoung person want to pick up a microphone again.

This October, don't just listen for JOTA stations. Welcome them.

Because the QSO you make during JOTA-JOTI 2026 may last only a few minutes - but the interest it creates could last a lifetime.

SWR

The Antenna We Carry on Four Wheels



By: Julio Mercado WP4PUX

There is something special about turning on the radio while you're behind the wheel. Maybe it is the chance to hear a conversation several miles away, find a repeater we have never used before, or simply know that, even while moving from one place to another, we are still connected to the ham radio community. Over the years, I have learned that in a mobile station, there is one component that often gets less attention than it deserves: the antenna.

I remember several occasions when I installed a VHF/UHF radio in a vehicle and thought that practically any antenna would do. After all, the radio could put out 25, 50, or even more watts. But experience taught me something different. A good antenna, properly installed, can do much more for our mobile station than simply increasing power.

For VHF and UHF, there are many options. Quarter-wave antennas are simple, affordable, and very forgiving of less-than-perfect installations. A 1/4-wave antenna for 2 meters is approximately 19 inches long, and when mounted over a good ground plane, it can provide excellent results. For anyone looking for simplicity, it remains a difficult option to overlook.

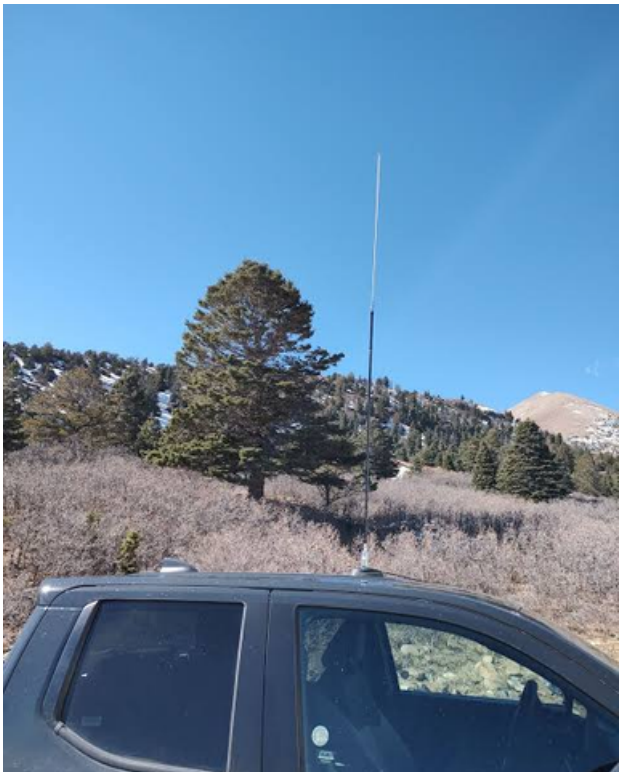
However, when I want a little more performance, I usually look toward 1/2-wave antennas or higher-gain collinear antennas. These antennas can provide better coverage, especially when working with repeaters or relatively distant stations. But this is where a word comes into play that I consider much more important than "gain": installation.

An excellent antenna installed in a poor location can perform worse than a simple antenna installed correctly.

In my vehicles, I have found that location makes a tremendous difference. An antenna installed in the center of the roof generally has a much more uniform view around the vehicle than one mounted in a corner. Magnetic-mount installations are practical and allow you to move the antenna from one vehicle to another, but a permanent installation using a proper mount offers both mechanical and electrical advantages.



We also have to think about the ground plane. On VHF and UHF, the metal body of the vehicle can become an important part of the radiating system. That is why an antenna mounted on a suitable metal surface can behave very differently from the same antenna installed on a small or nonconductive surface.
And then there is UHF.
Sometimes we hear that a particular antenna is "for VHF/UHF" and assume that it will perform exactly the same on both bands. The reality is that an antenna must be designed to work properly on the frequencies that interest us. A good dual-band antenna can be an excellent solution for a ham operator who uses 2-meter and 70-centimeter repeaters, but it is worth checking its frequency range, radiation pattern, power rating, and mounting method before buying one.
Among the best-known options are dual-band antennas from manufacturers such as Diamond, Comet, and other specialized brands. Models with 1/2-wave, 5/8-wave...



1/2-wave or collinear designs can provide very good results in a mobile station. But I don't like choosing an antenna simply because the box says "high gain." In a mobile station, the advertised gain does not always tell the whole story. A very long antenna may offer excellent electrical characteristics, but it can also become a significant mechanical load on the mount, especially when the vehicle is traveling at high speed. A shorter antenna may sacrifice some gain and still prove to be much more practical for everyday use.
I also learned not to underestimate 1/4-wave antennas. They are simple, rugged, and affordable. They do not require a complicated structure and can be an excellent option for someone getting started in mobile ham radio. In many cases, I prefer a simple, properly installed antenna over a sophisticated antenna mounted poorly. Another detail we often overlook is the coax. There is no point in making a significant investment in the radio and antenna only to use poor-quality coax, improperly installed connectors, or an unnecessarily long cable run. On UHF, coaxial losses can be especially significant.
That is why, when someone asks me what the "best" antenna for their vehicle is, my first answer is not a model. I ask what band they use, which repeaters they want to work, where they plan to install it, how much space they have, and how much they are willing to sacrifice in terms of size and convenience.
If I am looking for maximum simplicity, a good 1/4-wave antenna is an excellent choice. If I want a practical dual-band station for everyday use, a good 1/2-wave or collinear VHF/UHF vertical antenna can be an excellent alternative. If I need the best performance possible and don't mind carrying a longer antenna, then I consider higher-gain models, always paying close attention to the installation and mechanical limitations.
In the end, the best mobile antenna is not necessarily the longest, the most expensive, or the one advertising the most decibels.
It is the one properly designed for our frequencies, installed in a suitable location, connected with good coax, and used for the purpose we have in mind.
After many miles on the road with a radio turned on, I have come to appreciate that little antenna on the roof in a different way. While I'm driving, it is not simply a piece of aluminum or fiberglass. It is our window to the world of radio.
And sometimes, all it takes is hearing a station answer from a distant repeater to remind us why it is worth choosing that anten

NOISE OFFSET

WhatDoesThatKnobonaSwitching Power Supply Actually Do?

One unfamiliar control on a fellow amateur’s new power supply led to a simple question—and an interesting look at how some switching supplies help operators deal with an occasional RF nuisance.



José Sanabria, WP3NZ, at his amateur radio station with the Delta DPS60M switching power supply that sparked our curiosity about the Noise Offset control.

When fellow Caribbean Amateur Radio Group member José Sanabria, WP3NZ, shared photographs of his Delta DPS60M switching power supply, most of the controls on the front panel needed little explanation.

Voltage Adjust? Easy enough.

A Volt/Amp meter and selector? No mystery there.

But over on the right was a knob labeled: NOISE OFFSET

That one deserved a second look.

What exactly are we “offsetting”—and why would a power supply need a knob for it?

THE SWITCHING PART MATTERS

Unlike a traditional transformer-based linear power supply, a switching power supply—or SMPS—converts electrical energy using high-frequency switching.

That approach offers some obvious practical advantages. Switching supplies can deliver substantial current from a package considerably smaller and lighter than the large transformer-based supplies many amateurs remember sitting under—or sometimes holding down—the operating desk.

But there is another side to high-frequency switching.

The switching process can produce small amounts of RF energy and related harmonics. A properly designed supply incorporates filtering and other RFI/EMI suppression measures to keep those products under control.

The amateur-radio environment, however, presents an unusual challenge.

Our receivers are specifically designed to detect extremely weak RF signals.

Something electrically insignificant to most equipment can occasionally become noticeable to a sensitive HF receiver. Under the right circumstances, a switching-related product might show up as a small unwanted carrier, spur, tone, or what operators commonly call a birdie.

And sometimes that birdie happens to land in exactly the wrong place.

SO WHAT DOES NOISE OFFSET DO?

Here is the clever part—and also the part that can easily be misunderstood.



The control that started the conversation. The Delta DPS60M front panel includes a NOISE OFFSET control, a feature intended to shift the switching frequency so that certain switching-related interference products may move away from the frequency being received.

A Noise Offset control does not necessarily make the underlying RF energy disappear. Instead, the control can slightly alter the operating frequency of the switching circuitry.

When that switching frequency changes, interference products associated with it may also shift in frequency.

Imagine that you are trying to copy a weak signal and a switching-related birdie happens to fall directly on, or very close to, your receive frequency.

Turn the Noise Offset control.

The switching frequency changes slightly. The birdie may move with it.

Your desired frequency may become clear again.

Turn the knob. The birdie moves. Your frequency may become quiet again.

That distinction is important. Noise Offset is not a conventional noise filter or noise blanker, and it should not be thought of as a knob that simply “turns down” RFI.

It is better understood as a way of moving certain switching-related interference away from where it is causing a problem.

DOES HAVING THE KNOB MEAN THE SUPPLY IS NOISY?

No.

And the reverse assumption can be equally misleading.

The absence of a Noise Offset control does not prove that another switching supply is inherently quieter or better designed. Manufacturers have several ways of addressing RFI. Communications-oriented switching supplies may incorporate combinations of inductors, capacitors, ferrite components, input and output filtering, shielding, careful circuit layout, and other EMI/RFI suppression techniques.

Some manufacturers rely on those techniques without providing the operator with an external frequency adjustment. Others combine RFI suppression with a user-adjustable Noise Offset control. Established amateur-radio power supplies have used this type of user adjustment before, so the concept itself is not unique to the Delta DPS60M that caught our attention. The important point is that the knob itself is not a quality rating.

A supply with Noise Offset is not automatically noisy.

A supply without it is not automatically quieter.

It is simply another tool available to the operator when a particular kind of interference appears in an inconvenient place.

WHAT MIGHT AN OPERATOR EXPERIENCE?

In practice, several outcomes are possible. An operator may encounter no noticeable switching-related interference at all and therefore have little reason ever to touch the control.

If a birdie or spur does appear, adjusting Noise Offset may shift it away from the frequency being received.

And in some situations, moving the control may have little or no useful effect on the particular interference being heard.

That makes sense because Noise Offset is mitigation, not magic.

If the problem is associated with a switching product that responds to the adjustment, moving it may solve the immediate operating problem.

But the control is not a substitute for good RFI engineering, nor is every possible source of interference something Noise Offset can fix.

WHY DIDN'T MY OLD LINEAR SUPPLY HAVE THIS KNOB?

Because there was no comparable high-frequency switching process to "offset." A traditional transformer-based linear power supply operates differently from an SMPS and does not employ the same high-frequency switching oscillator.

That does not mean a linear supply is incapable of producing electrical noise or interference. It simply means it does not produce this particular family of artifacts as a consequence of high-frequency switching.

So there is no equivalent switching frequency for the operator to move.

ONE KNOB, ONE GOOD QUESTION

We have not subjected José's Delta DPS60M to a controlled SWR Magazine technical evaluation, so we are making no claims about how quiet—or noisy—this particular supply may be, nor about how effectively its Noise Offset control performs under actual station conditions.

And that really isn't the point of the story.

The Delta simply provided the question.

José Sanabria, WP3NZ, shared a piece of station equipment with us, and one unfamiliar control on its front panel made us stop and wonder what it actually did.



Rear view of the Delta DPS60M, showing the DC output terminals, cooling fan and AC input.

That is one of the enjoyable things about amateur radio. Even after years around radios, antennas, power supplies, and test equipment, there is usually another small detail waiting to send us down a new path of discovery.

Sometimes it is a switch. Sometimes a connector. Sometimes a meter.

And sometimes it is simply a knob you've never had a reason to turn.

SWR Magazine

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Share your knowledge.
Tell your story.
Inspire operators around the world.

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