YAESU HF RADIO CAT CONTROL DEMO

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YCAT – Yaesu Computer Assisted Transceiver

Why YCAT?

- Started as a way of learning my FT-891 with limited menus
- Control and Monitor radio over enhanced USB serial interface
- Used to control most common features of the radio
- Provide User defined functionality
- Access to all meters at once
- Program VFO memories
- Simple logbook, exports ADIF format (Even POTA)
- User selectable mapping views (requires vendor Keys for most maps)

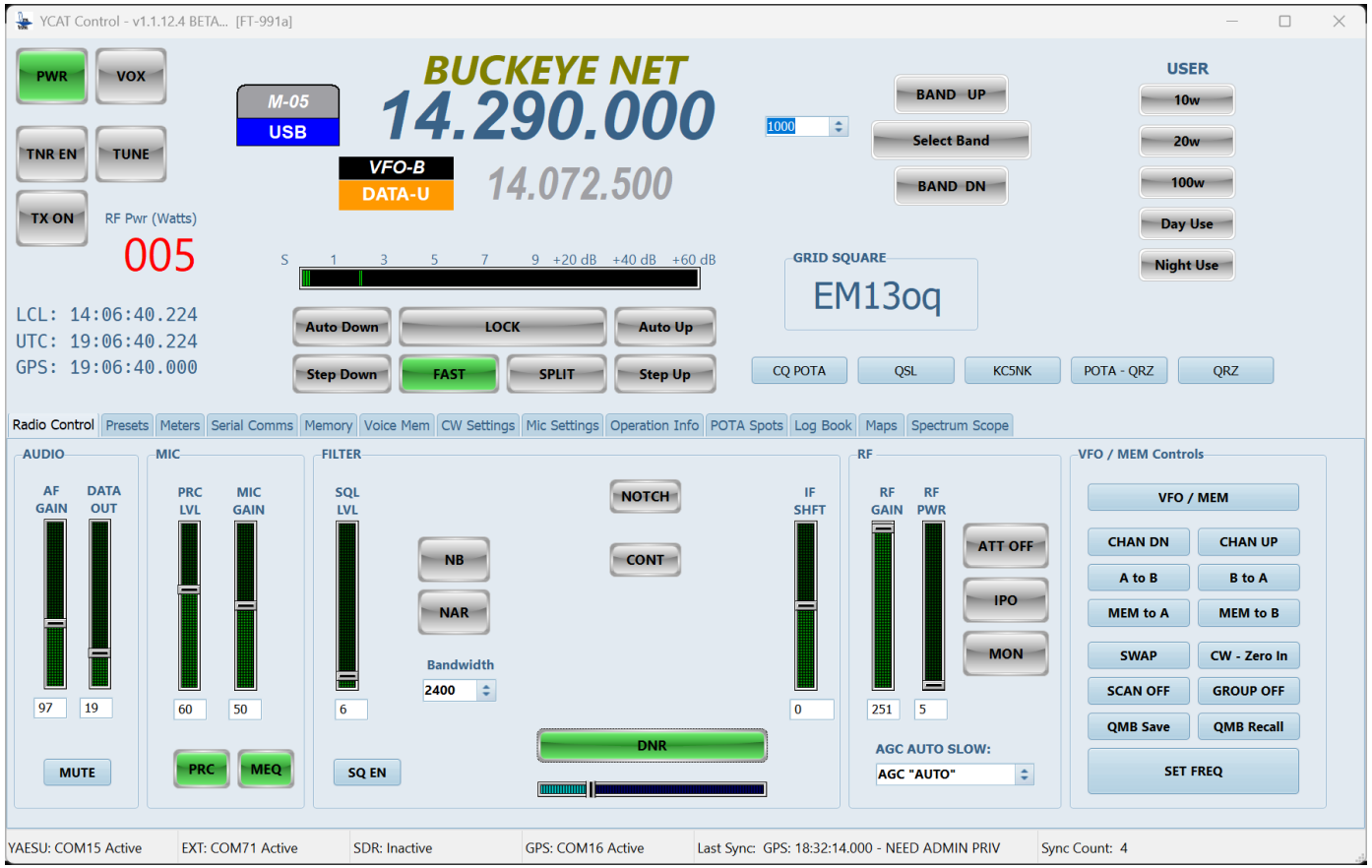
YCAT - Origins

- Bought FT-891 at beginning of Covid for “keeping in touch” with the world
- Noticed it had serial interface (CAT) which is what I do along with GPS
- Dabbled turning rig on and off, then added more features to learn about the FT-891.
- Eventually, it started taking form as a Rig Control application
- Started adding new radios (FT-991a, FT-dx10, FT-710, FT-dx3000, etc.)
- Reluctantly added a QSO logger and added POTA features for drag-n-drop into POTA.app
- Mapping allows me to find my own grid square without GPS and find bearing to DX stations if I needed to point a beam towards them.

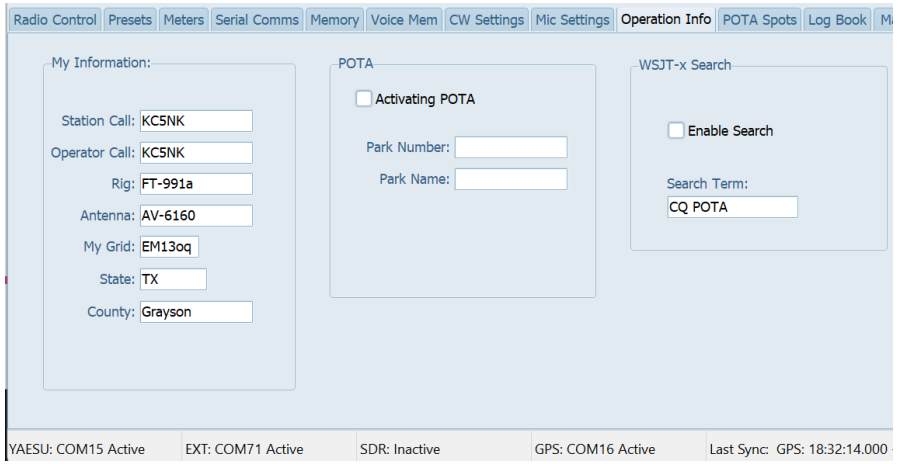
What is YCAT?

- Rig Control
- Customizable buttons
- All Meters display (relocatable)
- RIG / GPS / SDR and WSJT-x interfaces
- GPS computes 6-digit grid and PC time
- SDR interface works with RSP-dx, etc.
- VFO Memory read/write and file read/save
- HamDB and QRZ call sign lookup
- Voice Memory record/verify/send
- CW control, memory record/send
- Microphone equalizer settings
- Logger (regular / POTA)
- POTA spot viewing (filtering)
- Mapping with helpful features
- Spectrum Scope management for supported rigs
- Windows 32-bit application

YCAT – Main Operating Screen



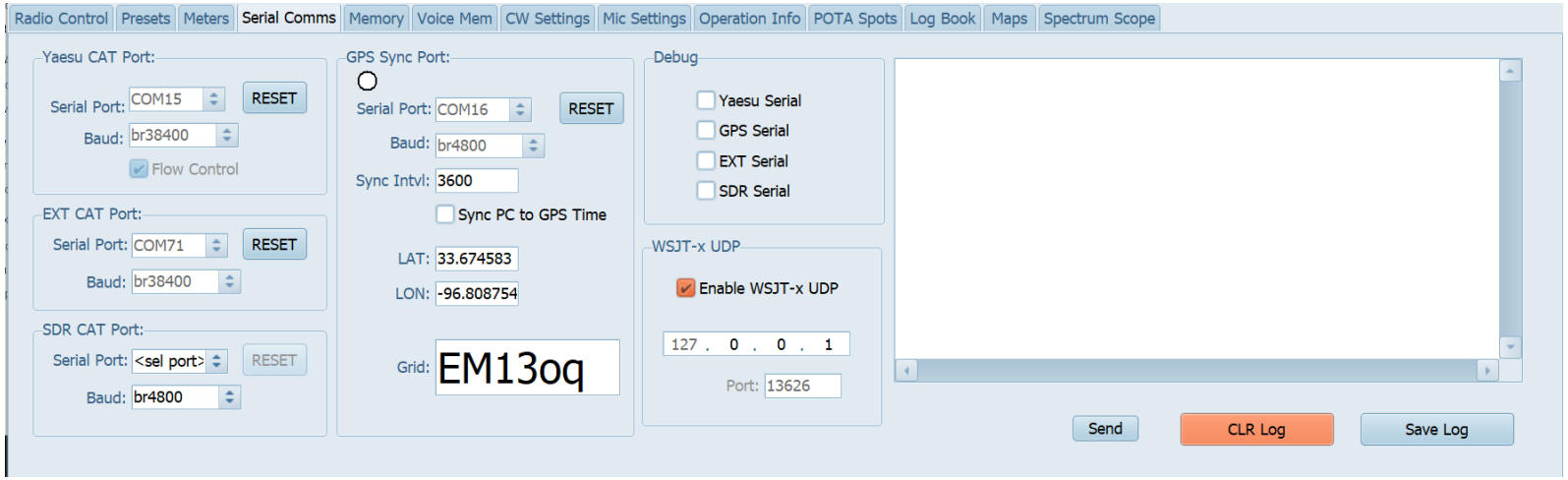
YCAT – Operation Info (Default tab)

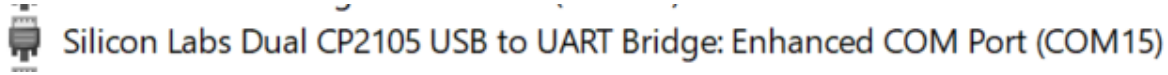


- My Information
  - Enter station call sign
  - Rig field should auto configure after radio starts communicating
  - Antenna field is optional
  - My Grid: this field will auto populate with a GPS dongle. Manually enter if no GPS configured.
- POTA
  - Check if activating POTA, enter park number and park name
- WSJT-x Search
  - Check “Enable Search” for audible beep for decoding “Search Term”

YCAT – Serial Comms

- Yaesu CAT Serial
  - Use Enhanced port
- EXT CAT (WSJT-X)
  - Requires virtual serial cable
  - In this case (COM70 / COM71)
- SDR CAT – emulates Kenwood TS480
  - Requires virtual serial cable
  - 2-way communication with SDR Play / SDR Uno
- GPS Serial
  - Sync PC Time with GPS Time (requires YCAT to run as Admin)
  - Shows current Latitude / Longitude and 6-digit Grid Square
- WSJT-X UDP
  - Allows receiving WSJT-X log information for YCAT logger
  - Must match IP and Port number.
  - Supports Multi-Cast



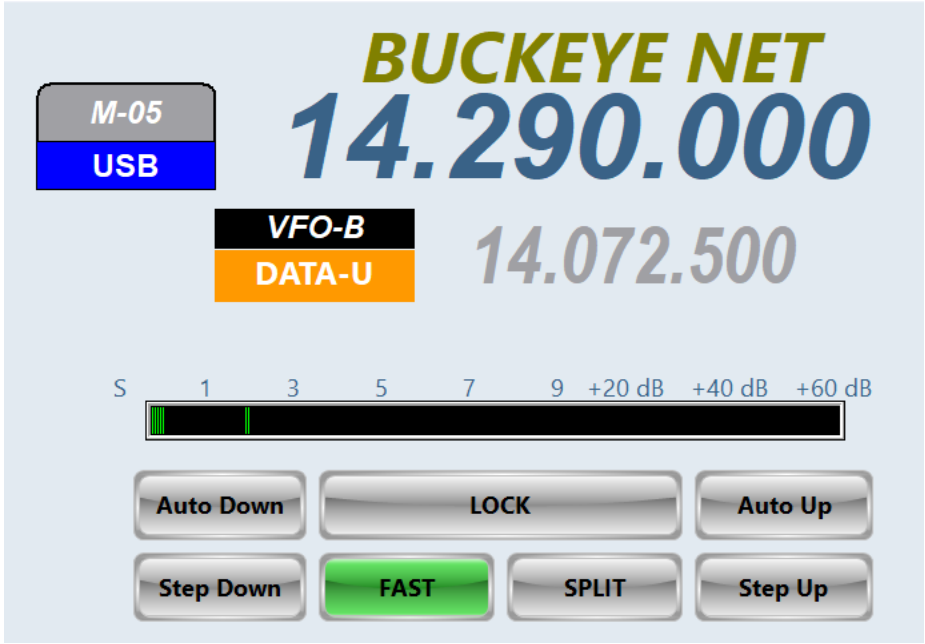


YCAT – Main Screen

- Many indicators are also controls
  - Power – turns radio ON/OFF
  - TNR EN – turns tuner ON/OFF
  - TUNE – initiates a tune cycle
  - TX ON – “keys” and “unkeys” transmitter
- RF Pwr (watts) – TX power setting
- Time settings
  - LCL – shows local time from PC
  - UTC – shows UTC time from PC
  - GPS – shows GPS time (UTC)
    - Requires optional GPS receiver

YCAT – Main Screen

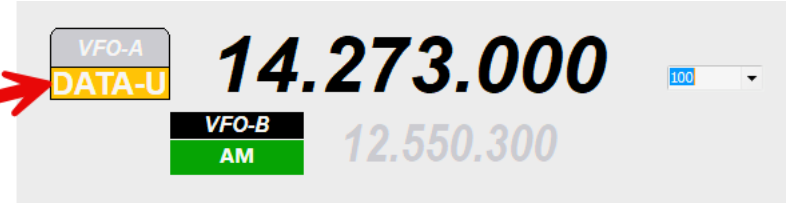
- VFO A Frequency
  - Memory Tag – user defined
  - Mem Channel indicator
- VFO B Frequency
- VFO Controls
  - Auto Down – hold to decrease VFO A
  - Auto Up – hold to increase VFO A
  - LOCK – Locks the VFO
  - Step Down – press to decrement VFO
  - Step Up – press to increment VFO
  - FINE (FAST) – controls VFO steps
  - SPLIT – turns VFO A/B split mode on/off
- S-meter – shows radio S readings (with peak indicator)



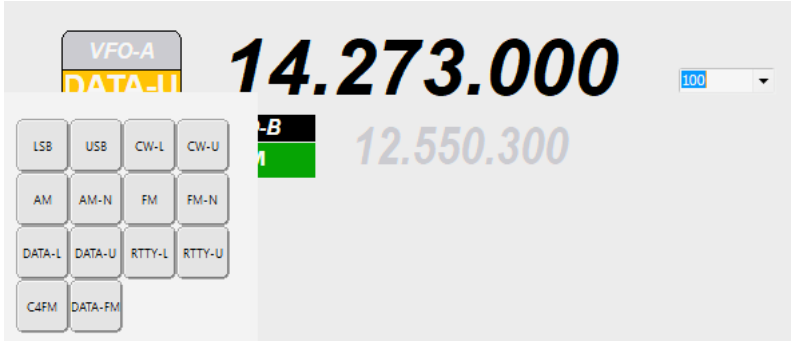
YCAT – Main Screen Modes (Legacy)

- Mode select
  - SSB
  - CW
  - RTTY
  - DATA
  - AM
  - AM Narrow
  - FM
  - FM Narrow
  - C4FM (FT-991 only)

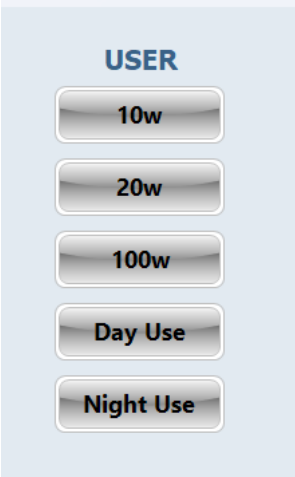
YCAT – Mode Selection (new)



- Click mode section under VFO-A to bring up menu
- Select Mode and menu closes automatically
- Similar to FT-710 screen operation
  - Works the same for all rigs



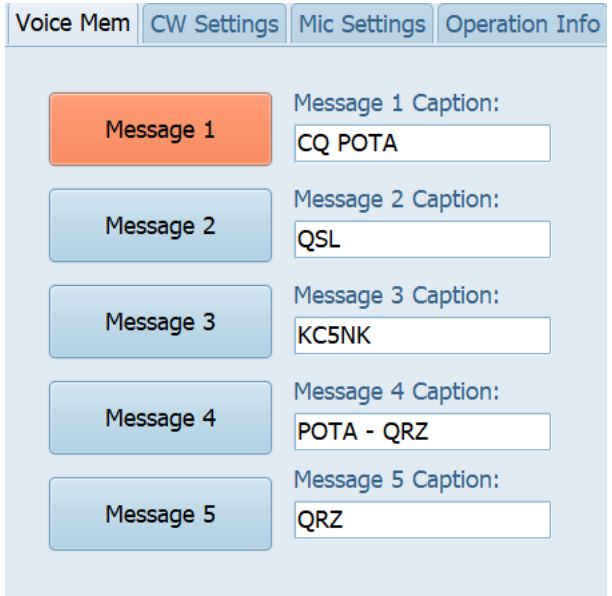
YCAT – User Defined Buttons (CAT COMMANDS)



- Five (5) buttons are available for the user to add their own features.
- Choose whether buttons are visible, what text to display, and the underlying CAT commands
- CAT Commands can be concatenated
- Reference the Yaesu CAT Manual for your rig.
- Configure in PRESETS tab

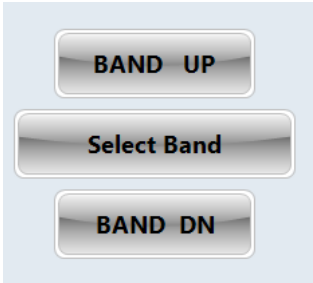
YCAT – Voice Memory

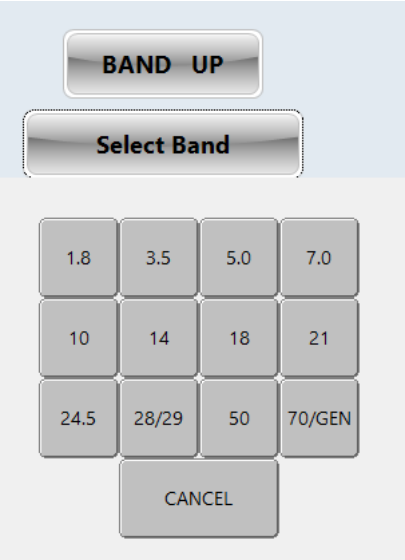
- Buttons have customizable text
- Configured in Voice Mem tab
- Defaults to SEND
- Can Record, Verify, and Send when pressed (Voice Mem Tab)



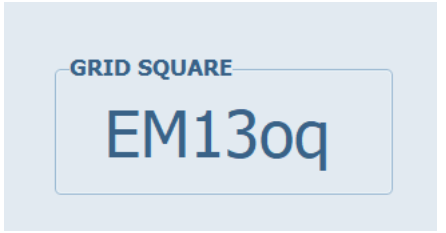
YCAT – Band Selection

- Simple Band Up and Band Down buttons
- Select Band button allows choosing the band to go to:
- Menu stays up until you choose band or cancel



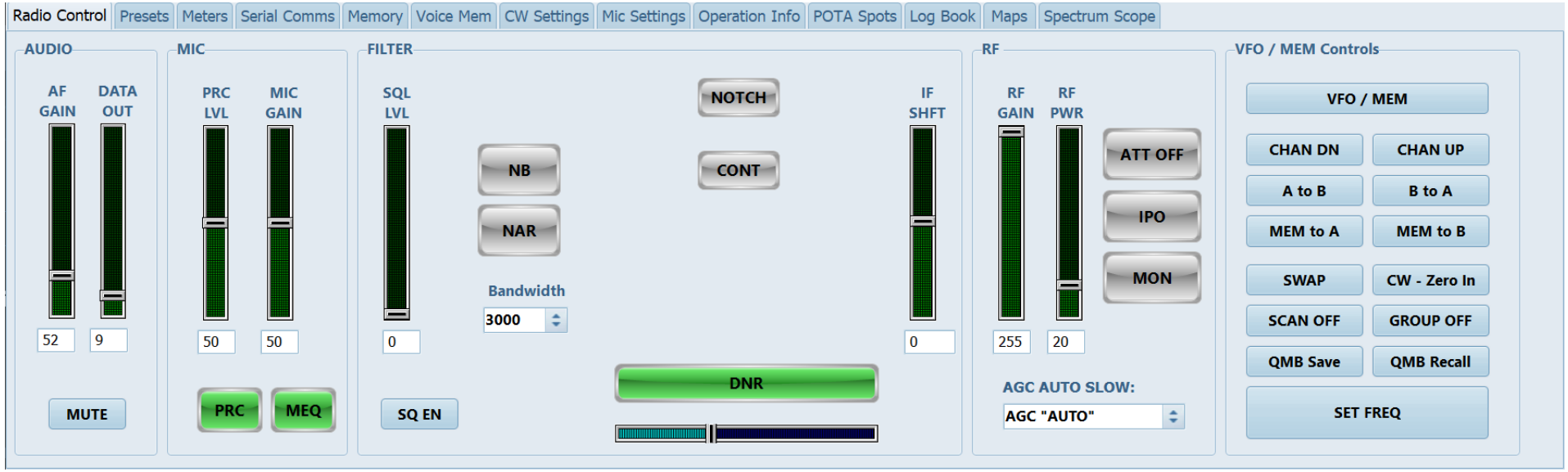


YCAT – Main : Grid Square



- When GPS is connected it automatically computes a 6-digit grid square
- Auto populates Operation Info – Grid Square field
- Syncs radio clock automatically
- Syncs PC clock (YCAT must be run as Admin for write to system clock permission)

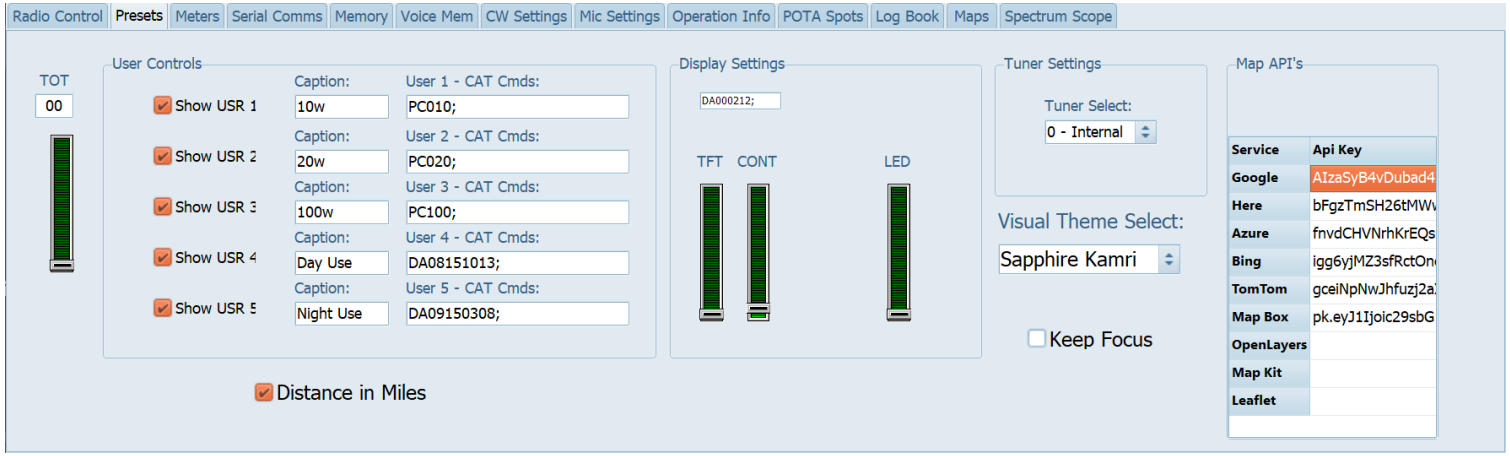
YCAT – Radio Control Tab



- Organized Audio to RF from left to right
- VFO / Memory operation on the furthest right-hand side

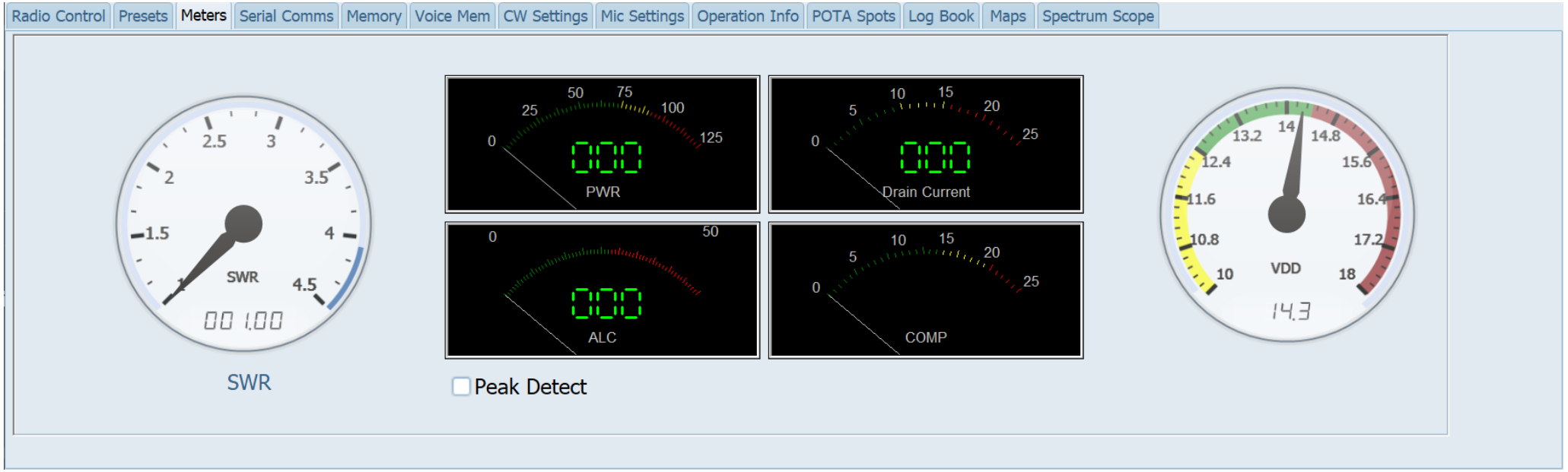
YCAT – Presets Tab

- TOT – TX Timeout Timer
- User Controls
- Display Settings
- Tuner Settings
- Visual Theme
- Mapping API Key storage.



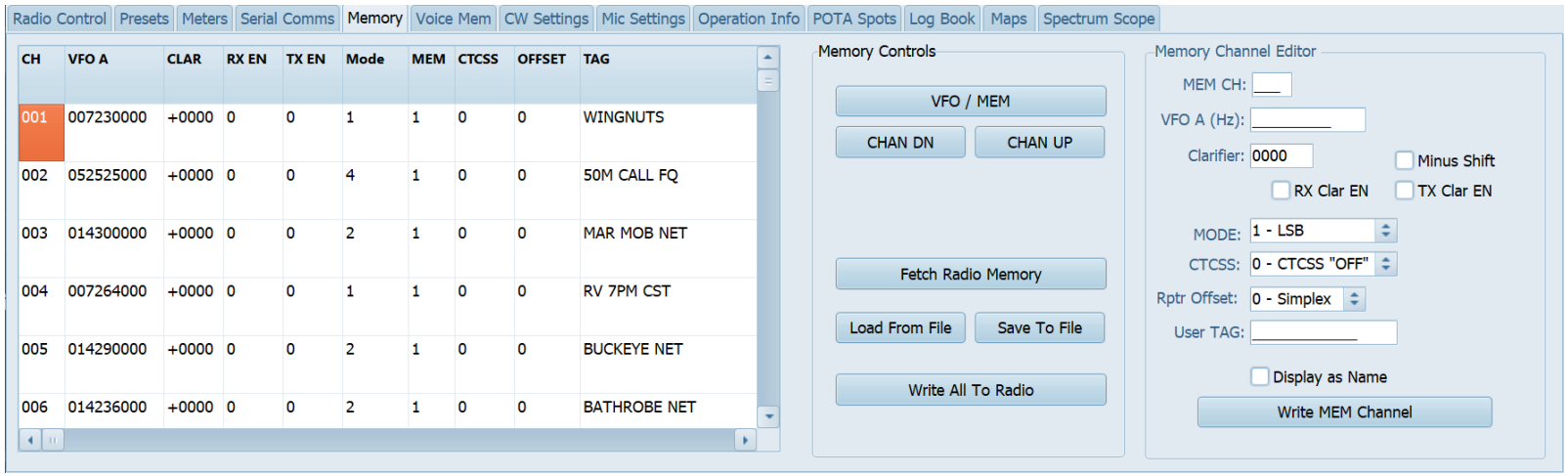
YCAT – Meters Tab

- Display all meters at once
- Voltage is real-time, all others are active during transmission.



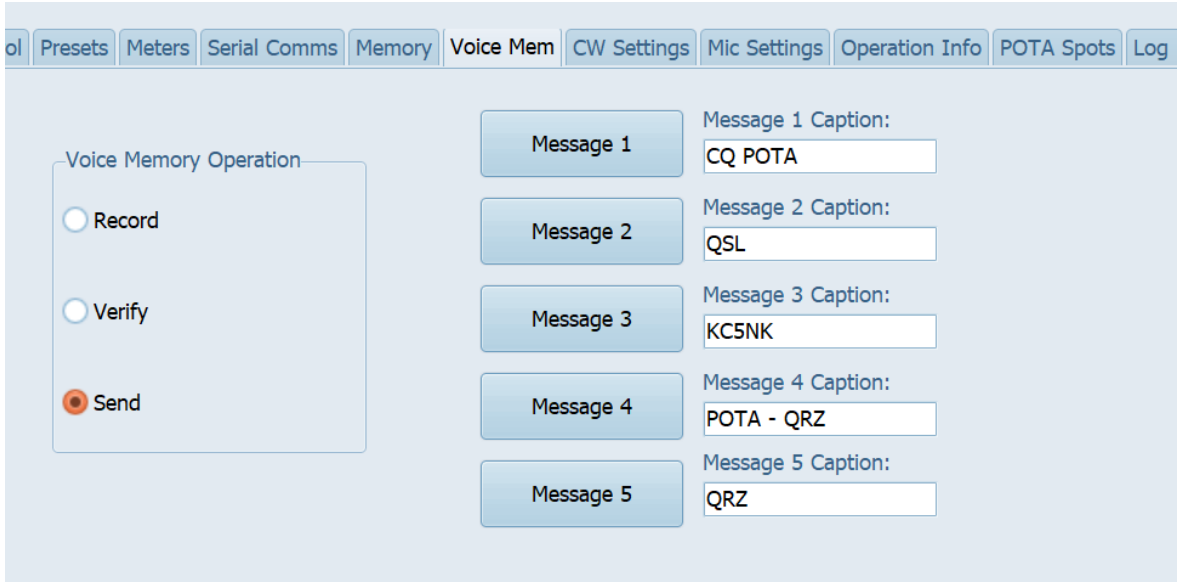
YCAT – Memory Tab

- Programming for VFO Memory with “TAGS”
- Read/Write with your Rig
- Read/Write with a file



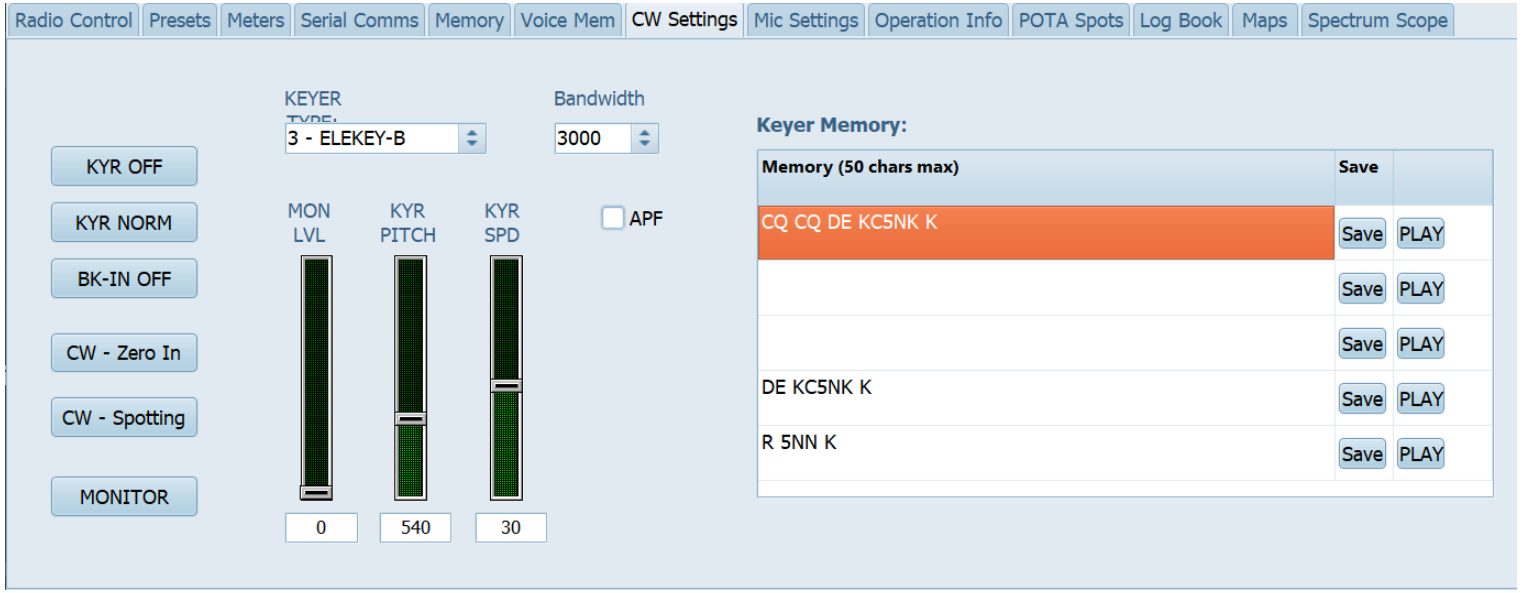
YCAT – Voice Memory Tab

- Allows user to create voice memory, customize buttons and control record, verify and send behavior for the five (5) voice memories in the Yaesu radio.



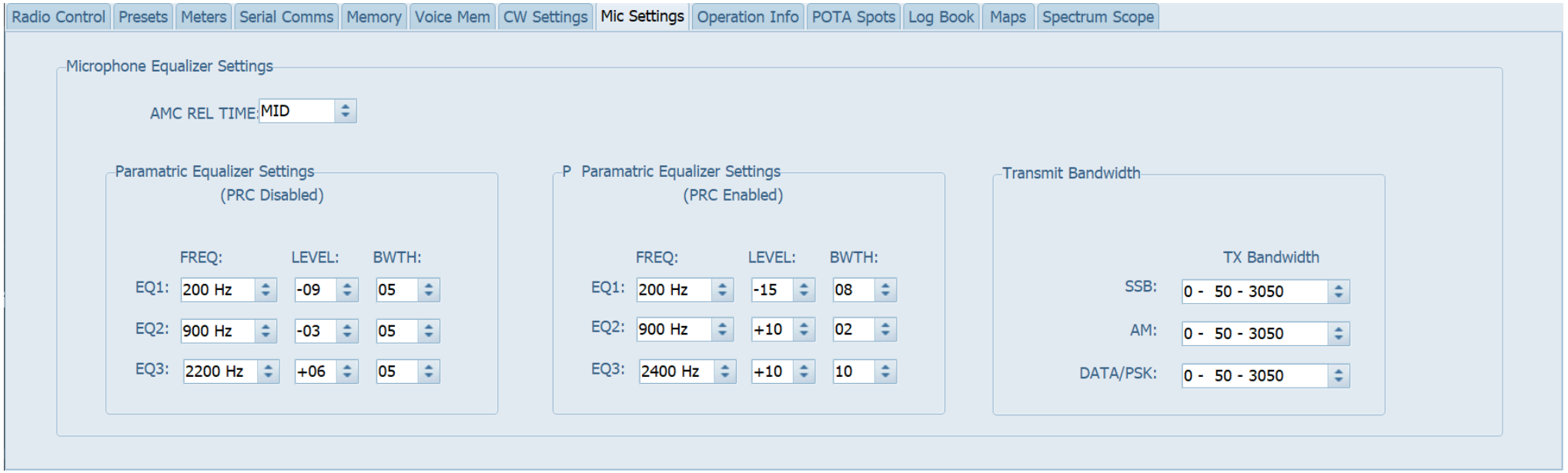
YCAT – CW Settings Tab

- Used for configure Yaesu radio CW Memory parameters
- Customize CW memory slots, adjust MON level, Keyer Pitch and Keyer Speed.



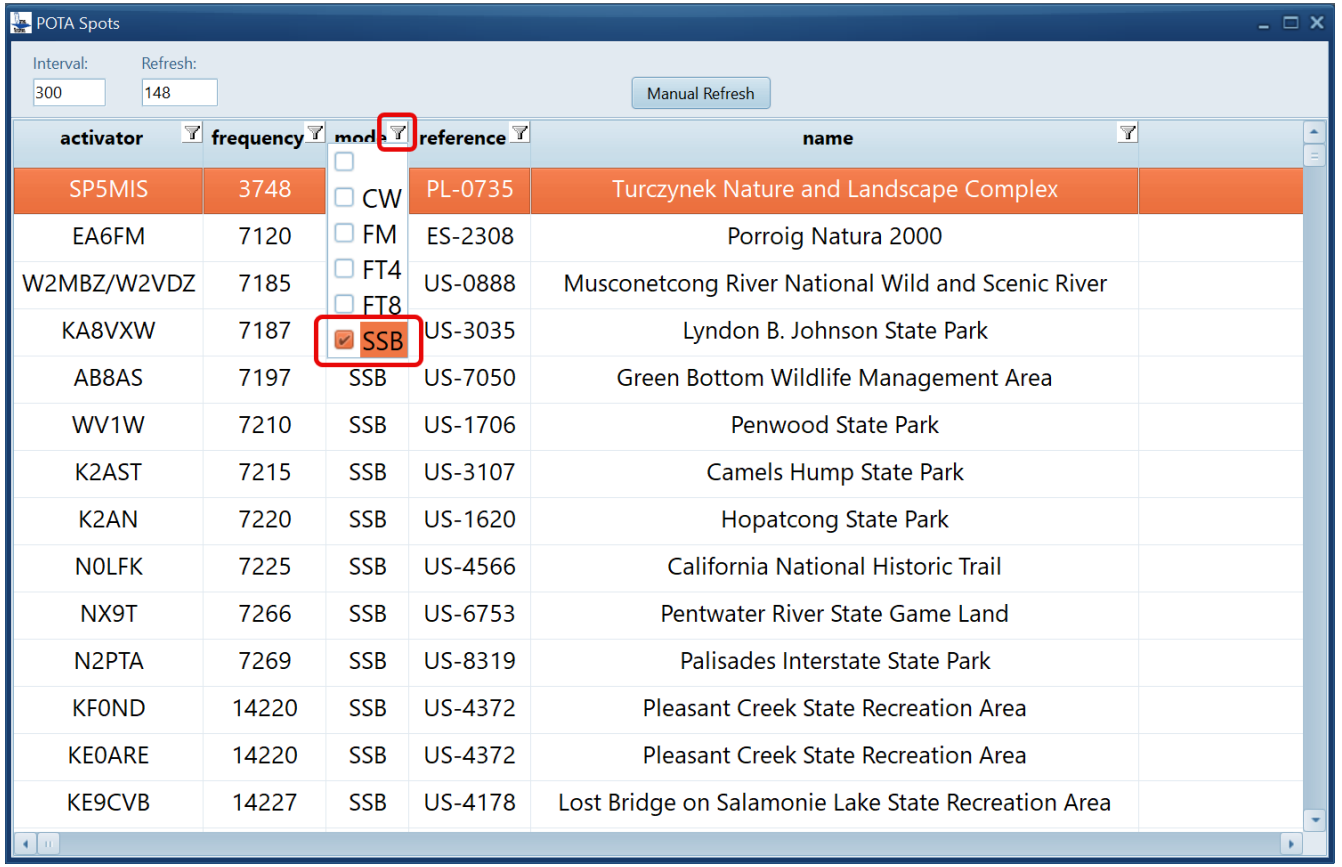
YCAT – Mic Settings Tab

- Set Mic Equalizer settings for PRC disabled / PRC enabled modes
- Set Transmit bandwidth settings for SSB, AM, and Data



YCAT – POTA Spots Tab

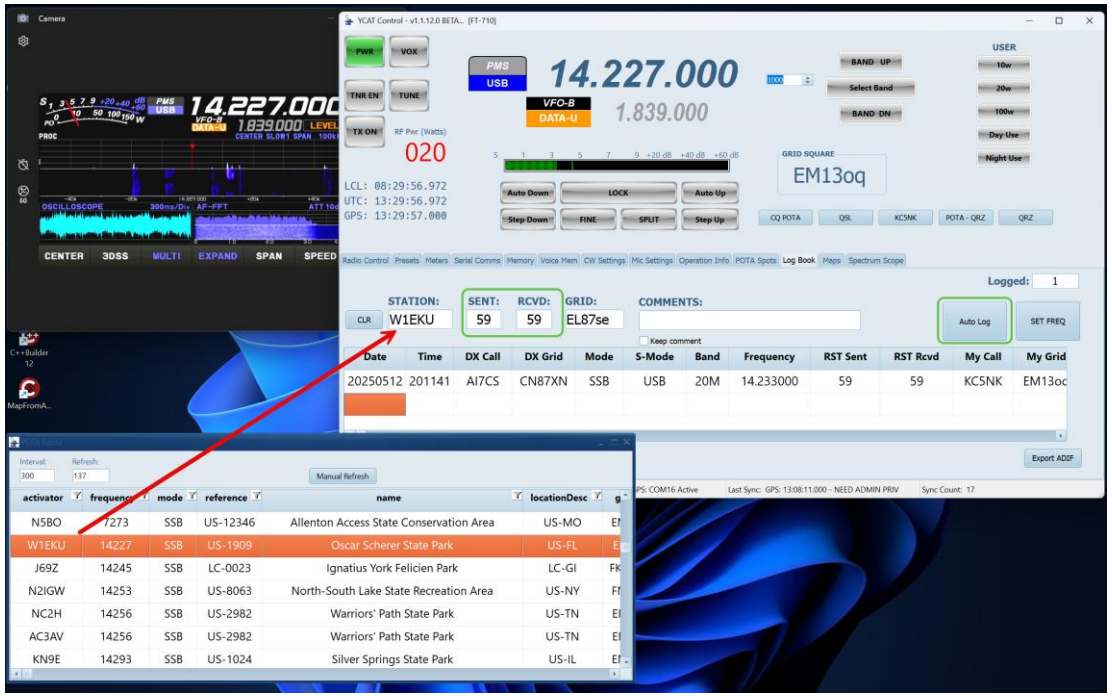
- Requires internet connection
- Press “Show POTA Spots” button
- POTA spots spreadsheet pops up
- Filter by Mode is most helpful
- Scroll or select a row tunes VFO
  - Auto populates in Log Book tab



activator	frequency	mode	reference	name
SP5MIS	3748		PL-0735	Turczynek Nature and Landscape Complex
EA6FM	7120		ES-2308	Porroig Natura 2000
W2MBZ/W2VDZ	7185		US-0888	Musconetcong River National Wild and Scenic River
KA8VXW	7187		US-3035	Lyndon B. Johnson State Park
AB8AS	7197	SSB	US-7050	Green Bottom Wildlife Management Area
WV1W	7210	SSB	US-1706	Penwood State Park
K2AST	7215	SSB	US-3107	Camels Hump State Park
K2AN	7220	SSB	US-1620	Hopatcong State Park
N0LFK	7225	SSB	US-4566	California National Historic Trail
NX9T	7266	SSB	US-6753	Pentwater River State Game Land
N2PTA	7269	SSB	US-8319	Palisades Interstate State Park
KF0ND	14220	SSB	US-4372	Pleasant Creek State Recreation Area
KE0ARE	14220	SSB	US-4372	Pleasant Creek State Recreation Area
KE9CVB	14227	SSB	US-4178	Lost Bridge on Salamonie Lake State Recreation Area

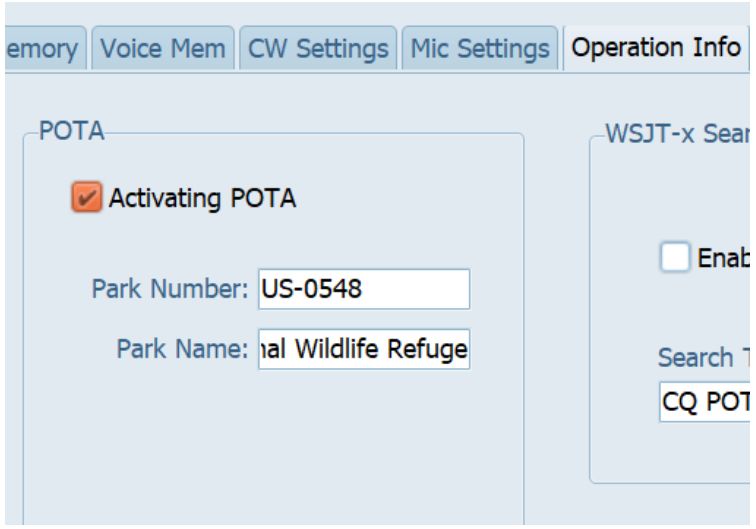
YCAT – Logging from POTA Spots

- Clicking on a row in POTA Spots grid will auto populate Log Book



YCAT – POTA Logbook Setup

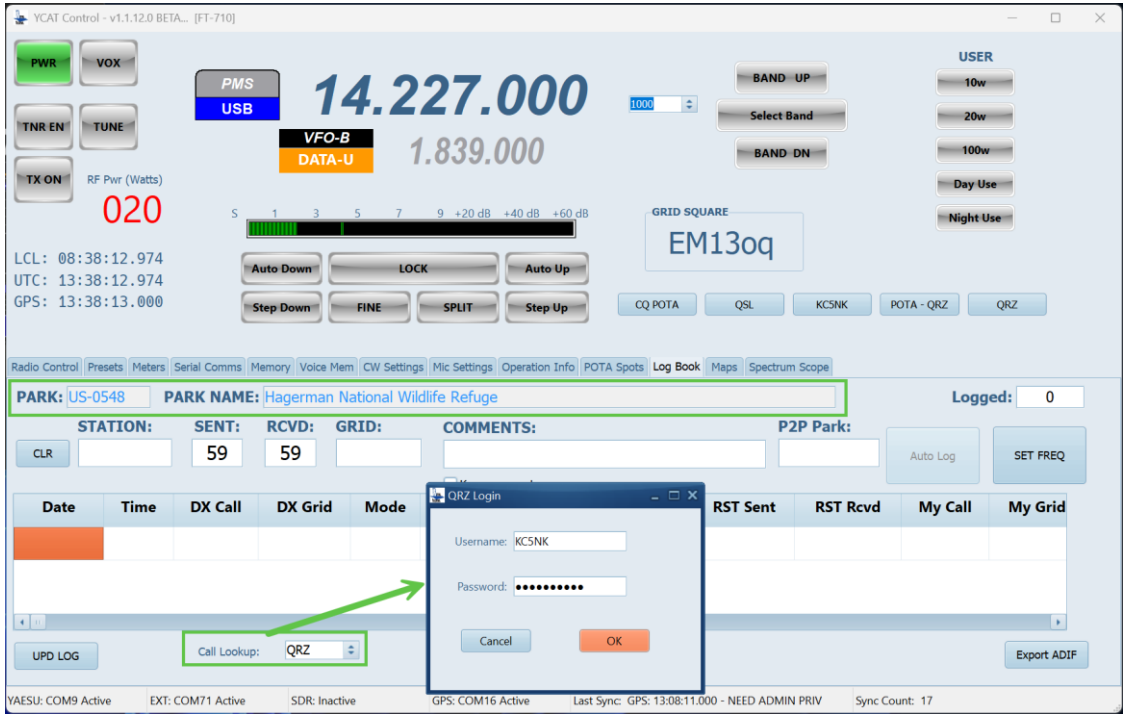
- Manually enter your park information in POTA section of OPERATION INFO tab



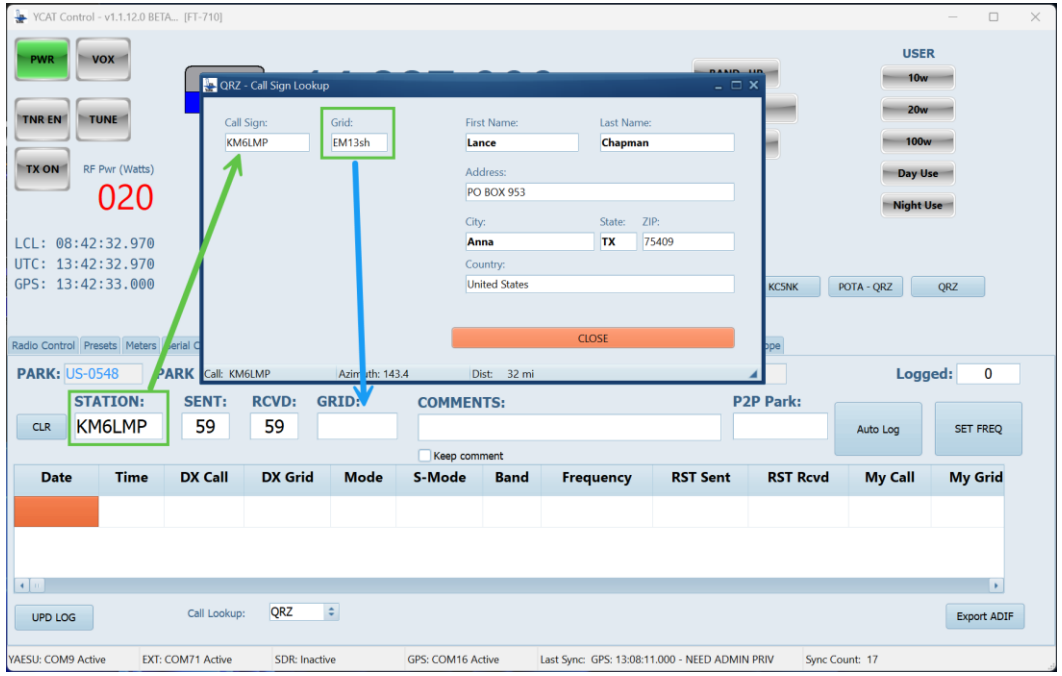
YCAT – POTA Logbook Setup, continued

- Switch to Log Book tab
- Call sign lookup choices are: None, HamDB, and QRZ
- Notice addition of visual cues for park information
- Enter call sign, if Call Lookup is enabled, a popup will show DX call information

YCAT – POTA Logging w/callsign lookup

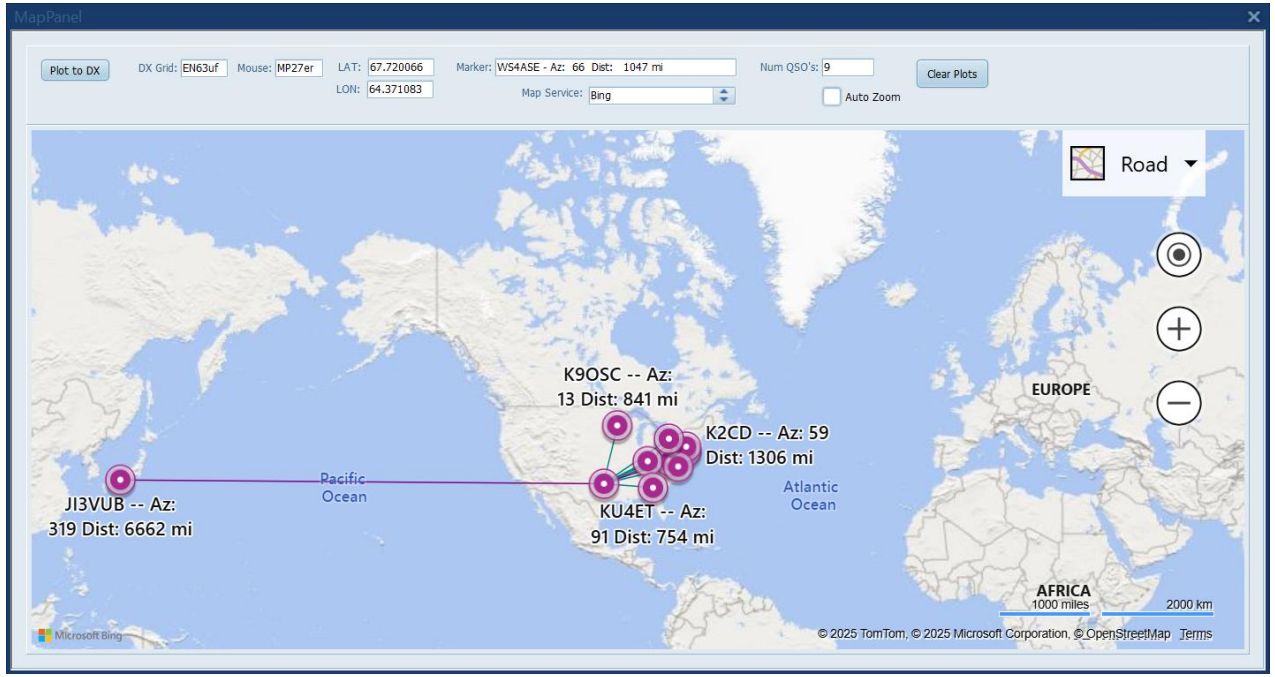


YCAT – POTA Logging



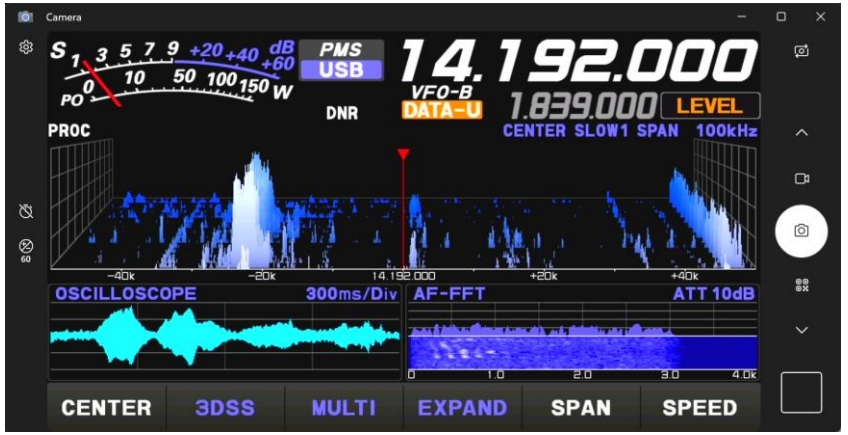
YCAT – Contact Mapping

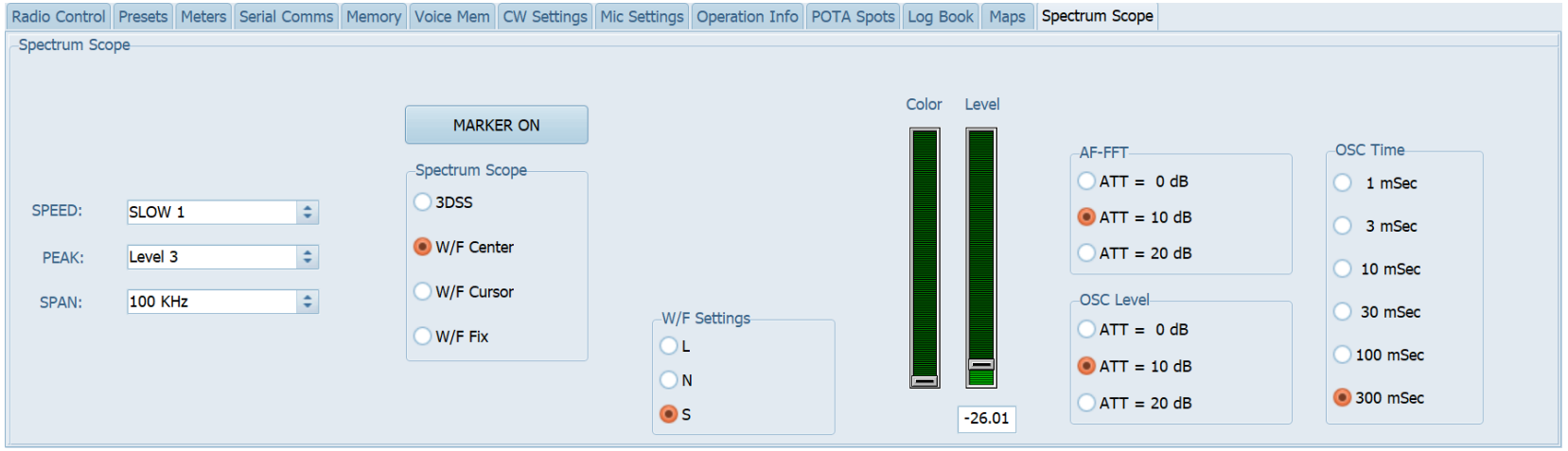
- View contacts on Maps tab
- Maps tab can be undocked
- Relocatable / resizable
- Free mapping – OpenLayers
- Can choose other with API Key from mapping vendor



YCAT – Spectrum Scope

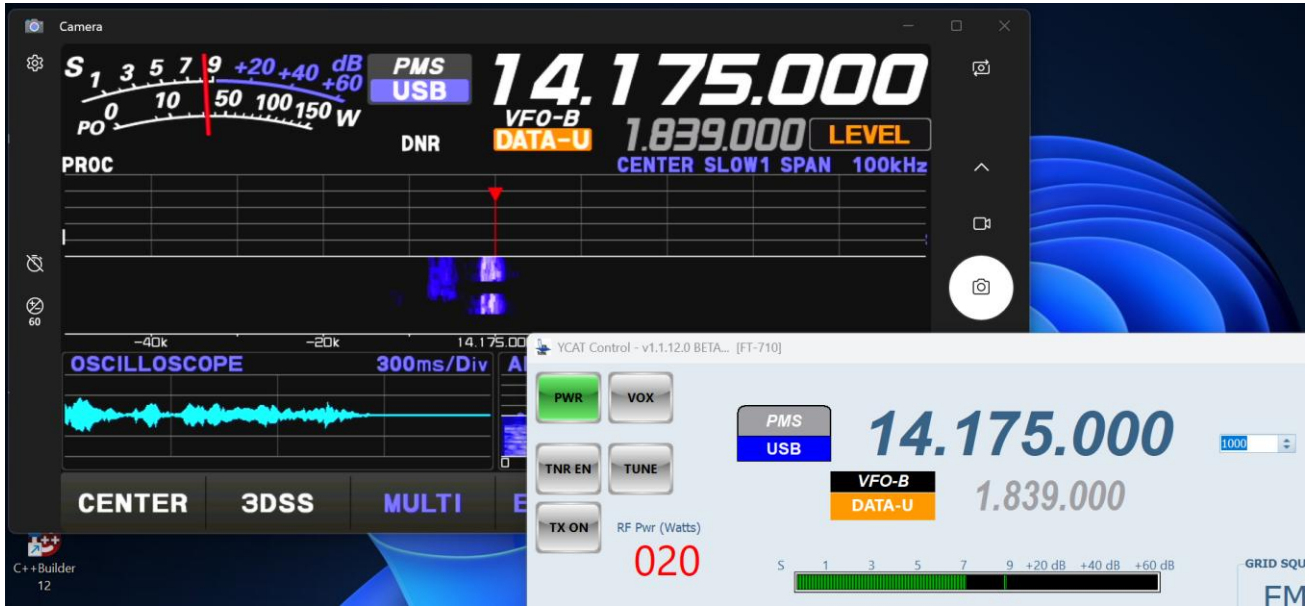
- Limited to FT-710 and FT-dx10 radios
- Allows controlling rig display from YCAT
- Helpful if using DVI-D to USB Video Capture device





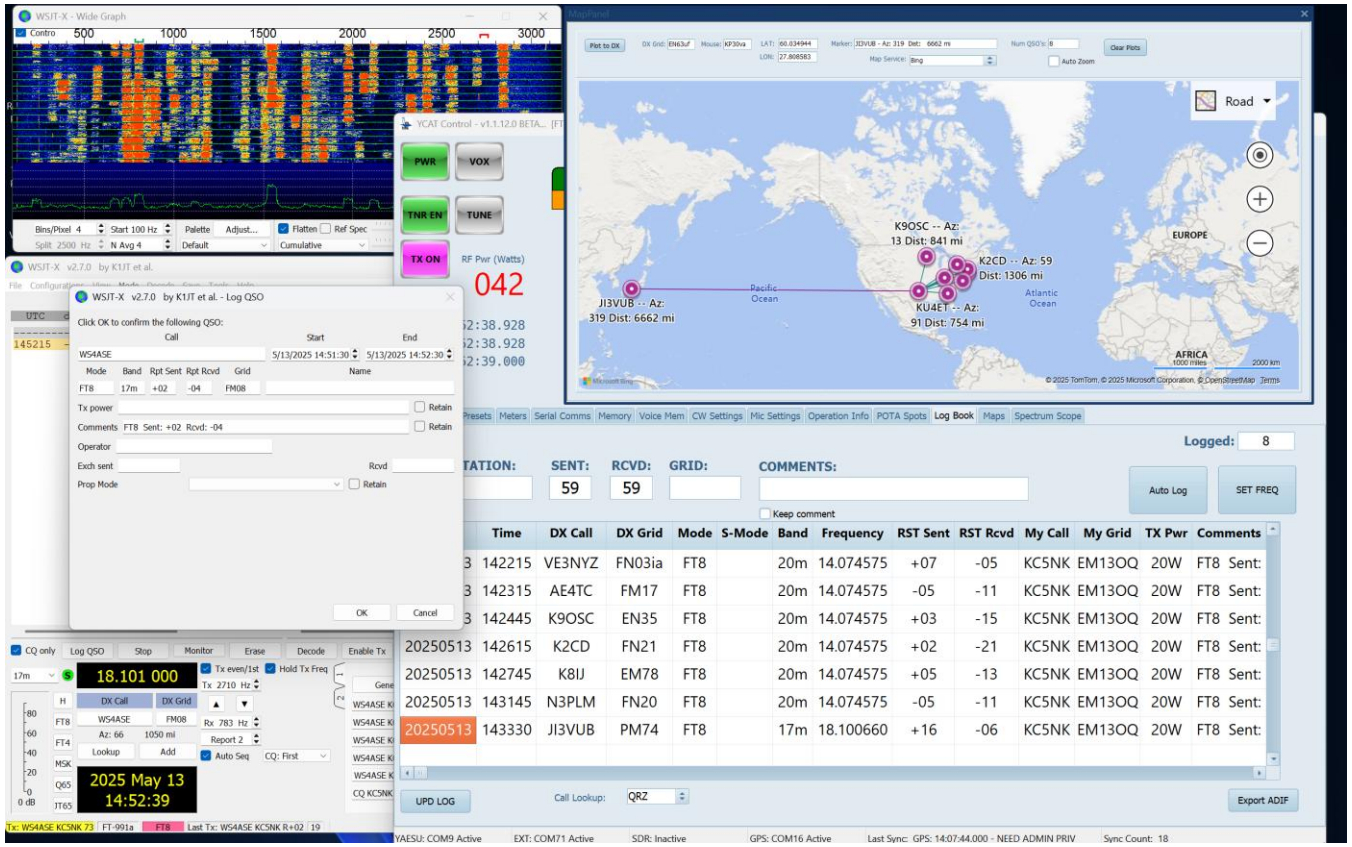
YCAT – Example of PMS

- Example of Extra class operator transmitting on band edge for Advanced class
- When setting rig for Preferred Memory it keeps you within the limits you set.
- I tried tuning to QSO but my lower limit is 14.175 MHz



YCAT – FT8 Operation

- Laptop display with WSJT-x, YCAT mapping / Logbook
- Requires a virtual serial cable between WSJT-x and YCAT's EXT Serial interface.



YCAT – Questions / answer

OPEN FOR Q/A