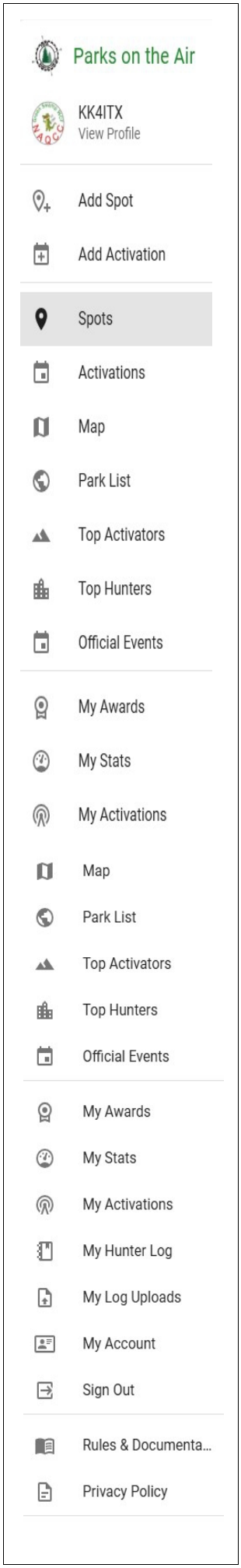


Introduction to **Parks On The Air (POTA)**
https://pota.app/

The **POTA** program is an Amateur Radio activity that grew out of ARRL's National Parks on the Air special event held in 2017. A group of volunteers wanted to continue the fun beyond that one-year event, and thus, **POTA** was born and has now spread to encompass our earth.

There are basically two parts of the POTA program:

1. **Activators** go out to an official "registered park", set up and call CQ. If they make a minimum number of contacts they have Activated that park.
2. **Hunters** can operate from home QTH or anywhere and at any power.

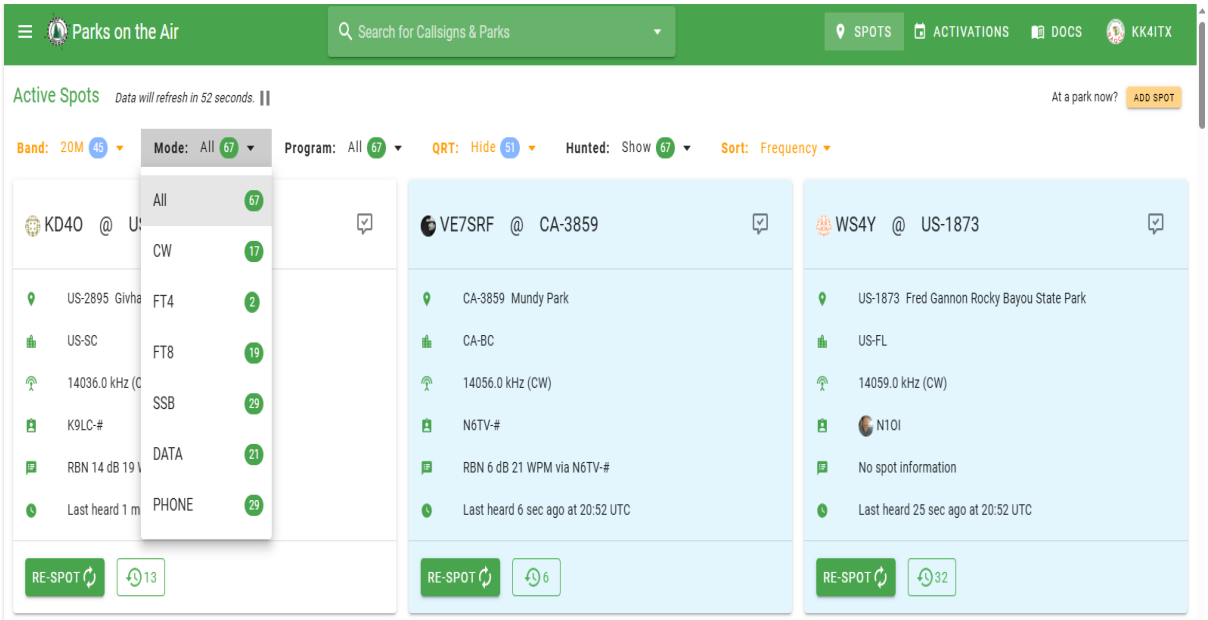
The **Activator** initiates the contact, Logs and reports the QSO to meet the requirement of the **Activator** rules and that is the confirmation that the **Hunter** was copied. The POTA online program does a fantastic job of keeping all of the details and awards automatically to both participants.

Usually, at least for the CW side, **Activators** start showing up around 9am and as the sun moves across the country so do the potential QSOs. I have activated a couple of times but I prefer to hunt as it's far more relaxing. Actually if you are at a registered park as a **Hunter** or on another mission and have 10 QSOs you can report (Log) as an **Activator**.

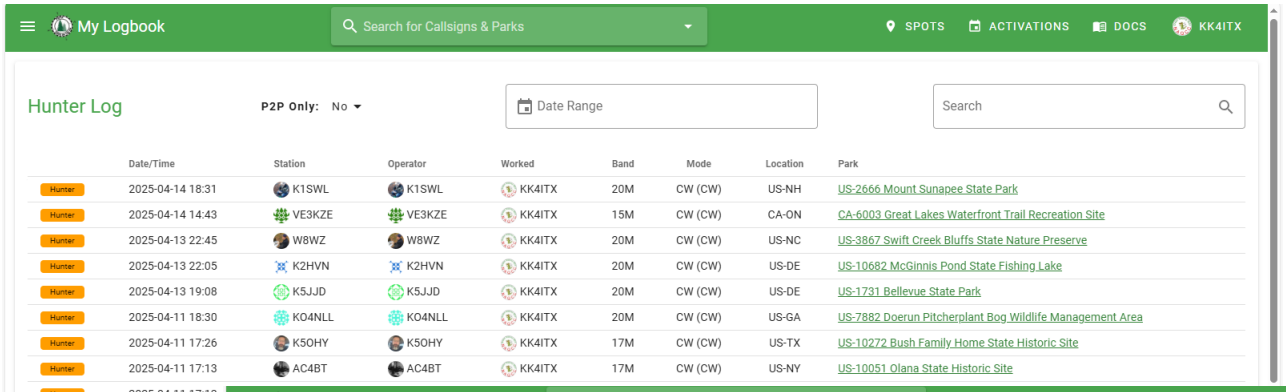
The whole idea is to get people off their duff and hopefully into a park and spread the word about Amateur Radio.

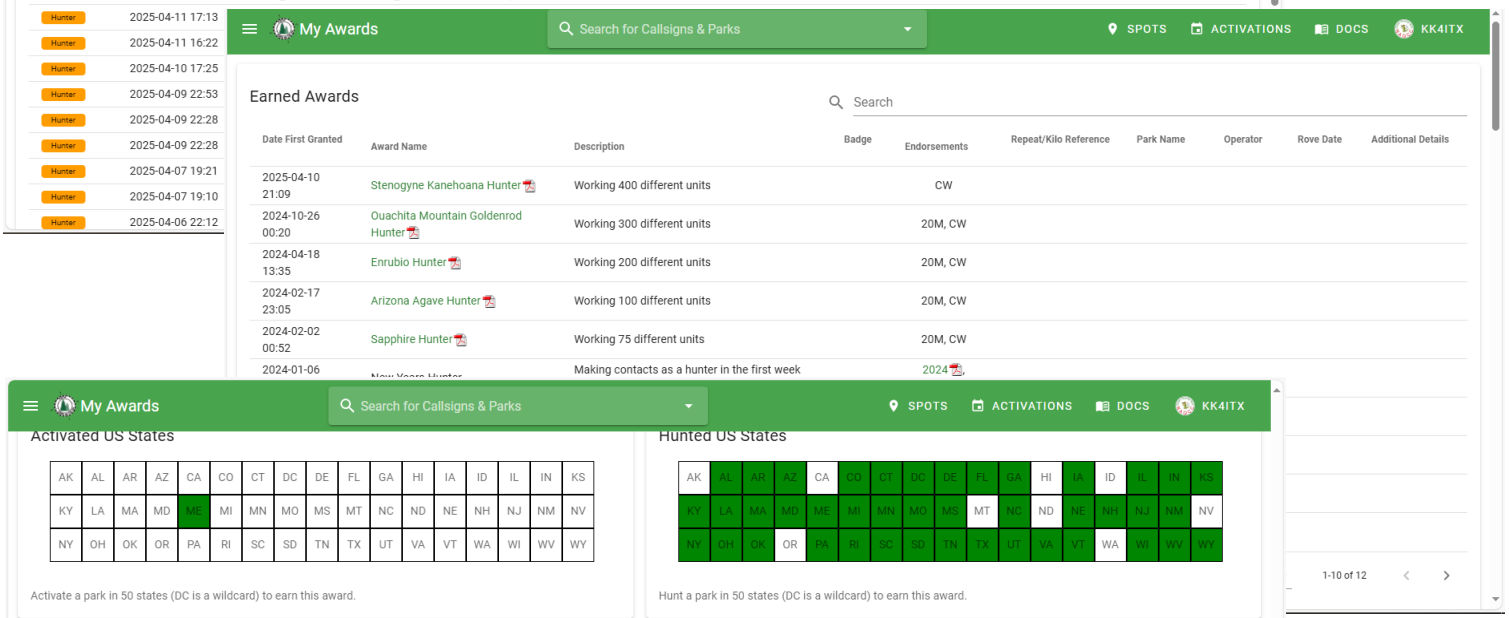
The operating modes are CW, SSB, FT8, FT4, DATA or FM . Power is up to you but if there's others around you it becomes a Field Day headache unless you control power, bands and modes to reduce interference. Since POTA is NOT a contest you can work any Band from 160m to 70cm, land repeater use is not allowed.

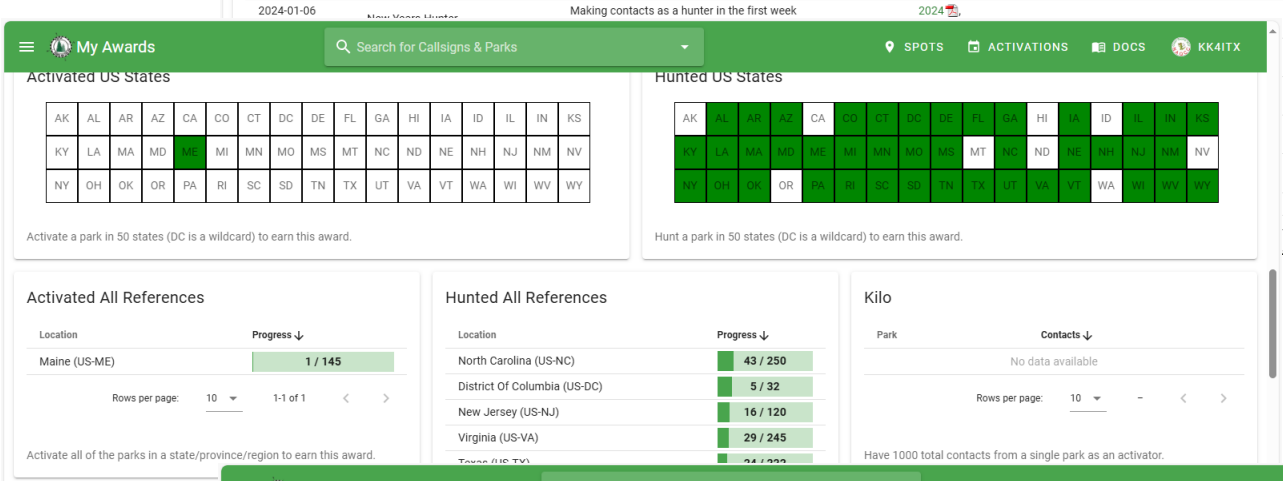
The screenshot below shows a few operators and the details of their Activation attempt. They must complete (10) QSOs for their Activation to count.

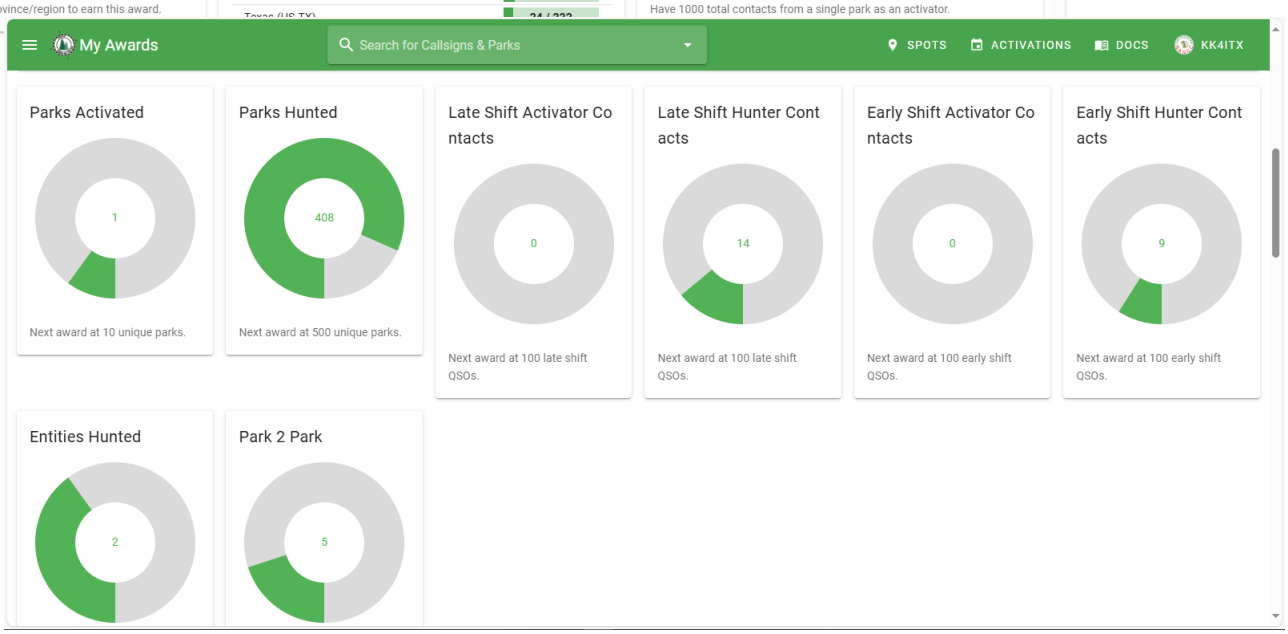


As a courtesy to the **Hunters**, if an **Activator** fails to make the required QSOs, he should still report the attempt so that the successful **Hunters** get credit.









Some content of this document came from the POTA website, the balance is my creation. The entire document can be used in any form for educational purposes only, any errors are mine please use the POTA website for “Official” reference.

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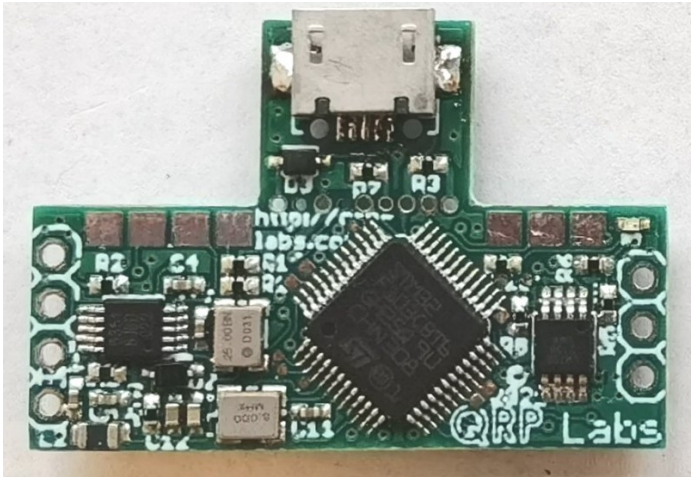


SIMPLE: the U4B can be configured just by entering your callsign. Then set up your own tracking page at the QRP Labs website, add antennas and solar cells, a balloon and you're ready to go. Your tracking page will show the live position on a Google map, with the altitude, groundspeed, battery voltage and temperature.

COMPLEX: for the more adventurous, U4B is a complete miniature computer system running QDOS (**Q**RP Labs **D**isk **O**perating **S**ystem). There is a full-screen text editor (connect a PC terminal emulator using the built-in USB to Serial Virtual COM port via a USB cable). A 32-bit Virtual Machine runs compiled BASIC. There's a 128K Disk for storing your programs and data files. 19 GPIO pins and an I2C bus provide ample expansion possibilities if you wish to add your own sensors. A key feature is that you can use the built-in QRP Labs telemetry-over-WSPR system to effortlessly collect not just the basic tracking data (location, altitude, groundspeed, battery voltage, temperature) but also your own sensor data. All over the WSPR monitoring network, collected by the QRP Labs web server automatically and ready for you to download from your tracking page. Or - use one of the other supported digital modes to design your own solution. The possibilities are endless!

List of features:

- 33.0 x 12.7mm PCB (plus removable protrusion with USB connector)
- Weight: 1.8g (with USB protrusion removed)
- Onboard high performance GPS receiver
- 32-bit ARM micro controller running QDOS (QRP Labs Disk Operating System)
- 128K disk (implemented on EEPROM chip)
- 27mW (approximately) transmitter using Si5351A synthesizer
- Onboard GPS used to sync time and location
- TCXO referenced frequency stability
- Band coverage 2200m to 2m
- LM75 temperature sensor
- Status LED
- USB interface for configuration, programming and easy firmware update (just copy the new firmware file into the apparent USB Flash drive)
- Free firmware updates for life, when enhancements are developed as the use cases expand

Advanced QDOS features:

- 19 GPIO pins – of which 9 can be configured as analog inputs and 8 are easily accessible via PCB edge pads; all 19 can be used as digital input or output control pins
- I2C bus for connecting additional sensors e.g. pressure, humidity
- BASIC programming language with full-screen text editor, compiler and debugger

•128K Disk storage for your programs and data; BASIC can read/write data files

•Command line utility

•Telemetry over WSPR for relaying your additional sensor data

The U4B radio transmitter can transmit the following modes:

•QRP Labs tracking and telemetry over WSPR

•WSPR (including extended mode and slow 15-minute WSPR)

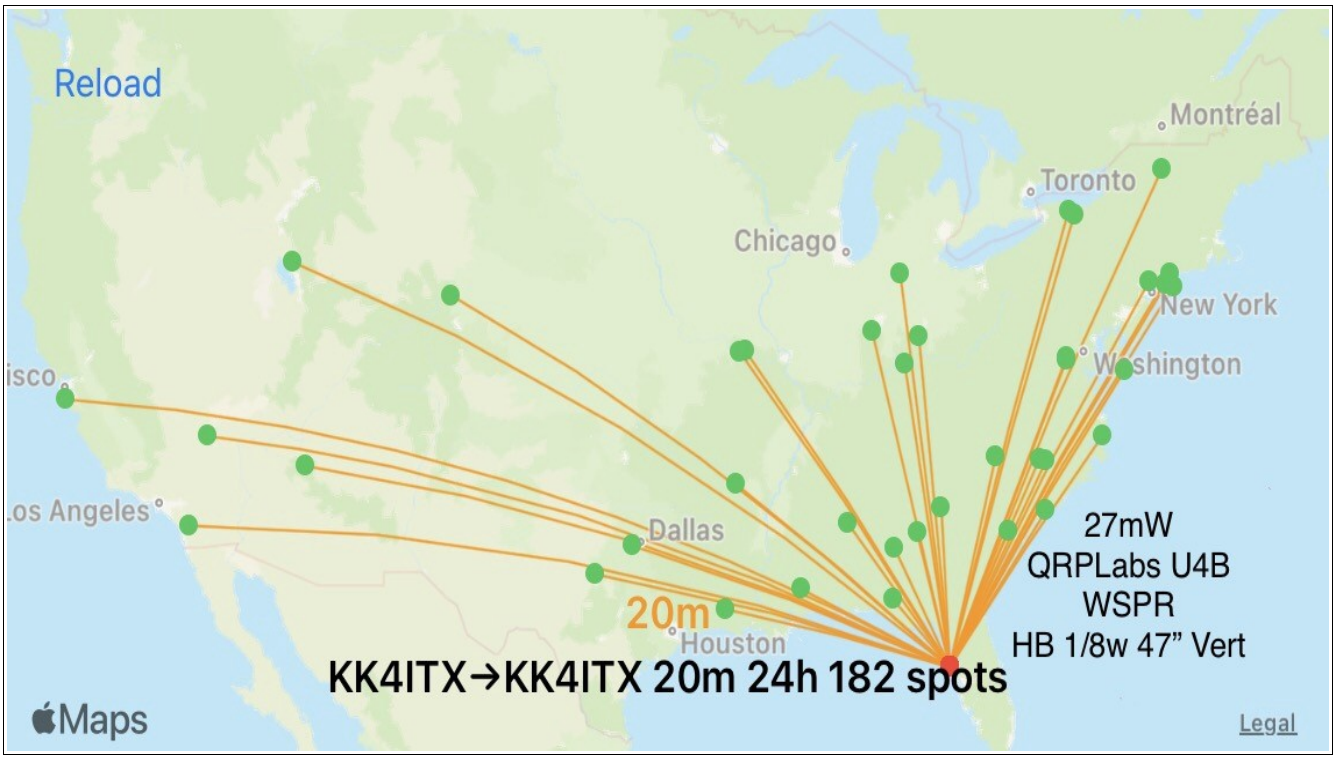
•JT9 (1, 2, 5, 10, 30 minutes)

•JT65 (modes A, B, C)

•Hellshreiber (standard, DX, and slow multi-tone FSK)

•CW (standard speed, QRSS, FSKCW and DFCW)

•Customized “Glyph” patterns can produce a unique identifier on QRSS



Typically I use this unit to check propagation and antenna performance from wherever I happen to be. The only setup required is to insert your Call and the frequency you want to use. WSPR has specific frequencies for each Band, they are listed in the 68 pages of the Operating and Hardware Manuals.

Of course for WSPR to work at all there needs to be a receiving and reporting station.

If you desire more information visit https://qrp-labs.com/ or contact me.

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QCX-mini CW Tranceiver

The Optional enclosure is black anodized extruded aluminium, very sturdy and elegant. The enclosure size is 95 x 63 x 25mm without protrusions. The top and side panels are drilled and cut to match the QCX-mini with laser-etched lettering. The enclosure includes four self-adhesive feet.

Special portable-friendly features:

- Small size: 95 x 63 x 25mm enclosure (plus protusions)
- Low current consumption (for example 58mA receive current, with 12V supply and display backlight off)
- Low weight, 202 grams
- Sturdy extruded aluminium enclousre
- All-metal BNC short connector, bolted to enclosure

List of features:

- Easy to build, two-board design, board with main circuit and connectors, display panel board with LCD; all-controls board-mounted on a press-out sub-board. No wiring, all controls and connectors are board-mounted
- Professional quality double-sided, through-hole plated, silk-screen printed PCBs
- Choice of single band, 160, 80, 60, 40, 30, 20 or 17m
- Approximately 3-5W CW output (depending on supply voltage)
- 7-14V recommended supply voltage
- Class E power amplifier, transistors run cool…
- 7-element Low Pass Filter ensures regulatory compliance
- CW envelope shaping to remove key clicks
- High performance receiver with at least 50dB of unwanted sideband cancellation
- 200Hz CW filter with no ringing
- Si5351A Synthesized VFO with rotary encoder tuning
- 16 x 2 yellow/green LCD screen
- Iambic keyer or straight key option included in the firmware
- Simple Digital Signal Processing assisted CW decoder, displayed real-time on-screen
- On-screen S-meter
- On-screen real time clock (not battery backed up)

•Full or semi QSK operation using fast solid-state transmit/receive switching

•Frequency presets, VFO A/B Split operation, RIT, configurable CW Offset

•Configurable sidetone frequency and volume

•Connectors: 2.1mm power barrel connector, 3.5mm keyer jack, 3.5mm stereo earphone jack, 3.5mm stereo jack for PTT, 3.5mm stereo jack for CAT control, BNC RF output

•Built-in test signal generator and alignment tools to complete simple set-up adjustments

•Built-in test equipment: voltmeter, RF power meter, frequency counter, signal generator

•Beacon mode, supporting automatic CW, FSKCW or WSPR operation

•GPS interface for reference frequency calibration and time-keeping (for WSPR beacon)

•CAT control interface

•Optional 50W PA kit

•Optional aluminum extruded cut/drilled/laser-etched black anodized enclosure

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I own 3 of these for various bands and have used them for a couple of years in the field with amazing results. Of course they are only CW capable but extremely easy to use.

Lots of Internet ways to learn CW or brush up if you haven't used the mode in a while. The 30-40K OPs doing QRP CW are a patient group willing to slow down to your speed and ability.

For more info on the QCX mini visit: https://qrp-labs.com/.

Check out ZAARC CW page and QRP page for ways to learn and practice CW.

Contact me.

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QMX+ 160-6m multi-mode transceiver

QMX+ is available in kit or assembled versions.

List of features:

•Full 160m to 6m band coverage

•CW and FSK Digi modes (SSB now)

•All features of QCX+ (VFO A/B/Split, RIT, Message and frequency memories, beacon, keyer, etc)

•3-5W output at 12V supply (can be built for 3-5W at 9V supply)

•SWR bridge built in

•Internal RTC powered by the common CR2032 coin cell battery (battery not included)

•Single signal digi mode transmission (zero unwanted sideband, zero residual carrier, zero inter-modulation distortion)

•Solid-state band switching and transmit/receive switching under CAT control

•High performance embedded SDR SSB receiver with 60-70dB of unwanted side band cancellation

•Built-in 24-bit 48ksps USB sound card

•Built-in USB Virtual COM Serial port for CAT control

•Si5351A Synthesized VFO with 25MHz TCXO as standard

•Easy to build single-board design, Professional quality 6-layer, through-hole plated, silk-screen printed PCBs

•All SMD components factory assembled

•Connectors: 2.1mm power barrel connector, USB-C (for audio and CAT control), BNC RF input/output, 3.5mm jacks for audio out, paddle/GPS/mic/PTT in, and PTT out

•Built-in test signal generator and testing tools

•GPS interface for frequency calibration, real time clock and location (internal WSPR beacon)

•IQ output mode for use with SDR software

•Switched mode regulators Receive current 80mA, Transmit current 1.0-1.1A for 5W output with 9V supply (around 0.7A for 5W with 12V supply).

•Internal microphone ready for the future SSB firmware update to use it

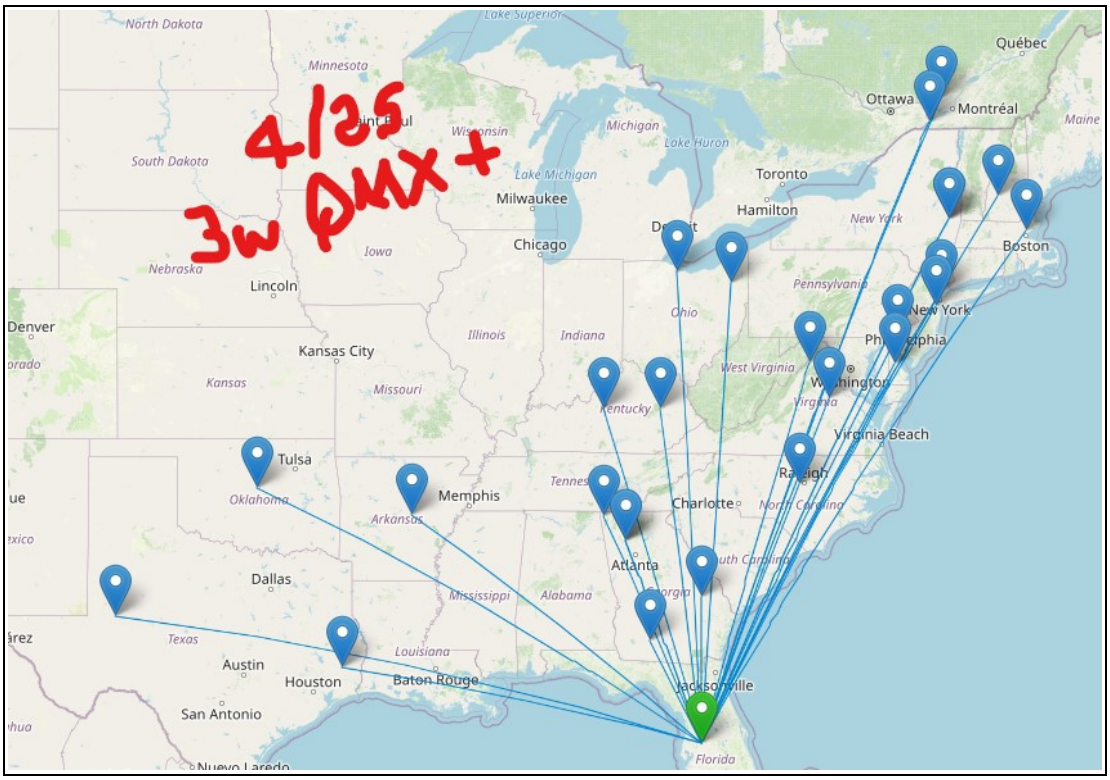
•11 GPIO ports including a 3.5mm stereo jack socket on the rear panel labeled "AUX" that may be configured as a serial port

•Optional aluminum extruded cut/drilled/laser-etched black anodized enclosure

Noteworthy items not mentioned above.

- A built in numerical SWR indicator. You can tune and watch the results as adjustments are made.
- A settable High and Low power protection, protects against incorrect applied power.
- Absolutely simple Plug and Play WSJT-X using USB “C”.
- PuTTY is used through the USB interface to run diagnostics and program some of the features.
- In CW mode there are 54 Filter possibilities selected from the menu.
- Beacon Modes (CW/FSKCW/WSPR).
- CW Practice Mode, read out on screen.
- Filter Sweeps using the PuTTY program can be performed for Audio, RF, SWR and LPF.

There's more goodies found in the 111 page Operating Manual.



For more info: https://qrp-labs.com/

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