International DX Convention – Contest Academy 2024

"FT8 Contesting" – Mark Aaker K6UFO

…more Contesting and NCCC info at nccc.cc

…more UFO info at k6ufo.com

Contest Academy - FT8 Contesting

Why is this a Contest Academy topic?

- FT8 is the most popular mode for daily operation and DX chasing. It has become the "daily driver" on the bands. Some of this popularity will spill into contesting.
- Entering a fast-paced SSB or CW contest can be intimidating for a newcomer, but FT8 cycles reduce the frantic pace and let the newcomer join in.
- Learning to contest in FT8 can gain you DX, improve your daily FT8 skills, and help setup software logging and radio control that will help you in other contests.
- The more experience you gain in FT8 contesting, the better you will do in FT8 DXing and in other contesting. (If you find you don't like FT8, its easy to switch to RTTY contesting, or just stick to CW/SSB. Only FT8 when you need the DX ☺.)

Some of this info is similar to "RTTY Contesting" but you cannot find RTTY in daily use.

Clublog: “Most Active Modes” chart for 1 week, Mar 8 - 15, 2024

Most active modes

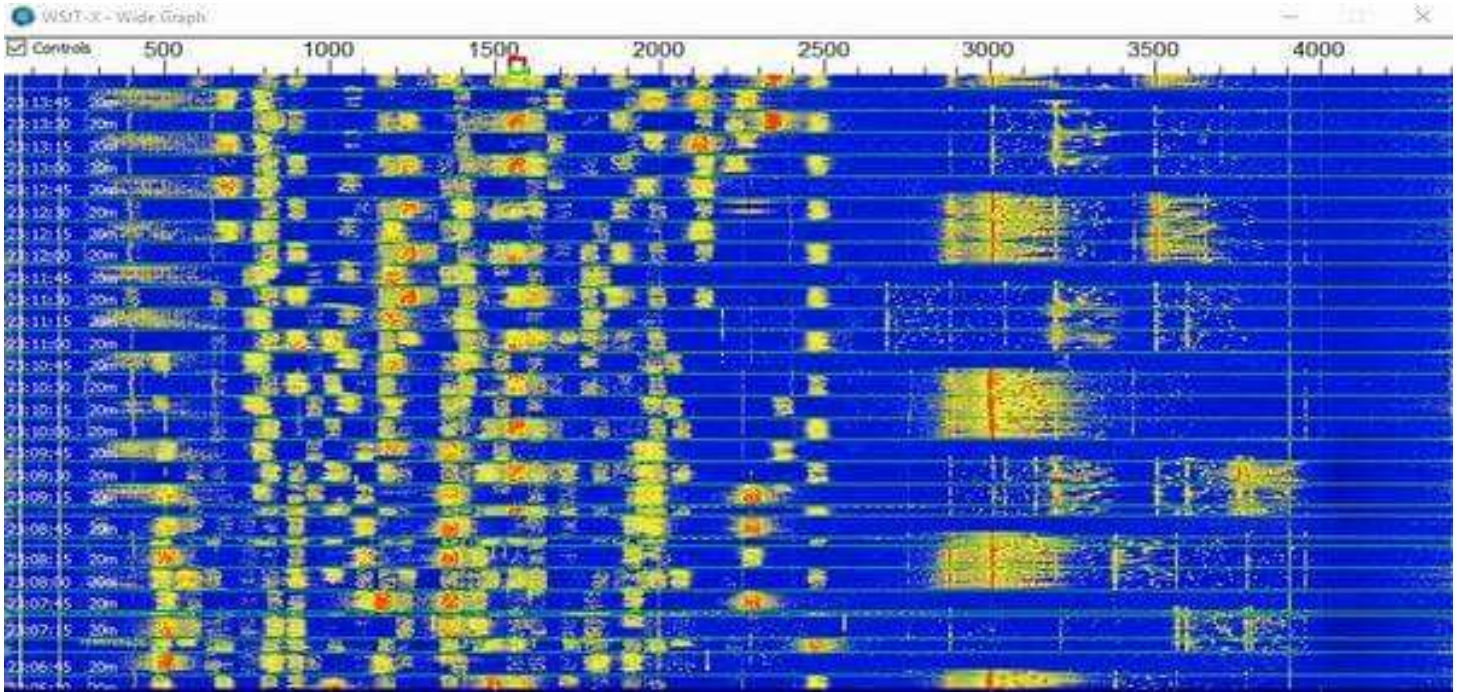
This chart illustrates which modes are being used most heavily during the period of this report.

Mode	% Use	QSOs	Graph
FT8	57.82	673,823	
FT4	13.96	162,746	
CW	12.73	148,390	
SSB	11.97	139,450	
RTTY	1.41	16,444	
PSK	1.13	13,184	
MFSK	0.44	5,112	
FM	0.20	2,329	
PKT	0.14	1,639	

FT8 or FT4 or ?

In this talk "FT8" means the FT8 and FT4 modes that are used in contests, with some VHF/UHF contests also using MSK144, JT65b, and Q65.

FT4 is faster than FT8 if signals are strong and clear and few repeats are needed. FT4 is 3.5 dB less sensitive and requires 1.6 times the bandwidth, but it offers the potential for twice the QSO rate. More stations use FT8 than FT4, but there will often be new stations in the other mode.



In contests, the “traditional” modes (SSB, CW, RTTY) are still more popular, but FT8 is in 4th place, and just getting started…

CQ WW SSB 2023:	9276 logs submitted (started 1948)
CQ WW CW 2023:	7648 logs (started 1948)
CQ WW RTTY 2022:	3077 logs (started 1986)
WW Digi 2023:	1389 logs (started 2019)
ARRL Digi 2023:	939 logs (started 2022)
FT Roundup 2023:	621 logs (started 2018)

SSB and CW will continue, and so will FT8.

<u>Upcoming FT8 contests by date:</u>

ARRL Digi	June 1, 2024
ARRL VHF	June 8, 2024
ARRL Field Day	June 22, 2024
CQ WW VHF	July 20, 2024
WW Digi	August 24, 2024
FT Roundup	December 7, 2024

Weekly FT4 NS on Thursday night (Friday 01Z), uses shortcut confirmations.
Some State QSO Parties allow FT8: (TX, 7QP, NEQP, DE…)
Most VHF/UHF contests, and SOTA and POTA allow FT8 contacts.

FT8? Isn't it "boring?"

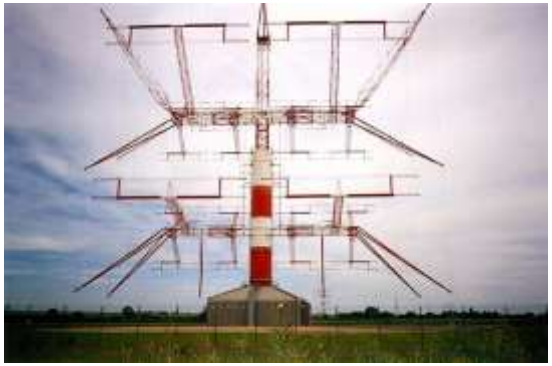
WW Digi Single Op winner made 1,487 QSOs in 24 hours
ARRL Digi SO Winner made 1,328 QSOs in 24 hours
FT Roundup SO Winner made 1,339 QSOs in 24 hours
...there will be more stations to work, you are limited by the FT8/FT4 cycles.

The FT8 contesting challenge is to get the "most" out of each cycle.
(new DX, new grid, most points, longest distance, ...)

FT8 is "easier" than understanding distorted SSB voices or decoding the CW in your head. This frees the operator for other contest tasks like looking for Multipliers, operating SO2V or SO2R, checking propagation, checking other bands, checking DX spots, …

FT8 is "paced" by the cycles, so you do not need quick reflex responses like are needed in SSB and CW contesting. Less tiring and less stressful. (But, less pileup adrenaline rush.)

FT8 is able to work very weak signals and marginal openings to rare locations. You don't need big antennas or high power, and you don't need to strain to listen and hear it.

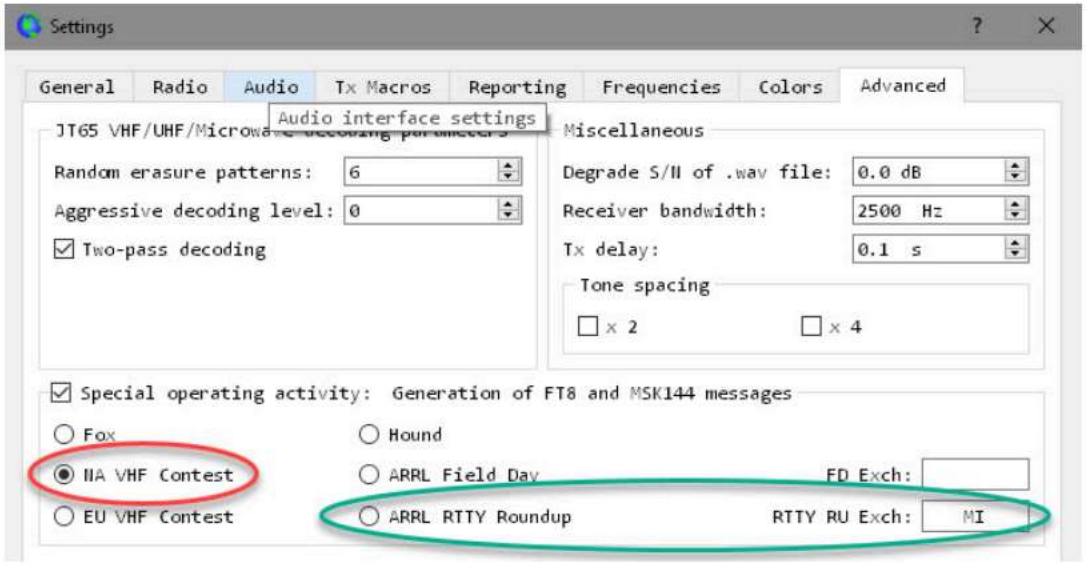


Step 1: Get on FT8 with the WSJT-x software and your radio. Use the help files, tutorials, YouTube, help from friends, …

Can I contest with WSJT-x alone? Yes, and that's the way to start. WSJT-x can produce ADIF format logs and a few types of Cabrillo logs.

WSJT-x has normal modes and "contest" modes called "Special operating activity" that changes the messages, Auto-seq, and color coding. (File, Settings, Advanced)

Configuration for a Specific Contest (WSJT-X only)



I recommend you stay "mainstream" with WSJT-x software to get the largest user base for support, and the latest released features. But there are other FT8 software/decoders that may fit certain needs:

JTDX provides more decoder options, and more sequence and filtering options.

MSHV allows multiple streams (not in contests) and multi-answering auto-seq queues.

DigiRite is integrated with Writelog logging for Mult identification, queues, …

WSJT-Z provides extended filtering, automation (not allowed some contests), alerts, ...

GridTracker provides maps, alerts, lists of active callsigns "Call Roster", ...

Note re "automation." Most contests say something like: "Each QSO must require some action by the operator, e.g., selecting a QSO partner."

FT Frequencies:

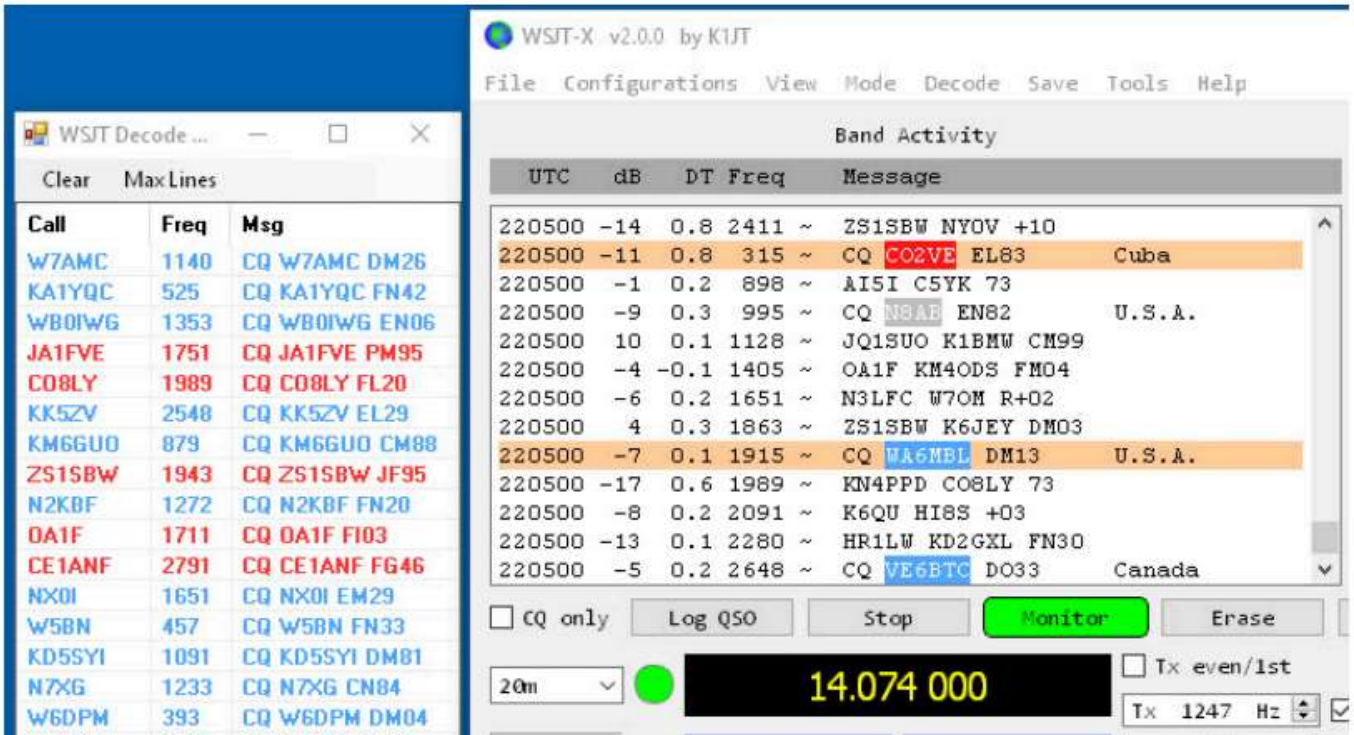
Usual FT8	Usual FT4	Contest FT8	Contest FT4
3573	3575	3590	3580
7074	7047.5	7090	7080
14074	14080	14090	14080
21074	21140	21090	21080
28074	28.180	28090	28080

There may also be Dxpeditions and other digital modes between x.070 – x.095 Also, ITU Region 1 (EU) and Region 3 (JA) digital stations may be operating “down low” x.030- x.070.

Big Improvement: Connect WSJT-x by "UDP broadcast" to a contest logging program. Better Dupe checking, Mult identification, Prefill, availabe QSOs and Mults per band, Rates, Scoring calculation and easily creating a log for submission to the contest sponsor.

The most widely used contest logging program is N1MM+, followed by N3FJP, Win-test, Dxlog, Writelog, … Some are better at "digital" e.g., N1MM+, Writelog.

On the Right, WSJT shows the decoded stations on this cycle. (1 Mult, 2 available stations) On the Left , N1MM shows all decoded stations over several cycles. You can see more Multipliers (6), more CQing stations (17), and eliminate Duplicates you've already worked. You can click on a call to load them into the WSJT messages, ready to go!

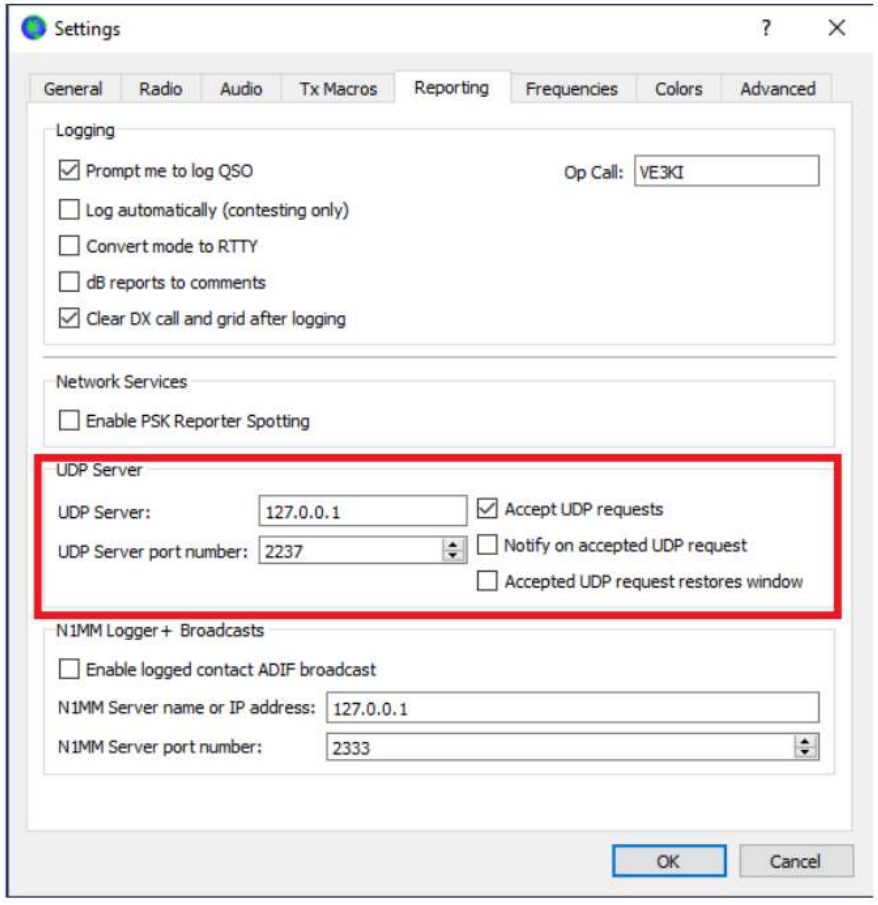


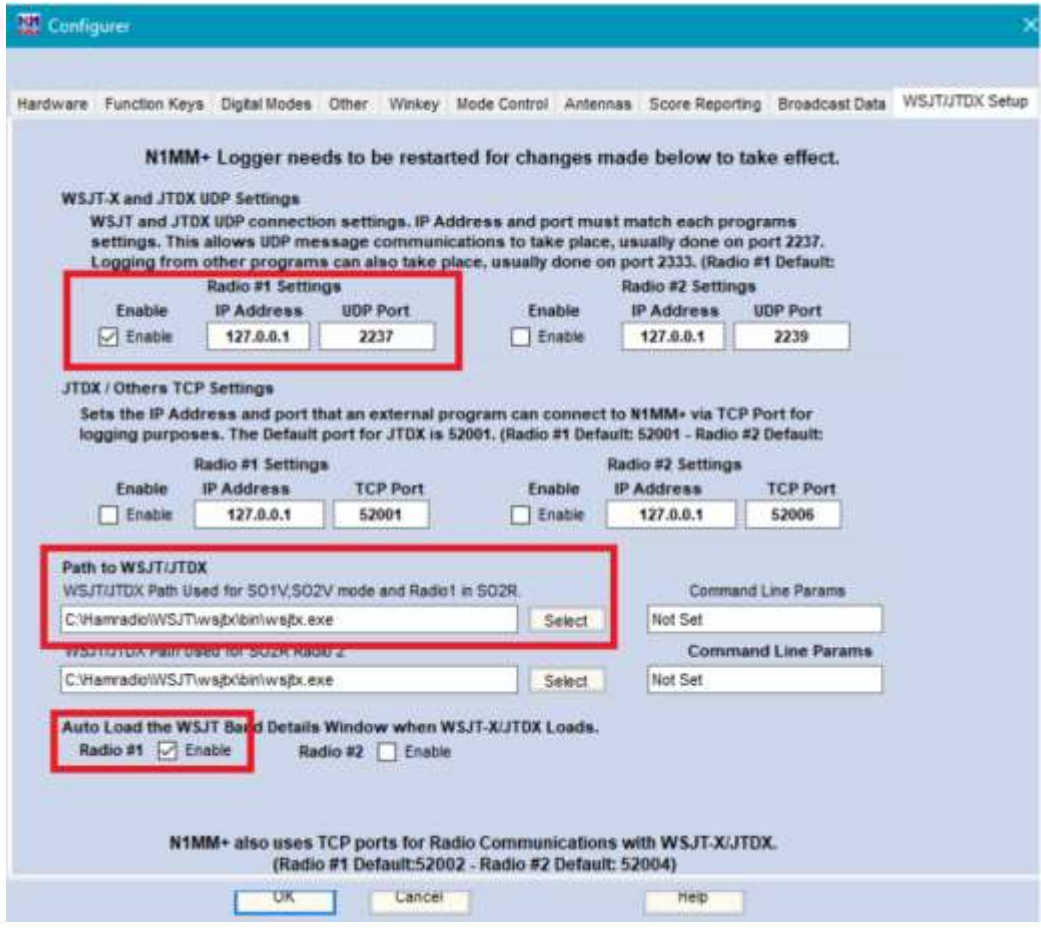
Connecting WSJT-x by “UDP broadcast” to a contest logging program.

Read the N1MM or WSJT manual.

In WSJT-x go to File, Settings, Reporting, in the UDP Server section check the 3 boxes.

In N1MM+ go to Configurer, WSJT/JTDX Setup, click first Enable box.





Other FT8 Contesting tips:

Periodically switch odd/even cycle and FT8/FT4. There will be new stations and mults.

Don't be afraid to CQ. When people see you CQ, they call you.

You are always "Split" (RX across the bandwidth, TX in a clear space.)

Don't be afraid to go above first 2-3 kHz, in a busy contest other people will go there too.

Use the contest suggested frequencies, but if you run out of contesters you can go to the "regular" FT8 frequencies and work "non-contesters". Be ready to send a “R-11” signal report if needed to advance the QSO, even if not needed by your contest. To reduce "frustration with non-contesters" don't call CQ, only answer other CQs or messages that have provided the Grid Square info that you need.

Minimizing NILs (Not In Log): Because of FT8 decoding’s “error-correction” you always have the callsign and exchange info correct. But points are lost when one person doesn’t think the QSO completed and doesn’t put the contact in the log. In FT8, NILs have been higher (5%) than in other modes (2%). Be careful in crowded conditions to complete. Watch for other station to repeat a report (R CM97) until you confirm (RRR RR73 73). Be willing to send extra 73s, but don't require it yourself.

Always be making progress by calling or responding on every TX cycle.
(Except if you need to check that you are TX in a “clear” space.)

FT8 Contest Strategy examples:

ARRL Digital Contest: Exchange is Grid(4), Scoring is sum of distance-based QSO points.

From K6OK re ARRL Digital Contest 2023: My strategy was simple -- there are no mults, it is 100 percent distance-based, so the whole game is maximizing kilometers per Q. Used DX clusters to monitor propagation to select the band that was open the farthest. With every decode cycle I chose the most distant station that had a reasonably workable signal. Reflecting that my mode mix was 80% FT8, 20% FT4, consistently FT8 was where the best DX was.

WW DIGI Contest: Exchange is Grid(4), Scoring is QSO pts x sum of Grid(2) all bands.

From K6OK re WW DIGI 2023: It is really a "grid collection" contest, so I used the DX clusters and HamAlert to help find unworked grids on each band.

Additional FT8 Contesting Resources:

WW Digi Operating Tips: https://ww-digi.com/operating.htm

Contest University presentations: https://www.contestuniversity.com/files/
W0YK – RTTY – FT4/FT8 Digital Contesting

European FT8 Club: User Guides, Operation Guides, Settings…
https://europeanft8club.wordpress.com/

Questions?
Comments?
Suggestions?

Go have fun!