

The Rochester VHF Group

The VHF



Journal

Volume 60, Issue 5

Jan. 2009

The next regular meeting of the Rochester VHF Group will be Friday, January 9th, 2009

**Spencerport Wesleyan Church**  
**2653 Nichols St., Spencerport**

**Map and directions in back**

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**Topics:**

Software Defined Radios  
January VHF Contest

## The Chairman Speaks! Bill Rogers, K2TER

**Fellow Groupers:**

This month's topic will be Software Defined Radios, specifically the FLEX 5000 SDR. Bob Nezelek (W2CNS), Walter Obenhofer (NQ2O) and Andy Flowers (K0SM/2) will give a talk on their experiences with this exciting new radio. There will be a live demonstration of the radio's capabilities.

This is also the traditional meeting to discuss plans for the January VHF Contest.

Please meet us at Spencerport Wesleyan Church – 2653 Nichols Street (Hwy 31) Directions on last page. **Bring a friend!**

**Bill, K2TER**

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# Secretary Report

Judy Stonehill, N2KXS

## Rochester VHF Group Meeting Minutes for December 12, 2008

The meeting, which was held at the Spencerport Wesleyan Church, was convened at 1949 local by the Chairman, K2TER.

Dave, K2DH, moved that the Treasurer's report be approved as written. The motion was seconded by Bob, W2CNS, and approved by the attendees.

Tom, KV2X, moved that the Secretary's report be approved as written. The motion was seconded by Bob, W2CNS, and approved by the attendees.

In attendance were K2DH, KV2X, W3OAB, W2CNS, N2KXS, N2MLH, K2QO, WB2BYP, WB2QCJ, NQ2O, K0SM, WO2P, and K2TER. Also attending were Mark Hazel, K2MTH, Paul Schwabel, W2TAU, Stephen Fleming, N2VTC, and Evhen Tupis, W2EV, as guests.

### OLD BUSINESS

Dave, K2DH, said that he had checked out the RVHFG web site and had found no obvious changes. Andy, K0SM said that he needs photos of RVHFG members and activities for the site. Bill, K2TER, asked if weekly meetings should be set up to discuss the web site and its development. Larry, N2MLH, said he could set up a test web site to experiment with.

### NEW BUSINESS

Bill told the group that he had received information from the West Carleton Amateur Radio Club (WCARC), located in Ottawa, Canada, about the fact that they have installed and activated four new beacons in FN15wg. All the beacons are running 3 watts with omni directional horizontally polarized antennas at 25 feet above ground level. WCARC asks that amateur radio operators listen for the VE3WCC CW ID on 50.009 MHz, 144.297 MHz, 232.063 MHz, and 432.358 MHz. (Bill questioned whether 232.063 should, instead, be 222.063 MHz). WCARC also has a 33 CM beacon on 903.365 MHz in FN25ek at 500 feet above ground level. The Chair of the WCARC Beacon Committee, Doug Leach, VE3XK, would like to receive emails with reception reports. His email address is [ve3xk@rac.ca](mailto:ve3xk@rac.ca). Bill asked Doug to spread the word about the Rochester Challenge.

Some of the attendees volunteered to send information regarding the Rochester Challenge to the clubs to which they belong. Bill, K2TER, reviewed the background of the Challenge and some details of the scoring which will be implemented. The scoring will be the total qso points scored by a person in the January VHF Sweepstakes times the number of contacts with RVHFG members. The list of our members will be posted on the club web site. Bill asked that RVHFG members spread the word to amateur radio clubs. He has announced the Challenge to RDXA and will be speaking at the January 2<sup>nd</sup> RaRa meeting about it.

Tom, KV2X, asked that anyone who has material for the Journal see him after the meeting.

Larry, N2MLH, announced that the Rochester Hamfest will be held for one day this year on Saturday, May 30<sup>th</sup>, at the Barnard Carnival (Firemen) Field from 0800 to 1600 hours. The entrance fee of \$5.00 will cover a tailgating spot. ARRL will be present and there will be presentations given as in past years.

Bob, W2CNS, moved that the meeting be adjourned. Andy, K0SM, seconded the motion which was passed by the attendees. The business meeting was adjourned at 2007.

### PROGRAM

John, WB2BYP, gave an outstanding presentation on pre-amps.

Also, the annual RVHFG Tune-up Clinic was held in preparation for the upcoming ARRL-sponsored January VHF Sweepstakes.

**Rochester VHF Group**  
**Treasurer's Report – January 2009**

**CHECKING ACCOUNT**

<b><u>Previous Balance</u></b> (as of 12/1/08):	<b>\$1,145.36</b>
Income:	\$ 0.00
Expenses:	
Rvhfg.com domain registration	\$ 10.95
<b><u>Current Balance</u></b>	<b>\$1,134.41</b>

**SAVINGS ACCOUNT**

<b><u>Previous Balance</u></b> (as of 12/1/08):	<b>\$1,523.51</b>
Income:	
Interest	\$0.26
Expenses:	\$0.00
<b><u>Current Balance</u></b>	<b>\$1,523.77</b>
<b>TOTAL</b>	<b>\$2,658.18</b>

*Respectfully submitted,*  
*Judy Stonehill, N2KXS*

## Up coming events

### ***2009 ARRL January VHF Sweepstakes***

**Object:** To work as many amateur stations in as many different 2 degrees x 1 degree grid squares as possible using authorized frequencies above 50 MHz. Foreign stations work W/VE amateurs only.

**Date and Contest Period:** The date will be announced annually by the ARRL but will generally be the third or fourth weekend in January. Begins 1900 UTC Saturday, ends 0359 UTC Monday (**January 17-19, 2009**) Source: ARRL.

All are encouraged to get on the air and pass out Q's and help make the Rochester VHF Challenge a success!

### **2009 Rochester VHF Challenge**

**By Bill Rogers, K2TER**

The Rochester VHF Group is pleased to announce a new local contest to kick off the 2009 VHF season. The Rochester VHF Challenge is a contest that runs in tandem with the ARRL January VHF QSO Party to encourage VHF, UHF, and microwave activity in the Rochester and surrounding areas.

**Objective:** Make as many valid contacts with Rochester VHF Group members and others in the area to obtain the largest score, according to the scoring rules presented below, within your quadrant in the Rochester area and Canada.

**Scoring:** Scoring is simple. It uses the same formula as the January ARRL QSO Party rules: Compute the product of your January ARRL VHF QSO points and the number of valid contacts in the log made with Rochester VHF Group members. This is the case if at least 20% of your contacts are with Rochester VHF Group members. If the percentage is less than that there is a formula to prorate the Q points. See the example #2 below.

**Eligibility:** In order to be eligible for the contest you don't need to be a member of any club or organization, just a single operator or group operating under a single call sign for the duration of the contest. The only exception is that current Rochester VHF Group members are not eligible to enter the Challenge.

#### **Prizes/Awards:**

- 1) A grand prize will be awarded to the operator with the highest overall score.
- 2) An award will be given to each of the first place finishers within each quadrant and Canada.
- 3) Certificates will be handed out for up to 5th place within each quadrant and Canada where it is determined that a significant effort has been made.
- 4) There will also be an award for the highest aggregate club score. Rochester VHF Group members (single operator – fixed station) can submit logs for other club participation only. Members of the Rochester VHF Group are ineligible for the individual Rochester Challenge awards.

Scores will be posted on the <http://www.RVHFG.org> web site. The decisions of the RVHFG Contest Committee with respect to the scoring and awards are final.

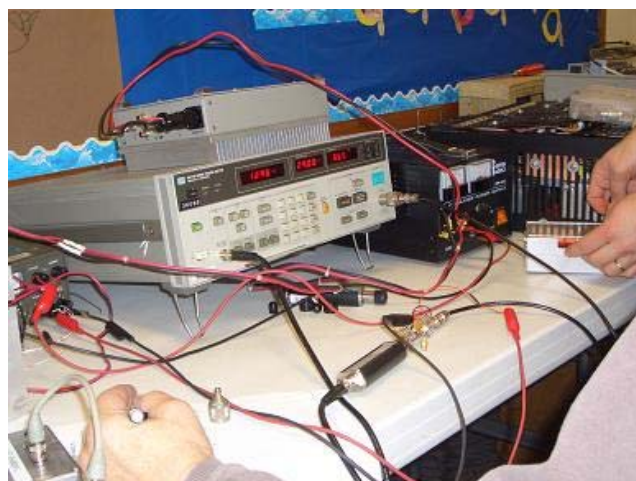


## Tune Up Clinic at December Meeting

Photos by Tom Jennings KV2X



Power measurement and noise figure stations



Dave K2DH, John WB2BYP, and Bill K2TER doing power and noise figure measurements.



People at the Meeting

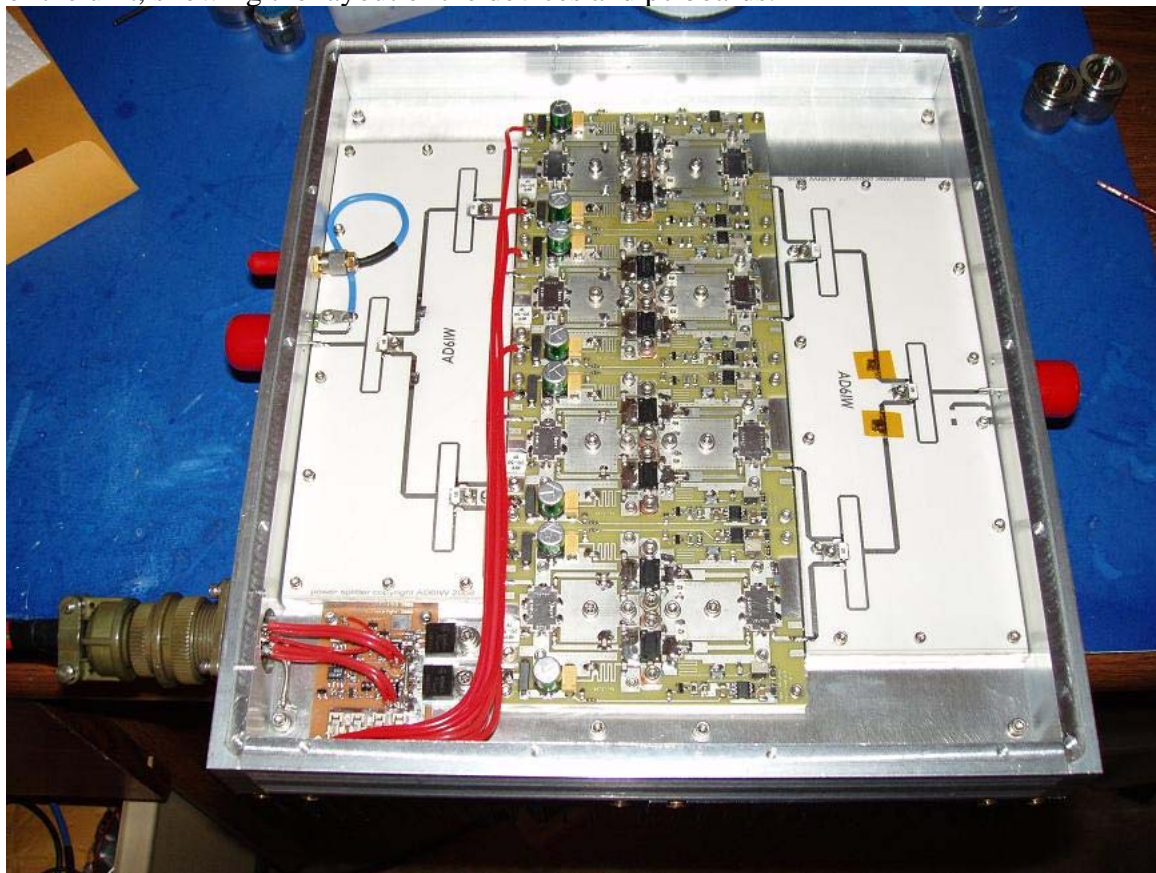


## My New LDMOS FET amplifier for 1296 EME

By Dave Hallidy K2DH

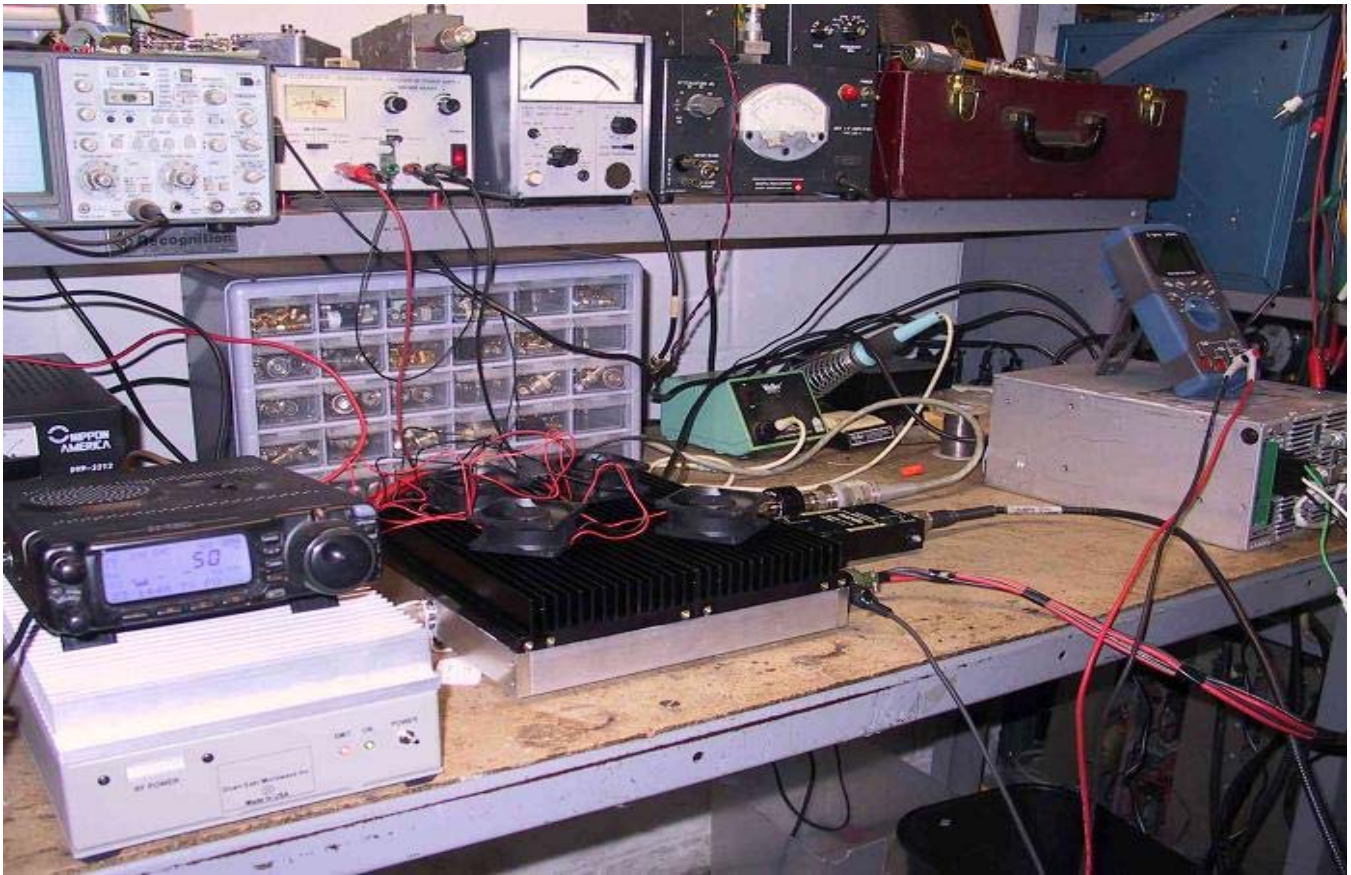
I recently decided to move into the 21st century (okay, the late 20th, really) and start moving away from tube amplifiers for my ham station. The first to go was the 1296 EME setup, and what I decided to do was to have Goran AD6IW build me an amplifier like the one he described in DUBUS magazine recently. I was ready to build a 500W tube amp, but he offered the same power in a state-of-the-art LDMOS FET amplifier that would eliminate the need for high voltage and water cooling. So, I ordered one from him. It arrived the day after Christmas and was by far, my best Christmas present!

Here are some photos of the new amp, set up on the bench for initial test out. The first is of the "insides" of the unit, showing the layout of the devices and pc boards.



The second photo shows the setup on the bench for testing. The transverters can run as much as 50W output, but I put an additional pad between the FT100 IF rig and the transverter TXIF input to allow me more 1296 output adjustment range as I varied the 2m drive. The box on the far right of this picture is the amplifier's power supply- adjusted to 28.8V (as high as it will go), it will do 85A max. Goran recommended 29V because the FET switch in the amp to turn it on in xmit drops about 0.5v at full load current. The output of the amp is fed through a calibrated 33dB directional coupler with a calibrated 20dB power pad attached, into my 432 power meter on the +5dBm scale. So, full scale on the power meter is +58dBm (631W).





As you can see in the third picture (the power meter face), I'm showing +57.5dBm output, which corresponds to 562W out with less than 40W drive (more like 35-37W). It seems quite happy to just sit there at that power, pulling a bit less than 40A (looks like 35 on my lousy current meter, but it might be a bit more).





I haven't detected any fade with time/temp and in fact with the four fans on the heatsink (I promise- I'll mount them correctly- I just couldn't wait to try out the amp!), the heatsink only rises about 10-15C above ambient after 5-6 minutes of continuous 500+W output. The coax to the dummy load (FSJ1-50 Superflex) gets quite warm, as does the Bird 500W load. Looking at the output on my spectrum analyzer, I couldn't see any junk in the output that wasn't present on the input.

I hope to have the thing all integrated very soon and I'm looking forward to hearing how it sounds of the moon!

Dave Hallidy K2DH

## **DTV Transition... Help Needed**

By Tom Jennings KV2X

A recent post on the ARRL website indicated that the ARRL received a request from the FCC asking that ARRL members to provide technical educational assistance to their communities concerning the FCC-mandated DTV conversion scheduled for February 17, 2009. ARRL will be reaching out to Ham clubs across the county to provide information regarding the DTV conversion in their area.

At the January's RARA meeting, two representatives from WXXI (ch 21) gave a short talk on what they are experiencing with the transition and asked for volunteers. On January 22, 2009 WXXI is planning to put a sign on their analog TV signal stating that if the viewer sees the sign, they will no longer be able to receive ch 21 after Feb 17, 2009. This will trigger a deluge of phone calls to the station asking what is going on and what the viewer needs to do to continue viewing ch 21. WXXI is asking for volunteers manning the phones at the station (280 State Street, Rochester) on January 22nd to help talk the viewer thru their problems. Also provide information on how to connect the DTV converter boxes, how to get the \$40 coupons towards purchase of DTV converter boxes. If you have extra time, you can come in the office and make some follow up calls. To volunteer, email Kent Hatfield, [Khatfield@wxxi.org](mailto:Khatfield@wxxi.org), with subject line stating: "**DTV transition help.**"

WXXI is also asking for donations of unused DTV Coupons. If you do not need a coupon, sign up for two and when they arrive donate them. WXXI will give them to needy people who will need them in order to purchase DTV Converter boxes.

To educate yourself and others, there is plenty of material which can be downloaded from the DTV Conversion Web site, <http://www.DTV.gov/outreach.html>. A complete list of publications available can be found at: <http://www.DTV.gov/publications.html>. Here is a sample of publications listed on the web page:

### **A simple guide to the Digital Television Transition**

- \* What Is Happening?
- \* Why Is The Government Switching to Digital?
- \* What Does This Mean To You?
- \* Converter Box?

### **DTV A one pager on the basics of the Digital Transition;**

- \* What is It?
- \* Why are We Switching?
- \* What should I Do To Be Ready?

## Troubleshooting Guide for Digital-to-Analog Converter Boxes and Digital Televisions

### Digital-to-Analog Converter Box – Selected Features

The Federal Communications Commission has prepared this Consumer Advisory on selected features in 41 digital-to-analog converter boxes that it has purchased.

### Setting Up Your Digital-to-Analog Converter Box (Basic with twin-lead antenna wire)

This Fact Sheet describes installation of a digital-to-analog-converter box if your TV set has twin-lead terminals for attaching the antenna, instead of a coaxial connector plug or port.

ARRL Media and Public Relations Manager Allen Pitts, W1AGP, stressed that hams should not make "house calls," sell any equipment or do actual installations; the request is only to distribute technical information and FCC materials.

I have a feeling that come February 18, 2009, there will be a lot of very upset and angry people when their analog TVs no longer work! At least you can say they were warned, but some people never get the message or will wait until they have no choice but to do something. As knowledgeable members of the community, hams should be prepared to help with the DTV transition. So please take a look at the two websites mentioned above and read up on what DTV is, what is involved in getting a DTV converter box, and hooking them up.

## Classified Listings

### For Sale: 2 and 3Gig Station

**2 and 3 G** in one box with common TWT(WA2MOP's rover station) All Down East components. \$500. PS for TWT.

**Free** 18" dish with tri-band feed with purchase of complete station.  
Contact: Howard Clark k2an at localnet dot com

### For Sale: Radio Gear, Attenuators, Line Stretchers, Loads, Splitters, Detectors.etc...

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Radio Gear  
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MMT 144-28R Transverter. 28MHz IF, 25w output (turned back to 10w). ~2dB NF, Mod for preamp insertion, good condition. Very stable, this is NOT the black-box version. With DC cables. \$100 ORO

3GHz Toshiba Amp 40w output (from K2AXX) - \$50 (connector removed, direct DC wire) [Sold once already, sale never completed]

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Attenuators, Line Stretchers, Loads, Splitters, Detectors:

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Huber-Suhner DC-18GHz Power Splitter (4901.19.A) - SMA connectors, precision unit. \$35  
ORO

Batch of attenuators, all SMA (M)(F) - \$30 for all ORO

1 x Elcom 10dB DC-18GHz attenuator

2 x Mini Circuits SAT-6 6dB DC-4GHz

1 x Omni Spectra 6dB DC-4GHz

1 x Narda 3dB DC-18GHz 2W

2 x 75-ohm variable attenuators, 1-10dB, BNC(F) in/out. Good for IF.

DB Products 15w N(M) screw-on loads. \$5 each

Aertech Diode Detectors - DC-10GHz, zero-bias schottky. Neg. DC output, ~200mV. Great for monitoring power with a directional coupler and a DC voltmeter. SMA(M) in, SMA(F) out. \$10 each (have 2)

Polyphaser 125-1000MHz Lightning protectors, N(M) > N(F), 375W max between 125-250MHz, reduces to 100W @ 1GHz. \$10 Each

Coaxial Line Stretchers - S-100 Rodostub twin stub tuners, N(M) to N(F). \$20 each

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Coaxial Relays & Adapters:  
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SP6T Coaxial relay, 28VDC, TNC(F) connectors. Used as IF switch, have a number of TNC to BNC cables, but will work to ~10GHz as-is. \$20 ORO

Various SPnT Relays: Some SP4T jobs, various voltages and actuation methods (TTL, 28VDC coils). Not sure how they work, but cheap! \$5.00/ea (have 3)

Huber-Suhner 36\_BMA-SMA-50-1/199\_U SMA(F) to BMA(M) bulkhead connectors. Bag of ~20, - \$35 for all. Includes mounting hdwe.

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Other Interesting things:  
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Andrew LDF4 Grounding Kits. Includes ground strap, sealing tape and mastic. \$3 each, 2 for \$5. (Worth the price just for the tape and mastic!)

~2' Grounding cables - heavy black PE jacketed. From LDF4 grounding kits, with the copper cable clamp removed. Lugs crimped on each end, ready to use for all sorts of things. \$2 each.

~40' or slightly longer pieces of LDF5-50 heliax, with N connectors on each end. \$30 each.

~125' piece of new LDF5-50A Heliac. No connectors, \$75. Buy a short piece above and get the connectors you need for this longer chunk ;-). If serious, I'll measure the real length.



~600+ foot spool of LMR-195 equivalent (like RG-58) and lots of BNC crimp connectors (great for jumpers, probably 50-60 connectors). Take it all for \$75, no crimp tool.

200' piece of LMR-400UF - \$70 with N(M) connectors each end.

Siemens RW-1125 Tube and dead power supply. The PSU I believe just needs a cap in the main DC input board (most likely hooked up backwards) It is some surgery though. It DOES have the control board which is handy. If you have a PSU that works, or are willing to try - this tube should provide you 10W or so on 10GHz. \$20.

6-port 144MHz 1/2 wl power divider. N(f) ports all, checked & tested.\$30 ORO

Heathkit SB-220 HF Input Coil assembly, with capacitors - \$20

Heathkit SB-220 Capacitor bank assembly - original caps, untested - \$10 for all.

Heathkit SB-220 Diode & Metering board - original, minus Zener Diode - \$10.

222 MHz FM Antenna - K1FO homebrew, works well - \$10 ORO

900MHz commercial yagis - 10dBd, with short coax, needs mounting hdwe - \$25 ORO

440-460MHz Commercial yagi - 3 el, needs mounting hdwe - \$20 ORO

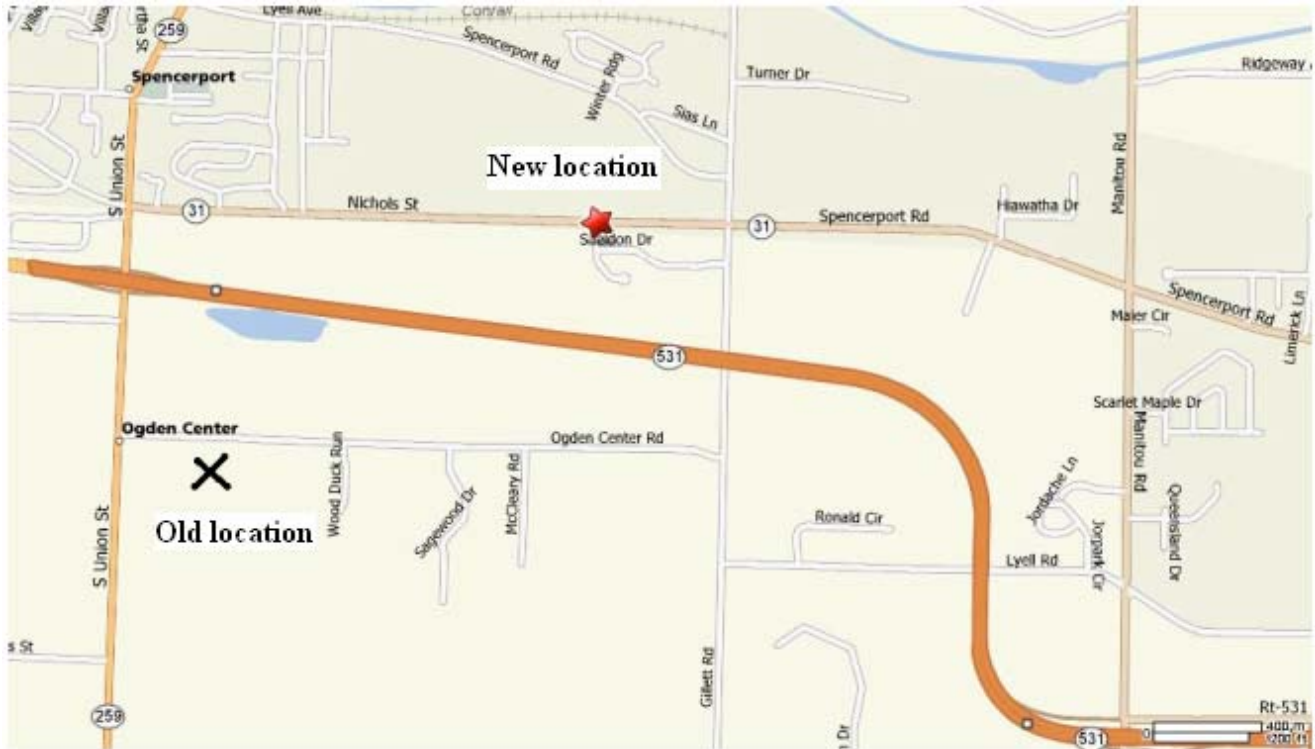
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As usual, if I find more good stuff as I continue to clean shop. I will put it here before ebay in case there's something someone local can use.

If you are interested in anything listed, contact me via email at mark@k2axx.com or (585)243-5606 before 9pm nightly. I should be at the January RVHFG meeting to hand-carry some of this stuff as well. I can ship some of it, will go USPS as its the easiest for me.

As always, I'd prefer to get these units into local hands - I'm SURE someone will have a need.

-Mark, K2AXX

# Meeting Location and Directions



**Spencerport Wesleyan Church on 2653 Nichols St. (actually Hwy. 31).**

**Directions from Rochester:**

**531W exit RT. to 259N**

**259N turn Rt. on 31E (first Rt. at traffic light)**

**Look for Spencerport Schools Bus Garage on left**

**Take first Rt. on Sheldon at A-framed church, park in rear lot.**

**Enter gray metal door under fire escape.**