

Digital Modes of Amateur Radio

Delta Amateur Radio Club

29 April 2021

An array of modes!



Will send out a Quick List, including programs, from Eric N6SPP

- WSJT (weak signal) – includes FT8, FT4, JT65, JT6M, FSK441
- JS8
- RTTY
- WSPR
- Packet Radio (includes. aprs)

FT8 & FT4



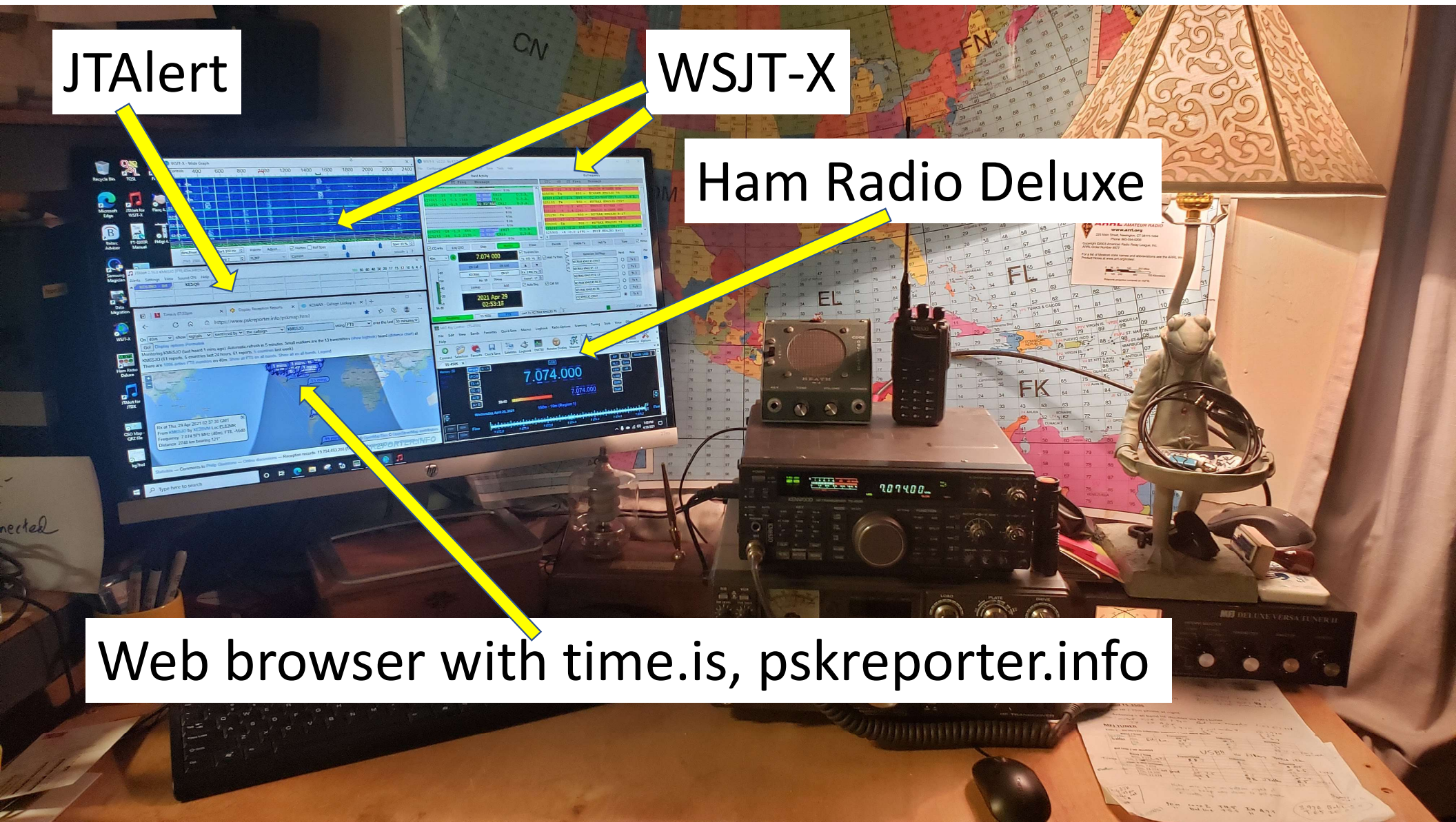
- Requires CAT (rig control)
- Requires a computer sound card interface
- 15 second transmit and receive cycles (7.5 seconds with FT4)
- Very important to have your computer synced with UTC (visit www.time.is)
- Helpful software is WSJT-X and JTAlert
- Setup on computer can be cumbersome, lots of trial & error (or success)

JTAlert

WSJT-X

Ham Radio Deluxe

Web browser with time.is, pskreporter.info



Band Activity

UTC	dB	DT	Freq	Message
022000	-10	0.2	1357 ~	CQ WA9YEE DN70 U.S.A.
022000	-5	-0.2	400 ~	CQ WB2UBW EM66 U.S.A.
022030	-12	0.1	1356 ~	CQ WA9YEE DN70 U.S.A.
022100	3	1.0	707 ~	CQ K6MRP CM97 U.S.A.
022130	4	1.0	707 ~	CQ K6MRP CM97 U.S.A.
022130	-15	0.1	908 ~	CQ K4YT FM19 U.S.A.
022200	4	1.0	706 ~	CQ K6MRP CM97 U.S.A.
022230	4	1.0	705 ~	CQ K6MRP CM97 U.S.A.

Rx Frequency

UTC	dB	DT	Freq	Message
021700	Tx	1005 ~		WB0ZRD KM6SJO +07
021730	Tx	1005 ~		WB0ZRD KM6SJO +07
021800	Tx	1005 ~		WB0ZRD KM6SJO +07
021830	Tx	1005 ~		WB0ZRD KM6SJO +07
021900	Tx	1005 ~		WB0ZRD KM6SJO +07
021930	Tx	1005 ~		WB0ZRD KM6SJO +07
022000	-5	-0.2	400 ~	CQ WB2UBW EM66 U.S.A.
022017	Tx	1005 ~		WB2UBW KM6SJO CM97
022030	-2	-0.2	400 ~	KM6SJO WB2UBW -15
022045	Tx	1005 ~		WB2UBW KM6SJO R-02
022100	-1	-0.2	399 ~	KM6SJO WB2UBW RR73
022115	Tx	1005 ~		WB2UBW KM6SJO 73
022200	4	1.0	706 ~	CQ K6MRP CM97 U.S.A.
022230	4	1.0	705 ~	CQ K6MRP CM97 U.S.A.
022245	Tx	1005 ~		K6MRP KM6SJO CM97

☒ CQ only

Log QSO

Stop

Monitor

Erase

Decode

Enable Tx

Halt Tx

Tune

☒ Menus

30m

S

10.136 000

☐ Tx even/1st

Tx 1005 Hz

☒ Hold Tx Freq

DX Call

DX Grid

K6MRP

CM97

Az: 125

50 mi

Lookup

Add

☒ Auto Seq

☒ Call 1st

Generate Std Msgs

Next

Now

Pwr

K6MRP KM6SJO CM97

☒

Tx 1

K6MRP KM6SJO +04

☐

Tx 2

K6MRP KM6SJO R+04

☐

Tx 3

K6MRP KM6SJO RR73

☐

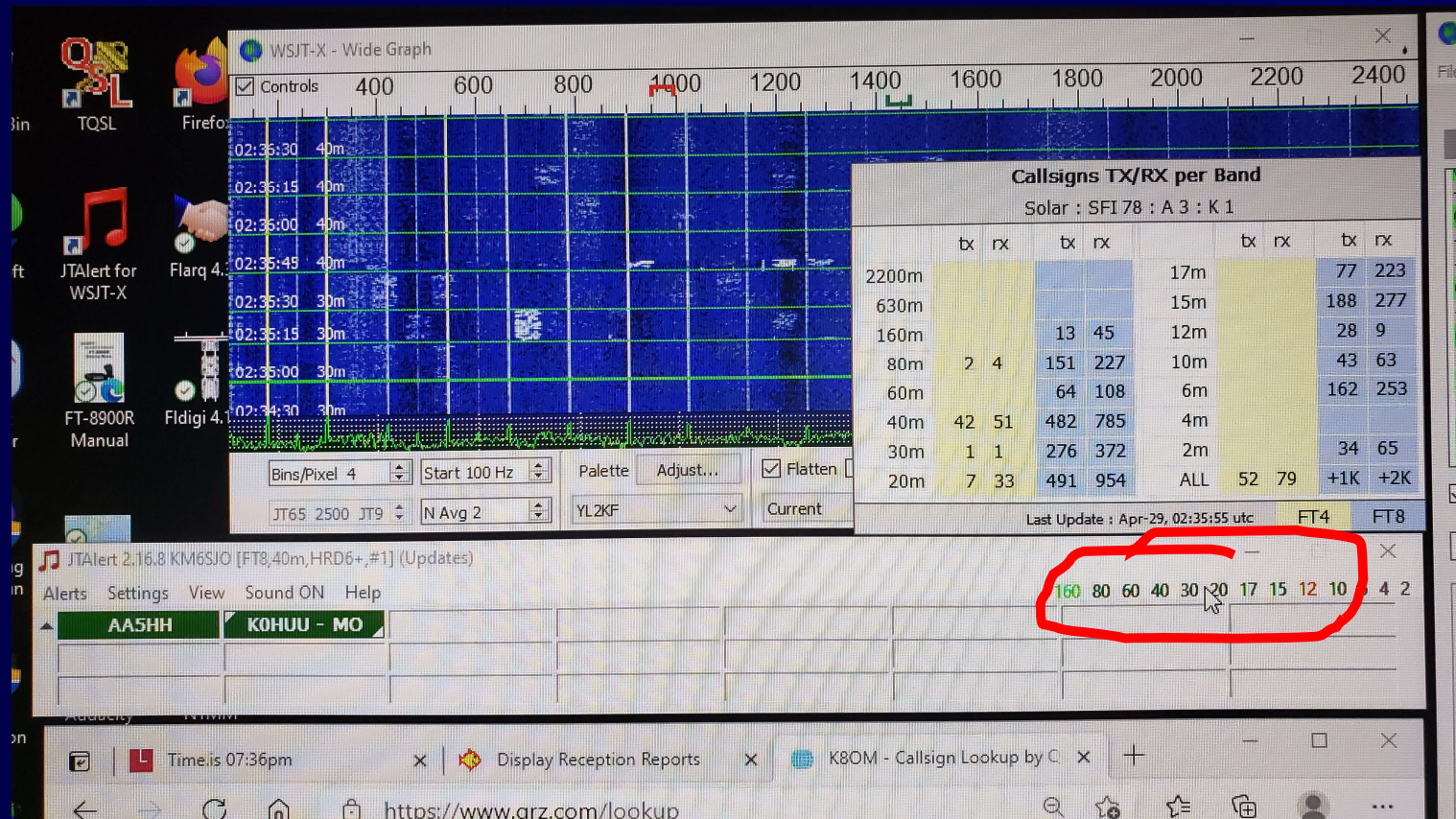
Tx 4

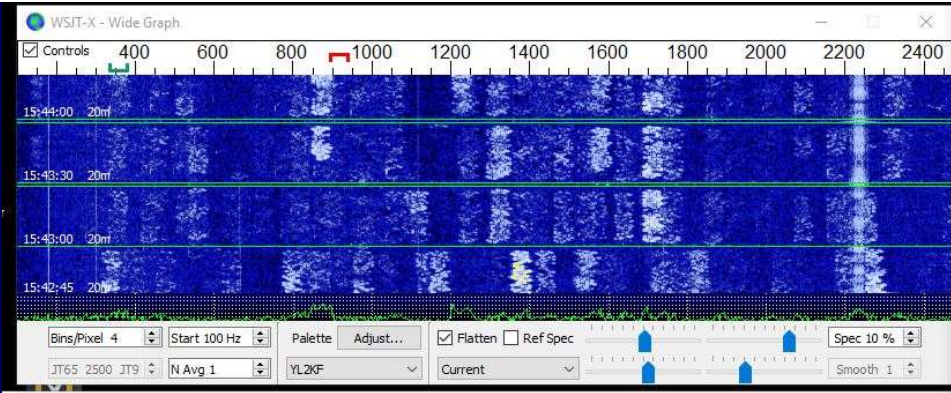
K6MRP KM6SJO 73

☐

Tx 5

The perks of JTAlert – distinguish between worked “B4” stations, and hovering over the bands tells you where the activity is.





IO (FT8, 20m, HRD6+, #1) (Updates)

W Sound ON Help

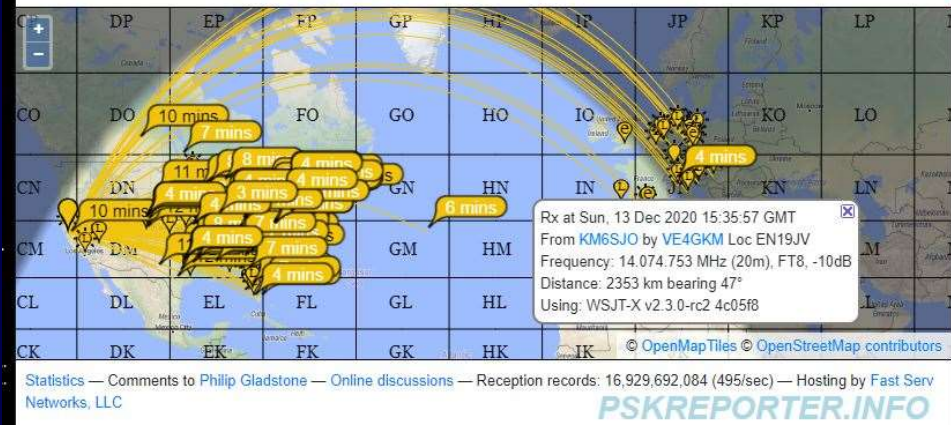
N0DOW - B4	K4T2T	WG2Y - NJ	W0DAS - CO	EA1PO	KD9MER - IN	NA6MG - CA	EA2DR
W8BU - NC	GOBVD	IK2RPE	KD9PCN	W9KB - FL	EA3GM	KD5WJV	KC3Y - PA
ON4VDV	PE1LJS	KD3YT - PA	KD2NXV - NY	K8IG - B4	GM4CUX	N4DV - FL	

Time is 07:43:01 x Display Recept: x QRZ Callsign D: x Antenna Tuner: x

← → ↺ ↻ 🏠 🔖 https://www.pskreporter.info/pskmap.html

On 20m ▾, show signals ▾, sent/rcvd by ▾, the callsign ▾ KM6SJO using FT8 ▾ over the last 15 minutes ▾ Go! Display options Permalink

Monitoring KM6SJO (last heard 3 mins ago). Automatic refresh in 5 minutes. Small markers are the 61 transmitters (show logbook) heard (distance chart) at KM6SJO (74 reports, 17 countries last 24 hours; 964 reports, 27 countries last week). There are 1243 active FT8 monitors on 20m. Show all FT8 on all bands. Show all on all bands. Legend



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

File Configurations View Mode Decode Save Tools Help

Band Activity						Rx Frequency						
UTC	dB	DT	Freq	Message		UTC	dB	DT	Freq	Message		
154230	-6	-0.1	1303	~	CQ ON4VDV JO20 Belgium	153945	Tx	894	~	HA1RB KM6SJO CM97		
154300	-11	0.1	336	~	CQ S50XX JN65 Slovenia	153955	Tx	894	~	CQ EU KM6SJO CM97		
154300	-14	0.0	1038	~	CQ NA6MG DM04 U.S.A.	154000	-9	0.1	1362	~	OZ7PBI K4T2T R-12	
154300	-12	0.0	2157	~	CQ WG2Y FN20 U.S.A.	154000	-16	0.4	1356	~	KE0YAG DL2HRE JO51	
154300	-16	-0.0	854	~	CQ NE W2AHH FM29 U.S.A.	154015	Tx	894	~	CQ EU KM6SJO CM97		
154300	-15	0.1	1232	~	CQ EA3GM JN11 Spain	154045	Tx	894	~	CQ EU KM6SJO CM97		
154300	-6	-0.0	1303	~	CQ ON4VDV JO20 Belgium	154030	-11	0.0	335	~	CQ S50XX JN65 Slovenia	
154300	-16	0.1	439	~	CQ F4FOM JN13 France	154115	Tx	894	~	S50XX KM6SJO CM97		
154300	-14	0.0	1710	~	CQ PD1CMF JO21 Netherlands	154145	Tx	894	~	S50XX KM6SJO CM97		
154300	-19	0.4	771	~	CQ NA 601UE IO81 England	154215	Tx	894	~	S50XX KM6SJO CM97		
154330	-11	0.0	335	~	CQ S50XX JN65 Slovenia	154230	-10	0.0	335	~	CQ S50XX JN65 Slovenia	
154330	-10	0.1	2156	~	CQ WG2Y FN20 U.S.A.	154245	Tx	894	~	S50XX KM6SJO CM97		
154330	-11	0.0	1037	~	CQ NA6MG DM04 U.S.A.	154300	-11	0.1	336	~	CQ S50XX JN65 Slovenia	
154330	-16	0.1	1232	~	CQ EA3GM JN11 Spain	154315	Tx	894	~	CQ EU KM6SJO CM97		
154330	-20	0.0	1902	~	CQ KD2NXV FN03 U.S.A.	154330	-11	0.0	335	~	CQ S50XX JN65 Slovenia	
						154345	Tx	894	~	CQ EU KM6SJO CM97		

✓ CQ only Log QSO Stop Monitor Erase Decode Enable Tx Halt Tx Tune ✓ Menus

20m ▾ 14.074 000

DX Call S50XX DX Grid JN65

Az: 30 6037 mi

Report -11

✓ Auto Seq ✓ Call 1st

2020 Dec 13 15:44:11

Receiving TS-450S FT8 Last Tx: CQ EU KM6SJO CM97 26 11/15 WD:5m

HRD Rig Control - [TS-450S]

File Edit View Bands Favorites Quick Save Macros Logbook Radio Options Scanning Tuning Tools Voice DStar Window Help

Connect Selection Favorite Quick Save Satellites Logbook DM780 Rotator Display Mapper Full Screen SW Data Sliders Customize Options Forums

TS-450S x

Memory: 00

VFO A B > A

VFO B

TX - A

TX - B

A/B

A > B

S9+20

14.074.000

18.099.950

AP TX Mode: USB

ALC Tone

Fine dB

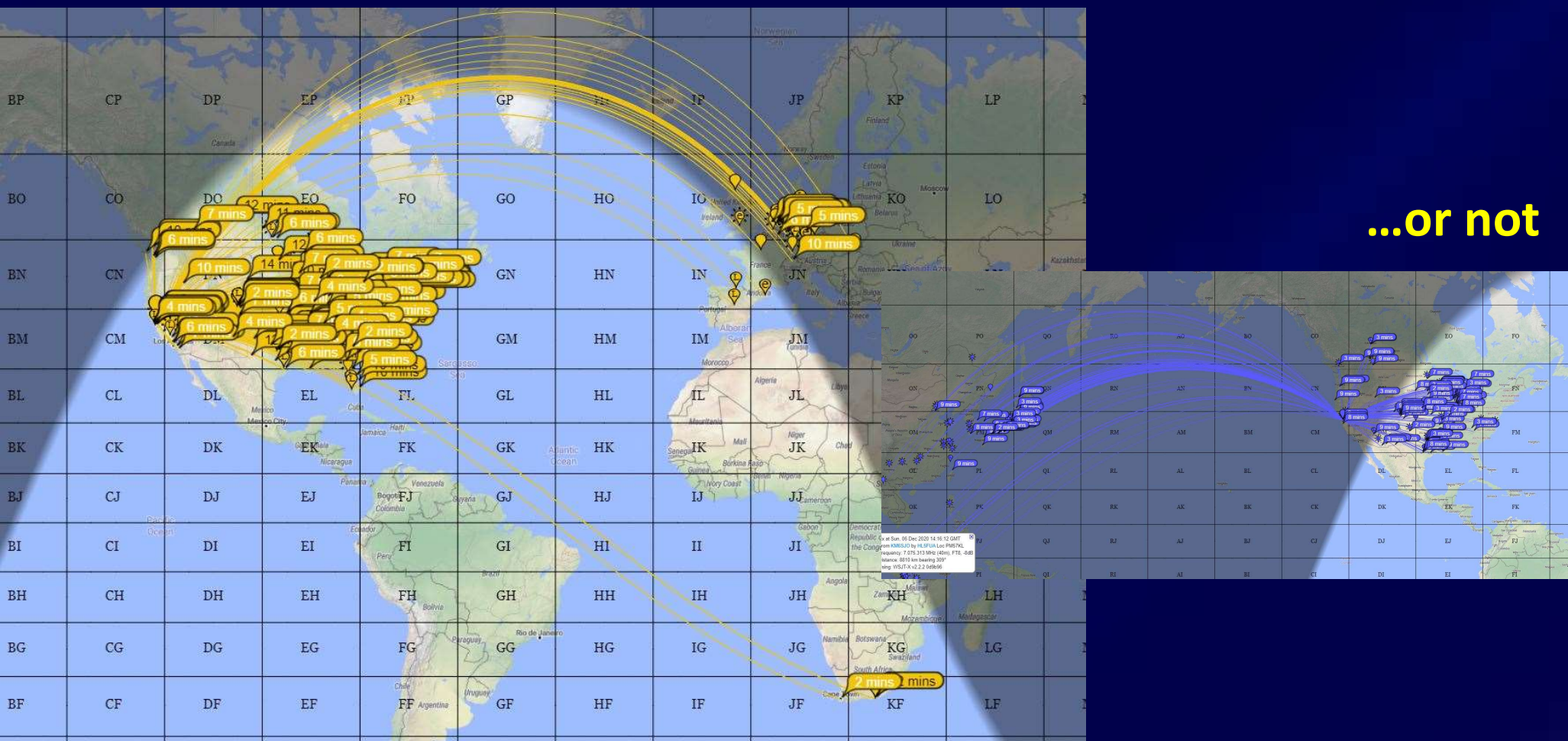
Lock

SWR

Scan

Sunday, December 13, 2020 160m - 10m (Region 1) 07:44:11

www.pskreporter.info – some QSO's on bands “ride the gray line”



JS8 – from David, W6DMW

14.078 000
1813 Hz

W6DMW - CM97DW

19:41:36
2021 Apr 28

RX

TX

FAST+MULTI+AUTO+HB+ACK

SPOT

LOG

TUNE

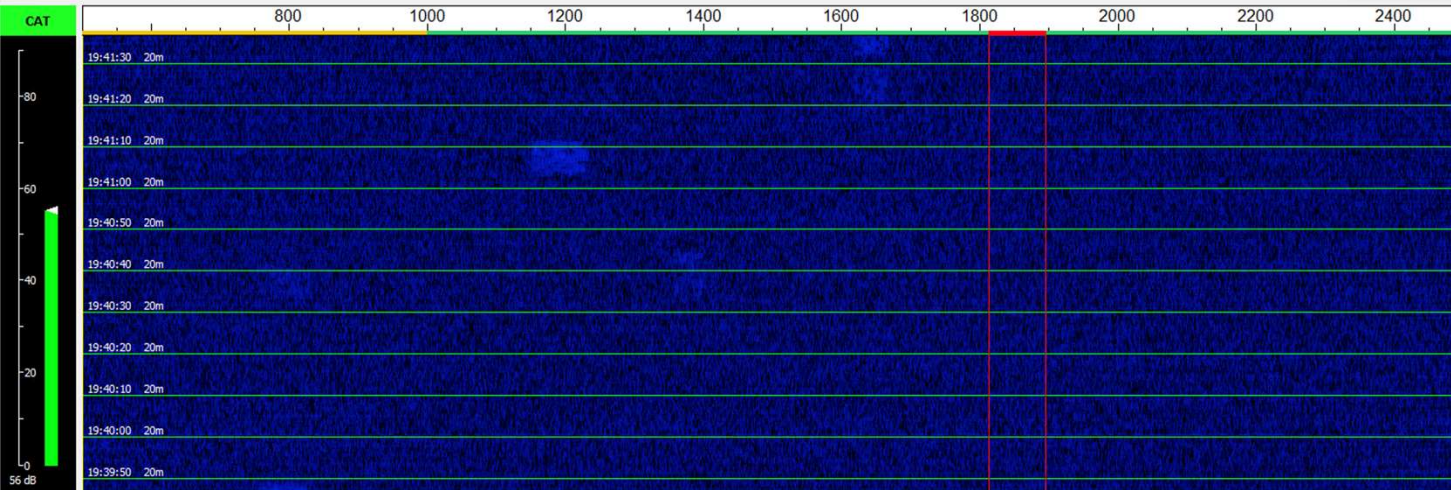
Offset	Age	SNR	Speed	Message(s)
1620 Hz	now	-17 dB	N	KSMGK: N7AKD GRID
1157 Hz	15s	-14 dB	F	N7AKD: KSMGK GRID? ◊
1359 Hz	45s	-18 dB	N	W1FVB: @ALLCALL CQ CQ CQ FN44 ◊
757 Hz	45s	-21 dB	F	KDOKYA: N5JDT HEARTBEAT SNR -15 ◊ N7AKD: N5JDT HEARTBEAT SNR -12 ◊
538 Hz	3m	-17 dB	N	W1FVB: @HB HEARTBEAT FN44 ◊

19:27:39 - (700) - W6DMW: @HB HEARTBEAT CM97 ◊
19:28:55 - (550) - W6DMW: @HB HEARTBEAT CM97 ◊
19:35:36 - (850) - W6DMW: @HB HEARTBEAT CM97 ◊
19:37:43 - (800) - W6DMW: W1FVB HEARTBEAT SNR -17 ◊

TYPE YOUR OUTGOING MESSAGES HERE.

Callsigns (5)	Age	SNR	Offset	✓	Name	Comment
@ALLCALL						
KSMGK	now	-17 dB	1620 Hz			
KDOKYA	1m	-12 dB	761 Hz			
KJ4BS	9m	-15 dB	2185 Hz			
N7AKD	15s	-14 dB	1157 Hz			
W1FVB	45s	-18 dB	1359 Hz			

HB + ACK CQ REPLY SNR INFO STATUS Saved Directed Deselect Send Halt



Control Display Timing

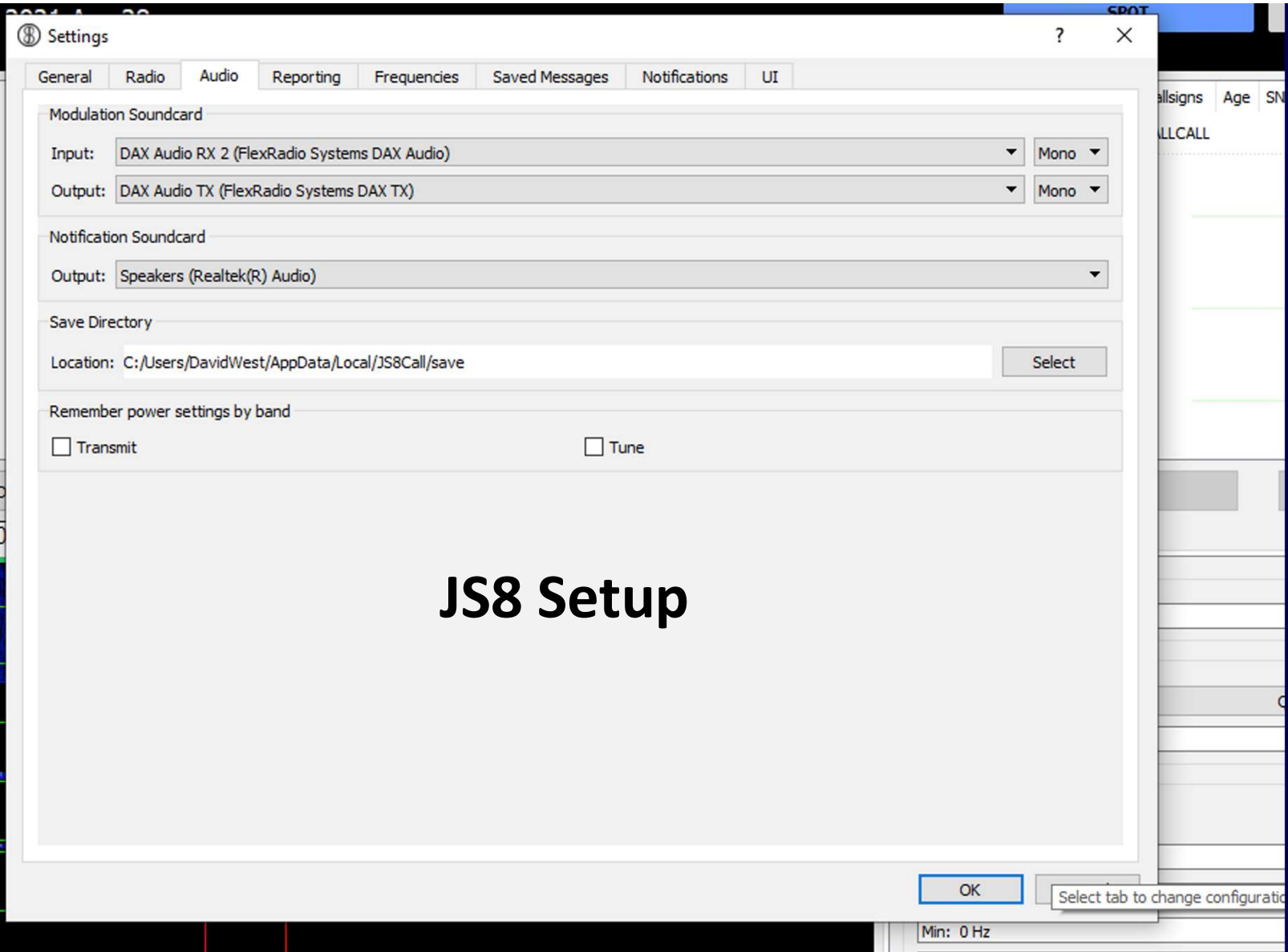
Offset
Offset: 1813 Hz

QSY
QSY

Center: 1423 Hz

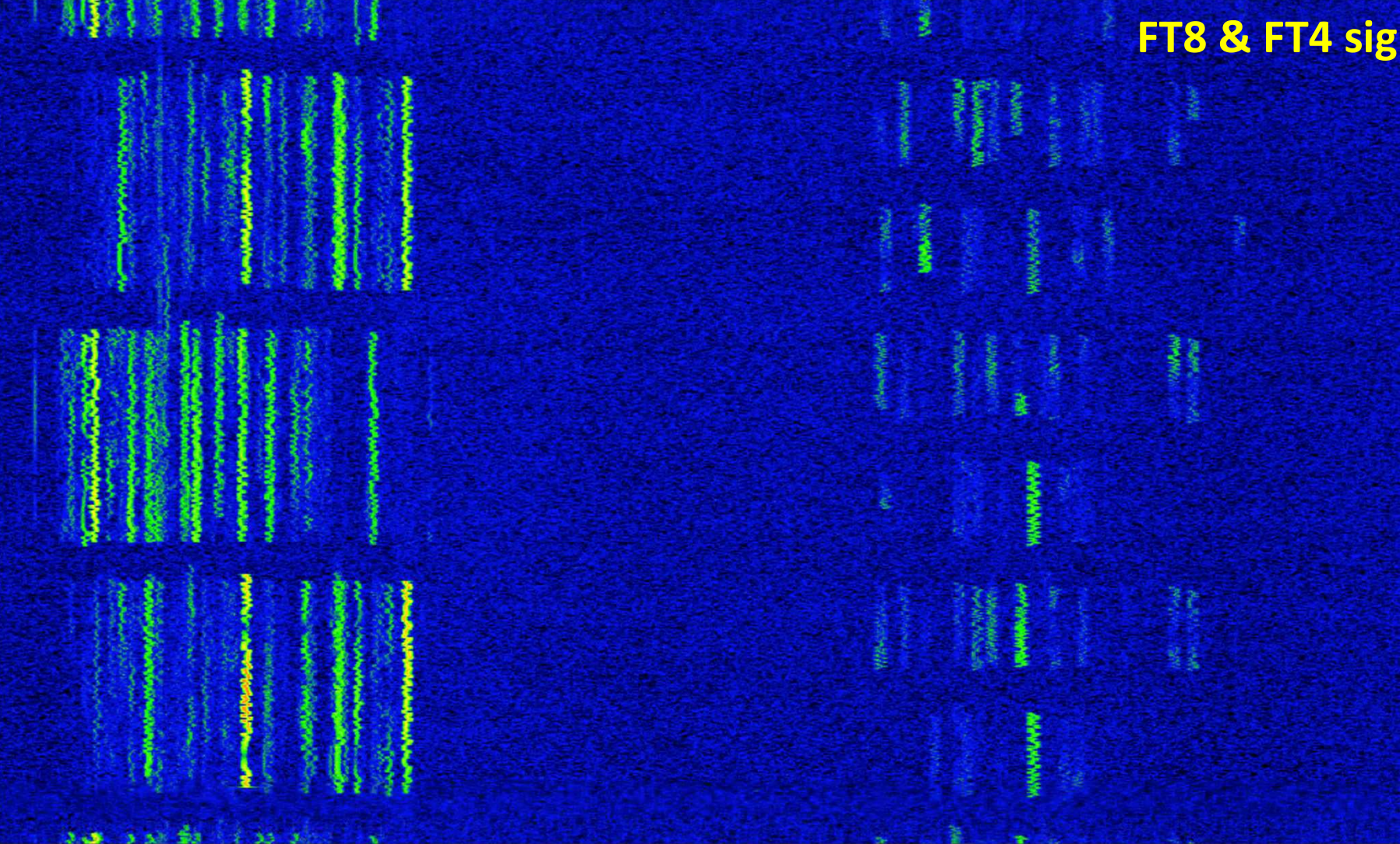
Filter
☒ Enable Filter
Center: 1348 Hz Sync
Width: 2696 Hz
Min: 0 Hz
Max: 2696 Hz

Decoding Home JS8 Last Tx: W6DMW: W1FVB HEARTBEAT SNR -17 6/10



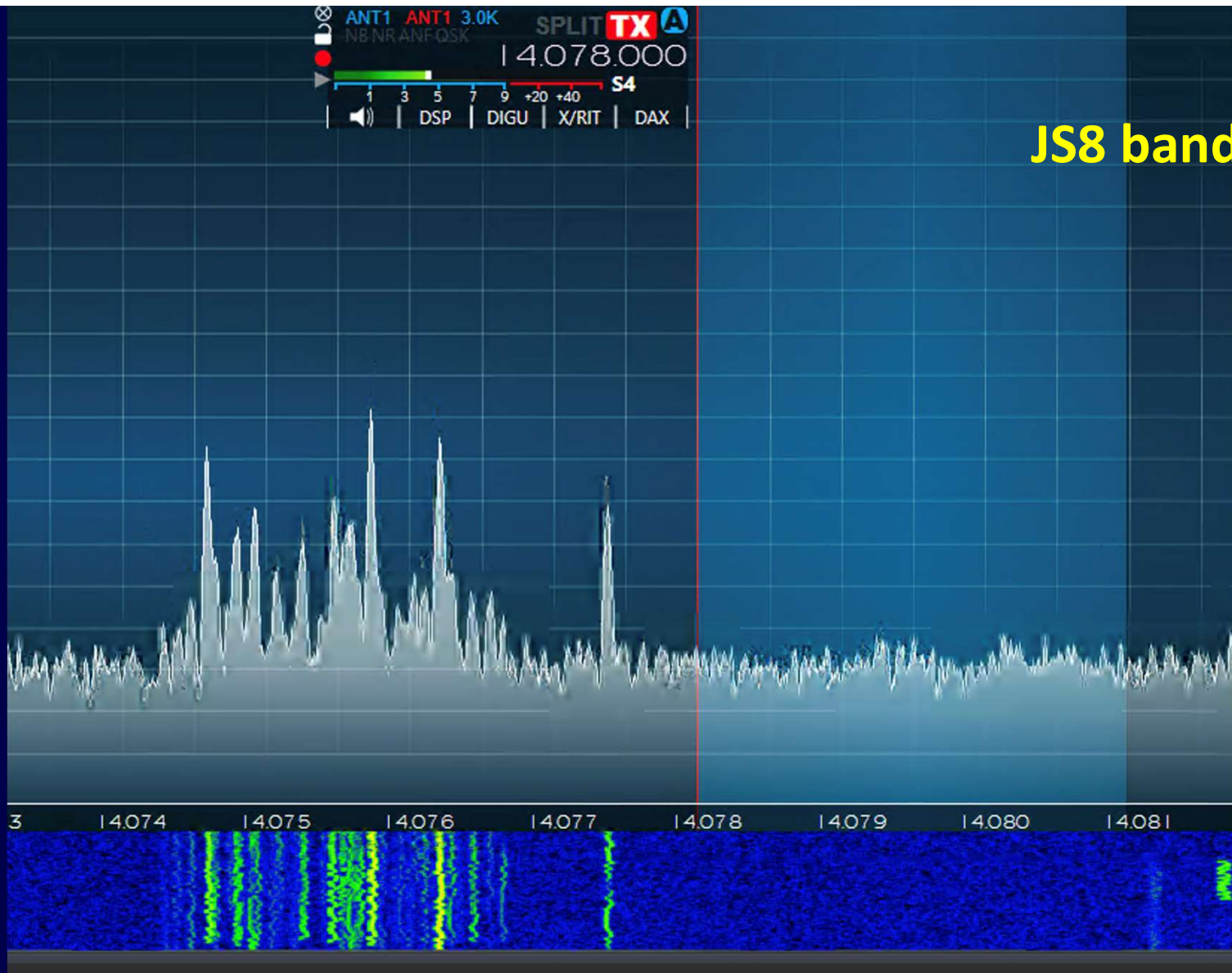
JS8 Setup

14074 14075 14076 14077 14078 14079 14080 14081 14082 14083 14084

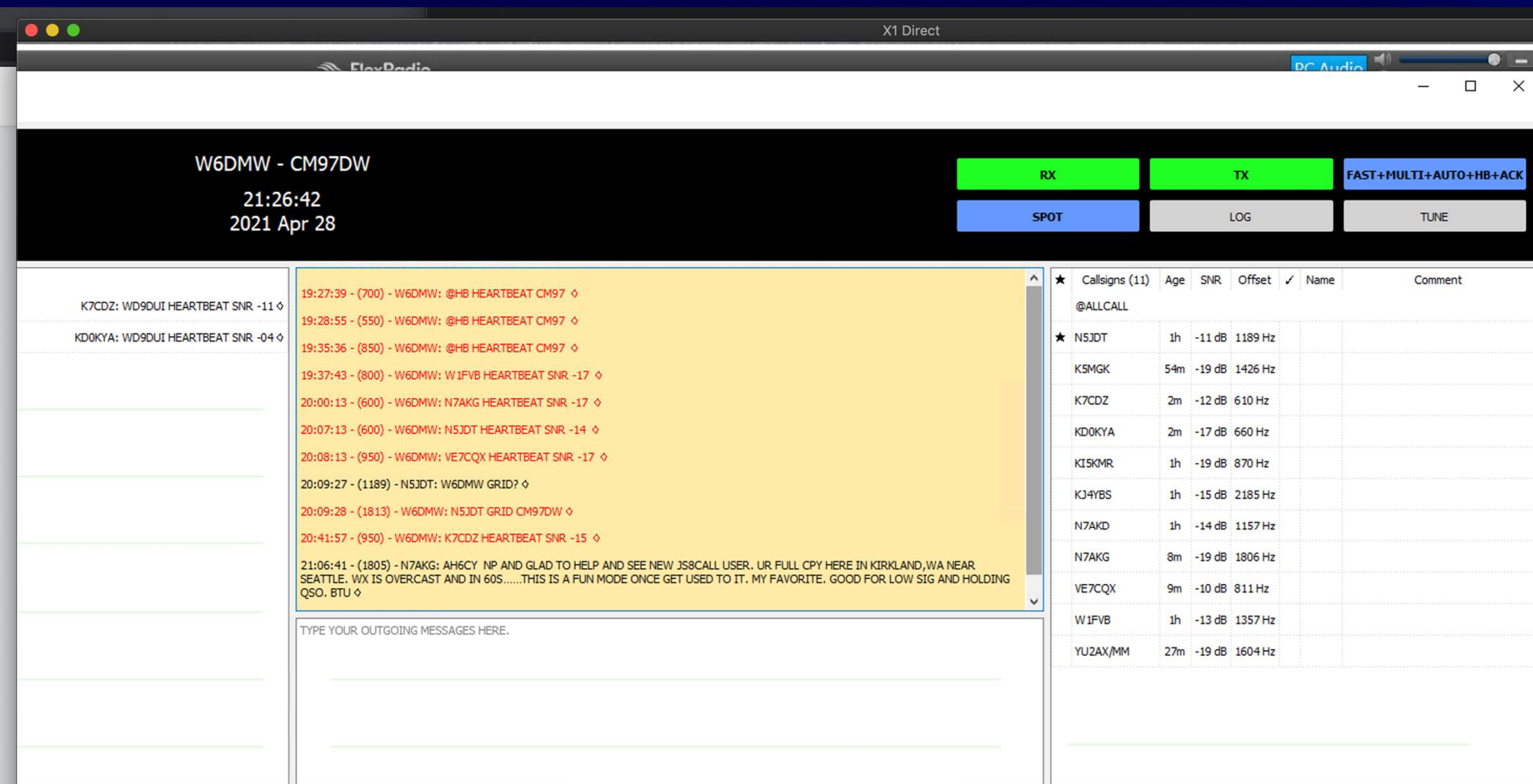


FT8 & FT4 signals

JS8 bandwidth



JS8 message



OK, now to open it up!

Other digital modes? Screen sharing or demos?