

FT8

A Powerful Mode for DX



Larry Banks, W1DYJ

First licensed: 1962 (KN1VFX)

W1DYJ since 1966 – Amateur Extra

10 Matthews Way Harpswell ME [FN43xs]

33 Blueberry Hill Road Woburn MA [FN42kl]

W1DYJ ~ Larry Banks



INDEXA

FT8

Agenda

- Intro to WSJT-X / FT8
- HW Setup
- SW Setup
- JTAlert
- Reporting Sites
- Summary



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First licensed: 1962 (KN1VFX)

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33 Blueberry Hill Road Woburn MA [FN42kl]

I will not be discussing clones: JTDX, etc.



FT8 Agenda

- **Intro to WSJT-X / FT8**
- HW Setup
- SW Setup
- JTAlert
- Reporting Sites
- W1DYJ experience



FT8 is Controversial!

(Disruptive Technology)

FCC Part 97:

Advance the communication and technical skills of radio

FT8 →→ RTTY, PSK, etc.

is like

CW →→ Spark

or

SSB →→ AM



WSJT ~ Weak Signal Joe Taylor

Joe Taylor, K1JT, is a retired Princeton professor and a Nobel Prize in Physics : *(discovered a new type of pulsar)*

The original version was introduced ~ 2001

WSJT is a computer program for amateur **VHF/UHF communication** using state-of-the-art digital techniques. It can help you to make contacts using fraction-of-a-second signals reflected from meteor trails, as well as steady signals more than 10 dB below the threshold of audibility. Distinct protocols or “modes” are provided for different types of propagation:

JTMS	For meteor scatter.
FSK441	For meteor scatter.
FSK315	For meteor scatter.
ISCAT	Optimized for meteor and ionospheric scatter on 6 meters.
JT6M	Optimized for meteor and ionospheric scatter on 6 meters. [2002]
JT65	For Earth-Moon-Earth (EME, “moonbounce”) and weak troposcatter. [2003]
JT4	Designed for EME on microwave bands.
CW	For EME using timed, computer-generated transmissions.
Echo	For testing echoes of your own signal from the Moon.



WSJT-X “experimental” Aug 2017 2.0.0

Adds

JT9

Optimized for the LF, MF, and HF bands

QRA64

EME

MSK144

Meteor Scatter on the VHF bands

WSPR

Weak Signal Propagation Reporter: probing potential propagation paths

FT8

Targeted **multi-hop sporadic E propagation on 6m and possibly higher VHF bands**...shorter T/R period than JT65 or JT9 due to the sometimes very short openings.

The popularity of FT8 on HF is largely a happy accident in that it fulfilled a latent frustration of many potential users of WSJT-X with the slow rate of QSOs using 1 minute T/R periods.

Email, 1/10/19, Bill Somerville, G4WJS



What is FT8's Sensitivity

Typical S/N (BW = 2500 Hz.):

SSB +10 dB

CW +/- 0 → - 10 dB

- 15 (good radio/ears)

FT8 - 21 dB

WSPR - 31 dB

More sensitive than CW!

From Joe Taylor, K1JT



What is FT8?

Technically

Named for:

Steven Franke: K9AN & Joe Taylor: K1JT

An 8 tone -frequency shift keying format [FSK] *[1 baud = 3 bits]*

15 Second T/R timing

Tone spacing: 6.25 Hz

50 Hz bandwidth

77 bit word + 14 bit CRC

→ $2^{77} = 151,115,727,451,828,646,838,272$
(about 1.5×10^{23}) possible messages.



What is FT8?

Operationally

- *Designed for WEAK SIGNAL Qs*
- *Absolute minimum info to be “legal” QSO*
- *Very structured syntax*
- *Maximum of 13 free form characters (TX5)*
- *Both ends must use the same syntax*

NOT QRP!

Not for Ragchewing



What is FT8?

Operationally

- *Designed for WEAK SIGNAL Qs*
- *Absolute minimum QSO info*
- *Maximum of 13 free form characters (TX5)*
- *Very structured syntax*
- ***Both ends use same syntax*** *[automated]*

CQ W1DYJ FN42

W1DYJ W1XXX FN43

W1XXX W1DYJ SN [s/n ratio]

W1DYJ W1XXX R-SN

W1XXX W1DYJ RRR [or RR73]

W1DYJ W1XXX 73

[Use if you
expect a "73"]

[Use if you don't
expect a "73"]

TX6

TX1

TX2

TX3

TX4

TX5 *can be customized
[13 characters]*



Versions of FTxxx

Read the Release Notes!

WSJT-X 2.0 **Aug 2017** **FT8**

WSJT-X 2.1 **Jul 2019** **FT4**

- Aimed at **CONTESTING**: twice as fast, half the sensitivity
- Better FT8 transmitted signal characteristics

WSJT-X 2.2 **Jun 2020**

- Decoder Improvements
- New EU Contesting format

WSJT-X 2.3 **Feb 2021** **FST4 FST4W**

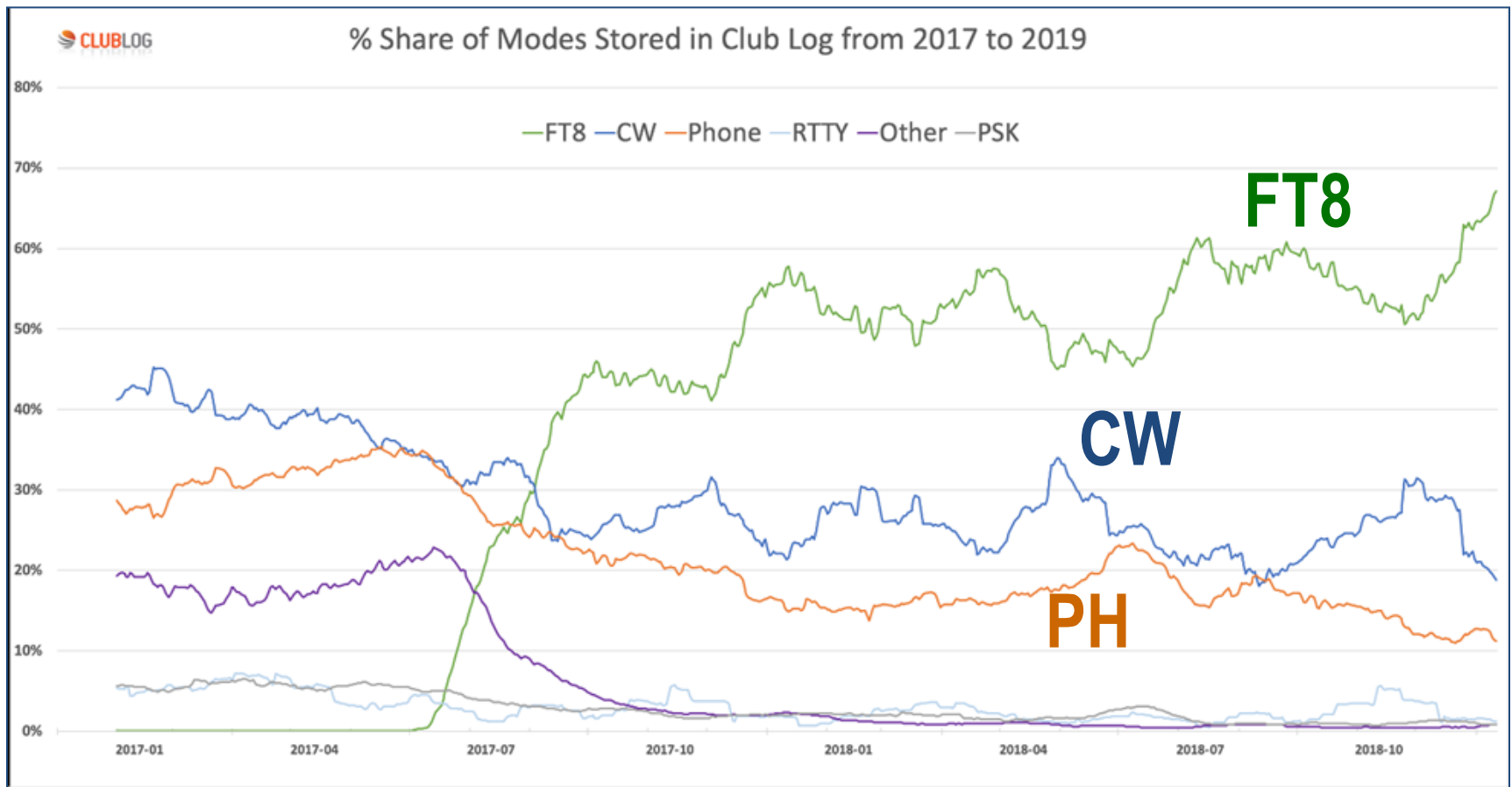
- FST4/4W designed for use on the LF and MF bands
- Additional improvements for other modes

WSJT-X 2.4.0-rc1 **Feb 2021** **Q65**

- EME / very weak signal VHF/UHF



FT8 Growth ~ [from ClubLog: 2017-2019]



Why FT8?

[for W1DYJ]

- ***Gave up on PSK years ago***
- ***Tried JT65 – slow!***
- ***FT8 is More Sensitive than CW***
 - *Important for someone (like me) with MEAGER CW skills*
- ***Makes running barefoot with homebrew antennas viable for DX!***



FT8 Agenda

- Intro to WSJT-X / FT8
- **HW Setup**
- SW Setup
- JTAlert
- Reporting Sites
- Summary



HW Setup ~ Essentially the same as PSK31 or AFSK RTTY



Rig with USB

Harpwell ME



USB

USB

Rig Control

Audio Control

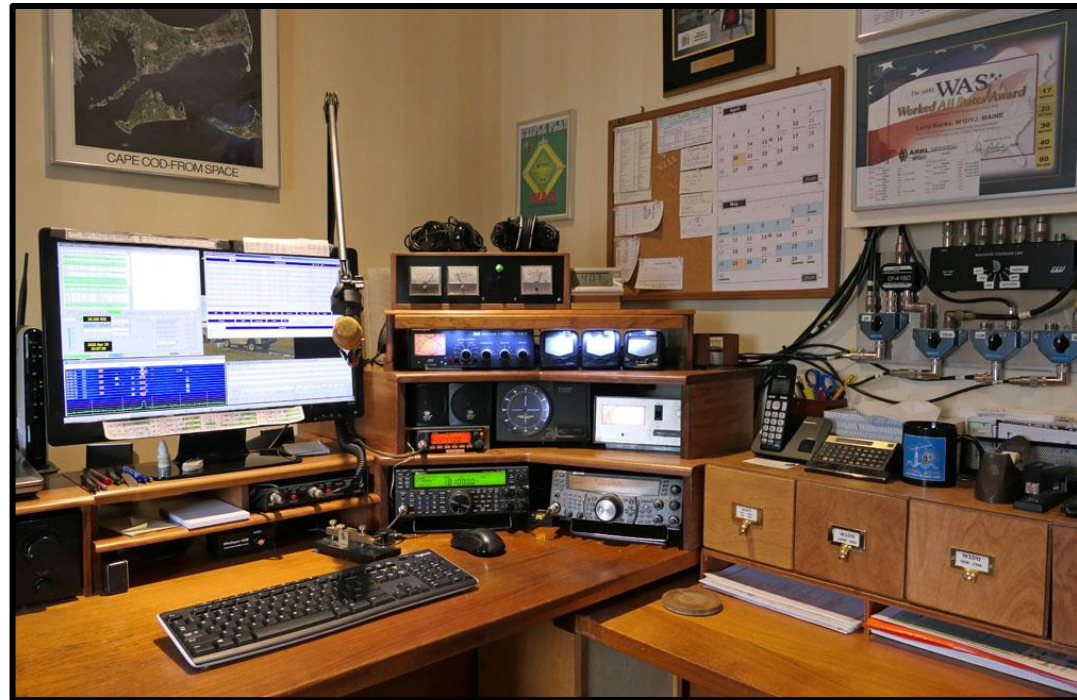
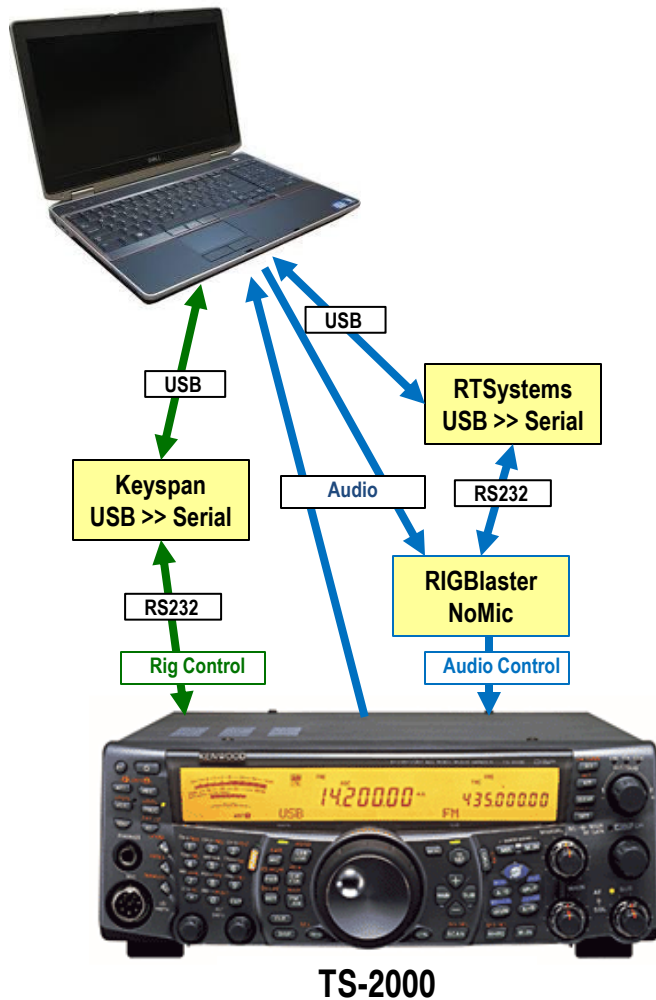


TS-590S



HW Setup ~ Essentially the same as PSK31 or AFSK RTTY

Woburn, MA



Rig without USB



FT8 HW Setup

Essentially the same as PSK31 or AFSK RTTY

Rig Setup

Transmitting

→ NO processing, ALC ~0, FLAT equalization

Receiving

→ NO noise reduction, FLAT response, full SSB BW

→ *Let the WSJT-X software do it's thing*

Rig Dependent



FT8 Agenda

- Intro to WSJT-X / FT8
- HW Setup
- **SW Setup**
- JTAlert
- Reporting Sites
- Summary

[Windows, Linux, macOS]

Email groups:

General:

wsjtx

“RCs”:

wsjt-devel



FT8 SW Setup

Read the Fine Manual

RTFM!

You WILL NOT operate FT8 effectively if you don't.
I'm only covering a small portion of the application.

 **Windows Clock**

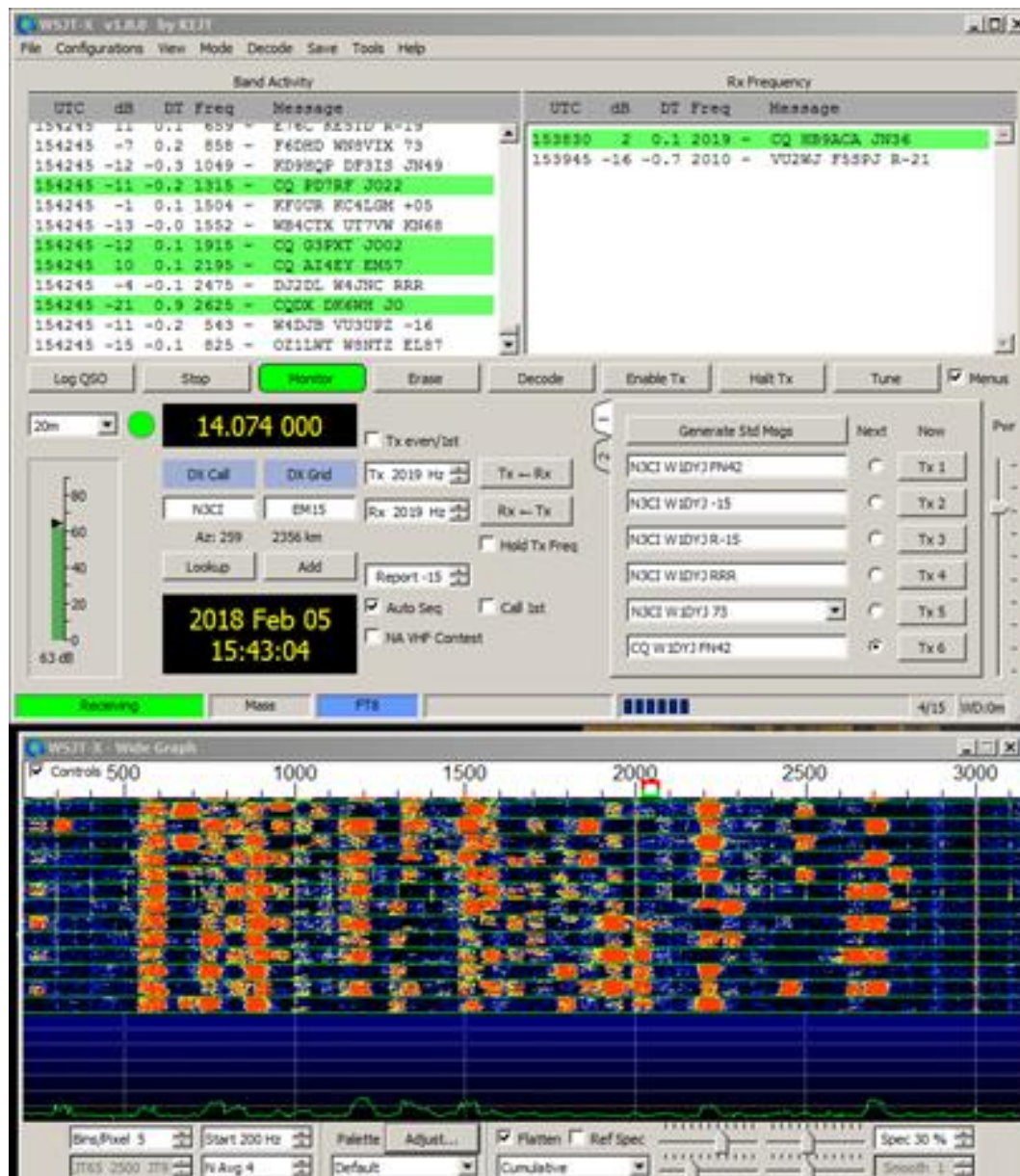
→ **Meinberg NTP**
[or GPS Dongle if no Internet]

Check your computer with: ["time.is"](http://time.is)



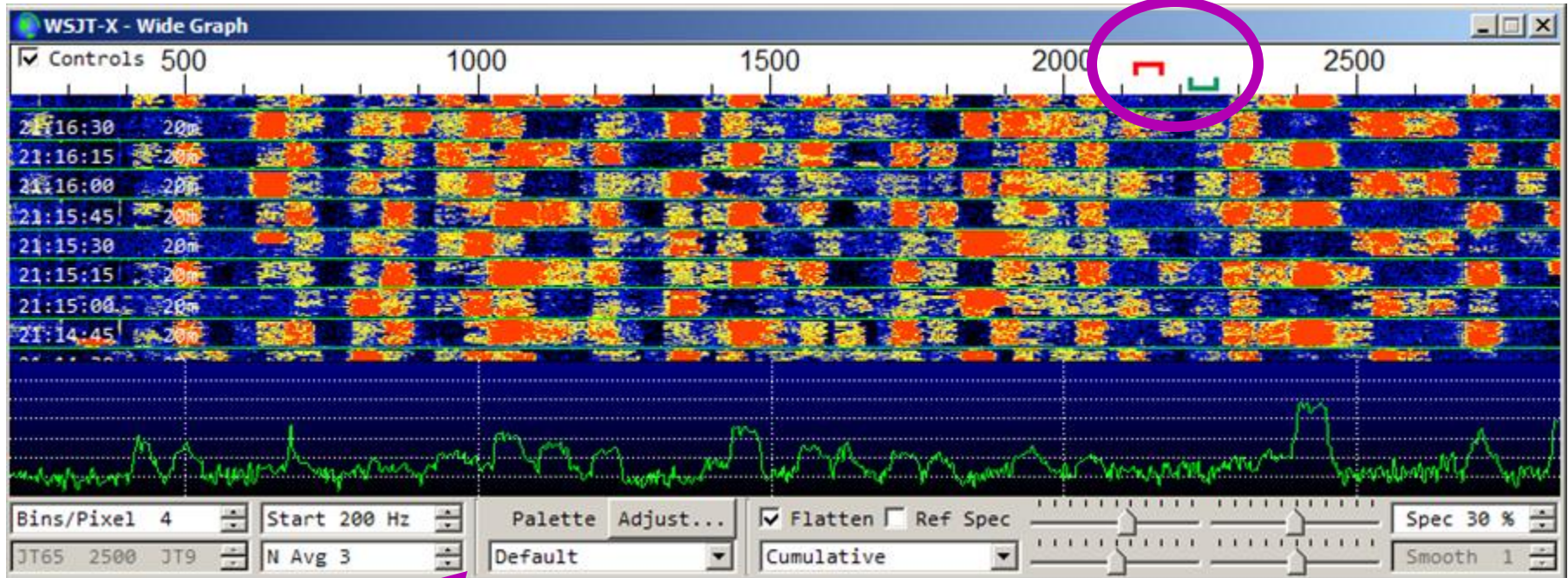
FT8 GUI

Graphical User interface



FT8 GUI ~ Waterfall

Your Frequencies
Xmit
Rcv



Control Panel



FT8 Control

All Signals in Waterfall

What you are listening to

UTC dB DT Freq Message

Clicking on CQ call
→ starts xmit

Predefined Messages

TX5

WSJT-X v2.2.2 by K1JT, G4WJS, and K9AN

File Configurations View Mode Decode Save Tools H

Band Activity

UTC	dB	DT	Freq	Message
211930	-1	0.3	2532	~ W6JH EB3JT RR73
211930	-10	-1.1	2444	~ CQ N3ITT FN20
211930	-14	0.1	431	~ ND4X EA3GBY RRR
211930	-6	0.3	1576	~ HP2NG AC0DH EN34
211930	2	-0.0	1731	~ VE3KPD EA8ACW R-15
211930	0	0.1	2643	~ WB9SDD EA5WO IM99
211930	-5	0.1	2533	~ CQ USA IW2ILQ JN45
211930	-2	-0.0	1893	~ EA5GTU K5JNT -10
211930	-10	0.1	1590	~ LU2ICA VA3LX FN14
211930	1	0.2	822	~ GM4UBJ PT2GMA RR73
211930	-19	0.0	1432	~ N8CQD K5DGC RR73
211930	1	0.2	1331	~ 9J2MM WD4CNO R-15
211930	-21	0.1	219	~ CQ LU3EMB GF05
211930	-16	0.6	1499	~ KC2DUX EA5ITJ -12
211930	-21	0.2	2780	~ YV4GLF DJ6MN R-11
211930	-18	0.2	631	~ HP2NG WA0YMH EM13
211930	-7	0.2	2579	~ N1UL EA3C -15
211930	-12	1.9	2405	~ AE4S EA3ENB JN11
211930	-6	0.1	1987	~ KB3AAY AK6A +08
211930	-10	-0.5	879	~ CQ DX K7PAX CN88
211930	-9	0.1	845	~ W4FXI EC3A -13

211330 -19 0.1 2219 ~ <LU2ICA> SX200HXX 73

211430 -19 0.1 2219 ~ <YV50IE> SX200HXX

211800 -19 0.1 2219 ~ <XE1KIM> SX200HXX

211815 8 -0.0 2394 ~ CQ KI5GIG EM53

211833 Tx 2122 ~ KI5GIG W1DYJ FN42

211845 8 -0.0 2394 ~ CQ KI5GIG EM53

211900 -14 0.1 2389 ~ KR7LD N6TN +02

211900 -20 0.1 2403 ~ AE4S IW4APB JN45

211915 3 0.0 2394 ~ CQ KI5GIG EM53

211930 -18 0.1 2388 ~ KR7LD N6TN RR73

☐ CQ only ☐ Log QSO ☒ Menus

20m ☒ 14.074 000 ☒ Tx even/1st

Tx 2122 Hz ☒ Hold Tx Freq

Rx 2394 Hz

Az: 243 1849 km Report 8

☒ Auto Seq ☒ Call 1st

2021 Feb 16 21:19:54

Receiving MA590SG FT8 Last Tx: KI5GIG W1DYJ FN42 40 9/15 WD:3m

Generate Std Msgs Next Now

KI5GIG W1DYJ FN42 Tx 1

KI5GIG W1DYJ +08 Tx 2

KI5GIG W1DYJ R+08 Tx 3

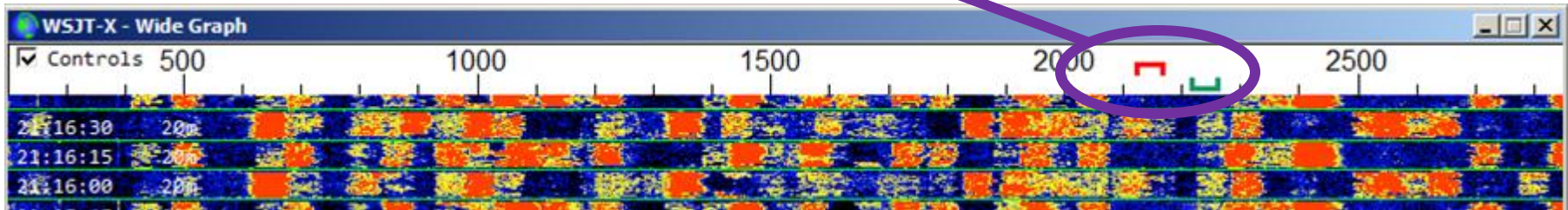
KI5GIG W1DYJ RR73 Tx 4

KI5GIG W1DYJ 73 Tx 5

CQ W1DYJ FN42 Tx 6



FT8 Control ~ Hold Tx Freq



To avoid QRM from competing callers, it is usually best to answer a CQ on a different frequency from that of the CQing station. The same is true when you tail-end another QSO. Choose a Tx frequency that appears to be not in use.

From the [WSJT-X online manual](#)



FT8 Setup Screens ~ General

“F2”

From
main
menu:

FILE >>
Settings

Settings

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

Station Details

My Call: My Grid: ☐ AutoGrid IARU Region:

Message generation for type 2 compound callsign holders:

Display

☒ 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

Behavior

☐ Monitor off at startup ☐ Enable VHF/UHF/Microwave 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

☐ CW ID after 73 Tx watchdog:

Periodic CW ID Interval:



FT8 Setup Screens ~ Radio

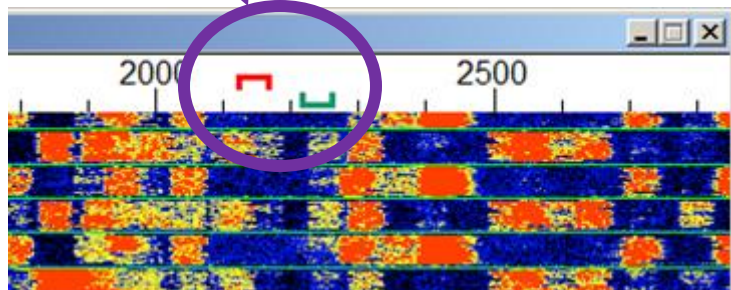
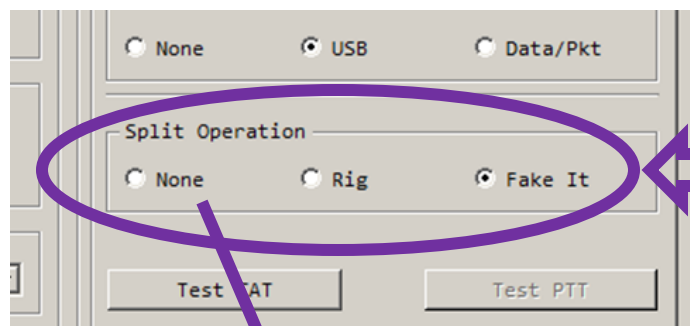
“F2”

Cat
Control

The screenshot shows the 'Settings' dialog box with the 'Radio' tab selected. The 'Rig' dropdown is set to 'Kenwood TS-2000' and the 'Poll Interval' is '1 s'. The 'CAT Control' section on the left includes a 'Serial Port' dropdown set to 'COM11', 'Serial Port Parameters' with 'Baud Rate' at '9600', 'Data Bits' set to 'Eight', 'Stop Bits' set to 'Two', 'Handshake' set to 'None', and 'Force Control Lines' with 'DTR' at 'Low' and 'RTS' at 'High'. The 'PTT Method' section on the right has 'VOX', 'CAT', and 'DTR' unselected, 'RTS' selected, and 'Port' set to 'COM16'. The 'Transmit Audio Source' section has 'Rear/Data' unselected and 'Front/Mic' selected. The 'Mode' section has 'None' unselected, 'USB' selected, and 'Data/Pkt' unselected. The 'Split Operation' section has 'None' unselected, 'Rig' unselected, and 'Fake It' selected. There are 'Test CAT' and 'Test PTT' buttons at the bottom. A purple oval highlights the 'Rig' dropdown, and another purple oval highlights the 'Split Operation' section with an arrow pointing to it. A purple bracket on the left groups the 'CAT Control' settings under the label 'Cat Control'.



FT8 Setup Screens ~ *Fake It*



Moves the RF and Audio frequencies in opposite directions, resulting in a cleaner transmitted signal. It keeps the Tx audio always in the range 1500 to 2000 Hz, where the audio pass band is flat, and puts audio harmonics above the audio pass band.

20M:

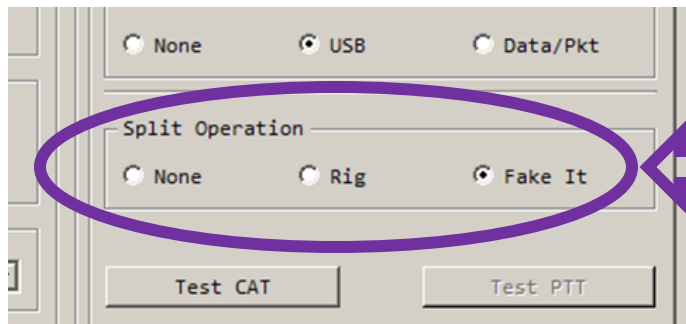
$$14074.00 + 2.120 = 14076.12$$

With Fake It:

$$14074.50 + 1.620 = 14076.12$$

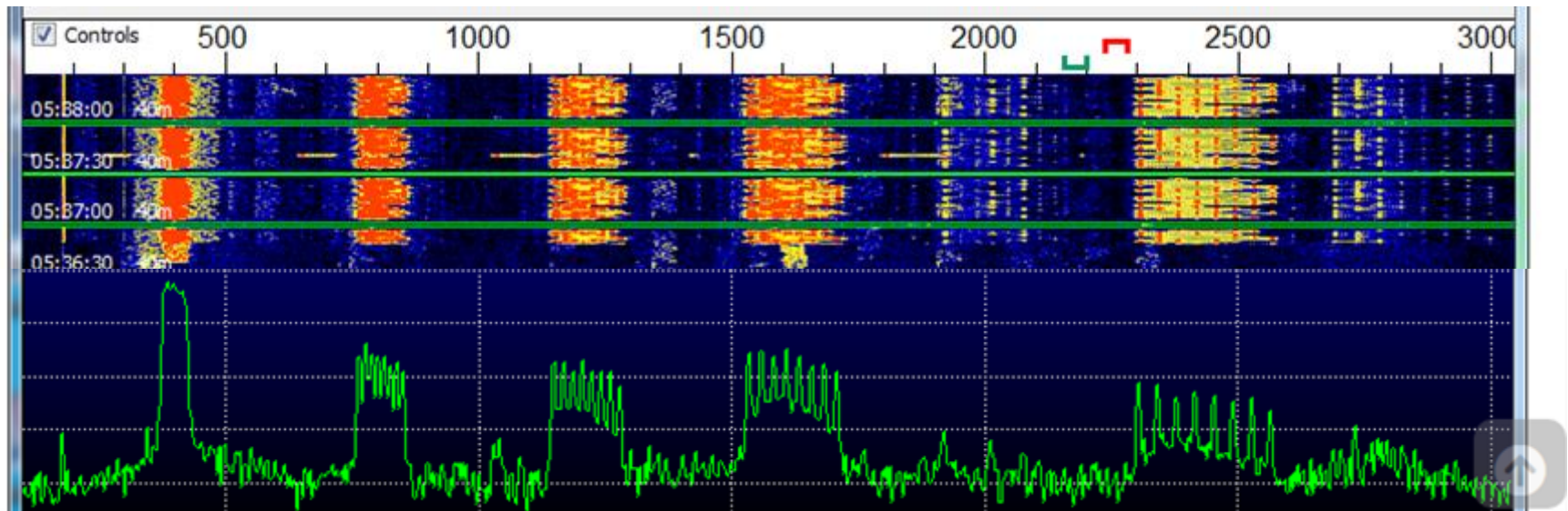


FT8 Setup Screens ~ *Fake It*



Moves the RF and Audio frequencies in opposite directions, resulting in a cleaner transmitted signal. It keeps the Tx audio always in the range 1500 to 2000 Hz, where the audio pass band is flat, and puts audio harmonics above the audio pass band.

Audio = 400 Hz.



Vastly over modulated and bad harmonics



FT8 Setup Screens ~ *Audio*

“F2”

Configure
audio device
for 48000 Hz,
16 bits

DO NOT USE
the windows
default device

Settings

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

Soundcard

Input: Microphone (High Definition Aud) Mono

Output: Speakers (High Definition Audio) Mono

Save Directory

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

AzEl Directory

Location: C:/Users/Larry/AppData/Local/WSJT-X Select

Remember power settings by band

☐ Transmit ☐ Tune

OK Cancel

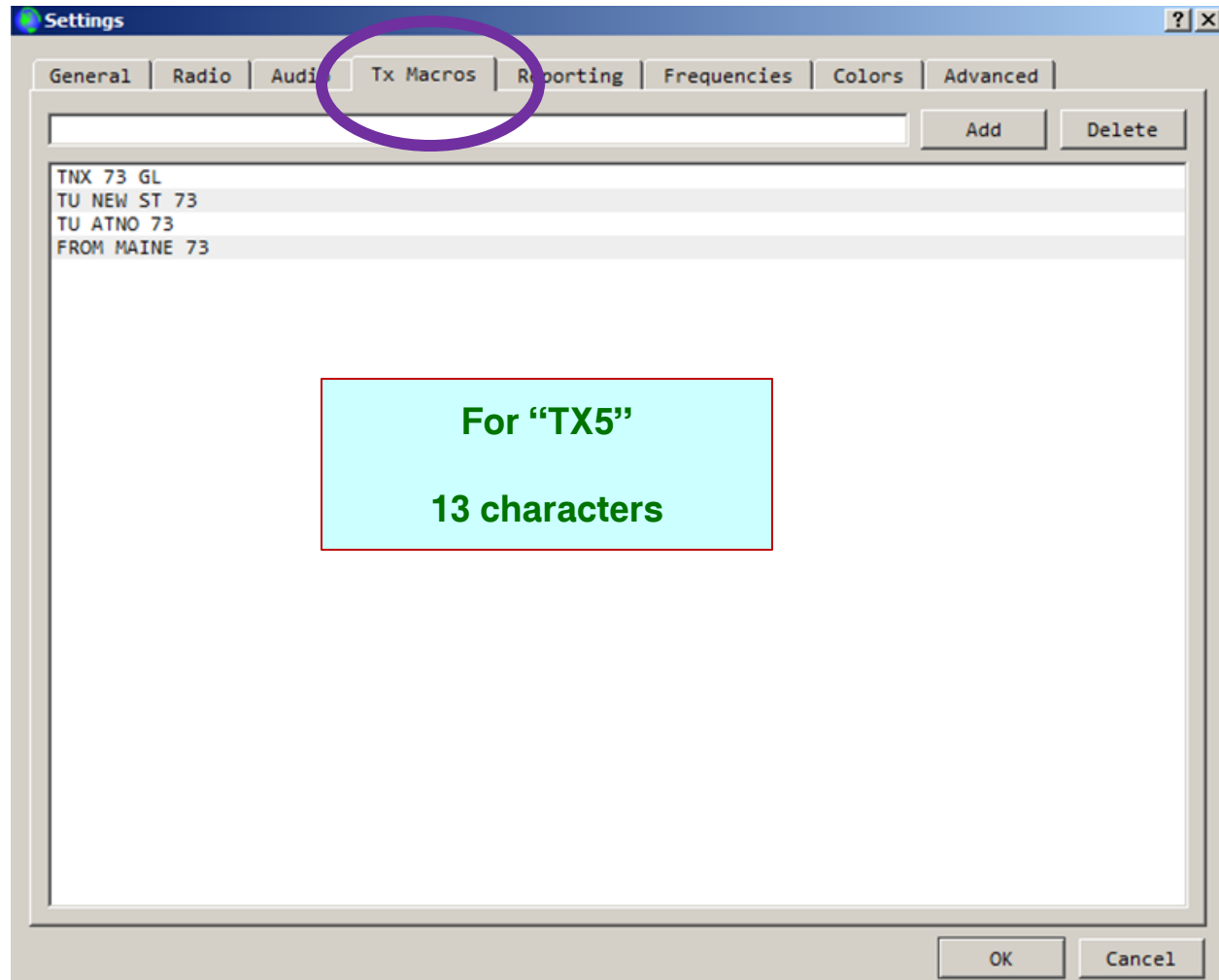
Audio I/O

Don't let extraneous audio
into your FT8 audio chain!



FT8 Setup Screens ~ Tx5 Macros

“F2”



FT8 Setup Screens ~ *Reporting*

“F2”

The screenshot shows the 'Settings' window with the 'Reporting' tab selected. The 'Logging' section has 'Prompt me to log QSO' checked. The 'Network Services' section has 'Enable PSK Reporter Spotting' checked. The 'UDP Server' section has 'UDP Server' set to '127.0.0.1', 'UDP Server port number' set to '2237', and all three checkboxes ('Accept UDP requests', 'Notify on accepted UDP request', and 'Accepted UDP request restores window') checked. The 'N1MM Logger+ Broadcasts' section has 'Enable logged contact ADIF broadcast' unchecked, 'N1MM Server name or IP address' set to '127.0.0.1', and 'N1MM Server port number' set to '2333'. A purple circle highlights the 'Reporting' tab. A purple arrow points from the text '“F2”' to the 'Prompt me to log QSO' checkbox. Another purple arrow points from the left to the 'Enable PSK Reporter Spotting' checkbox. A purple bracket on the right side of the 'UDP Server' section points towards the text 'Check for JTAAlert'.

Settings

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

Logging

☒ Prompt me to log QSO Op Call:

☐ Log automatically

☐ Convert mode to RTTY

☐ dB reports to comments

☐ Clear DX call and grid after logging

Network Services

☒ Enable PSK Reporter Spotting

UDP Server

UDP Server: ☒ Accept UDP requests

UDP Server port number: ☒ Notify on accepted UDP request

☒ Accepted UDP request restores window

N1MM Logger+ Broadcasts

☐ Enable logged contact ADIF broadcast

N1MM Server name or IP address:

N1MM Server port number:

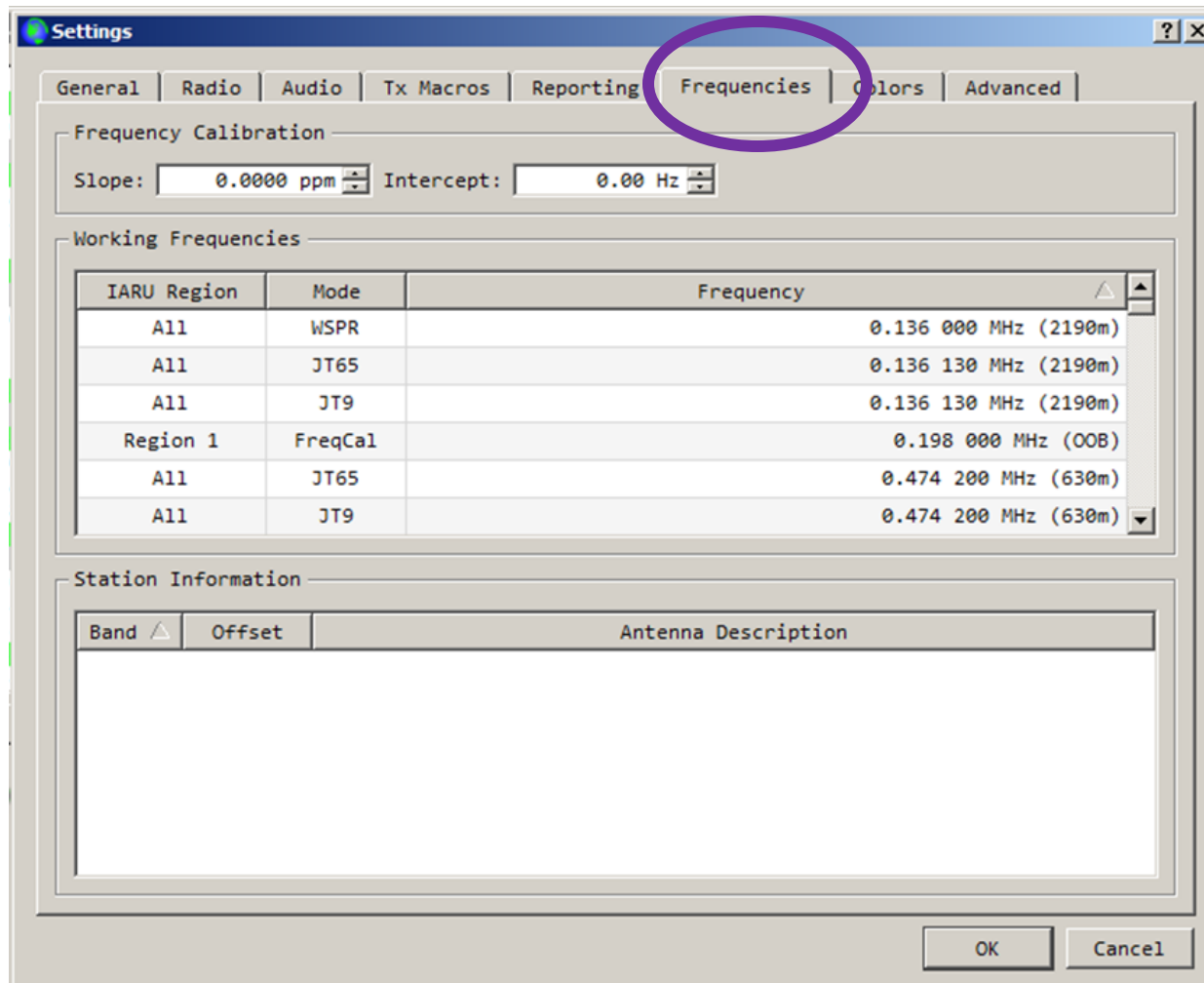
OK Cancel

**Check
for
JTAAlert**



FT8 Setup Screens ~ *Freq's*

“F2”



The screenshot shows the 'Settings' window for FT8, specifically the 'Freq's' tab. The 'Working Frequencies' section is highlighted with a purple circle. Below it is the 'Station Information' section.

Frequency Calibration

Slope: 0.0000 ppm Intercept: 0.00 Hz

Working Frequencies

IARU Region	Mode	Frequency
All	WSPR	0.136 000 MHz (2190m)
All	JT65	0.136 130 MHz (2190m)
All	JT9	0.136 130 MHz (2190m)
Region 1	FreqCal	0.198 000 MHz (OOB)
All	JT65	0.474 200 MHz (630m)
All	JT9	0.474 200 MHz (630m)

Station Information

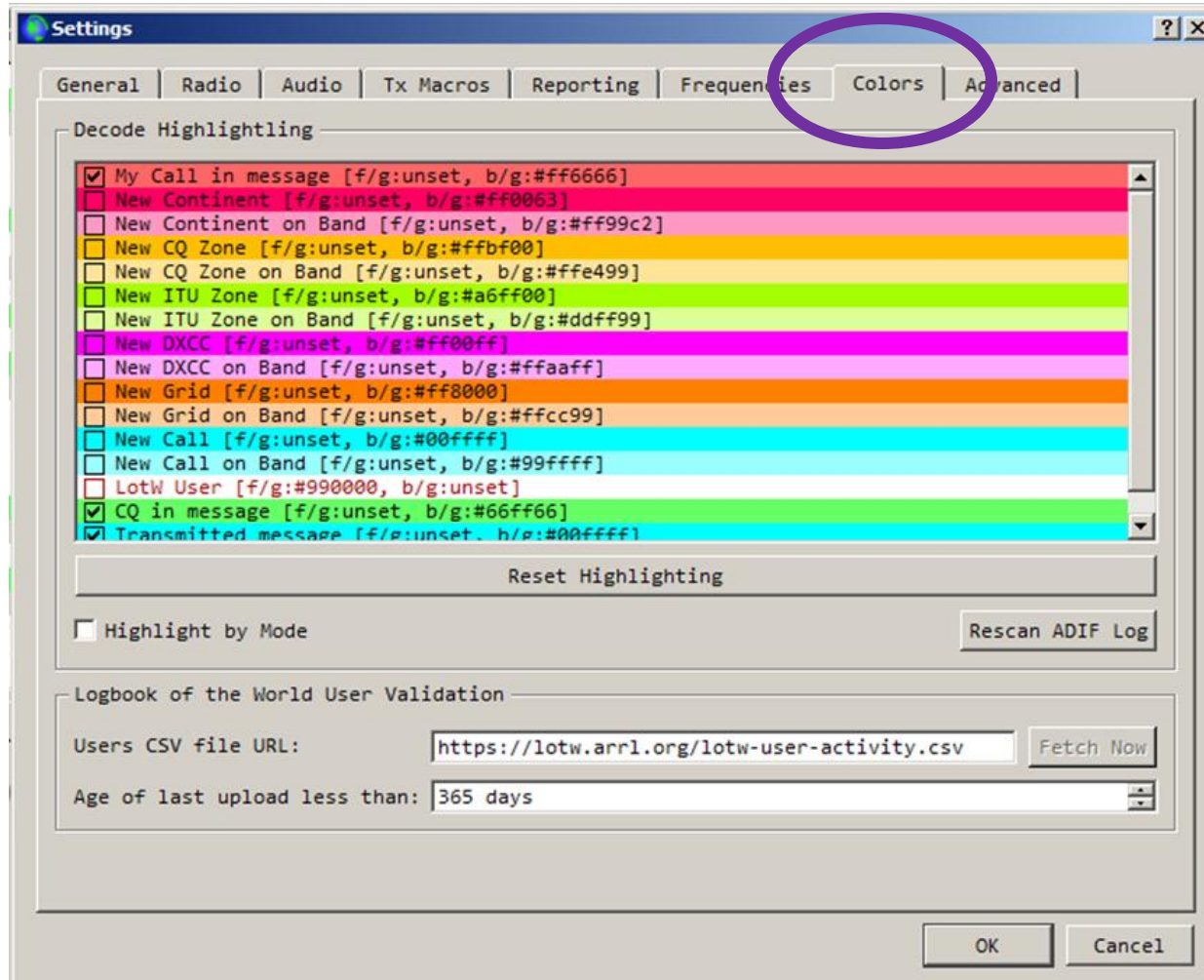
Band	Offset	Antenna Description
------	--------	---------------------

OK Cancel



FT8 Setup Screens ~ Colors

“F2”



FT8 Setup Screens ~ Advanced

“F2”



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: 2500 Hz

Tx delay: 0.5 s

Tone spacing

☐ x 2 ☐ x 4

☒ Special operating activity: Generation of FT8 and MSK144 messages

☐ Fox ☐ Hound

☒ NA VHF Contest ☐ ARRL Field Day FD Exch:

☐ EU VHF Contest ☐ ARRL RTTY Roundup RTTY RU Exch:

OK Cancel



FT8 Control ~ the other stuff

File Configurations View Mode Decode Save Tools Help

UTC	dB	DT	Freq	Message
211930	-1	0.3	2532	~ W6JH EB3JT RR73
211930	-10	-1.1	2444	~ CQ N3ITT FN20
211930	-14	0.1	431	~ ND4X EA3GBY RRR
211930	-6	0.3	1576	~ HP2NG AC0DH EN34
211930	2	-0.0	1731	~ VE3KPD EA8ACW R-15
211930	0	0.1	2643	~ WB9SDD EA5WO IM99
211930	-5	0.1	2533	~ CQ USA IW2ILQ JN45
211930	-2	-0.0	1893	~ EA5GTU K5JNT -10
211930	-10	0.1	1590	~ LU2ICA VA3LX FN14
211930	1	0.2	822	~ GM4UBJ PT2GMA RR73
211930	-19	0.0	1432	~ N8CQD K5DGC RR73
211930	1	0.2	1331	~ 9J2MM WD4CNO R-15
211930	-21	0.1	219	~ CQ LU3EMB GF05
211930	-16	0.6	1499	~ KC2DUX EA5ITJ -12
211930	-21	0.2	2780	~ YV4GLF DJ6MN R-11
211930	-18	0.2	631	~ HP2NG WA0YMH EM13
211930	-7	0.2	2579	~ N1UL EA3C -15
211930	-12	1.9	2405	~ AE4S EA3ENB JN11
211930	-6	0.1	1987	~ KB3AAY AK6A +08
211930	-10	-0.5	879	~ CQ DX K7PAX CN88
211930	-9	0.1	845	~ W4FXI EC3A -13

UTC	dB	DT	Freq	Message
211330	-19	0.1	2219	~ <FA> SX200HXX 73
211430	-19	0.1	2219	~ <FA> SX200HXX
211800	-19	0.1	2219	~ <XE1K> SX200HXX
211815	8	-0.0	2394	~ CQ KI5GIG
211833	Tx		2122	~ KI5GIG W1DYJ
211845	8	-0.0	2394	~ CQ KI5GIG EM53
211900	-14	0.1	2389	~ KR7LD N6TN +02
211900	-20	0.1	2403	~ AE4S IW4APB JN45
211915	3	0.0	2394	~ CQ KI5GIG EM53
211930	-18	0.1	2388	~ KR7LD N6TN RR73

Log QSO Stop Monitor Erase Decode Enable Tx Halt Tx Tune Menus

20m 14.074 000 Tx even/1st Tx 2122 Hz Hold Tx Freq Rx 2394 Hz Report 8

DX Call DX Grid KI5GIG EM53 Az: 243 1849 km Lookup Add Auto Seq Call 1st

2021 Feb 16 21:19:54

Receiving MA590SG FT8 Last Tx: KI5GIG W1DYJ FN42 40 9/15 WD:3m

RTFM



FT8 Agenda

- Intro to WSJT-X / FT8
- HW Setup
- SW Setup
- **JTAlert** → Provides Audio & Visual Alerts.
- Reporting Sites
- Summary



My 23" Monitor

The screenshot shows a 23-inch monitor displaying three software applications used for amateur radio communication:

- WSJT-X** (left): A software-defined radio interface showing a waterfall plot of frequencies from 500 to 3000 kHz. It includes a message log with UTC, dB, DT, Freq, and Message fields. The current frequency is 14.074 000 MHz.
- ACLog** (top right): A contact log application showing a list of recent contacts with columns for Date, Time, Freq, Bnd, Mode, Call, Snt, Rec, Off, Country, My I..., Name, ST, B, S, Grid, and Comments. The text "ACLog" is overlaid in large black font.
- JTAlert** (bottom right): A station alerting application showing a grid of active stations with columns for Name, QTH, Grid, Comments, PWR, Time, Country Name, State, CQ, ITU, Cont, and QSL. The text "JTAlert" is overlaid in large red font.

A large screen is very helpful.



WSJT - X

Logger

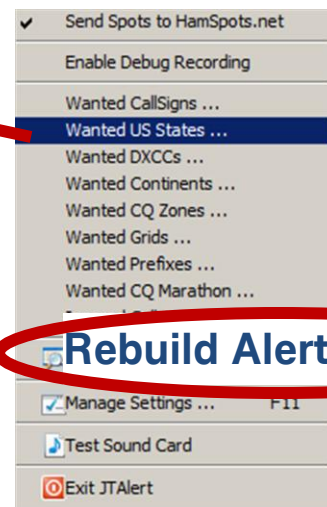
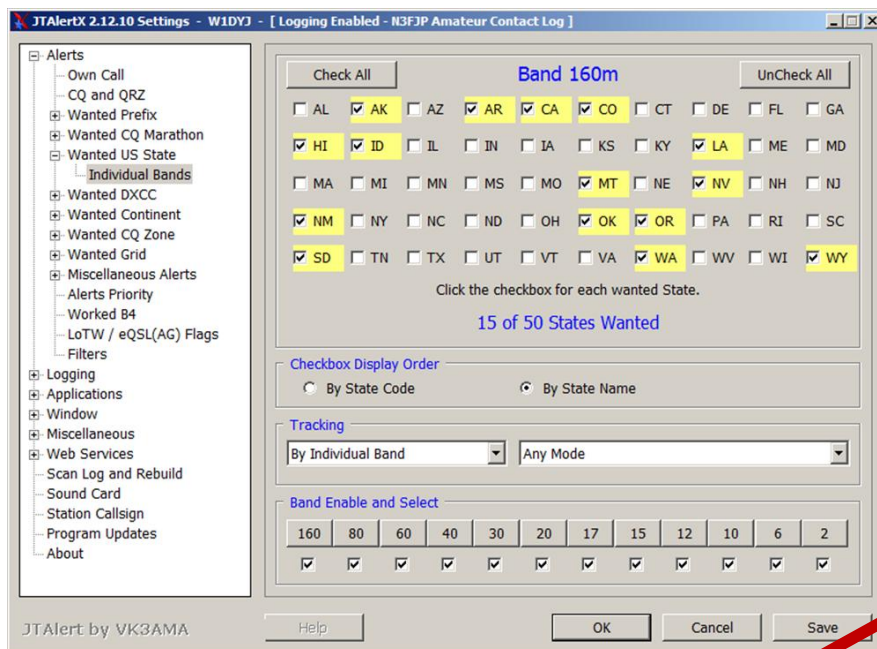
- DXLab DXKeeper
- ACLog
- Log4OM
- HRD Log
- Standard ADIF 2.2 file



Clicking on a call → Sets up WSJT-X



Some JTAlert Details

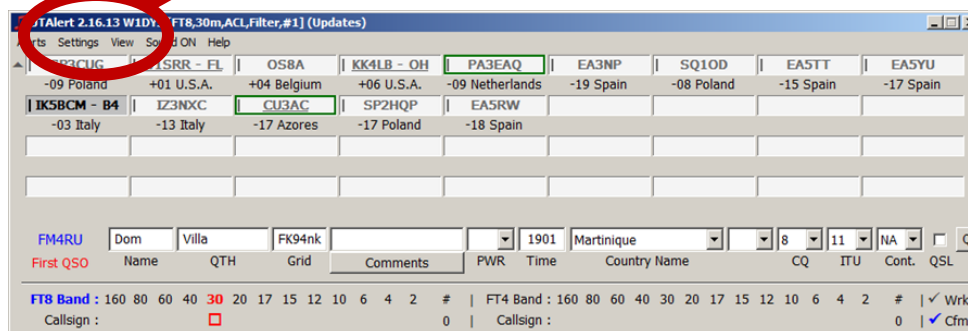


Manual
setup

Rebuild Alert Database

Pulls info
from logger
to JTAlert

Settings



Some JTAlert Details

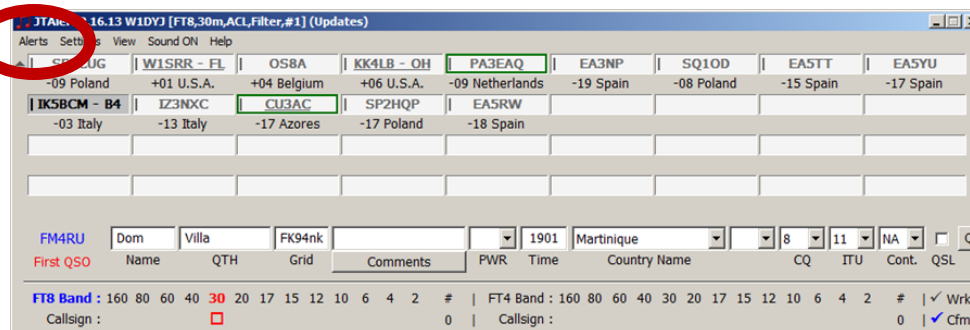
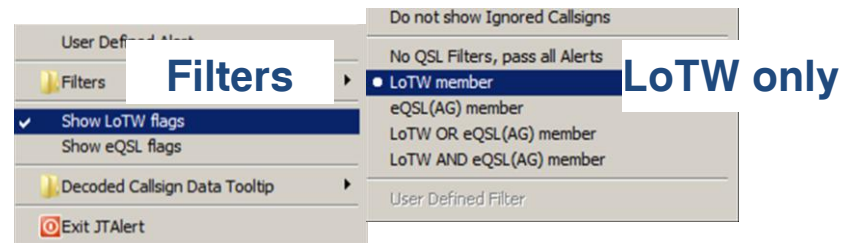
Cell Alerts and priority



Also has Voice Annunciations:
DX ***New State*** ***Calling You***

Show LoTW
Flags

Alerts



Some JTAlert Details

Show QSOs History Popup

DXKeeper/DXView/PathFinder Lookups
DXKeeper Previous QSOs
DXView Lookup
Pathfinder Lookup

Open Browser to QRZ.com Callsign page

Add to Wanted CallSigns List
Delete from Wanted CallSigns List

Add to Ignored CallSigns List
Delete from Ignored CallSigns List

Copy Callsign to Clipboard
Send Text Message to Callsign

Current
Station
Transmission
Details

Unique Callsigns TX/RX per Band													
Solar : SFI 68 : A 14 : K 1													
	tx	rx	tx	rx	tx	rx		tx	rx	tx	rx	tx	rx
160m					80	40	17m					323	284
80m					235	123	15m					197	105
60m					36	34	12m					9	18
40m	1	1			364	423	10m					90	107
30m					239	278	6m					71	184
20m	6	10	1	3	647	864	ALL	7	11	1	3	+1K	+2K
TT65	TT0	(last Update : 21-Aug-2013 10:43:10)										TT0	

Right Click on Call

Hover

Hover

JTAlert X 2.12.3 W1DYJ [~30m,ACL,F,#1] (Update!) | Alerts | Settings | View | Sound ON | ? |

160 80 60 40 30 20 17 15 12 10 6

N4AU - AL	S56ECR	OZ9GA	LB5MA	AD9P - WI	IZ0MGA	N4V - SC	U.S.A. - SC	U.S.A.
U.S.A.	Slovenia	Denmark	Norway	U.S.A.	Italy	U.S.A. - SC	U.S.A.	U.S.A.
N2BJ - B4	RU3EJ	W5K8H - LA	IK7JVE	N4CLY - NC	Z39A	K8ZT - OH	R2AL	U.S.A.
U.S.A. - IL	Russia (EU)	U.S.A.	Italy	U.S.A.	Macedonia	U.S.A.	Russia (EU)	U.S.A.

A45XR CHRIS Cpo LL93do 1950 Oman 21 39 AS Q

New Band Name QTH Grid Comments PWR Time Country Name State CQ ITU Cont. QSL

JT65 Band : 160 80 60 40 30 20 17 15 12 10 6 2 # : FT8 Band : 160 80 60 40 30 20 17 15 12 10 6 2 # : ✓ Wrk
Callsign : ✓ 1 : Callsign : ✓ 1 : ✓ Cfm



FT8 Agenda

- Intro to WSJT-X / FT8

- HW Setup

- SW Setup

- JTAlert

- **Reporting Sites**

- Summary

- ***JTAlert***
- *DXMaps*
- *PSK Reporter*

These slides show just a small part of these sites.



Reporting Sites ~ JTAlert

<https://hamspots.net/ft8/>

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

SFI 70, A 6, K 2
Online : 00:01:25

**** FT8 MODE ****

416 Online
22:44:38 : UTC

Auto refresh every 60 secs - Next refresh in 33 secs - [Refresh Now](#)

Chat / Skeds / Announcements

F1TXI de LU8FJP 14074.00 kHz FT8
TNX QSO
[age 53m] Feb-13 21:50utc

de 7K2PZG 1908.00 kHz FT8
Watching on 1840
[age +3h] Feb-13 18:47utc

de JN7FAH 1908.00 kHz FT8
CQ 1840 looking for EU
[age +4h] Feb-13 17:47utc

IU4DTV/QRP de IU4DTV 10136.00 kHz FT8
[age +23h] Feb-12 19:53utc

de KB7SAT 21074.00 kHz FT8
Looking for any VT PL DE ME 2400-2450
Query: 0.0036 sec

Cluster Spots.

[Blocked Calls] [POST.SPOT]

☐ 2200m ☐ 630m ☐ 100m ☒ 80m ☐ 60m ☐ 40m ☐ 30m ☐ 20m ☐ 17m ☐ 15m
☐ 12m ☐ 10m ☐ 6m ☐ 4m ☐ 2m [Apply Changes](#) [Check All](#) [Uncheck All](#)

Age	DX	Freq	Sig	Mode	St	Country	Spotter
2m	SP2V	3574.11	-12	FT8		Poland	PA7TWO
2m	G1BVI	3571.70	-11	FT8		England	SV1FJA
2m	HB9EUP	3573.62	-10	FT8		Switzerland	EA5RW
2m	ON6VL	3573.80	-24	FT8		Belgium	KG2H
2m	IK5XLB	3574.22	-05	FT8		Italy	EK6R
2m	UK8AEA	3574.24	-08	FT8		Uzbekistan	UA3O
2m	PU2OXB	3574.18	-09	FT8		Brazil	PY2JOS
2m	PA0U	3574.49	-14	FT8		Netherlands	K2IAM
2m	US5MTK	3575.32	+5	FT8		Ukraine	SP9HE
2m	A41ZZ	3573.93	-24	FT8		Oman	KJ4SPG
2m	RK9UJS	3574.77	-25	FT8		AS Russia	UA3O
2m	EA7GXD	3574.10	-13	FT8		Spain	YG9CMM
2m	EU1KY	3574.80	-15	FT8		Belarus	DG9SDN
2m	ON6VL	3573.84	-15	FT8		Belgium	RK9UJS
2m	G4CCZ	3570.30	+3	FT8		England	F5BZB
2m	CT1EKY	3570.60	+2	FT8		Portugal	F4GGJ
2m	EA3GP	3574.14	-13	FT8		Spain	G0VXE
2m	DF2LH	3570.95	-03	FT8		Germany	SP7QJF
2m	R5DT	3575.76	-06	FT8		EU Russia	YG9CMM
2m	DF4LB	3573.41	-15	FT8		Germany	DL1HAZ
2m	IK2RZQ	3570.65	+5	FT8		Italy	F4GGJ

Calls You Spotted

Age	DX	Bnd	Mode	Sig
2m	K4BBL	30	FT8	-22
2m	WD1Z	30	FT8	+3
3m	YO9FLD	30	FT8	-15
3m	IK5BQW	30	FT8	-12
3m	IT9CFP	30	FT8	-11
3m	F5MXH	30	FT8	-21
3m	W5CIA	30	FT8	-02

Your Call Spotted

Age	Spotter	Bnd	Mode	Sig
2m	IU4DEG	30	FT8	-18
2m	KF4RWA	30	FT8	-11
2m	IV3GOW	30	FT8	-12
2m	KU4A	30	FT8	+3
2m	K4YCP	30	FT8	-16
3m	YO5NY	30	FT8	-16
3m	KD5HIP	30	FT8	-01

W1DYJ
[Log Out](#)
[Your Spot History](#) [Settings](#)

Seen Call: Frequency: Mode:
Message: [Post](#)

To chat, you can leave "Mode" & "Frequency" fields blank

Activity | Links

© 2019, HamSpots by VK3AMA



Reporting Sites ~ JTAlert ~ Searches

<https://hamspots.net/ft8/>

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

SFI 70, A 6, K 2 Online: 00:05:15 ** LOTW SEARCH - US STATE ** 416 Online 22:48:26 : UTC

data:state:lotw:AK,AK,604800,state:lotw
LOTW Callsigns for US State: **ALASKA - [AK]**
20 stations spotted on Cluster, PSKReporter & from JTAlert : Last +1 week

Spot cnt	Callsign	LoTW date	eQSL (AG)	--- BAND Activity ---													--- MODE Activity ---						
				630	160	80	60	40	30	20	17	15	12	10	6	2	CW	SSB	RTTY	PSK	FT8	JT65	JT9
2097	KL7J	2019				X		X		X		X							X				
1448	WL7CG	2019	yes			X			X	X									X				
1082	WL7N	2019	yes		X			X		X	X	X							X				
831	KL7OH	2019	yes					X	X	X	X								X				
686	NL7S	2019	yes					X		X									X				
624	NL8E	2019	yes			X		X											X				
557	KL7USA	2019	yes					X		X	X	X							X				
501	AL7TC	2019	yes		X			X				X							X				
434	KL7HBK	2019						X		X	X								X				
347	KL2T	2019	yes			X			X	X							X	X					
321	AL7JX	2019	yes		X	X				X									X				
234	WL7SJ	2019			X														X				
177	KL0K	2019	yes					X		X									X				
140	AL4Y	2019	yes				X												X				
105	KL6M	2019						X			X								X				
81	AL7JK	2019	yes					X	X	X									X				
cnt	Callsign	LoTW	eQSL	630	160	80	60	40	30	20	17	15	12	10	6	2	CW	SSB	RTTY	PSK	FT8	JT65	JT9
40	KL4C	2019						X		X										X			
32	NL7ER	2019	yes						X											X			
6	KL7IH	2019	yes							X								X					
2	KL7L	2018		X																			X

Query: 0.0143 sec

W1DYJ Log Out Your Spot History Settings

Search for callsigns or frequencies
Select the STATE then press the Display Button
US State:

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FT8 Agenda

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- JTAlert

- **Reporting Sites**

- Summary

- JTAlert
- ***DXMaps***
- PSK Reporter

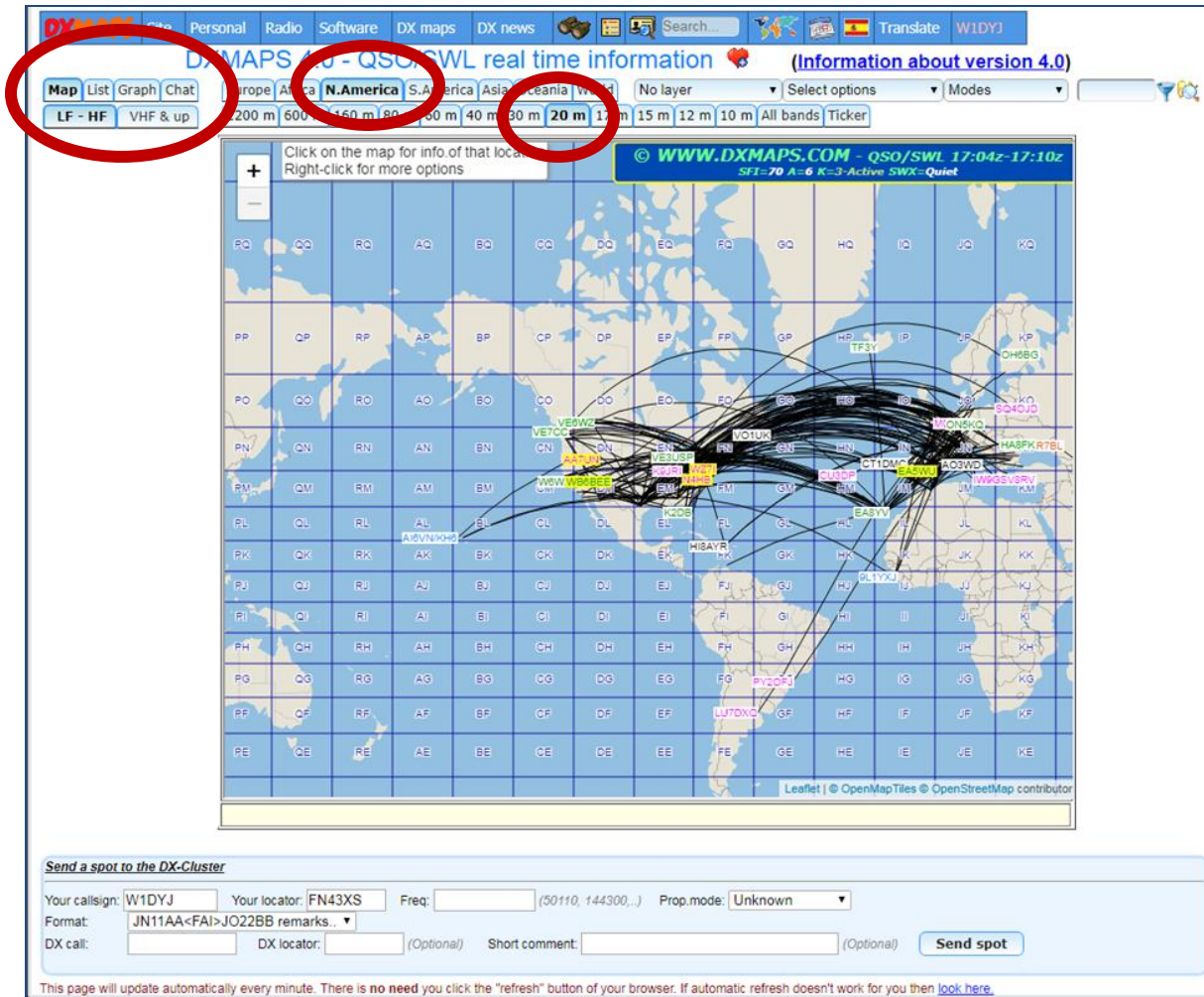
These slides show just a small part of these sites.



Reporting Sites ~ DXMaps ~ *Map mode*

<http://www.dxmaps.com/spots/mapg.php>

Map



INDEXA

Reporting Sites ~ DXMaps ~ List mode

<http://www.dxmaps.com/spots/mapg.php>

List

DXMAPS 4.0 - QSO/SWL real time information (Information about version 4.0)

Map **List** Graph Chat

LF - HF VHF & up

200 m 600 m 160 m 80 m 60 m 40 m 30 m **20 m** 17 m 15 m 12 m 10 m All bands Ticker

Time	Call Sign	Freq	Distance	Notes
2019-02-11 17:13	WWW.DXMAPS.COM	17:13z		
2019-02-11 17:13	VE2OV (FN32AO)	14.281.0 SSB	4194 km	Eureka base, Ellsmere island, LoTW
2019-02-11 17:13	OE9WPV (JN47VE)	14.253.0 SSB	6164 km	tnx Brain qso 73 f.oe9 LoTW
2019-02-11 17:13	VE3XIN (FN02HP)	14.219.0 SSB	6448 km	Tnx for QSO!
2019-02-11 17:13	N3MAV (FN20ET)	14.281.0 SSB	4386 km	44 in EPA
2019-02-11 17:12	KM3T (FN42ET)	14.100.0 CW	4262 km	CW 17 dB 22 WPM NCDXF B
2019-02-11 17:12	W1NT (FN42)	14.006.0 CW	6615 km	CW 17 dB 25 WPM CQ
2019-02-11 17:12	W8WVW (EN91HM)	14.032.8 CW	6202 km	CW 3 dB 19 WPM CQ
2019-02-11 17:12	W6ZNV (FN31DA)	14.076.6 FT8	6182 km	FN31da<->JN49 FT8 -18
2019-02-11 17:12	KM3T (FN42ET)	14.006.0 CW	6662 km	CW 20 dB 25 WPM CQ
2019-02-11 17:12	W3LPL (FM19LG)	14.006.0 CW	7198 km	CW 12 dB 25 WPM CQ
2019-02-11 17:11	VE3PF (FN04)	14.219.0 SSB	6319 km	
2019-02-11 17:11	PD1ECA (JO32LE)	14.074.6 FT8	5873 km	JO32le<->FN31 FT8 -18
2019-02-11 17:11	N0DH (EN34RN)	14.074.5 FT8	2601 km	EN34rn<->CM88 FT8 +12
2019-02-11 17:11	N4HB (FM17UU)	14.076.3 FT8	6607 km	FM17uu<->JN36 FT8 -22
2019-02-11 17:11	N3ICK (EM60QK)	14.076.3 FT8	1400 km	EM60qk<->FN10 FT8 +05
2019-02-11 17:11	W84DFW (EM84NR)	14.075.3 FT8	2446 km	EM84nr<->FK68 FT8 -17
2019-02-11 17:11	KA2AIC (FN13FD)	14.075.4 FT8	6385 km	FN13fd<->JN48 FT8 -05
2019-02-11 17:10	OH6BG (KP03SD)	14.021.0 CW	6328 km	CW 10 dB 25 WPM CQ
2019-02-11 17:10	W8BEE (DM97ME)	14.021.1 CW	2352 km	CW 3 dB 27 WPM CQ
2019-02-11 17:10	EASWU (JN99AU)	14.021.1 CW	6404 km	CW 8 dB 28 WPM CQ
2019-02-11 17:10	N53U (FN00DH)	14.076.4 FT8	6353 km	FN00dh<->JO32 FT8 -11
2019-02-11 17:10	KY9B (EN61KL)	14.075.9 FT8	2900 km	EN61kl<->CN89 FT8 -24
2019-02-11 17:10	DK9IP (JN48GT)	14.021.2 CW	6470 km	CW 6 dB 27 WPM CQ
2019-02-11 17:10	S50ARX (JN65TW)	14.021.1 CW	6965 km	CW 5 dB 28 WPM CQ
2019-02-11 17:10	K9JRI (EM69XW)	14.075.5 FT8	717 km	EM69xw<->FM19 FT8 -12
2019-02-11 17:10	VA6SHS (DO16EE)	14.075.0 FT8	4026 km	DO16ee<->EL89 FT8 -10
2019-02-11 17:09	VE3XIN (FN02HP)	14.275.0 SSB	6876 km	58 into Toronto
2019-02-11 17:09	VE9V (EN52XN)	14.043.9 CW	1386 km	CW 33 dB 20 WPM CQ
2019-02-11 17:09	W3LPL (FM19LG)	14.018.4 CW	7488 km	CW 11 dB 22 WPM CQ
2019-02-11 17:09	K3PA (EM29MD)	14.020.0 CW	2031 km	CW 20 dB 14 WPM CQ
2019-02-11 17:09	K54XQ (EM84QS)	14.019.3 CW	1341 km	CW 14 dB 30 WPM CQ
2019-02-11 17:09	VE7CC (CN89RE)	14.020.0 CW	3985 km	CW 10 dB 13 WPM CQ
2019-02-11 17:09	VE2WU (FN35AA)	14.100.0 CW	4047 km	CW 16 dB 22 WPM NCDXF B
2019-02-11 17:09	ON5KQ (JO10OS)	14.021.2 CW	6030 km	CW 8 dB 26 WPM CQ
2019-02-11 17:09	VE6WZ (DO21XB)	14.021.3 CW	2659 km	CW 22 dB 25 WPM CQ
2019-02-11 17:09	DR4W (JN59SV)	14.021.3 CW	6591 km	CW 16 dB 26 WPM CQ
2019-02-11 17:09	KM3T (FN42ET)	14.032.5 CW	3913 km	CW 22 dB 22 WPM CQ
2019-02-11 17:09	H8JCB (JN47CA)	14.021.1 CW	6554 km	CW 9 dB 26 WPM CQ
2019-02-11 17:09	W1KFL4 (EL96US)	14.075.6 FT8	2646 km	EL96us<->DM62 FT8 -13
2019-02-11 17:09	WA2CLX (FN13DF)	14.075.5 FT8	1834 km	FN13df<->EM40 FT8 -02
2019-02-11 17:09	WR9VGL (DM34TD)	14.075.7 FT8	1628 km	DM34tn<->FM22 FT8 -14

Send a spot to the DX-Cluster

Your callsign: W1DYJ Your locator: FN43XS Freq: (50110, 144300,...) Prop.mode: Unknown

Format: JN11AA<FAI>JO22BB remarks: ▼

DX call: DX locator: (Optional) Short comment: (Optional) Send spot

This page will update automatically every minute. There is no need you click the "refresh" button of your browser. If automatic refresh doesn't work for you then [look here](#).

IMPORTANT: YOU MAY NOT use this maplist in your own WEB pages. I will appreciate links to this WEB page, but you are not allowed to show the maplist in your site!

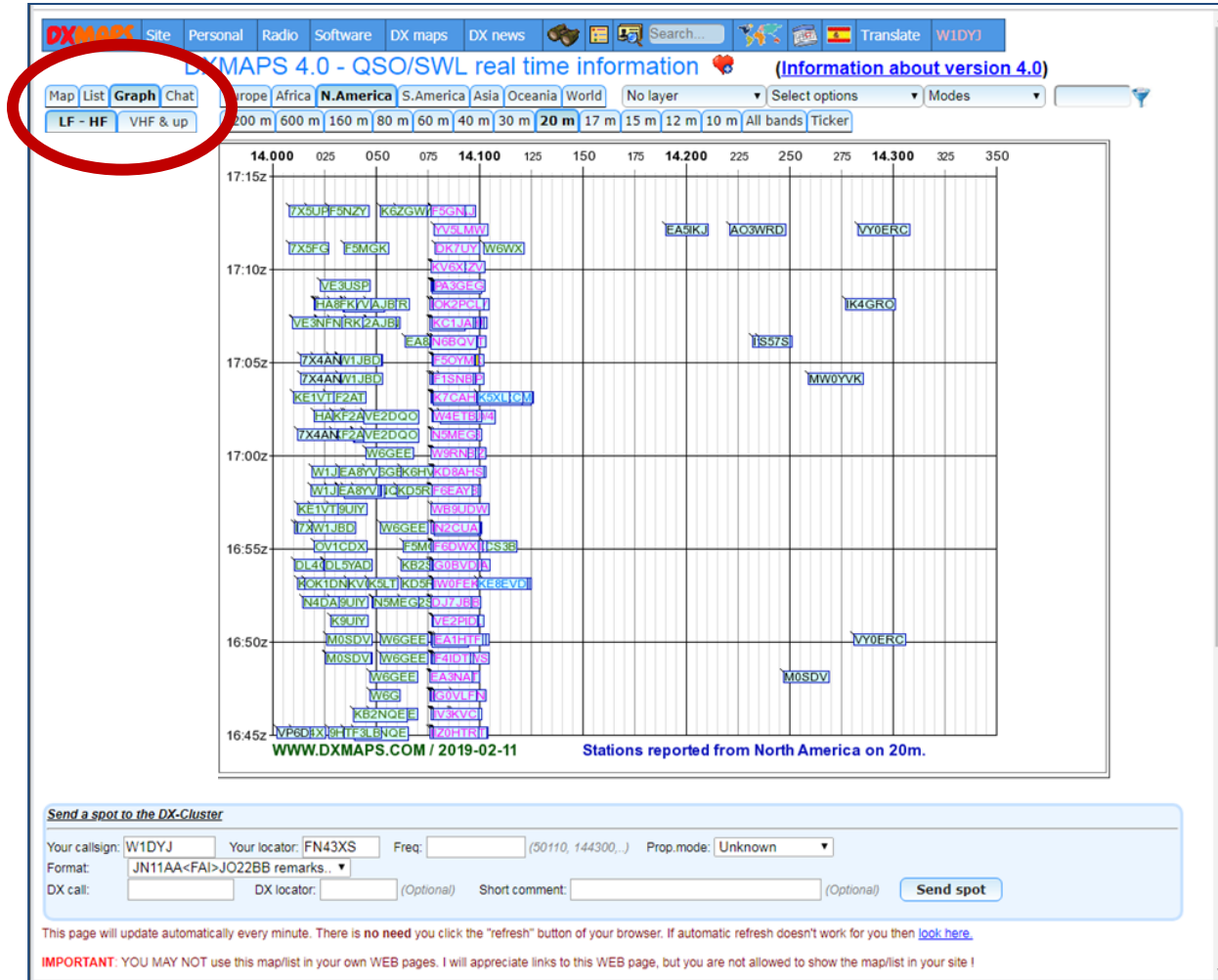
Now you can also receive customized pronunciation warnings by E-Mail !!



Reporting Sites ~ DXMaps ~ Graph mode

<http://www.dxmaps.com/spots/mapg.php>

Graph



Reporting Sites ~ DXMaps ~ options

<http://www.dxmaps.com/spots/mapg.php>

Clicked on BL01IK 98BR
8,318 km away from FN43XS - QTF=285° LP=105°
(Next SR: 17:11Z / SS: 04:30z)
DXCC: KH6 - Hawaii
CQ: 31 / ITU: 61 / Continent: OC
Possible IOTA: OC-019 - Hawaiian Islands

NH6RF info: [Callbook & DX-Calendar](#) [Recent spots](#) [Tracking & Statistics \(HF+6m\)](#)
[Calculate HF propagation to NH6RF](#)
Click on the map for info of that location
Right-click for more options / Click here to hide this window

Options

Highlight a call

DXMaps sends me email alerts for 6M openings



FT8 Agenda

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- *DXMaps*
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These slides show just a small part of these sites.



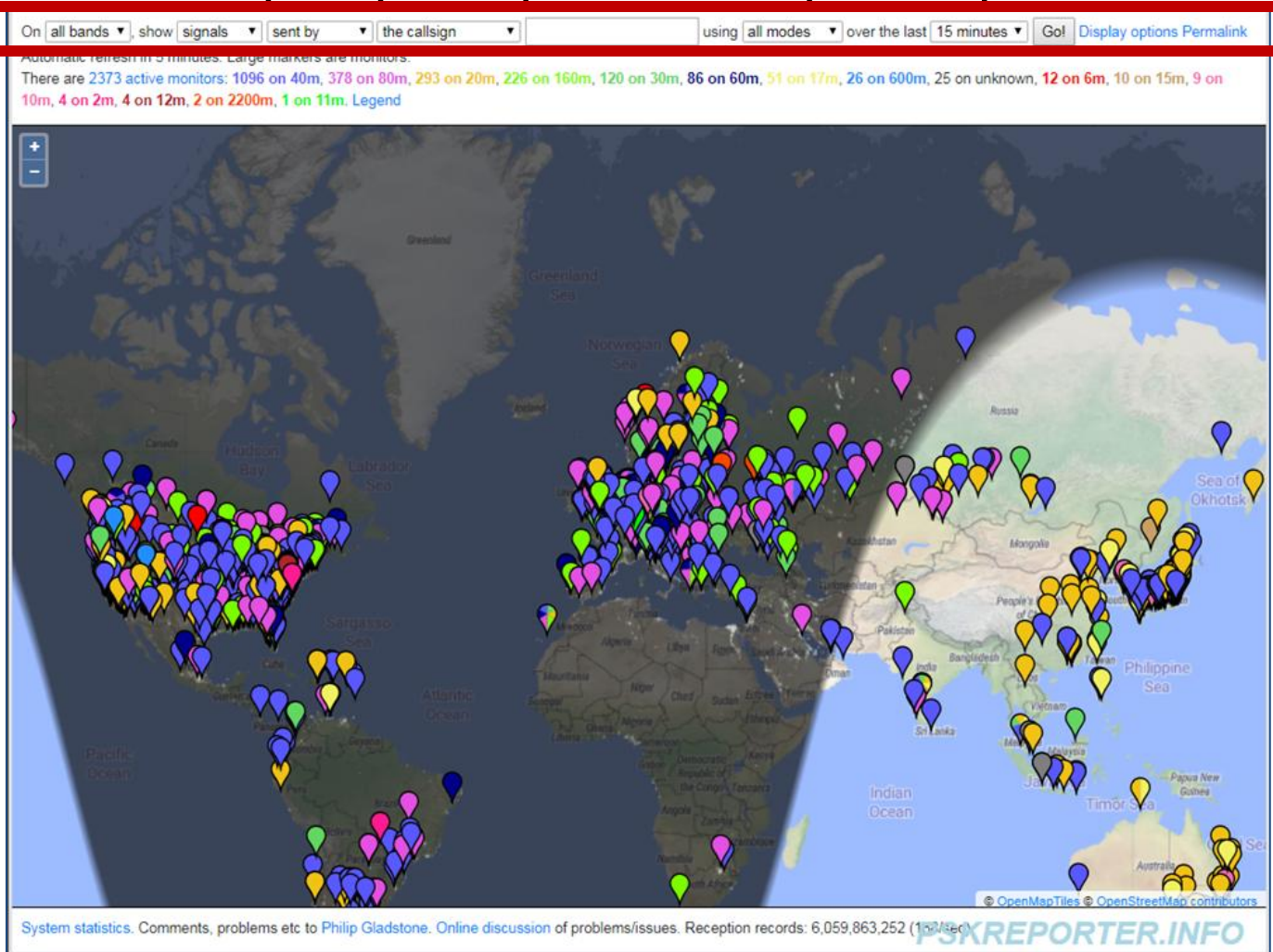
Reporting Sites ~ PSKReporter

<https://pskreporter.info/pskmap.html>

When first
fired up.

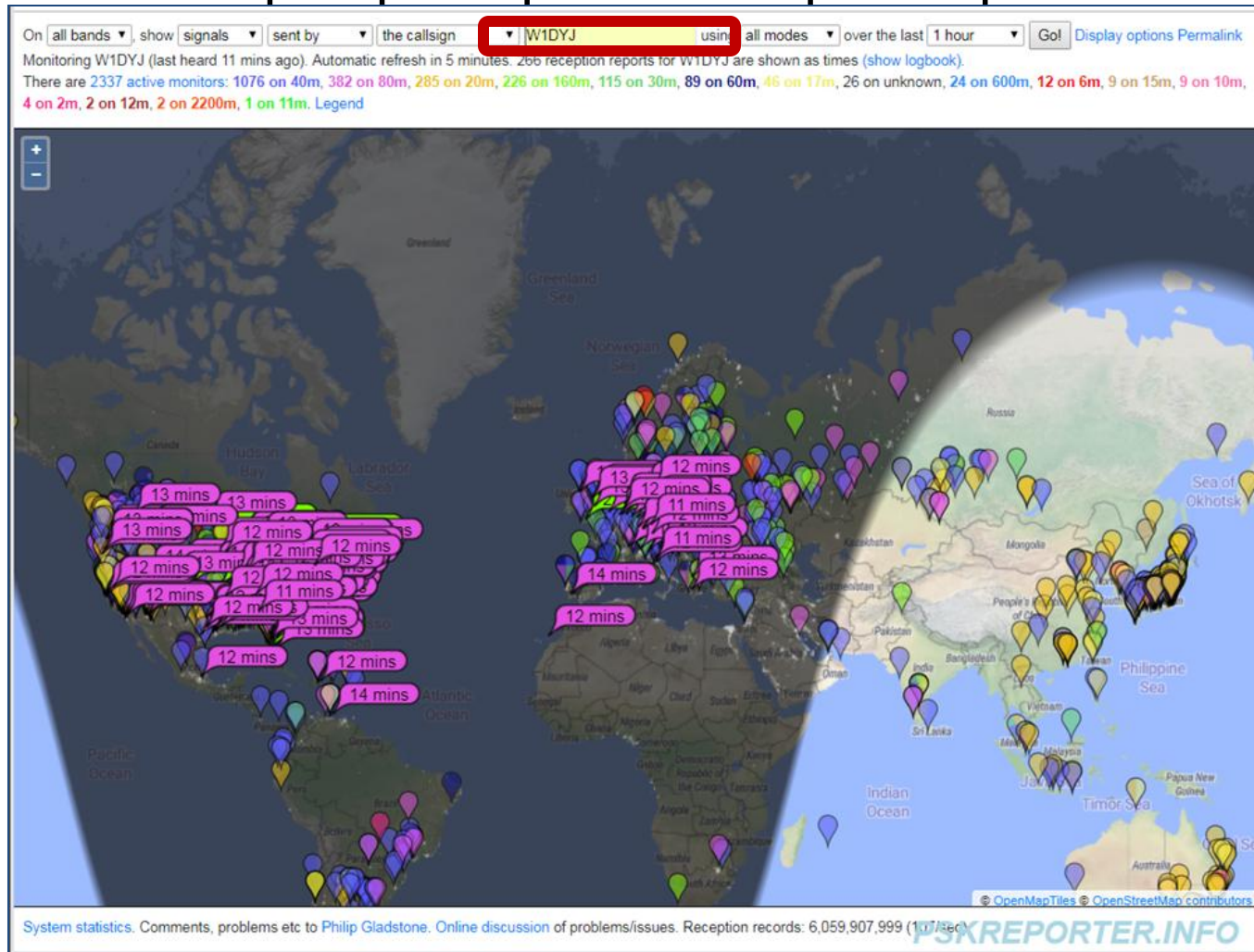
Shows
all bands,
all signals,
all calls,
all modes.

Over a
certain
time



Reporting Sites ~ PSKReporter

<https://pskreporter.info/pskmap.html>



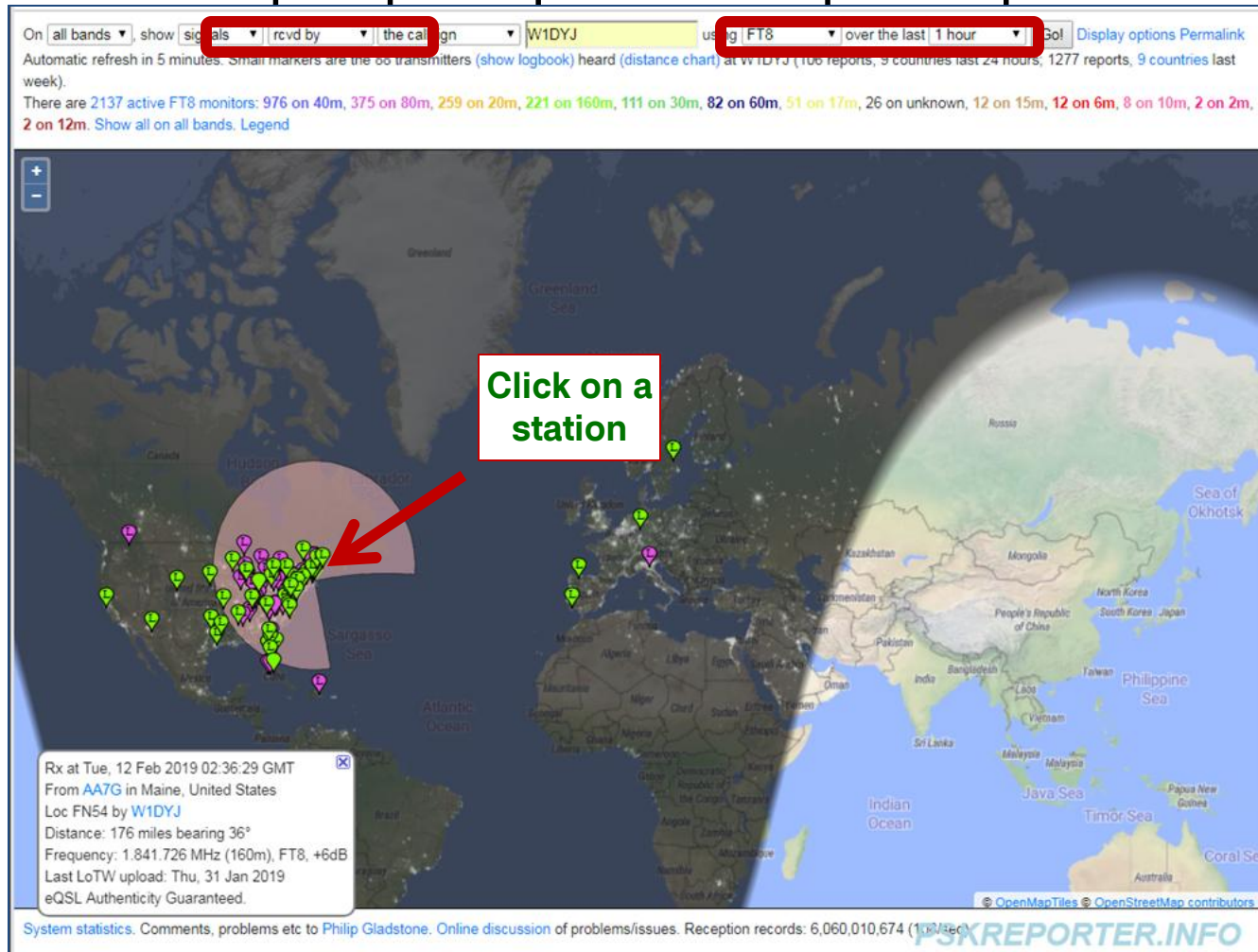
Changed to:

All stations who heard W1DYJ during last hour on all band & all modes



Reporting Sites ~ PSKReporter

<https://pskreporter.info/pskmap.html>



Changed to:

All stations received by W1DYJ over last hour on FT8



Reporting Sites ~ PSKReporter

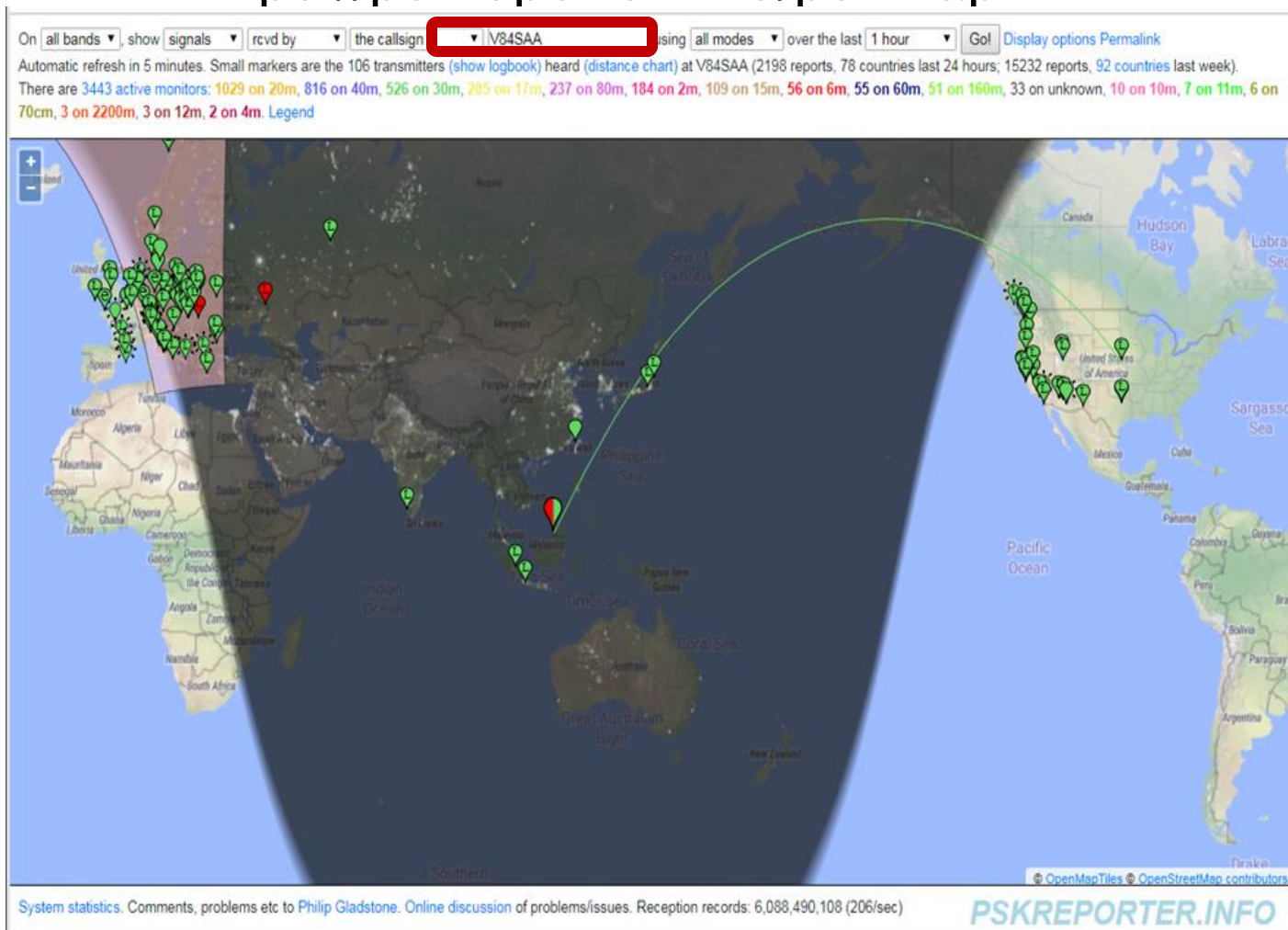
<https://pskreporter.info/pskmap.html>

14 Feb '19

Heard by

V84SAA
Brunei

30M



FT8 Agenda

- Intro to WSJT-X / FT8
- HW Setup
- SW Setup
- JTAlert
- Reporting Sites
- **Summary**



Summary ~ W1DYJ DXCC Experience

April 2017

March 2021

DXCC	Phone 223	CW 166	Digital 61	Mixed 235
160	1	7	0	7
80	60	71	7	86
60				
40			18	
30		48	2	50
20			18	
17	40	19	0	58
15			15	
12	18	6	0	24
10		91	1	
6	25	6	0	26

Phone 229	CW 201	Digital 180	Mixed 258
7	50	63	84
71	91	97	
0	0	45	45
	81		
47	26		
20	11	69	89
	91	21	
26	7	41	52



Summary ~ Some Final Thoughts

- *Be sure your computer clock is accurate*
 - *WINDOWS clock is not!*
- *Be aware of different FT8 modes:*
 - *Contests, Fox/Hound, etc.*
- **SPLIT is good for DX** *[Fake It / Hold TX Freq]*
- *Don't allow extraneous audio in audio chain*
- *How much power???*
 - *“Keep received reports to ~ -5 dB” (Joe T.)*

