### "Parks On The Air"

Paul White – K3UWY Tamiami ARC Presentation April 9, 2025



## What is "Parks On The Air"?

"Parks on the Air" is a 501c3 registered nonprofit radiosport program that encourages communications to and portable operations from state, provincial, and nationally managed public lands.



## Activators and Hunters

Activators operate from one of over 33,000 locations in 33 countries (8000+ in the US alone).

Hunters or chasers operate from anywhere to contact activators

Two activators can also contact each other for a "Park to Park" QSO

## What is Required to Activate

Radio Amateur License

Registration of your callsign at pota.app

Radio

**Antenna** 

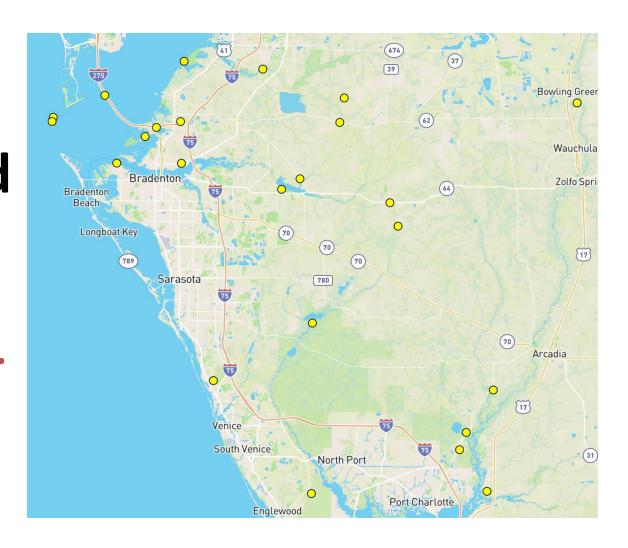
Portable power or AC mains if available

Any logging software that can export an ADIF file

#### Activator Responsibilities

- Register your callsign before an activation on pota.app.
- Activations must be from parks on POTA's designated list (see map)
- Spot yourself on the pota.app website so others can find you
- Log all QSOs with minimum of Activator Call Sign, Hunter Callsign, Band, Mode, Park #, Date and Time (UTC). Submit all logs in ADIF format on the pota.app page of via email or website upload

## Local Registered Park Locations



#### 10 QSOs within one UTC day

Requirements for Successful Activation of a Park Simplex contacts only

ALL hardware and operators must be within the physical boundaries of the park

Submission of ADIF log files via POTA.APP

### **Logging Recommendations**

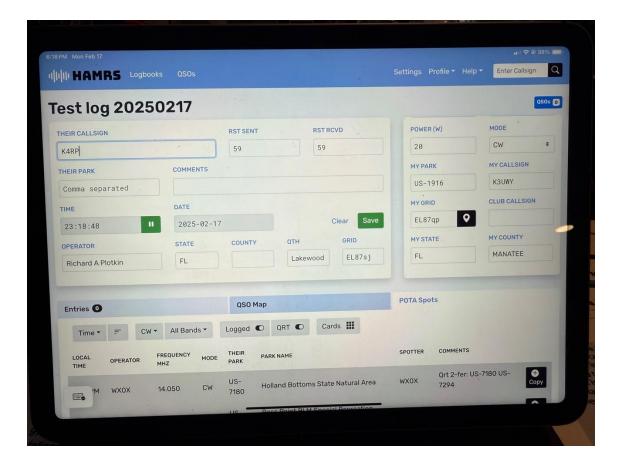
**HAMRS** is most popular POTA Logging application. IOS version is not cloud based, but does provide good database for both parks and operators with web access.

Worldradioleague.com is new to the game and offers a good web based alternative with "in app" spotting.

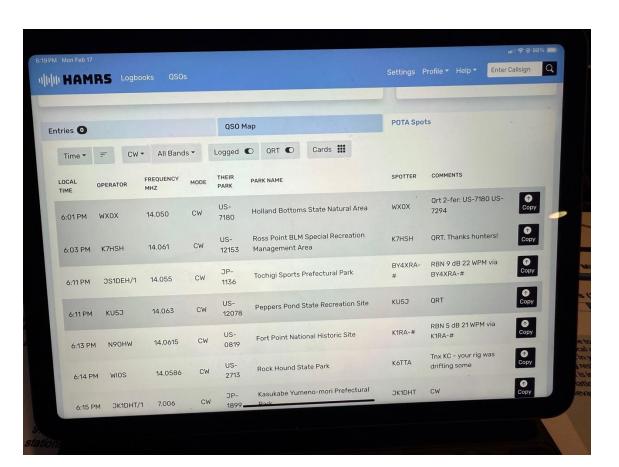
Ham2k POLO is another new entrant to the mix

Paper logging still works when things get crazy!

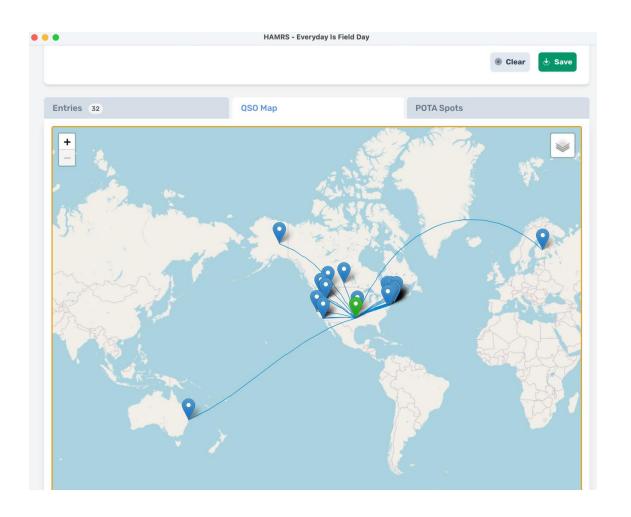
### HAMRS Log Entry



#### HAMRS POTA SPOTS



### HAMRS QSO Map



### My Logging Page

Parks on the Air Log Worksheet									
Call Sign	K3UWY	Rig	IC705	Power	10W	Mode	Park US-	Date	
Call		Time	Freq	RST Sent	RST Rcv	State	Park to Park	Notes / Mode	
									1
									2
									3
									4
									5
									6
									7
									8
									9
									10
									11
									12
									13
									14
									15
									16

## Hunting – Contacting an Activator

Only attempt a QSO if you already hear the activator.

Typical exchange is callsign, QTH (state), and signal report

No need to provide logs as is required for LOTW (that responsibility only applies to the activator)

Take the time to SPOT on the spotting page on the POTA.APP website.

## Finding Activators

• Many logging apps will include a listing of POTA spots. I use HAMRS, "Ham Toolbox", Smart SDR for Mac, SDR-Control, TS-Control, or FT-Control...most of which provide CAT control of the radio.

Time ^	Activator	Freq	Mode	Park	Spotter	Comment
16 sec ago	NN9K	14.063	CW	US-0997@US-IL	W1NT-6-#	RBN 6 dB 18 WPM via W1NT-6-#
19 sec ago	N0HR	14.059	CW	US-0064@US-VA	KP3CW-#	RBN 8 dB 21 WPM via KP3CW-#
47 sec ago	KQ4DUX	14.065	CW	US-9912@US-AL	KU8T	
1 mins ago	NU6W	14.069	CW	US-7493@US-CA	K7MJG-#	RBN 6 dB 18 WPM via K7MJG-#
2 mins ago	KC8RVD	14.046	CW	US-9405@US-OH	ON4FF	tnx for new park, 73s Filip
2 mins ago	NN9I	14.058	CW	US-4103@US-IL	K3TEE	599 into SC K3TEE Thanks.
3 mins ago	VE7SRF	14.049	CW	CA-4235@CA-BC	N6TV-#	RBN 7 dB 20 WPM via N6TV-#
3 mins ago	W8SOO	14.056	CW	US-4487@US-MI	KU8T	
3 mins ago	AA5JF	14.052	CW	US-0661@US-FL,US-MS	KU8T	
4 mins ago	K3RTA	14.062	CW	US-1741@US-DE	K3RTA	qrt
5 mins ago	W1YTQ	14.068	CW	US-0745@US-MA	WE9V-#	RBN 26 dB 17 WPM via WE9V-#
5 mins ago	N2PPI	14.061	CW	US-2086@US-NY	OK4QRO-#	RBN 5 dB 19 WPM via OK4QRO-#
15 mins ago	N3CZ	14.064	CW	US-6952@US-NC	N3CZ	QRT
23 mins ago	N7MEB	14.089	CW	US-5926@US-UT	N7MEB	qRT getting hot. Thanks hunters! 💗
00						

## Benefits of Hunting

- Easy, short contact, but helps activators to reach their goals
- Awards program for both hunters and activators
- No log submissions for hunters
- Makes you a better operator, especially when working a pileup
- You can hunt as much or as little as you desire.

#### How Do Hunters get their Stats?

- Register your call sign on pota.app.
- Check your stats and awards on the dashboard on pota.app

#### **Earned Awards** Q Search Date First Granted Award Name ↑ Description Badge Endorsements 2024-05-09 00:51 Arizona Agave Hunter 73 Working 100 different units 20M, CW, PHONE 15M, 17M, 20M, 40M, CW, DATA, FT8, 2024-03-30 23:17 Bronze Hunter Working 10 different units PHONE 2024-04-26 21:46 Diamond Hunter 75 20M, CW, PHONE Working 50 different units Hunting 5 different DX DX Hunter 📆 2024-05-06 23:36 10 Entities 2024-06-12 00:48 Enrubio Hunter Working 200 different units 20M, CW, PHONE 2024-04-22 04:36 Gold Hunter Working 30 different units 20M, CW, PHONE 2024-07-29 02:58 Ouachita Mountain Goldenrod Hunter Working 300 different units 20M 2024-08-02 22:06 Park to Park 📆 Making Park to Park QSOs 25 2024-04-25 02:50 Platinum Hunter Working 40 different units 20M, CW, PHONE 2024-05-01 00:45 Sapphire Hunter 📆 Working 75 different units 20M, CW, PHONE

## My Operating Location Preferences

Sometimes I activate from a picnic table, or from the car, or on a couple of lawn chairs.









### My Radio Preferences



In last 10 months I have used FTdx10, IC-7000, IC-705, IC-7100 and FX4-CR



But my two favorite POTA radios are IC-705 and FX4-CR

#### **20W Optimum Power for POTA**

- Good battery life
- Only 1.2 S-unit below 100W
- Small and lightweight

## My Favorite POTA Radio FX4-CR

- 1.) Radio designed and built by BG2FX, Yu, who also provides support.
- 2.) Builds 250-300 units per year. Each year the radio evolves a bit based on customer input.
- 3.) Radio ships direct from China, although Yu does sell 10-20 units through AliExpress each year.
- 4.) No published warranty, but great support and a good users group for additional insight.
- 5.) Amazing performance and simple user interface.



- •TX and RX on 80-6m
- •2.0"TFT display screen
- •0-20W Output Power
- •SSB, CW, AM, FM, and Digital Modes
- •Spectrum display and 48 kHz waterfall plot
- Dual VFO operation
- •Internal USB sound card with serial communication via USB and CAT Control
- Built-in Bluetooth
- Adjustable DSP digital noise reduction
- Multiple BPF selections
- •Ultra wide input voltage: 9 V 18 V

## Another Popular 20W POTA Radio Xiegu G-90



#### Available from Radioddity

https://www.radioddity.com/products/xiegu-g90-hf-

transceiver?msclkid=77d5bcdfcaa61c0ce237 db6b03ceb2fc&utm source=bing&utm med ium=cpc&utm campaign=Xiegu&utm term= Xiegu%20G90&utm content=Xiegu%20G90

- •TX and RX on 160-10m
- •1.8"TFT display screen
- •0-20W Output Power
- •SSB, CW, AM, FM, and Digital Modes
- •Spectrum display and 48 kHz waterfall plot
- •Built-in wide range antenna tuner
- Detachable front panel
- •Ultra wide input voltage: 10.5-16.5V

# Other Favorite POTA Radios

Yaesu FT-891, FT-991, FT-710, FT-857

Icom IC-7000, IC-7100, IC-705, IC-706, IC-7300

Elecraft KH1, KX2, KX3

Xiegu G90, X6100, X6200, X5105, G106

Kenwood TS-480SAT

# POTA Antenna Preferences EFHW 4010M

- Lightweight, small, easy to deploy
- 40/20/15/10M without tuner
- Sloper from tree or inverted L from mast
- Reel-POTA, PackTenna, Ebay



POTA
Antenna
Preferences
Tunable
Resonant
Vertical



- Tunable SS 17' whip for 20/17/15/12/10/6M
- Add bottom loading coil for 80/40/30M
- Can be used with "Faraday" cloth groundplane

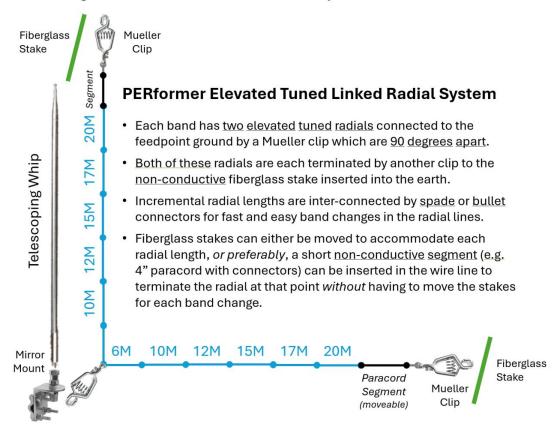
Don't forget your antenna analyzer (Rig Expert, or NanoVNA) to adjust your antenna!

### Elevated Tuned Vertical Operation "POTA Performer" (KJ6ER)

- Resonant "one-band-at-a-time" elevated ¼ wave vertical antenna for 40M-6M
- Mounted on tripod or guyed PVC (feed point >4'AGL)
- Optimum 2 radials at 90 degrees for 4-5dB F/B
- 2 radials at 180 degrees for omnidirectional
- Linked segmented radials allows quick tuning for optimum length on each band (40-6M)
- 20-6M with 17' SS whip
- 40-30M with base loaded coil and tuned radials (1/4 wave) with 17' SS whip
- Feedline "choked" at antenna

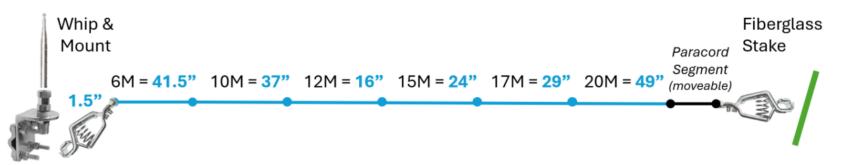
## POTA Performer Sketch

#### **Antenna Configuration and Elevated Tuned Linked Radial System**



## POTA Performer Radial Lengths

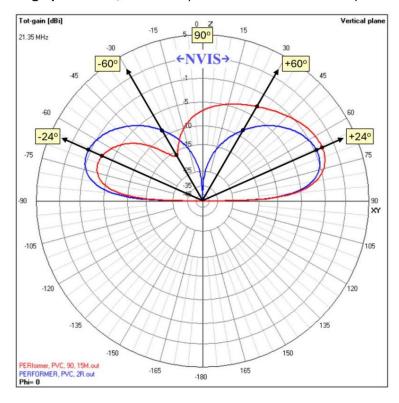
#### Incremental Wire Segment Lengths for Each Band in the Radial Pair



# 4NEC2 Modeled Performance 90 degrees vs 180 degree radial orientation

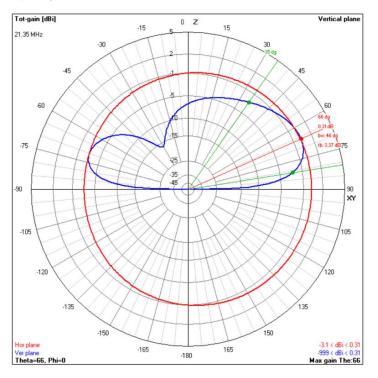
#### Comparing the PERformer with Radial Spans at 90° Directional and 180° Omnidirectional

One of the interesting features of the PERformer is that the radials can provide *directionality* at a 90° span but can also be made *omnidirectional* with a 180° span (*opposite* each other). This benefits those deployments where you want to radiate evenly in all directions (e.g., center of the country). Note in the 15M far field radiation graphic below, the radial span at 90° is in red and the span at 180° is in blue.



# 4NEC2 Modeled Performance 90 degree radial orientation

4NEC2 Computer Model Graphics Showing the Far-Field Radiation Pattern (vertical, horizontal planes) and Reflection Coefficient (RC) for 15M (21.350 MHz). Note the directionality evident in the vertical plane. The maximum gain of +0.31 dBi occurs at 24 degrees off the horizon with a -3 dB beamwidth of 46° (+31°, -15°). The front-to-back is 3.37 dB. The reflection coefficient is -51.2 dB.



### 4NEC2 Modeled Performance 90 degrees vs 180 degree radials orientation

The 90° radial span provides +0.98 dB more forward gain at +24° elevation and +5.27 dB more upward gain at forward NVIS angles from +60° to 90° elevation. However, the 90° radial span creates a null at -60° for weaker rear NVIS coverage but has a 3.37 dB front-to-back at -24° for directionality. The radial span configuration at 90° or 180° does not impact the high radiation efficiency of 90% or better.

	<b>Elevation</b> off Horizon	90° Span (directional)	180° Span (omni)	Delta
NVIS	+24° <mark>Forward</mark>	0.31 dBi	-0.67 dBi	+0.98 dB
	+60° Forward	-3.26 dBi	-8.53 dBi	+5.27 dB
	-60° Rear	-16.3 dBi	-8.53 dBi	+7.77 dB
	-24° <mark>Rear</mark>	-3.06 dBi	-0.67 dBi	+2.39 dB

- Directional configuration provides 3.37 dB front-to-back at 24° elevation
- Radial span <u>does not</u> impact antenna <u>radiation efficiency</u> of <u>90.4%</u>

K3UWY POTA
Performer
Implementation
Mirror Mount
with 3/8 -24 to
M12 adaptor



K3UWY POTA
Performer
Implementation
Lampstand
(Amazon) Tripod



## K3UWY POTA Performer Implementation Grond Radial clip with 4mm banana fitting



- Easy to change radials configuration
- One set for 20/17/15/12/10M
- One set for 40/30M

## K3UWY POTA Performer Implementation Ground clip with radial attachment



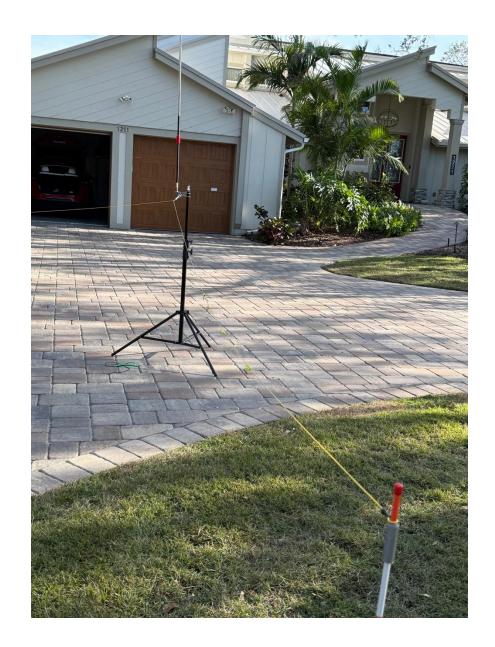
• Easy to configure for 2 or 4 elevated radials if desired

## **K3UWY POTA Performer Implementation Segmented radial implementation**





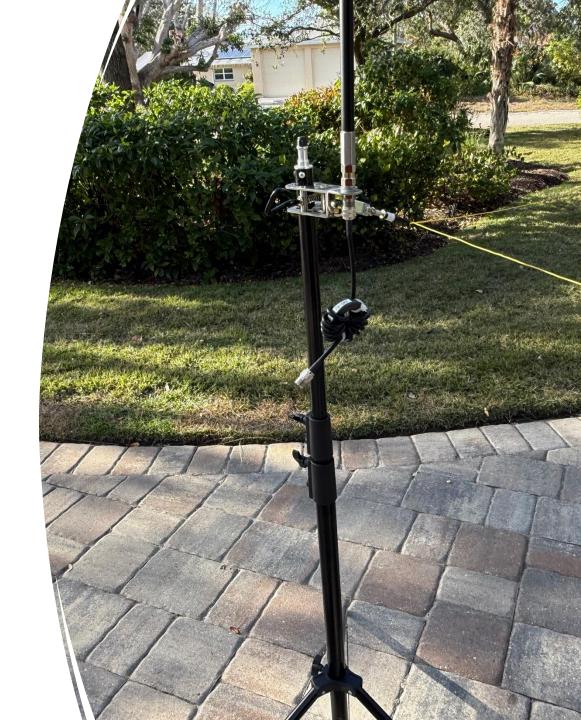
K3UWY POTA
Performer
Implementation
Setup in
driveway with 90
degree radials



K3UWY POTA
Performer
Implementation
fiberglass snow
rod radial
endpoles



K3UWY POTA
Performer
Implementation
Homemade
isolation choke
240-43 core



## **K3UWY POTA Performer Implementation MC-750 40M Base loaded Coil**





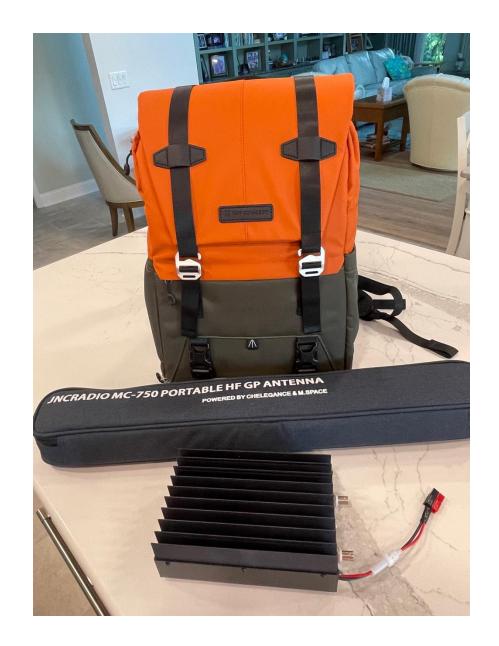
# My Battery Preferences

- I use a LiFePO4 13V, 3AH, 4.5AH, and 6Ah battery good for 2-6 hours. I also have a 20Ah and 50Ah battery for multiday outing.
- Bioenno is Top Shelf but top cost!
- I use Anderson Power Poles on everything!

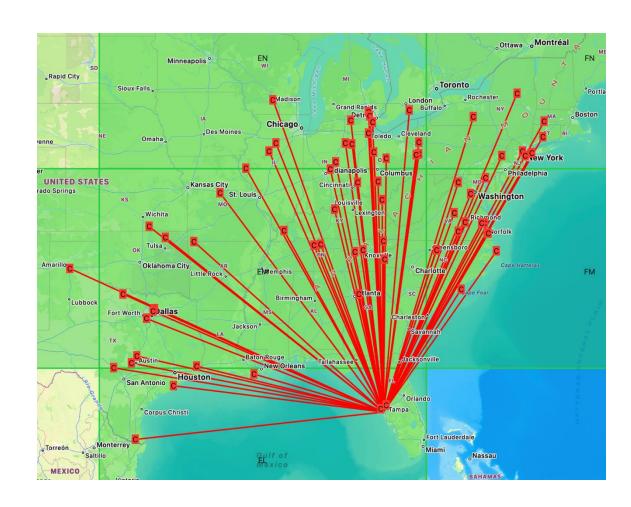
### My "Go Pack



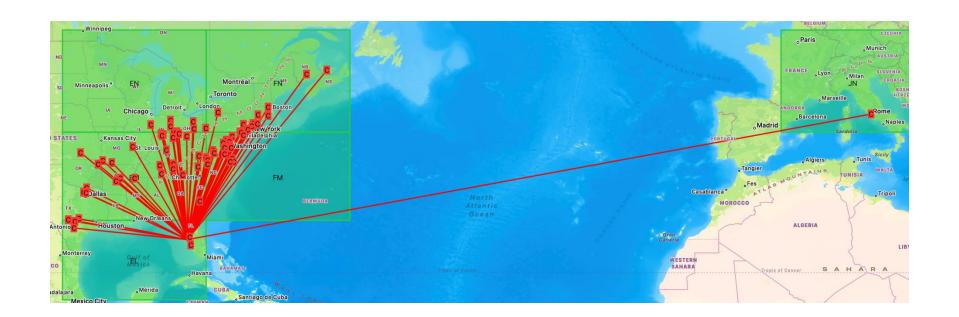
### My "Go Pack", Antenna, and 50W PA



20M CW
Activation
from US-1916
Skyway Fishing
Pier State Park
73 QSOs in 80
minutes



20M SSB Activation from US-1916 Skyway Fishing Pier State Park 76 QSOs in 2:15

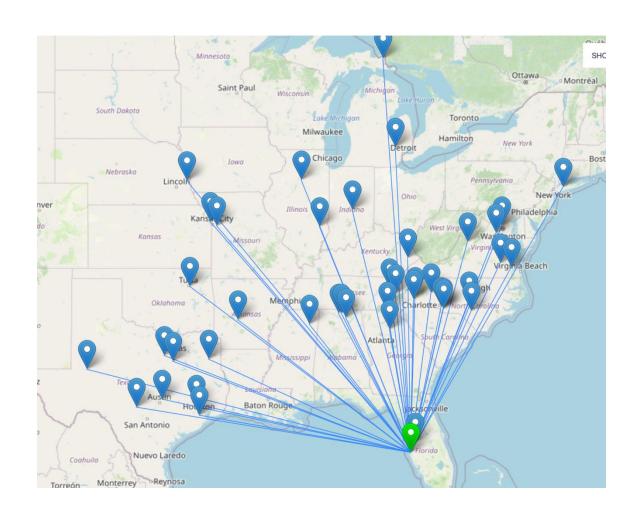


#### POTA Activation 9/2/2024 – US1916 14.062 MHz, 10W CW IC-705, M750 Vertical

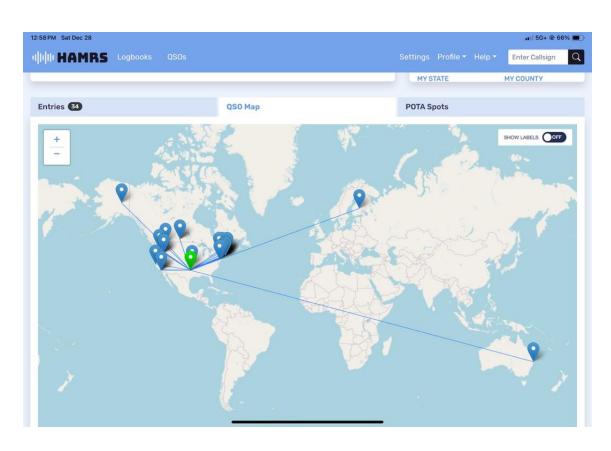




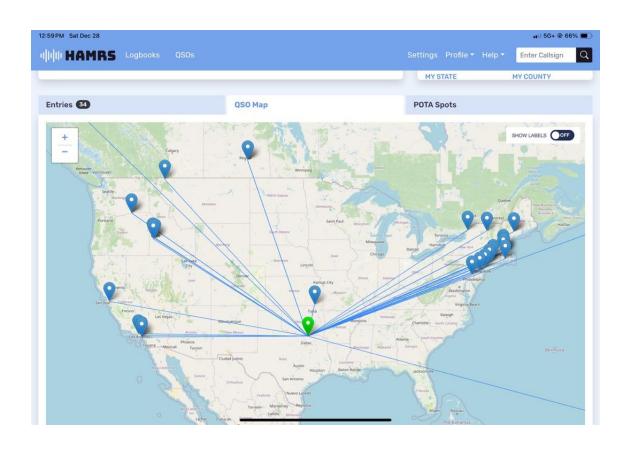
POTA
Activation
9/2/2024 –
US1916
14.062 MHz,
10W CW, 46
QSOs in 80
minutes



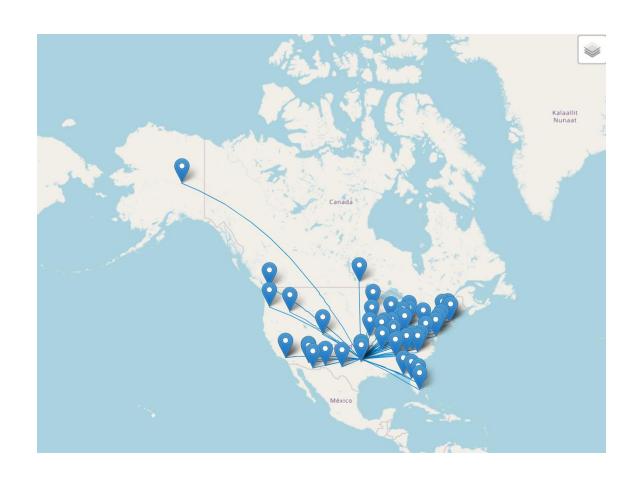
POTA
Activation
12/27/2024
US-3005
10M & 15M
SSB and CW 50
QSOs in 1:50



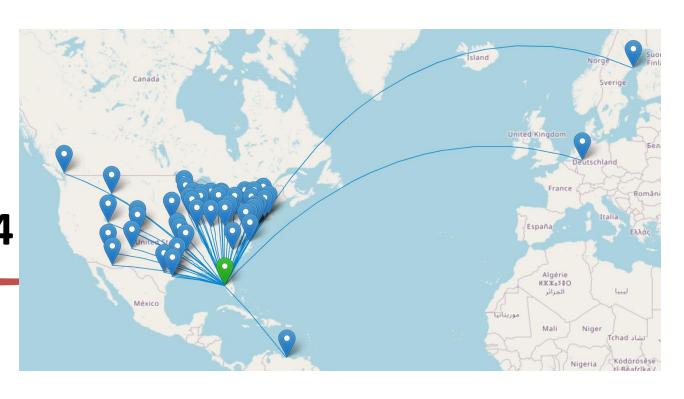
K3UWY/US-3005 – OH6RM 5071 miles K3UWY/US-3005 to VK2IZ 8398 miles POTA
Activation
12/27/2024
US-3005
10M & 15M
50 QSOs in
1:50



POTA
Activation
12/29/2024
US-3005
10M & 20M
SSB 32 QSO
in 1:07

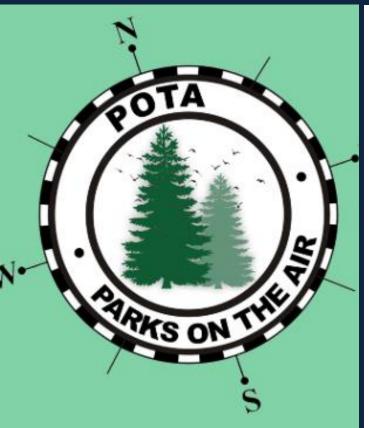


POTA
Activation
3/23/2025
US-0772
15M SSB 50
QSOs in 0:54



#### POTA SUMMARY





- Antennas make all the difference!
- 20W can work the world!
- Don't be afraid to jump in!
- Be ready for a pileup!!!
- Have fun!!!

#### **Additional POTA Info**

- Website POTA.APP
- Youtube Info Video by Matt, N3NWV <u>https://www.youtube.com/watch?v=odegfaGczAc&t=22s</u>
- YOUTUBE CHANNELS
  - K8MRD Mike from TX
  - KB9VBR Michael from WI
  - K4SWL QRP POTA from Tom from NC
- "Go To" Book from ARRL
   "The Parks on the Air Book"

### **Additional Sourcing Info**

#### Online Links

- POTA Bag (Amazon Camera Bag)
   <a href="https://www.amazon.com/gp/product/B09YRS44XT/ref=ppx\_yo\_dt\_b\_sea">https://www.amazon.com/gp/product/B09YRS44XT/ref=ppx\_yo\_dt\_b\_sea</a>
   rch\_asin\_title?ie=UTF8&th=1
- Lighting Tripod
   <a href="https://www.amazon.com/gp/product/B08ZK492H8/ref=ppx yo dt b se arch asin title?ie=UTF8&psc=1">https://www.amazon.com/gp/product/B08ZK492H8/ref=ppx yo dt b se arch asin title?ie=UTF8&psc=1</a>
- Mirror Mount for Antenna <u>https://www.amazon.com/gp/product/B0785MC7VH/ref=ppx\_yo\_dt\_b\_s</u> earch\_asin\_title?ie=UTF8&psc=1
- Chelegance M750 <a href="https://chelegance.com/products/jncradio-mc-750-100-watts-portable-hf-gp-antenna/">https://chelegance.com/products/jncradio-mc-750-100-watts-portable-hf-gp-antenna/</a>
- Bioenno Batteries
   <a href="https://www.bioennopower.com/collections/all?sort\_by=manual&filter.p.">https://www.bioennopower.com/collections/all?sort\_by=manual&filter.p.</a>
   <a href="mailto:tag=12v&filter.v.price.gte=&filter.v.price.lte="mailto:tag=12v&filter.v.price.gte=&filter.v.price.lte="mailto:tag=12v&filter.v.price.gte=&filter.v.price.lte="mailto:tag=12v&filter.v.price.gte=&filter.v.price.gte="mailto:tag=12v&filter.gte">https://www.bioen.gte="mailto:tag=12v&filter.gte">https://www.bioen.gte="mailto:tag=12v&filter.gte">https://www.bioen.gte="mailto:tag=12v&filter.gte">https://www.bioen.gte="mailto:tag=12v&filter.gte">https://www.bioen.gte="mailto:tag=12v&filter.gte">https://www.bioen.gte="mailto:tag=12v&filter.gte">https://www.bioen.gte="mailto:tag=12v&filter.gte">https://www.bioen.gte="mailto:tag=12v&filter.gte">https://www.bioen.gte="mailto:tag=12v&filter.gte">https://www.bioen.gte="mailto:tag=12v&filter.gte">https://www.bioen.gte="mailto:tag=12v&filter.gte">https://www.bioen.gte="mailto:tag=12v&filter.gte">https://www.bioen.gte="mailto:tag=12v&filter.gte="mailto:tag=12v&filter.gte="mailto:tag=12v&filter.gte="mailto:tag=12v&filter.gte="mailto:tag=12v&filter.gte="mailto:tag=12v&filter.gte="mailto:tag=12v&filter.gt
- Thread Adaptor 3/8 x 24 to M12 <a href="https://www.mcmaster.com">https://www.mcmaster.com</a>