

N.E.W.S. LETTER

The Official Publication of the North East Weak Signal Group – <http://www.newsvhf.com/>

April 2019

Volume 28

Issue 3

VHF Super Conference April 25 – 28

Monday, April 8 Last Day for Early Bird Rate!

Sponsored by SVHFS, NEWS Group and The Packrats

Hosted by the Grid Pirates Contest Group and Directive Systems and Engineering

If you've never been to a VHF-UHF-Microwave Conference --- This is the One to Go To!
Registration, Banquet, Bus Tours Early Bird Rates extended through Monday, April 8

Registration

Register online for the conference at <http://vhfsuperconference.com/>

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MEMBERSHIP in the N.E.W.S Group is \$10 per year
Apply to John Crawford, N2OY. E-mail: n2oy.vhf@gmail.com

A membership application form can be found at the end of this newsletter
or it can be downloaded from our web page: <http://www.newsvhf.com>

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Send articles by e-mail to George Collins, KC1V at news.kc1v@gmail.com

VHF Super Conference April 25 – 28

Holiday Inn Washington-Dulles International Airport

Sponsored by SVHFS, NEWS Group and The Packrats
Hosted by the Grid Pirates Contest Group and Directive Systems and Engineering

Registration

Online Registration is available at <http://vhfsuperconference.com/>

Early Bird Discounts

Extended Through Monday, April 8!

Early Bird Registration is \$99, After April 8 it is \$110 – *if available*

Includes: Lunch and All Day Beverages Friday and Saturday
Hospitality Room Thursday and Friday Evenings
Conference Proceeding CD

Early Bird Banquet: is \$43; After April 8 it is \$50 – *if available*

Early Bird Bus Trips Thursday and Friday Rates Available through April 8

For Hotel Reservations Call: 877-875-9823

Special Hotel Rates have expired
Check Hotel Web site to room rates.

Thursday and Friday Bus Trips

Thursday Early Bird Rate: \$39 - \$45 after April 8 (if available). Three-hour Guided Bus Tour of Washington, DC plus three hours on your own to visit the Smithsonian area museums and the Capitol. Bus leaves at 10 AM, returns about 6 PM.

Friday Early Bird Rate: \$29 - \$35 after April 8 (if available). Four hours on your own at the National Zoo. Bus leaves at 10 AM, returns about 4 PM.

Bus Trips are now on the Registration Web Page

There is Something for Everyone!

*** Microwaves ***
*** CW & SSB Weak Signal DX ***
*** Digital ***
*** 6 Meters and Up ***
*** Vendor ***
*** Contesting ***
*** Great Amateur Radio Fellowship ***

Schedule of Events

Thursday: DC Bus Trip, Evening Hospitality
Friday: Presentations all day, National Zoo
Bus Trip, Evening Hospitality
Saturday: Presentations all day, Evening
Banquet
Sunday: Morning Tailgate in Parking Lot

2019 Super VHF Conference
Preliminary List of Speakers
4/1/2019

AF1T	Optical communications
K1JT	MSK144, FT8, and Beyond
K2EZ	Contest Automation 2020
K4QF	Impedance Matching 101
K5QE	Large Vertical Arrays for 6M Contesting
K8ZR	78 GHz Fun in the AZ Sun
K8ZR & W2RMA	The Future of VHF/UHF/Microwave Contesting
KA2LIM	The Quagi Revisited
KC1HTT	Low Power, 144 MHz, EME Amateur Radio Station
KM4KMU	Observations on FM Contesting
KS4VA	3D Printing Microwave Antennas
N3RG	Another Look at Station Automation
N6NB	Fifteen Rovers Large and Small
Norman Grody	Homebuilt 4,12 and 20 GHz Microwave Radiometers
NW2M	Feeding and Phasing LFA Antennas
PA0HRK	EME: A Beginners Journey
VE2UG	From Hills to Home on 10 GHz
W1GHZ	Visualizing Microwaves
W4ZST	EME misadventures of K4SQC and W4ZST
W9JJ	2019 ARRL Contest Update
WA1MBA	Rain Scatter, SHF and EHF
WA3NUF	VHF Contesting In The Age Of Digital Disruption
WA3ZKR	A Refresher on Antenna Properties
WB4UIV	Grounding for Lightning Protection
W3IP	GPSDO LO

2019 Super VHF Conference

Preliminary Schedule

4/1/2019

Note: Green is 45 minutes, others 30 minutes

<u>Time</u>	<u>Speaker</u>	<u>Title</u>	<u>Room 1</u>	<u>Room2</u>
<u>Thursday 25 April</u>				
1700-2300		Tour		
1930		Hospitality		
		Show and Tell		
<u>Friday 26 April</u>				
830	Antenna Testing			
1000	BREAK			
1030		Welcome		
1035			WB4UIV	K4QF
			KA2LIM	W4ZST
1200	LUNCH			
1330			WA1MBA	KC1HTT
			K8ZR (78GHz)	PA0HRK
1500	BREAK			
1530			W1GHZ	WA3ZKR
			N3RG	NW2M
			K2EZ	K5QE
1730	Dinner - on your own			
1900		Swap Session		
2030		Hospitality		
1300-1700	WA1VUG	Test Equipment courtesy of Rohde & Schwarz		
<u>Saturday 27 April</u>				
815	Welcome			
830			KM4KMU	W3IP
			WA3NUF	VE2UG
1000	BREAK			
1030			W9JJ	AF1T
			K8ZR & W2RMA	KS4VA
1200	LUNCH			
1330			N6NB	Norman Grody
			K1JT	
1530	BREAK	CLEAR ROOMS by 4PM		
1600	WA2AAU - Filter Tuning Workshop in Test Room			
1730				
1800		Cash Bar		
1900		Banquet		
2030		Prize Drawing		
1000-1700	WA1VUG	Test Equipment courtesy of Rohde & Schwarz		
<u>Sunday 28 April</u>				
800		Flea Market	***NO EARLYBIRDS***	

News Meeting March 23, 2019 Notes:

The meeting started 1:30 pm

The Minutes of the last meeting were accepted as printed in the last news letter

The treasure report was delivered via remote control Text to Dick WA2AAU:

- Balance \$ 3540.08 in the bank
- 97 members apx 31 need to renew

Old business: None was brought up

New business:

- Mickey mentioned about a possible tour of Washington, DC during the Super conference.
- Dick and Bob brought boxes of Surface mount parts of various values Free for the taking.
- K2AEP, Pete said that there might be possible aurora the night of 3-23-19.
- A discussion of digital modes used on Microwave bands; FT8 - JT4 or something of that fashion and picking a frequency where they could be used.
- A discussion of Using SKYPE or other video conferencing systems for presenters to call in to the meetings.

Business meeting adjourned 2:02 pm

After the break Don FKF showed the group his 3D printed beam-antenna element holders of various designs for 432 and up.

Dick Wa2AAU gave a presentation of what he has been working on:

- Trying to track down increasing noise floor on the 902 and 5760 bands
- What he had to do to fix a 222 Xverter - reengineering a 194 mhz LO and fixing relays on the bias supply. Overall upgrading the unit to a good, working system again.
- Next was a talk of Stub filters for Rovers or home use.

Short break:

That last thing presented was Dick's work with some TWTs for the microwave bands and how they can hold up for years if fed and cared for properly.

The meeting ended at 3:24 pm.

Submitted by;
Eric Mazur, Vice President NEWS Group
3-23-2019

Club Area at NEAR-Fest XXV

Hello Winter-weary club members! Flea market and conference season is upon us and it's time to make a plan for NEAR-Fest XXV - Friday and Saturday, May 3-4. Last May, Lanette & I roped off a selling area for club members who signed up, and a few extras had to squeeze in. Please email your intentions to join us in Deerfield, as I need to reserve the required number of spaces by "tax day". Thanks and don't forget to sign up for the Super VHF Conference.

73's Don W1FKF Donw1fkf-news@yahoo.com

Modernizing a Microwave Modules 432-MHz Transverter

Paul Wade W1GHZ ©2019

www.w1ghz.org

Microwave Modules transverters were state of the art back in the 1980s, and got many hams on the air. Any that are still working may not be up to today's standards, but if they are still making contacts, that is terrific. This article is about the ones that have died.

Some years back, Steve Powlishen, K1FO, (SK) had a couple of 432-MHz Microwave Modules transverters on his table at a flea market, marked "as is." If Steve couldn't get them working, they were probably hopeless. He offered them to me for less than the cost of a die-cast box, so I figured it was a good deal.

Last year, my 432-MHz transceiver died again. I had been planning to build a transverter so I could use an SDR – operating with only a knob feels like working in the dark. It was time to get to work. You can see the details on your Super VHF Conference CD – *432 Transverter for SDR*.

Designing a transverter – PC board, assembly, test, and debug – is about 90% of the job. Then comes the other 90%; packaging it up into a working unit. The PC board looked like about the right size to fit in one of the Microwave Modules boxes, so I thought I'd give that a try.

The first step was to open up a Microwave Modules transverter to see what was usable. See Figure 1.

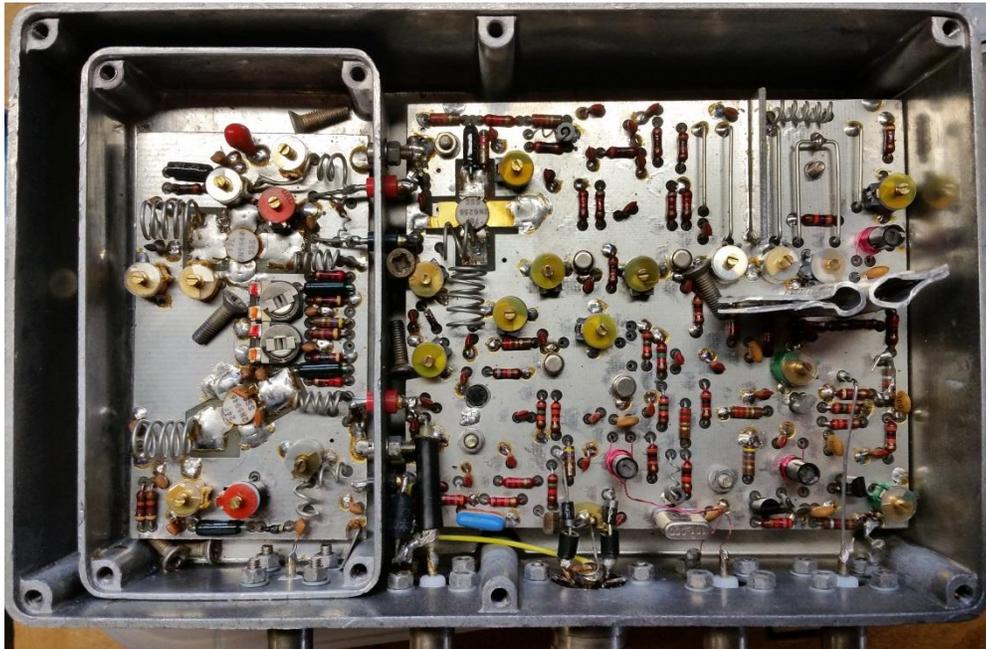


Figure 1 – Inside Microwave Modules 432-MHz SSB Transverter

Then I removed the parts I wasn't planning to use, see Figure 2. The rest of the parts went in a bag marked "Spare parts for Microwave Modules 432 transverter" and sold to some lucky(?) ham at a flea market.

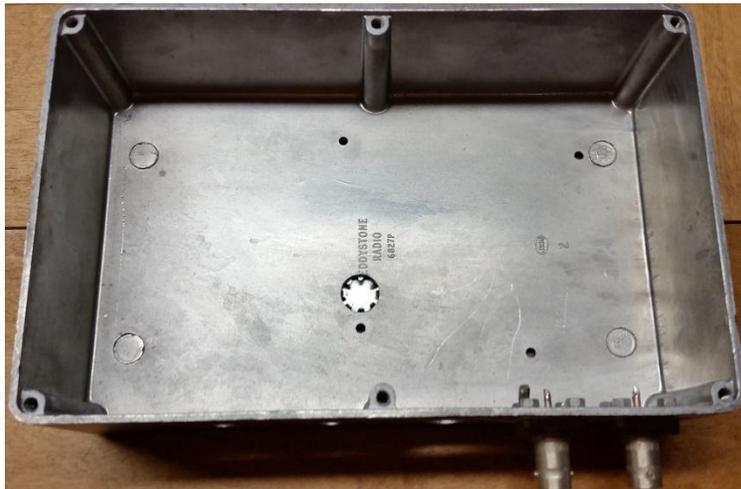


Figure 2 - Microwave Modules 432-MHz SSB Transverter usable parts

As usual, deciding on the box before fitting everything in might have been a mistake. It took a bit of cramming to fit the transverter PCB, Figure 3, DigiLO synthesizer², a 7 watt Mitsubishi amplifier module (RA07H4047M), Figure 4, and a sequencer. Figure 5 shows the inside before adding the synthesizer, and Figure 6 includes the synthesizer in an Altoids tin, floating above the PC board. At final assembly, after all is working, the synthesizer is bolted to the lid.

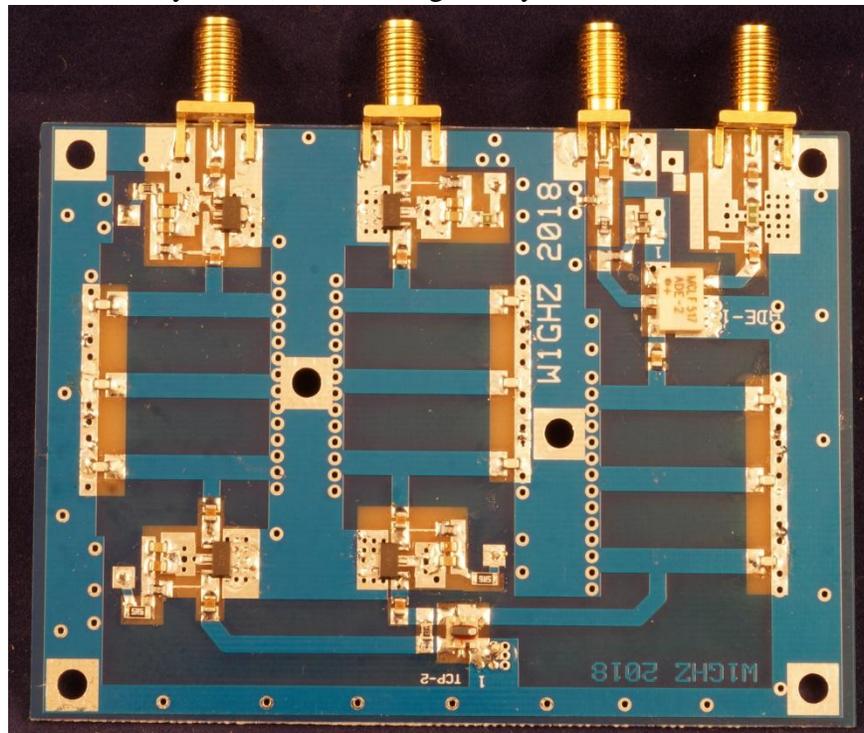


Figure 3 – W1GHZ 432-MHz Transverter

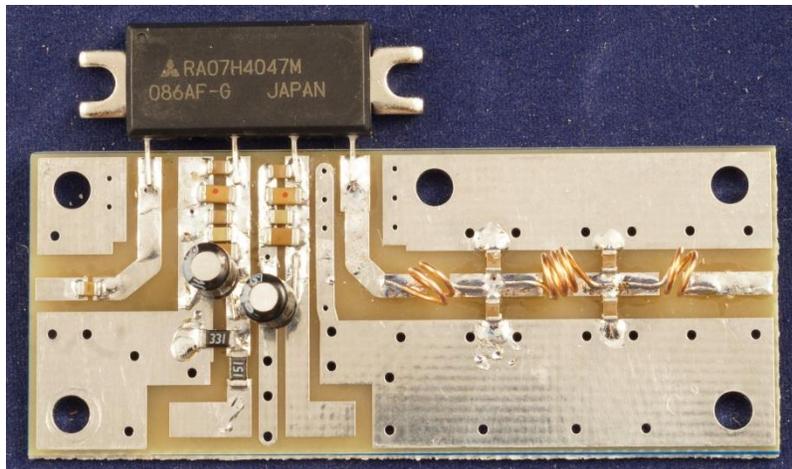


Figure 4 – 7-watt power amplifier and PC board

I considered using a 25-watt Mitsubishi amplifier module, but that would be harder to fit and would require a heat sink. The 7-watt amp runs cool attached to the box without a heat sink, and is more than enough to drive a 400-watt ebay amplifier².

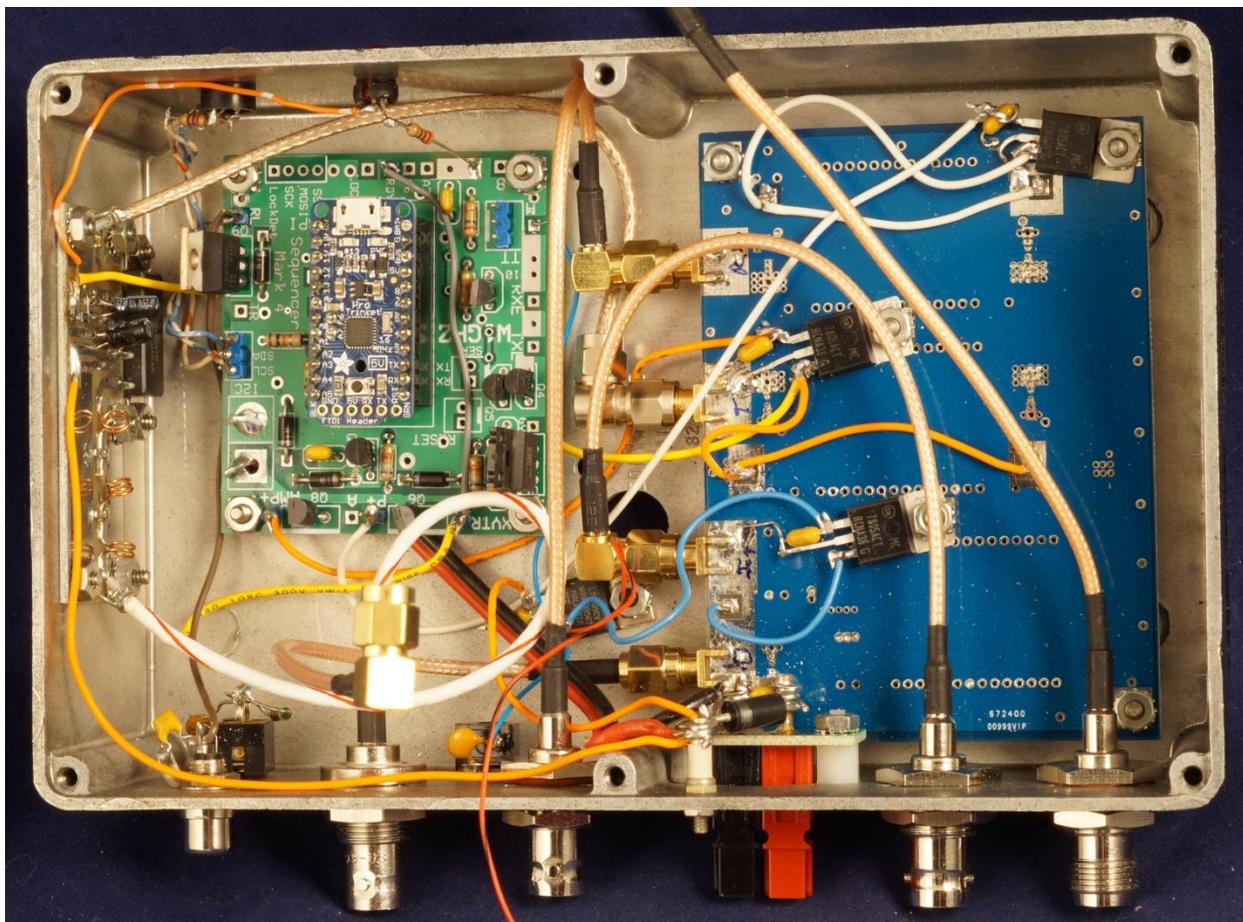


Figure 5 – Modernized 432-MHz transverter without synthesizer



Figure 6 – Complete modernized 432-MHz transverter with lid removed

The DigiLO synthesizer has pretty good phase noise and can be locked to 10 MHz. The receiver noise figure is under 1 dB. And the sequencer³, my Smart Fool-resistant Sequencer Mark 4, has enough smarts in an Arduino to operate the whole 432-MHz system. I think it is an upgrade.

Notes:

1. www.Q5signal.com
2. Don Twombly, W1FKF, “432MHz ebay 400W amplifier modification,” *Proceedings of the 44th Eastern VHF/UHF Conference*, 2018.
3. Paul Wade, W1GHZ, “A Smart Fool-resistant Conditional Sequencer,” *Proceedings of the 44th Eastern VHF/UHF Conference*, 2018.

Conference Supporters



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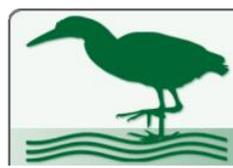
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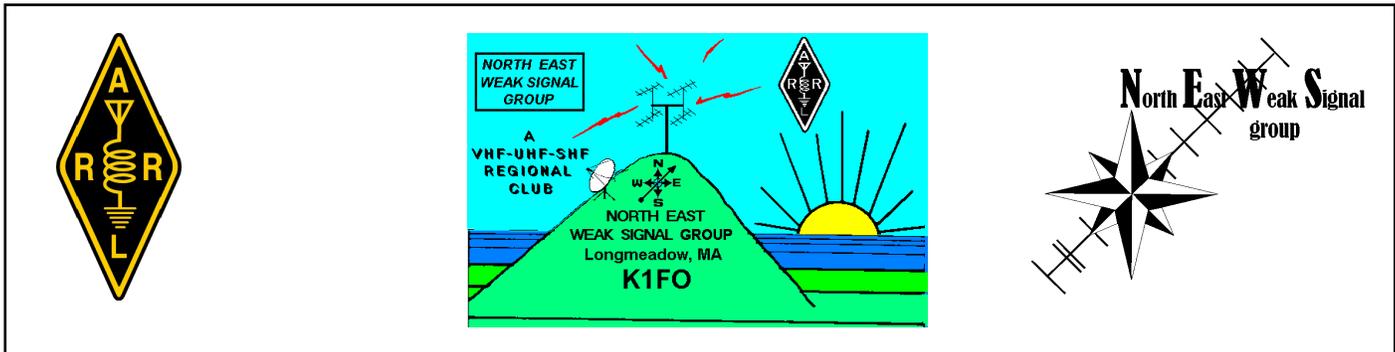


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Phone (home) _____ Optional (work) _____

Email _____

ARRL member: Y N

Electronic Newsletter Delivery: Y N

Operational Bands (circle)	50 MHz	144 MHz	222 MHz	432 MHz	903 MHz	1.2 GHz
	2.3 GHz	3.4 GHz	5.6 GHz	10 GHz	24 GHz	47 GHz
	76 GHz	Light	Other (list)			

The North East Weak Signal [N.E.W.S.] Group is being established to form a camaraderie among fellow VHF-UHF-SHF enthusiasts and support a convenient means to exchange technical information. We currently have six meetings per year, held at a centrally located facility and provide a "NEWSLETTER" that is distributed two weeks prior to each meeting. Any contributions to this publication are appreciated and can be sent to: George Collins, KC1V by e-mail to news.kc1v@gmail.com. Dues are \$10/year. Remember, this group is formed by VHF'ers for VHF'ers.

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Check your membership
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