Elecraft K4 User's Group

Hamvention 2025

FORUM ROOM 1

10:15 am – 12:05 pm

Audience Poll – Show of Hands

- Owned a K4 for less than 6 months
- Owned a K4 for more than 6 months
- Don’t own a K4, but seriously considering purchase
- Plan to operate a K4 Remotely
- Plan to order K4/0 Remote Control Head
- Plan to order V-POD Enhanced Tuning Knob for VK4
- Plan to order K4HD Superhet Front End
- Plan to order new KPA500 or KPA1500

Elecraft Co-Founder WA6HHQ

- When will K4/0 ship?
- When will V-POD and VK4 Software Ship?
- When will K4HD ship?
- Spectral Subtraction Noise Reduction?
- Adaptive Predistortion?
- Questions from Audience

Elecraft K4 Tips and Tricks

by N6TV

n6tv@arrl.net

May 16th, 2025

Please Review the Guides

From Elecraft K4 Manuals Page:

- Introduction to the Elecraft K4
- RTTY Setup Guide (Elecraft "Application Note")
- Built-in Manual and Programmer's Reference
- Remote K4 ON/OFF Control Methods
- Release Notes

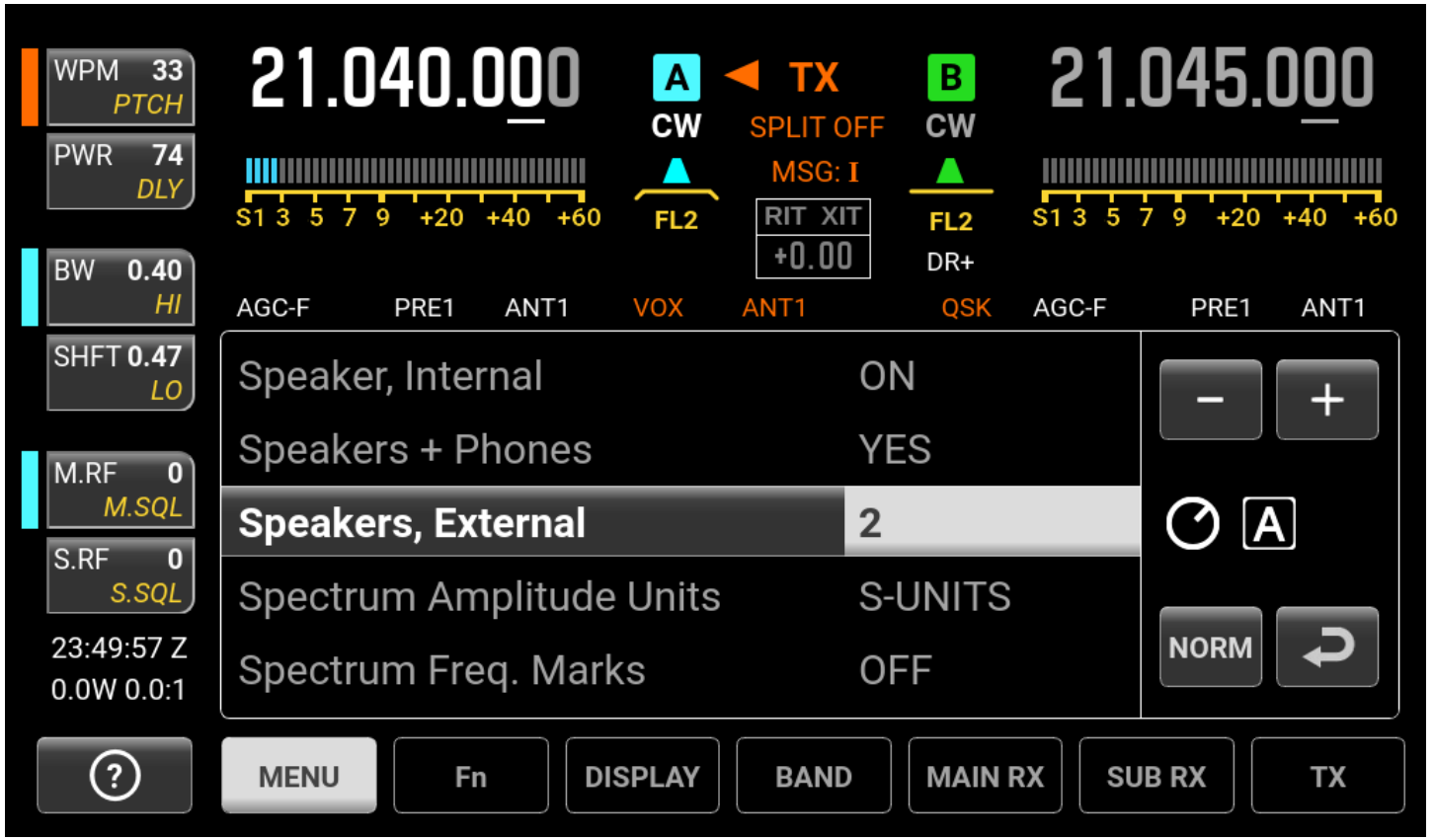
From Elecraft K4 Groups.IO: https://groups.io/g/Elecraft-k4/files

- New Owner's Setup Checklist by N6TV (*before* connecting USB cable)
- MacOS Setup Tips by AI6W
- FT8 Setup Guide by WT8P
- Interactive Zoom and K4 Problem solving, every Sunday: 20:00 UTC

Tip #1 – Use the **NORM** switch to reset the passband for current mode

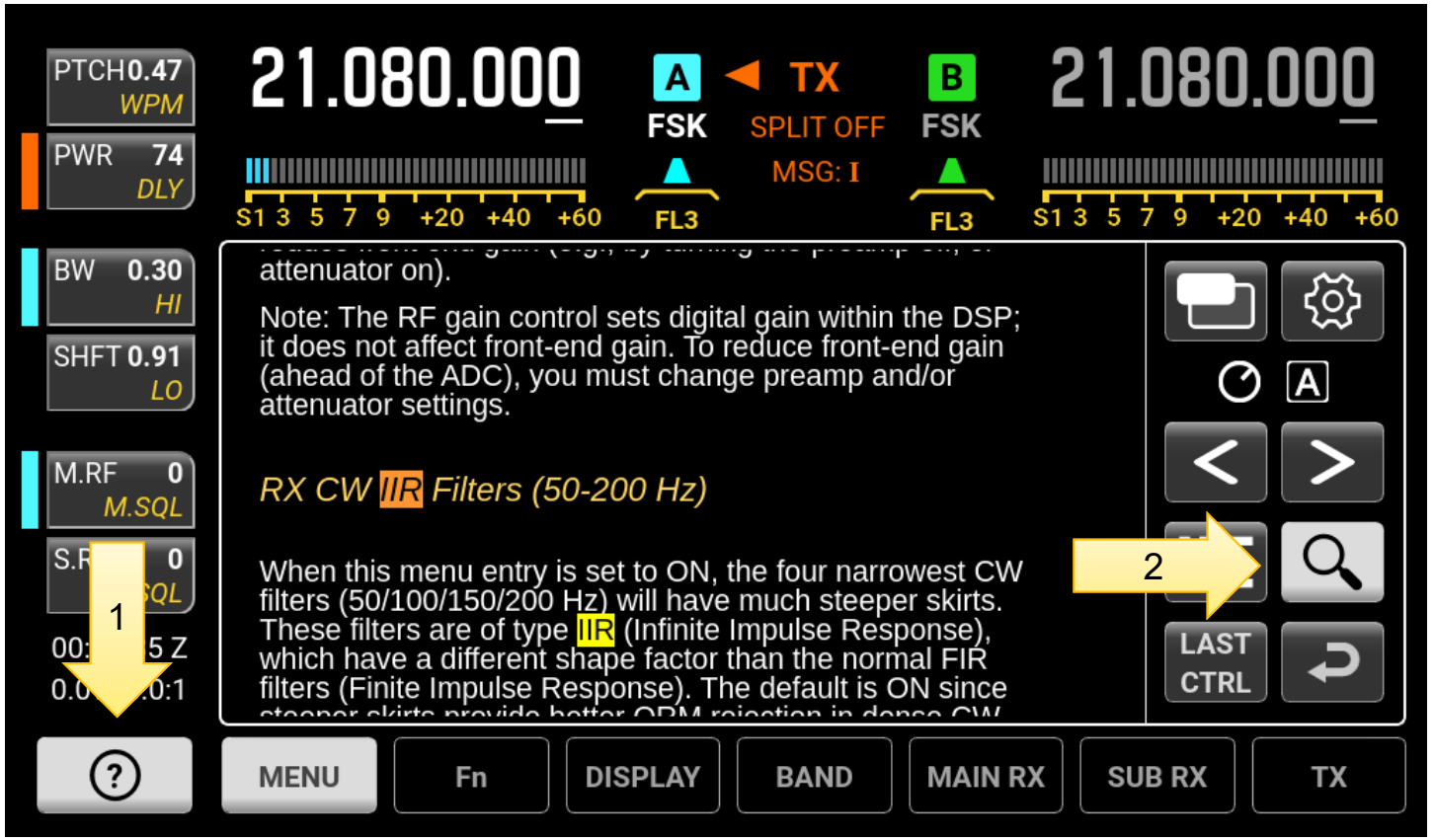
Tip #2 – Toggle **Speakers+Phones (Press PF3)** to mute speakers.

Select Speakers **2** for MAIN RX / SUB RX stereo separation

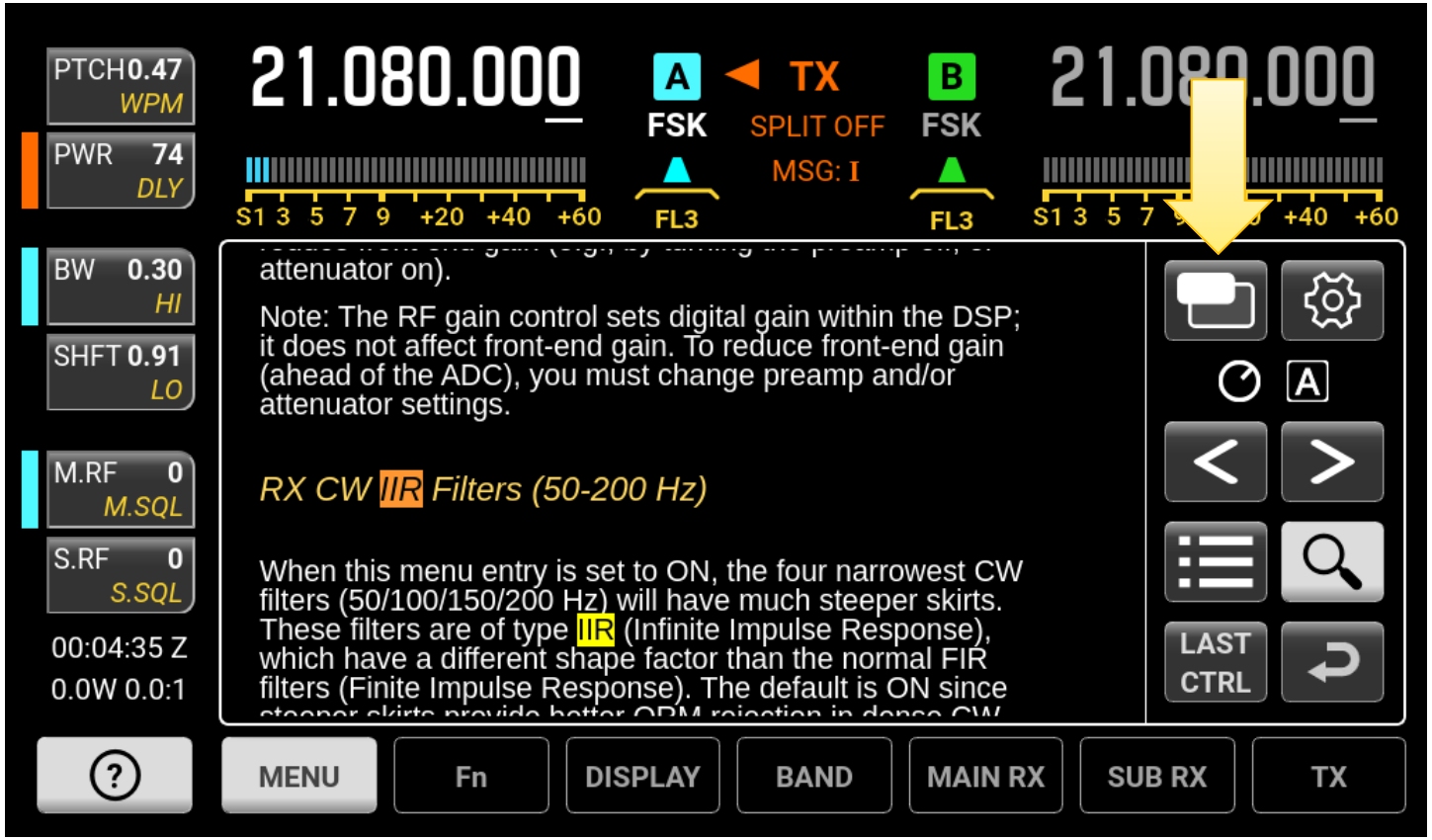


Tip #3 – Search the built-in manual (on web)

- ***Search*** the built-in manual (or [HTML file on web])

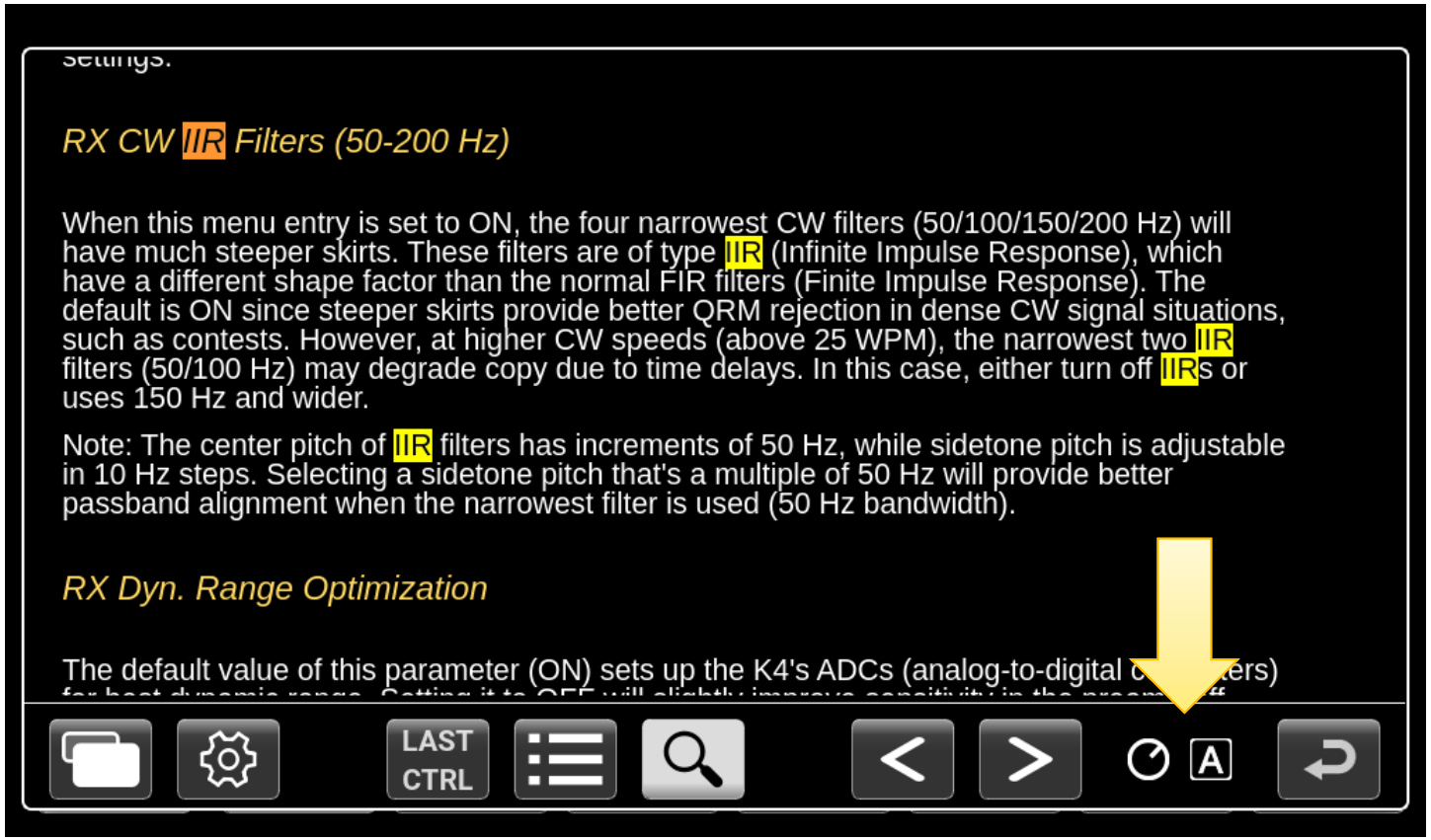


Enable full screen help text mode

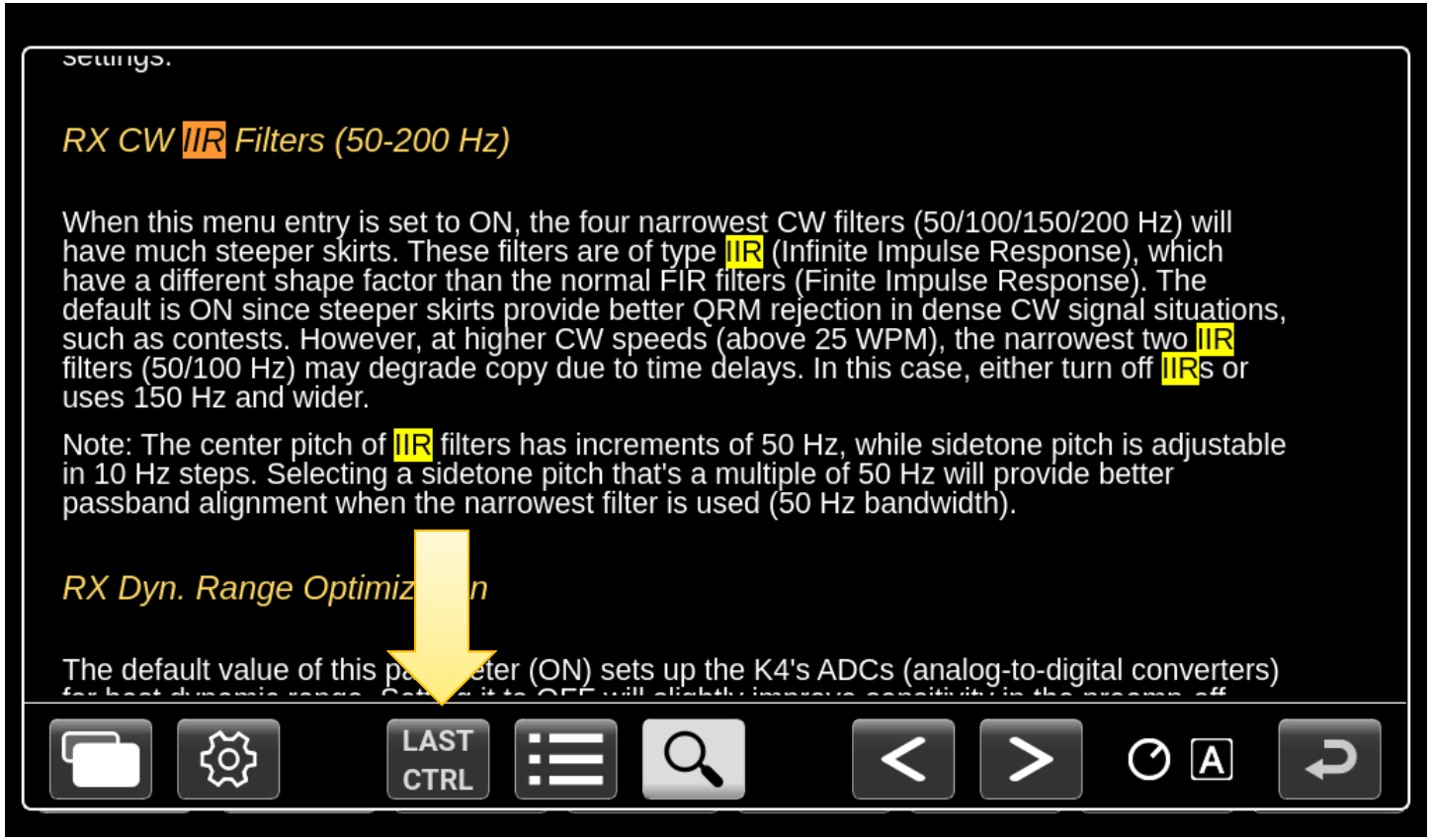


Full screen help text mode

Scroll with VFO A knob or mouse wheel

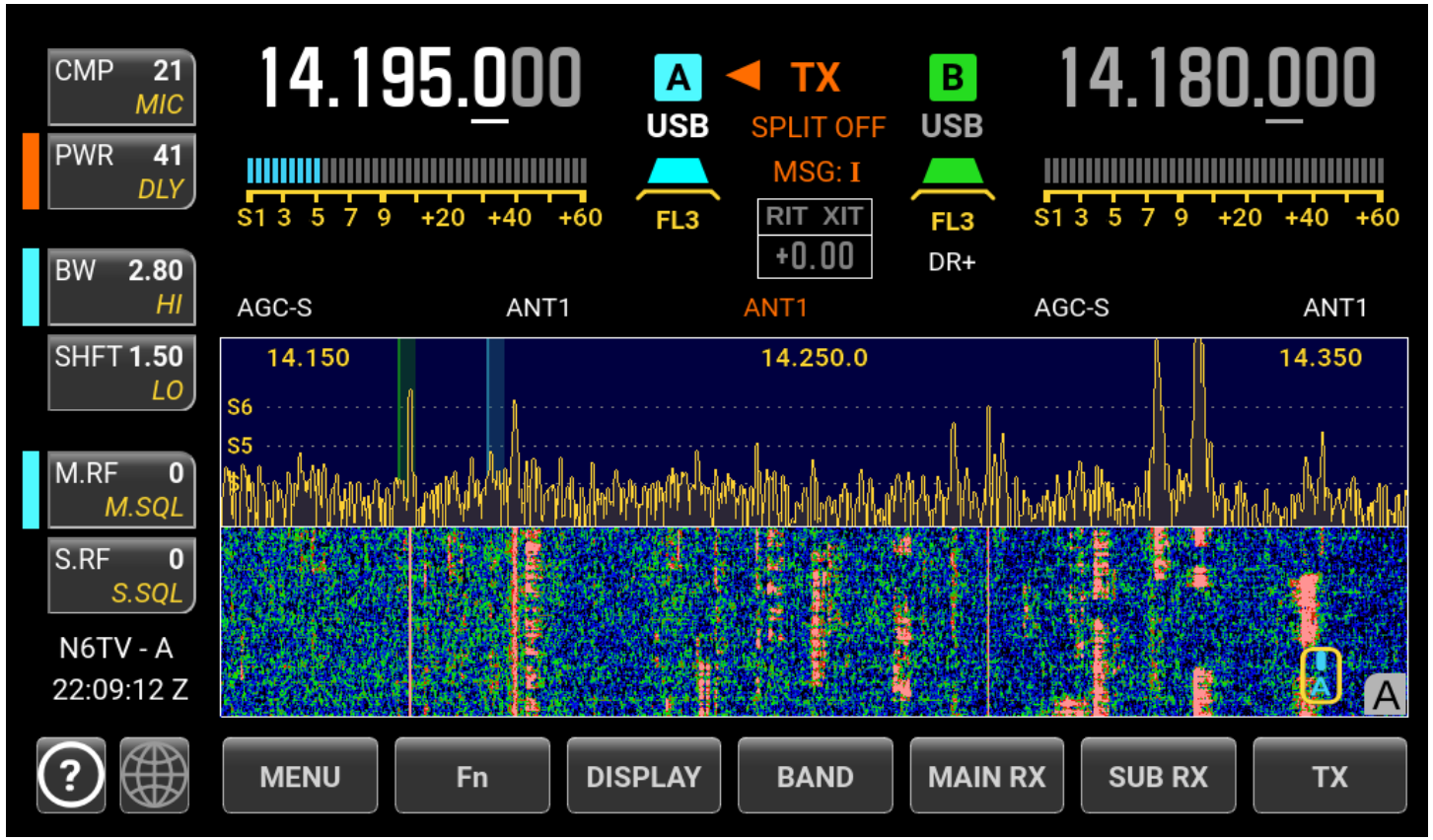


Use the “Last Control” button
(Get help for last button or menu entry used)



Tip #4 – Change factory default scope settings

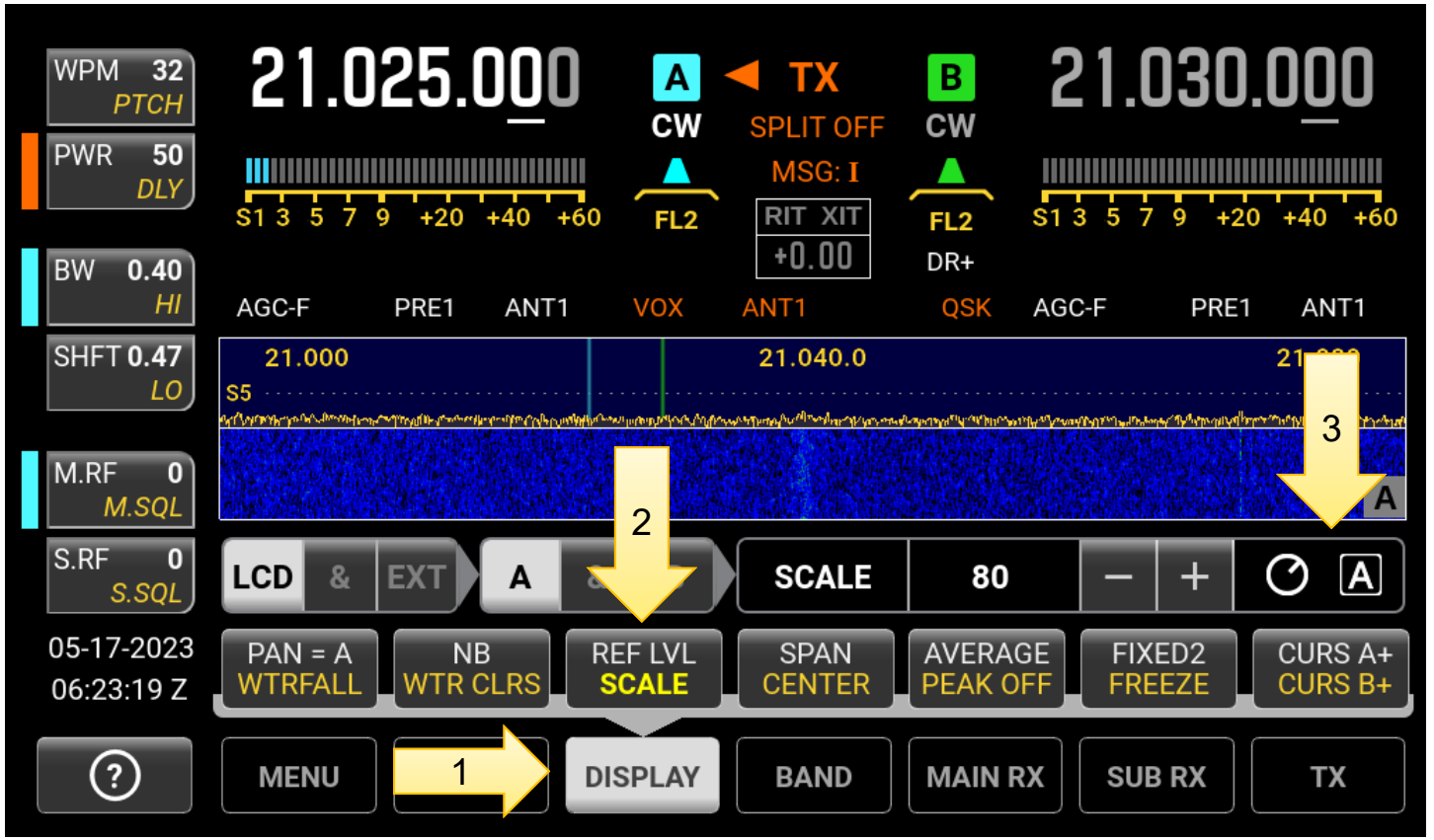
- Display should NOT look like this:



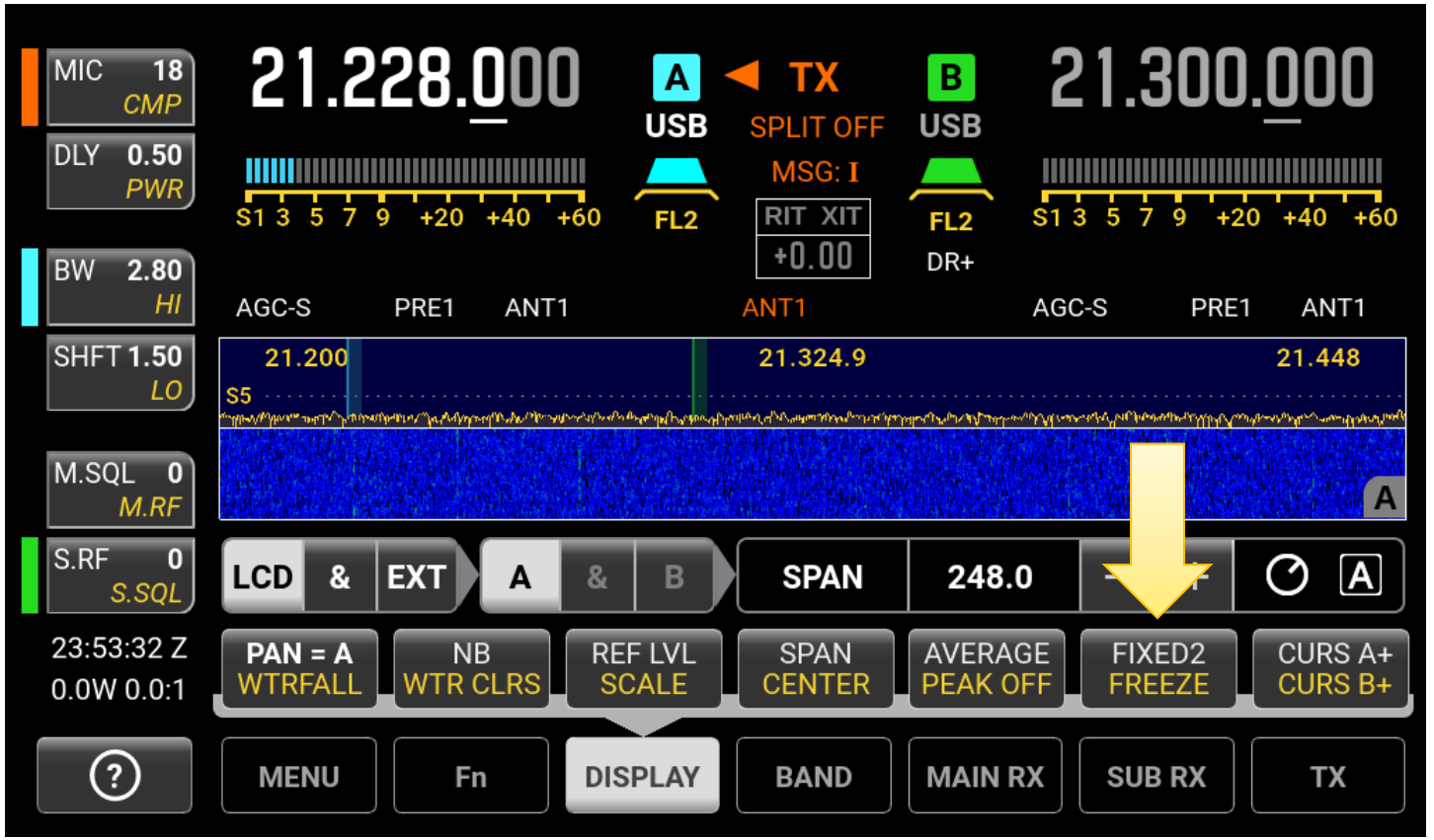
Adjust the scope SCALE and SPAN, then set the band edges, half span scrolling

- Change **MENU:Spectrum Amplitude Units** from **dBm** to **S-Units**
- Tap **DISPLAY**, set **SCALE** (vert. axis) to 80 dB or more
- Tap **DISPLAY**, set **REF LVL** to **AUTO**
- Change **MENU:AutoRef Offset** to **4**
- Tap **DISPLAY**, select **FIXED2** mode
- Try **SPAN 40** kHz on CW, **100** kHz on Phone
- Use **RIT** (OFS) knob to set edges instead of **CENTER** button, by setting
  MENU:**RIT Knob Alt. Function** to **PAN CTR**
- Tap **A > B** *twice* to make Pan A and B look the same, so **A / B** swap preserves display.

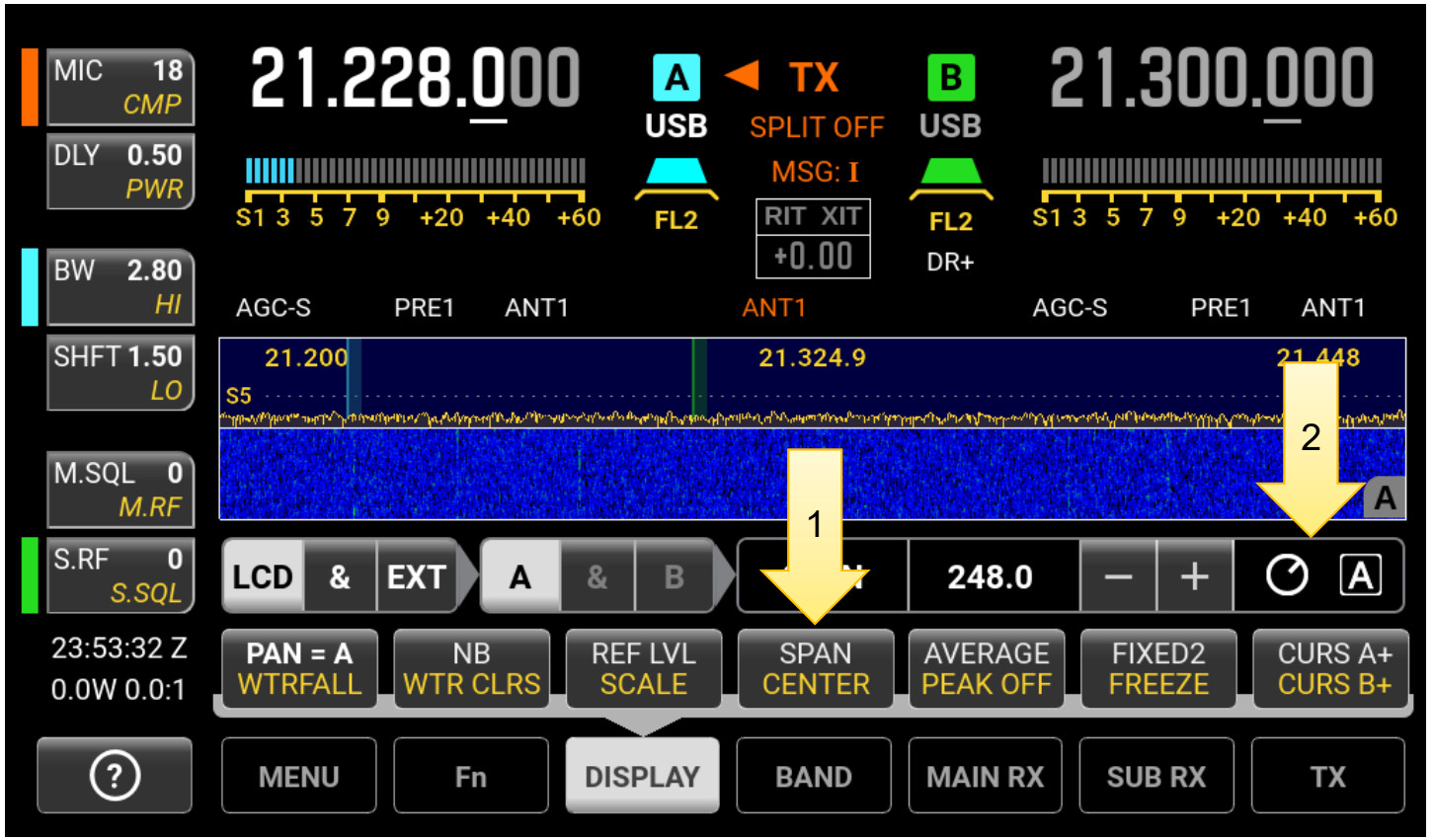
Tap DISPLAY, hold **SCALE**
Rotate VFO A to set vertical scale



Display > **FIXED2** (half span)
Tap the button to change setting

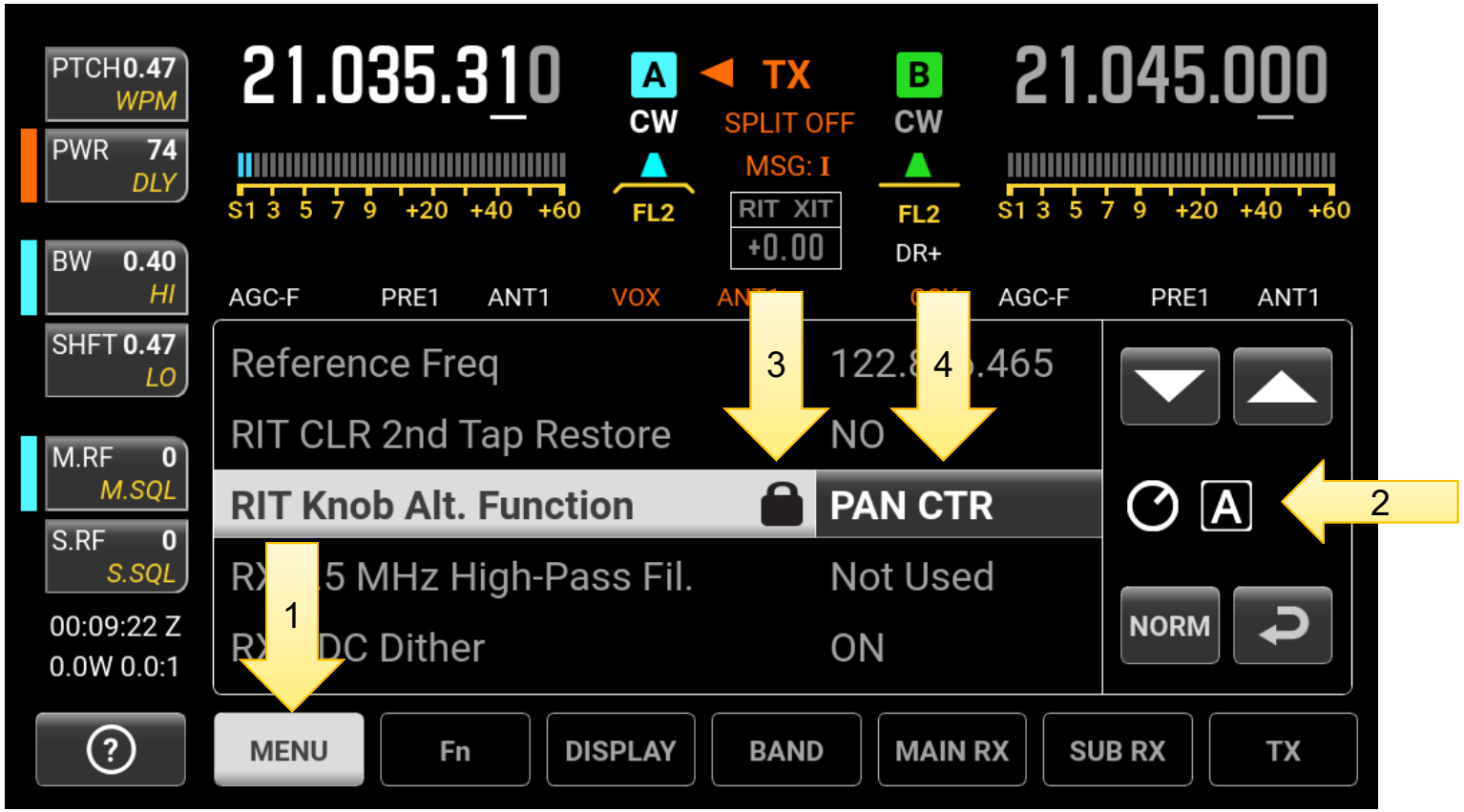


Tap **SPAN**, rotate VFO A knob

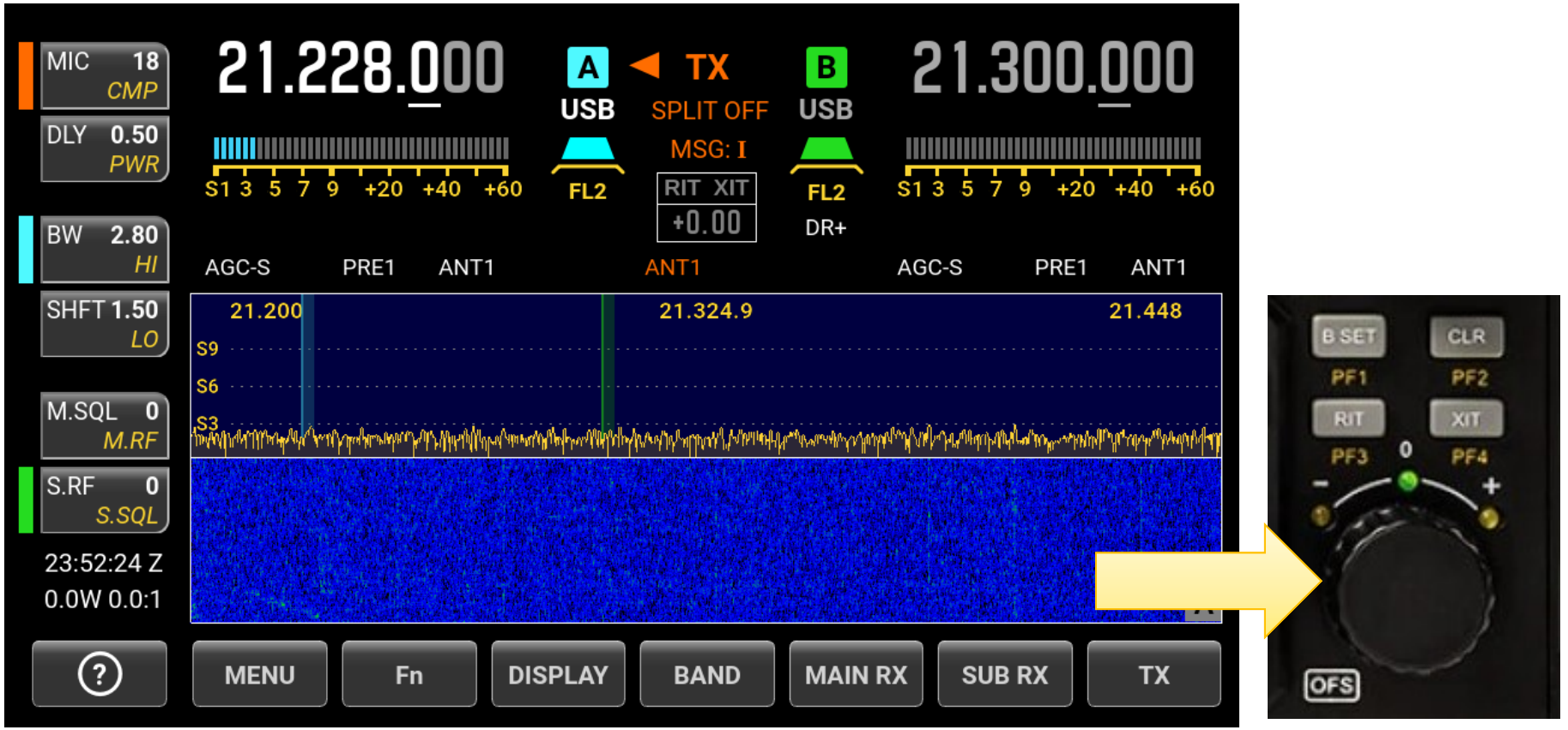


Use **RIT** Knob as **PAN CTR** knob or **PAN SPAN**

When RIT OFF, RIT knob slides or zooms the scope

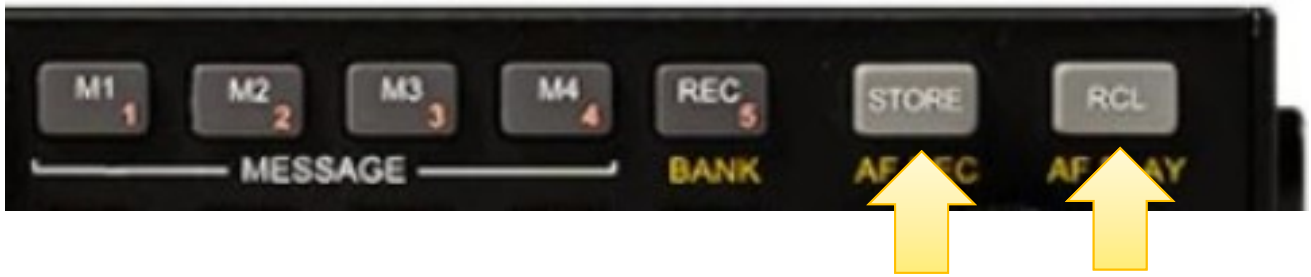


Setting Scope Edge using the “OFS” (RIT) knob when RIT OFF



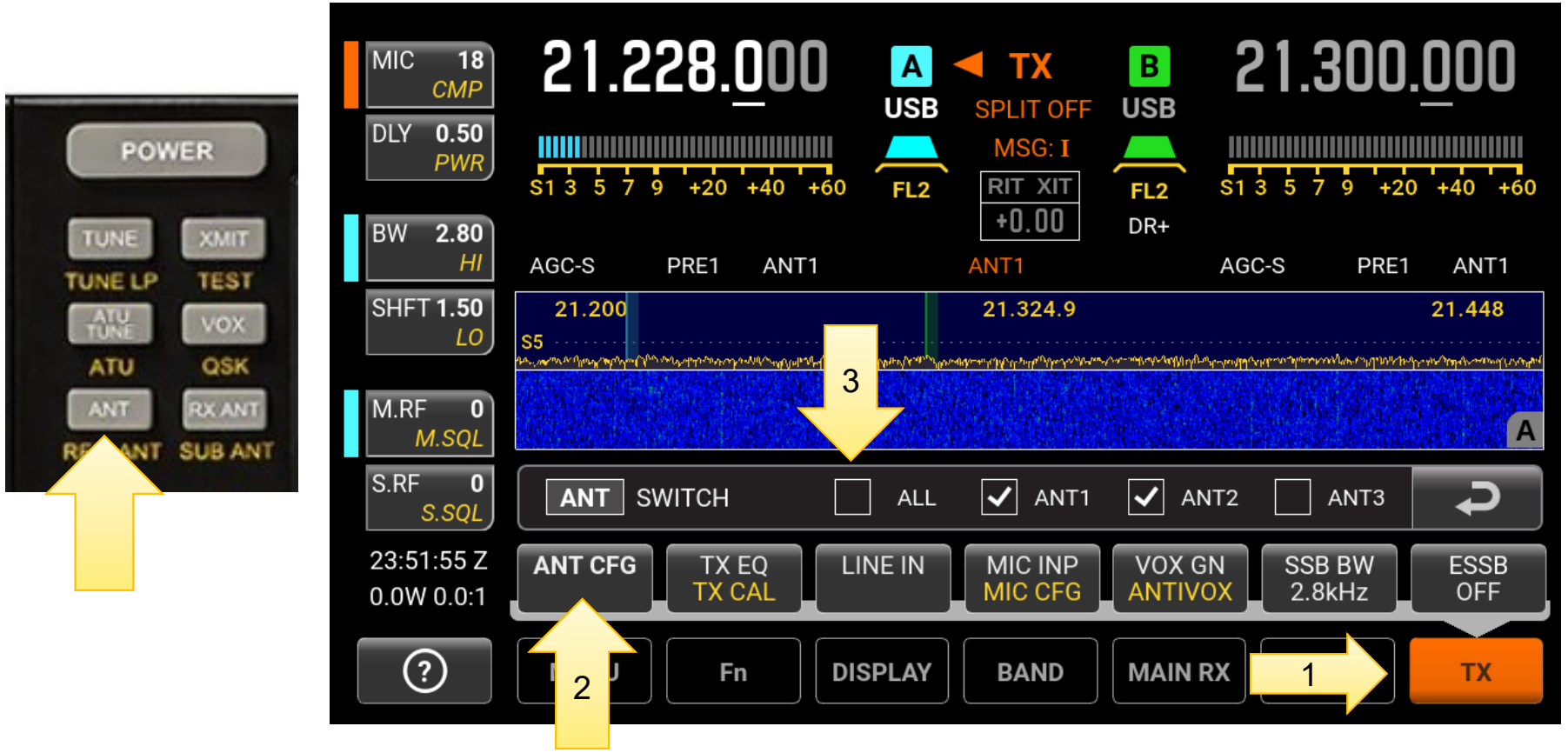
Tip #5 – Save and restore everything using the Per-Band Quick Memories

Tap **STORE** or **RCL** > **M1** to **M4**



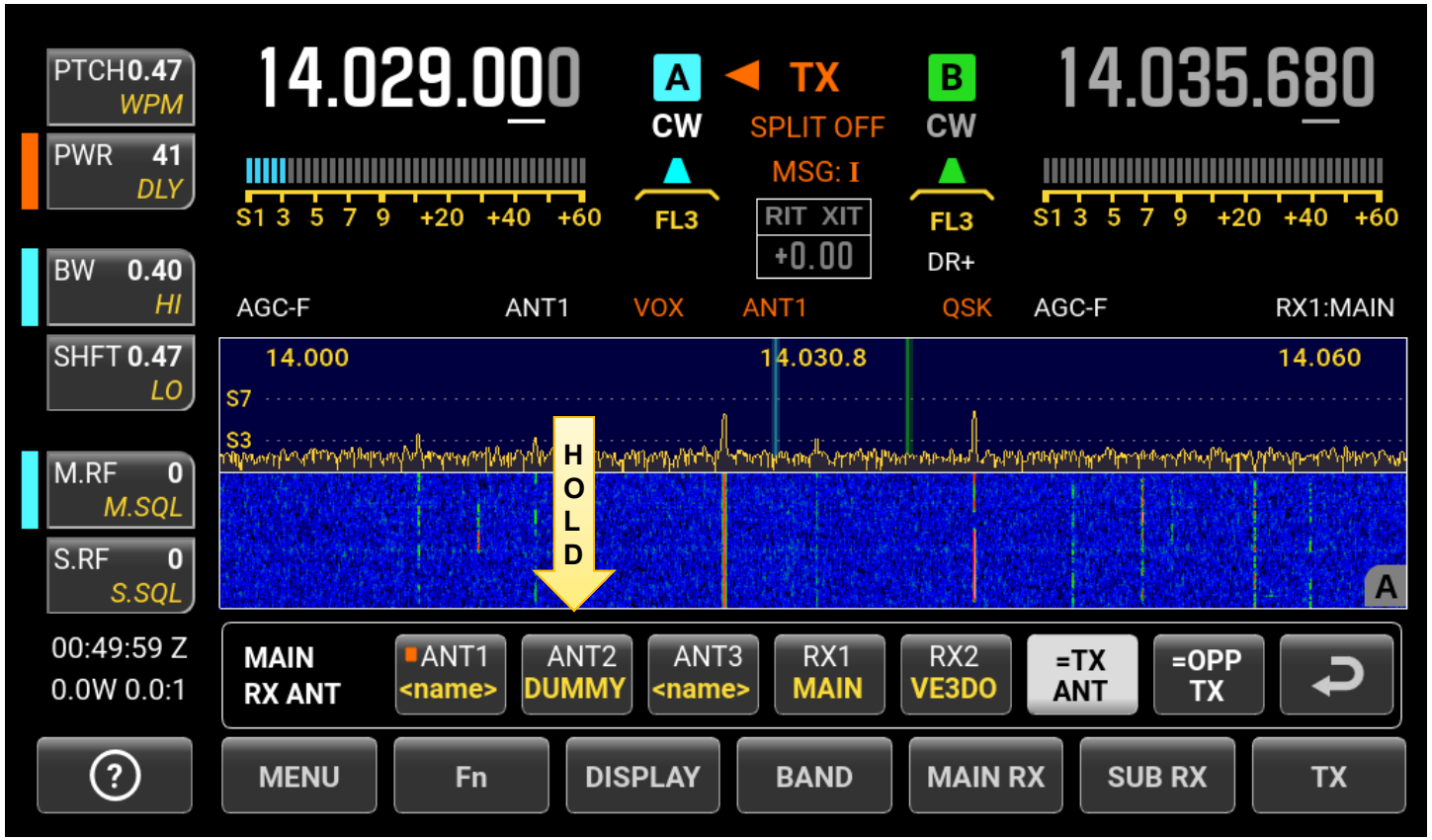
- Once programmed, *much* easier than using **Mode** and **Display** Buttons
- Saves and restores Freq, Mode, **Scope Edges**, Filters, of *both* VFOs, with two taps
- Program and save mode and scope edges on all bands
- **M1** = CW, **M2** = SSB, **M3** = RTTY, **M4** = FT8

Tip #6 – For best **ANT** switch operation, tap **TX** > **ANT CFG**, uncheck **ALL**



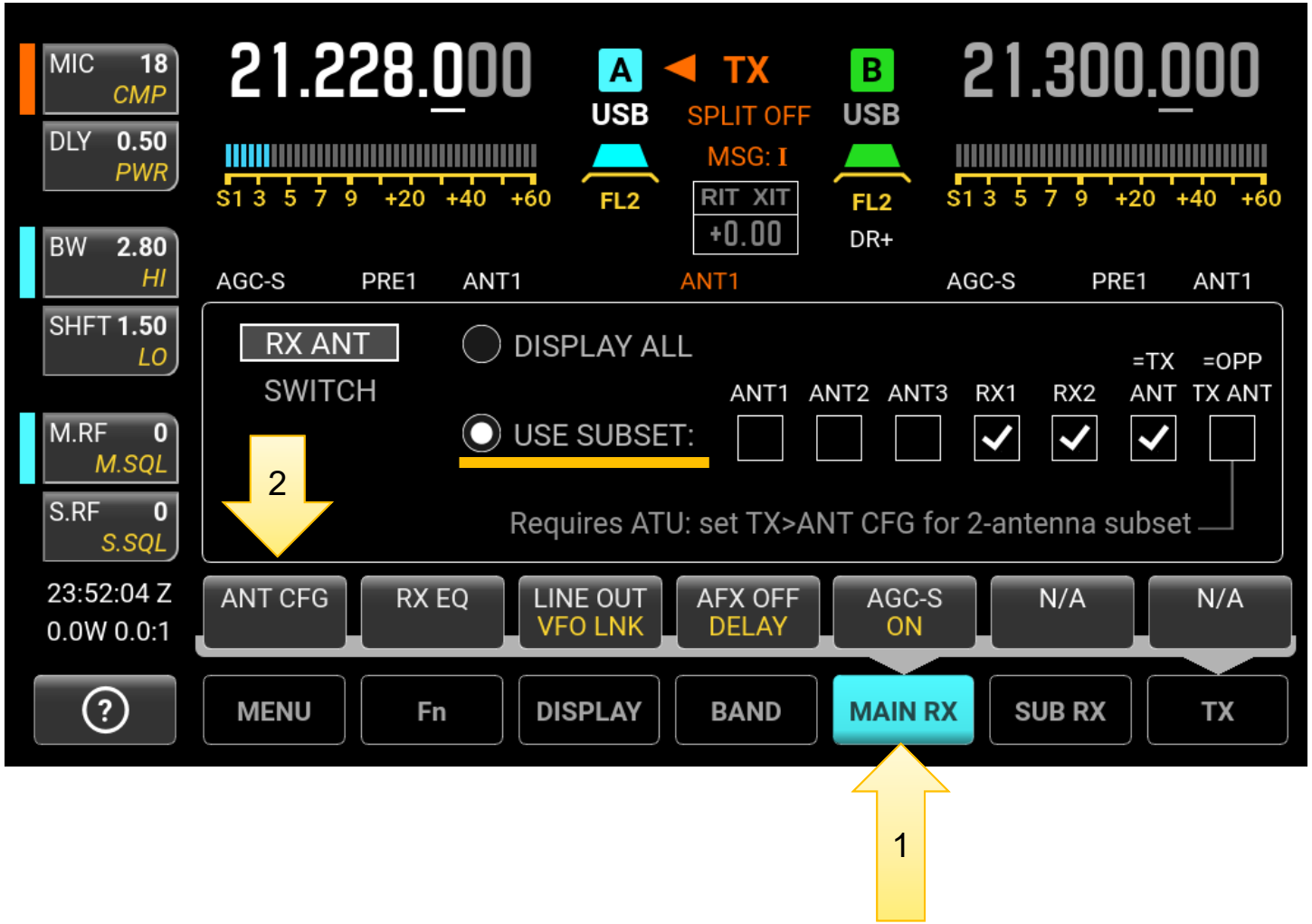
Tip #7 – Label antenna names first, then select **Use Subset**, until you want to relabel

As shipped, **RX ANT** button brings up a dialog where you can label antenna names (hold button to change name)

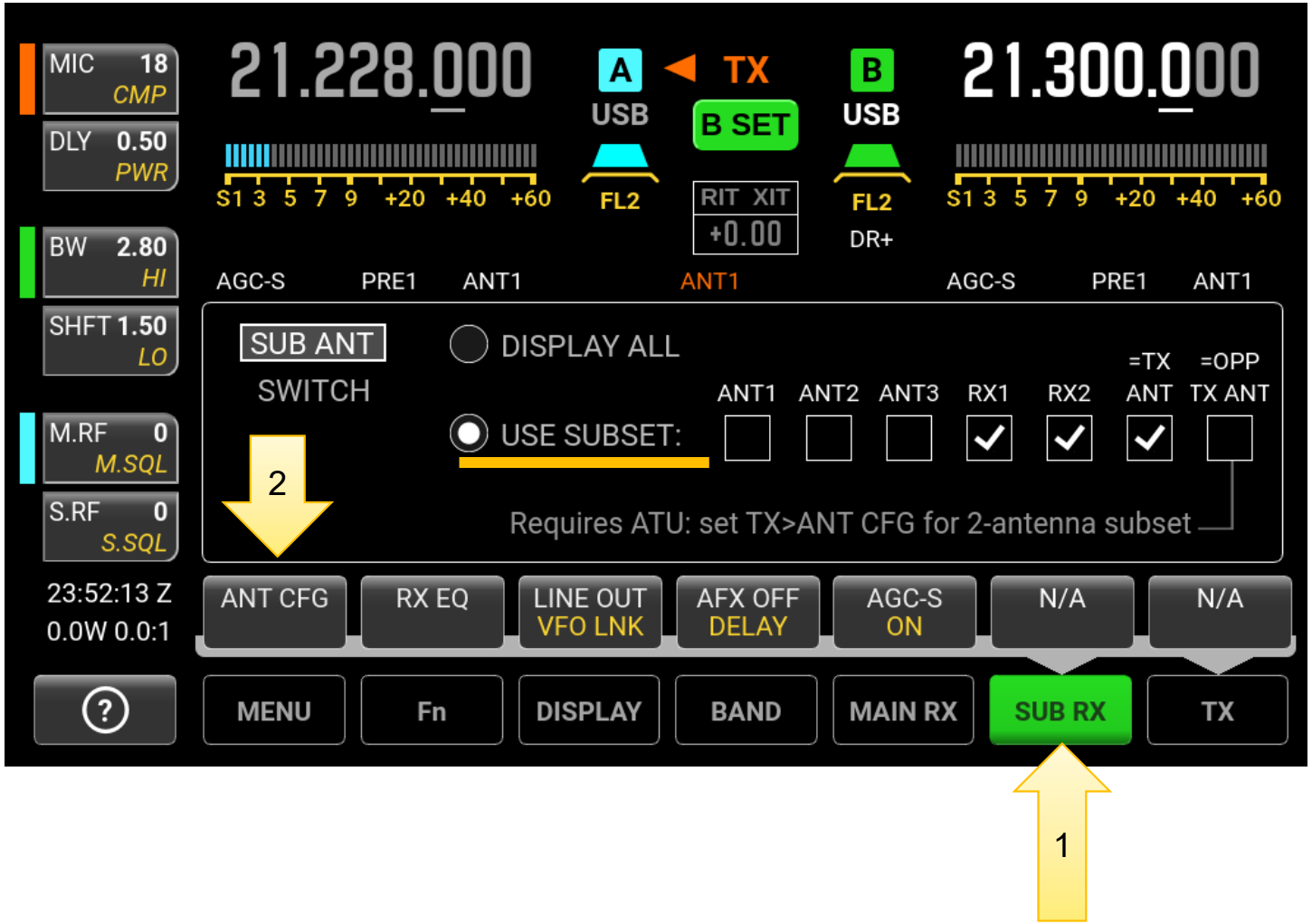


Edit Antenna Name, tap **Enter**

Next tap **MAIN RX** > **ANT CFG**
Select **USE SUBSET**



Next tap **SUB RX** > **ANT CFG**
Select **USE SUBSET** select the same



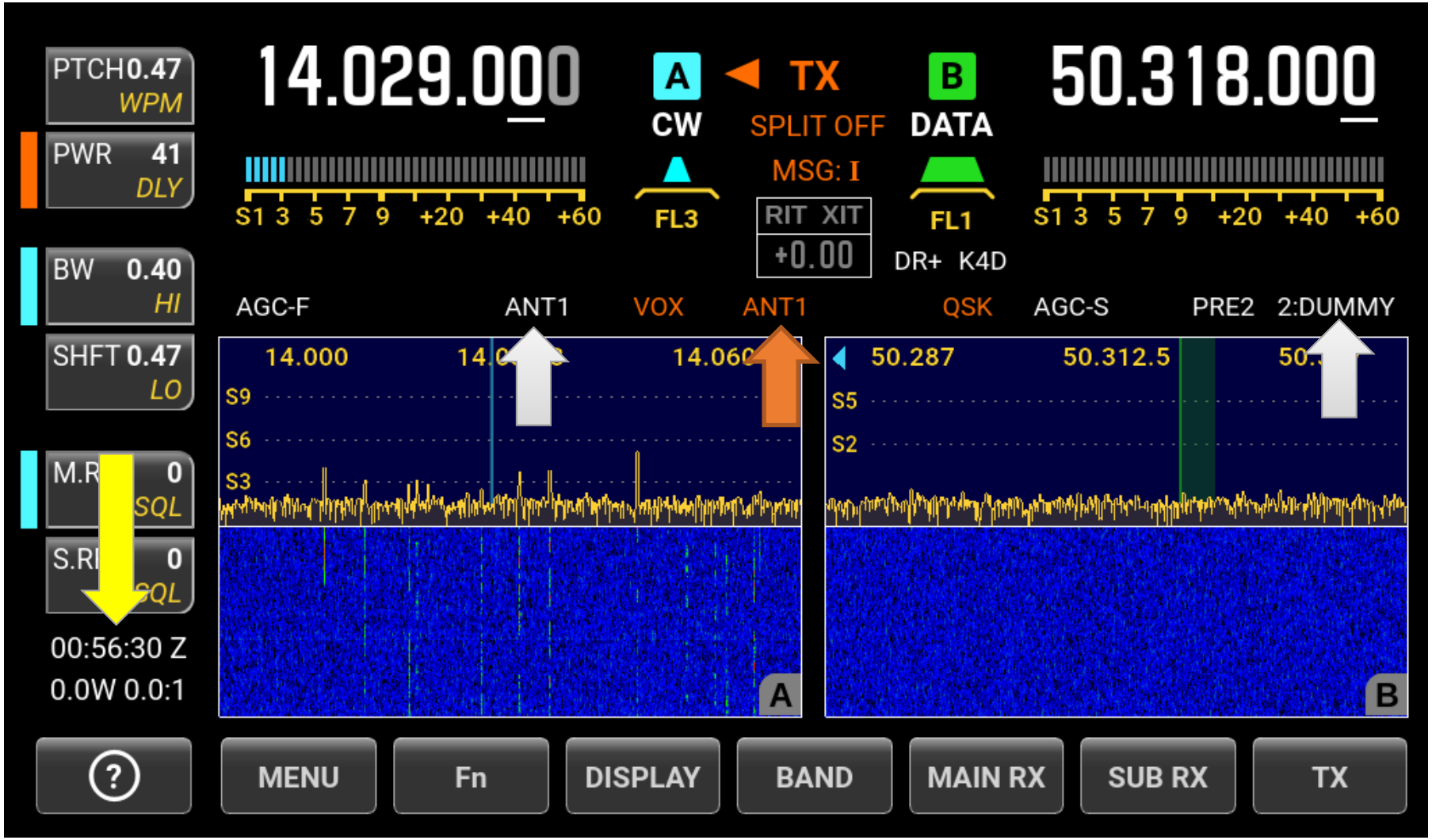
RX ANT and **SUB ANT** (hold) switch will now cycle through enabled antennas quickly (no more pop-ups)

To rename antennas again:

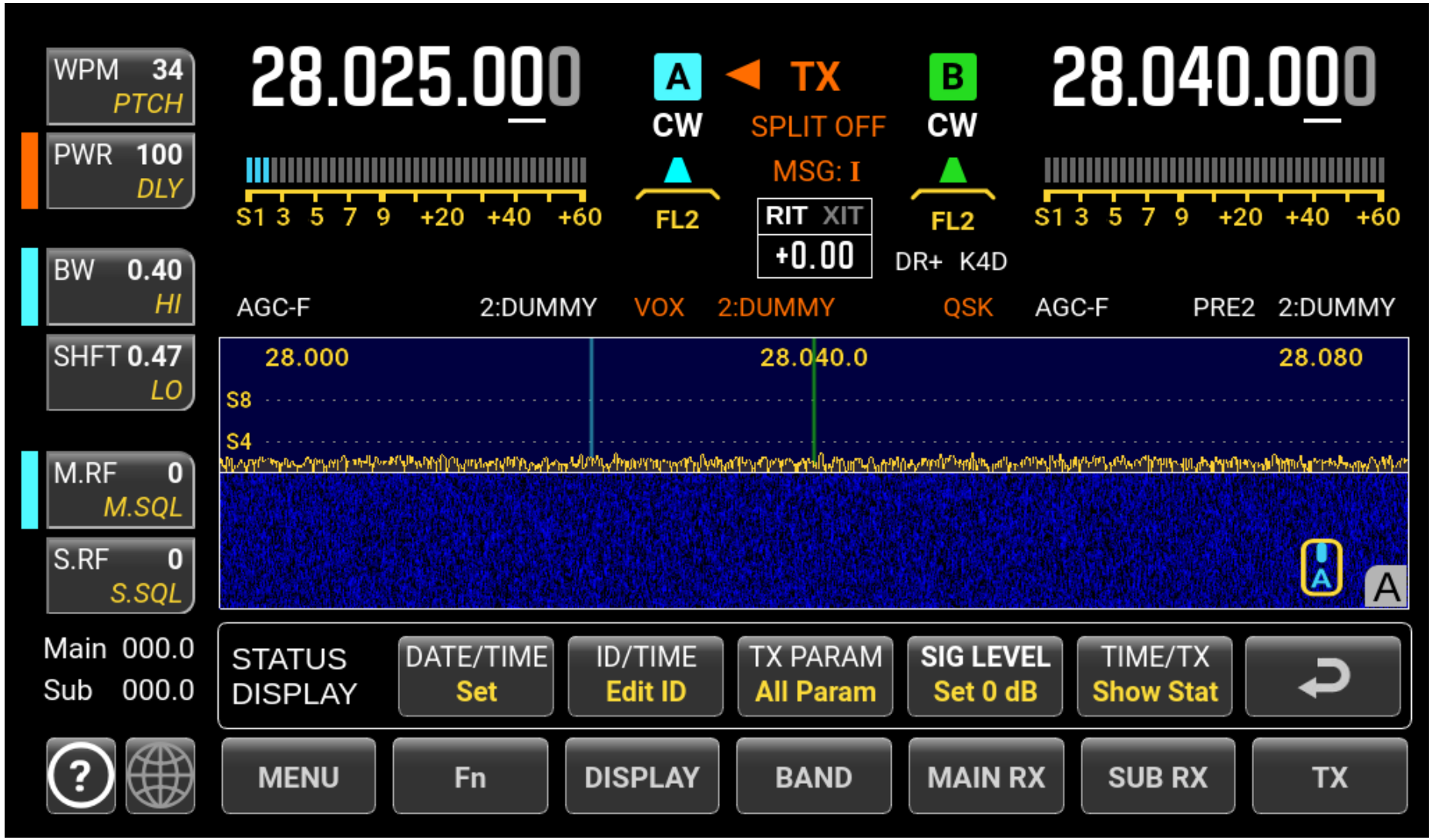
Tap **MAIN RX** > **ANT CFG**, select **DISPLAY ALL**, dismiss, then tap **RX ANT** switch

Have to select **DISPLAY ALL** to make **RX ANT** switch show the antenna renaming menu

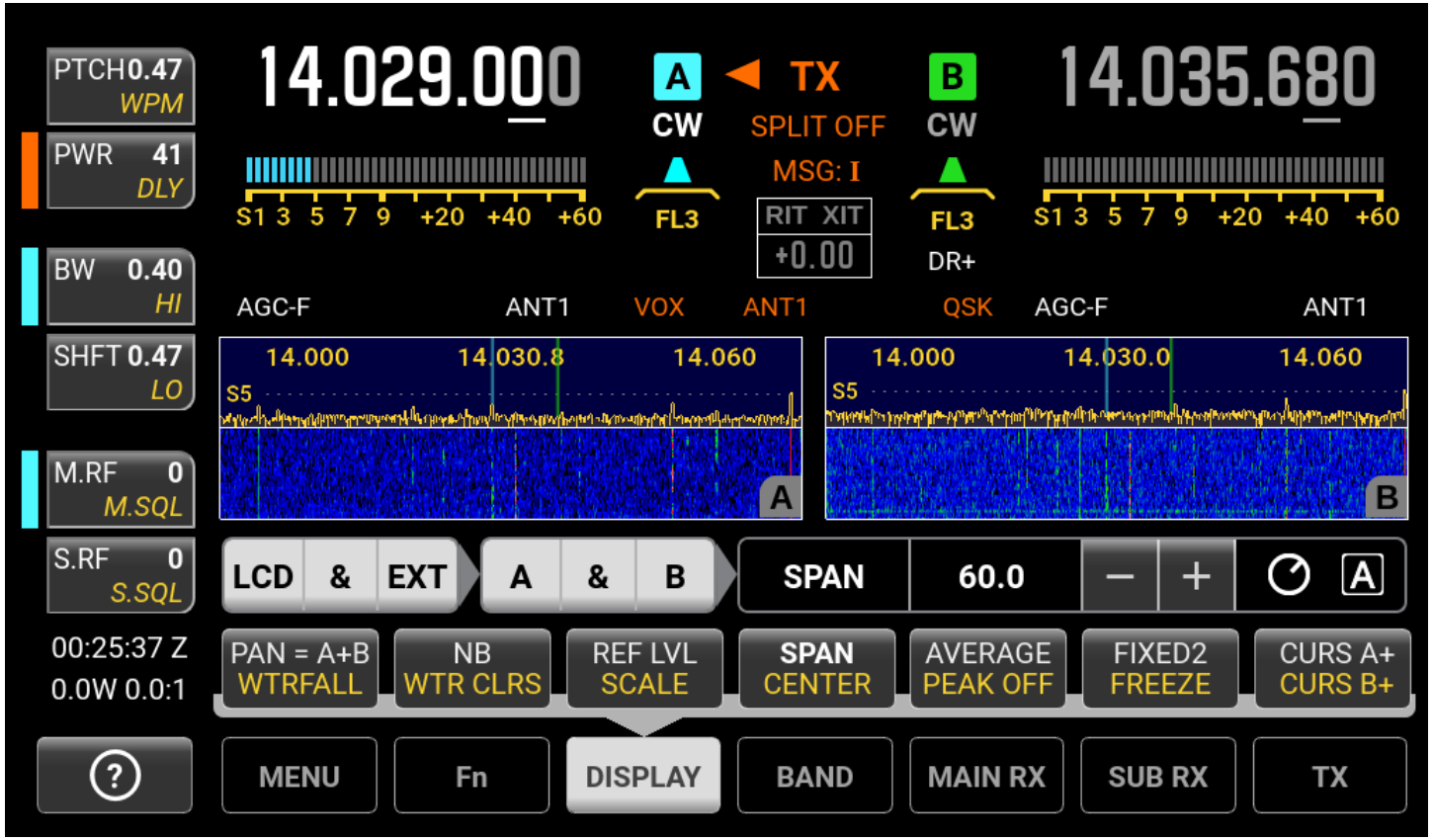
Main RX Ant, TX Ant, and SubRx Ant are always displayed above spectrum area



The “Clock” is a button – the Status Display



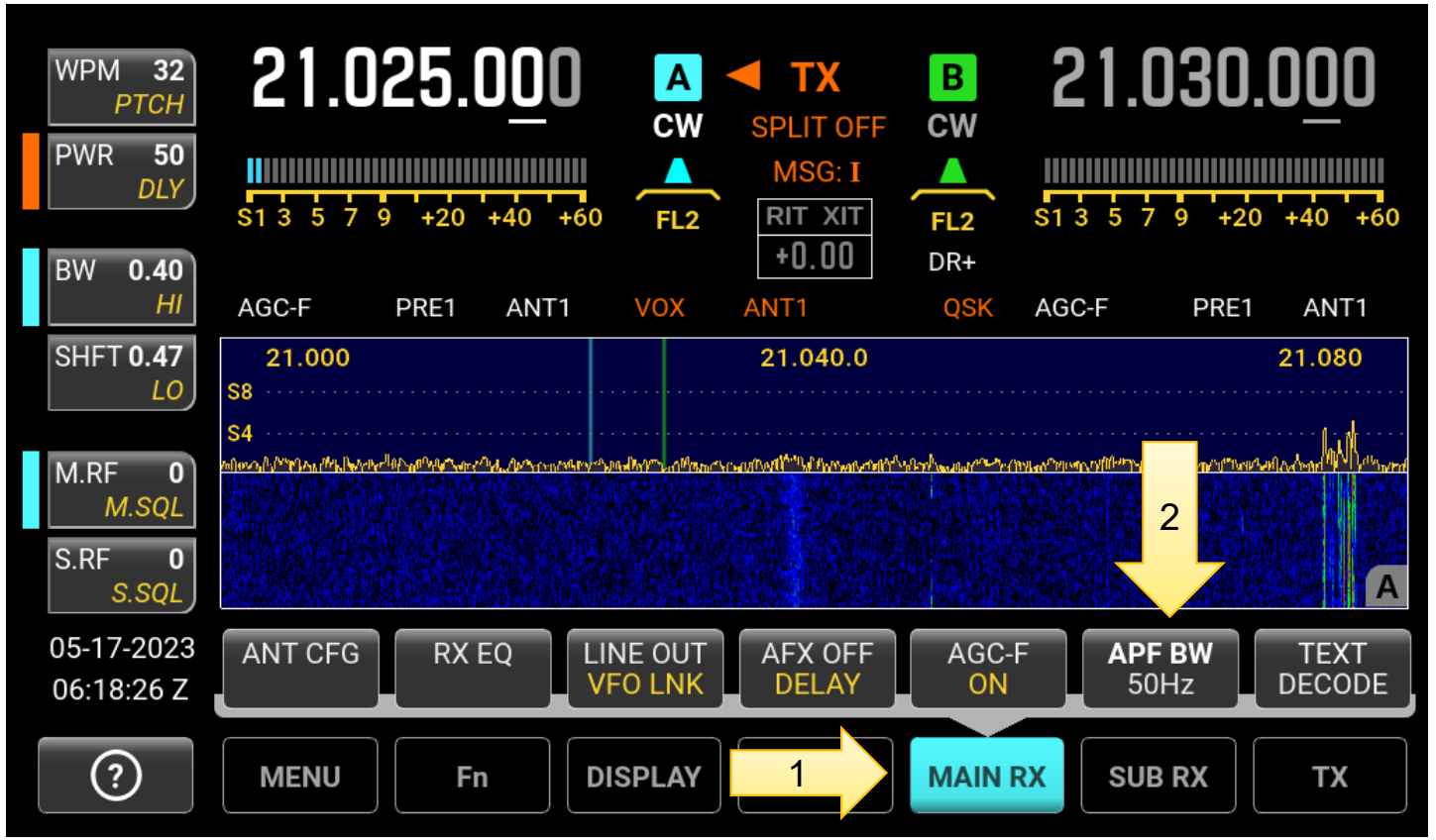
Tip #8 – **DISPLAY** sets **LCD, EXT, VFO A, VFO B**



Tap the white buttons to select, then adjust

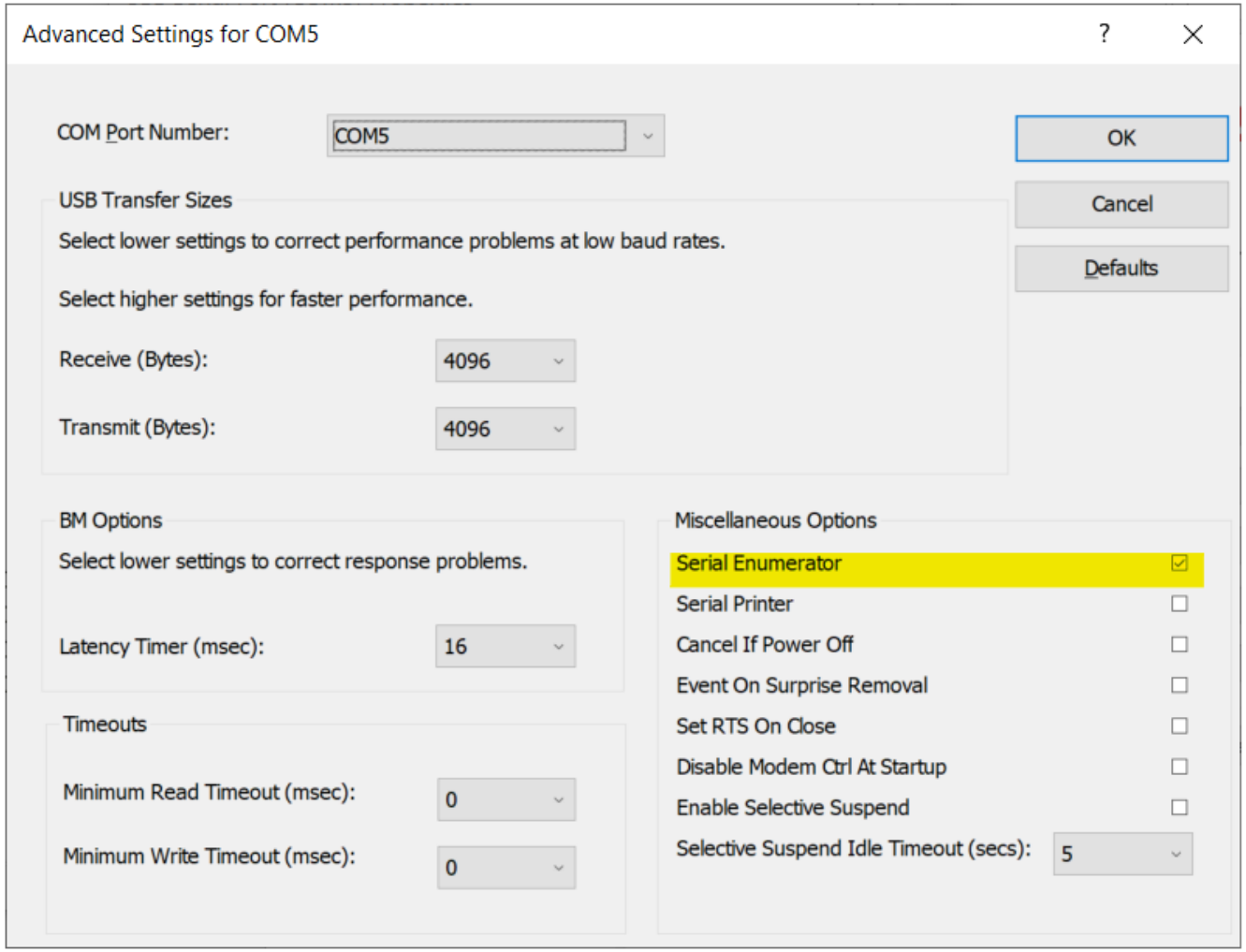
Tip #9 – Copying weak CW signals using the K4 Audio Peaking Filter (APF)

- Tap **MAIN RX > APF BW** to select 50 Hz
  - Repeat on **SUB RX**, and *all* bands (saved per-band, per VFO)

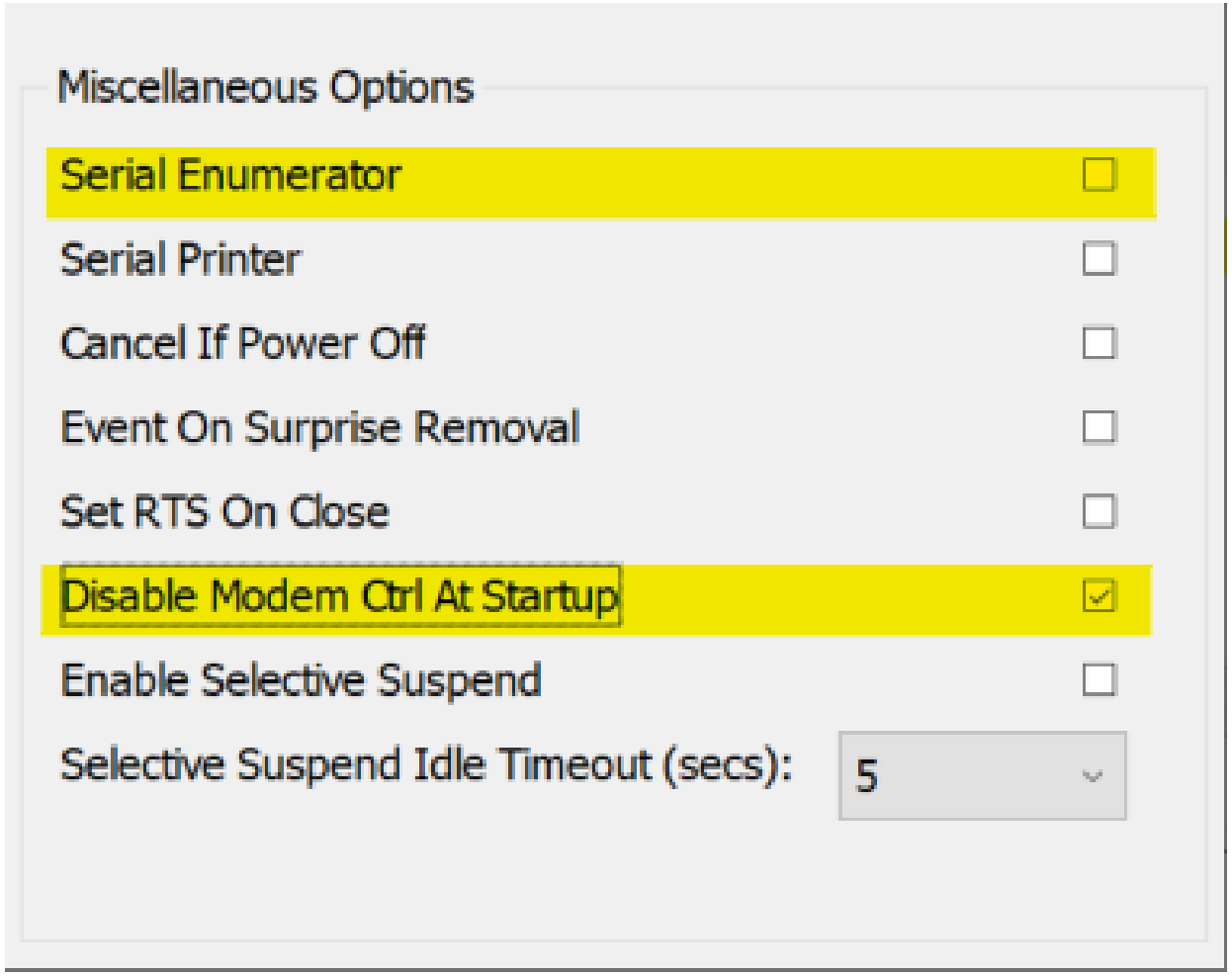


Hold **FIL** switch (**APF**) to toggle ON/OFF
Better: use this macro: **`AP/;AP$/;`**

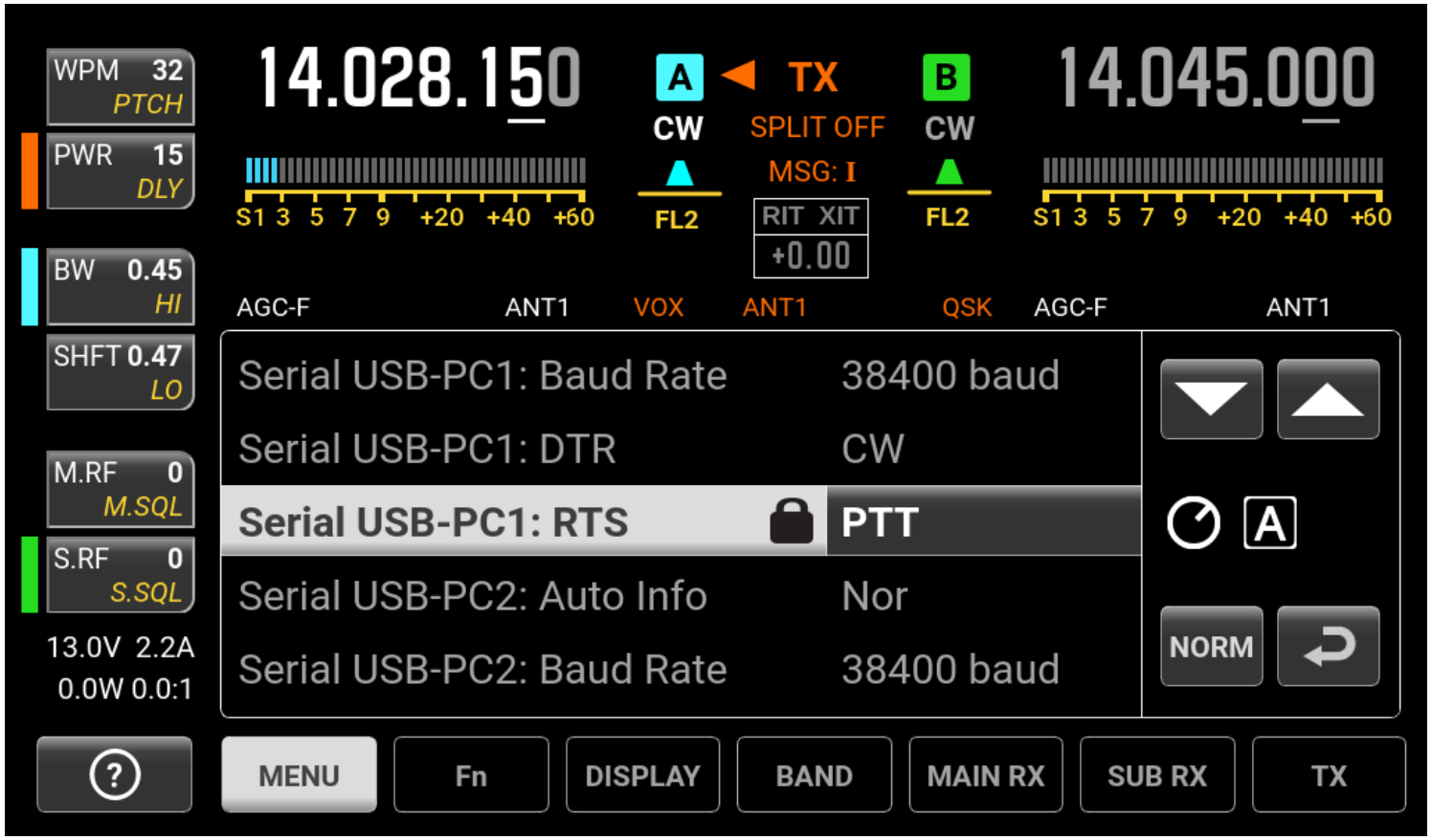
Tip #10 – Windows Device Manager Settings for proper keying
Do NOT use FTDI Default Options (can key radio)



Change the FTDI Options To This:

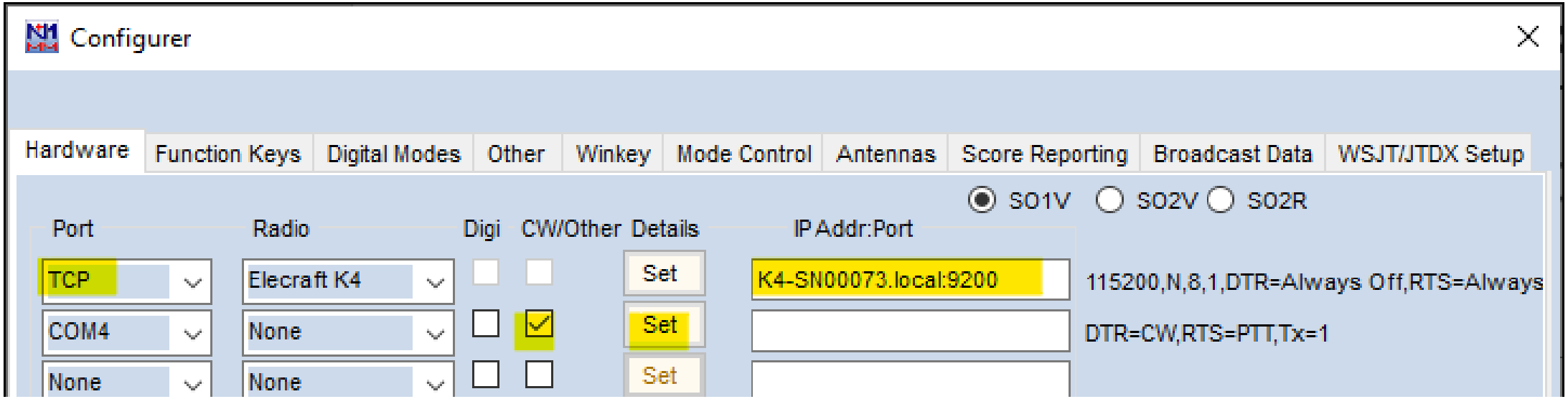


Now can use Menu to set **CW** Keying on **DTR**, **PTT** on **RTS** (FSK **RTTY** on **DTR** also supported)



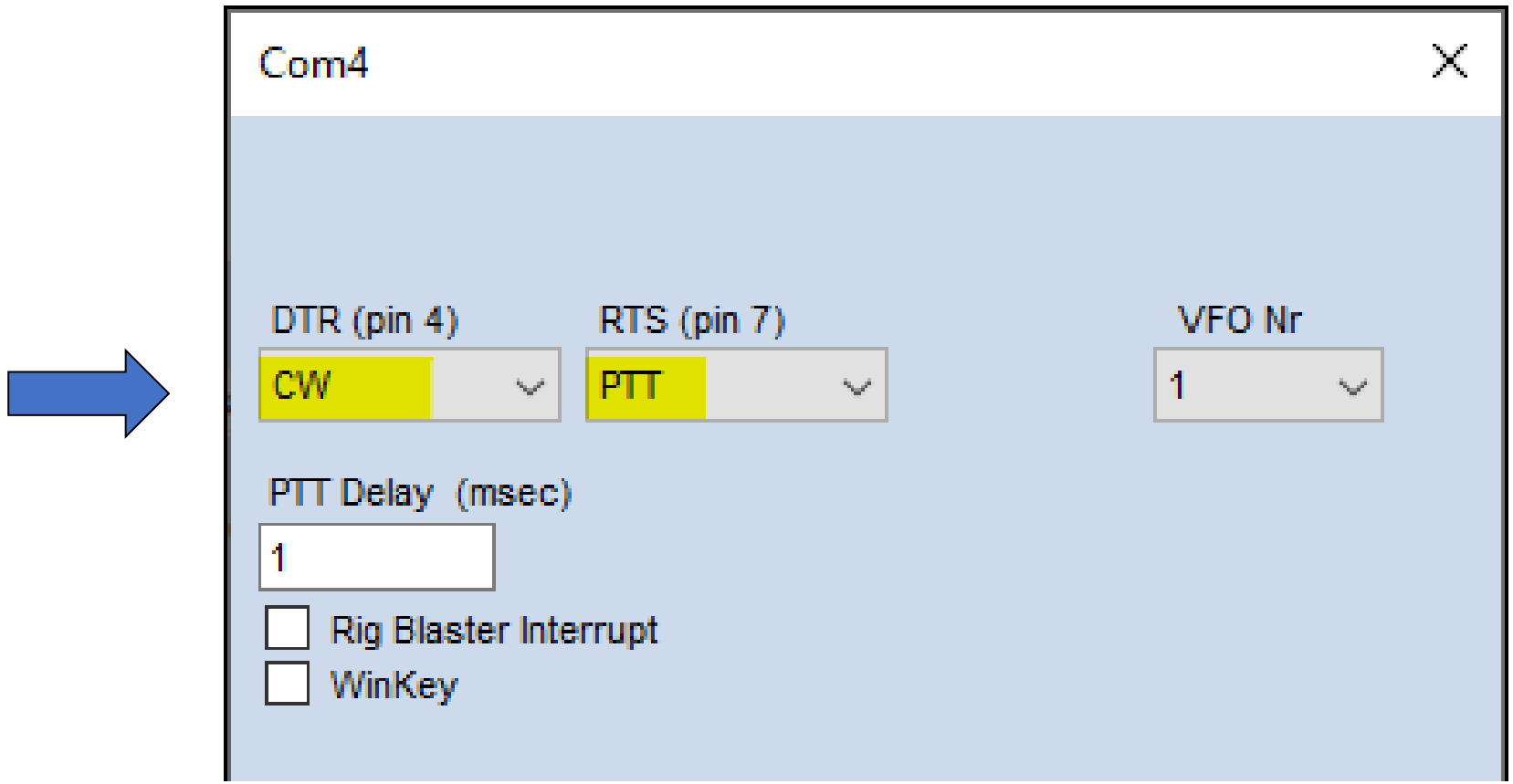
N1MM+ Contest Software Configuration for CW Keying

- Select **Config**, **Configure Ports**, **Hardware** tab
- Can use **TCP** with K4 *hostname* or IP address for control **K4-SNxxxxx.local:9200** (xxxxx = K4 serial number)
- Check **CW/Other** box next to K4 Virtual Serial Port, click **Set**



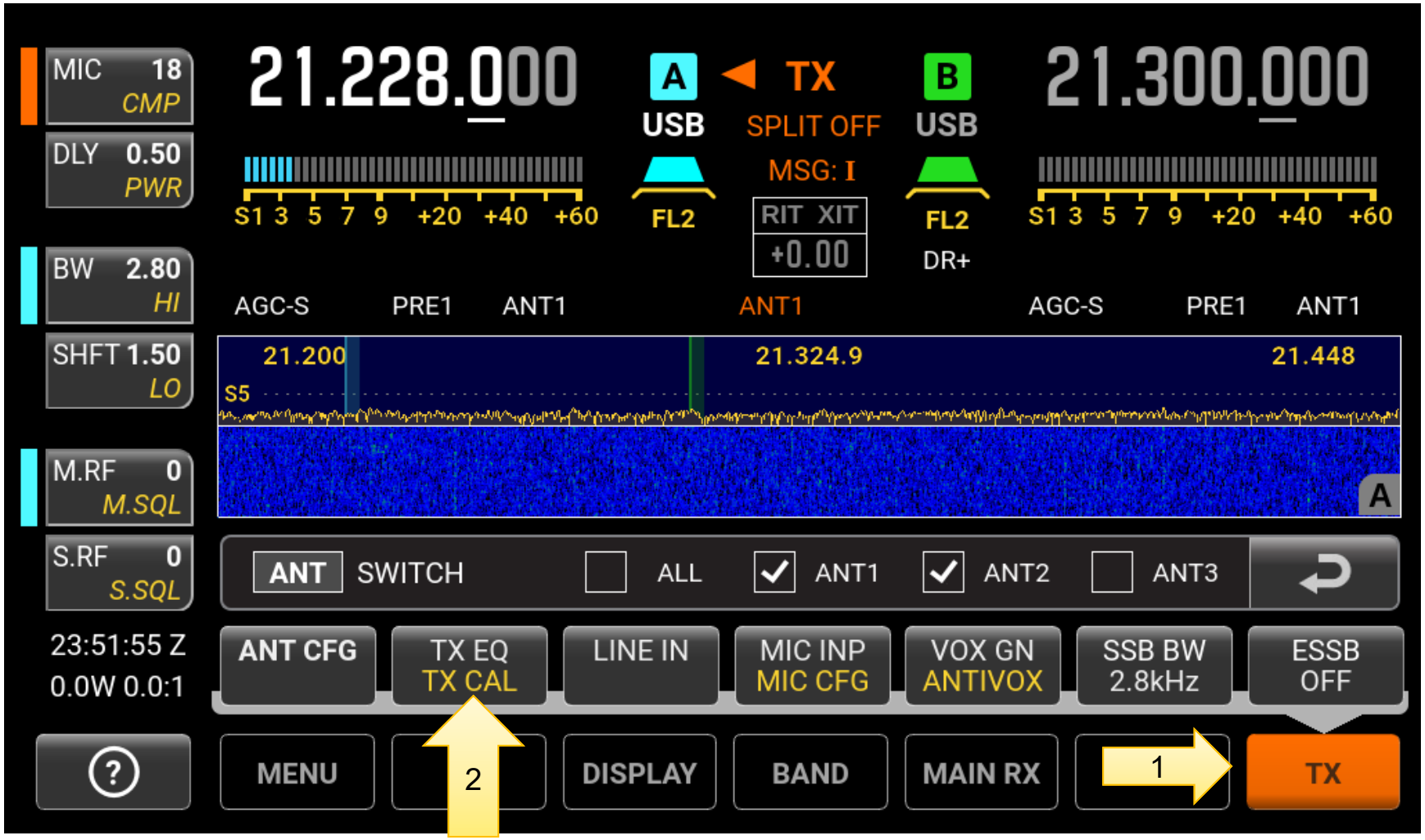
N1MM+ Contest Software Configuration (cont'd)

- Set **DTR** (pin 4) = CW, **RTS** (pin 7) = PTT

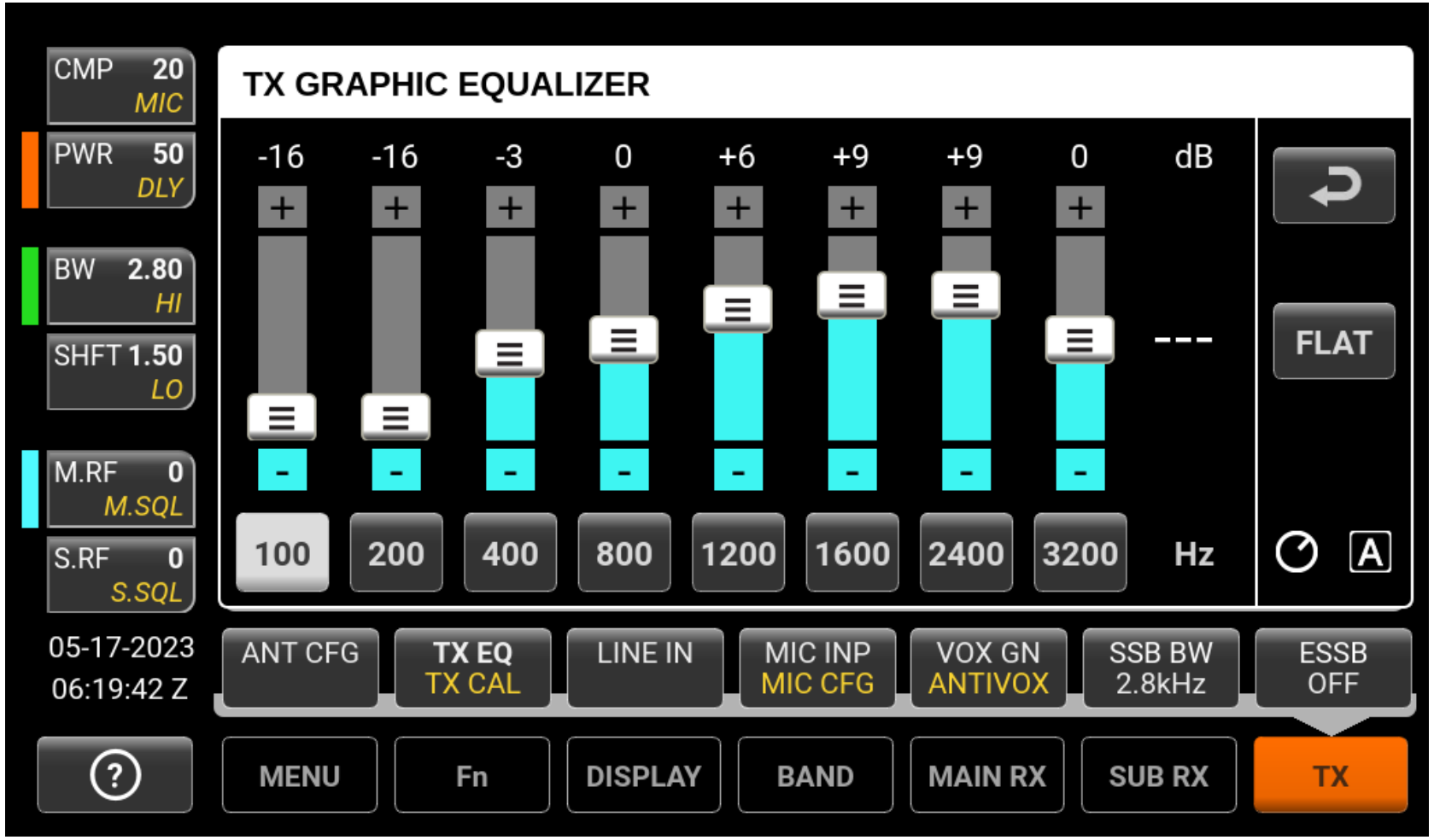


Tip #11 – SSB Operating
Adjust TX EQ for “more punch” on SSB

Tap **TX > TX EQ**



Recommended TX EQ starting point. Use MON and Voice Memories to hear the difference. Tap **FLAT** to toggle ON/OFF.
Macro: **`TE-16-16-03-00+06+09+09+05;`**



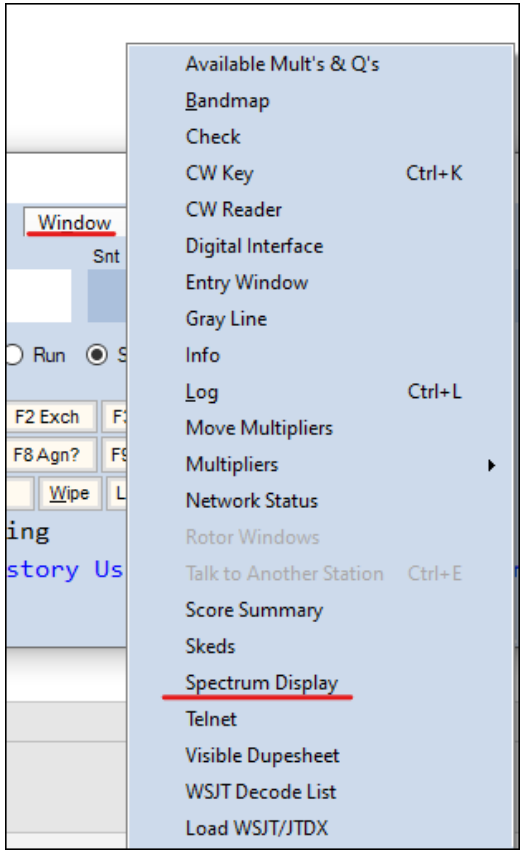
Recording and Playing Voice Memories

- Tap **REC > M1** > *talk* **>** Tap **M1** to save, **REC** to cancel

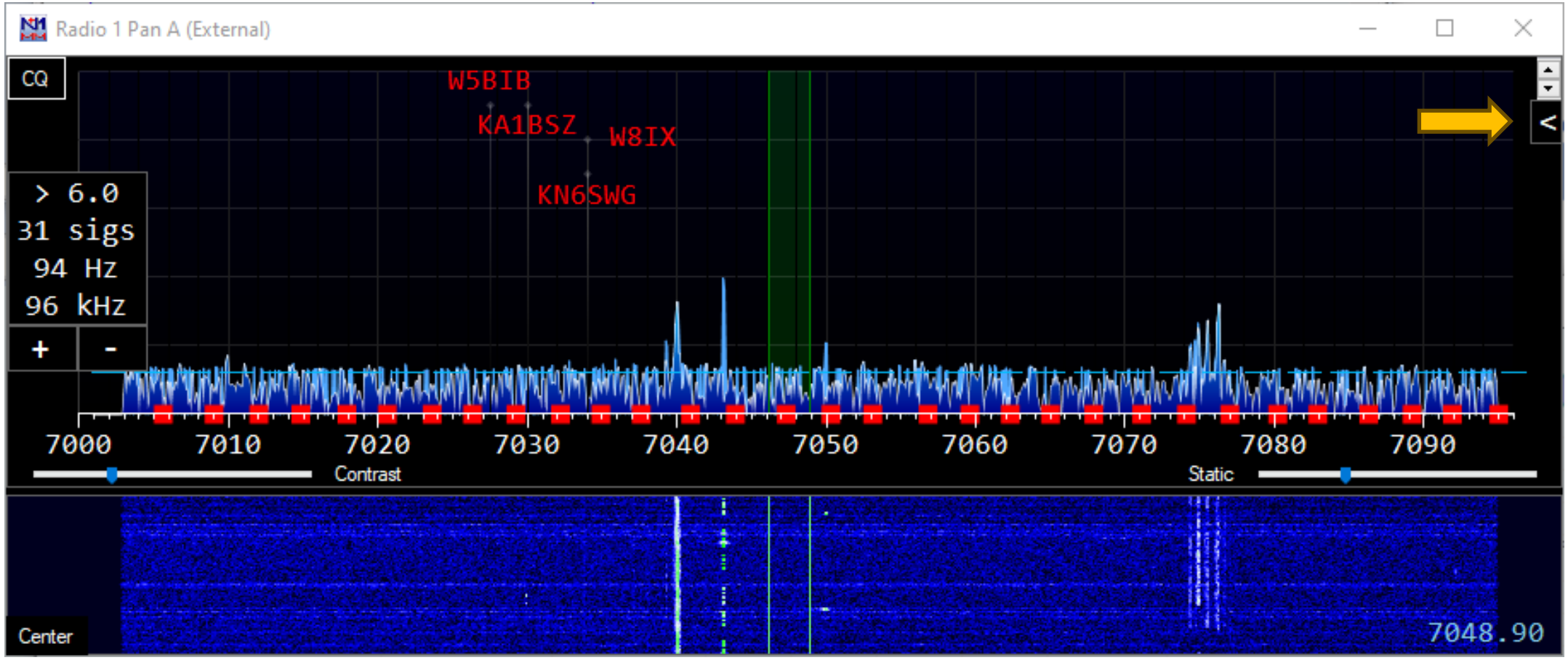
- Enable **TX TEST** mode, tap **M1** listen to **MON**
- Playback Macros: **`PB1;`** **`PB2;`** … **`PB8;`** **`RX;`**

Tip #12 – Try N1MM Spectrum Display

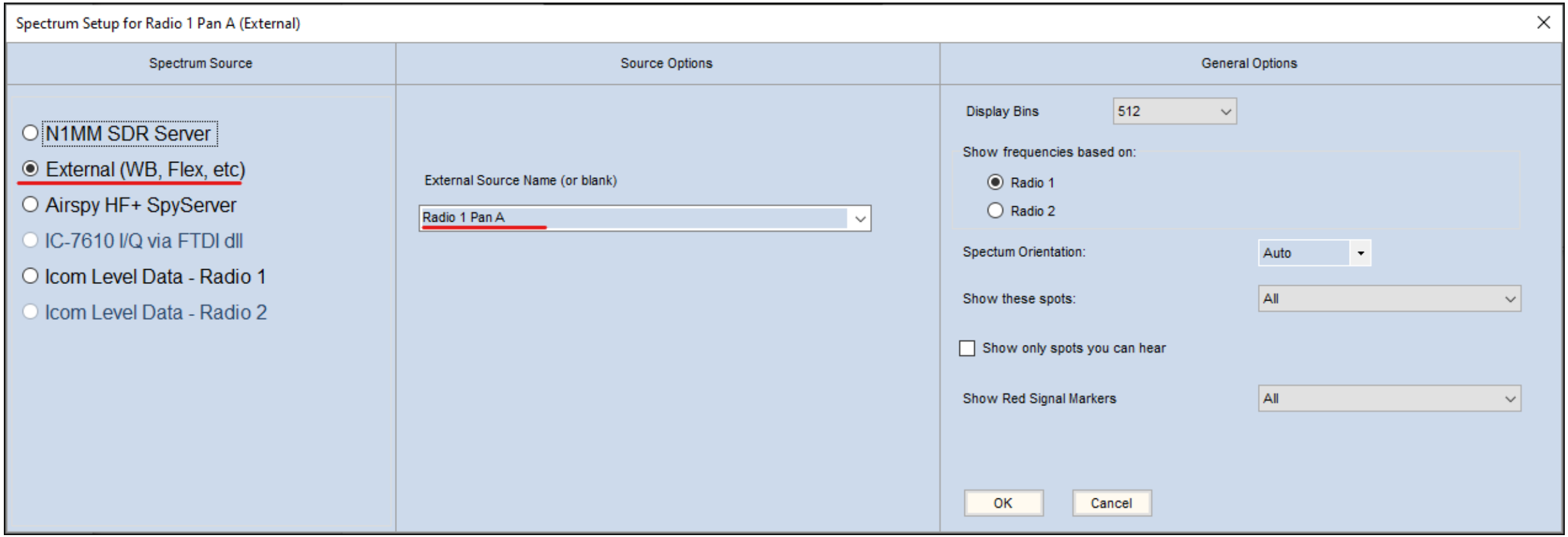
- Select **Window > Spectrum Display**



N1MM Spectrum Display for K4

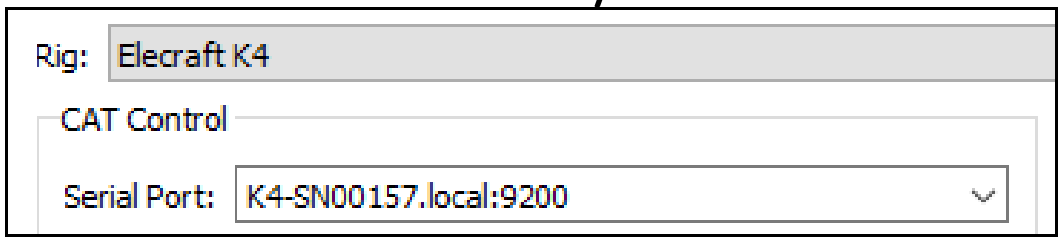


N1MM Spectrum Display Options for K4



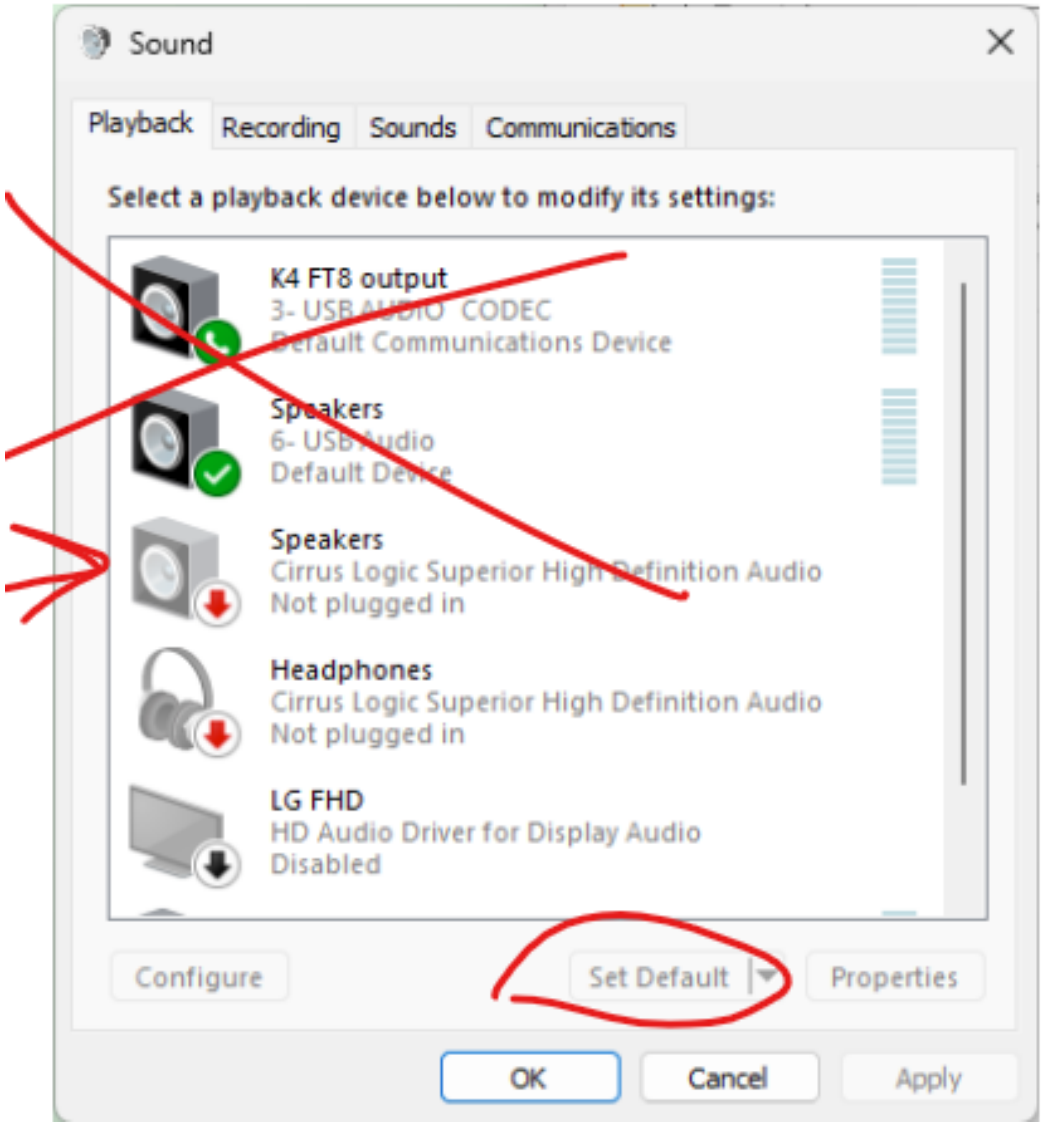
Tip #13 – FT8 Operating Tips

- Give **WJST-X** or **JTDX** direct access to K4 COM port or IP Address
- Enter hostname or **IP address** for TCP/IP:



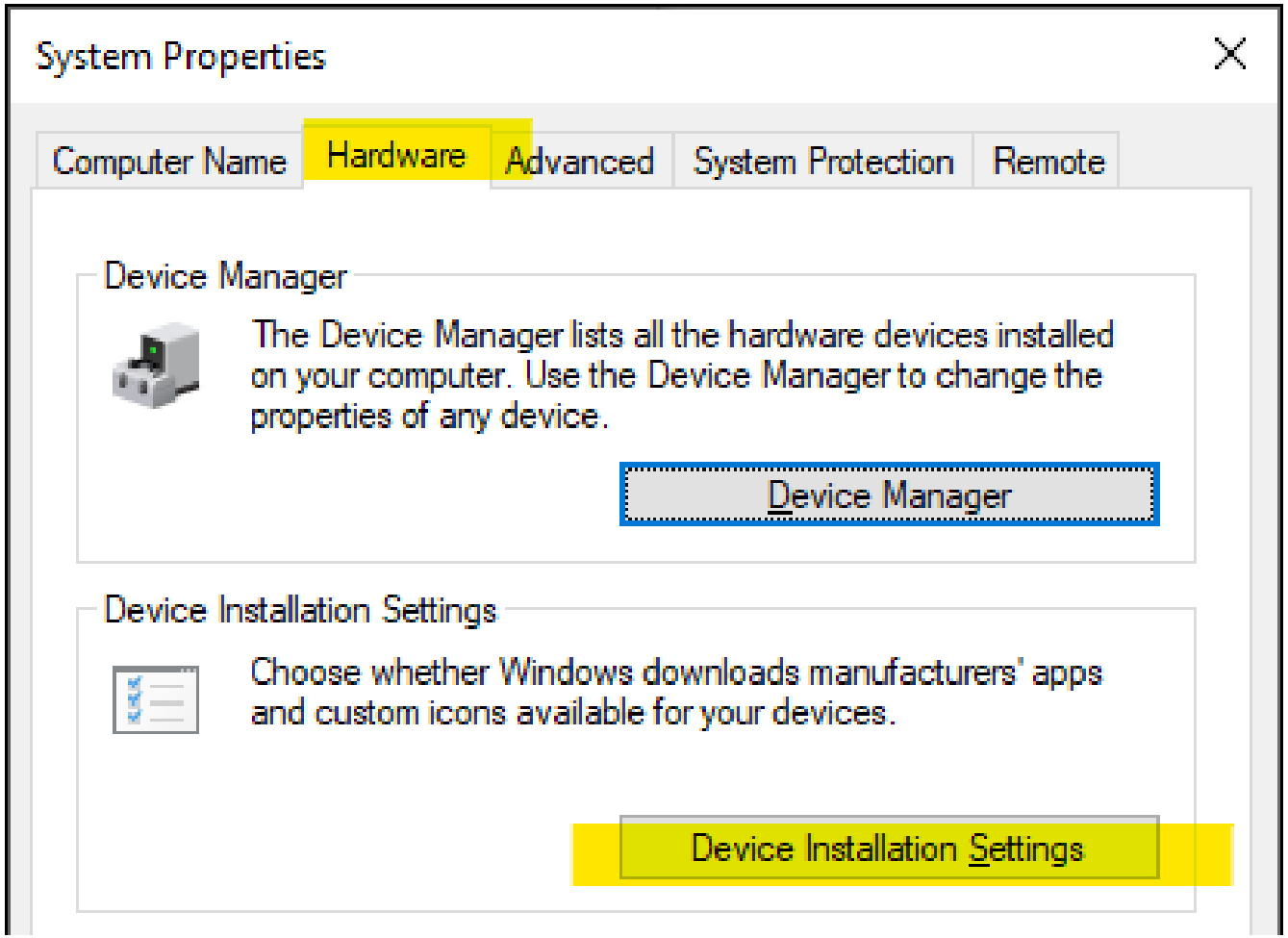
- Use **PTT via CAT** or **PTT via RTS** and use **TEST CAT** and **TEST PTT** buttons
- Use **SPLIT=FAKE IT**
- Set Audio I/O to K4 **USB Audio CODEC**
- Leave **PWR** slider set to max
- Set **TX > LINE IN** to **SOUND** CARD, level to **36** – or ALC at Hashmark 5
- **Dell PCs**: Run **services.msc** to disable Waves Audio Service
- Run **mmsys.cpl** – Windows Sound Control Panel, Disable Enhancements
- Never leave the K4 **USB Audio CODEC** as the Windows default sound card

Leave NO GREEN MARKS on the K4 USB Audio CODEC



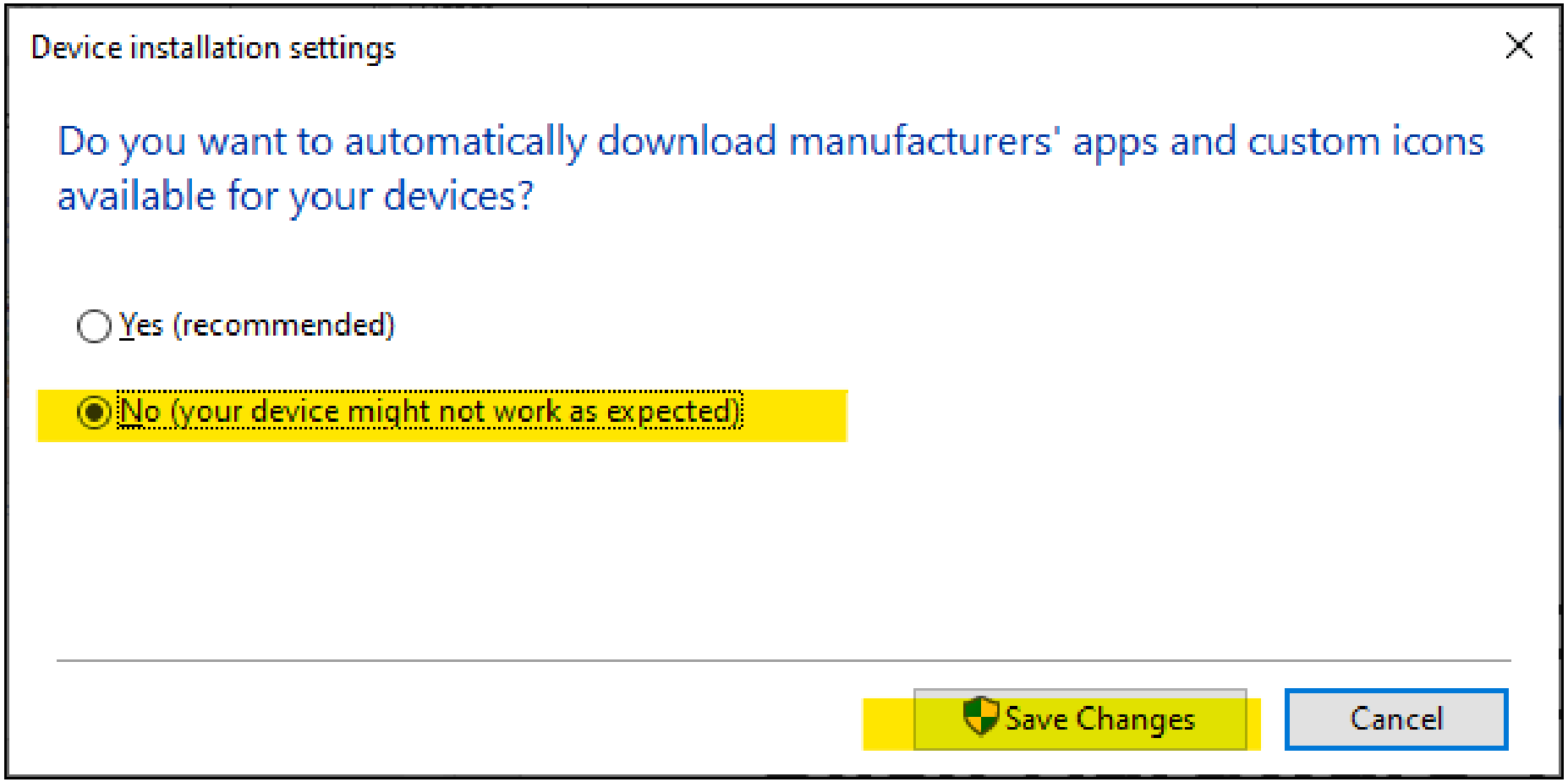
How to Prevent Windows Updates from updating Device Drivers

Enter in Taskbar search box: Advanced System Settings
Click Hardware Tab, Click Device Installation Settings



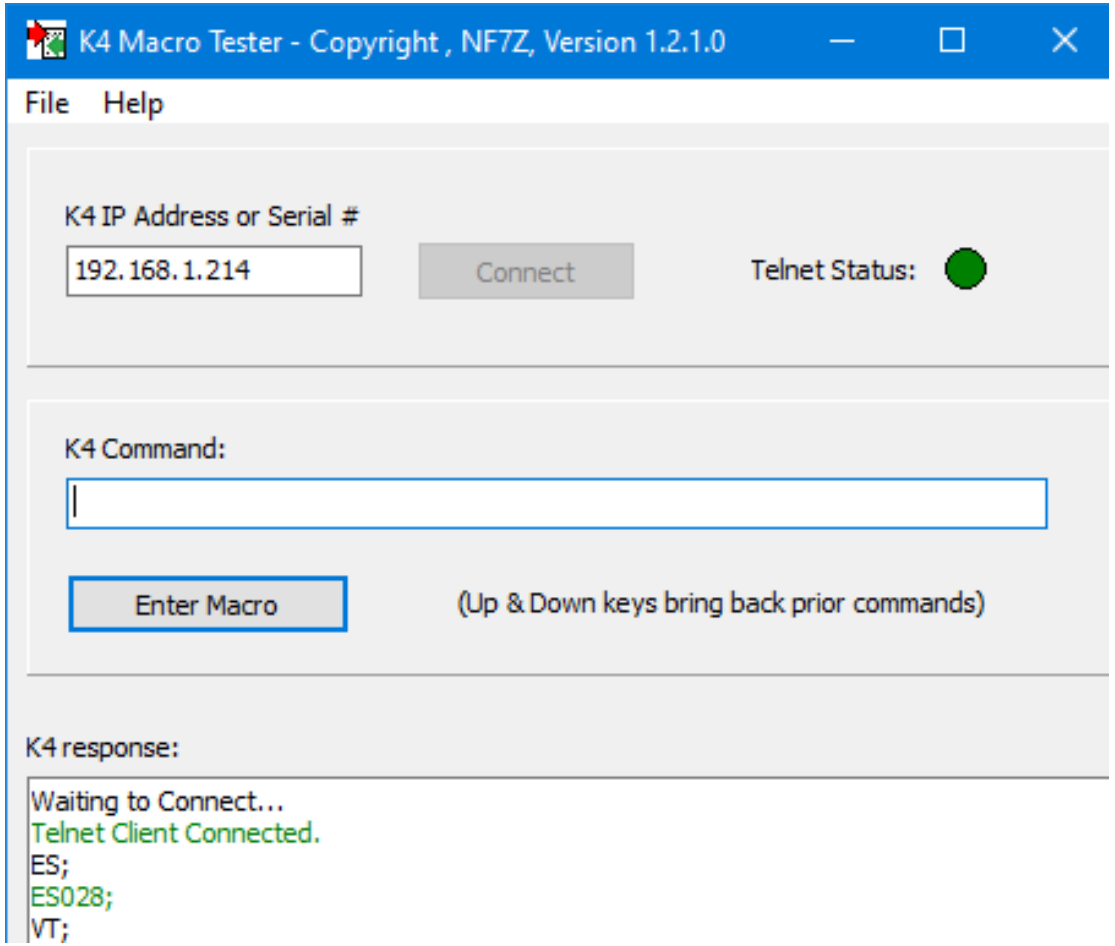
How to Prevent Windows Updates from updating Device Drivers

Automatically download manufacturers' apps? NO! Click Save Changes



Tip #14 – Use K4 Macros to maximize operator convenience

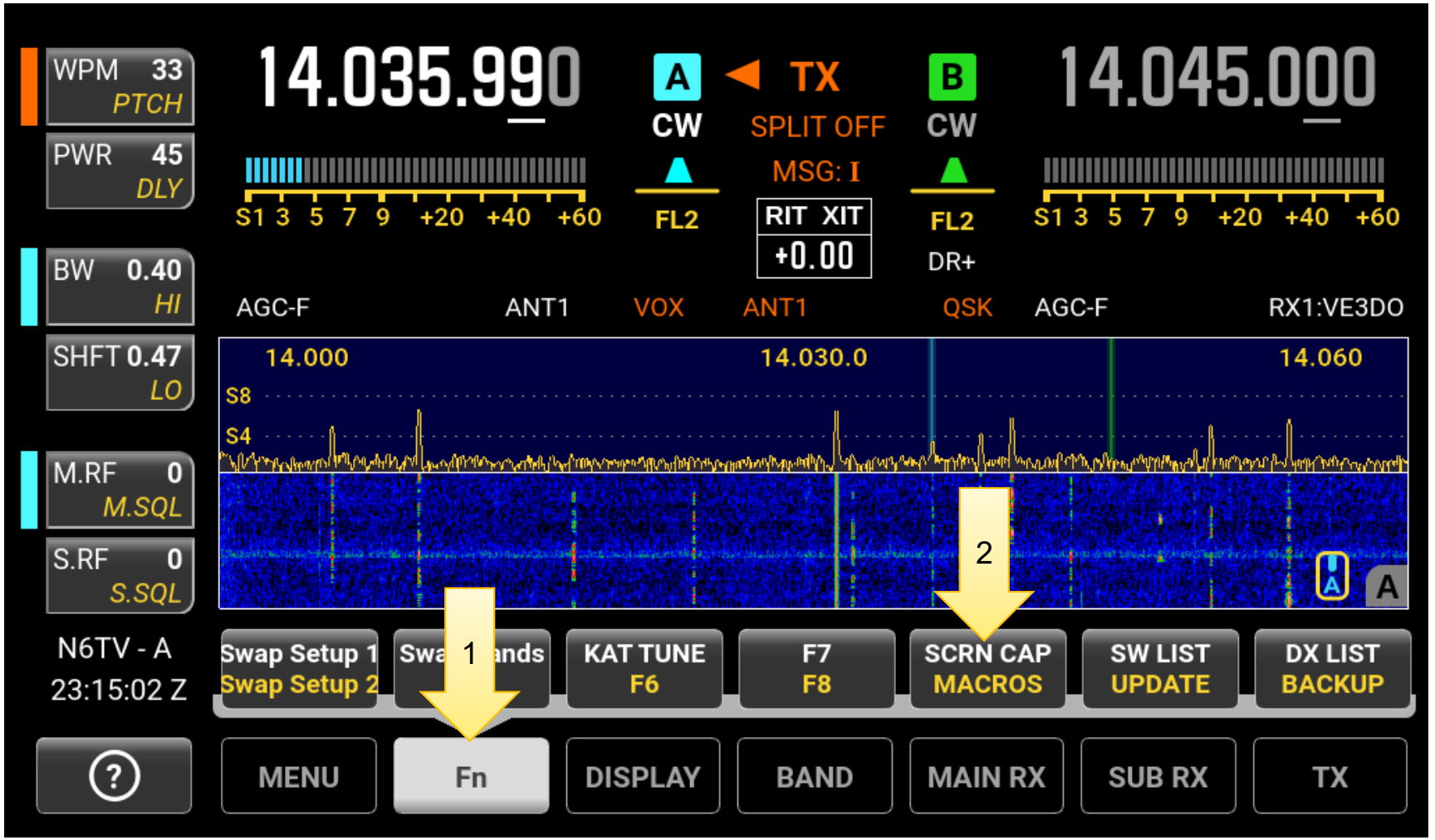
- Use TELNET or NF7Z K4 Macro Tester or NK7Z K4 Macro Master
- When commands work, program them into the K4



Example: Using the **REM ANT** switch to refresh **REF LEVEL** of scope

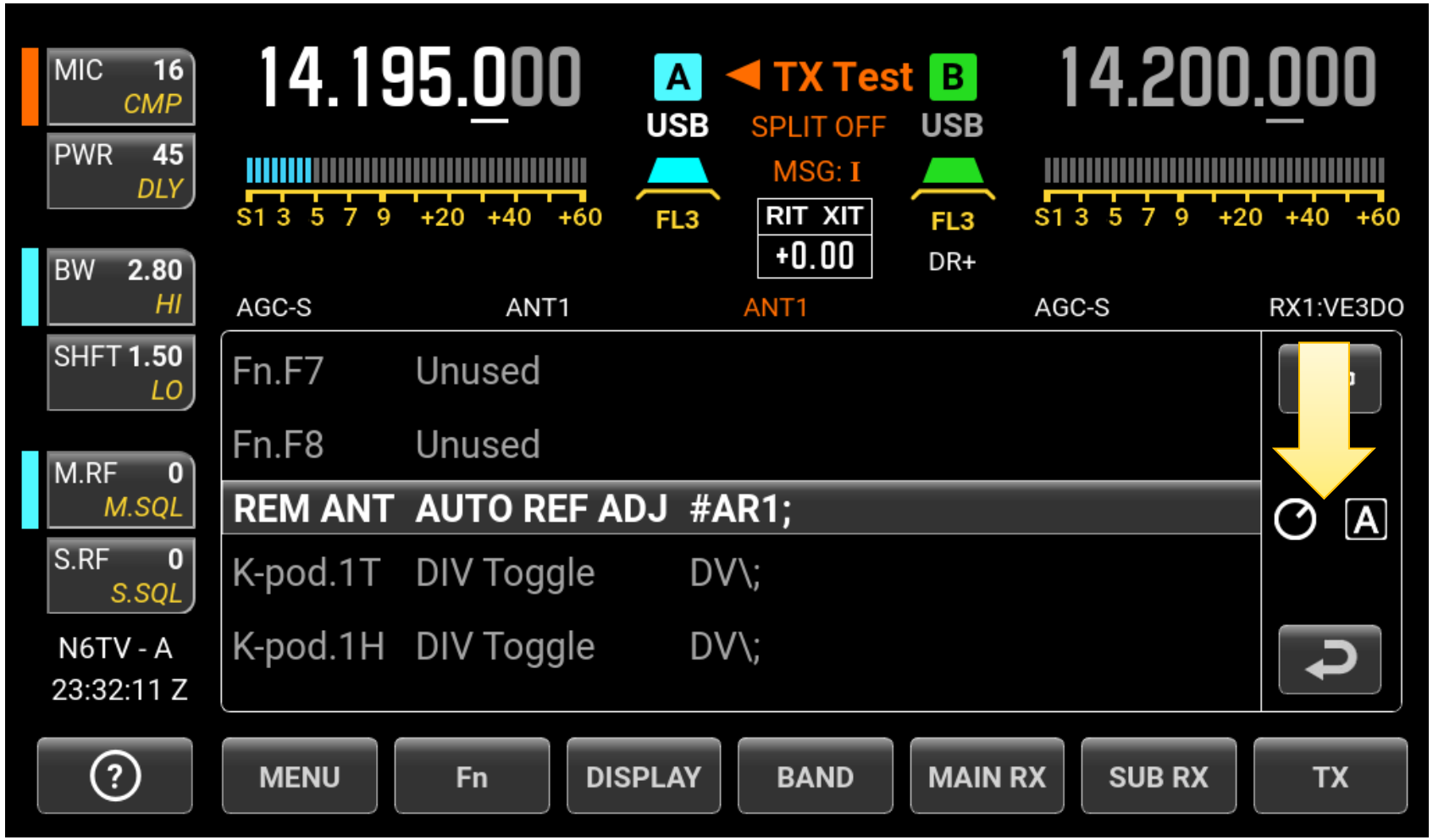
Programming a macro

1. Tap **Fn > MACROS** (hold)



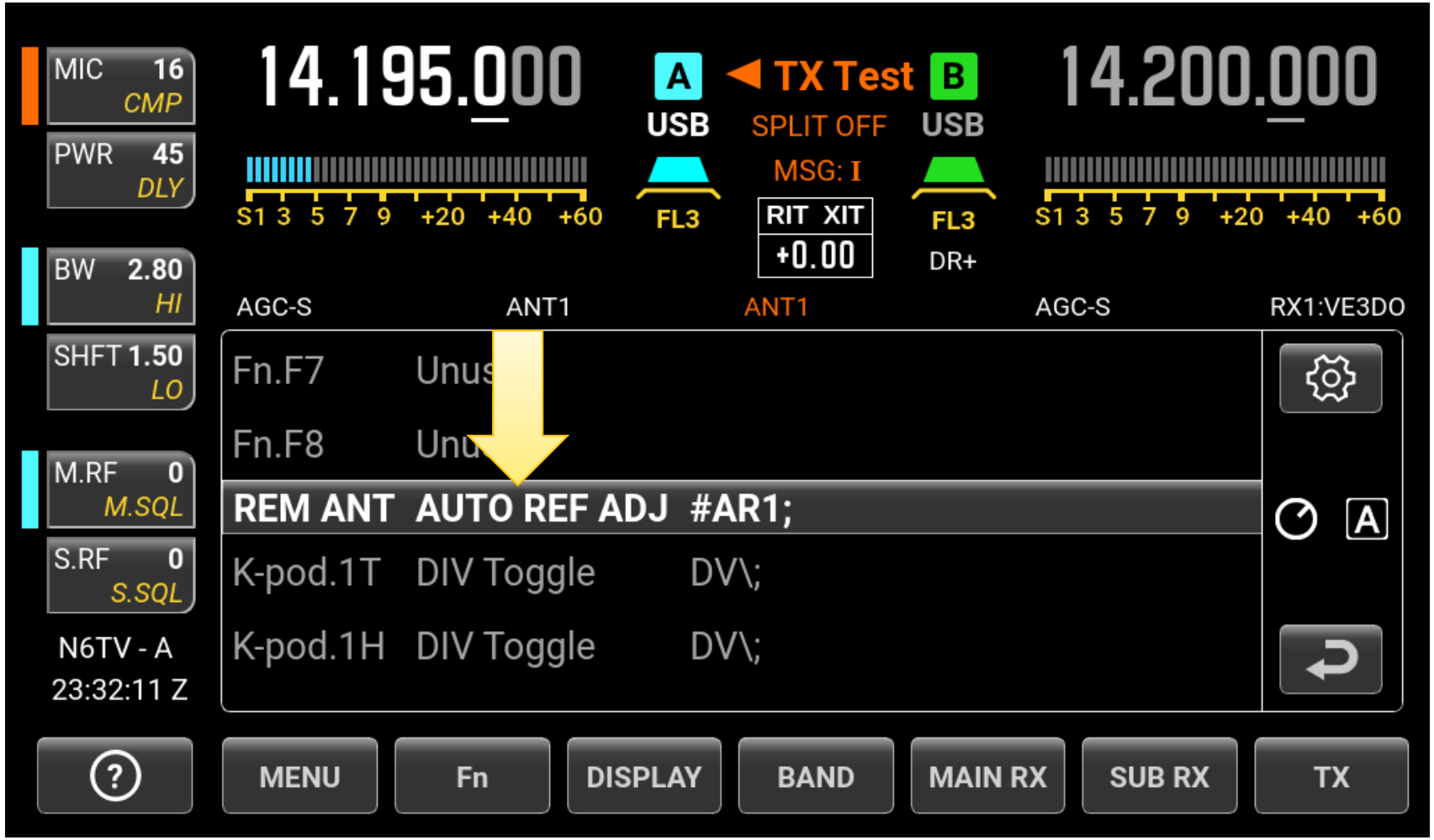
Scroll down and highlight the **REM ANT** entry

2. Use the **VFO A** knob or mouse wheel to scroll to REM ANT



Enter a label
(optional, but documentation is helpful)

3. Tap / click on the *middle* column to set the label only

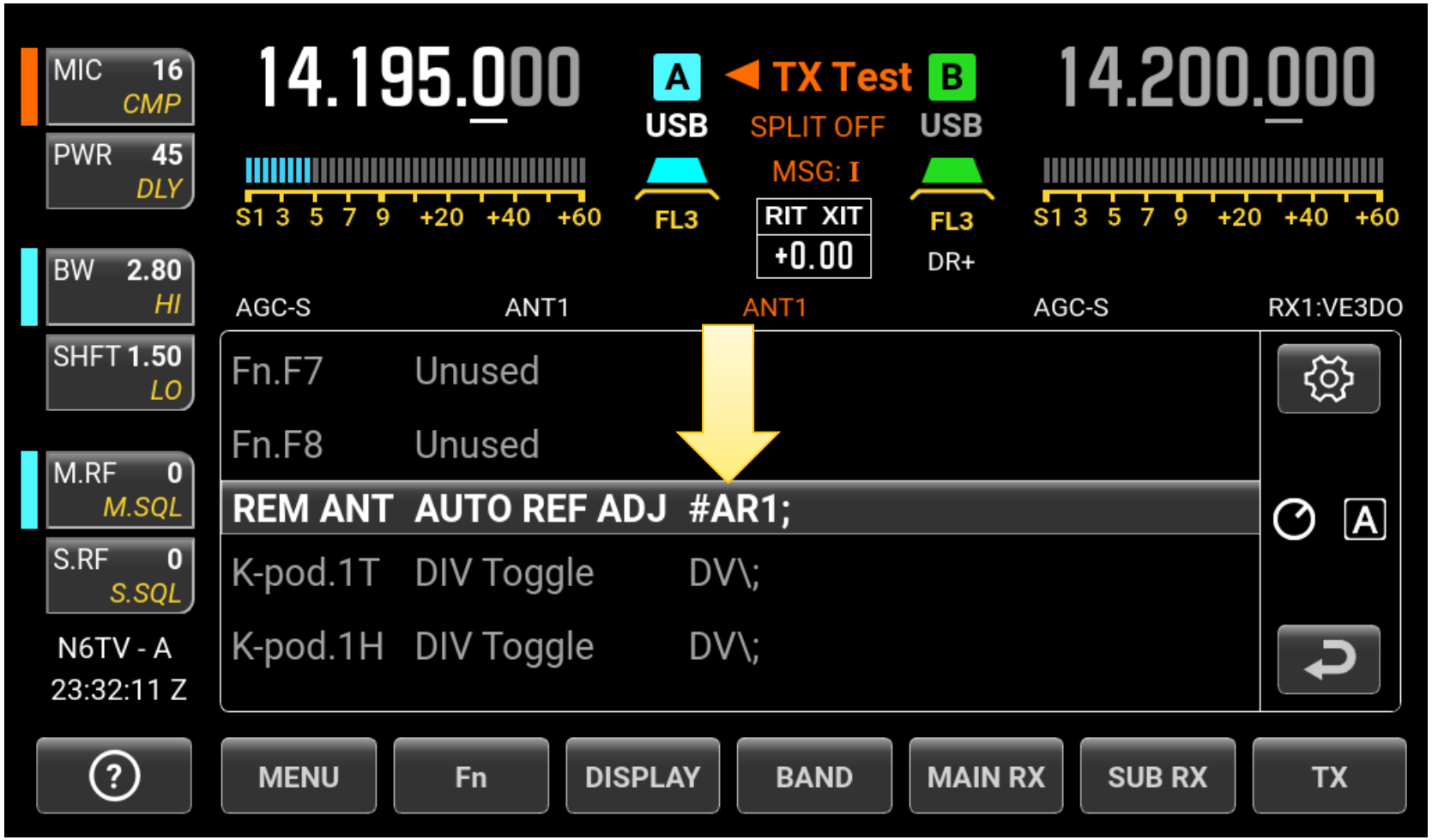


Entering the label

4. Enter the label, tap **ENTER** to save, **[X]** to cancel

Enter command(s) – see *Programming Reference*

5. Tap click on the ***last*** **column** to set the command(s)



Entering the Command(s)

6. Enter the command(s), tap **ENTER** to save, **[X]** to cancel

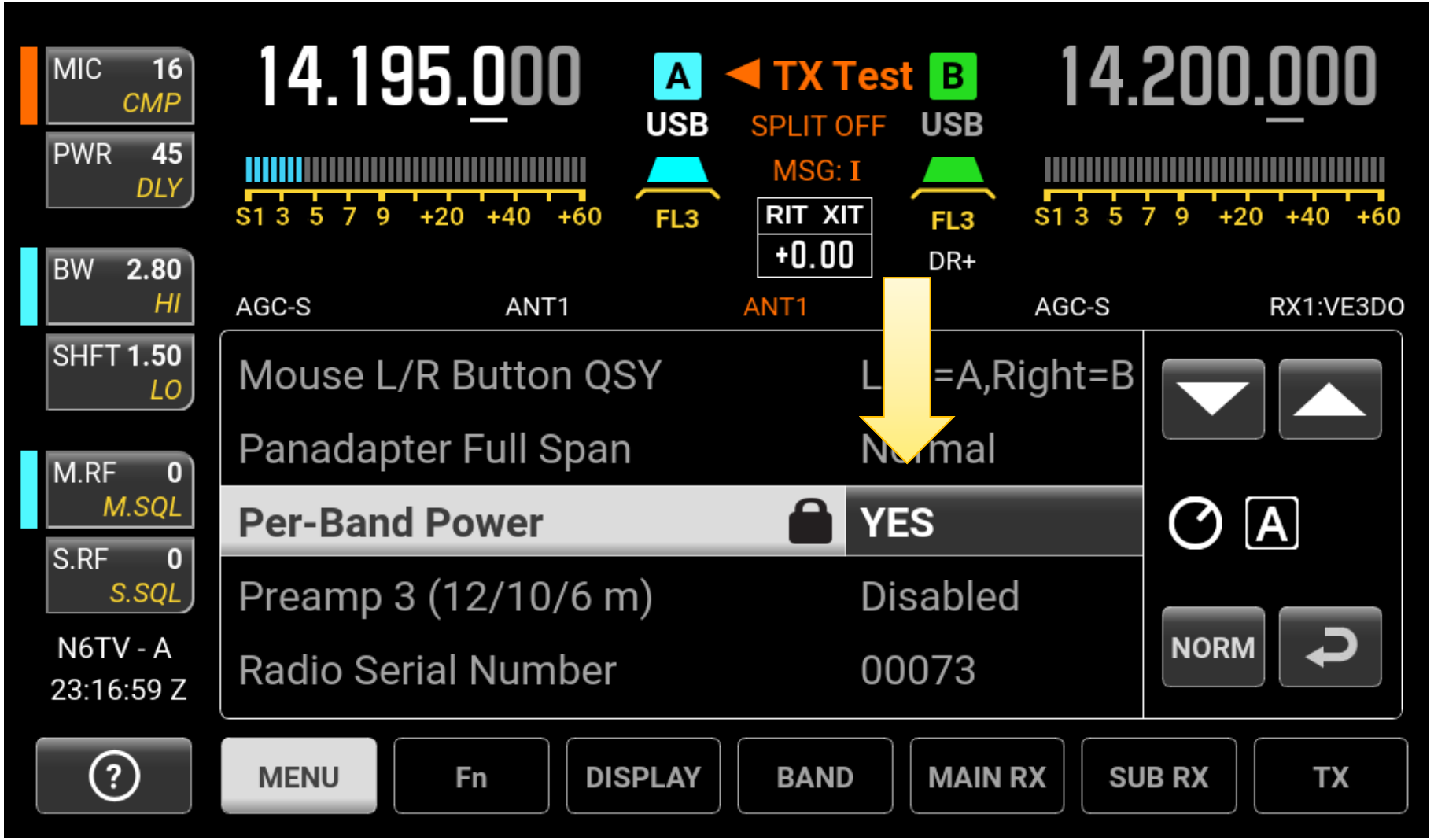
Other K-POD macros I use:

REM ANT	AutoRef Reset	#AR1;
K-pod.1T	DIV Toggle	DV\;
K-pod.1H	Write Log	LOG;
K-pod.2T	Band Stack	BN>;
K-pod.2H	**Capture LCD**	**SS0;**
K-pod.3T	DIV Off	DV0;SB0;
K-pod.3H	Capture EXT	SS1;
K-pod.4T	APF Toggle	AP/;AP$/;
K-pod.4H	**SUB Toggle**	**SB/;**

K-pod.5T	A > B	AB0;
K-pod.5H	A > B All	AB3;
K-pod.6T	A / B	AB2;
K-pod.6H	A / B all	AB5;
K-pod.7T	**RIT Off**	**RC;RT0;**
K-pod.7H	RIT Off	RC;RT0;
K-pod.8T	RIT On	RT1;RC;
K-pod.8H	RIT On	RT1;RC;

Tip #15 – For linear amplifiers, K4 can remember separate drive per band.

For KPA500/KPA1500, *two* levels per band. Put AMP in OPER first, *then* set DRIVE.



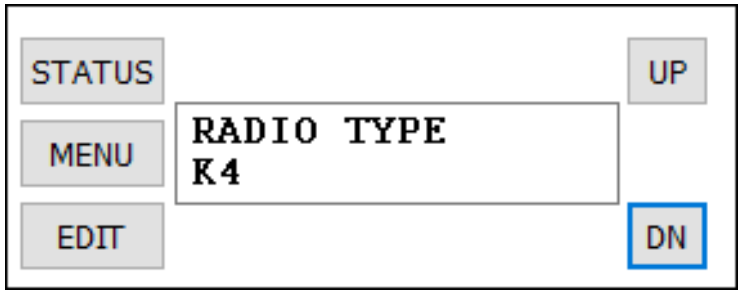
Tip #15A – Adjust **TX Delays** to prevent amplifier hot-switching *and* eliminate T/R transition artifacts (loud pops)

Tip Summary

1. Use the **NORM** switch
2. Use **Speakers+Phones** toggle (**PF3**)
3. Use **Search** in the built-in and web manuals (STFM)
4. Adjust scope **SCALE** and **SPAN**, use **RIT** knob to set edges
5. Use the Per-Band Quick Memories **M1** to **M4**
6. Set **TX > ANT CFG**
7. Set **MAIN RX > ANT CFG** and **SUB RX > ANT CFG**
8. How to use the **DISPLAY** menu
9. **CW** Tip: **APF** with BW 50 hz
10. Fix **FTDI Properties**, set **DTR keying**
11. **SSB** Tip: Set **TX EQ**, use **Voice memories**
12. Use **N1MM Spectrum Display**
13. **FT8** Tip: no green marks on **USB Audio CODEC**, block **Windows Update**
14. Use **K4 Macros** to optimize operating convenience
15. For Linear Amplifiers, use **Per-Band Power** and **TX DLY**

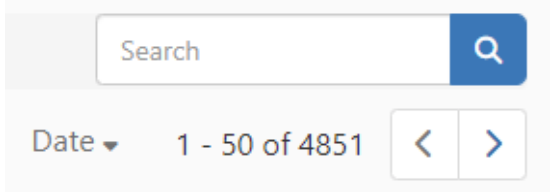
Bonus Tip - K4 to KPA1500 Integration

- When connected by **AUX** cable, BAND buttons on AMP change band of rig (KPA500 too)!
- One tap KPA1500 **ATU TUNE** keys rig with 20W and tunes



References

- https://groups.io/g/Elecraft-K4/topics
  Use the SEARCH box, top right corner:



- https://groups.io/g/Elecraft-K4/files
  Includes organized 412-page PDF by DL2FAG
- http://www.qrz.com/db/n6tv - Links to this and other presentations
- n6tv@arrl.net

Questions?