

DCARC official ELMER

An Introduction to FT-8 using WSJT-X

- 1- How to set it up.
- 2- What else you might need for best results.
- 3- How to make a contact.

(Everything you always wanted to know but were afraid to ask!!!)

(No Radio specific setting)

Presented by Bill McGowan - KC1EO

What do we know about WSJT-X and FT8?

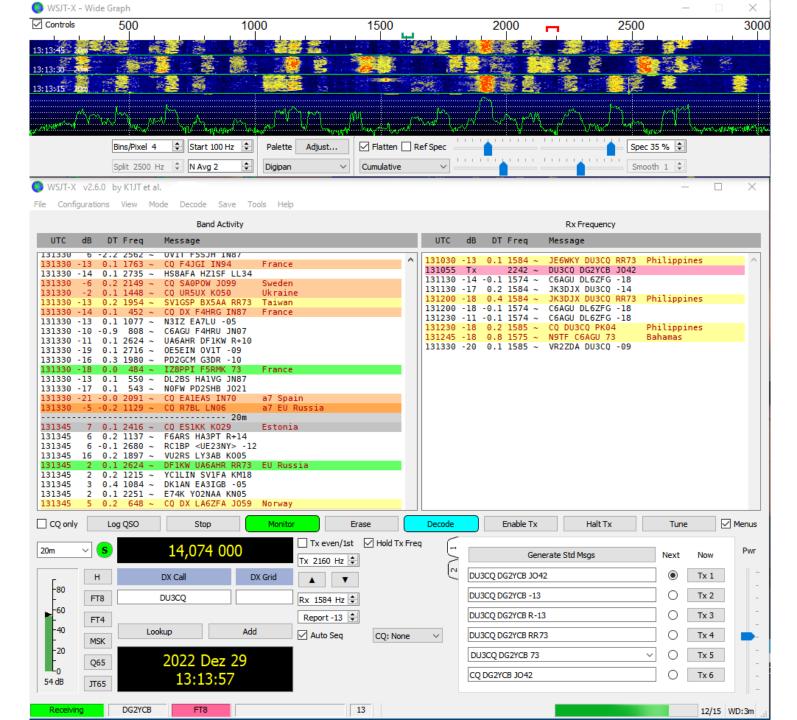
- WSJT-X was developed by Steven Franke, K9AN, and Joe Taylor K1JT in 2017and uses 8 tone FSK modulation
- Needs accurate timing +/- 1.0 seconds to UTC*
- Shows signal strength (-26db to +30db)
- Designed for QSO's not "Rag Chewing"
- Logs contacts in ADIF format (Amateur Data Interchange Format) within the program, and can share that information, as well as decode data information with other programs.
- Generates appropriate TX messages to complete QSO
- Exchanges Grid squares as well as signal reports*
- Multiband standardized Frequencies on all supported bands
- Weak Signal mode NOT <u>low power mode</u>
- Computer Aided Technology (CAT) Compliant
- 10 different modes: **FT4, FT8**, Most Popular for <u>everyday</u> operation and contests.
- JT4, JT9, JT65, QRA64, ISCAT, MSK144, WSPR, and Echo
- Fox/Hound Mode for <u>DXPeditions</u>

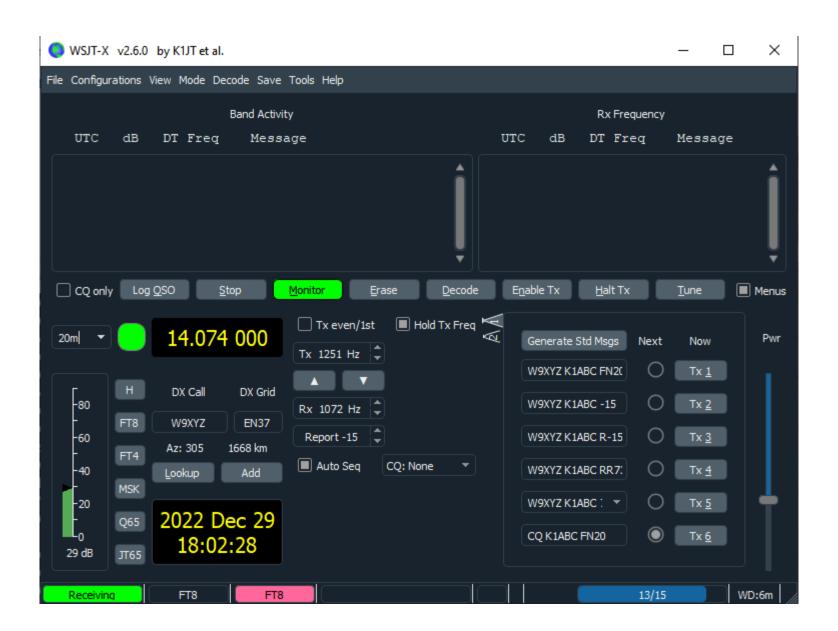
FT-8 System Requirements

- SSB transceiver and antenna
- •Computer running Windows 7 or later, macOS 10.13 or later, or Linux
- •1.5 GHz or faster CPU and 200 MB of available memory; faster machines are better
- Monitor with at least 1024 x 780 resolution
- •Computer-to-radio interface using a serial port or equivalent USB device for T/R switching, or **CAT** control, or VOX, as required for **your** radio-to-computer connections
- •Audio input and output devices supported by the operating system and configured for sample rate 48000 Hz, 16 bits
- Audio or equivalent USB connections between transceiver and computer
- •A means for synchronizing the computer clock to UTC within ±1 second or better*

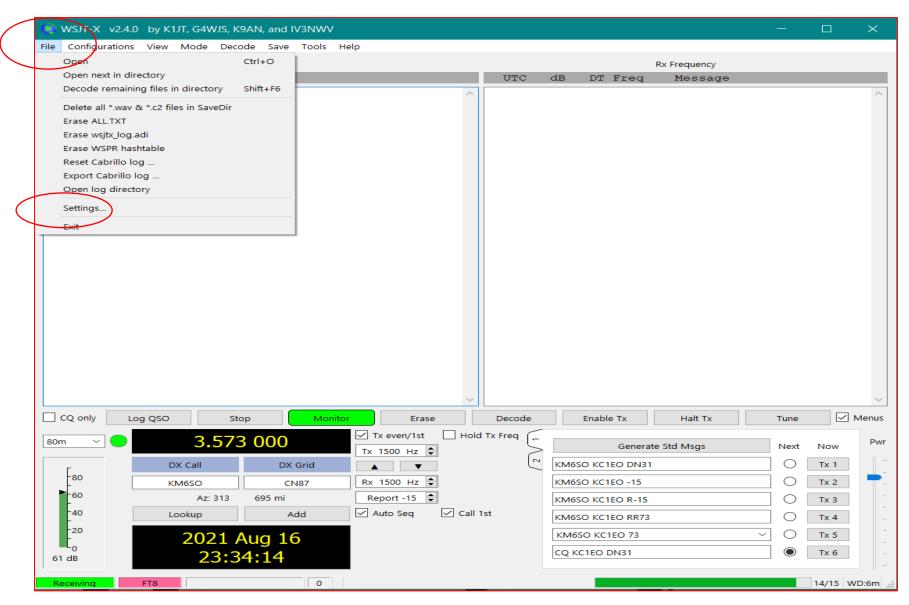
We need more than WSJT-X to get the most from FT8

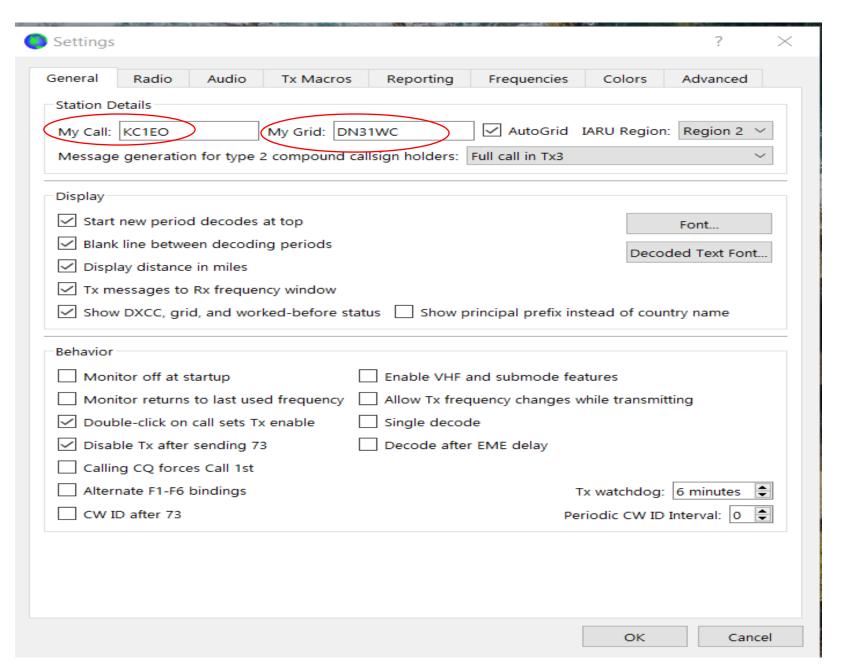
- WSJT-X –The main program (WSJT Home Page (sourceforge.io))
- Dimension 4 or another similar program to keep your time synced (thinkman.com/dimension4)
- DXLabs Suite DXKeeper Log your contacts and MORE (Dxlabsuite.com) (Refer to Joe's presentation of last month)
- JT Alert (Hamapps.com) ((Almost required))
- GridTracker (Gridtracker.org)
- -----
- PSK Reporter (https://pskreporter.info/pskmap.html)
- Groups.io (https://groups.io) Email group for FT8, Radios, etc.
- ARRL LoTW VERY helpful (arrl.org/quick-start)

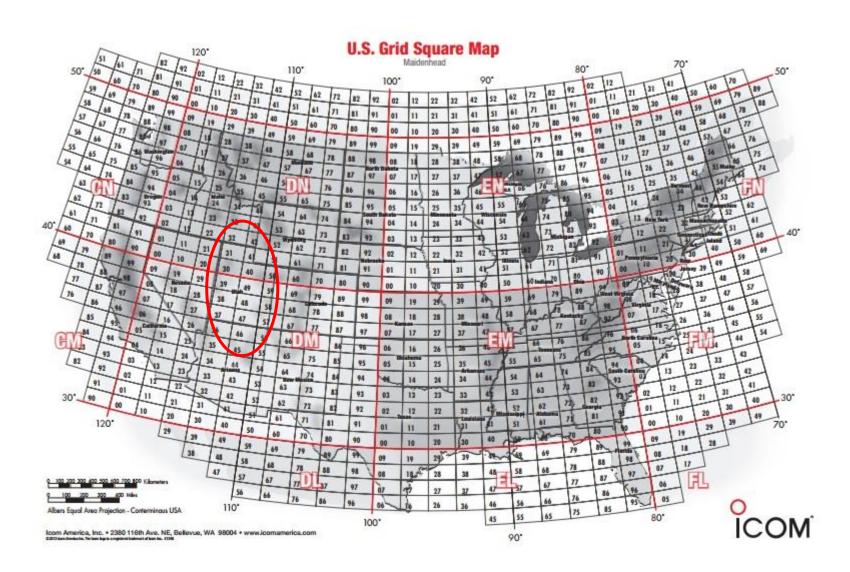


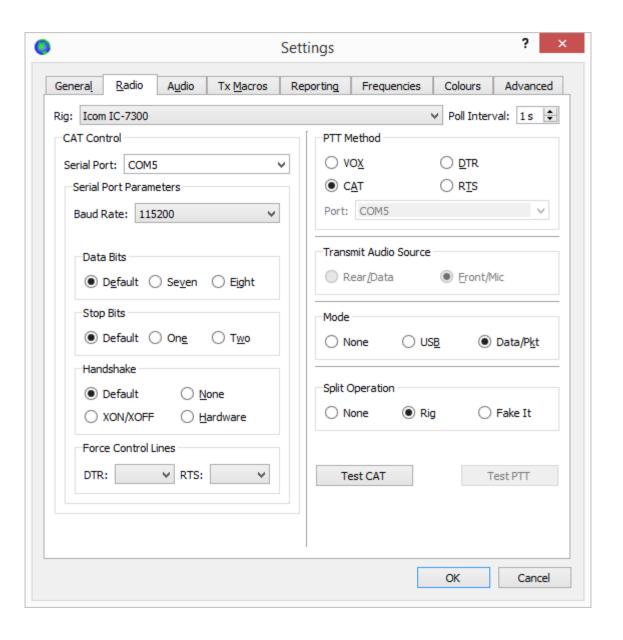


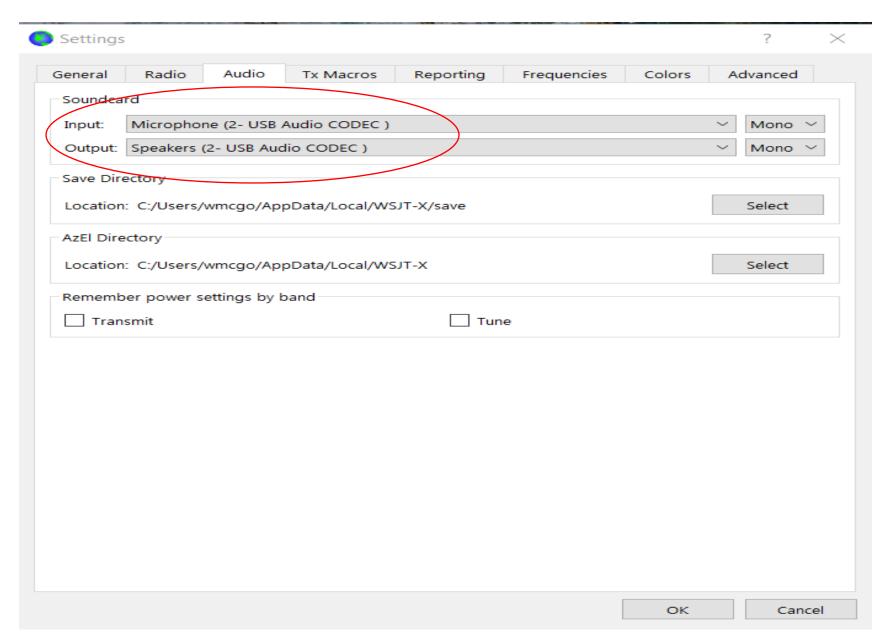
Settings changes take place on the following tabs.

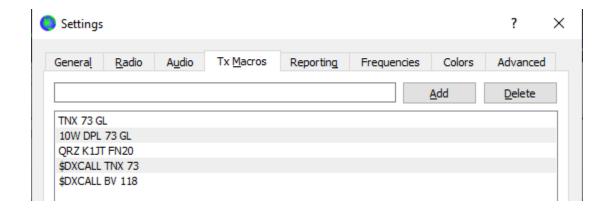






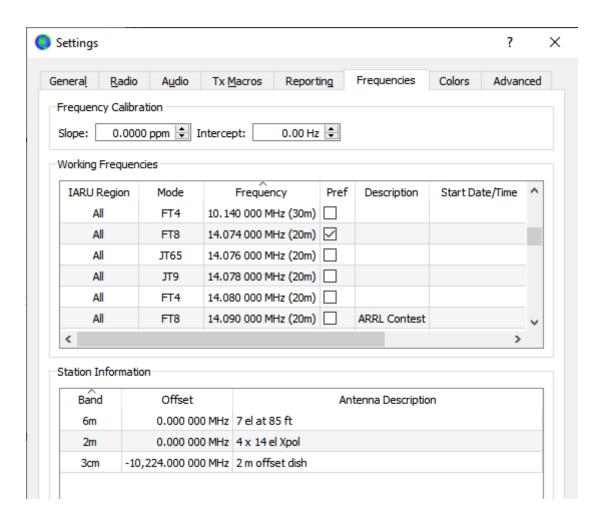


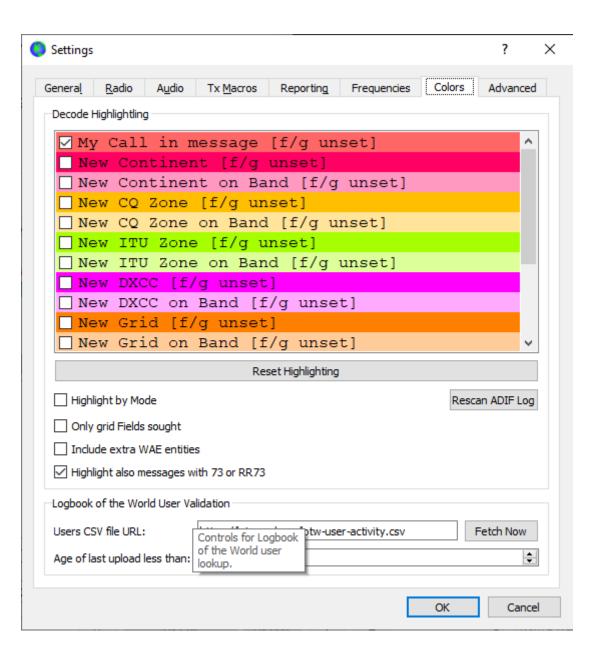


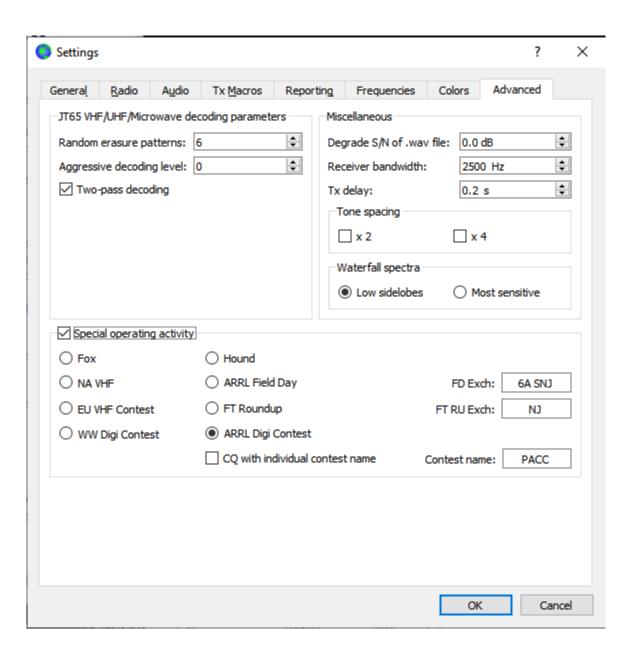


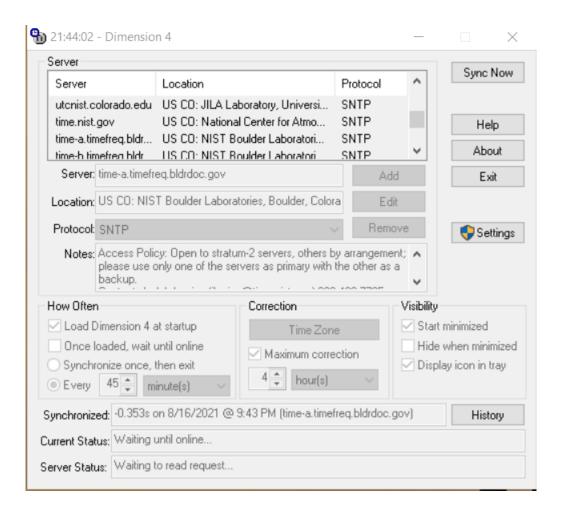


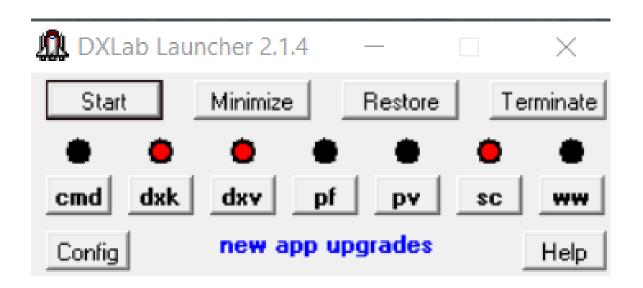
General Radio Audio	Tx Macros	Reporting	Frequencies	Colors	Advanced
Logging ✓ Prompt me to log QSO Log automatically (conte	estina only)		Op Call:		
Convert mode to RTTY dB reports to comments Clear DX call and grid a	5 /				
Network Services Enable PSK Reporter Sp	otting	☐ Use	TCP/IP connectio	n	
UDP Server: 1 UDP Server port number: 2	127.0.0.1	•	✓ Accept UDP r ✓ Notify on acc ✓ Accepted UD	epted UDP r	
Secondary UDP Server (dep		1			
Server name or IP address: Server port number:	2337				•
				OK	Cancel

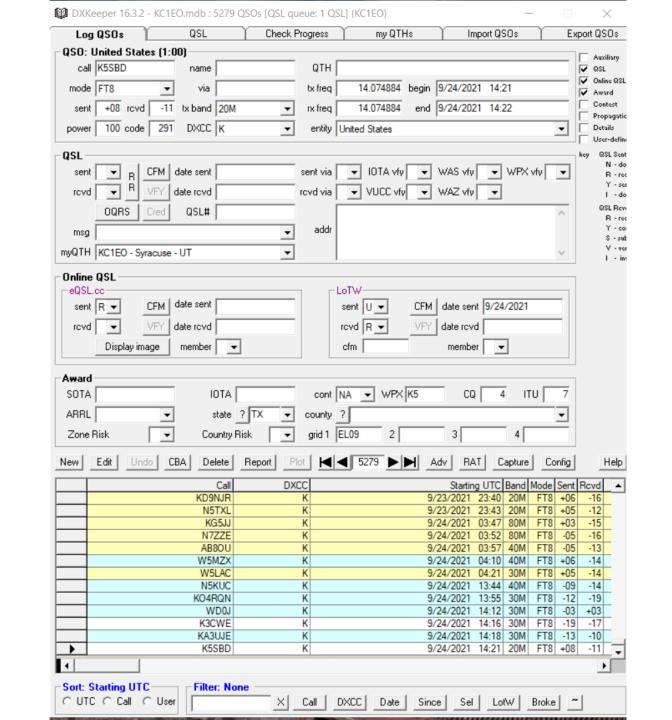


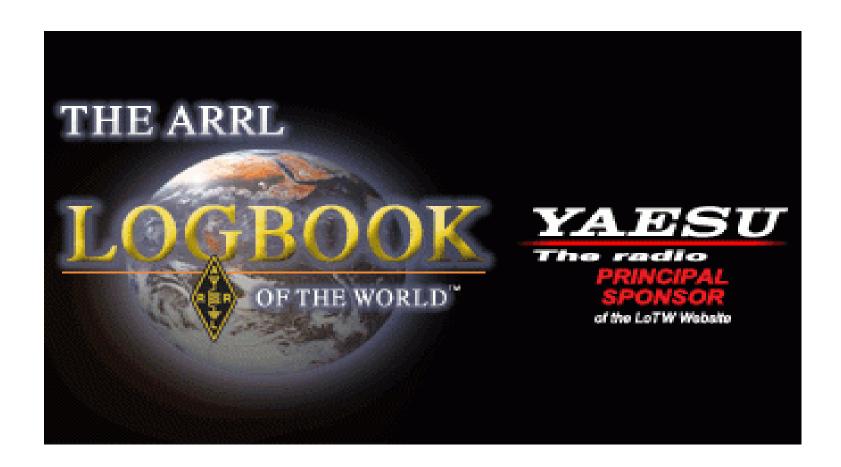












New Query

25 Records Shown (1-25) Sorted by QSO Date (0.005168 seconds elapsed)

							<u>Next</u>
	Call sign	Worked	Date/Time	Band	Mode	Freq	QSL
<u>Details</u>	KC1E0	W1WSF	2023-10-30 13:57:15	17M	FT8	18.10120	UNITED STATES OF AMERICA
<u>Details</u>	KC1E0	KE3ZT	2023-10-30 13:49:45	20M	FT8	14.07523	UNITED STATES OF AMERICA
<u>Details</u>	KC1E0	KC1QYD	2023-10-30 13:47:00	20M	FT8	14.07523	
<u>Details</u>	KC1E0	KB8YTD	2023-10-30 13:42:15	30M	FT8	10.13713	UNITED STATES OF AMERICA
<u>Details</u>	KC1E0	KT7N	2023-10-30 13:38:30	40M	FT8	7.07510	
<u>Details</u>	KC1E0	K5CM	2023-10-30 13:37:00	40M	FT8	7.07510	
Details	KC1E0	K1LEC	2023-10-30 13:32:45	40M	FT8	7.07510	UNITED STATES OF AMERICA
Details	KC1E0	KD5ZLR	2023-10-30 13:31:45	40M	FT8	7.07510	UNITED STATES OF AMERICA
Details	KC1E0	KQ0Q	2023-10-30 13:29:45	40M	FT8	7.07510	UNITED STATES OF AMERICA
Details	KC1E0	K4TER	2023-10-29 14:09:15	20M	FT8	14.07520	UNITED STATES OF AMERICA
<u>Details</u>	KC1E0	K5LVC	2023-10-29 14:04:45	20M	FT8	14.07510	
Details	KC1E0	VE3UIN	2023-10-29 14:03:45	20M	FT8	14.07510	
Details	KC1E0	KO4DBP	2023-10-29 14:01:15	20M	FT8	14.07510	UNITED STATES OF AMERICA
Details	KC1E0	JM8BPM	2023-10-29 13:54:45	30M	FT8	10.13750	
Details	KC1E0	N7BFO	2023-10-29 13:51:45	30M	FT8	10.13750	UNITED STATES OF AMERICA
<u>Details</u>	KC1E0	7N4WPY	2023-10-29 13:45:15	40M	FT8	7.07547	JAPAN
<u>Details</u>	KC1E0	JH7AUL	2023-10-29 13:41:45	40M	FT8	7.07547	JAPAN
Details	KC1E0	AA0HJ	2023-10-29 13:41:00	40M	FT8	7.07547	UNITED STATES OF AMERICA
Details	KC1E0	K0KD0	2023-10-29 13:38:45	40M	FT8	7.07547	
Details	KC1E0	JQ7BQT	2023-10-29 13:37:00	40M	FT8	7.07547	JAPAN
Details	KC1E0	N7CEE	2023-10-29 13:36:56	40M	FT8	7.07547	
Details	KC1E0	JA1Q0W	2023-10-29 13:33:15	40M	FT8	7.07547	
Details	KC1E0	NONIY	2023-10-29 13:28:00	40M	FT8	7.07540	UNITED STATES OF AMERICA
Details	KC1E0	KJ7ZHG	2023-10-29 13:26:00	40M	FT8	7.07540	
Details	KC1E0	JO4JDU	2023-10-29 01:59:00	17M	FT8	18.10140	
							Next

Most recent QSO record received 2023-10-30 14:10:51Z

	Submit Query Form		
Call sign worked: Your call sign:	- Any - 💙	May use wildcards (? and *)	Common Queries

Your Logbook DXCC Account (KC1EO - UNITED STATES OF AMERICA)

Account Status

DXCC Award	New LoTW QSLs	LoTW QSLs in Process	DXCC Credits Awarded	Total (All)	Total (Current)
Mixed *	19	0	252	271	266
<u>CW</u>	0	0	12	12	12
<u>Phone</u>	15	0	245	260	255
<u>Digital</u>	103	0	0	103	103
<u>80M</u>	6	0	2	8	8
40M	42	0	2	44	44
<u>30M</u>	77	0	0	77	77
<u>20M</u>	57	0	106	163	159
<u>17M</u>	53	0	0	53	53
<u>15M</u>	50	0	110	160	160
<u>12M</u>	6	0	0	6	6
<u>10M</u>	62	0	92	154	151
Challenge	353	0	305		658

* = Award has been issued

View Award Credit Matrix

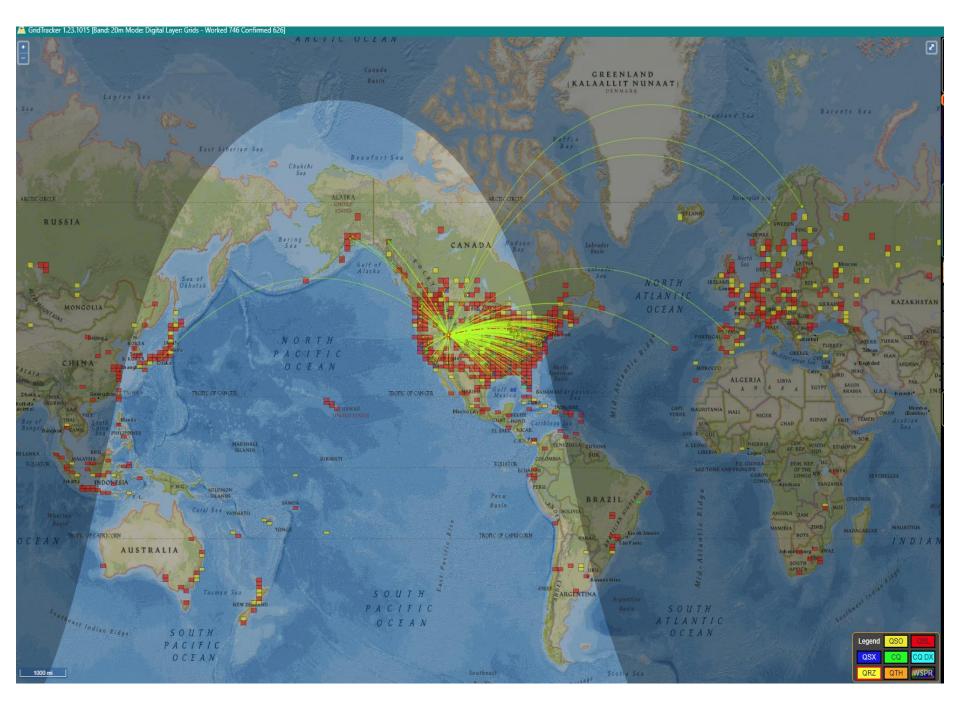
This account includes credits for the following:

KC1EO - UNITED STATES OF AMERICA This account is linked with DXCC record:

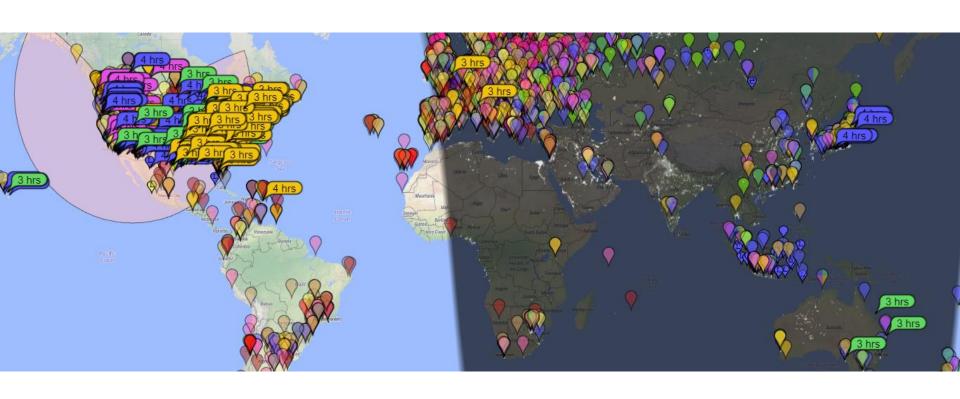
William McGowan, KC1EO

Notes

- Click on the **Awards** item in the menu at the top of the page to select a different LoTW award account.
- You can click on the links in the Account Status table to view the credit list for an individual award.
- When you are ready to apply your LoTW credits to your DXCC record, use <u>Application</u>
- To view the present and past applications you have submitted, use <u>Application History</u>.
 For an ADIF download with the details of all QSLs in
- your DXCC record use <u>DXCC QSL Download</u>.



PSK Reporter screen shot

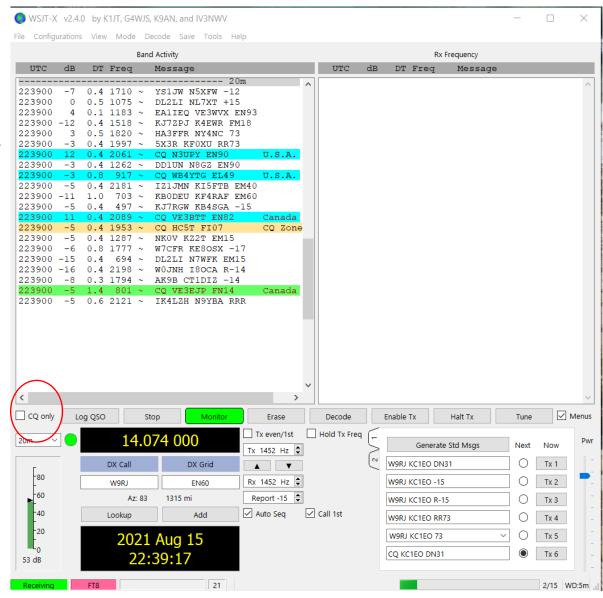


There is A LOT going on. You have to decide who's CQ you want to return. Have you worked them B4? How strong are they to your QTH?

Do you need them for a Prefix or DXCC or WAS? You have 15 seconds to decide tick..tick..tick..

TIMES UP!!!!!!!

Can we do anything to help us decide????????? Easiest way is to reduce the number of decodes you see by checking the "CQ only box.....OR.....use the "JT Alert" program



JT Alert

Helps make
better informed
decisions quickly.
Incoming calls
can be sorted by
"Signal Strength",
countries and US
counties are
identified as well
as needed
prefixes.





QSO in process

				Dall	a Activity
UTC	dB	DT	Freq		Message
					40m
)43400	15	0.2	797	~	CQ AK9B DM61 U.S.A.
)43400	3	-0.1	584	~	W4NRG XE2JS <mark>RR73</mark>
)43400	4	-1.4	1593	~	K7NWT KD9OFJ <mark>73</mark>
)43400	3	0.5	1298	~	CQ KI6NAZ DM03 U.S.A.
)43400	6	0.1	2050	~	N0POH KD2QAR FN02
)43400	0	-0.1	1689	~	LY1CX K9TF EN63
)43400	-3	0.2	2250	~	CQ DX KO4DCR EL98 U.S.A.
)43400	-7	0.7	1492	~	CQ VE3ELL FN04 Canada
)43400	1	0.2	1385	~	CQ NOYEP EN33 U.S.A.
)43400	0	0.1	2117	~	SP1MGM KG4AKV -16
)43400	-4	0.9	1001	~	WOL W1BUS CN85
)43400	-7	0.2	1780	~	CQ EA7CK IM76 CQ Zone
)43400	5	0.1	1931	~	CQ DX N9TNY EN51 U.S.A.
)43400	-1	0.4	2168	~	KB60QJ F5LOW -14
)43400	4	0.2	1953	~	<s5030xx> KU0G EM38</s5030xx>
)43400	-1	0.1	748	~	G6MND KB9JJA EM48
)43400	-15	0.1	692	~	ZL1VAH WA6GXQ FM06
)43400	-6	0.2	1386	~	M3FON N4MEC FM06
)43400	-14	0.2	1557	~	N0POH K4NDN FM08
)43400	-22	0.1	480	~	<> KN4JCD R-15
)43400	-18	0.2	1544	~	XE1YO <mark>YS1RS</mark> -09
)43400	-17	0.3	2637	~	CQ W7OK CN86 U.S.A.

_	4 0.4	071				
		871	~	CQ PT7ZZ HI06	CQ	٨
8 T	х	871	~	PT7ZZ KC1EO DN31		
0 -	7 0.4	871	~	CQ PT7ZZ HI06	CQ	
.5 Т	х	871	~	PT7ZZ KC1EO DN31		
		870	~	CQ PT7ZZ HI06	CQ	
0	8 0.1	797	~	CQ AK9B DM61	U.S	
5 Т	Х	797	~	AK9B KC1EO DN31		1
0 1	5 0.1	797	~	KC1EO AK9B -13		ı
5 Т	Х	797	~	AK9B KC1EO R+15		ı
0	6 0.1	797	~	KC1EO AK9B RR73		ı
5 T	х	797	~	AK9B KC1EO 73		1
0 1	5 0.2	797	~	CQ AK9B DM61	U.S	
	5 T 0 - 0 5 T 0 1 5 T	5 Tx 0 -5 0.4 0 8 0.1 5 Tx 0 15 0.1 5 Tx 0 6 0.1 5 Tx	5 Tx 871 0 -5 0.4 870 0 8 0.1 797 5 Tx 797 0 15 0.1 797 5 Tx 797 0 6 0.1 797 5 Tx 797	5 Tx 871 ~ 0 -5 0.4 870 ~ 0 8 0.1 797 ~ 5 Tx 797 ~ 0 15 0.1 797 ~ 5 Tx 797 ~ 0 6 0.1 797 ~ 5 Tx 797 ~	5 Tx 871 ~ PT7ZZ KC1EO DN31 0 -5 0.4 870 ~ CQ PT7ZZ H106 0 8 0.1 797 ~ CQ AK9B DM61 5 Tx 797 ~ AK9B KC1EO DN31 0 15 0.1 797 ~ KC1EO AK9B -13 5 Tx 797 ~ AK9B KC1EO R+15 0 6 0.1 797 ~ KC1EO AK9B RR73 5 Tx 797 ~ AK9B KC1EO 73	5 Tx 871 ~ PT7ZZ KC1EO DN31 0 -5 0.4 870 ~ CQ PT7ZZ HI06 CQ 0 8 0.1 797 ~ CQ AK9B DM61 U.S 5 Tx 797 ~ AK9B KC1EO DN31 0 15 0.1 797 ~ KC1EO AK9B -13 5 Tx 797 ~ AK9B KC1EO R+15 0 6 0.1 797 ~ KC1EO AK9B RR73 5 Tx 797 ~ AK9B KC1EO 73

Here is a typical QSO

AK9B calls CQ with callsign and grid.

KC1EO answers with call sign and grid

AK9B responds with signal report

KC1EO returns signal report

AK9B sends RR73

KC1EO sends 73

AK9B sends CQ looking for next QS0

How do we make a contact (Search and Pounce or Call CQ or Fox/Hound)

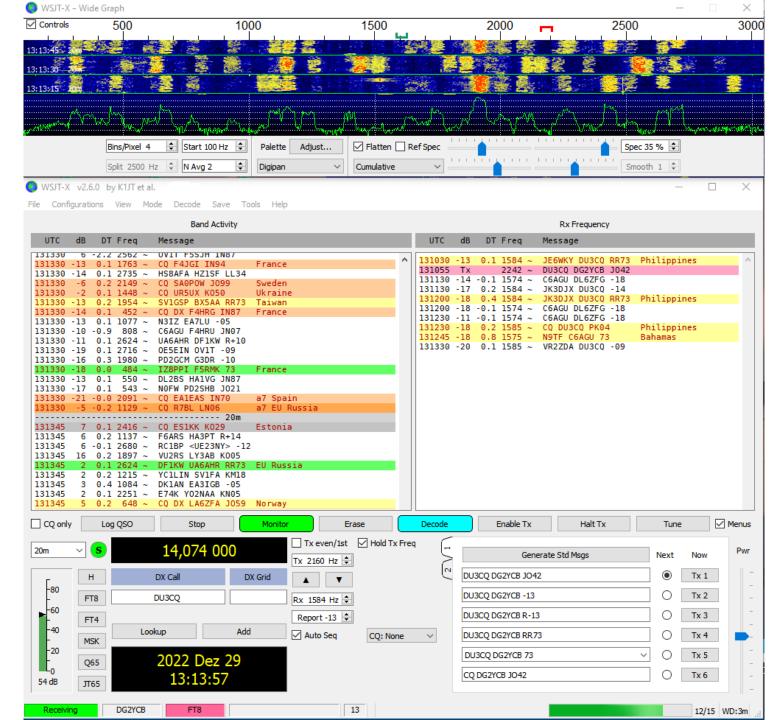
<u>Search and Pounce</u> – Easy Peasy!!! Double click on either the "WSJT-X" call you want to work or "JT-Alert" <u>Callsign</u> box

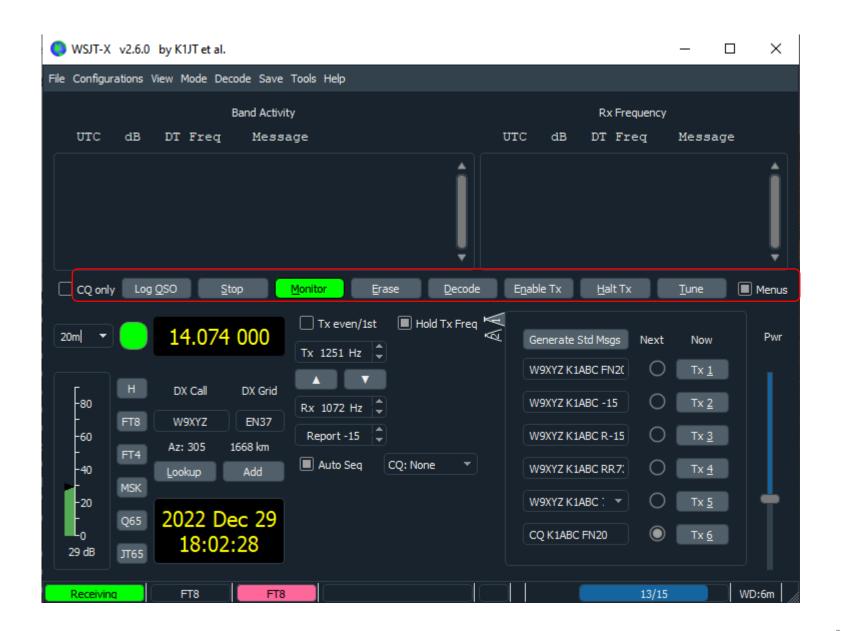
Calling CQ

Calling CQ is a bit more involved initially. Find an unused frequency. Move both the <u>Red and Green</u> frequency marker to the <u>unused space on the waterfall</u>. Move the <u>Red marker</u> by holding down the <u>Shift key</u> while clicking. . Move the <u>Green Marker</u> by clicking on the same open space. Next, click the <u>TX6 radio</u> button. Now merely select <u>Enable TX</u> on the menu bar located above the "Generate Standard messages" line on the main screen.

Fox and Hound Mode Operation - Typically DXPeditions

- Select the "H" on the lower half of the WSJT-X screen to select "HOUND" mode
- Set Transmit (Red (goal post) to any frequency that is <u>clear</u>, but must be <u>ABOVE</u> 1000 on the Waterfall.
- Enter the DX's call into the DX Call box
- Select "Generate Standard Messages
- Click on Enable Transmit





Summary –

- 1 We've reviewed what kind of hardware (radio) you need to run the program
- 2 We've reviewed what hardware (computer) you need to run the program
- 3 We've reviewed what ancillary programs are useful when running the program.
- 4 We've reviewed the initial settings on WSJT-X as to how to set up the program but.....RTFM wsjtx-main-2.6.1.pdf (sourceforge.io)
- 5 We've reviewed the main WSJT-X screen and identified major sections
- 6 We've reviewed "How to call "CQ" or answer "CQ"

Questions ??????