

Capture the **MAGIC** of **Six Meters**



You too can
capture the
MAGIC

Jim Wilson, K5ND

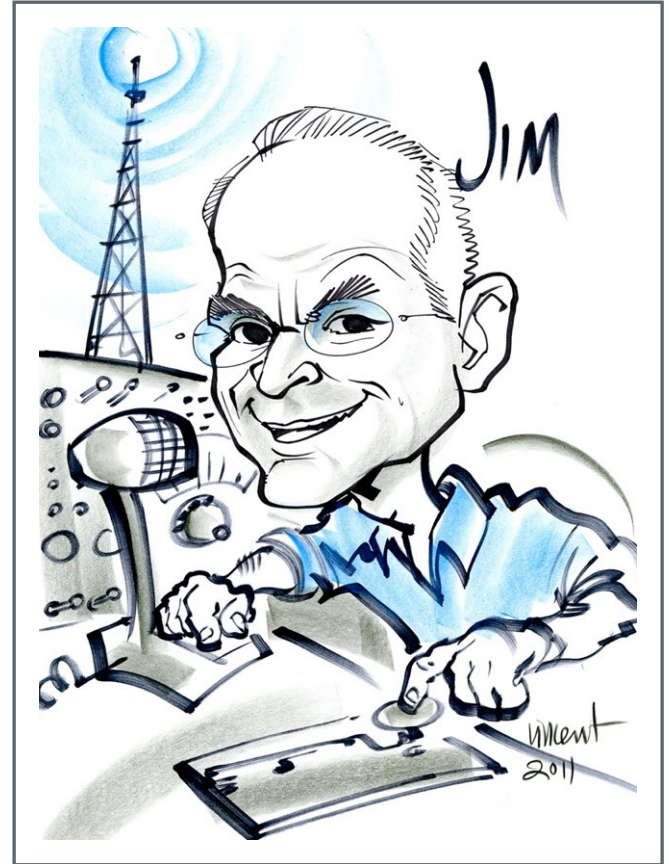


What's on the Agenda?

- The Magic and the Tragic Band
- Propagation Modes
- Equipment
- Antennas
- Software including Assistance
- Awards
- Contesting

Jim Wilson, K5ND

- Writer — Heathkit, 73 Magazine, QST, CQ
National Contest Journal
- Blogger — www.k5nd.net
Freelance Writer
- Scouter — National and World Levels
- VHF Contester & Grid Chaser
- Six Meter Addict



VHF Operations

Magic Bands
with
Super Results
from
Average Stations

Joel Harrison, W5ZN





My Results

- Location = Dallas / Fort Worth Texas
- 6 Meter Rig = 100 watts
- Attic Dipole = LU4FPZ (CW), CX5BL
- Vertical = GM3POI & EA8DBM (FT8)
- Moxon = ZL1RS (CW), JA1UAV (JT65)
- 3-el Yagi = NH6Y and E51WL (FT8)
- 5-el Yagi = 5T5PA + several EU (FT8)
- 600+ Grids
- 60+ DXCC

SIX METERS

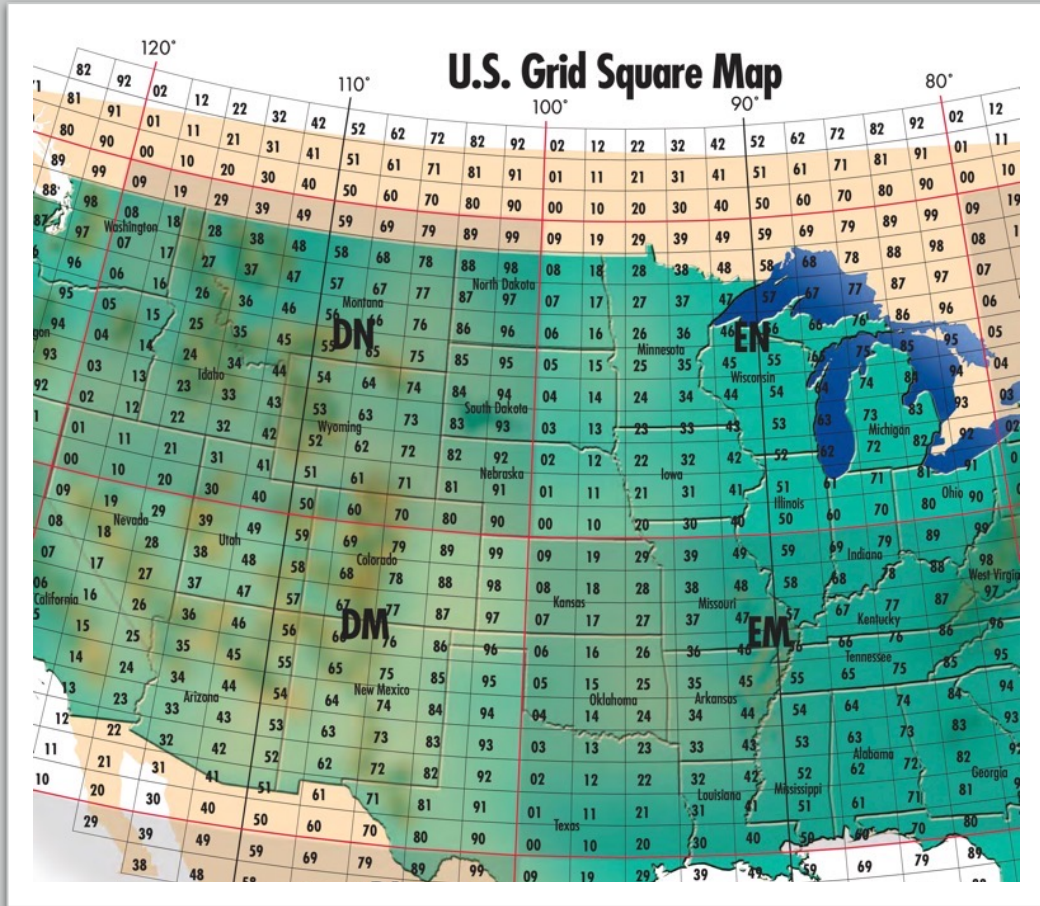
What is 6 m?

- Transition from HF to VHF
- High Sunspot F layer Propagation
- Anytime Sporadic E Propagation
- Scatter Modes
- Moon Bounce / EME
- Aurora
- Trans-Equatorial
- FM and Repeaters

Frequencies

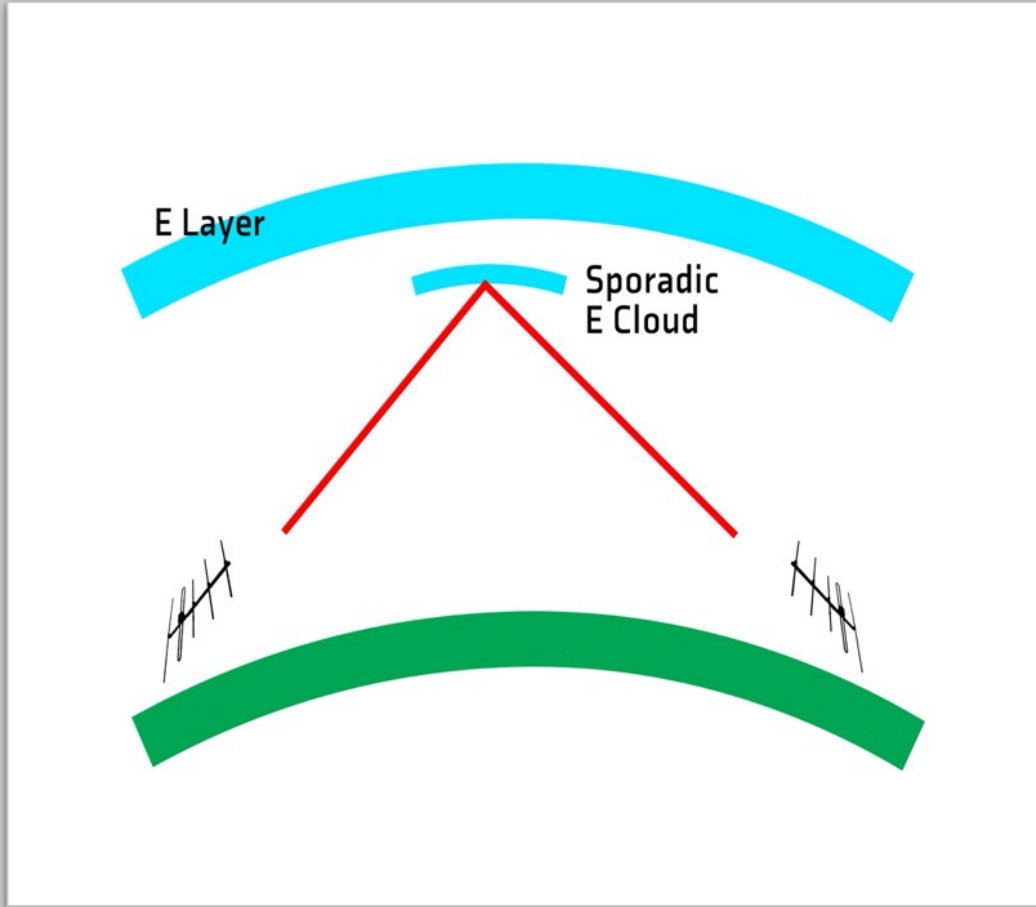
- 50.125 SSB Calling
- 50.100 to 50.125 DX Window
- 50.080 to .100 for CW
- 50.080 and down Beacons
- 50.260 for MSK144
- 50.313 for FT8
- 50.323 for FT8 to Europe
- 50.318 for FT4
- 50.275 for Q65-30A





Grids

- VHF Operating uses Grids
- 1 degree latitude x 2 degrees longitude
- Roughly 70 miles x 100 miles in USA
- Grid Fields i.e. EM
- Grid Squares i.e. 12

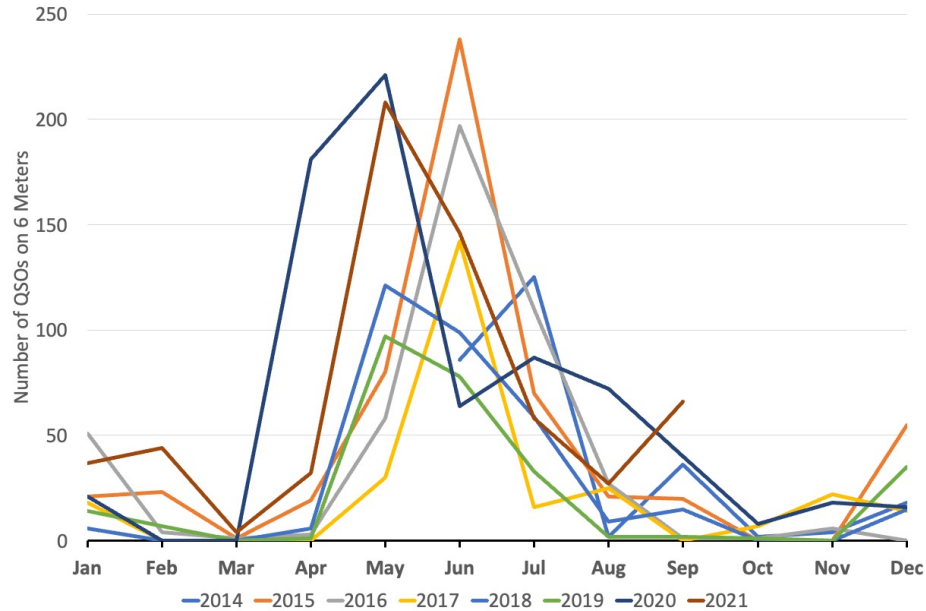


Sporadic E

- Primarily in the Summer
- Cause? Many theories
- Can't be predicted
- Es Cloud location determines the path
- First bounce max ~ 1,500 miles
- Multiple bounces possible

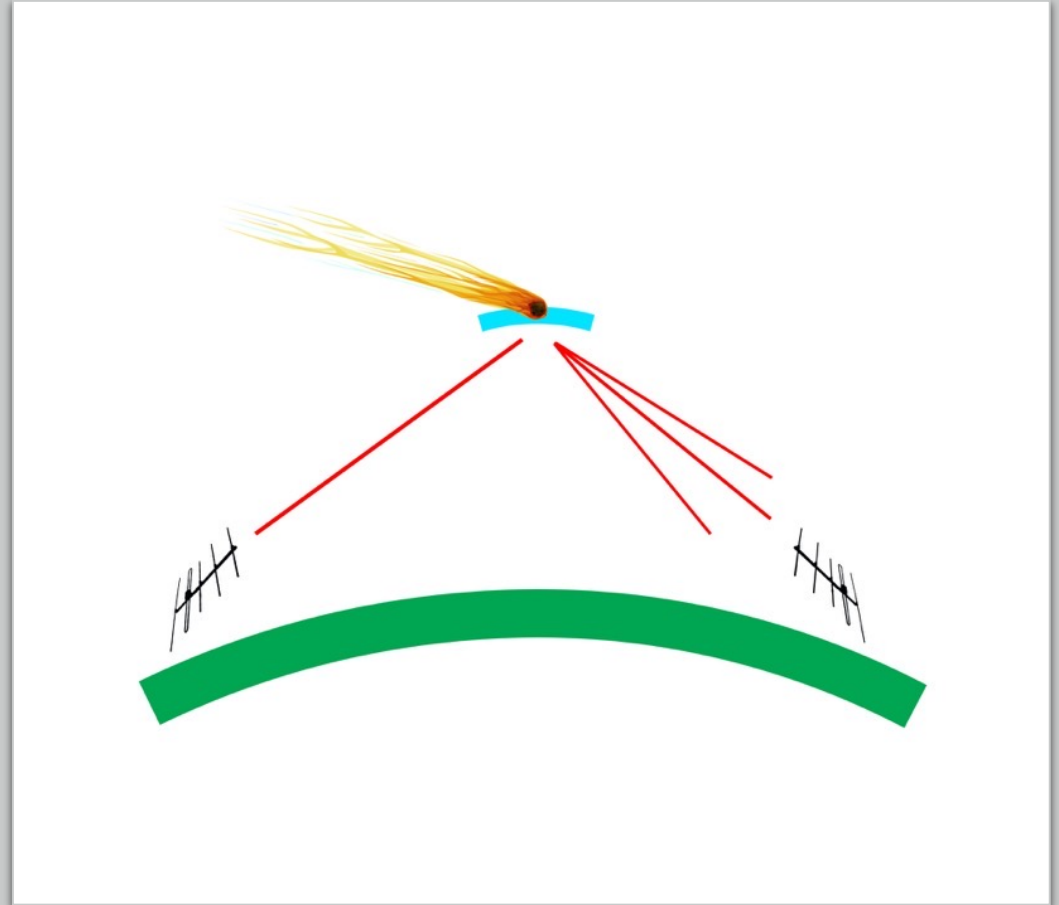
Sporadic E

- Seasonal Activity
- K5ND QSOs by Month
- Past 8 Years



Scatter Modes

- Meteor Scatter
- Can Happen Anytime, morning best
- Meteor Trails
- Max distance ~ 1,500 miles
- Ionospheric Scatter
- Disturbances in the Ionosphere



50 MHz DXpedition

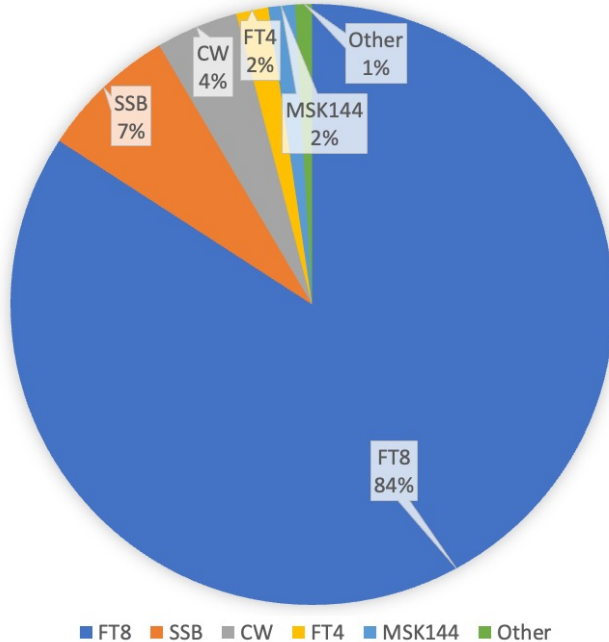
KH8/W7GJ

TULA, AMERICAN SAMOA AH45rs

Other Modes

- Moon Bounce / EME
- Aurora
- Trans-Equatorial – TEP
- F2 Layer Propagation

QSOs on Club Log March 2020 to March 2021



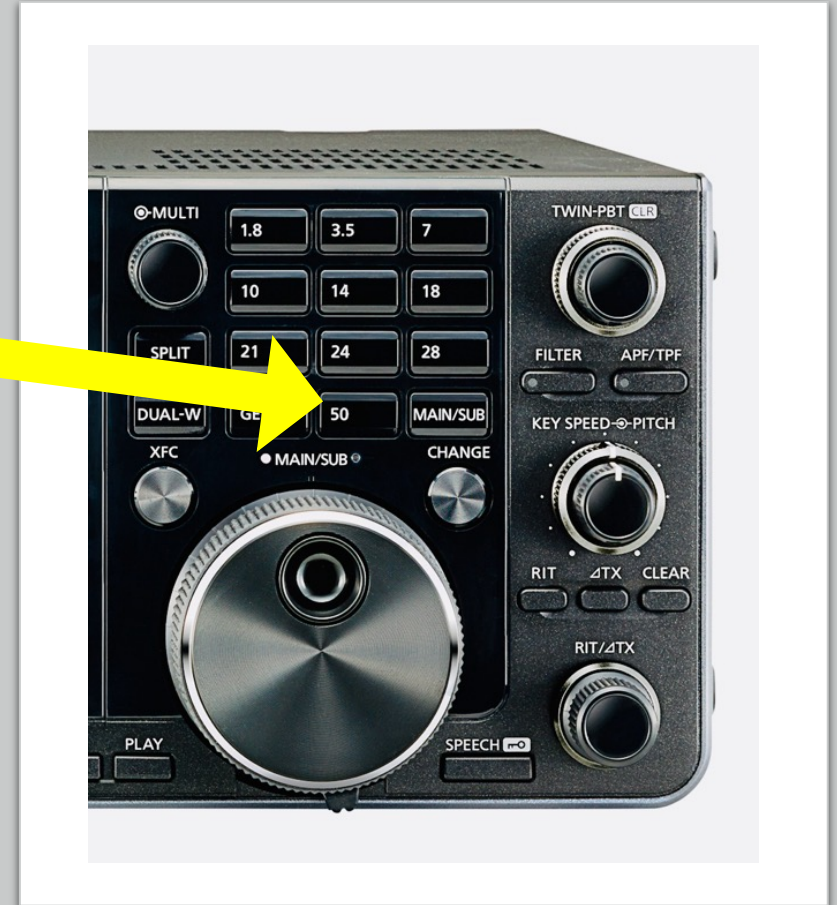
6 Meter Modes

- Data from Club Log
- Covers All DXCC Entities
- FT8 made up 84% of all contacts logged on 6 meters

Equipment

- HF + 6 Meter Rig is Perfect
- 100 watts is fine
- Preamp can help but not critical
- Coax cable — LMR400 / RG8
- Shorter the run the better

- Try what you have – Get on the Air





Antennas

- Dipole can work fine
- Vertical can also work
- Moxon is an excellent antenna
- Yagis work great
- Small size with good gain directivity
- 30 feet high is superb



2605

6 m Moxon



2605

6 m Omniangle₁₇



6 m 3-element Yagi



6 m 5-element Yagi ¹⁹

My Backyard

- Push Up Mast
- Strapped to Pool Fence
- M2 6M3SS 3-element Yagi
- Armstrong Rotator
- Used for Summer E Season



WSJT-X - ForEW1 v2.2.0-rc2 by K1JT, G4WJS, and K9AN

File Configurations View Mode Decode Save Tools Help

Band Activity

UTC	dB	DT	Freq	Message
140130	-12	0.2	2028	~ WB5TUF IZ5DKJ RR73
140200	-11	0.1	2608	~ K5ND EI4DQ -11
140200	-9	0.4	2546	~ VE2FZP G4RRA R-16
140200	-9	0.4	2292	~ W7FI IK5YJY RR73
140200	-17	0.3	2495	~ W5TRL IW4AOT JN54
140200	-20	0.1	2668	~ CQ DX GU8FBO Guern
140200	-15	0.1	2028	~ WB5TUF IZ5DKJ RR73
140200	-21	0.2	493	~ K8ZR I4EAT -09
140200	-20	0.2	1109	~ W5TRL IK2TDM -15
140230	-10	0.1	2608	~ K5ND EI4DQ RR73
140230	-14	0.4	2545	~ AA5AM G4RRA -09
140230	1	0.1	1264	~ CQ EU K8SIX U.S.A
140230	-14	0.7	2292	~ W7FI IK5YJY RR73
140230	-17	0.3	2495	~ W5TRL IW4AOT JN54
140230	-13	0.8	2059	~ WU1ITU I4MKN JN64
140230	-19	0.3	2332	~ K0GU EA5IOG 73
140230	-16	0.1	2029	~ WB5TUF IZ5DKJ RR73

Rx Frequency

UTC	dB	DT	Freq	Message
135745	Tx		1674	~ EA5IOG K5ND R-17
135815	Tx		1674	~ EA5IOG K5ND R-17
135830	-18	0.3	2333	~ K5ND EA5IOG RR73
135845	Tx		1674	~ EA5IOG K5ND 73
135900	-14	0.3	2333	~ CQ EA5IOG IM98
135900	-13	0.1	2667	~ CQ NA GU8FBO
135915	Tx		1674	~ GU8FBO K5ND EM12
135945	Tx		1674	~ GU8FBO K5ND EM12
140015	Tx		1674	~ GU8FBO K5ND EM12
140030	-19	0.1	2667	~ K5ND GU8FBO -12
140045	Tx		1674	~ GU8FBO K5ND R-19
140100	-17	0.1	2668	~ K5ND GU8FBO RR73
140115	Tx		1674	~ GU8FBO K5ND 73
140130	-16	0.1	2608	~ CQ EI4DQ IO51
140145	Tx		1674	~ EI4DQ K5ND EM12
140200	-11	0.1	2608	~ K5ND EI4DQ -11
140215	Tx		1674	~ EI4DQ K5ND R-11
140230	-10	0.1	2608	~ K5ND EI4DQ RR73
140245	Tx		1674	~ EI4DQ K5ND 73

CQ only Log QSO Stop Monitor Erase Decode Enable Tx Halt Tx Tune Menu

6m S 50.323 000 Tx even/1st

Hold Tx Freq

Auto Seq Call 1st

Generate Std Msgs Next Now Pwr

Tx 1

Tx 6

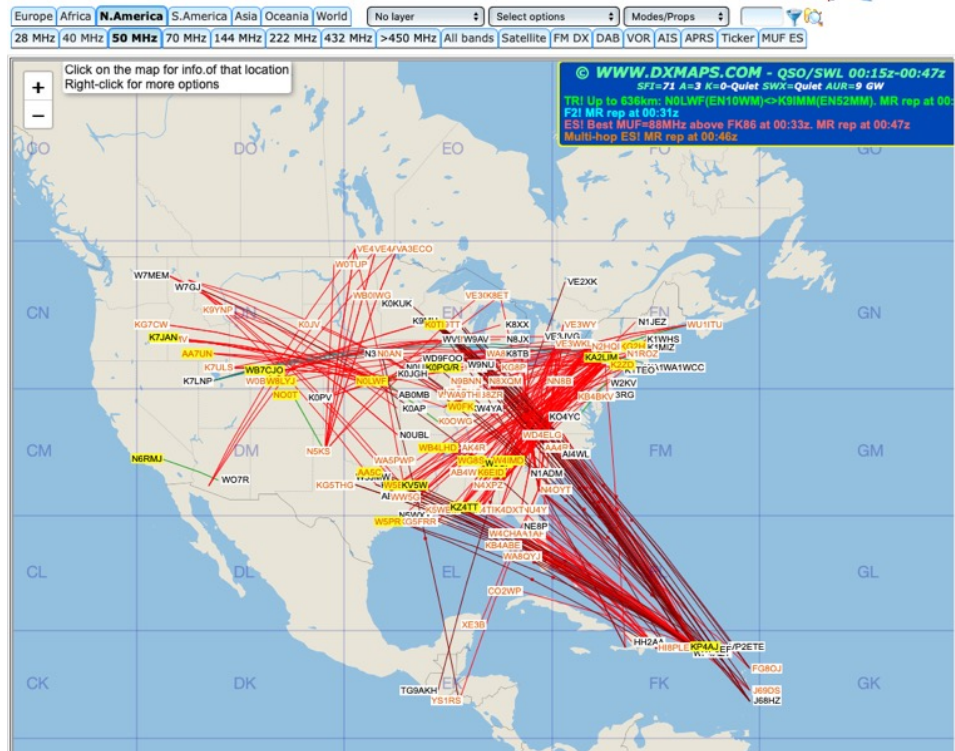
WSJT-X

- FT8 and FT4
- MSK144
- Q65
- NA Contest Mode

- Use your favorite logging program
- Look for QSO transfer from WSJT

Assistance

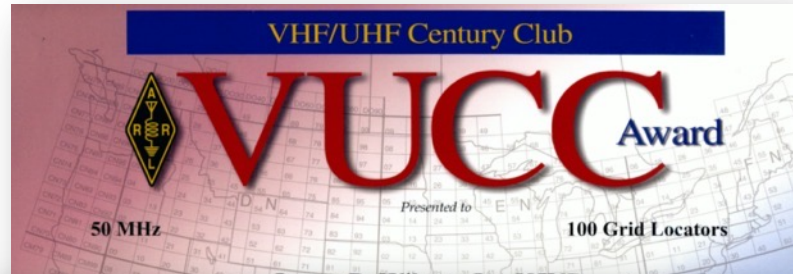
- DX Maps
- PSK Reporter
- Spotting Networks
- Slack VHF-Chat
- Ping Jockey



Awards

- VUCC — 100 grids confirmed
- Worked All States
- DXCC
- FFMA

- Central States VHF Society
- UK Six Metre Group



Contests

- High Activity Levels
- Great for chasing new grids, states
- ARRL January, June, September VHF
- CQ WW VHF in July
- VHF Sprints – Spring and Fall



More Information

- **Central States VHF Society** www.csvhfs.org
- **UK Six Metre Group** www.uksmg.org
- **SMIRK Six Meter International Radio Club** www.smirk.org
- **Magic Band Antennas for Ham Radio, 6 Meter Antennas You Can Build** by Bruce Walker, N3JO. Published by ARRL.
- **Web search** on Six Meters Ham Radio
- Try my website www.k5nd.net
- And my eBook on 6 meters
<https://www.k5nd.net/capture-the-magic-of-six-meters-ebook/>





Thank You

Jim Wilson, K5ND

www.k5nd.net

Press the Six Meter Button and get On the Air
Experience the MAGIC