JEFFREY KOPCAK

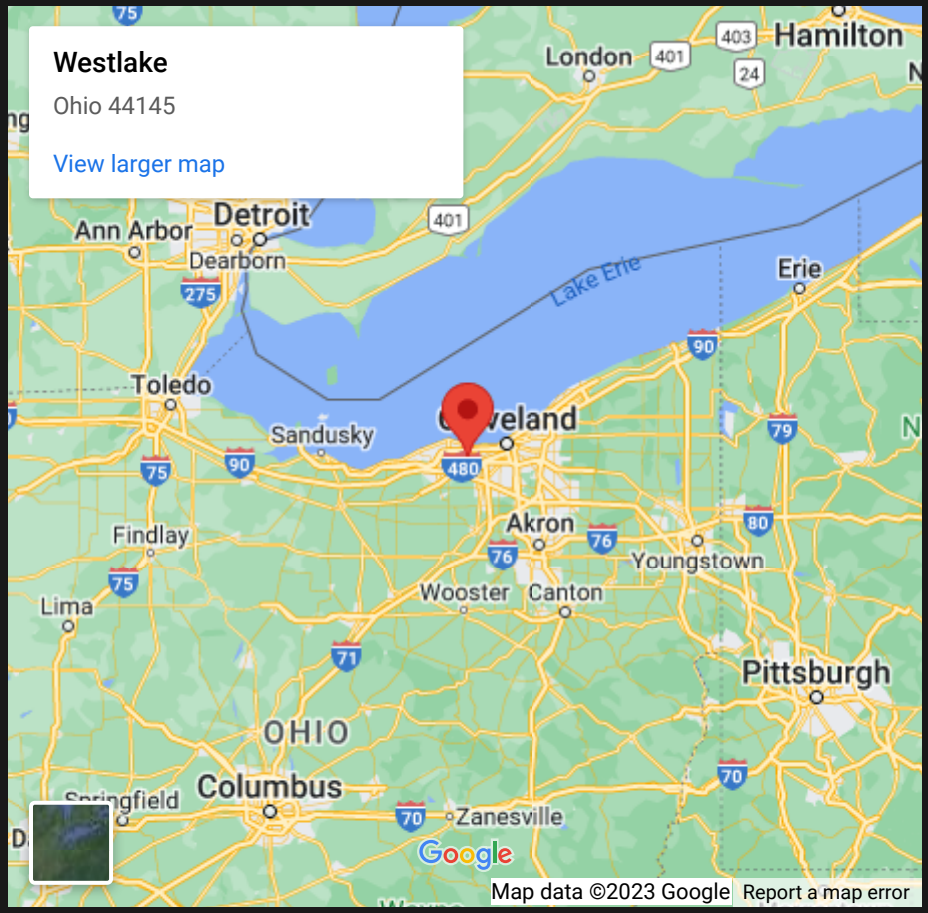
K8JTK

ARRL OHIO SECTION TECHNICAL COORDINATOR

BIOGRAPHY

- Born, raised, and live in Westlake, Ohio
- Computers at an early age
- Windows 3.1 & GeoWorks
- FOSS
- Current: Home networking, Home Lab, Self-Hosted, Linux daily driver
- Music

More: Computers



EDUCATION

- Westlake High School
  - WHBS-TV
- Bowling Green State University (BGSU)
  - WBGU-TV
- Cleveland State University (CSU)
  - Information Systems & Technology
  - Masters of Business Administration

WORK DETAIL

(2004-2008)

- Intern
- Desktop Support
- Break fix
- Server & Networking

(2009-current)

- POS Analyst/Developer: Escalations, Linux System Admin, everything
- POS Analyst/Developer: Merchandise, Unix, Payments
- InfoSec & Networking Sr Analyst: Integrations, NAC, Firewall, Web proxy, VPN

HAM RADIO

- Interested in amateur radio at a young age through my father, Tom N8ETP
- Licensed right before my sophomore year of high school in 1999
- Novice & Technician exams
- General & Extra exams (2008)

img: RigReference

HAM RADIO

Computers, networking, & digital modes

- Early VoIP, aka EchoLink
- D-STAR, Fusion, DMR, AllStar, HamShack Hotline, NXDN, P25, Hams Over IP, AmateurWire
- HF: mostly FT8 & Winlink. JT65, JT9, PSK, Olivia, SSB, FreeDV.
- SDR
- Mesh
- DVMIS: linking 9 modes - 14 ham radio VoIP networks

More: On Air

CLUBBING

- Life Member of the Wood County Amateur Radio Club (WCARC)
  - Webmaster
- Life Member of American Radio Relay League (ARRL)
  - Volunteer Examiner (VE)
  - Technical Specialist (TS)
  - Maxim Society
- Dayton Amateur Radio Association (DARA)
- TAPR
- West Chester Amateur Radio Association
- Skywarn spotter/NCS

More: Clubs and activities

AND NOW...

ARRL Ohio Section: Technical Coordinator

ARRL FIELD ORGANIZATION

The ARRL divides the United States and its territories into 71 administrative sections. Many sections are comprised of a single state, but a few of the larger states, such as Texas or California, are divided into two more sections.

The membership in each section elects a Section Manager (SM) once every two years. The SM is responsible for managing the Field Organization programs in their section. Through coordinators, the SM recruits ARRL volunteers to staff various crucial program areas.

ARRL: STRUCTURE

- ARRL Officers
  - President, First & Second Vice President, COO, ...
- ARRL Board Committees
  - Executive Committee, Administration & Finance, Programs & Services, Public Relations, DX, LoTW ...
- Divisions
  - 15 Divisions
  - Director & Vice Director

ARRL: STRUCTURE - SECTIONS

- Section Manager (SM)
- Section Traffic Manager (STM)
- Section Emergency Coordinator (SEC)
- Assistant Section Manager (ASM)
- Technical Coordinator (TC)
- Affiliated Club Coordinator (ACC)
- Public Information Coordinator (PIC)
- State Government Liaison (SGL)
- Section Youth Coordinator (SYC)

https://www.arrl.org/field-organization

TECHNICAL COORDINATOR

The ARRL Technical Coordinator (TC) is a section-level official appointed by the Section Manager to coordinate all technical activities within the section.

- Supervise and coordinate the work of the section's Technical Specialists (TS)
- Refer amateurs in the section who need technical advice to local TS
- Encourage amateurs in the section to share their technical achievements with others through the pages of QST, at club meetings, hamfests, and conventions

TECHNICAL COORDINATOR

- Be available to assist local technical program committees in arranging suitable programs for local club meetings, ARRL hamfests, and conventions
- Promote technical advances and experimentation at VHF/UHF and with specialized modes, and work closely with enthusiasts in these fields within the section

https://www.arrl.org/technical-coordinator

TECHNICAL SPECIALIST

For a section team to be effective in one of the most important arenas in Amateur Radio, technology, there must be a cadre of qualified, competent Technical Specialists (TS).

"Advancement of the radio art" is a profound obligation we incur under the rules of the FCC.

TSes help meet this obligation.

TECHNICAL SPECIALIST

TS supports the TC in two main areas of responsibility: **Radio Frequency Interference** and **Technical Information**.

Technical Specialist can specialize in certain specific technical areas, or can be generalists.

https://www.arrl.org/technical-specialist

WHAT DOES THE TECHNICAL COORDINATOR REALLY DO?

Your guess is as good as mine.

WHAT DO THE TECHNICAL COORDINATOR AND TECHNICAL SPECIALISTS DO?

We play around with stuff!!!

§97.1 BASIS AND PURPOSE

The rules and regulations in this part are designed to provide an amateur radio service having a fundamental purpose as expressed in the following principles:

(a) Recognition and enhancement of the value of the amateur service to the public as a voluntary noncommercial communication service, particularly with respect to providing emergency communications.

(b) Continuation and extension of the amateur's proven ability to contribute to the advancement of the radio art.

SECTION MANAGER'S GOALS

1. I want every ham in the Ohio Section to get involved and have more FUN with their hobby than they ever thought possible!
2. I want every citizen of the State of Ohio to be aware that YES – Amateur Radio still exists and it’s as much fun and more exciting than ever
3. I want to see the hobby grow. New Hams, and new ARRL members. There is strength in numbers!

- WB8LCD, OSJ 2021-06. First published OSJ 2021-02

TC RESPONSIBILITIES

- Review Technical Specialist applicants
- Ohio Section Journal articles
  - Technical in nature, explain for non-techies
  - Computer topics for techies
  - Encourage and promote ideas
  - Devices, gadgets, projects
  - Reports from Technical Specialists
  - Upcoming meetings, hamfests, or events
- Point of contact for technical and RFI requests
- Available for meetings, hamfests, and conventions

Antennas – The Last Frontier

1

FRANK J. BEAFORE
WS8B

What is Field Day and Why Should I Go?

June 2022

SARA

SILVERCREEK AMATEUR RADIO ASSOCIATION

W8WKY.ORG

This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.
http://creativecommons.org/licenses/by-sa/4.0/

DMR

By K8MD

AllStarLink

Jason McCormick N8EI

SARA

SILVERCREEK AMATEUR RADIO ASSOCIATION

W8WKY.ORG

This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.
http://creativecommons.org/licenses/by-sa/4.0/

THE ORIGINS OF RADIO®

Hamvention ® 2015

Frank J. Beafore

WS8B

NanoVNAs

SILVERCREEK AMATEUR RADIO ASSOCIATION

W8WKY.ORG

This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.
http://creativecommons.org/licenses/by-sa/4.0/

ANTENNAS FOR EMERGENCIES

BEING PREPARED – A FORUM

FRANK J. BEAFORE – WS8B

F. BEAFORE / WS8B © 2018

A New Take on the "Simple" 2m/70cm Dual Band J-Pole

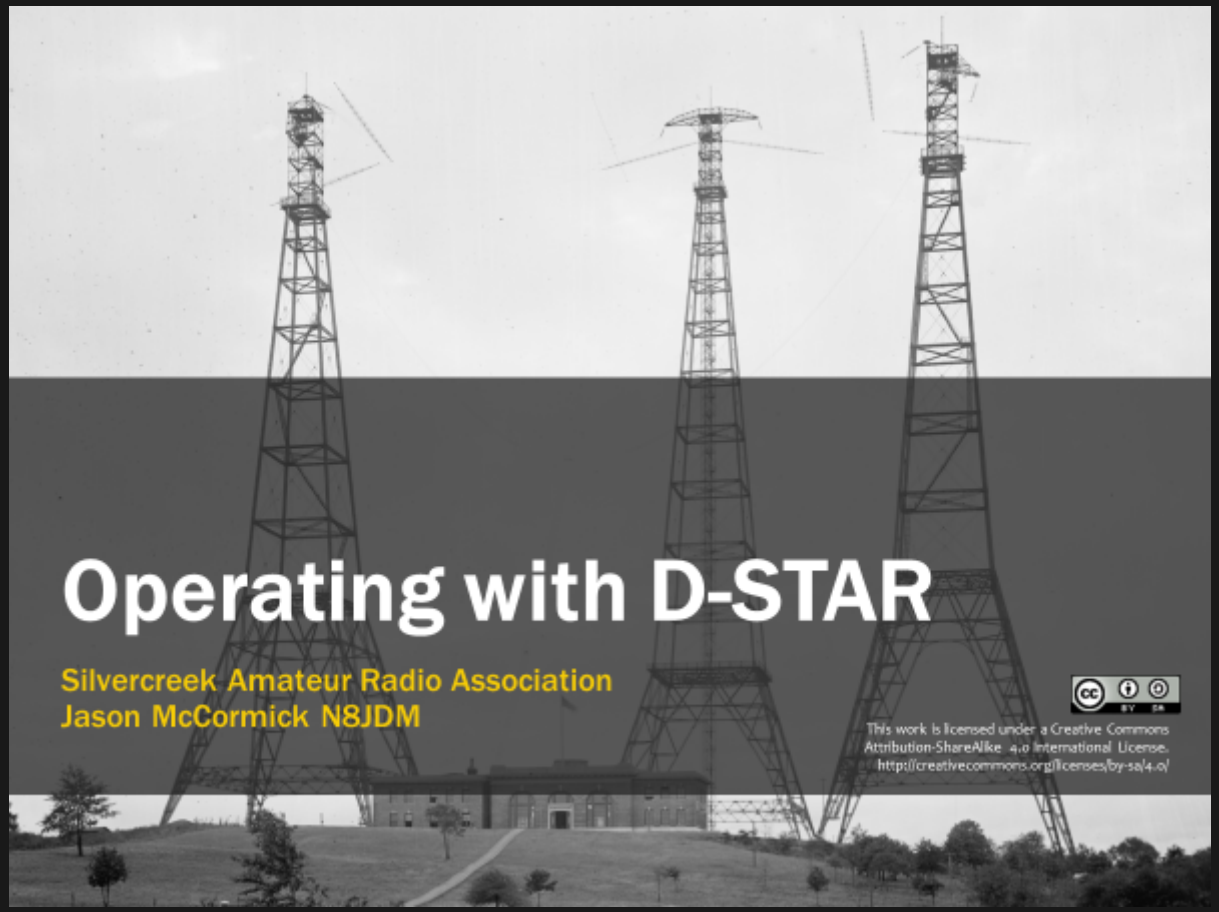
Jason McCormick N8EI

SARA

SILVERCREEK AMATEUR RADIO ASSOCIATION

W8WKY.ORG

This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.
http://creativecommons.org/licenses/by-sa/4.0/



Operating with D-STAR

Silvercreek Amateur Radio Association
Jason McCormick N8JDM

This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.
http://creativecommons.org/licenses/by-sa/4.0/

DIGITAL AND NETWORK-CONNECTED REPEATERS

Jason McCormick N8EI
John Wagner N8CD

SARA

SILVERCREEK AMATEUR RADIO ASSOCIATION
W8WKY.ORG

This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.
http://creativecommons.org/licenses/by-sa/4.0/

OPERATING FT8

This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.
http://creativecommons.org/licenses/by-sa/4.0

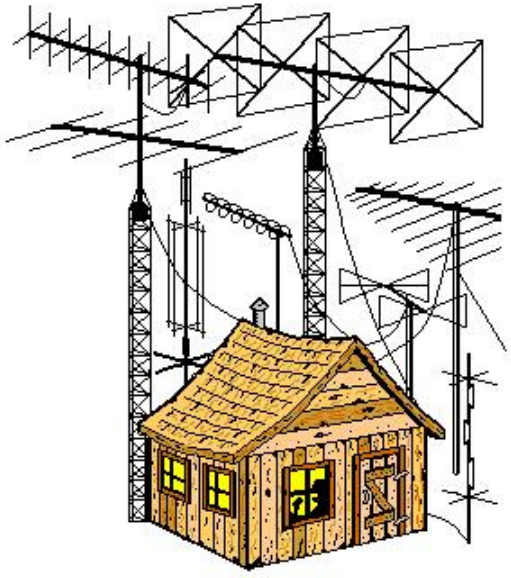
DX Band-Aids for our Spotless Sun

"Or how I learned to live with the warbled tones of FT-8"

Presented by:

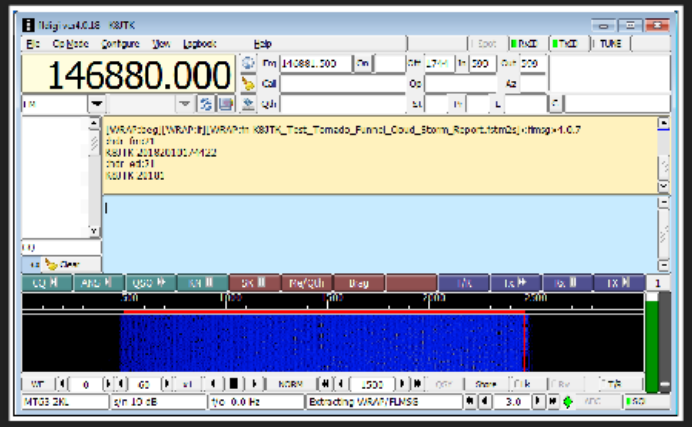
W5UHQ, Eldon Peterson, MSEE, ARRL Technical Specialist

Ohio Section



NBEMS

AN INTRODUCTION USING FLDIGI AND FLMSG



Jeffrey Kopcak - K8JTK
ARRL Ohio Section Technical Coordinator

Moving Beyond the Baofeng

What equipment do I really need as a new ham?

SILVERCREEK AMATEUR RADIO ASSOCIATION
W8WKY.ORG

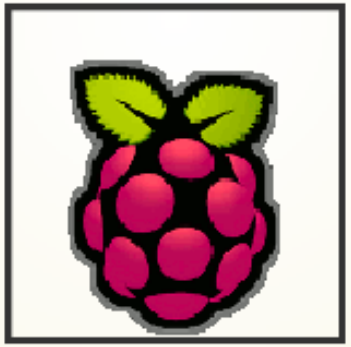
SSTV

IMAGES VIA RADIO!

Jeffrey Kopcak - K8JTK
Ohio Section Technical Coordinator

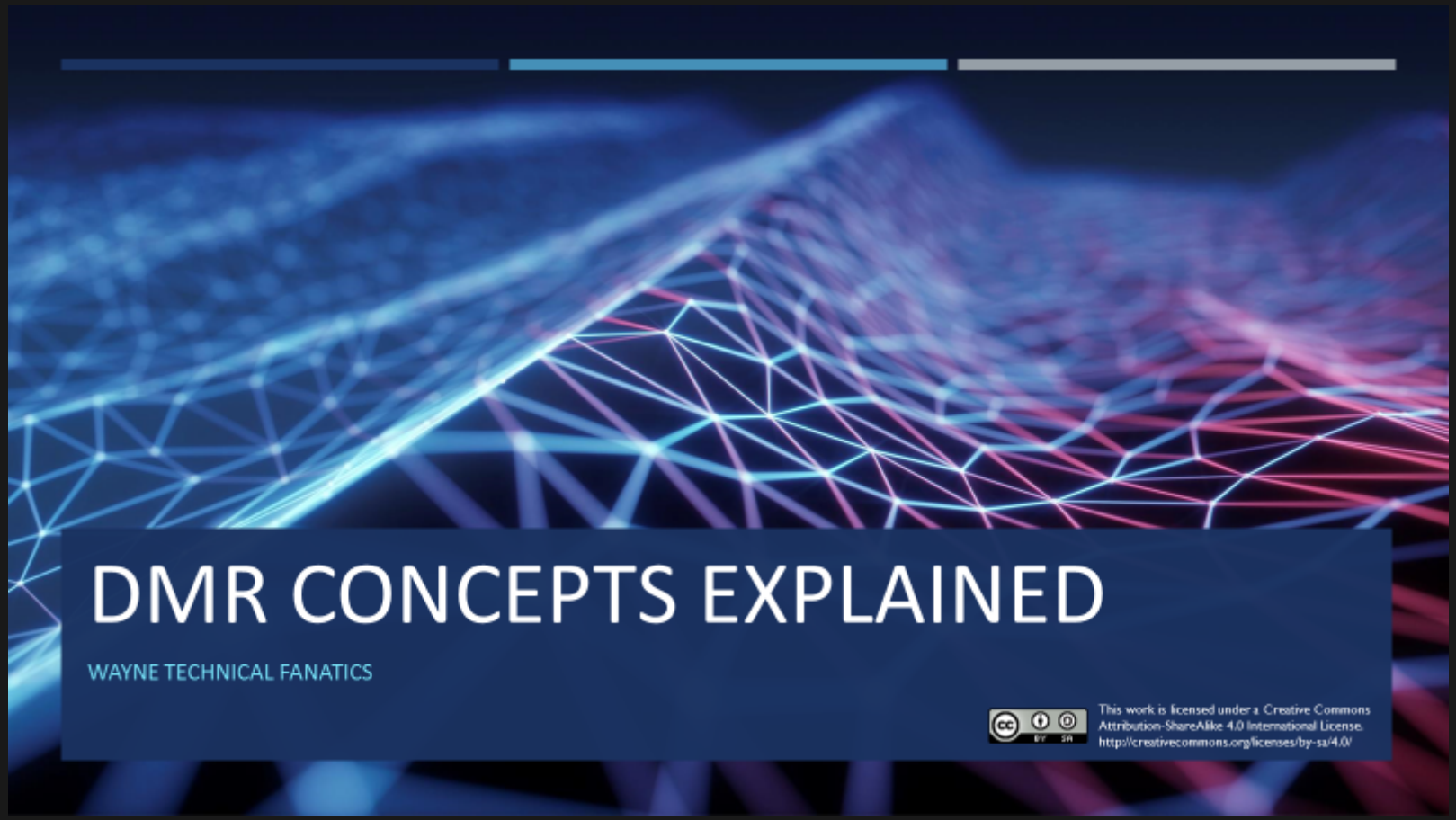
RASPBERRY PI

AN INTRODUCTION TO THE CREDIT-CARD SIZED COMPUTER



Jeffrey Kopcak - K8JTK
Ohio Section Technical Coordinator

SARA
Silvercreek
Amateur Radio Association
Logbook of the World
This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.
http://creativecommons.org/licenses/by-sa/4.0



This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.
http://creativecommons.org/licenses/by-sa/4.0/

Propagation

Frank J. Beafore
WS8B – ARRL Technical Specialist
Great Lakes Division

©WS8B 2019

TROUBLESHOOTING RADIO FREQUENCY INTERFERENCE (RFI)

img: ARRL RFI

TROUBLESHOOTING HF RADIO FREQUENCY INTERFERENCE

- Determine if the noise source is internal
- Shut off circuit breakers, all devices with batteries
- Radio will need a battery source
- Turn them on one breaker at a time until noise returns
- Unplug all devices on that breaker and plug in until noise returns
- Small AM radio may help in this situation

TROUBLESHOOTING RFI: EXTERNAL

- Need loop antenna, spectrum analyzer, or portable HF receiver
- Loop is bidirectional. Find null rather than peak.
- Null indicates the noise is 90 degrees from the loop
- May need to triangulate the source
- Impossible with non-directional antenna (whips, wire)

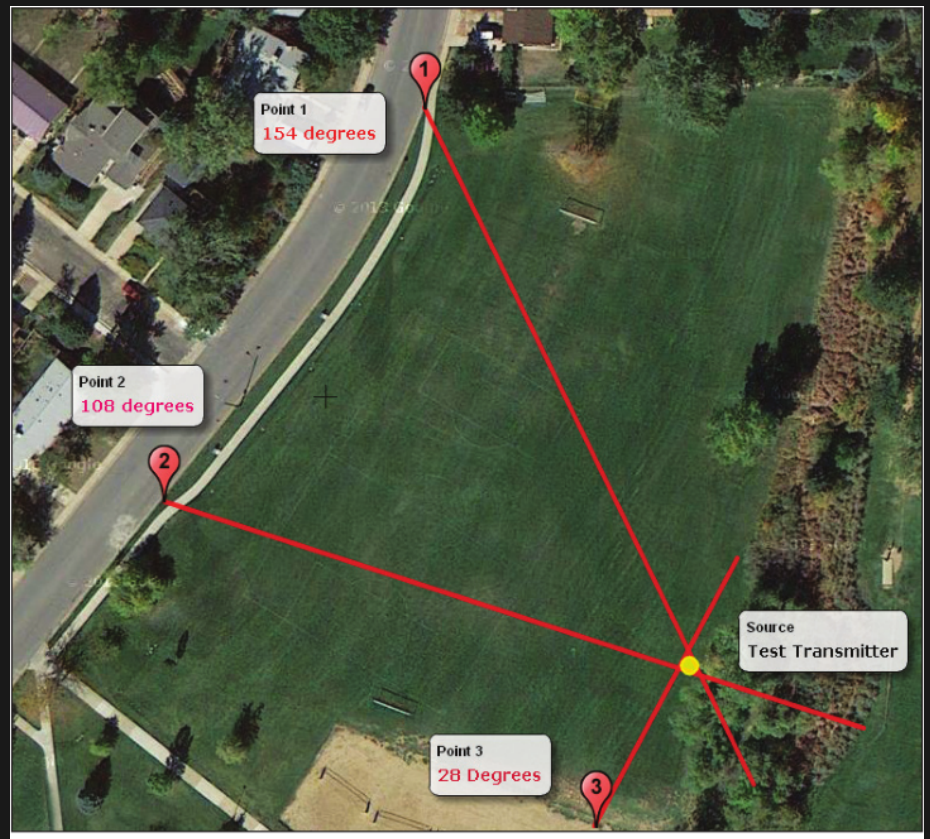


Figure 8 — Triangulation example using in a local park. [Image source: **www.scribblemaps.com**, copyright 2013 Google]

img: Locating RF Interference at HF

TROUBLESHOOTING RFI: EXTERNAL

- Keep good notes of findings and contacts
- May never find source, no access to building or facility
- Rule out **everything** else
- Most owners/service technicians are willing to help out, to an extent
- Contact utility companies
- **Always** remain cool, calm, and collected

Can't find it? Need help?

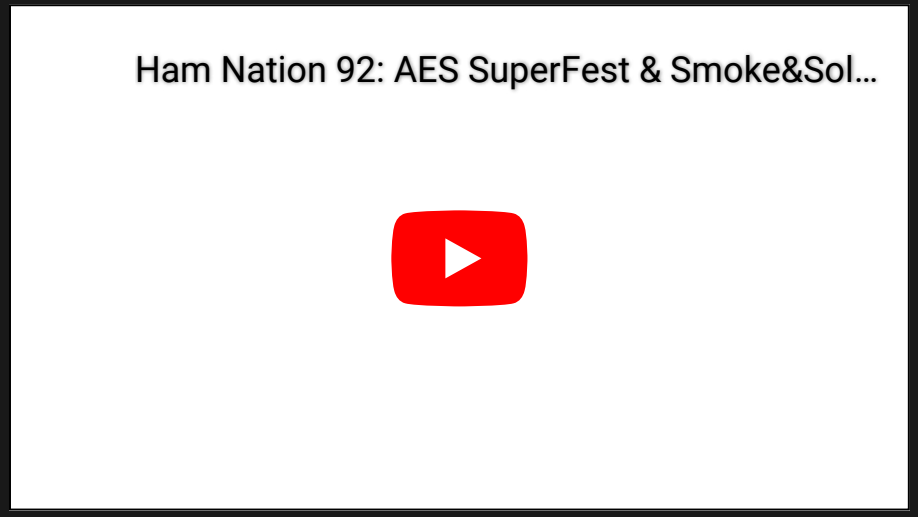
- Technical Specialists in the area
- Referral to an ARRL technical resource

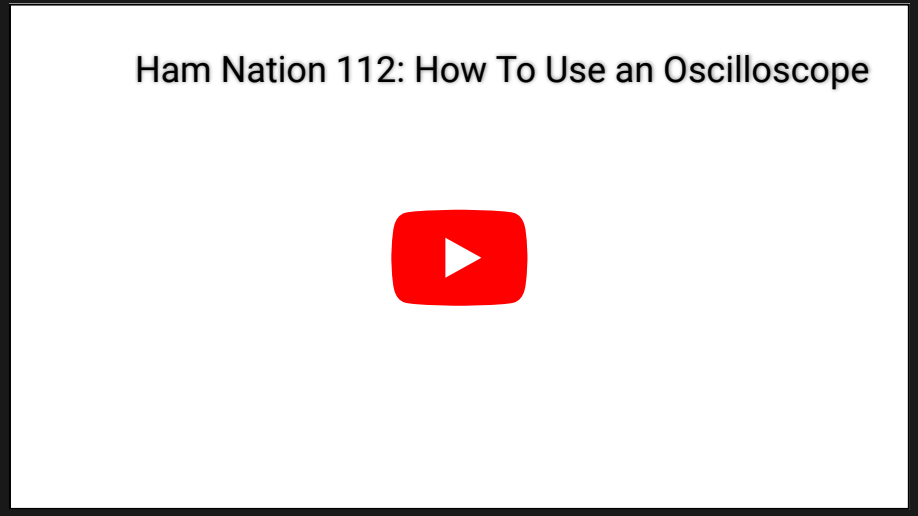
TROUBLESHOOTING RFI: RESOURCES

Web: ARRL RFI, ARRL EMI/RFI, QRM.guru
QST: Locating RFI at HF
Book: ARRL RFI Book - 3rd edition

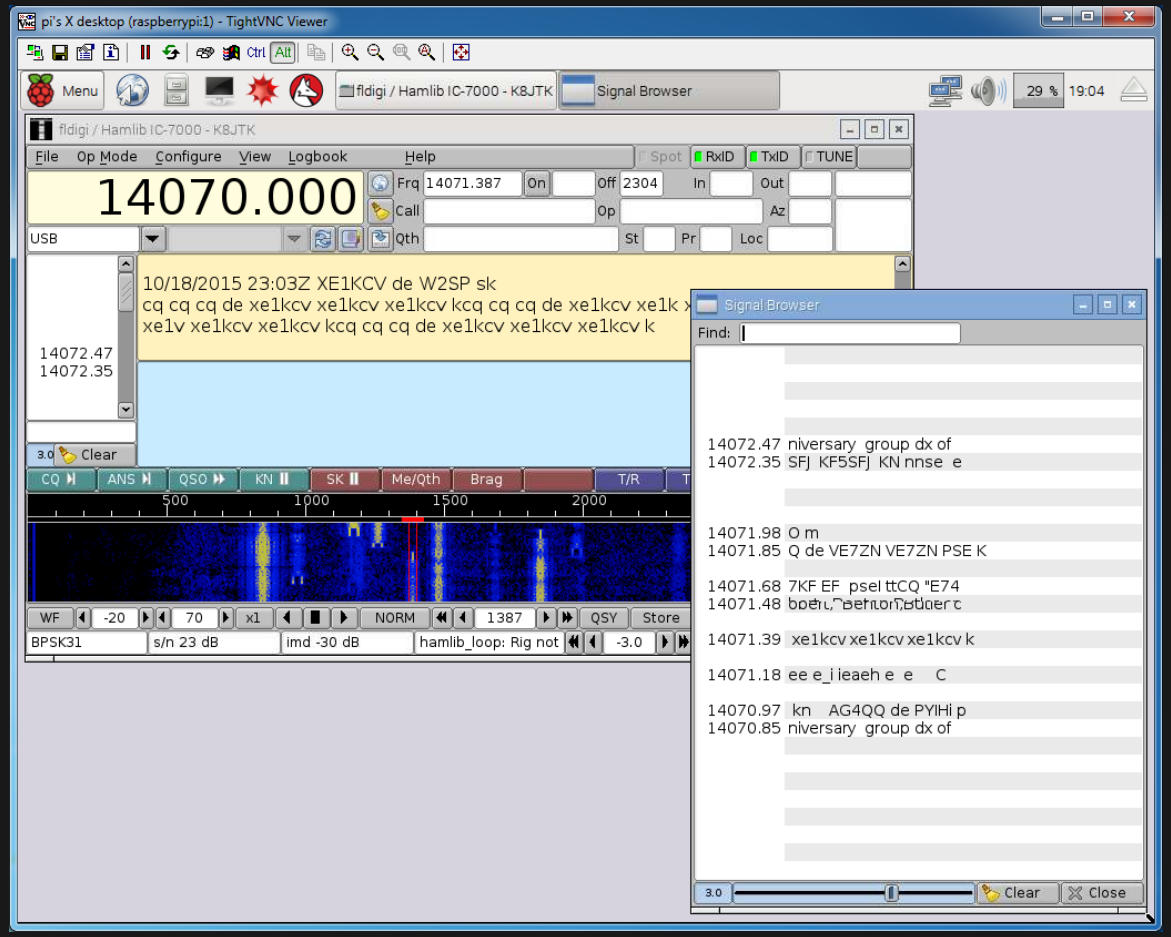
Video: Noise sources
Video: Tips for identifying noise in your house

MFJ Directional Noise Finder
MFJ Ultra-Sonic Receiver
Video: Demonstration





FLDIGI ON THE RASPBERRY PI

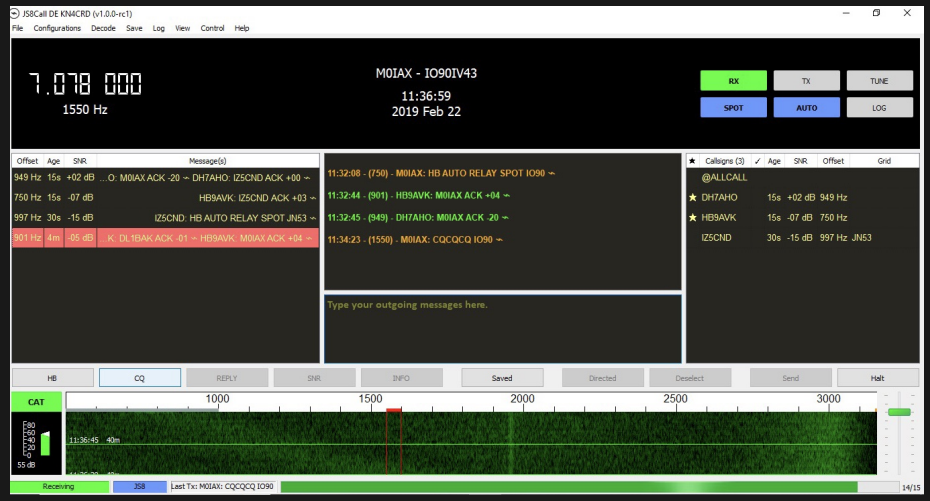


How to: Running Fldigi Flmsg and Flwrap on the Raspberry Pi 2

WHAT'S NEXT??

Half the time I don't even know...

- FT4
- JS8Call
- Digital Communications in Amateur Radio articles
- ARDEN



JS8Call

THE END

JEFFREY KOPCAK - K8JTK

- ARRL Ohio Section Technical Coordinator
- K8JTK@arrl.net
- This presentation is available on my website: K8JTK.org
- Ohio Section