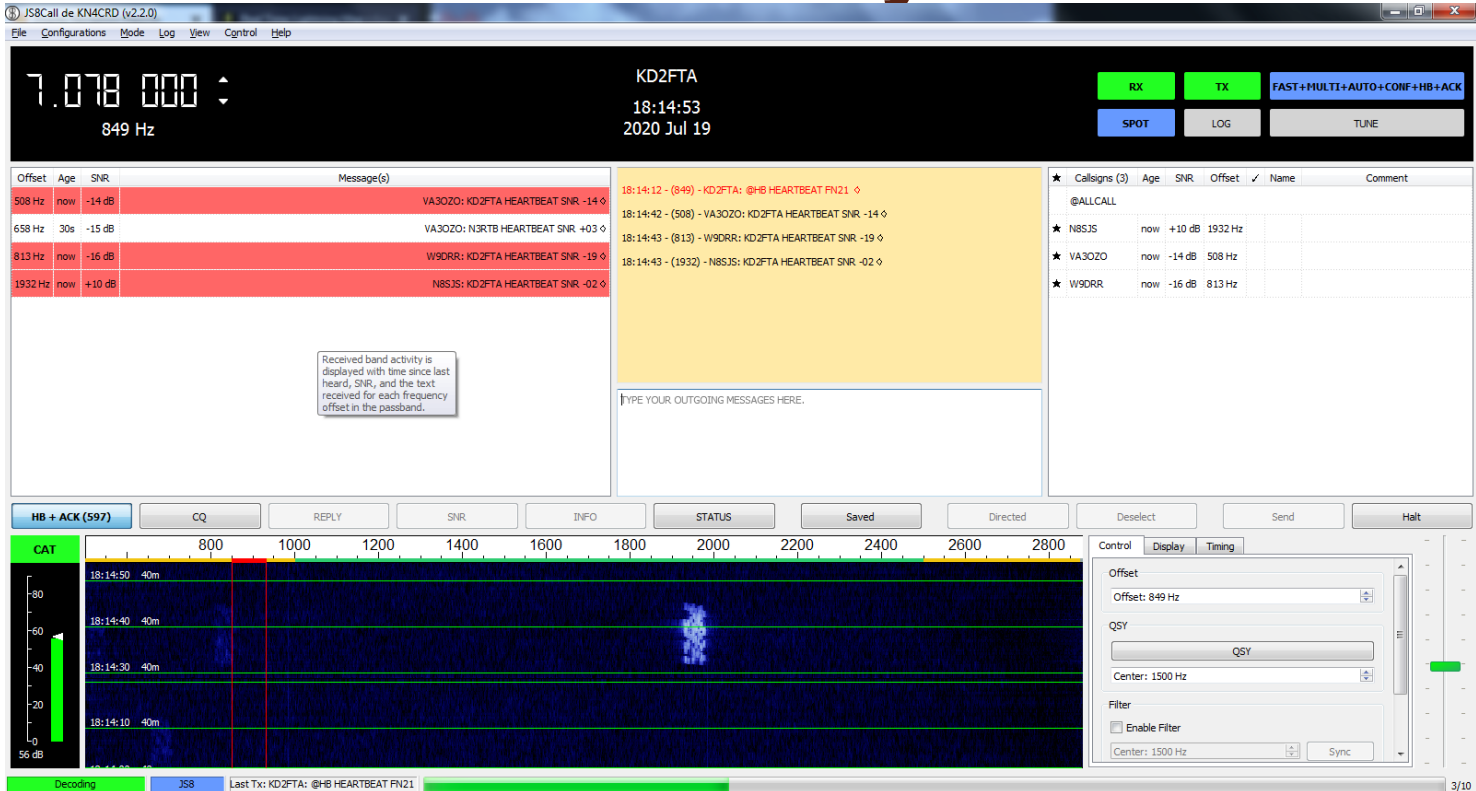


Welcome to JS8Call



An introductory presentation for EPARA by KD2FTA



First things first

- The majority of the information found in this presentation is copied from websites or publications authored by Jordan Shere KN4CRD, and Julian OH8STN.
- I take no responsibility for the accuracy of their work, but have used JS8Call sufficiently long enough to feel confident with the information I'm providing here.
- All rights belong to KN4CRD, and OH8STN, and I provide the proper acknowledgments

What is JS8Call?!

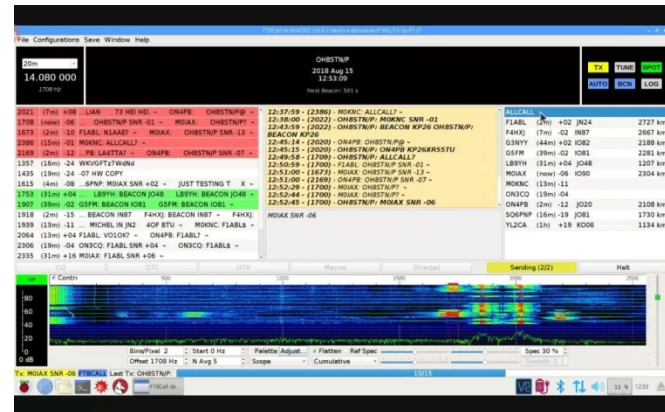
From the JS8Call Website:

“The idea with JS8Call is to take the robustness of FT8 mode and layer on a messaging and network protocol for weak signal *communication* on HF with a keyboard-to-keyboard interface. JS8Call is heavily inspired by VWSJT-X, Fldigi, and FSQCall and would not exist without the hard work and dedication of the many developers in the amateur radio community.”

FT8 Screen



JS8Call Screen





What is JS8Call?!

“JS8Call is a **derivative** of the WSJT-X application, restructured and redesigned for message passing using a custom FT8 modulation called JS8. It is not supported by nor endorsed by the WSJT-X development group. While the WSJT-X group maintains copyright over the original work and code, JS8Call is a derivative work licensed under and in accordance with the terms of the GPLv3 license”.

KN4CRD



What can HAMs do with JS8Call?

- If you've used FSQ, Fldigi or WSJT-X before, you'll feel right at home with JS8Call. The premise is that JS8Call uses JS8 modulated messages, breaking up long free-text messages into multiple **back-to-back** transmission cycles with a few seconds of silence between "frames".
– KN4CRD

What can HAMs do with JS8Call?

- **Mode Speed**

- JS8Call 2.0 introduced two new faster mode speeds for QSOs and 2.1 introduced a slow mode. The four speeds now available in JS8 are:
- Slow - 30 second frames - 25Hz bandwidth - and around 8WPM decoded down to -28dB
- Normal - 15 second frames - 50Hz bandwidth - and around 16WPM decoded down to -24dB
- Fast - 10 second frames - 80Hz bandwidth - and around 24WPM decoded down to -20dB
- Turbo- 6 second frames - 160Hz bandwidth - and around 40WPM decoded down to -18dB
- The intent of the faster speeds is to start your QSO in normal and "upgrade" to the faster speeds if conditions support it. If you have a modern PC with a performant CPU, you can optionally enable MULTI from the mode menu, allowing the decoder to decode all mode speeds at once.



What can HAMs do with JS8Call?

- “Two of general misconceptions about JS8 are its similarity to FT8, and its purpose. Often, operators don’t understand the point of JS8 since the assumption is, it must be nearly identical to FT8. This is where the discussion goes terribly wrong. There are features implemented in JS8, making it a magnificent mode for group communications, or managing remote stations in a grid down scenario.”
– OH8STN



What can HAMs do with JS8Call?

- “JS8Call stations can send out beacons at set intervals, announcing themselves to the network (Heart beats). Stations hearing that beacon or “in range” of a station, are announced and populated on your JS8Call screen.”
- “Stations having bi-directional Communications with your own station are listed with an asterisk on your JS8Call screen. At that point you can hover over a station listed on your screen, to see what stations it can hear directly. Your network just became bigger”!
- “Now your station not only has the stations you can hear directly, but also has access to the stations heard directly by stations hearing you”.

From OH8STN

14.078 000

652 Hz

KD2FTA

13:34:33

2020 Jul 19

RX

TX

FAST+MULTI+AUTO+CONF+HB

SPOT

LOG

TUNE

Offset	Age	SNR	Message(s)
656 Hz	now	-06 dB	K4NDZ: K7CDZ #7 TEST 95 < K4NDZ: K7CDZ #8 TEST 90 <

13:25:12 - (652) - K4NDZ: KD2FTA HEARTBEAT SNR +00 <

13:27:29 - (652) - KD2FTA: K4NDZ GOOD MORNING -DE KD2FTA <

13:28:28 - (652) - KD2FTA: K4NDZ SNR -04 <

13:28:52 - (652) - KD2FTA: K4NDZ HAVE A GREAT DAY 73 DE KD2FTA SK <

13:30:12 - (656) - K4NDZ: KD2FTA AGN? <

13:30:33 - (650) - KD2FTA: K4NDZ HAVE A GREAT DAY 73 DE KD2FTA SK <

13:31:42 - (656) - K4NDZ: KD2FTA LIKEWISE AND 73 <

13:33:12 - (656) - K4NDZ: K7CDZ #7 TEST 95 <

13:34:11 - (656) - K4NDZ: K7CDZ #8 TEST 90 <

TYPE YOUR OUTGOING DIRECTED MESSAGE TO K4NDZ HERE.

★	Callsigns (3)	Age	SNR	Offset	✓	Name	Comment
	@ALLCALL						
★	AD0KI	31m	-18 dB	867 Hz			
	BLIQ5JODA	48m	-28 dB	819 Hz			
★	K4NDZ	15s	-05 dB	656 Hz			

HB

CQ

REPLY

SNR

INFO

STATUS

Saved

Directed to K4NDZ

Deselect

Send (10s)

Halt

CAT

8001000120014001600180020002200240026002800

13:34:30 20m

13:34:20 20m

13:34:10 20m

13:34:00 20m

13:33:50 20m

57 dB

ControlDisplayTiming

Offset

Offset: 652 Hz

QSY

QSY

Center: 1500 Hz

Filter

Enable Filter

Center: 1500 Hz

Sync

Decoding

JS8

Last Tx: SK

3/10

12.0wpm / 90.0cpm

7.078 000
1932 HzKD2FTA
19:55:06
2020 Jul 19

RX

TX

FAST+MULTI+AUTO+CONF+HB

SPOT

LOG

TUNE

Offset	Age	SNR	Message(s)
1931 Hz	now	+05 dB	...OT OF JS8 WHILE I WAS FLOATING IN THE POOL. GOT BACK HOME AND MISSED THE FOOD! WAS GOING

19:46:00 - (1932) - N8SJS: KD2FTA YEA!! DOES WELL I USED TO DO ALOT OF PSK31 AND OLIVIA WAS GREAT BUT THIS WORKS MUCHO BETTER! ⬇

19:47:21 - (1932) - KD2FTA: N8SJS HEY RANDY IS IT VERY HOT IN OHIO TODAY? THE TEMPS HERE IN NORTHERN NJ ARE IN THE 90S BUT HEAT INDEX IS AROUND 100F BTU ⬇

19:49:28 - (1932) - N8SJS: KD2FTA YEA ITS 93 HRE RIGHT NOW AND MUGGY I HAD FLASHBACK AND THOUGHT I WAS ON VACA IN THAILAND ! ⬇

19:50:31 - (1932) - KD2FTA: N8SJS QSL ⬇

19:50:48 - (1932) - KD2FTA: N8SJS YEAH THAT'S AMAZING, THAILAND! I LOVE THAT FOOD LOL, AND JUST RECENTLY HAD INDIAN FOOD FOR THE FIRST TIME AND ALSO ENJOYED IT. COPY CONTINUES TO BE SUPER +07 DB BTU ⬇

19:53:08 - (1932) - N8SJS: KD2FTA YEA UR STIL +04 TO +12 HRE. YEA DID A WEEK IN THAILAND LAST YEAR HAD STATION HRE SETUP FOR REMOT DID ALOT OF JS8 WHILE I WAS FLOATING IN THE POOL. GOT BACK HOME AND MISSED THE FOOD! WAS GOING

TYPE YOUR OUTGOING DIRECTED MESSAGE TO N8SJS HERE.

★	Callsigns (10)	Age	SNR	Offset	✓	Name	Comment
	@ALLCALL						
	K4CDN	29m	-07 dB	2110 Hz			
★	KB8ECG	1h	-06 dB	569 Hz			
	KD8OFT	29m	-19 dB	915 Hz			
	NOVKR	1h	-13 dB	689 Hz			
★	N8SJS	1m	+09 dB	1932 Hz			
★	VA3OZO	9m	-14 dB	558 Hz			
	VE3TRQ	12m	-03 dB	608 Hz			
★	W0LEN	59m	-17 dB	854 Hz			
	W4MUP	21m	-04 dB	896 Hz			
★	W9DRR	1h	-16 dB	813 Hz			

HB

CQ

REPLY

SNR

INFO

STATUS

Saved

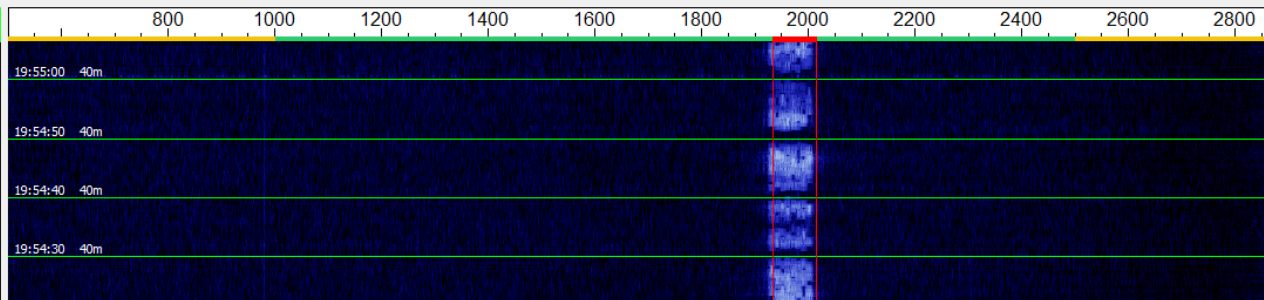
Directed to N8SJS

Deselect

Send (10s)

Halt

CAT

80
60
40
20
0
59 dB

Control Display Timing

Offset

Offset: 1932 Hz

QSY

Center: 1500 Hz

Filter

☐ Enable Filter

Center: 1500 Hz

6/10

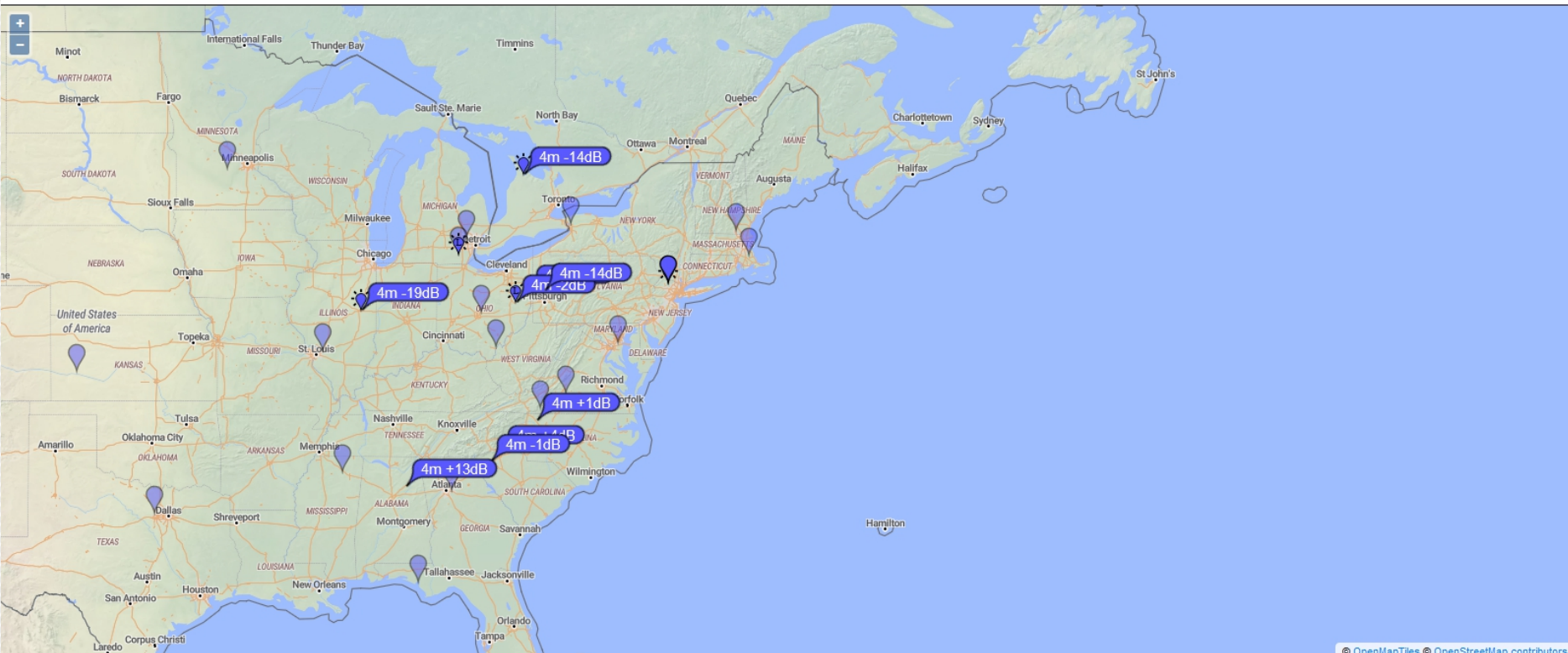
12.0wpm / 90.0cpm



On 40m ▾, show signals ▾, sent/rcvd by ▾, the callsign ▾ KD2FTA using JS8 ▾ over the last 15 minutes ▾ [Go!](#) [Display options](#) [Permalink](#)

Monitoring KD2FTA (last heard 4 mins ago). Automatic refresh in 5 minutes. Small markers are the 4 transmitters ([show logbook](#)) heard at KD2FTA (52 reports, 2 countries last 24 hours; 55 reports, 4 countries last week).

There are [85 active JS8 monitors](#) on 40m. [Show all JS8 on all bands](#). [Show all on all bands](#). [Legend](#)





What can HAMs do with JS8Call?

- The benefits of JS8Call are :
 - Robust text messaging in near real-time or delayed.
 - Near real-time status of stations within the emergency Network.
 - Multiple messaging routes for stations.
 - Every station in the emergency Network supports and contributes to the network.
 - Not reliant on infrastructure.
- Most Operators use JS8 for its keyboard QSO capabilities. Since the mode is something between psk31 and ft8, offering the free text capabilities of psk, with a weak signal capabilities of ft8, its an attractive option.
From OH8TSN

Let's get more into it...*

• Call Activity

- In the Call Activity, when a station responds to you a ★ indicator will be displayed next to their call sign. This helps you find, at a glance, other operators that are confirmed to be able to hear you.
- When a station is calling CQ, a ☎ indicator will be displayed next to their call sign for 5 minutes. This helps you find, at a glance, other operators that are looking to make contact.
- If a station has left you a message, a 📧 indicator will be displayed next to their call sign. You can read that message by right clicking on the station and clicking “Show Message Inbox”.
- Station distance and azimuth is computed from the first 6 digits of the maidenhead grid locators. This is an approximation describing an “area” on the map, not an exact point. JS8Call supports up to 12 digit locators for greater precision, but even then, the calculation will always remain an approximation.

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Let's get more into it...*

- **Waterfall**

- There is a waterfall at the bottom of the screen to show you the signals in your audio passband. You can click on the waterfall to set your audio frequency offset.
- There is also an option to QSY to that frequency by centering your selected audio offset to the rig passband center. This allows you to use narrow filters easily.

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Let's get more into it...*

- **Messages**

- The top yellow text box shows you messages that are either on the frequency offset you're on or who have directed a message to you (they sent a message that included your call sign).
- You type into the white box on the bottom to prepare a message for transmission.
- Normal FT8 character restrictions **do not** apply!
- The extended character set includes all printable uppercase ASCII (A-Z 0-9 Space ./?+-`~!@#\$%^&*()_=[]\{}|;:','<>) and Latin I (İ;ÀÁÂÃÄÅÆÇÈÉÊËÌÍÎÏÐÑÒÓÔÕÖØÙÚÛÜÝÞ). The message structure is variable encoded, so the most common characters take the least amount of space, and special characters take longer to send.

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Let's get into it more*...

- **Messages con't**

- As you type your message you'll see the send button display the transmission time it'll take to send your complete message.
- All you have to do is click send (or hit enter) to start transmitting on the next interval. As each frame is transmitted one after the other, the button will update with the amount of time left to transmit the message.
- JS8Call 2.0 supports type ahead, so you can start transmitting and continue typing your message as each frame is transmitted. Check summed messages like MSG or Relays cannot use type ahead.
- Because of this special variable encoding, messages in JS8Call cannot be decoded by WSJT-X. The same is also true, WSJT-X messages will not be shown in JS8Call.



Let's get more into it...*

- **Message Types**

- Messages come in three forms:
- standard JS8Call free text messages
- undirected JS8Call messages
- directed JS8Call messages

*KN4CRD



Let's get into it more*...

- **Standard Messages**

- Standard messages are free-text messages that do not start with a call sign or a directed command. These messages will only print at other station locations if they align their receive offset within 10Hz of your transmit offset. This operation is similar to other keyboard-to-keyboard digital modes, like Olivia, RTTY, and PSK.

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Let's get more into it...*

- Directed Messages
 - Directed messages are special JS8Call transmissions that automatically prefix your message with your call sign, similar to how FSQCall operates. Directed messages are useful for communicating in that you do not have to include your call sign in your message, allowing you to use more of the transmission frame(s) for actual message text, as well as alerting the recipient that a message was sent to them. As long as you are in the same passband, you do not have to be on the same frequency offset to receive a directed message.
 - To send a directed message, all you need to do is include the call sign of the receiving station as the first word in the message or select a call sign in your heard list to have it automatically prefixed.

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Demo

- Time for a DEMO