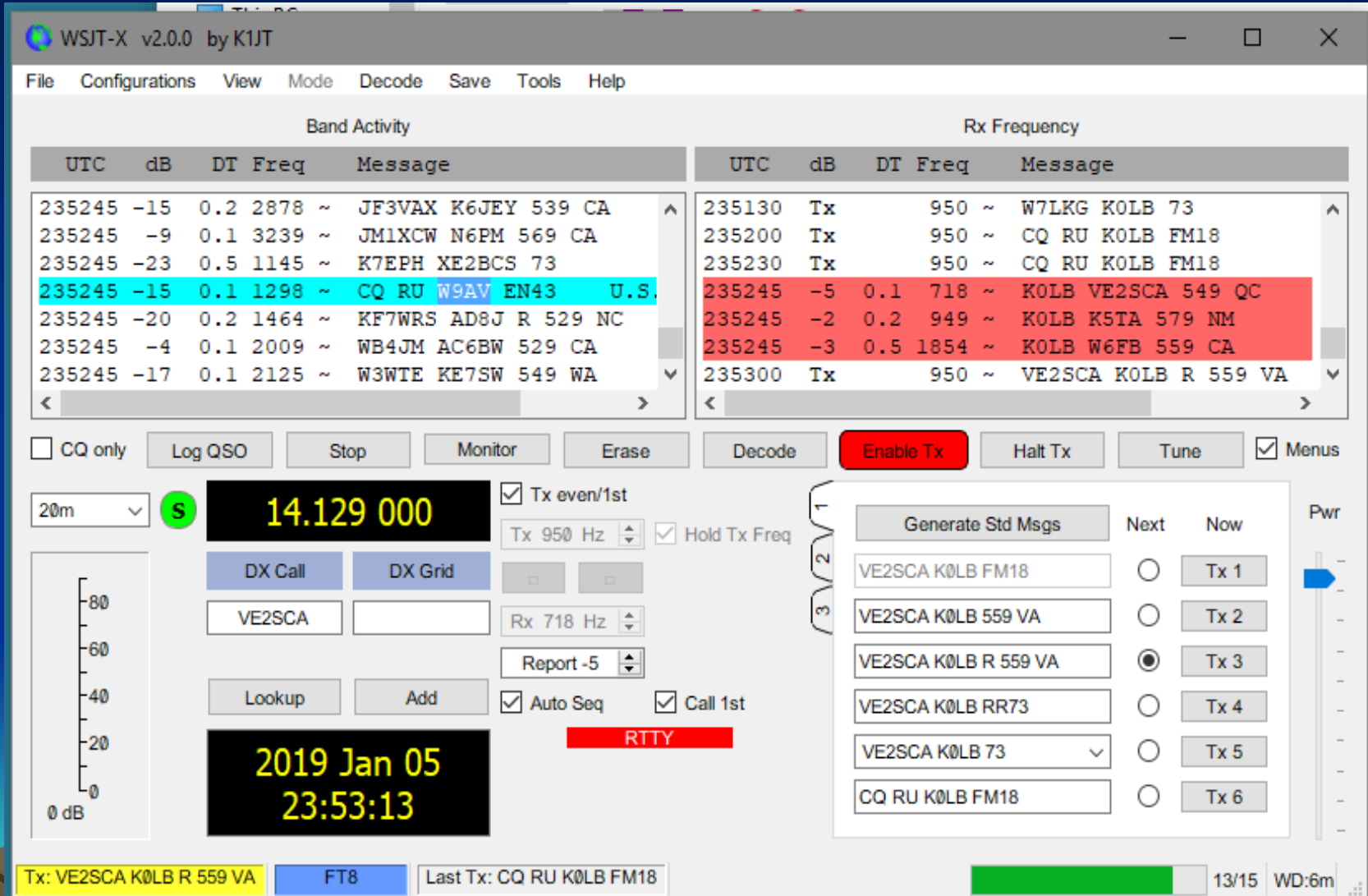
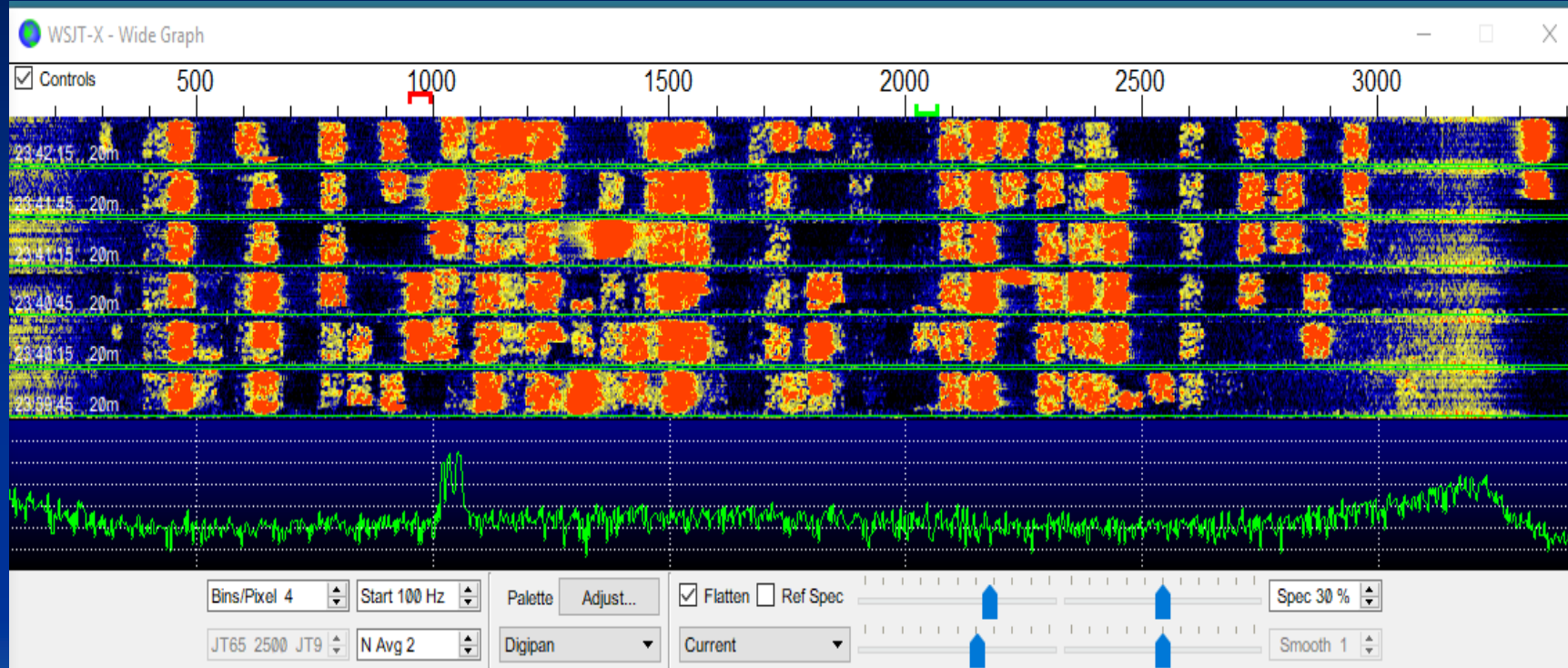


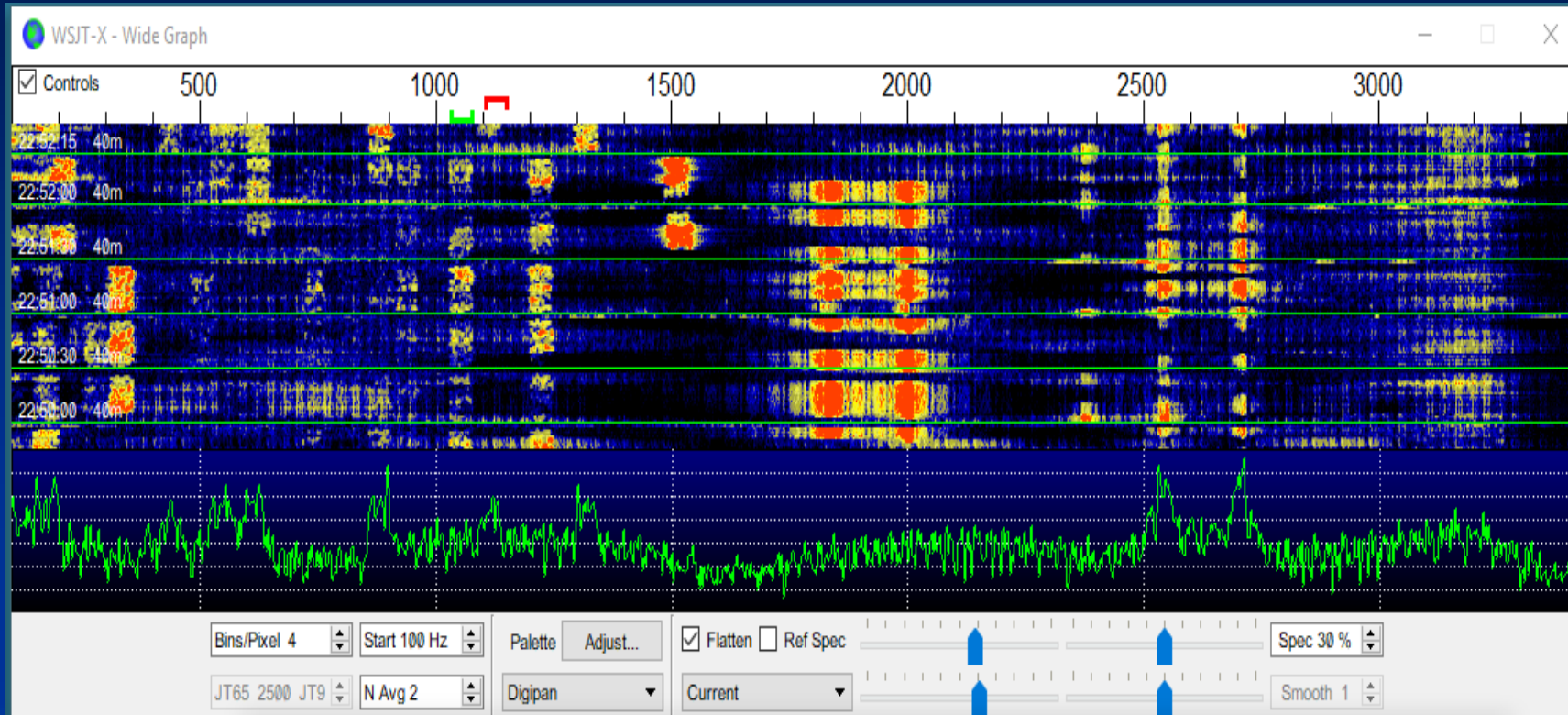
# WSJT-X (FT8 Contest Mode)



# WSJT-X (FT8)



# WSJT-X (FT8 and RTTY)



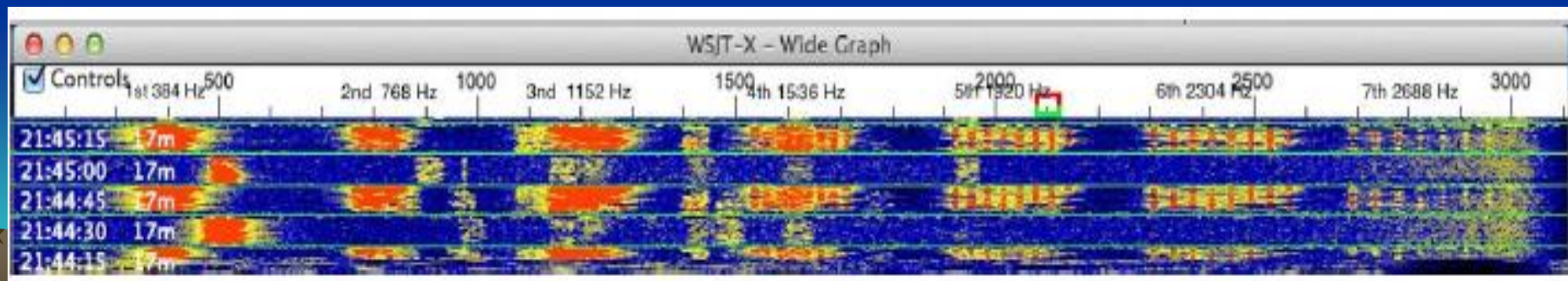
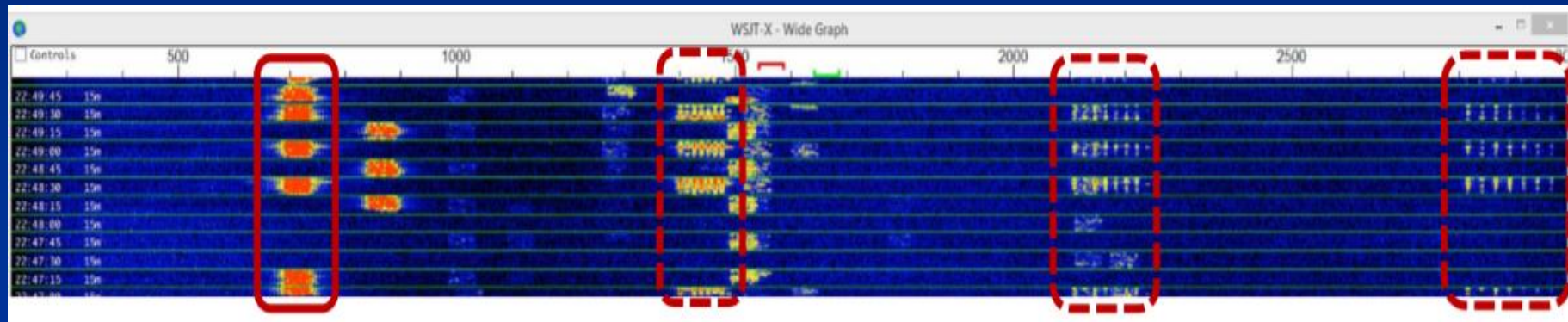
# FT8 Distortion

- Although FT8+ is a constant-carrier FSK mode (unlike PSK, CW and SSB), overdriving will distort and widen your signal (making it less likely to decode) and may generate spurious signals. Set the transmit levels so the entire chain from AF generation through to RF transmission is operating linearly.



# FT8 Audio Example

- Overdriven audio can generate spurious output.
- Set audio drive to indicate 0 (zero) ALC on transmitter



# FT8 Tips

- Know your radio TX audio passband cutoff. Attempting to reply to a caller outside of the range will result in no power output.
- Need a accurate time reference for your computer. If off by more than a second may experience problems decoding.
- Turn off radio noise blanker.
- Call a station away from their TX frequency.

# General Settings

Settings

General Radio Audio Tx Macros Reporting Frequencies Colors Advanced

Station Details

My Call: K0LB My Grid: FM18HQ ☐ AutoGrid IARU Region: Region 2

Message generation for type 2 compound callsign holders: Full call in Tx3

Display

☐ Start new period decodes at top

☐ Blank line between decoding periods

☒ Display distance in miles

☒ Tx messages to Rx frequency window

☒ Show DXCC, grid, and worked-before status ☐ Show principal prefix instead of country name

Font...

Decoded Text Font...

Behavior

☐ Monitor off at startup ☐ Enable VHF and submode features

☐ Monitor returns to last used frequency ☐ Allow Tx frequency changes while transmitting

☒ Double-click on call sets Tx enable ☐ Single decode

☐ Disable Tx after sending 73 ☐ Decode after EME delay

☐ Calling CQ forces Call 1st

☐ Alternate F1-F6 bindings

☐ CW ID after 73

TX watchdog: 6 minutes

Periodic CW ID Interval: 10

OK Cancel

# Radio Settings

Settings

General Radio Audio TX Macros Reporting Frequencies Colors Advanced

Rig: Icom IC-7100 Poll Interval: 8 s

**CAT Control**

Serial Port: COM6

**Serial Port Parameters**

Baud Rate: 19200

**Data Bits**

☐ Default ☐ Seven ☒ Eight

**Stop Bits**

☐ Default ☐ One ☒ Two

**Handshake**

☐ Default ☒ None ☐ XON/XOFF ☐ Hardware

**Force Control Lines**

DTR: RTS:

**PTT Method**

☐ VOX ☐ DTR ☒ CAT ☐ RTS

Port: COM5

**Transmit Audio Source**

☒ Rear/Data ☐ Front/Mic

**Mode**

☒ None ☐ USB ☐ Data/Pkt

**Split Operation**

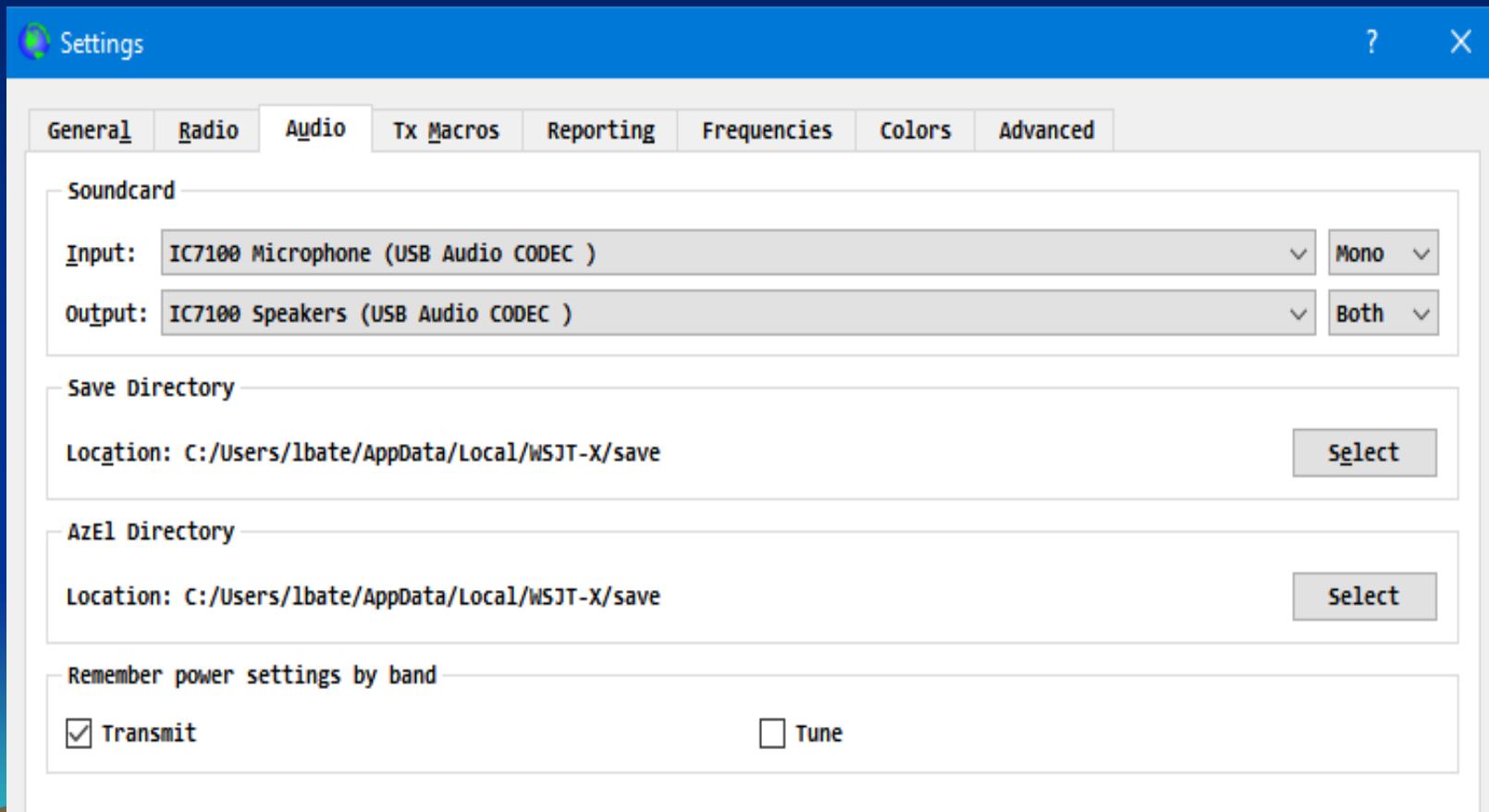
☐ None ☐ Rig ☒ Fake It

Test CAT Test PTT

OK Cancel



# Audio Settings



The screenshot shows the 'Audio' tab of the WSJT-X settings window. The window has a blue title bar with the 'Settings' icon and text. Below the title bar are several tabs: 'General', 'Radio', 'Audio' (selected), 'Tx Macros', 'Reporting', 'Frequencies', 'Colors', and 'Advanced'. The 'Audio' tab contains three main sections: 'Soundcard', 'Save Directory', and 'AZEL Directory'. The 'Soundcard' section has 'Input' and 'Output' dropdown menus, both set to 'IC7100 Microphone (USB Audio CODEC )' and 'IC7100 Speakers (USB Audio CODEC )' respectively, with 'Mono' and 'Both' as secondary options. The 'Save Directory' and 'AZEL Directory' sections each show a file path 'C:/Users/lbate/AppData/Local/WSJT-X/save' and a 'Select' button. The bottom section, 'Remember power settings by band', contains two checkboxes: 'Transmit' (checked) and 'Tune' (unchecked).

Settings

General Radio **Audio** Tx Macros Reporting Frequencies Colors Advanced

Soundcard

Input: IC7100 Microphone (USB Audio CODEC ) Mono

Output: IC7100 Speakers (USB Audio CODEC ) Both

Save Directory

Location: C:/Users/lbate/AppData/Local/WSJT-X/save Select

AZEL Directory

Location: C:/Users/lbate/AppData/Local/WSJT-X/save Select

Remember power settings by band

☒ Transmit ☐ Tune

# FT8 Tips

- Remember the Digital Setting for your radio
- Call a station away from their TX frequency.
- Timing is important! If your computer clock is out by more than a second you will experience problems (CQ ignored, Response to other stations).
- If you are unconcerned about the accuracy of your clock but simply want to work someone with timing issues, you can deliberately 'nudge' your clock forward or backward using the Time Fudge utility by W9MDB.

# Advanced Settings Fox/Hound, Contest

Settings

General Radio Audio Tx Macros Reporting Frequencies Colors Advanced

**JT65 VHF/UHF/Microwave decoding parameters**

Random erasure patterns: 6

Aggressive decoding level: 0

☐ Two-pass decoding

**Miscellaneous**

Degrade S/N of .wav file: 0.0 dB

Receiver bandwidth: 3000 Hz

Tx delay: 0.1 s

**Tone spacing**

☐ x 2 ☐ x 4

**Waterfall spectra**

☒ Low sidelobes ☐ Most sensitive

☒ Special operating activity: Generation of FT4, FT8, and MSK144 messages

☐ Fox ☐ Hound

☐ NA VHF Contest ☒ ARRL Field Day

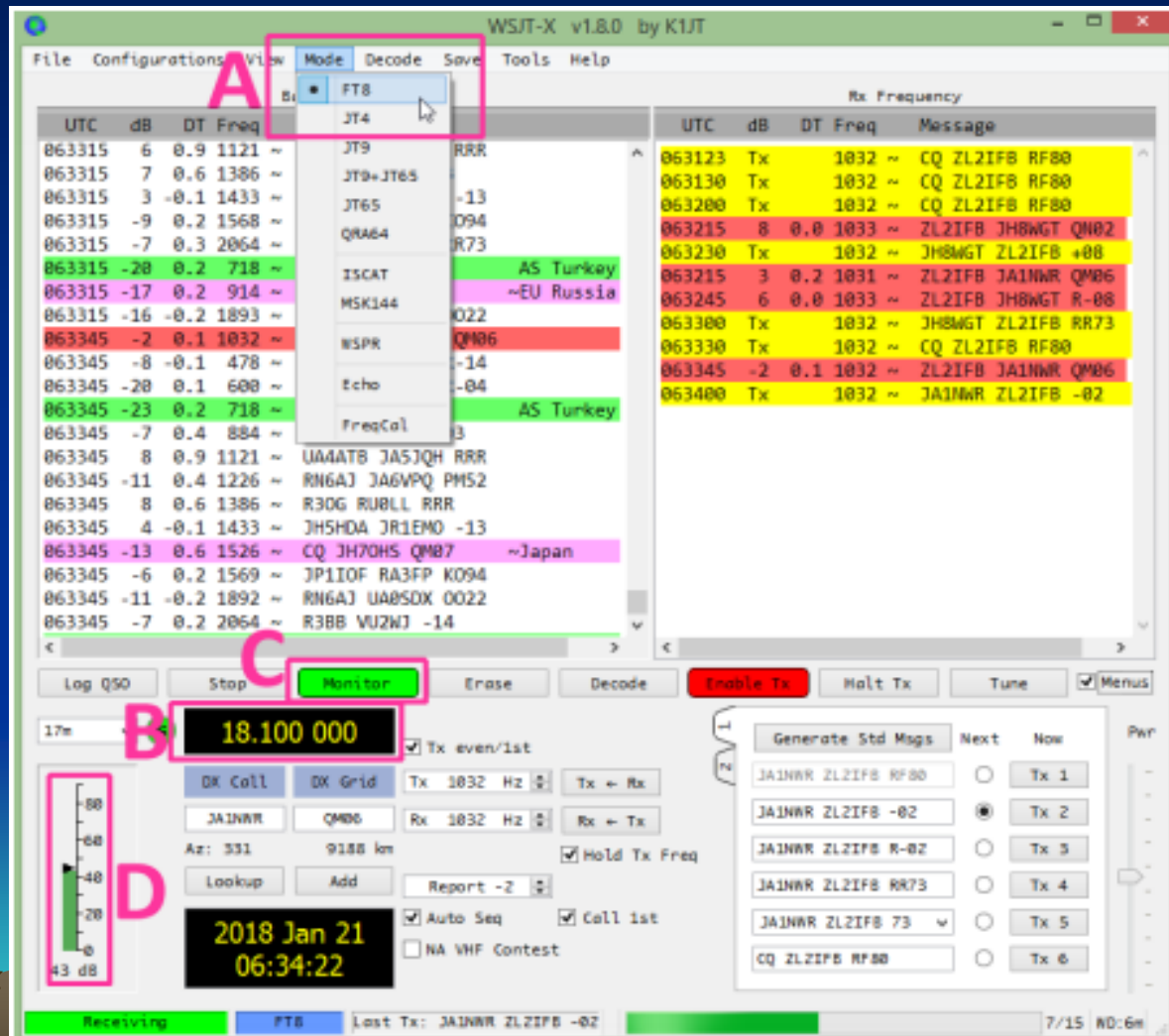
☐ EU VHF Contest ☐ RTTY Roundup messages

☐ WW Digi Contest

FD Exch: 9A VA

RTTY RU Exch: VA

# FT8 Broken? No Decodes?



A – Set to FT8 Mode

B – Rig on FT8  
Frequency, USB, Data  
Mode

C – Monitor Enabled

D – Sufficient audio  
reaching software.  
Should be Green when  
the band is busy

# Frequencies for Digital Modes

Mode	2200m	630m	160m	80m	60m	40m	30m	20m	17m	15m	12m	10m	6m
FST4	0.1360	0.4742	1.8390										
FST4W	0.1360	0.4742	1.8390										
FT4				3.5750	5.3570	7.0475	10.1400	14.0800	18.1040	21.1400	24.9190	28.1800	50.3180
FT8			1.8400	3.5730	5.3570	7.0740	10.1360	14.0740	18.1000	21.0740	24.9150	28.0740	50.3130 & 50.3230
JS8			1.8420	3.5780		7.0780	10.1300	14.0780	18.1040	21.0780	24.9220	28.0780	50.3180
JT65			1.8380	3.5700	5.3570	7.0760	10.1380	14.0760	18.1020	21.0760	24.9170	28.0760	50.3100
JT9			1.8390	3.5720		7.0780	10.1400	14.0780	18.1040	21.0780	24.9190	28.0780	50.3120
MFSK			1.8385	3.5825		7.0425	10.1410	14.0725	18.1030	21.0865	24.9215	28.0725	
PSK			1.8380	3.5800		7.0400	10.1410	14.0700	18.1030	21.0700	24.9200	28.0700 & 28.1200	50.3050
RTTY				3.5900		7.0430	10.1430	14.0830	18.1060	21.0800	24.9250	28.0800	50.6000



# FT8 Frequencies

160m	1.840
80m	3.573
40m	7.074
30m	10.136
20m	14.074
17m	18.100
15m	21.074
12m	24.915
10m	28.074
6m	50.313

- Fldigi
  - <http://www.w1hkj.com/>
- Ham Radio Deluxe
  - <http://www.ham-radio-deluxe.com/>
  - <http://www.n8xym.com/2012/02/ham-radio-deluxe-51-released-version-51.html> (Free Version)
- WSJT-X (Use Version 2.3.x or greater)
  - <https://wsjtx.net/>
- JTAlert
  - <https://hamapps.com>
- Time Sync
  - [https://www.meinbergglobal.com/english/sw/ntp.htm#ntp\\_stable](https://www.meinbergglobal.com/english/sw/ntp.htm#ntp_stable)

# Reference URL

- Good Reference for how to use FT8  
[http://www.g4ifb.com/FT8\\_Hinson\\_tips\\_for\\_HF\\_DXers.pdf](http://www.g4ifb.com/FT8_Hinson_tips_for_HF_DXers.pdf)

# Questions?

- Any interest in a live demo?