FT8 & FT4

Digital Soundcard Modes

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FT8 & FT4

Digital Soundcard Modes

tiny.cc/
ft8ft4


K2BSA
SN9U
C3LNS
OX3VB
LA3JT
CE0Y
PT5XO
ZA1BM
K8ZT
RADIO
GOODYEAR
AMATEUR RADIO
Contact Information
ANTHONY LUSCRE
MR LUSCRE

Contact Information

K8ZT

Flying Pigs QRP Club

- Email- k8zt@arrl.net
- Website- www.k8zt.com
- Digital Operating- www.k8zt.com/digital

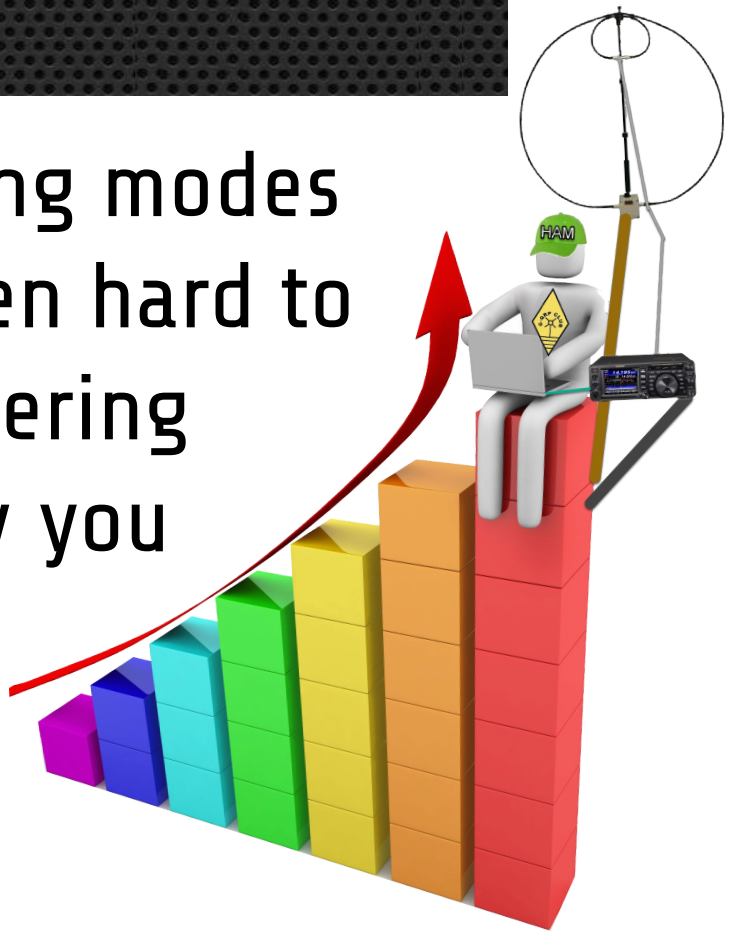
What is FT8/FT4 ?

- I am guessing that most of you reading this have either heard about FT8 from fellow Hams or heard it on air as that strange repetitive buzzing sound between the CW and SSB portions of the bands

FT8  FT4 

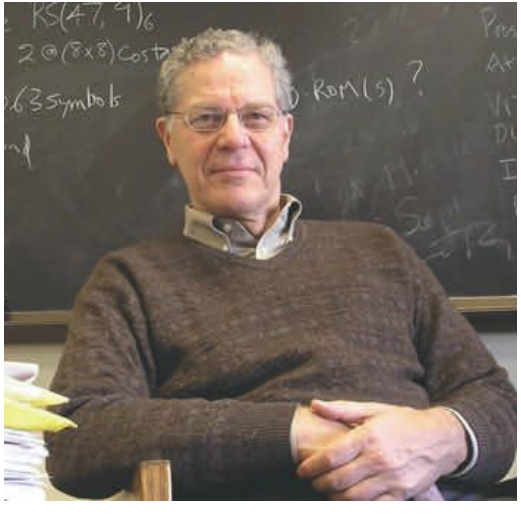
What is FT8/FT4 ?

- As one of the fastest growing modes of Amateur Radio it has been hard to miss, but you may be wondering how to get started and why you would want to?
- First, who is responsible?

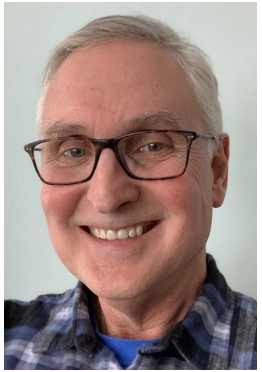


Who is Responsible for these Modes?

- Joe Taylor, K1JT
  - Nobel Laureate in Physics (1993)
  - Princeton University, Distinguished University Professor in Physics, retired
  - Bio Link



Open Source Project



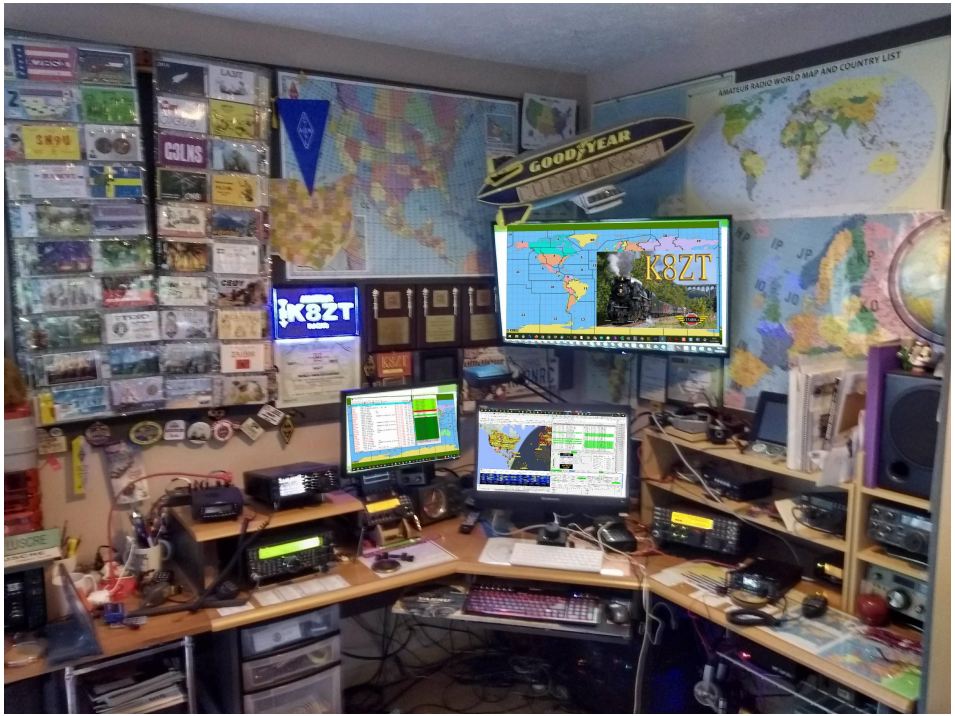
- Other prominent developers-
  - Steve Franke, K9AN
  - Bill Somerville, G4WJS
- Joe K1JT-“You (or anyone else) are more than welcome to submit patches or larger revisions of our code to implement features you'd like to see.”

Why I Do FT8/FT4 ?

- My “Multitasking Mode” (while I am reading email, writing with computer, etc.)
- Great with Low Power
- Seems that Bands are Open More Often
- Fill in those missing State/Band Combos

Why I Do FT8/FT4 ?

- My “Multitasking Mode” (while I am reading email, writing, working with computer, etc.)
- Works great with my QRP (low-power) signal

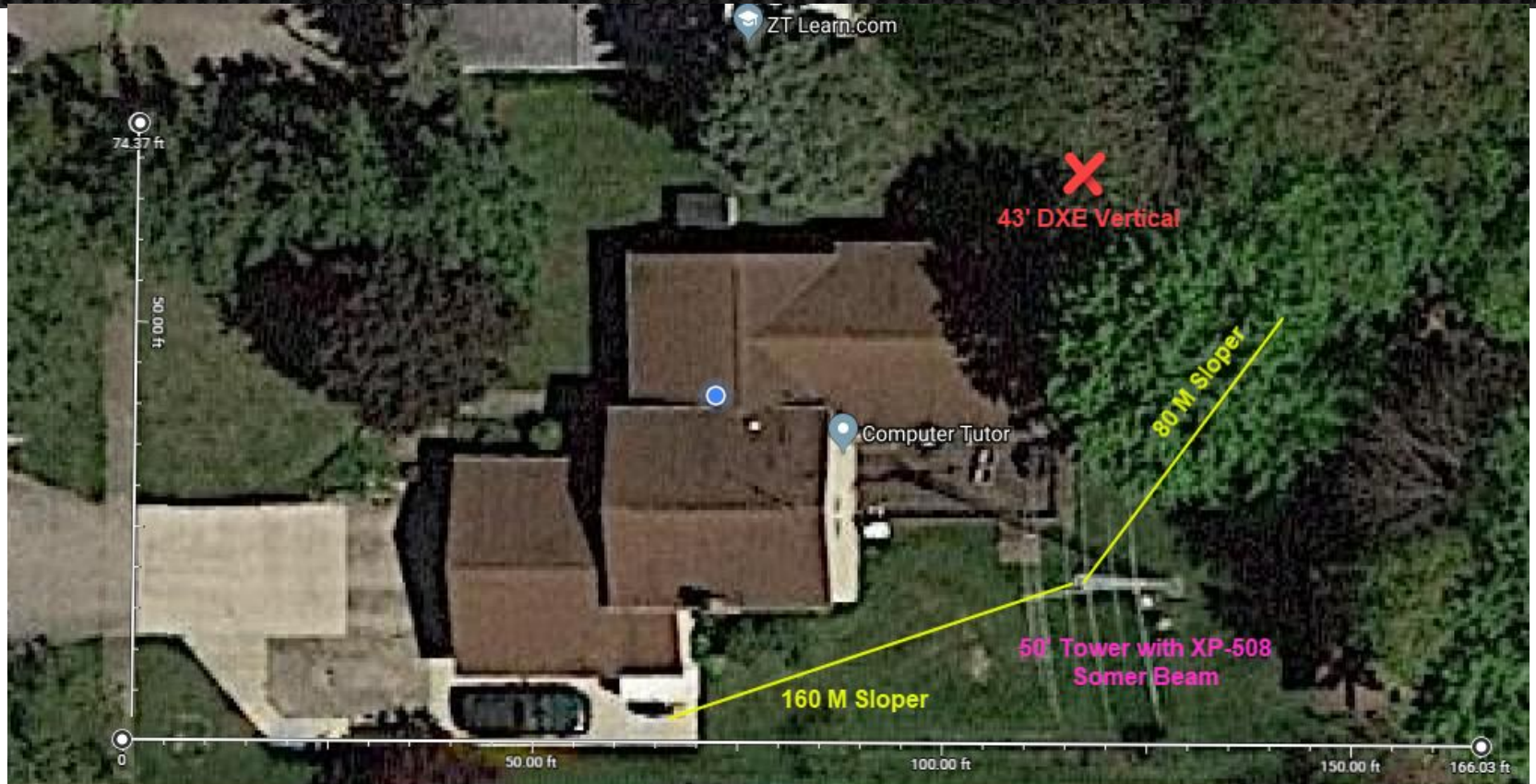


Why I Do FT8/FT4 ?

- Increase my total DXCC, WAS & total QSOs #s on less used Bands
- Allow me to use bands that often seem dead
- Call CQ, even as a QRP Station, and get pileups of responders!

% QSOs by Mode for 11 Bands at K8ZT				
Band	CW	SSB	RTTY	FT8, FT4 & JT65
6M	11%	51%	0%	38%
10M	29%	66%	2%	3%
12M	43%	14%	5%	38%
15M	61%	28%	4%	7%
17M	24%	8%	2%	66%
20M	56%	20%	3%	22%
30M	37%	0%	2%	61%
40M	68%	14%	3%	15%
60M	1%	1%	0%	98%
80M	54%	21%	5%	20%
160M	76%	8%	0%	17%

Why I Do FT8/FT4 ?



Why I Do FT8/FT4 ?

- Allows my QRP signal (5 watts) & marginal antenna (60' sloper) to work all states & new DX on 160 M.
- Best 160 DX so far… ZS (13,000 m), UA0 (8500 m) & E51 (6600 m)

160 Meters DXCC by Mode

DXCC	CW	FT8	SSB
TOTAL	55	61	10
6Y	6		1
8P	1	1	1
9A	2	2	
9X		1	
9Y		1	
C6	24	1	3
CE	1		
CN	3	1	
CO	2	2	
CT	3	2	
CT3		1	
CU	1	2	
CY9		1	
D4		1	
DL	5	3	
E5-N		1	
E7	1		
EA	2	1	
EA6		2	
EA8	1	1	

DXCC	CW	FT8	SSB
ONLY	14	22	1
EI	3	4	1
F	2	3	
FG		3	
FM	2		
FP		1	
G	9	4	
GM	3	3	
GW	1	2	
HA	1	1	
HB		1	
HI	3	2	
HK	3		
HP	1	1	
I	1	3	
J3		1	
J6		1	
J7	2	1	
K	6823	1372	663
KH6	4	1	
KL7	1	2	

DXCC	CW	FT8	SSB
Multi	42	39	9
KP2	41	2	
KP4	8		2
LA		1	
LY		1	
OE	1		
OL	2	1	
OM	1	1	
ON		1	
OX	1	1	
OZ		1	
P4	7	1	
PA	2		
PJ2	18	1	
PJ2-N	9		
PJ4	1		
PJ5		1	
S5	1		
SM	4	3	
SP	2		
SV	1		

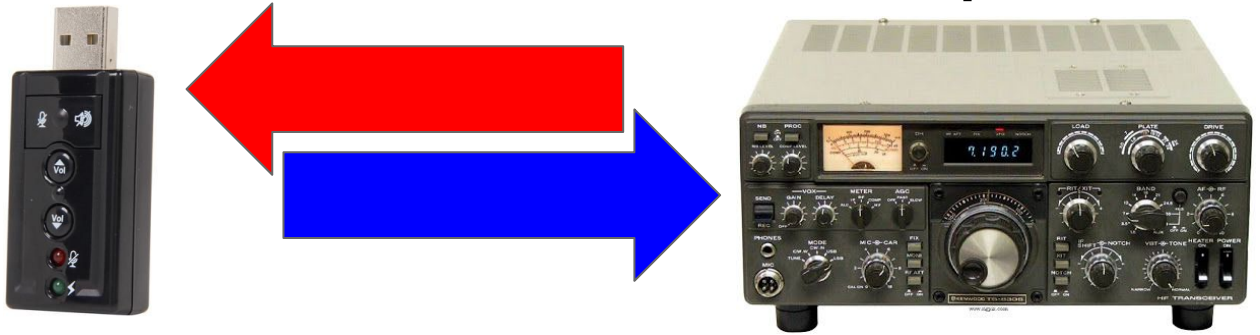
DXCC	CW	FT8	SSB
%	70%	77%	13%
SV9		1	
TG		1	
TI	1		
UA	1	3	
UA0		2	
UR	2	3	
V3	6	2	1
VE	711	90	106
VP2-E			1
VP2-M	2		
VP2-V		1	
VP5	8	1	1
VP9	13		
XE	10	1	
XF4	1		
YU	1	1	
YV	3	1	
ZF	19	1	1
ZS		1	

Amateur Digital Soundcard Modes

- FT8 is one of the many digital modes referred to as soundcard modes (SCM)
- Utilize a computer's sound card to bring in audio from your radio to be processed by software to decode the information embedded in the signal.

Amateur Digital Soundcard Modes

- Conversely, when you want to transmit, the software encodes your message into audio tones that are sent out via your sound card to your radio's audio or Mic input



Amateur Digital Soundcard Modes

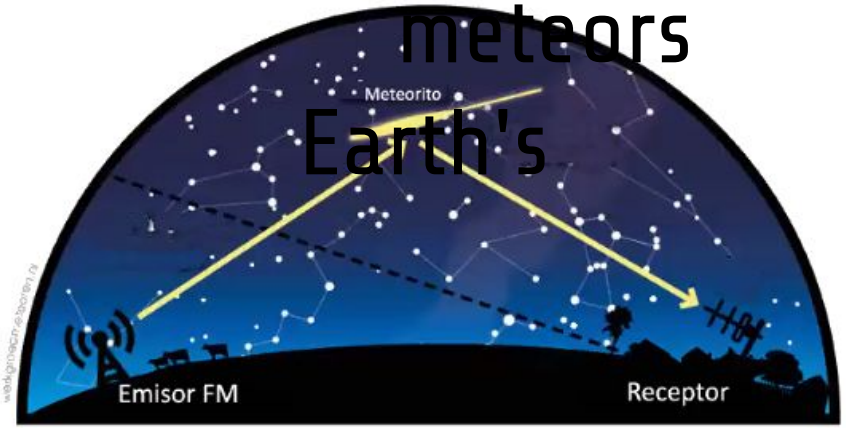
- Frequency-Shift Keying- RTTY
- Phase-Shift Keying - PSK31 & PSK63
- Multiple Frequency-Shift Keying (MFSK) - MSK144, JT9, JT65, FT8, FT4 & Olivia
- Packet Radio (AX25) & (APRS)
- Lots of Others

WSJT-X Software – Brief History

- Originally released in 2001
- Undergone several major revisions
- Modes have been both added & removed

WSJT-X Software – FSK441

- FSK441, (2001) first mode included with WSJT is designed to support VHF contacts using streaks of radio-reflecting ions created by the trails of meteors entering the Earth's atmosphere



WSJT-X Software – JT65

- JT65 (2003) is intended for extremely weak but slowly varying signals–
  - Troposcatter
  - Earth-Moon-Earth (EME or "moonbounce") paths

MFSK- WSJT-X Software – JT65

- Operators soon began using the JT65 mode for contacts on the HF bands, often using low transmit power. Ability to decode weak signals was paramount.

WSJT-X- JT65, FT8 & FT4

- Can decode signals many decibels below the noise floor and can often allow amateurs to successfully exchange contact information without signals being audible to the human ear.

WSJT-X- JT65, FT8 & FT4

- Add redundancy to the data, such that all of a message may be successfully recovered even if some bits are not received by the receiver.

WSJT-X- JT65, FT8 & FT4

- Messages are typically either decoded correctly or not decoded at all, with very high probability.
- Requires tight synchronization of time & frequency between TX and RX

WSJT Software - FT8

- **FT8** (June 29, 2017)
- Stands for "Franke-Taylor design, 8-FSK modulation"
- Created by Joe Taylor, K1JT and Steve Franke, K9AN.

WSJT-X Software – FT8

- Very similar to JT65 but transmission times 1/4 as long (~15 seconds per cycle). So typical QSO could be completed in less than 2 minutes.
- This was the game changer!

WSJT Software – FT8

- FT8 although designed primarily for VHF it quickly gained popularity on HF.
- A few dB less sensitive, but allows QSOs four times faster. Bandwidth is greater than JT9, but about 1/4 of JT65

WSJT Software – FT8

- T/R sequence length: 15 s
- Message length: 75 bits + 12-bit CRC
- FEC code: LDPC(174,87)
- Modulation: 8-FSK, Keying rate
- Tone spacing = 6.25 Hz.

WSJT-X Software – FT4

- **FT4** (April 2019) very similar to FT8 but transmission times ½ as long (~7.5 sec).
- Typical QSO could be completed in less than 1 minutes.
- Designed primarily for contesting.

WSJT-X- JT65, FT8 & FT4

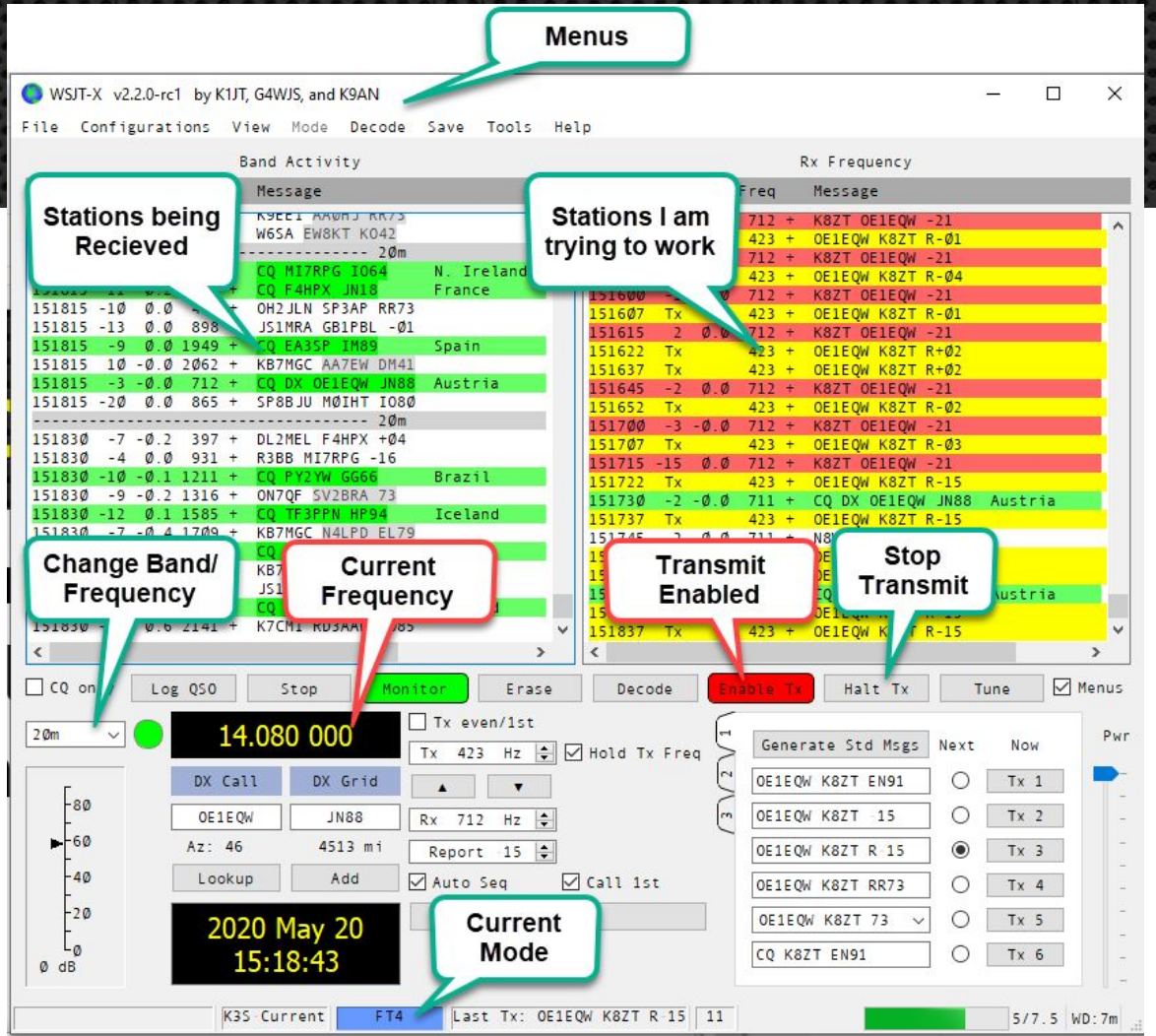
- Decoding threshold by mode better than:
  - JT65 -24 dB
  - FT8 -20 dB
  - FT4 -18 dB
  - CW -15 dB
  - SSB +10 dB

WSJT Software – FT8 & FT4

- Multi-decoder: finds & decodes all FT8 or FT4 signals in passband
- FT8 & FT4 not decoded at same time
- Auto-sequencing after manual start of QSO

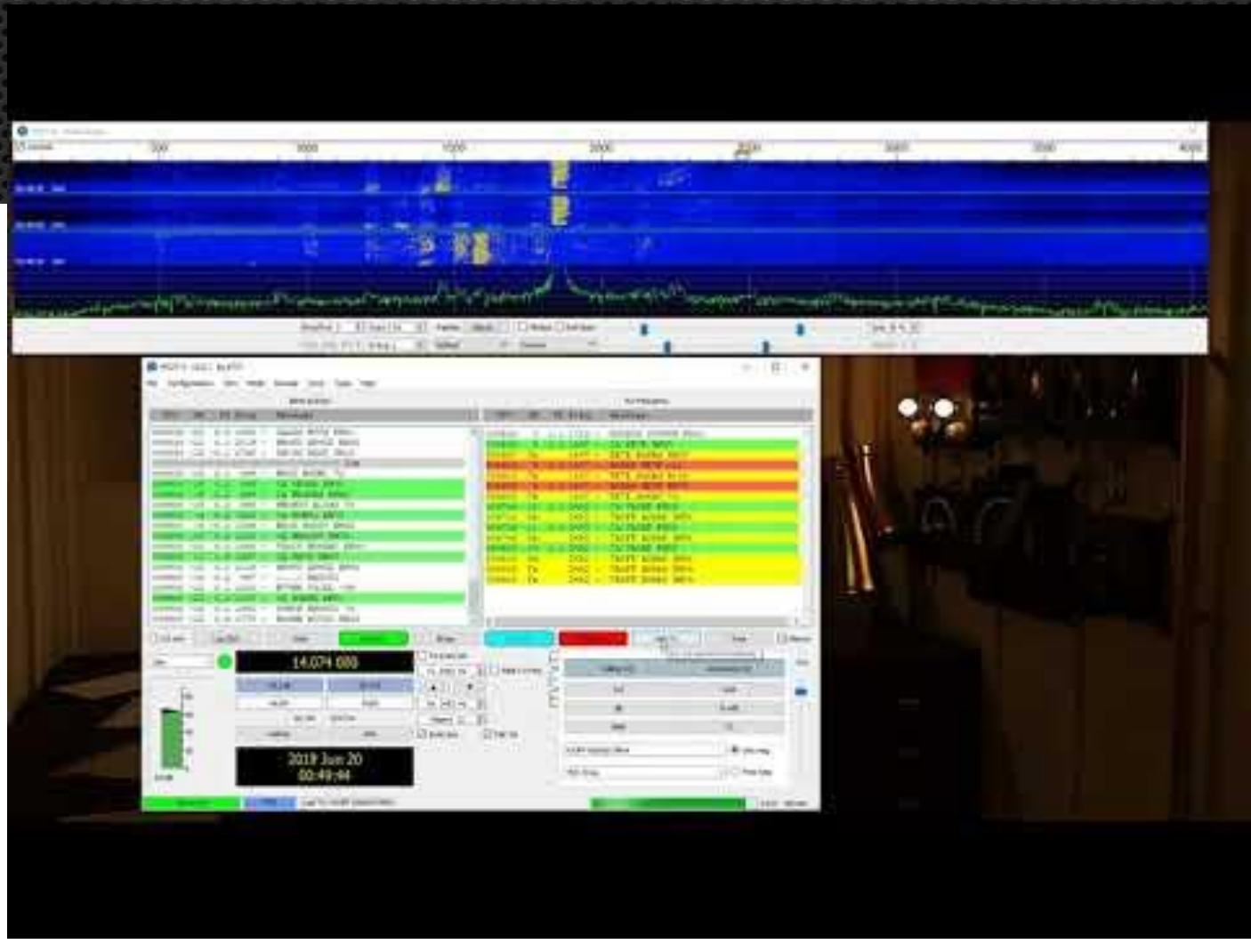
WSJT-X

- Quick View of Program's Screen



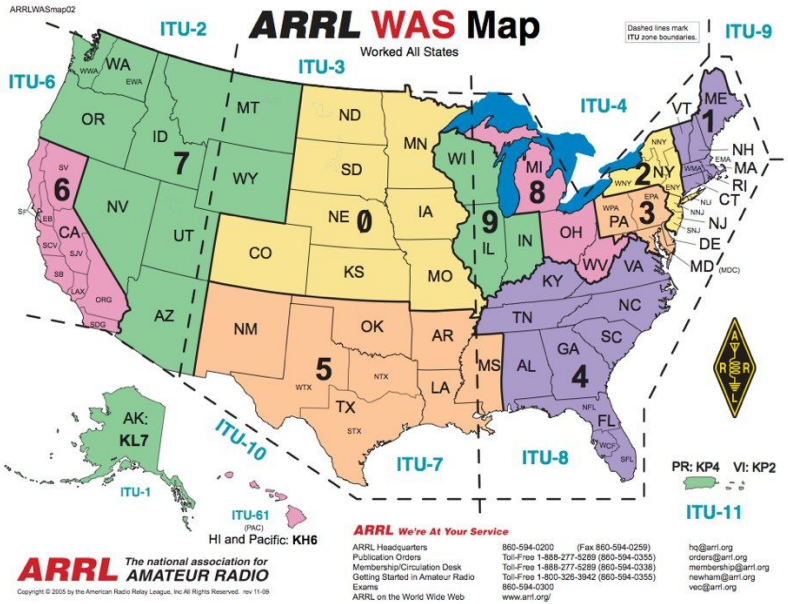
WSJT-X

- Quick Demo Video



What Can FT8 & FT4 & 5 Watts Do?

- Worked All States
  - 66 Days to FT8 WAS
  - <2 years to FT8 Eight Band WAS (160-15)
  - 122 Days to FT4 WAS (1 week to 39, 2 wks to 45 with a brand new mode!)



What Can FT8 & FT4 & 5 Watts Do?

- DXCC
  - 272 days to FT8 DXCC
  - 214 days to FT8 DXCC
  - 219 DXCC
- >19,000 FT8 & FT4 QSOs since July 2017

Band	DXCC Entities
160M	61
80M	57
60M	67
40M	64
30M	84
20M	187
17M	156
15M	108
12M	49
10M	39
6M	22

What Can FT8 & FT4 & 5 Watts Do?

- In just three years, during sunspot low…
  - DXCC
    - 219 Entities
    - 3 bands
  - 10 Bands WAS
  - Over 19,000 QSOs
  - All QSOs <5 watts

Band	DXCC	WAS	QSOs	%
160M	61	50	1618	10%
80M	57	50	949	6%
60M	67	50	647	4%
40M	64	50	1526	10%
30M	84	50	663	4%
20M	187	50	5757	37%
17M	156	50	1806	12%
15M	108	50	842	5%
12M	49	49	396	3%
10M	39	48	497	3%
6M	22	48	812	5%
Totals	894	545	15513	

What Can FT8 & FT4 & 5 Watts Do?

1A	SMO Of Malta	9L	Sierra Leone	DL	Germany	G	England	K	USA	PJ2	Curacao	TT	Chad	XT	Burkina Faso
3B8	Mauritius Island	9X	Rwanda	E3	Eritrea	GD	Isle Of Man	KG4	Guantanamo Bay	PJ4	Bonaire	UA	European Russia	YA	Afghanistan
3B9	Rodriguez Island	9Y	Trinidad & Tobago	E4	Palestine	GI	Northern Ireland	KH1	Baker Howland	PJ5	Saba & St Eustatius	UA0	Asiatic Russia	YB	Indonesia
3D2-F	Fiji Is.	A3	Tonga	E5-N	North Cook Is.	GJ	Jersey	KH2	Guam	PJ7	Sint Maarten	UA2	Kaliningrad	YJ	Vanuatu
3X	Guinea	A4	Oman	E5-S	South Cook Is.	GM	Scotland	KH6	Hawaii	PY	Brazil	UJ	Uzbekistan	YL	Latvia
4L	Georgia	A6	UEA	E6	Niue	GU	Guernsey	KH8	American Samoa	PY0F	Fernando De Noronha	UN	Kazakhstan	YN	Nicaragua
4O	Montenegro	A7	Qatar	E7	Bosnia-Herzegovina	GW	Wales	KL7	Alaska	PZ	Suriname	UR	Ukraine	YO	Romania
4X	Israel	A9	Bahrain	EA	Spain	HA	Hungary	KP2	Us Virgin Is.	S0	Western Sahara	V2	Antigua & Barbuda	YS	El Salvador
5B	Cyprus	BY	China	EA6	Balearic Is.	HB	Switzerland	KP4	Puerto Rico	S5	Slovenia	V3	Belize	YU	Serbia
5N	Nigeria	C3	Andorra	EA8	Canary Is.	HB0	Liechtenstein	LA	Norway	S7	Seychelles Is.	V4	Saint Kitts & Nevis	YV	Venezuela
5R	Madagascar	C5	The Gambia	EA9	Ceuta & Melilla	HC	Ecuador	LU	Argentina	S9	Sao Tome & Principe	V5	Namibia	Z3	North Macedonia
5T	Mauritania	C6	Bahamas	EI	Ireland	HC8	Galapagos Is.	LX	Luxembourg	SM	Sweden	VE	Canada	Z6	Kosovo
5V	Togo	C9	Mozambique	EK	Armenia	HH	Haiti	LY	Lithuania	SP	Poland	VK	Australia	Z8	South Sudan
5W	Samoa	CE	Chile	EL	Liberia	HI	Dominican Rep.	LZ	Bulgaria	SV	Greece	VK9N	Norfolk Island	ZA	Albania
5X	Uganda	CE0E	Easter Island	ER	Moldova	HK	Colombia	OA	Peru	SV5	Dodecanese	VP2E	Anguilla	ZB2	Gibraltar
5Z	Kenya	CE0Z	Juan Fernandez Is.	ES	Estonia	HK0-S	San Andres Island	OD	Lebanon	SV9	Crete	VP2M	Montserrat	ZD7	Saint Helena
6W	Senegal	CE9	Antarctica	EU	Belarus	HL	Korea	OE	Austria	T2	Tuvalu	VP2V	British Virgin Is.	ZF	Cayman Is.
6Y	Jamaica	CN	Morocco	F	France	HP	Panama	OH	Finland	T31	Central Kiribati	VP5	Turks & Caicos Is.	ZK3	Tokelau Is.
7P	Lesotho	CO	Cuba	FG	Guadeloupe	HR	Honduras	OH0	Aland Is.	T7	San Marino	VP6	Pitcairn Island	ZL	New Zealand
7Q	Malawi	CP	Bolivia	FJ	Saint Barthelemy	HV	Vatican City	OJ0	Market Reef	T8	Palau	VP6-D	Ducie Island	ZP	Paraguay
7X	Algeria	CT	Portugal	FK	New Caledonia	I	Italy	OK	Czech Republic	TA	Turkey	VP8-F	Falkland Is.	ZS	South Africa
8P	Barbados	CT3	Madeira Is.	FO-F	French Polynesia	IS0	Sardinia	OM	Slovak Republic	TF	Iceland	VP8-H	South Shetland Is.		
8R	Guyana	CU	Azores	FO-M	Marquesas Is.	J3	Grenada	ON	Belgium	TG	Guatemala	VP8-O	South Orkney Is.		
9A	Croatia	CX	Uruguay	FP	Saint Pierre & Miquelon	J6	Saint Lucia	OX	Greenland	TI	Costa Rica	VP9	Bermuda		
9G	Ghana	CY9	Saint Paul Island	FR-R	Reunion Island	J7	Dominica	OZ	Denmark	TK	Corsica	VR	Hong Kong		
9H	Malta	D4	Cape Verde	FS	Saint Martin	JA	Japan	P4	Aruba	TN	Rep. Congo	VU	India		
9K	Kuwait	D6	Comoros	FY	French Guiana	JW	Svalbard	PA	Netherlands	TR	Gabon	XE	Mexico		

- WAS
- FT8
- 5 watts
- Need 2 QSOs for 11 Band WAS

	160M	80M	60M	40M	30M	20M	17M	15M	12M	10M	6M
# St / Band	50	50	50	50	50	50	50	50	50	50	48
AK	2	4	4	1	4	10	6	3	2	2	
AL	21	20	7	23	20	27	8	7	7	12	18
AR	7	8	9	15	17	24	9	5	10	7	17
AZ	7	7	7	7	11	44	57	33	13	4	5
CA	8	27	12	15	19	99	71	67	27	17	5
CO	18	6	5	6	14	67	25	6	6	7	22
CT	34	21	13	9	9	6	3	2	3	5	3
DE	9	7	3	8	3	3	1	2	1	3	3
FL	38	20	35	53	43	139	44	33	40	67	84
GA	53	19	17	45	25	27	9	7	6	12	3
HI	1	3	3	3	1	11	8	1	2	1	
IA	25	11	11	10	12	14	6	3	7	6	10
ID	13	5	5	5	8	10	19	12	8	1	3
IL	102	35	19	53	18	26	5	3	5	5	5
IN	71	26	18	21	7	5	2	2	3	2	11
KS	19	8	10	6	12	23	6	5	11	10	24
KY	48	17	7	21	3	6	4	3	2	3	2
LA	12	10	6	11	10	28	6	8	9	18	14
MA	55	17	8	28	12	33	14	4	2	10	2
MD	58	25	7	23	5	5	2	3	2	3	3
ME	16	7	8	10	17	18	8	5	8	5	5
MI	68	29	9	14	7	6	5	3	2	1	14
MN	37	22	12	19	25	15	11	4	4	10	9
MO	49	27	8	28	24	32	9	4	9	9	12
MS	19	9	7	8	9	19	9	4	5	7	16

	160M	80M	60M	40M	30M	20M	17M	15M	12M	10M	6M
# St / Band	50	50	50	50	50	50	50	50	50	50	48
MT	4	6	1	2	5	10	11	5	4	1	1
NC	104	27	29	78	21	25	7	8	3	5	1
ND	6	8	6	2	5	8	3	4	4	11	6
NE	10	4	3	5	13	13	4	4	3	12	11
NH	31	18	8	19	14	27	8	4	9	10	5
NJ	62	40	13	37	9	17	4	4	2	6	1
NM	2	2	1	2	8	10	7	2	3	1	6
NV	1	6	2	8	3	19	10	8	6	2	3
NY	102	37	22	45	14	20	4	3	2	7	5
OH	131	56	21	36	10	46	36	29	27	36	220
OK	10	5	4	12	7	25	5	2	7	11	18
OR	5	5	4	4	1	15	18	14	7	2	2
PA	111	56	12	34	7	18	7	7	5	12	23
RI	11	4	6	9	4	5	3	3	5	4	2
SC	28	14	4	28	10	12	6	8	3	4	5
SD	6	6	3	3	3	7	6	2	6	4	12
TN	61	18	8	36	12	28	5	2	4	9	6
TX	22	23	23	37	40	200	47	20	26	43	82
UT	8	4	6	5	6	31	19	11	5	2	2
VA	88	40	21	43	4	12	3	2	2	2	8
VT	25	21	5	15	6	8	6	2	2	3	1
WA	15	14	8	6	12	39	37	30	11	8	2
WI	49	19	9	24	15	5	8	6	2	7	2
WV	33	13	3	7	2	5	2	2	3	3	10
WY	3	1	2	4	4	6	6	4	1	2	5

What Can FT8 & FT4 & 5 Watts Do?

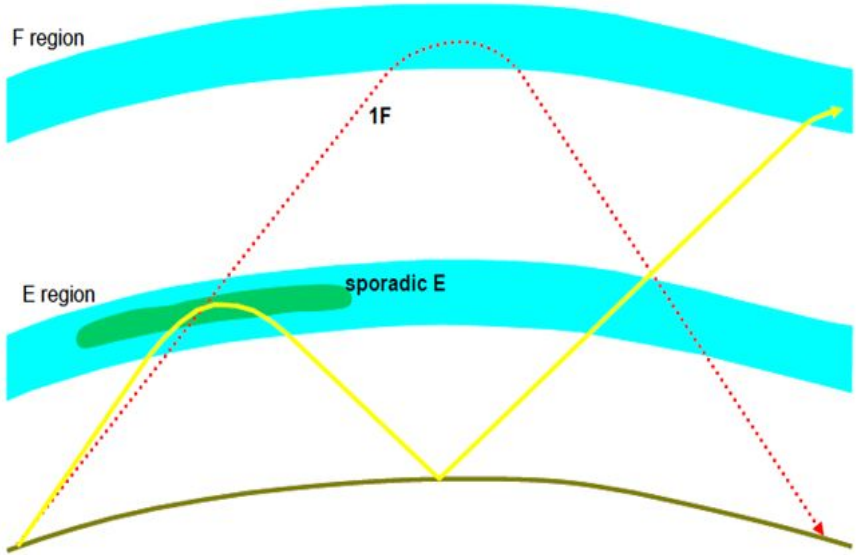
CQZ	160M	80M	60M	40M	30M	20M	15M	12M	10M	6M	Total
Zones	21	18	20	25	26	33	26	18	17	10	34
1	2	4	12	3	4	31	1	1	2		60
2	3			1	1	4	1		2	2	14
3	58	79	42	97	57	526	152	42	33	33	1119
4	777	428	248	641	302	1179	137	157	241	586	4696
5	790	421	237	768	219	845	103	99	163	202	3847
6	2	2	3	2	3	18	6	5		2	43
7	4	4	3	8	6	26	15	8		1	75
8	18	21	17	29	31	98	44	19	16	17	310
9	4	8	8	15	6	62	22	8	5	2	140
10				2	2	13	8	4			29
11		3		1	2	24	94	31	12		167
12						13	11	4	2		30
13		7	2	1	2	21	51	17	12		113
14	36	62	136	70	41	1666	151	19	15	5	2201
15	10	10	39	22	27	836	49	10	3		1006
16	7	6	2	3	4	278	7				307
17	2					39					41
18						12	1				13
19						7					7
20	1		5	6	4	105	12		1		134

CQZ	160M	80M	60M	40M	30M	20M	15M	12M	10M	6M	Total
21					1	11					12
22											0
23											0
24											0
25						71					71
26											0
27											0
28											0
29					1						1
30				5	6	38					49
31	1	3	3	4	1	21	1				34
32	1	1		7	4	34	13	3	2		65
33	3	3	6	4	3	29	4	4	1	4	61
34						1					1
35	1	4	3	2	2	14	7		1		34
36	1		1	1	1	11	4	1	2		22
37			1	1	1	5					8
38	1	1	2			21	17	4			46
39				1		5	3				9
40	1		2	1	1	25	5				35

What Can FT8 & FT4 Do?

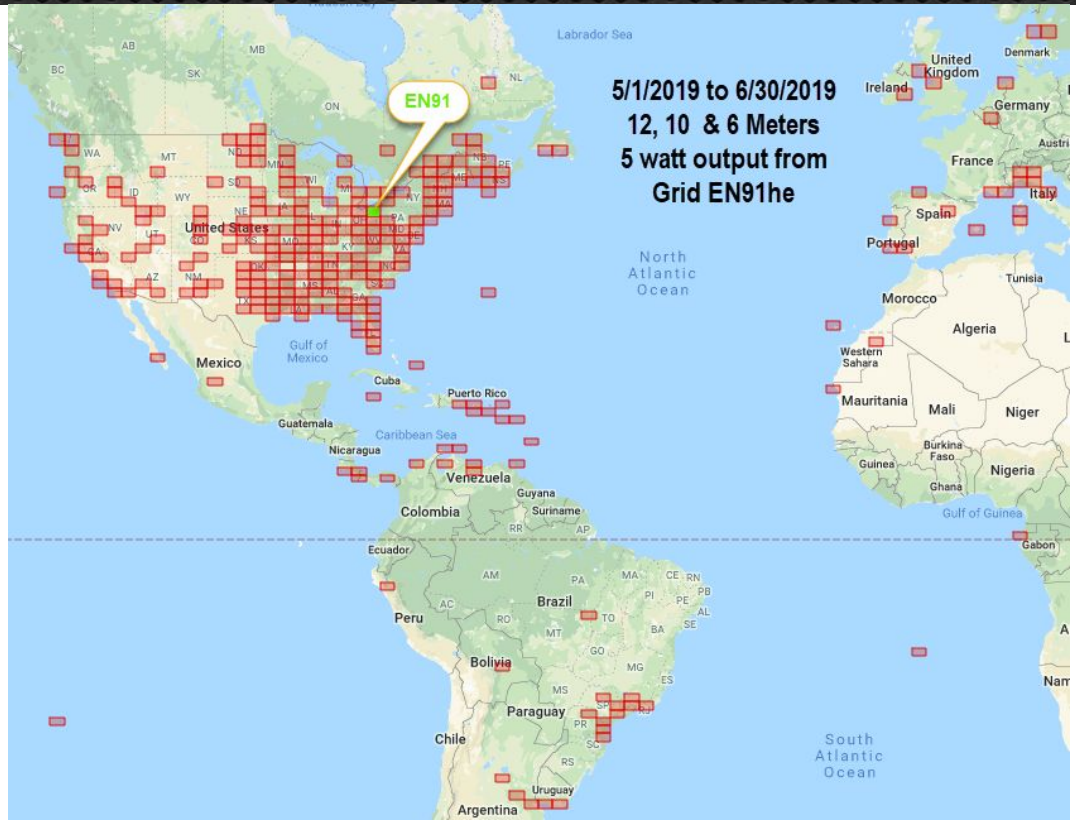
- “Dead” Bands are alive daily (12, 10 & 6)
- Read-

  “*Want to Work 6, 10 or 12 Meters But No Sunspots? Don’t Miss Your Chance with Summer E Skip and FT8*”🔗



What Can FT8 & FT4 Do?

- "Dead" Bands?
- 10, 12 & 6 M QSOs
- May 2018 to June 2019
- 5 Watts
- Antena – 3 El Beam at 50'



What Can FT8 & FT4 Do?

- K8ZT from:
  - May 2018-
  - July 2019
- Power output
  - 5 watts.
- Antenna
  - 3 El Beam at 50 feet.

DXCC

DXCC	12m	10m	6m	Total
5T		1		1
8P		3		3
9Y			1	1
C6			1	1
CE	3	3		6
CE0E	1			1
CP	1			1
CT		1	1	2
CX	1	3		4
EA	3			3
EA6	1	2		3
EA8	1	2	3	6
EI		2		2
F	3	1		4
FG	1		1	2
FP		1	1	2
G		4		4
GI	1			1
HC		1		1
HI	2	3	1	6
HK	1			1
HP	2			2
I	4	2		6
IS0		1		1
J7	1			1
K	165	279	393	837
KP2	1	4		5
Total	440	226	1044	

DXCC	12m	10m	6m	Total
KP4	1	4	3	8
LU	4	8		12
OA	1			1
ON		1		1
P4	1	4		5
PA		1		1
PJ2		3		3
PJ4	1	5		6
PJ5	1			1
PY	10	12		22
S0	1			1
SM			2	2
TG		1		1
TI	2			2
TK	1			1
TR		1		1
VE	3	10	26	39
VP2-E	1	1		2
VP2-M		1		1
VP6-D	1			1
VP8-F	2	1		3
VP9		1	5	6
XE		3	1	4
YN		1		1
YV	2	4	1	7
ZD7	1	1		2
ZF	1	2		3
Total	440	226	1044	

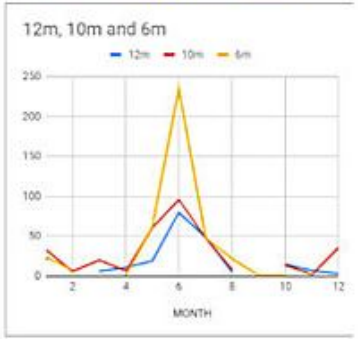
WAS

STATE	12m	10m	6m
AL	5	9	11
AR	4	3	11
AZ	3	5	3
CA	2	13	3
CO	5	3	12
CT	1	6	1
DE	1	2	3
FL	17	43	55
GA	2	3	3
IA	6	1	5
ID	2	1	1
IL	4	4	2
IN		2	6
KS	7	7	14
KY	2	3	2
LA	8	9	9
MA	1	7	3
MD	1	3	3
ME	6	5	4
MI	2	2	7
MN	3	8	2
MO	6	4	4
MS	5	5	10
MT			1
Total	226	379	443

STATE	12m	10m	6m
NC	3	4	1
ND	2	10	4
NE	3	5	3
NH	5	7	3
NJ	2	5	1
NM	3	1	3
NV	1	4	3
NY	2	3	1
OH	9	22	110
OK	2	7	14
OR	1	1	1
PA	3	5	5
RI	2	4	
SC	3	4	3
SD	6	4	6
TN	2	3	5
TX	12	26	40
UT	2	2	2
VA	2	2	4
VT	2	2	1
WA	1	5	
WI	2	2	1
WV	2	3	4
WY	1	1	3
Total	226	379	443

by Month

MONTH	12m	10m	6m	Totals
1	22	33	24	79
2		6	8	14
3	6	20		26
4	11	7	1	19
5	19	61	62	142
6	80	96	235	411
7	49	48	48	145
8	5	8	22	35
9			1	1
10	15	14	1	30
11	7	2		9
12	3	36		39
Year	217	331	402	950



What Can FT8 & FT4 Do?

- Works well with HOA Limited, indoor, temporary, mobile, etc. Antenna Options
- Magnetic Loop Antennas are very portable, and the limited bandwidth (without retuning) is not as big a problem on fix frequency modes FT8/FT4 as on other modes

What Can FT8 & FT4 Do?

- 160 M capability for modest stations
  - Currently (with 5 watts & 60’ sloper antenna)
    - >1600 QSOs
    - 61 DXCC
    - 50 WAS
    - 6 WAC
    - Best DX–ZS (13,000 m), UA0 (8500 m) & E51 (6600 m)

What Can FT8 & FT4 Do?

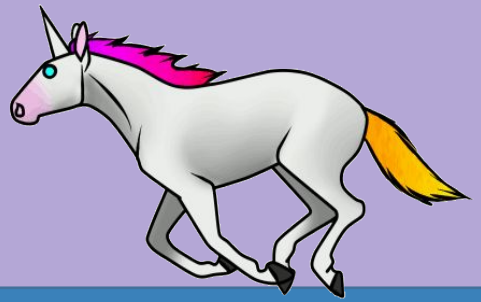
- ✔ Automatic Logging into ADIF file
- ✔ Easy transfer of electronic log to LOTW, eQSL and your master station logbook
- ✔ Let you know how strong stations you are decoding are in dBs
- ✔ Work with almost any SSB Radio including VHF/UHF

What FT8 & FT4 CANNOT Do?

- Rag Chewing and Long Contacts
  - *JS8CALL* is option
  - PSK31 is more traditional option
- Work without a computing device
- Work with a CW only radio
- Work a station without an Operator

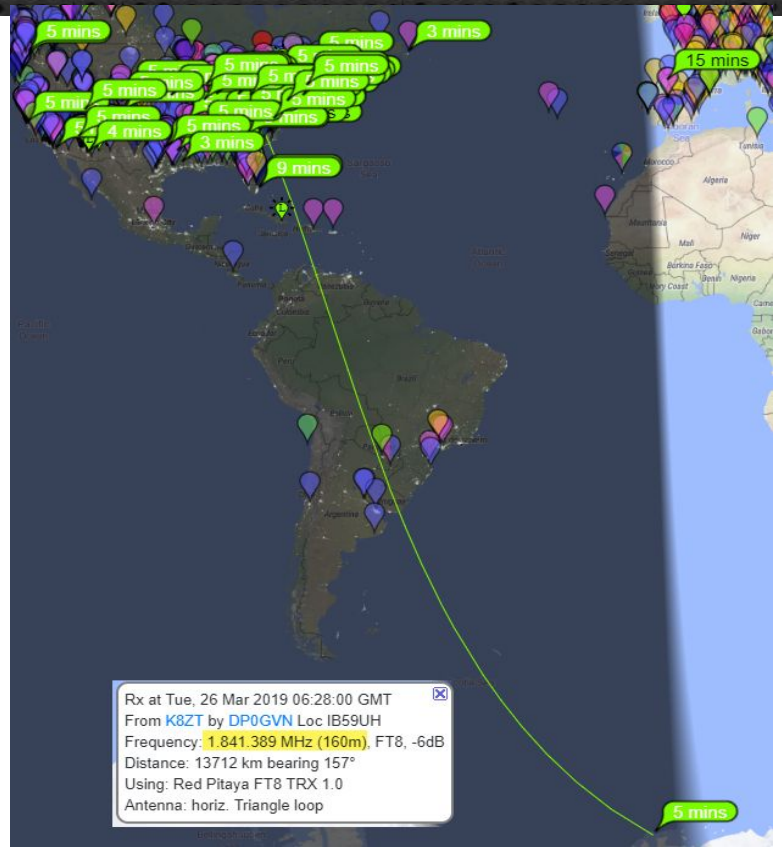
FT8/FT4 Myths

- FT8 requires Internet to make QSOs
- No Operator is required
- No Operator skill required
- There is no home-brew or kits for Digital
- Only new radios can be used



160 M the one that got away!

- Antarctica!
- PSK Reporter showed they were receiving me (for over 20 minutes)
- Unfortunately no one seem to be at station to reply to my calls




Getting Started

Getting Started- What You Need

- HF Radio
- Computer
- Soundcard or Soundcard Interface*
- Software (Free)

* Some radios have this built into the radio

Getting Started- What You Need

- Method to generate audio (soundcard either in radio, in interface or independent)
- Way to Key Radio's PTT when transmitting
  - CAT Control
  - Sound Card Interface with built-in keying
  - Radio's VOX
  - Manual PTT Switch

Getting Started- What You Need

- Radio Hardware
  - HF Radio Capable of SSB Transceive
  - Sound Card Interface (one of these):
    i. Not needed if radio has it own
    ii. External Interface such as Signalink
    iii. Audio cables to computer sound card

Recent Radios*-Built in Soundcard?

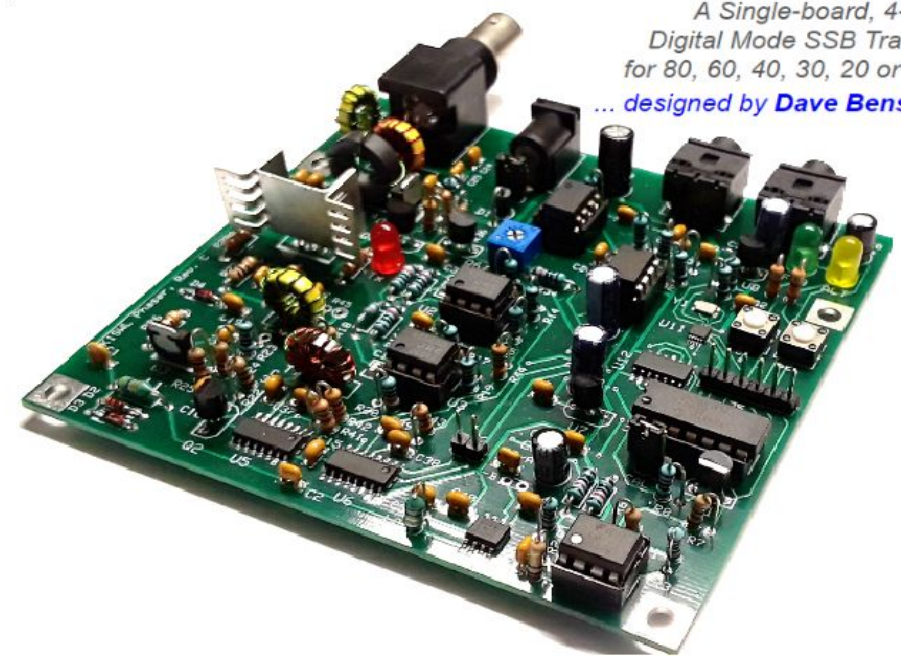
Radios with Built in Soundcard	Radio that do not have SC	Radio w/o SC but Isolation circuits so you can connect directly to soundcard
ICOM 7300	ICOM 718	
ICOM 7100	Yaesu FT-891	Elecraft K3
Yaesu FT-991 / 991A	Yaesu FT-1200	Elecraft KX3
Yaesu FTDX3000	Yaesu FT-450	Elecraft KX2
Elecraft K3s	Yaesu FT-857	Phaser Single Band Kits $55
Kenwood TS 590 S / 590SG	Yaesu FT-818 /817	QRPGuys DSB Digital Transceiver Kit $40
FLEX-6400	Kenwood TS-480	
ICOM 705	Alinco DX-SR8T	

* Under $2000

QRP Single Band FT8/FT4 Kits

Midnight Design Solutions

PHASER Digital Mode Transceiver



A Single-board, 4-watt
Digital Mode SSB Transceiver
for 80, 60, 40, 30, 20 or 17 Meters
*... designed by **Dave Benson, K1SWL***

Getting Started- What You Need

- Computer Hardware
  - Computer running Windows (7 or later), Linux, or OS X
    - 1.5 GHz or faster CPU and 200 MB of available memory.
    - Monitor with at least 1024 x 780 resolution
    - Possibly 2nd monitor for more screen space

Getting Started- What You Need

- Computer Software
  - *WSJT-X* (Free!) Operating Software
  - Helper Software
    - *JT Alert* (Free!) for Windows or
    - *AlarmeJT* for Linux (Free!)
  - Software to maintain highly synchronized time
  - Online Monitoring (spotting) *Pskreporter*

Getting Started- What You Need

- Miscellaneous stuff (you might need)
  - USB Cable
  - Audio Cables / Y-Splitters
  - Microphone Cables
  - DIN connector Cables

WSJT-X Software

WSJT-X User Guide

Putting it All Together– Radio

1. Setup Radio
   a. Install manufacturer's driver software
   b. Set Baud Rate of Radio (you may also need to turn on interface)
   c. Connect Interface cable
   d. Determine Com Port # of Radio
   e. Test operation of CAT control with logging or contesting software (*N1MM*, etc.)

Sound Card Radio Interfaces

1. Radio with built in Soundcard
2. Interface with built in Soundcard
3. Interface without built in Soundcard
4. Radio without soundcard but capable of direct connection to Soundcard

Sound Card Radio Interfaces

2. Interface with built in Sound Card
   - *Tigertronics Signalink*
   - *MFJ-1204*
   - *ZLP Electronics MiniProSC*
   - *Digirig Mobile*

Sound Card Radio Interfaces

2. Interface with built in Sound Card
   - *West Mountain RIGblaster*
   - *XGGCOMMS*

Sound Card External

3. & 4. External USB Sound Card
   - Syba SD-AUD20101 USB ($10 or less at many places)
   - Review of many USB Audio Interfaces for Digital Modes - Jim Brown K9YC

... we interrupt for extra geekiness

Soundcard Interfaces

Soundcard Interfaces

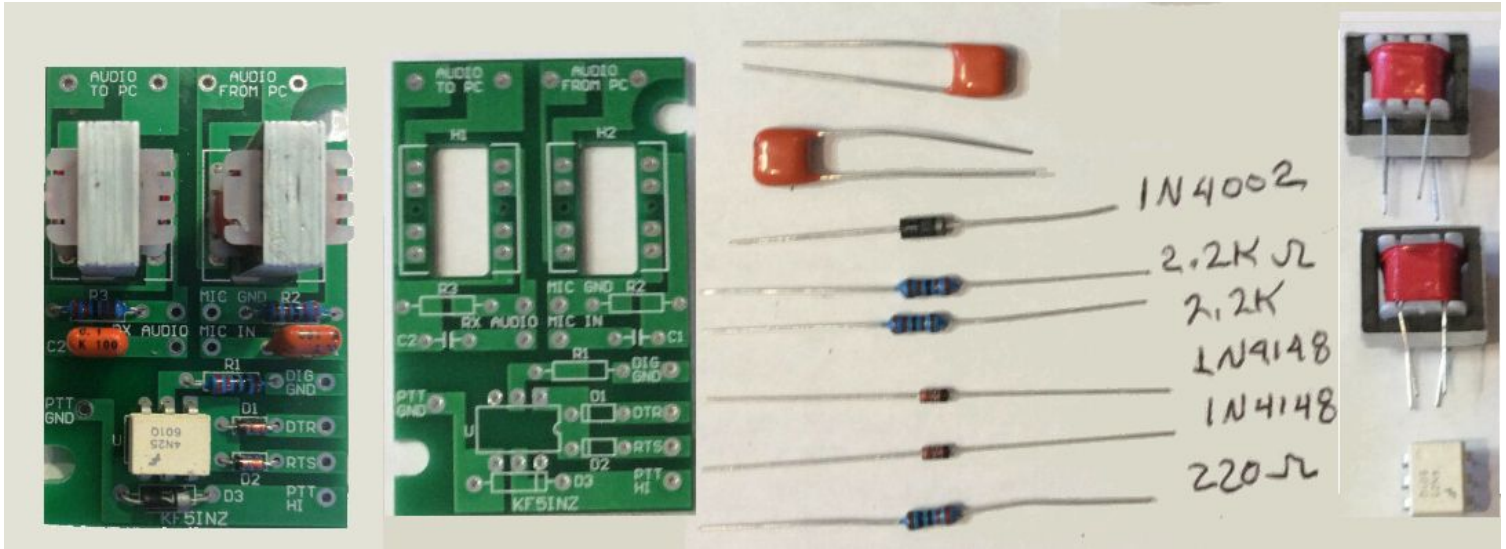
- *Ham Guide to Interfacing Everything* –Jim Brown K9YC

Homebrew Soundcard Interfaces

- *G4ILO*
- KD2AVU
  - *Video*
  - *Circuit Diagram*
- KB9RLW *DuinoVOX*

Kit Interfaces

- EASY DIGI- Kit ~$9 on eBay. Requires separate computer soundcard



Kit Interfaces

- EASY DIGI- Built with case ~$20-30 on eBay.
- Requires computer soundcard

Dealing with Com Ports!

- Legacy PC Serial Ports
- USB Ports and Devices
- USB-to-Serial Adapters
- Using the Device Manager
- Managing Serial Port Numbers
- Using Serial Ports for CW / FSK / PTT Keying
- Sharing Serial Ports
- USB Sound Cards

A must read even if not interested in FT8!

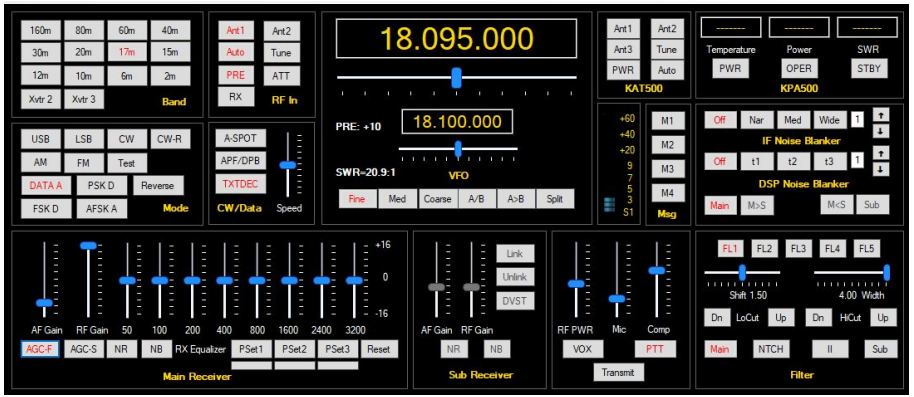
Serial & USB Port Interfacing

- Read this excellent reference on Serial and USB Ports to avoid/ fix problems with logging software, WSJT-X, etc.- *N6TV – "Everything You Need to Know About USB and Serial Interfaces"*🔗 or watch the video of presentation at Contest University 2020

Radio Computer Interfacing

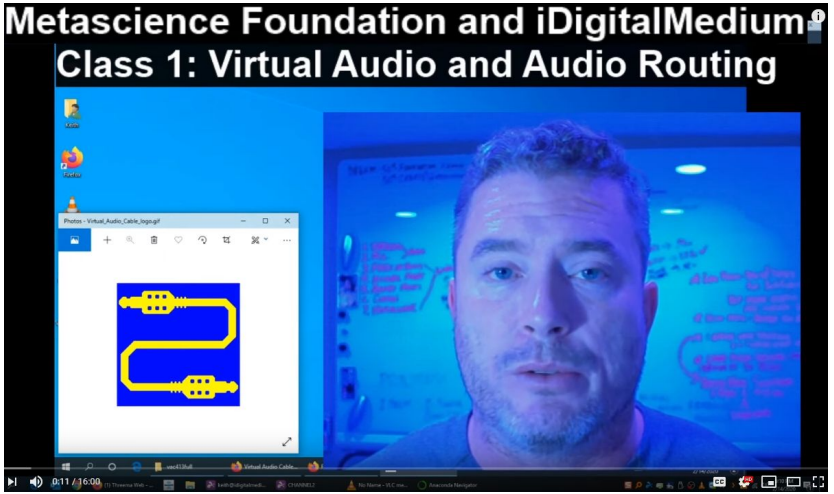
Sharing Com Ports!

- If you want to use rig control with multiple software programs at same time
  - Win4___ Suite
    - *Win4K3Suite*
    - *Win4IcomSuite*
    - *Win4Yaesu Suite*



  - *Null-modem emulator (com0com)*

Virtual Audio Connections



… now back out regularly scheduled presentation

Resources to Help With Setup

K0PIR- FT8 with Icom 7300

FT-991 SETUP FOR DIGITAL MODES

K3S on JT65/JT9- Setting Up & Using

FB NEWS FT8 with IC-7300


Yaesu FT-991 WSJT-X Setup

Setup Elecraft Radios for Data Modes

W6AWD
WSJT-X-- IC-7100, 7200, 7300 & 7410

Yaesu FT-891 WSJT-X

LAMCO Kenwood TS590 WSJT-X

KB9VBR
Yaesu FT-891

KENWOOD TS590
Setup for WSJT-X

Putting it All Together– Audio

2. Setup Audio Path
    a. If Radio has built in Soundcard
        i. Install manufacturer's driver software
        ii. Check Computer’s Sound settings (Control Panel)

Putting it All Together– Audio

2. Setup Audio Path
    b. If Radio does not has built in Soundcard
        i. Chose Interface Device (Signalink, MFJ-1204, etc.)
        ii. Follow manufacturer's instructions
        iii. Connect all cables
        iv. Check Computer’s Sound settings (Control Panel)

Putting it All Together– Audio

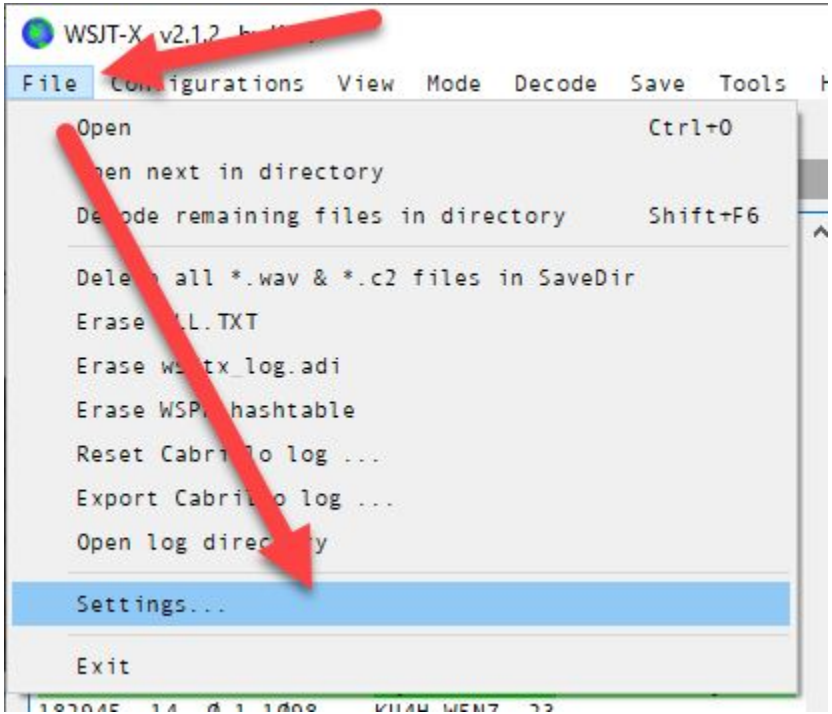
2. Setup Audio Path
   c. In all cases make sure your Radio or Interface sound card is **NOT DESIGNATED AS THE DEFAULT SOUND DEVICE** in Sound Control Panel Settings
   d. Set your computer's internal soundcard (the one you are not using for WSJT-X) as default

Putting it All Together- Software

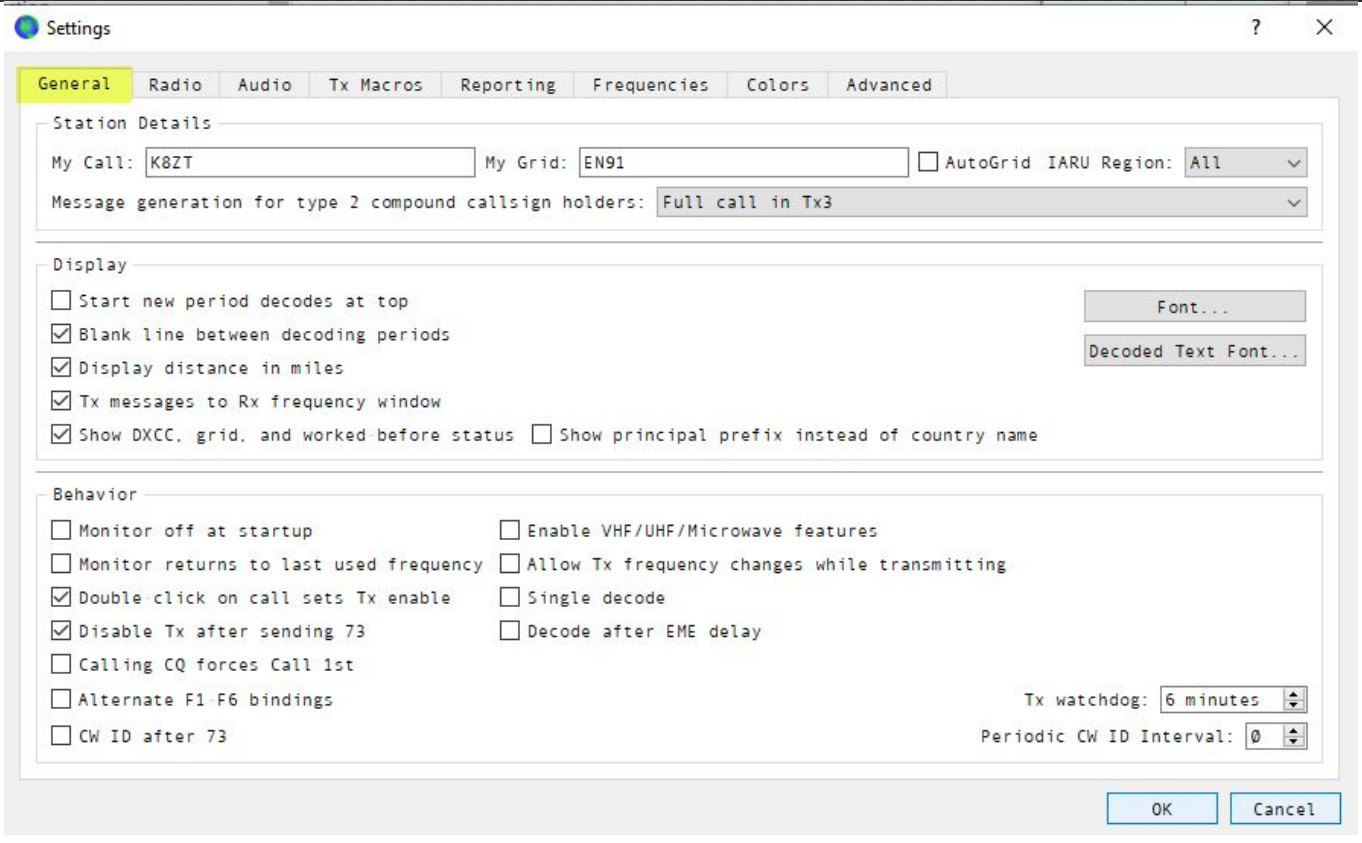
3. Install Software
   a. WSJT-X- *Installer Link*
   b. The built-in Windows facility for time synchronization is usually not adequate. Install *Meinberg NTP* (*Network Time Protocol Setup*) or *Dimension 4* from *Thinking Man Software*.
   c. Install JT Alert- *Link*

Putting it All Together- Configure

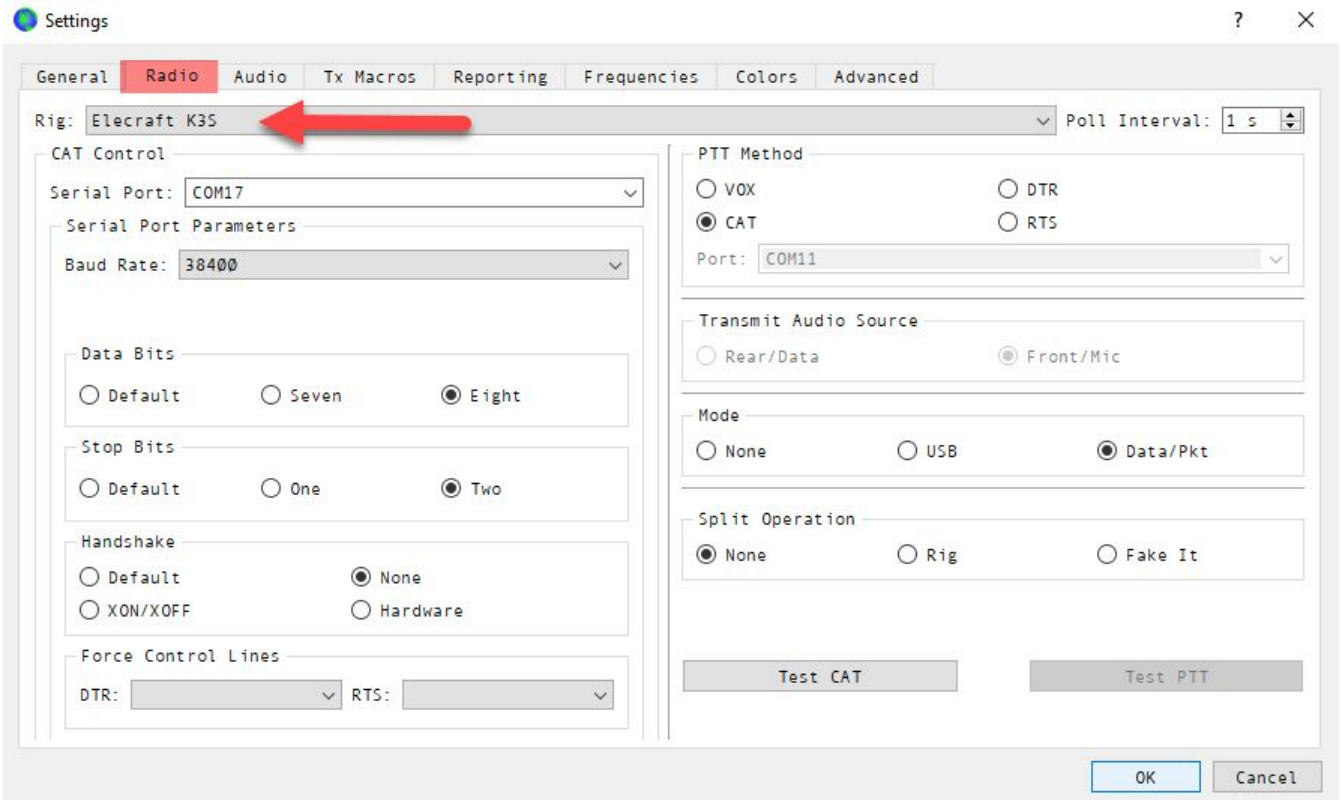
4. Configure Software
   a. WSJT-X- *Configuration Link*



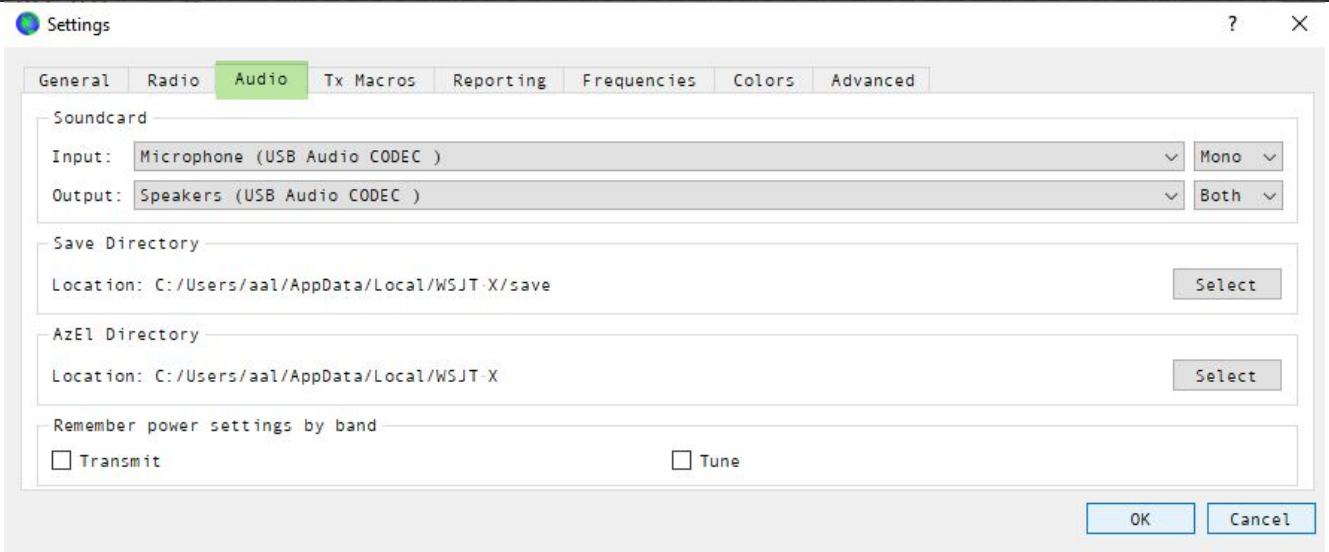
Putting it All Together- Configure



Putting it All Together- Configure

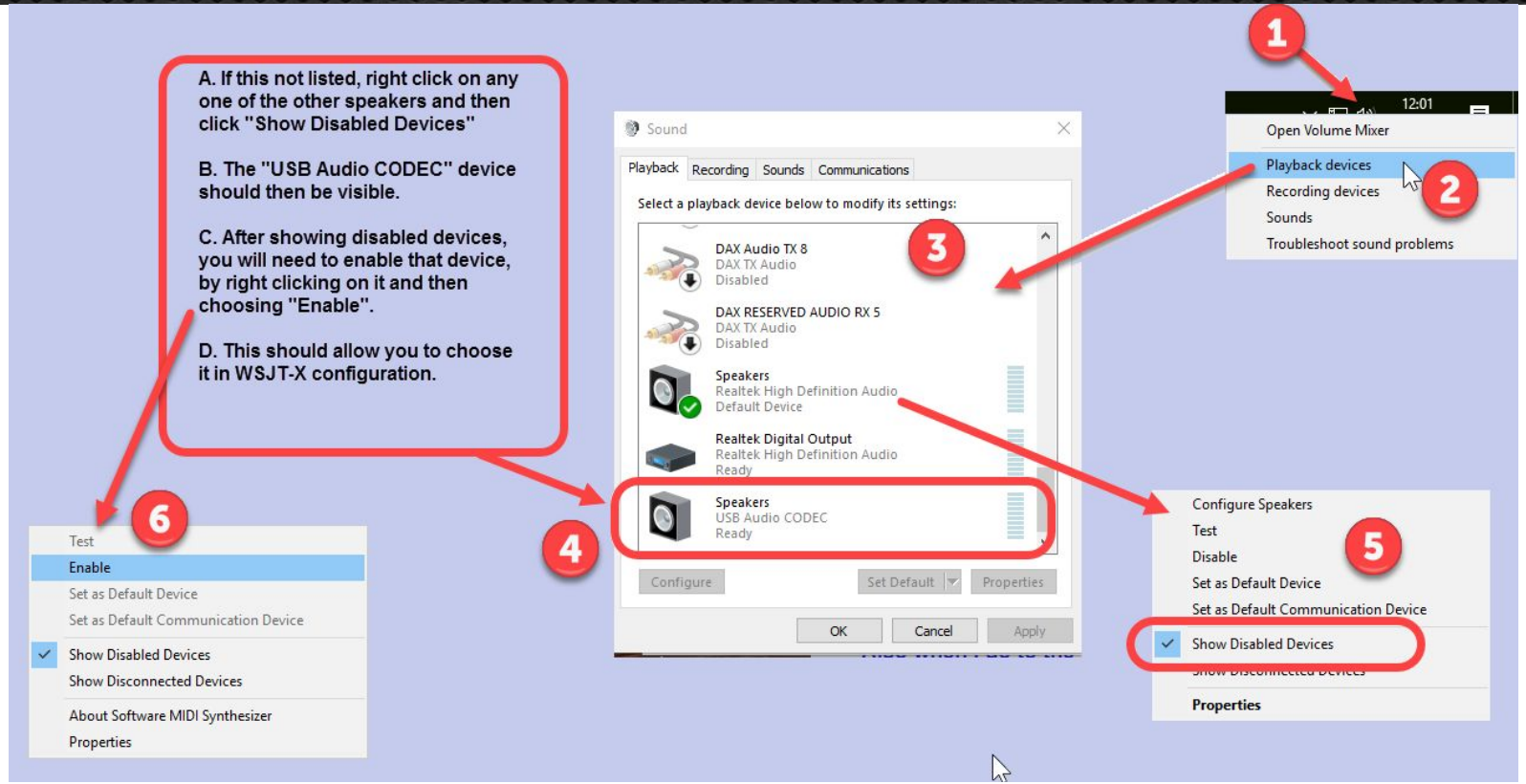


Putting it All Together- Configure



Make sure Soundcard Input and Output are not your computer's internal soundcard

Putting it All Together- Configure



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Setup Elecraft Radios for Data Modes

W6AWD
WSJT-X-- IC-7100, 7200, 7300 & 7410

LAMCO Kenwood TS590 WSJT-X

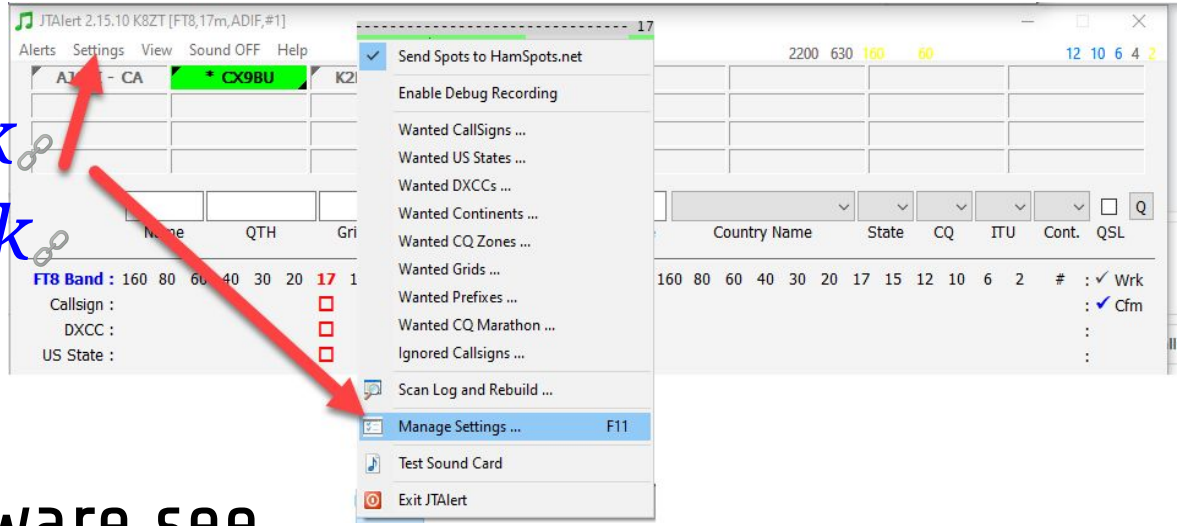
Yaesu FT-891 WSJT-X

KENWOOD TS590 Setup for WSJT-X

KB9VBR
Yaesu FT-891

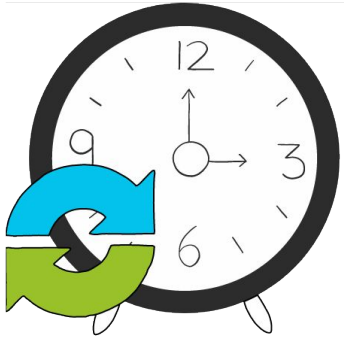
Putting it All Together- Configure

4. Configure Software
   b. JT-Alert
      i. *AE4VJ Link*
      ii. *KC8RP Link*
      iii. *M0MCX*
      iv. Logging
   c. Time Sync software see below

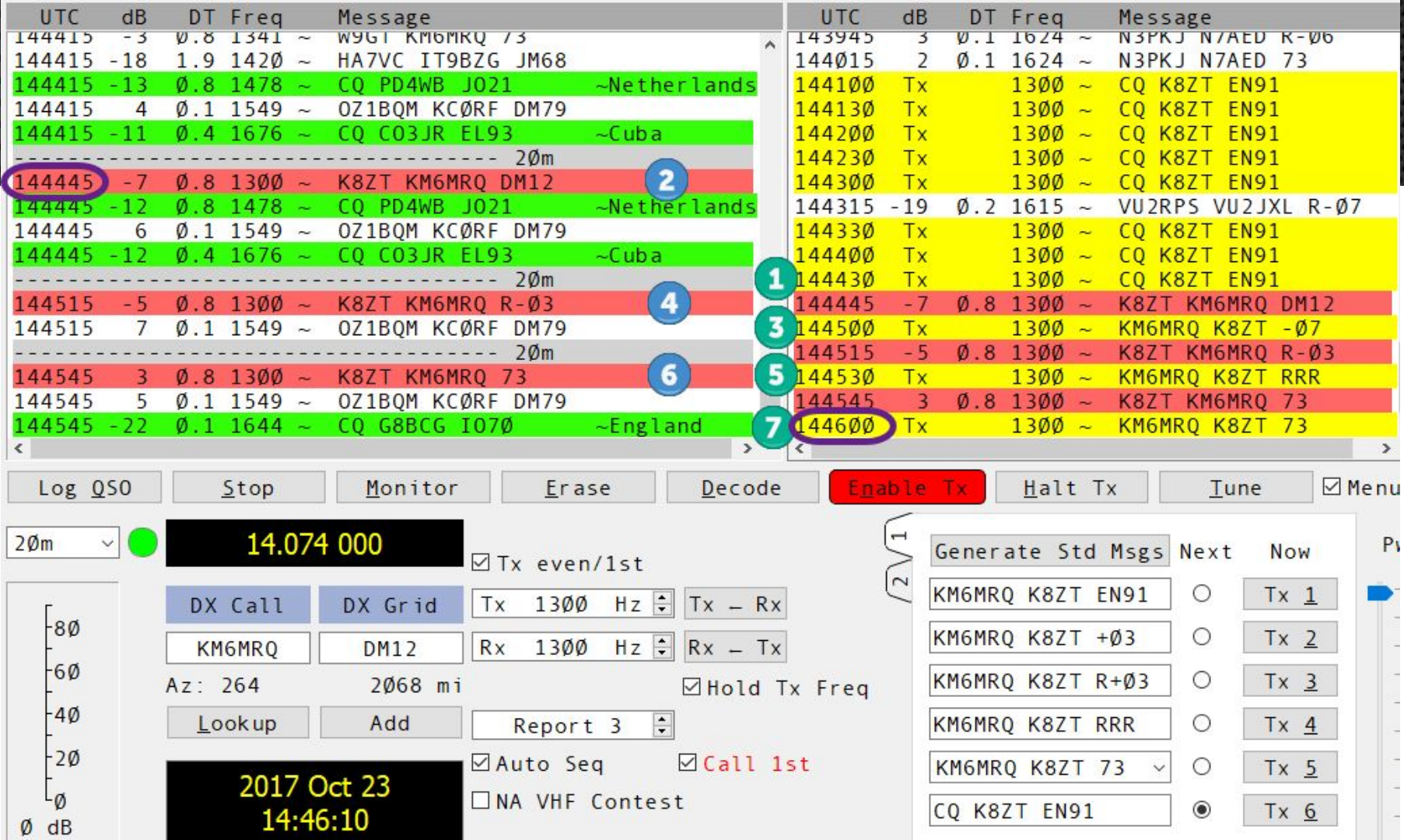


Helper Software –Time Sync

- *Meinberg NTP Time Server Monitor*
- *Thinkman*
- *Mania Software*



VA3MW- List of Time Syncing Options


UTC dB DT Freq Message
144415 -3 Ø.8 1341 ~ W9GT KM6MRQ 73
144415 -18 1.9 142Ø ~ HA7VC IT9BZG JM68
144415 -13 Ø.8 1478 ~ CQ PD4WB JO21 ~Netherlands
144415 4 Ø.1 1549 ~ OZ1BQM KCØRF DM79
144415 -11 Ø.4 1676 ~ CQ CO3JR EL93 ~Cuba
---------- 2Øm ----------
144445 -7 Ø.8 13ØØ ~ K8ZT KM6MRQ DM12
144445 -12 Ø.8 1478 ~ CQ PD4WB JO21 ~Netherlands
144445 6 Ø.1 1549 ~ OZ1BQM KCØRF DM79
144445 -12 Ø.4 1676 ~ CQ CO3JR EL93 ~Cuba
---------- 2Øm ----------
144515 -5 Ø.8 13ØØ ~ K8ZT KM6MRQ R-Ø3
144515 7 Ø.1 1549 ~ OZ1BQM KCØRF DM79
---------- 2Øm ----------
144545 3 Ø.8 13ØØ ~ K8ZT KM6MRQ 73
144545 5 Ø.1 1549 ~ OZ1BQM KCØRF DM79
144545 -22 Ø.1 1644 ~ CQ G8BCG IO7Ø ~England
UTC dB DT Freq Message
143945 3 Ø.1 1624 ~ N3PKJ N7AED R-Ø6
144Ø15 2 Ø.1 1624 ~ N3PKJ N7AED 73
144ØØ Tx 13ØØ ~ CQ K8ZT EN91
144130 Tx 13ØØ ~ CQ K8ZT EN91
144200 Tx 13ØØ ~ CQ K8ZT EN91
144230 Tx 13ØØ ~ CQ K8ZT EN91
144300 Tx 13ØØ ~ CQ K8ZT EN91
144315 -19 Ø.2 1615 ~ VU2RPS VU2JXL R-Ø7
144330 Tx 13ØØ ~ CQ K8ZT EN91
144400 Tx 13ØØ ~ CQ K8ZT EN91
144430 Tx 13ØØ ~ CQ K8ZT EN91
144445 -7 Ø.8 13ØØ ~ K8ZT KM6MRQ DM12
144500 Tx 13ØØ ~ KM6MRQ K8ZT -Ø7
144515 -5 Ø.8 13ØØ ~ K8ZT KM6MRQ R-Ø3
144530 Tx 13ØØ ~ KM6MRQ K8ZT RRR
144545 3 Ø.8 13ØØ ~ K8ZT KM6MRQ 73
144600 Tx 13ØØ ~ KM6MRQ K8ZT 73
1
2
3
4
5
6
7
Log QSO
Stop
Monitor
Erase
Decode
Enable Tx
Halt Tx
Tune
Menu
2Øm
14.074 000
Tx even/1st
DX Call
DX Grid
Tx 13ØØ Hz
Tx – Rx
KM6MRQ
DM12
Rx 13ØØ Hz
Rx – Tx
Az: 264
2Ø68 mi
Hold Tx Freq
Lookup
Add
Report 3
Auto Seq
Call 1st
NA VHF Contest
2017 Oct 23
14:46:10
8Ø
6Ø
4Ø
2Ø
Ø
Ø dB
Generate Std Msgs
Next
Now
KM6MRQ K8ZT EN91
Tx 1
KM6MRQ K8ZT +Ø3
Tx 2
KM6MRQ K8ZT R+Ø3
Tx 3
KM6MRQ K8ZT RRR
Tx 4
KM6MRQ K8ZT 73
Tx 5
CQ K8ZT EN91
Tx 6

Operating Tips

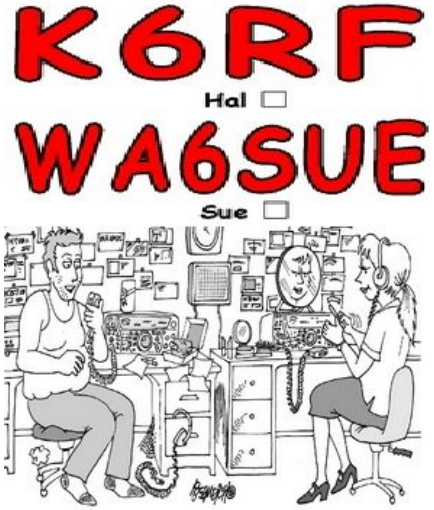
- Before starting WSJT-X software
  - Always make sure all USB cables & devices are attached to computer (USB Sound Cards, Digital Interfaces, Radio Controllers (CAT), etc.)
  - Make sure the Radio is turned on

Operating Tips

- You can create multiple WSJT-X Configurations for different radios/operators
- You can copy your configuration files for installation on new computer
  - Copy following files-WSJT-X.ini, wsjtx_log.adi and ALL.TXT

Operating Tips 2nd Operator

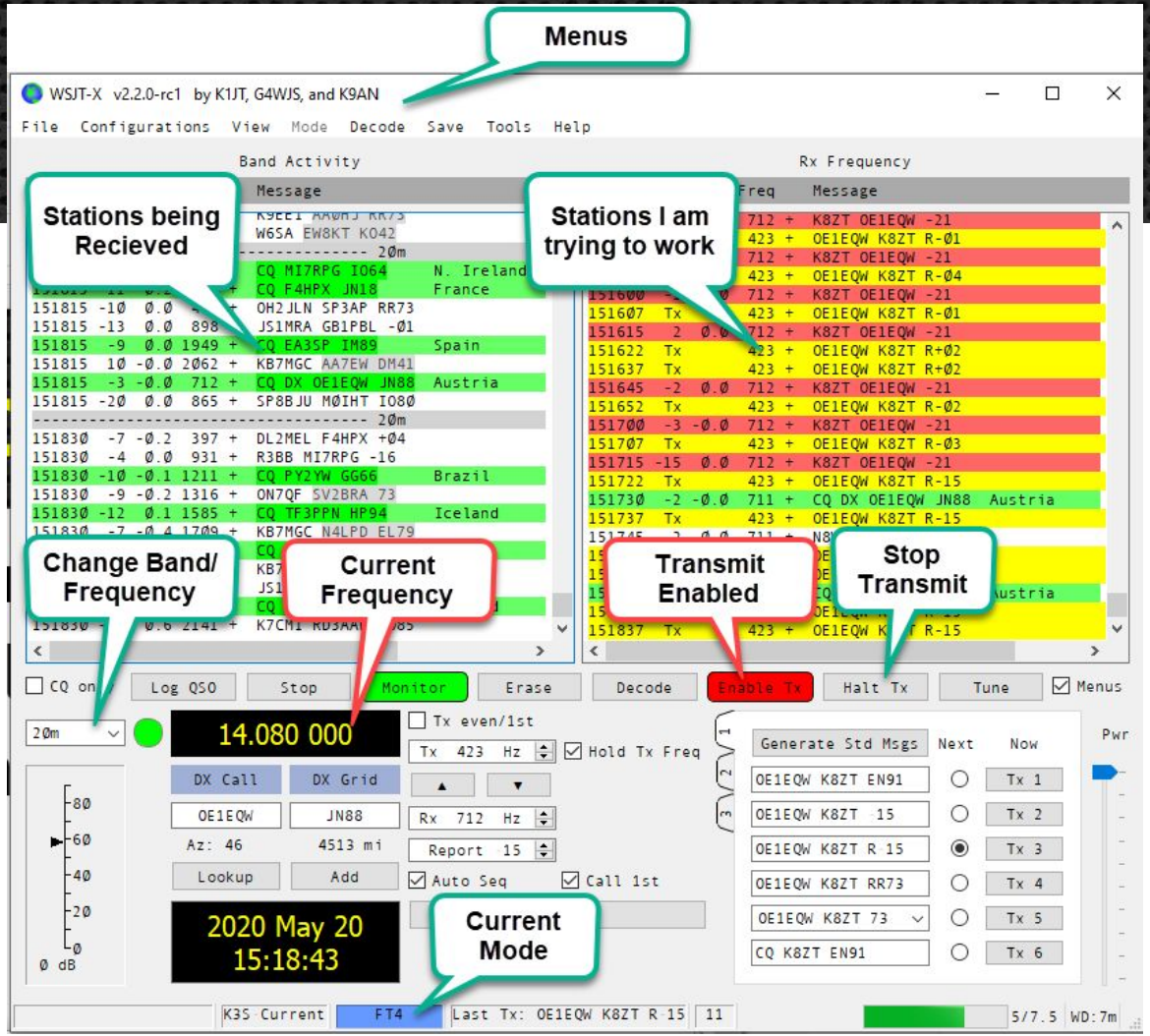
- You can create multiple WSJT-X…
  - Configurations for different radios
  - Logs for *Second User on the Same Windows Computer*
- You can copy your configuration files for installation on new computer (WSJT-X.ini, wsjtx_log.adi and ALL.TXT)



FT8/FT4 Operating Tips

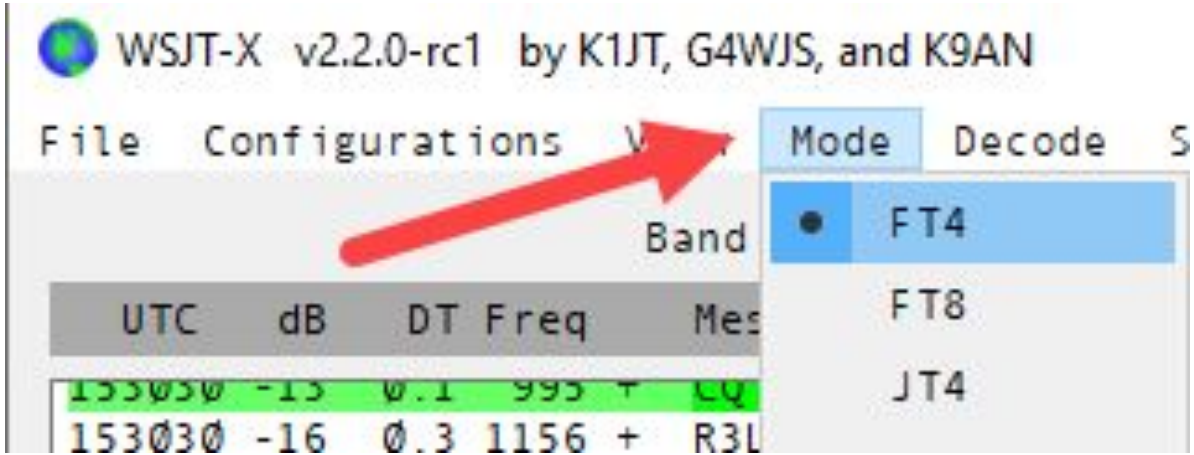
- If things stop working check:
  - Computer Soundcard settings (especially after Windows updates)
  - Time Synchronization
  - Radio bandwidth filter is set at maximum
  - Is radio in correct mode (USB or Data)?
  - Is WSJT-X in correct mode (FT8 or FT4)?
  - 3 boxes checked? (Hold Tx Freq, Call 1st, Auto Seq)
  - Is “Special Operating Activity” selected?
  - Is radio working on other modes?

Screen


Menus
WSJT-X v2.2.0-rc1 by K1JT, G4WJS, and K9AN
File Configurations View Mode Decode Save Tools Help
Band Activity
Rx Frequency
Stations being Recieved
Stations I am trying to work
Change Band/ Frequency
Current Frequency
Transmit Enabled
Stop Transmit
Current Mode
CQ MI7RPG IO64 N. Ireland
CQ F4HPX JN18 France
CQ EA3SP IM89 Spain
CQ DX OE1EQW JN88 Austria
CQ PY2YW GG66 Brazil
CQ TF3PPN HP94 Iceland
Log QSO
Stop
Monitor
Erase
Decode
Enable Tx
Halt Tx
Tune
Menus
20m
14.080 000
Tx even/1st
Tx 423 Hz
Hold Tx Freq
DX Call
DX Grid
OE1EQW
JN88
Az: 46
4513 mi
Lookup
Add
Rx 712 Hz
Report 15
Auto Seq
Call 1st
2020 May 20
15:18:43
Generate Std Msgs
Next
Now
OE1EQW K8ZT EN91
OE1EQW K8ZT 15
OE1EQW K8ZT R 15
OE1EQW K8ZT RR73
OE1EQW K8ZT 73
CQ K8ZT EN91
Tx 1
Tx 2
Tx 3
Tx 4
Tx 5
Tx 6
Pwr
K3S Current
FT4
Last Tx: OE1EQW K8ZT R 15
11
5/7.5
WD:7m

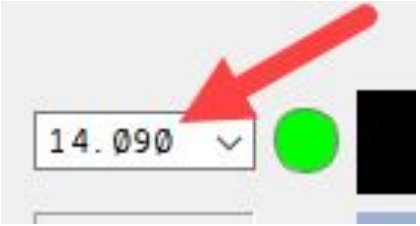
Basic Operation Steps

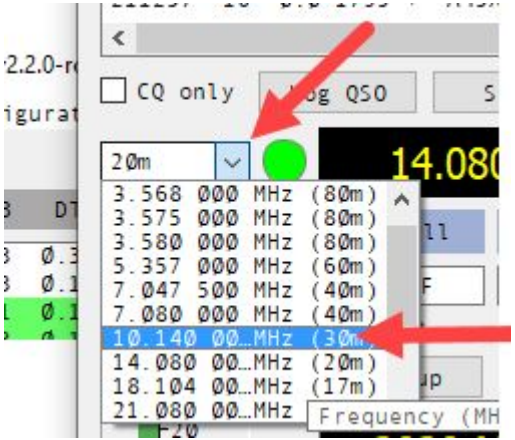
- Start Program
- Choose FT8 or FT4 from “Mode” menu

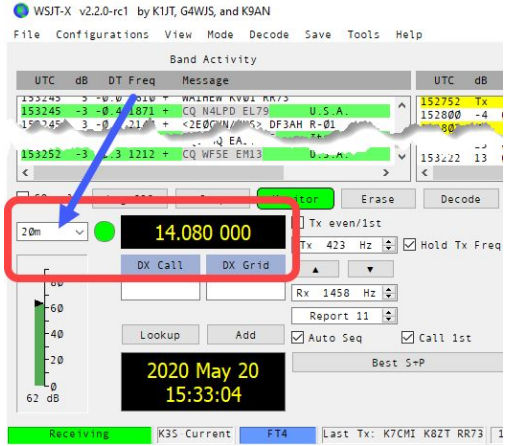


Basic Operation Steps

- Use Frequency selection box to choose desired band using drop down-menu or by directly typing in freq.

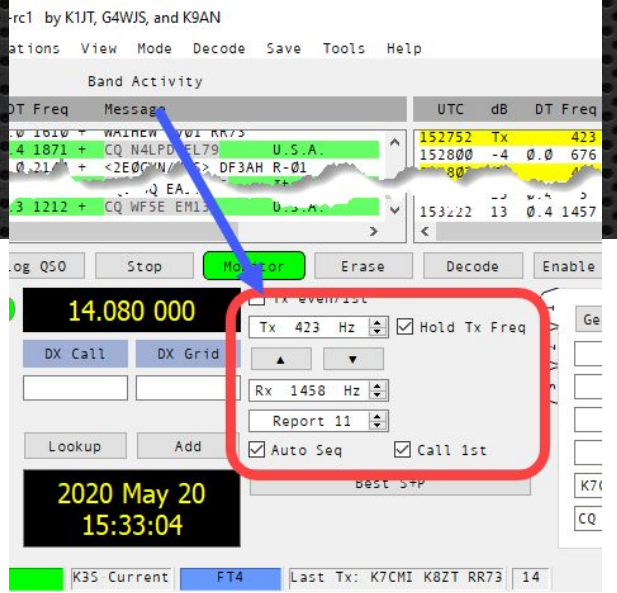


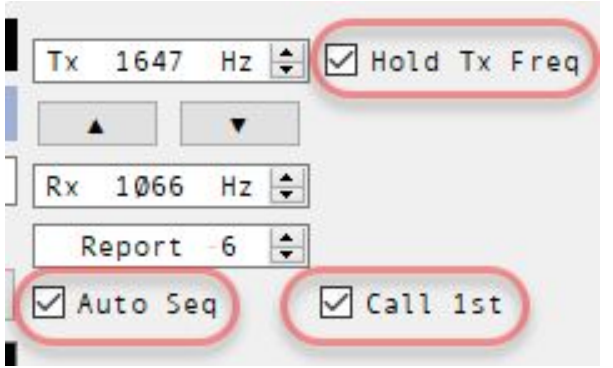




Basic Operation Steps

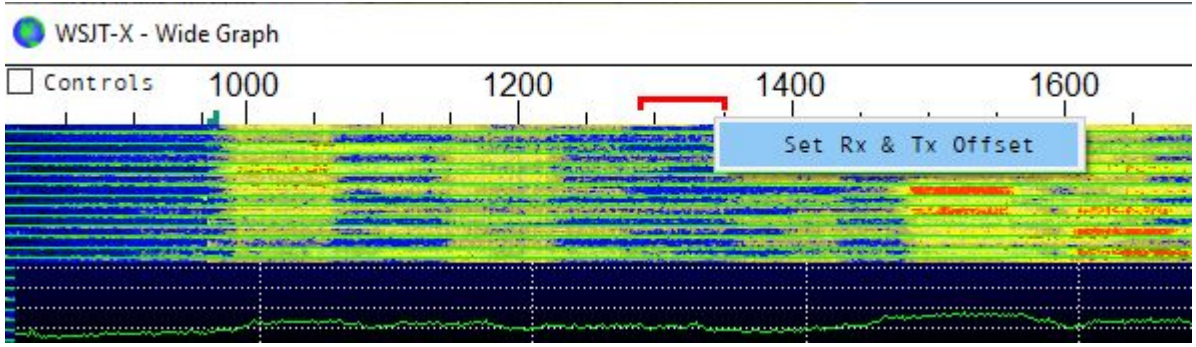
- Three boxes that should be checked in normal operation
- "Hold Tx Freq" (avoids changing transmitting frequency when you double click on a station to call them)
- "Auto Seq" (sends proper replies after starting of a contact or response to CQ)
- "Call 1st" (used when CQing to allow auto-answering of responding station)



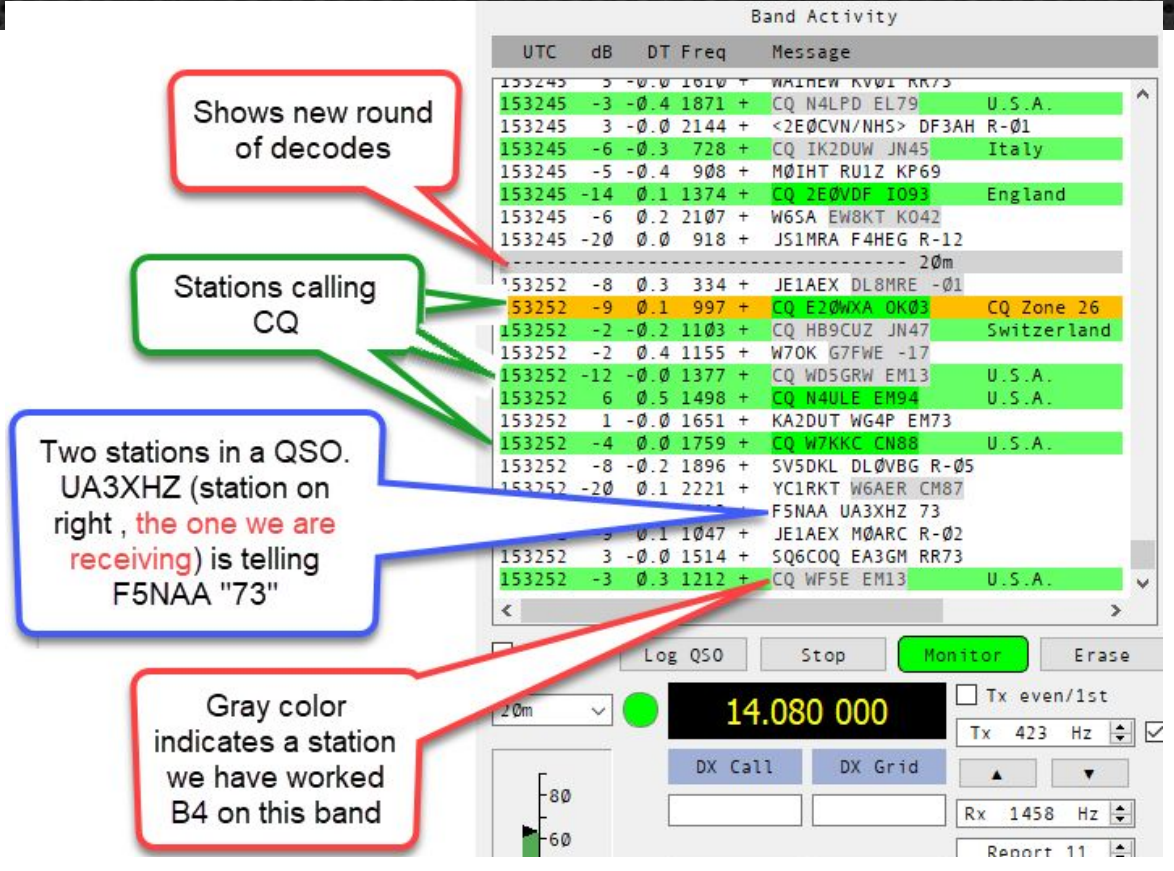


Basic Operation Steps

- Choose Transmit Frequency Using Band Map
- Allow a couple cycles of decode
- Find unoccupied space and Right Mouse Click to choose “Set Rx & Tx Offset”

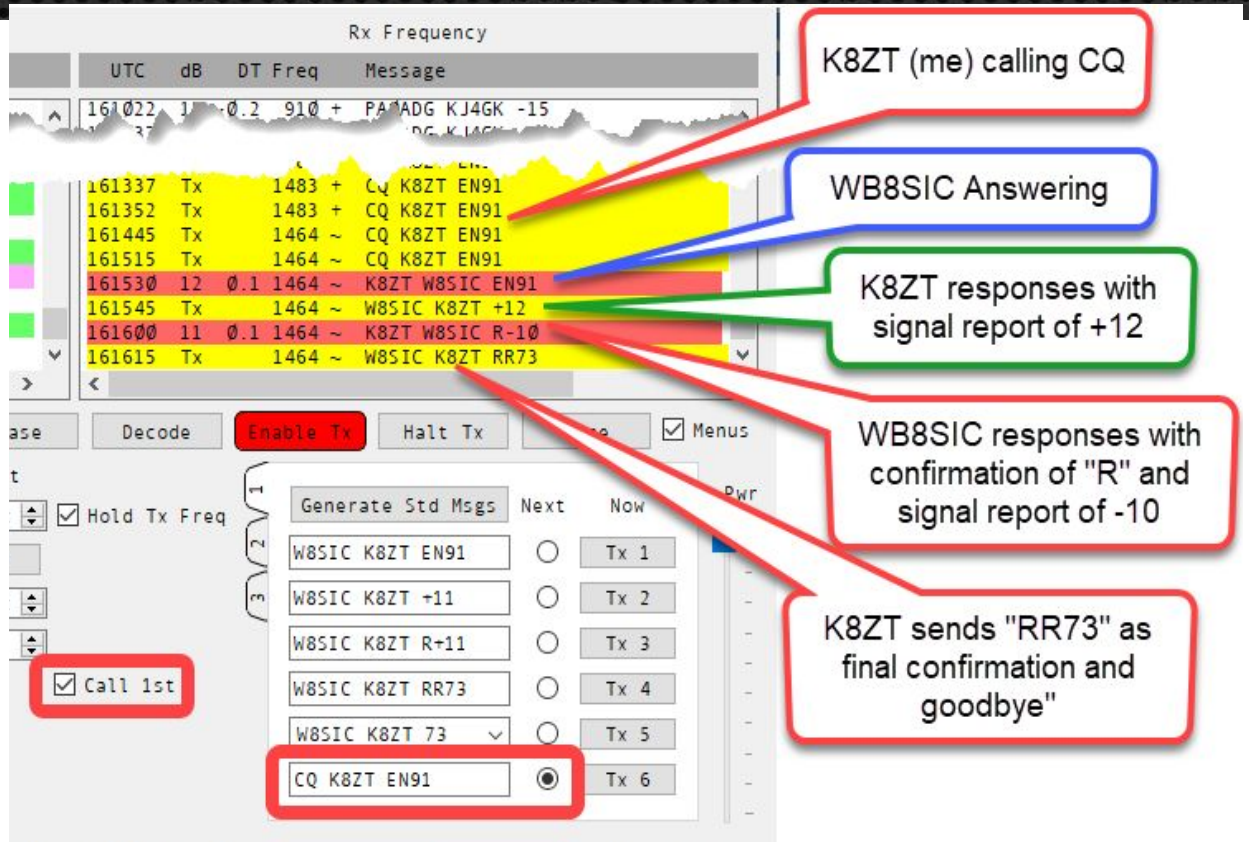


Basic Operation Steps– Receiving



Basic Operation Steps- CQing

- Make sure “Call 1st” box is checked
- Choose “CQ” message
- Enable Tx



Basic Op Steps- Answering a CQ

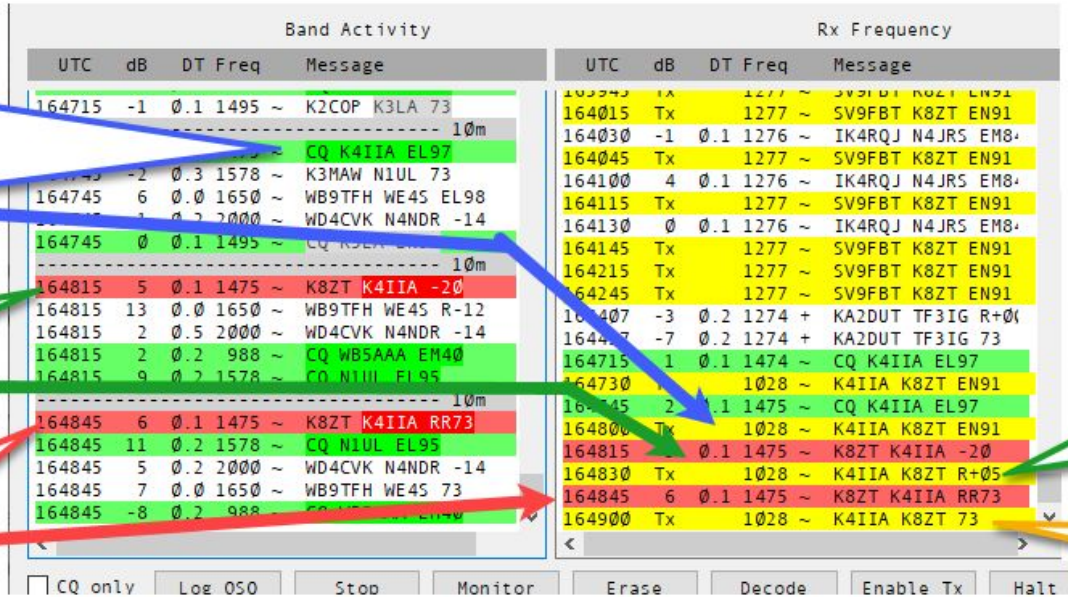
K4IIA calling CQ, I double click with mouse on this. My Enable Tx activated and I send "K4IIA K8ZT EN91"

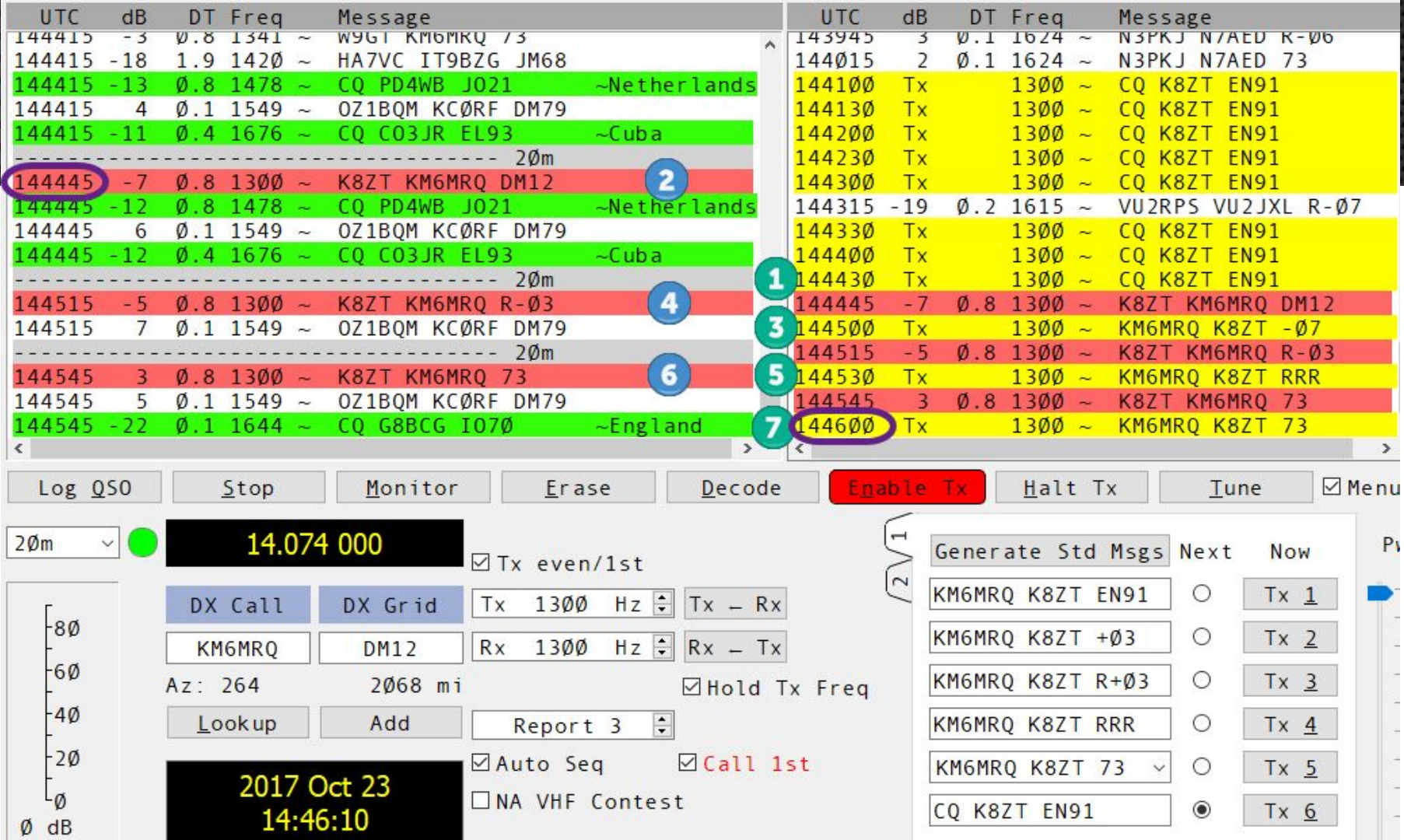
K4IIA responds with "K8ZT K4IIA" and signal report of "-20"

K4IIA responds with "K8ZT K4IIA" and confirmation of "RR73"

K8ZT responds with "K4IIA K8ZT" and confirmation and signal report of "R +05"

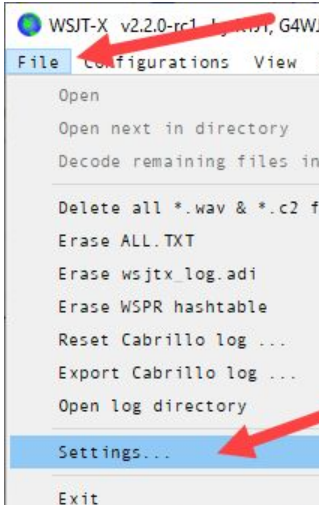
K8ZT responds with final "K4IIA K8ZT 73"

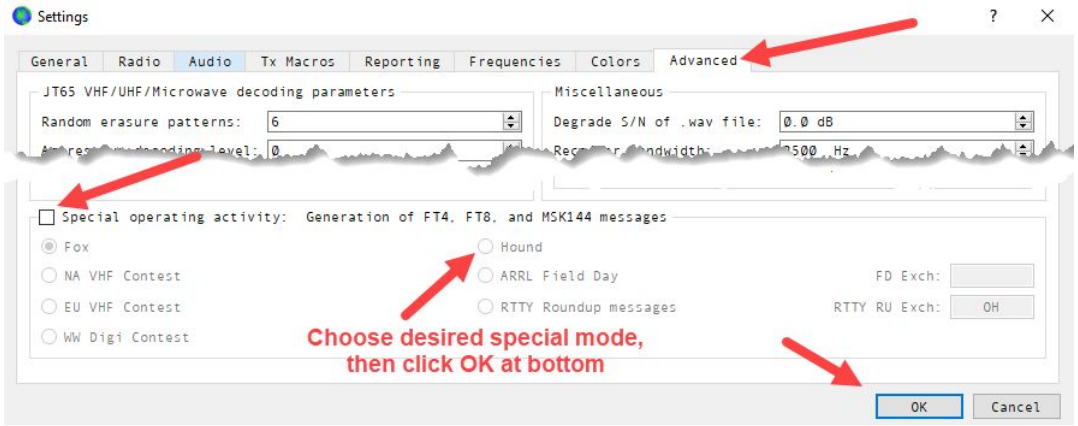



UTC dB DT Freq Message
144415 -3 Ø.8 1341 ~ W9GT KM6MRQ 73
144415 -18 1.9 142Ø ~ HA7VC IT9BZG JM68
144415 -13 Ø.8 1478 ~ CQ PD4WB JO21 ~Netherlands
144415 4 Ø.1 1549 ~ OZ1BQM KCØRF DM79
144415 -11 Ø.4 1676 ~ CQ CO3JR EL93 ~Cuba
---------- 2Øm ----------
144445 -7 Ø.8 13ØØ ~ K8ZT KM6MRQ DM12
144445 -12 Ø.8 1478 ~ CQ PD4WB JO21 ~Netherlands
144445 6 Ø.1 1549 ~ OZ1BQM KCØRF DM79
144445 -12 Ø.4 1676 ~ CQ CO3JR EL93 ~Cuba
---------- 2Øm ----------
144515 -5 Ø.8 13ØØ ~ K8ZT KM6MRQ R-Ø3
144515 7 Ø.1 1549 ~ OZ1BQM KCØRF DM79
---------- 2Øm ----------
144545 3 Ø.8 13ØØ ~ K8ZT KM6MRQ 73
144545 5 Ø.1 1549 ~ OZ1BQM KCØRF DM79
144545 -22 Ø.1 1644 ~ CQ G8BCG IO7Ø ~England
UTC dB DT Freq Message
143945 3 Ø.1 1624 ~ N3PKJ N7AED R-Ø6
144Ø15 2 Ø.1 1624 ~ N3PKJ N7AED 73
144ØØ Tx 13ØØ ~ CQ K8ZT EN91
144130 Tx 13ØØ ~ CQ K8ZT EN91
144200 Tx 13ØØ ~ CQ K8ZT EN91
144230 Tx 13ØØ ~ CQ K8ZT EN91
144300 Tx 13ØØ ~ CQ K8ZT EN91
144315 -19 Ø.2 1615 ~ VU2RPS VU2JXL R-Ø7
144330 Tx 13ØØ ~ CQ K8ZT EN91
144400 Tx 13ØØ ~ CQ K8ZT EN91
144430 Tx 13ØØ ~ CQ K8ZT EN91
144445 -7 Ø.8 13ØØ ~ K8ZT KM6MRQ DM12
144500 Tx 13ØØ ~ KM6MRQ K8ZT -Ø7
144515 -5 Ø.8 13ØØ ~ K8ZT KM6MRQ R-Ø3
144530 Tx 13ØØ ~ KM6MRQ K8ZT RRR
144545 3 Ø.8 13ØØ ~ K8ZT KM6MRQ 73
144600 Tx 13ØØ ~ KM6MRQ K8ZT 73
1
2
3
4
5
6
7
Log QSO
Stop
Monitor
Erase
Decode
Enable Tx
Halt Tx
Tune
Menu
2Øm
14.074 000
Tx even/1st
DX Call
DX Grid
Tx 13ØØ Hz
Tx – Rx
KM6MRQ
DM12
Rx 13ØØ Hz
Rx – Tx
Az: 264
2Ø68 mi
Hold Tx Freq
Lookup
Add
Report 3
Auto Seq
Call 1st
NA VHF Contest
2017 Oct 23
14:46:10
8Ø
6Ø
4Ø
2Ø
Ø
Ø dB
Generate Std Msgs
Next
Now
KM6MRQ K8ZT EN91
Tx 1
KM6MRQ K8ZT +Ø3
Tx 2
KM6MRQ K8ZT R+Ø3
Tx 3
KM6MRQ K8ZT RRR
Tx 4
KM6MRQ K8ZT 73
Tx 5
CQ K8ZT EN91
Tx 6

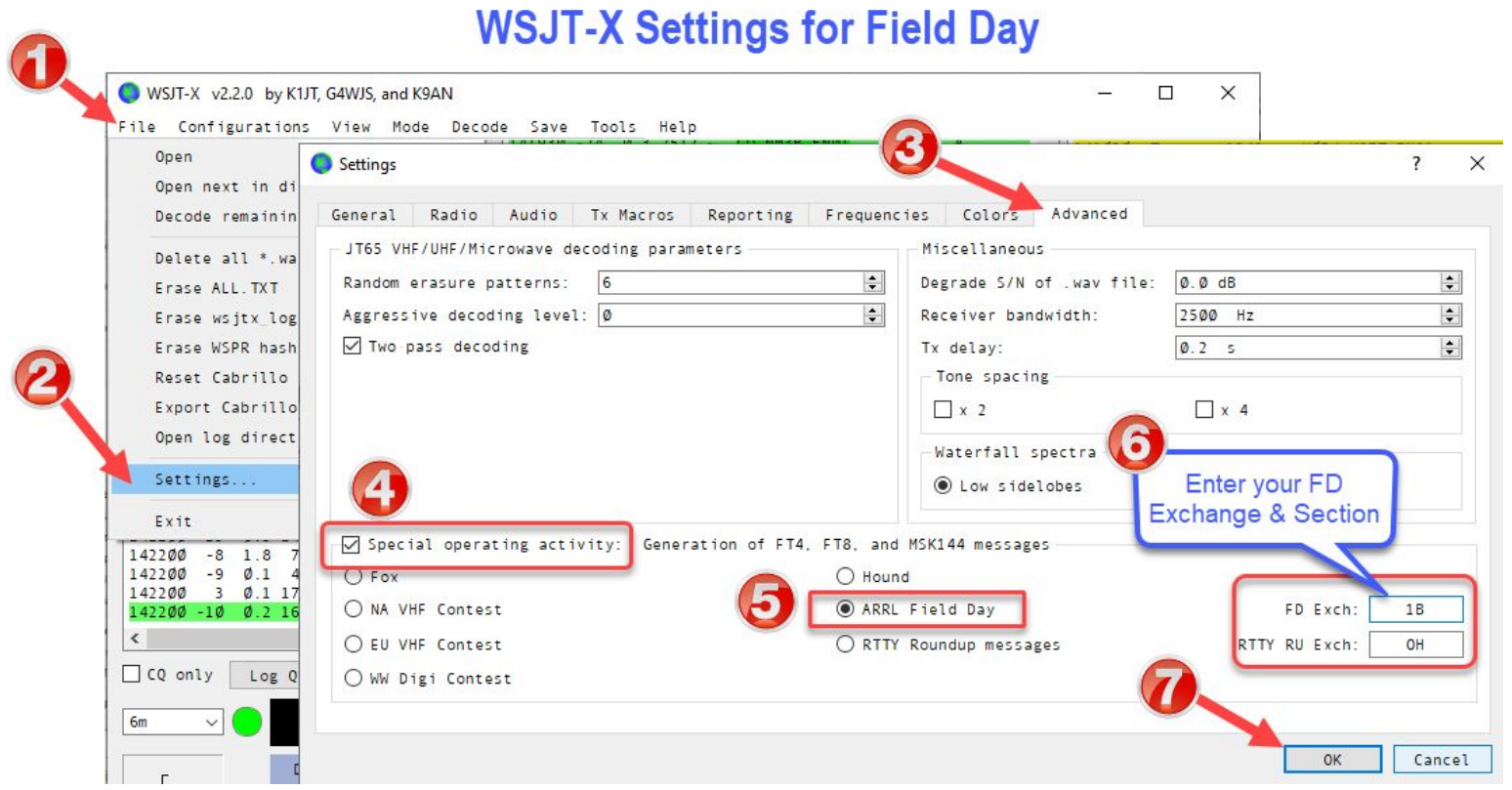
Special Modes Settings

- There are a few special modes available from “Settings…Advanced” menu
  - Hound Mode for DX stations using F/H
  - FD & other contesting modes





Special Modes Settings- Field Day

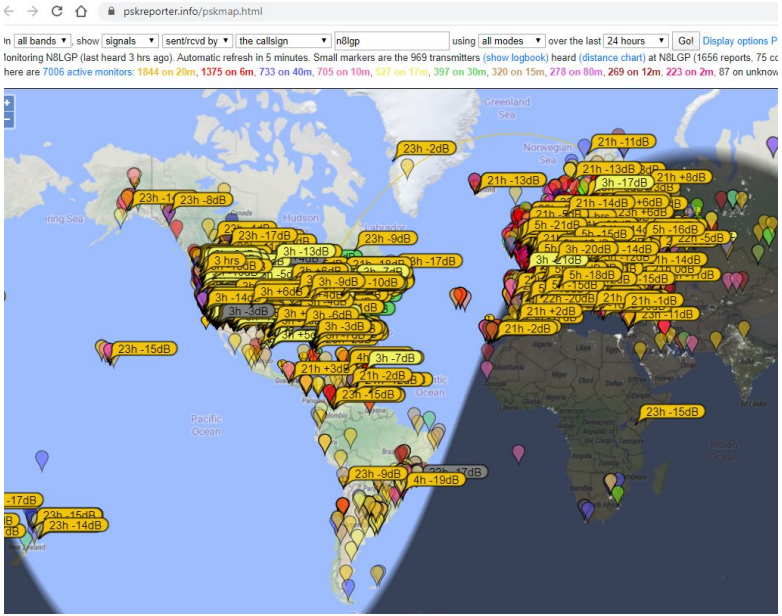


Operating Tips

- Reduce power output settings on your radio to avoid overheating your transmitter
- Make sure your radio's filtering is set for its maximum bandwidth
- All speech processing, noise blanking, etc. is turned off

Operating Tips

- After transmitting a few times you can use *PSKReporter* to check to make sure your signal is getting out and other stations are decoding you

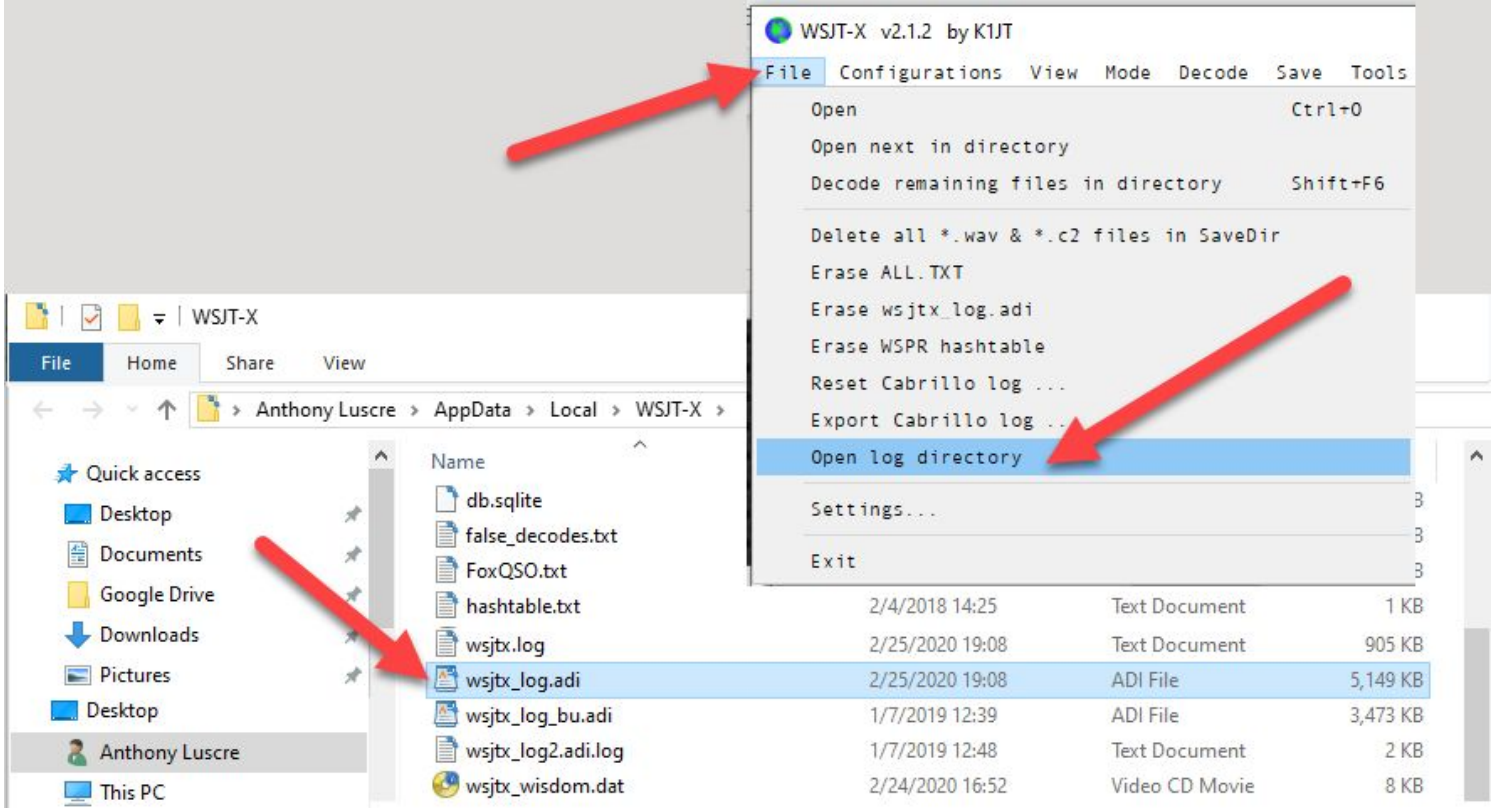


Operating Tips- 6M DX

- Intercontinental 6M DX
  - Check both 50.313 & 50.323
  - May, June & July Peaks
  - Use timing conventions

Operating Tips

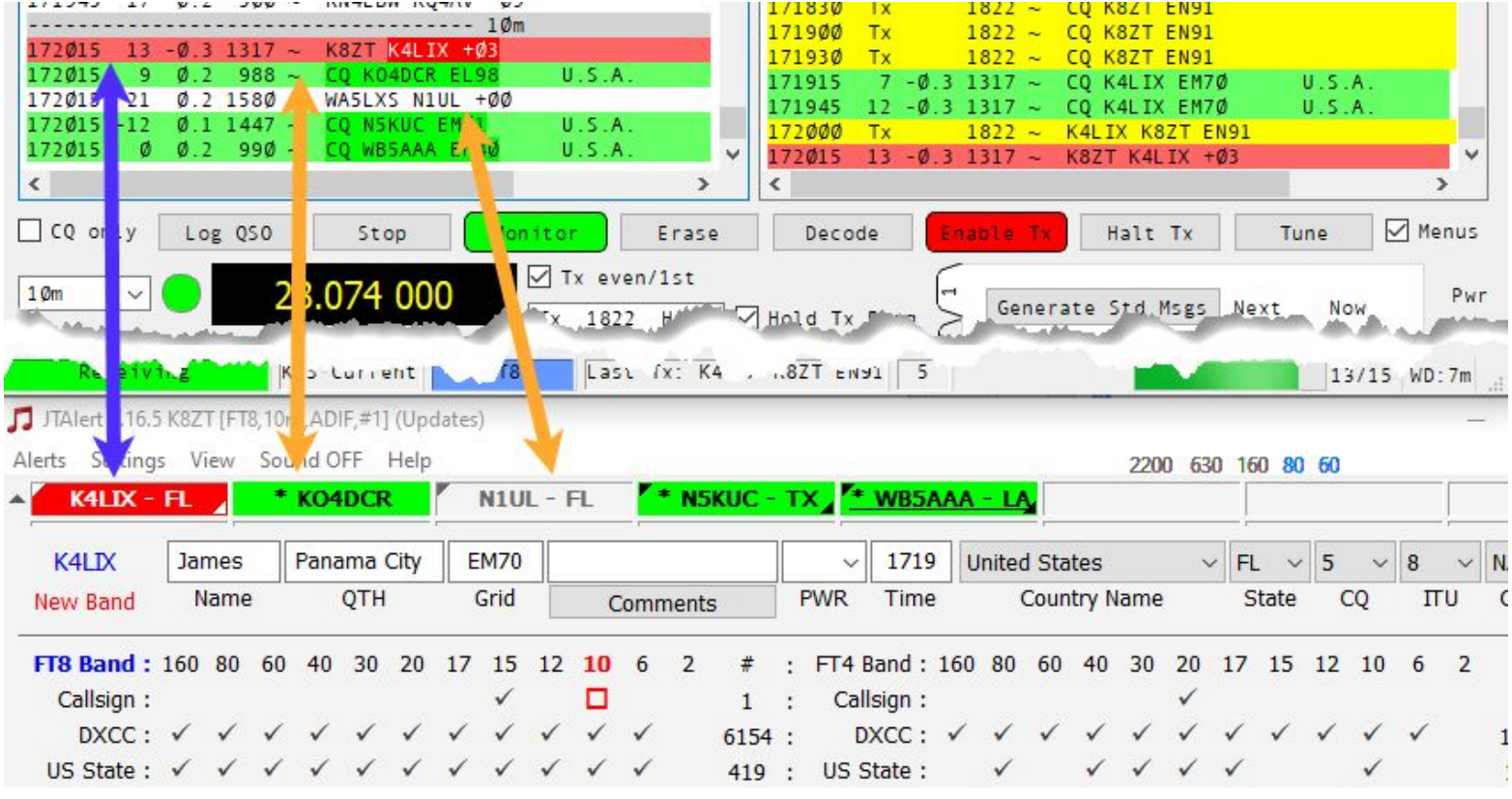
- Where is my log?



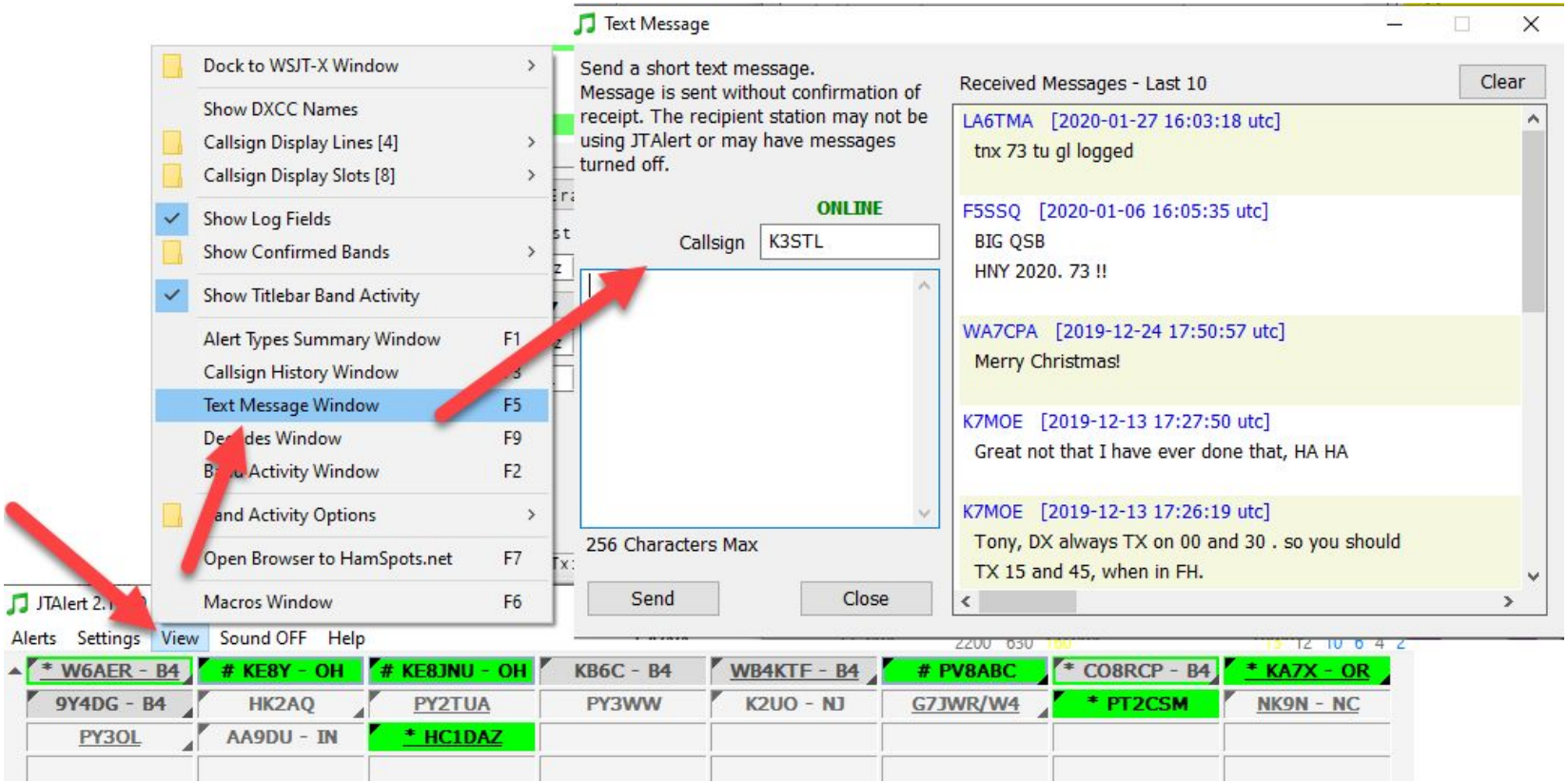
JT Alert

- A “helper” program to use with WSJT-X
  - Provides several audio and visual alert types based on decoded Callsigns within WSJT-X.
  - Support logging to some external logbook programs
  - Online XML Callsign Database lookup of names & locations of Calls- QRZ.com (paid) & HamQTH (free)
  - Upload QSOs to Online Logbooks- ClubLog & HRDLog

JT Alert

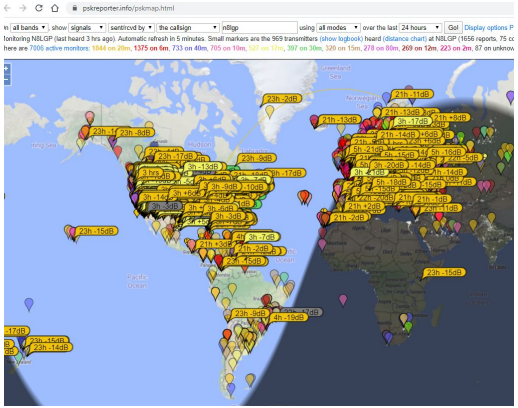

10m
172015 13 -0.3 1317 ~ K8ZT K4LIX +03
172015 9 0.2 988 ~ CQ KO4DCR EL98 U.S.A.
172015 21 0.2 1580 WA5LXS N1UL +00
172015 -12 0.1 1447 ~ CQ N5KUC EM U.S.A.
172015 0 0.2 990 ~ CQ WB5AAA E U.S.A.
171830 Tx 1822 ~ CQ K8ZT EN91
171900 Tx 1822 ~ CQ K8ZT EN91
171930 Tx 1822 ~ CQ K8ZT EN91
171915 7 -0.3 1317 ~ CQ K4LIX EM70 U.S.A.
171945 12 -0.3 1317 ~ CQ K4LIX EM70 U.S.A.
172000 Tx 1822 ~ K4LIX K8ZT EN91
172015 13 -0.3 1317 ~ K8ZT K4LIX +03
CQ only
Log QSO
Stop
Monitor
Erase
Decode
Enable Tx
Halt Tx
Tune
Menus
10m
28.074 000
Tx even/1st
Hold Tx
Generate Std Msgs
Next
Now
Pwr
Receiving
Last Tx: K4 8ZT EN91
5
13/15
WD:7m
JTAlert 2.16.5 K8ZT [FT8,10m,ADIF,#1] (Updates)
Alerts
Settings
View
Sound OFF
Help
2200 630 160 80 60
K4LIX - FL
* KO4DCR
N1UL - FL
* N5KUC - TX
* WB5AAA - LA
K4LIX
New Band
James
Name
Panama City
QTH
EM70
Grid
Comments
PWR
1719
Time
United States
Country Name
FL
State
5
CQ
8
ITU
FT8 Band : 160 80 60 40 30 20 17 15 12 10 6 2
Callsign : ✓ ☐
DXCC : ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
US State : ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
: 1 : 6154 : 419
FT4 Band : 160 80 60 40 30 20 17 15 12 10 6 2
Callsign : ✓
DXCC : ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
US State : ✓ ✓ ✓ ✓ ✓ ✓ ✓

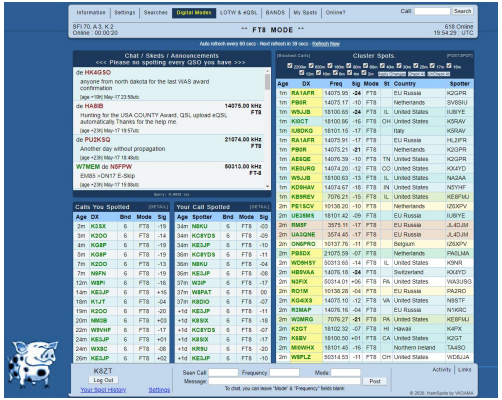
JT Alert- Text Message Window



Propagation & Spotting

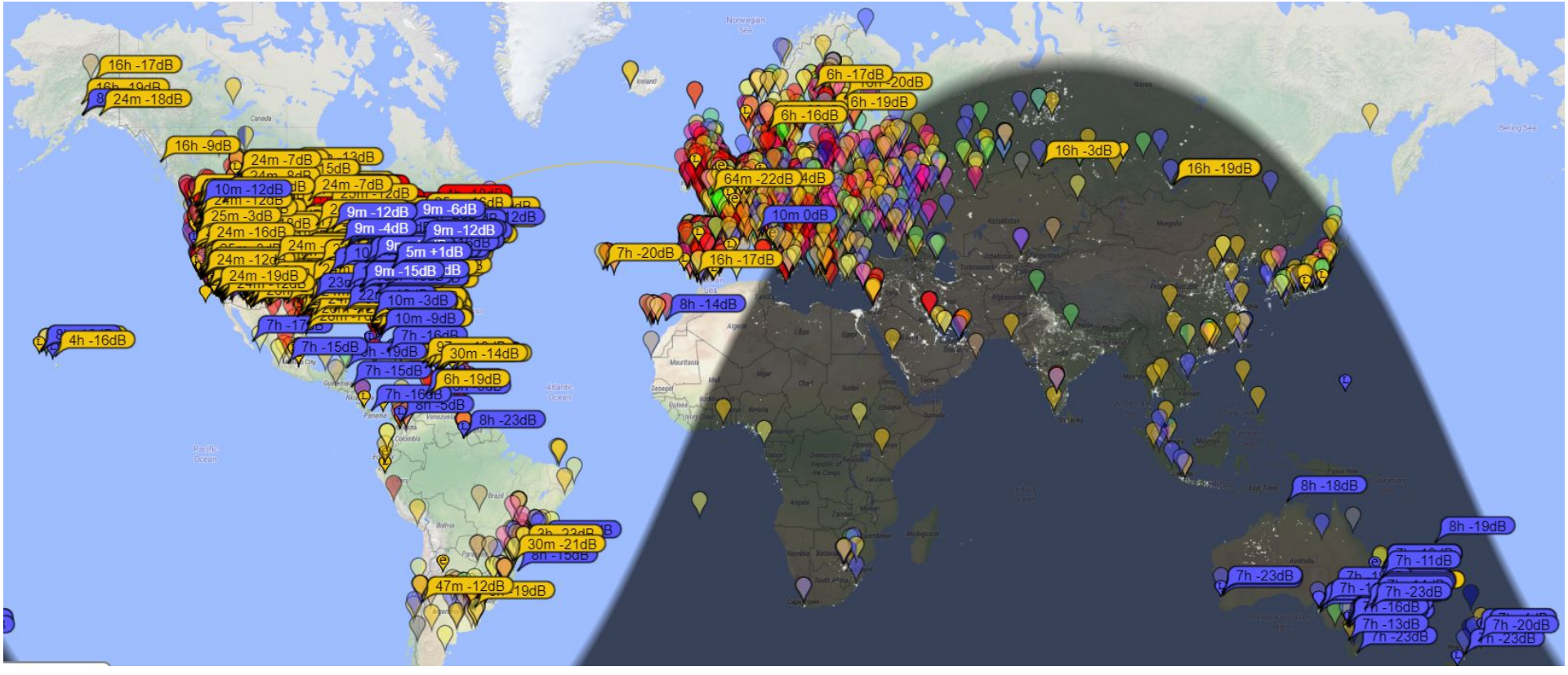
- See How Your Signal is Getting Out
- Find Other Activity





Spotting


PSK Automatic
Propagation Reporter


16h -17dB
24m -18dB
16h -9dB
24m -7dB
10m -12dB
24m -7dB
9m -12dB
9m -6dB
25m -3dB
9m -4dB
9m -12dB
24m -16dB
5m +1dB
24m -12dB
9m -15dB
24m -19dB
10m -3dB
10m -9dB
4h -16dB
7h -15dB
30m -14dB
7h -15dB
6h -19dB
7h -16dB
8h -23dB
30m -21dB
47m -12dB
6h -17dB
6h -19dB
6h -16dB
64m -22dB
10m 0dB
7h -20dB
16h -17dB
8h -14dB
16h -3dB
16h -19dB
8h -18dB
8h -19dB
7h -11dB
7h -23dB
7h -23dB
7h -16dB
7h -13dB
7h -20dB
7h -23dB

Spotting

Information | Settings | Searches | **Digital Modes** | LOTW & eQSL | BANDS | My Spots | Online?

Call: [ ] Search

SFI 77, A 6, K 2
Online : 98:42:42

** FT8 MODE **

501 Online
14:29:12 : UTC

Auto refresh every 60 secs - Next refresh in 56 secs - Refresh Now

Local Spots / Chat / Skeds

de **K7DD** 3574.67 kHz FT8
IS THERE EVER ANYONE ON FROM DELAWARE?
[age +2h] Oct-23 12:03utc

de **W0MU**
LZ2WP could not hear me :(
[age +10h] Oct-23 04:00utc

Calls You Spotted. [DETAIL]

Age	DX	Bnd	Mode	Sig
2m	AG9S	40	FT8	+4
2m	K4PO	40	FT8	-05
2m	KE4ZUN	40	FT8	+5
2m	N4TL	40	FT8	-15
2m	W5ADD	40	FT8	-13
2m	W7TRA	40	FT8	-24

Your Call Spotted. [DETAIL]

Age	Spotter	Bnd	Mode	Sig
+14h	DF1VB	60	FT8	-14
+14h	K6EID	60	FT8	+5
+14h	N5DG	60	FT8	-03
+14h	WE4X	60	FT8	-07
+14h	DF1VB	60	FT8	-18
+14h	K6EID	60	FT8	+7

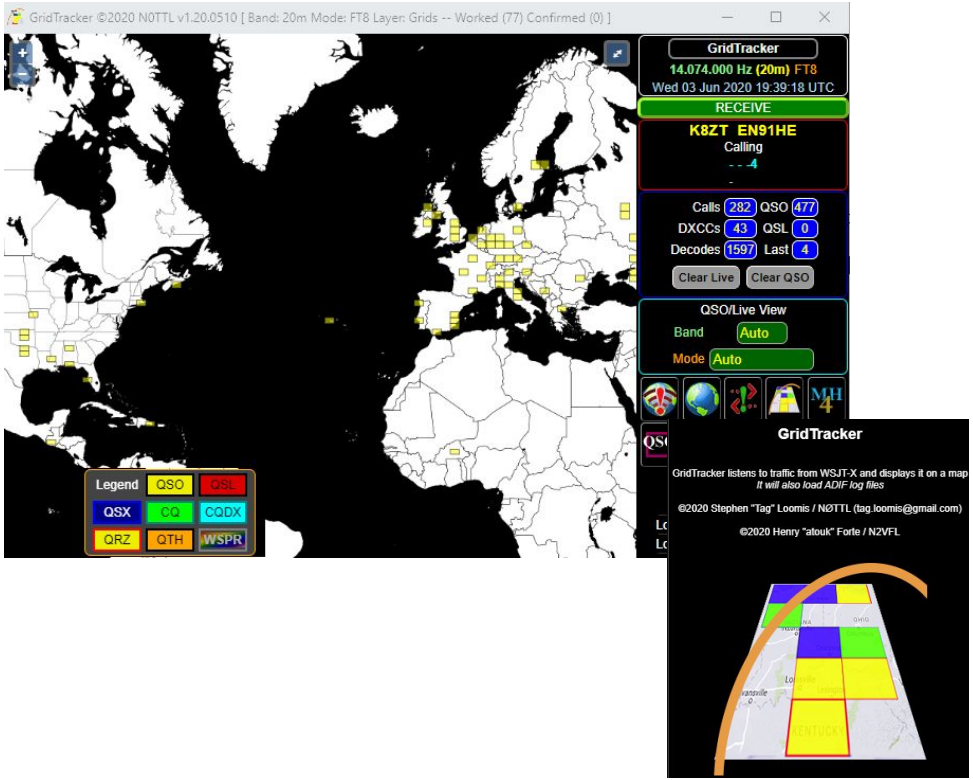
[Blocked.Calls] **Cluster Spots.** [POST.SPOT]

☑ 160M ☑ 80M ☑ 60M ☑ 40M ☑ 30M ☑ 20M ☑ 17M ☑ 15M
☑ 12M ☑ 10M ☑ 6M Apply Changes Check All UnCheck All

S	Age	DX	Freq	Sig	Mode	St	Country	Spotter
P	1m	DC5EG	14075.24	-20	FT8		Germany	OF8TA
P	1m	S51TC	21076.63	-24	FT8		Slovenia	IK6JRJ
P	2m	JR4CTF	3574.33	+01	FT8		Japan	JG8FWH
X	2m	WA0RLC	21076.15	+4	FT8	MO	United States	LU2FCY
X	2m	OZ1PIF	28075.00	-14	FT8		Denmark	ZS5LEE
X	2m	SV2MJY	28075.13	-16	FT8		Greece	ZS5LEE
X	2m	TF5B	10137.39	-15	FT8		Iceland	R8KAH
X	2m	DL4ABN	28075.83	-18	FT8		Germany	ZS5LEE
X	2m	ZS2ZG	21076.15	-05	FT8		South Africa	LU2FCY
X	2m	DJ4BO	10136.84	-16	FT8		Germany	R8KAH
X	2m	F6EAZ	28074.83	-24	FT8		France	PA2BT

Propagation- GridTracker

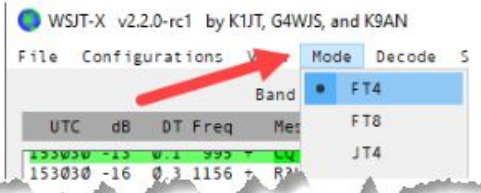
- *GridTracker* a companion program listens to WSJT-X Decodes & displays them on a map



Additional Reading

- *7-page "Quick Start FT8/FT4 Operations"*
- *Using PSK Reporter as Propagation Tool*

2. Changing Modes
   a. Click on Mode in the top menu
   b. Choose FT4 or FT8



Additional Reading

- *Ham Radio Deluxe adding WSJT-X FT8*
- *HRD Logbook and WSJT-X Integration*
- *FT4 and FT8 Contesting- operating advice for future contests*
- *An Introduction to JS8CALL- M0SPN*
- *Digital Mode Operating Tips: Worth What You Pay!-NO6E*

Questions / Comments ?

View/Download this slide show at

tiny.cc/ft8ft4

If you need a PDF copy click here

Other Presentations

Field Day in Social Distancing

Amateur Radio Grab & Go

TECHNIQUES TO WAS & DXCC

TOP SECRET

Anthony Luscre K8ZT

Fun with Morse! Getting Started with CW - K8ZT

QSLing in an Online World

K8ZT

Presentations

- If your club is interested in a online presentation I am currently offering seven options
  - *Field Day in Social Distancing*
  - *FT8 & FT4- Digital Soundcard Modes*
  - *QSLing in Online World*
  - *Having Fun with Morse Code*
  - *Youth in Amateur Radio*- (based on my article in March 2020 CQ Magazine)
  - *Software & Web Resources for Contesting*
  - *Top Secret- Techniques to work DXCC and WAS*
- Email me if interested k8zt@arrl.net

Contact Information

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- Digital Operating- *www.k8zt.com/digital*