

JS8 and JS8Call As a Keyboard-to-Keyboard Communication Tool

JS8 is a digital mode based on FT8, and implemented by a derivative of the WSJT-X program called *JS8Call*. The name comes from the program *FSQCall* and the *FSQ* digital protocol in *FLDigi*. Both *JS8* and *FSQ* are weak signal keyboard-to-keyboard communication digital modes.

The mode and program were both the brainchild of Jordan Sherer KN4CRD. The initial release came out about two years ago, with a 2nd generation release due out any time now. There has been a steady progression of both features and UI improvements. A group of amateur operators are now helping Jordan to keep thing moving and improving.

As with WSJT-X, the software is available for multiple platforms, as well as in source form. See js8call.com for software and information.

Features

- FT8 modulation and FEC (forward error correction)
- FT8 Tx timing, 15 second periods
- Multiple 15 sec periods, as many as required for an arbitrary message
- Arbitrary text may be sent, of any length
- Text may be directed to a particular callsign, to print on their screen
- Text may be directed to a group ID, with all members of the group receiving the message
- Messages, including cell phone texting commands, may be forwarded to *APRS* nodes
- Messages may be stored on destination stations, or relayed through them, with multiple hops
- *Heartbeats* may be sent out periodically to test propagation. Stations will respond with SNR
- A station may respond (or not) with acks to messages, requests, and heartbeats

What's it Good For?

- Great for one-on-one ragchew, especially in challenging propagation conditions
- Very useful for directed nets, using heartbeats and directed group messages
- *Heartbeat* messages will build up a "*heard list*" of callsigns with their SNR
- You can select from the *heard list* to send directed messages, relays, or CQs
- There is a *CQ* type message that is very efficient
- Can send grid / location information to APRS-IS by sending to @APRSIS GRID
e.g. @APRSIS GRID FN04TV53
- Can send raw commands to APRS-IS by sending @APRSIS CMD (useful for text messages)
e.g. @APRSIS CMD :MSGTE :@5551212 TEST

How Good is JS8?

- Works to a SNR of -20 dB (and sometimes better). Reliable at -18 dB SNR
- Like FT8, 50mnHz wide 8-level MFSK signal, in a 3KHz bandwidth window
- Gets through and keeps the QSO going where many other modes won't
- 40m appears to be the current "*best*" location for contacts
- Frequency "*watering holes*" are built in, as in WSJT-X; 7.078, 14.078, etc.
- All *heartbeat* and *ack* traffic is kept between 500 – 1000 Hz (configurable)
- All message traffic is between 500 Hz and 3 KHz – lots of room for signals
- Includes an automatic clock drift tool to synch with a QSO partner or anyone else

HeartBeat

JS8Call de KN4CRD (v2.1.1)

7.078 000
500 Hz

VE3TRQ
18:12:49
2020 Jun 24

RX TX NORMAL+MULTI+AUTO+HB+ACK
SPOT LOG TUNE

Offset	Age	SNR	Speed	Message(s)
1798 Hz	3m	-08 dB	N	KD5UFQ: HB AUTO RELAY SPOT FM07
800 Hz	4m	-06 dB	S	WS3H: HB AUTO RELAY SPOT FM18
890 Hz	8m	+11 dB	N	KB8HTU: NOLSD ACK +03
1443 Hz	9m	-16 dB	N	NO1ZE: KV4ATV ACK -08
838 Hz	9m	+07 dB	N	KB8HTU: KV4ATV ACK -11

Heartbeat sent →

Offset	Age	SNR	Speed	Message(s)
17:52:42 - (600)				VE3TRQ: HB SPOT EN93
17:53:13 - (941)				KB8HTU: VE3TRQ ACK +08
17:55:46 - (600)				VE3TRQ: HB SPOT EN93
17:56:23 - (950)				VE3TRQ: HB SPOT EN93
18:08:27 - (850)				VE3TRQ: WS3H ACK -06
18:08:59 - (550)				VE3TRQ: KD5UFQ ACK -08
18:12:16 - (650)				VE3TRQ: HB AUTO RELAY SPOT EN93
18:12:41 - (500)				VE3TRQ: HB AUTO RELAY SPOT EN93

VE3TRQ: HB AUTO RELAY SPOT EN93

Callsigns (274)	Age	SNR	Offset
@NET			
@RAGCHEW			
AE4HZ	30d	-04 dB	1826 H
NAVLF	92d	+05 dB	1363 H
KD5UFQ	3m	-08 dB	1798 Hz
WS3H	4m	-06 dB	800 Hz
KB8HTU	8m	+11 dB	890 Hz
NO1ZE	9m	-16 dB	1443 Hz
NOJUH	38m	-20 dB	851 Hz
WBAPP	39m	+05 dB	1939 Hz
W9HVV	1h	-15 dB	1591 Hz
KV4ATV	1h	-20 dB	888 Hz
W8WQU	1h	-02 dB	2032 Hz
KM4ACK	1h	-21 dB	596 Hz

HB + ACK CQ REPLY SNR INFO Saved Directed Deselect Sending (11s) Halt

Tx: VE3TRQ: HB AUTO RELAY SPOT EN93 JS8 Last Tx: VE3TRQ: HB AUTO RELAY SPOT EN93 4/15 12.0wpm / 66.0cpm

JS8Call de KN4CRD (v2.1.1)

7.078 000
1350 Hz

VE3TRQ
18:13:37
2020 Jun 24

RX TX NORMAL+MULTI+AUTO+HB+ACK
SPOT LOG TUNE

Offset	Age	SNR	Speed	Message(s)
801 Hz	now	-11 dB	S	WS3H: VE3TRQ ACK -20
841 Hz	15s	+03 dB	N	KB8HTU: VE3TRQ ACK +02
1798 Hz	4m	-08 dB	N	KD5UFQ: HB AUTO RELAY SPOT FM07
800 Hz	5m	-06 dB	S	WS3H: HB AUTO RELAY SPOT FM18
890 Hz	9m	+11 dB	N	KB8HTU: NOLSD ACK +03

Heartbeat response ⇒

Offset	Age	SNR	Speed	Message(s)
17:55:46 - (600)				VE3TRQ: HB SPOT EN93
17:56:23 - (950)				VE3TRQ: HB SPOT EN93
18:08:27 - (850)				VE3TRQ: WS3H ACK -06
18:08:59 - (550)				VE3TRQ: KD5UFQ ACK -08
18:12:16 - (650)				VE3TRQ: HB AUTO RELAY SPOT EN93
18:12:41 - (500)				VE3TRQ: HB AUTO RELAY SPOT EN93
18:13:13 - (841)				KB8HTU: VE3TRQ ACK +02
18:13:26 - (801)				WS3H: VE3TRQ ACK -20

TYPE YOUR OUTGOING MESSAGES HERE.

Callsigns (274)	Age	SNR	Offset
@NET			
@RAGCHEW			
AE4HZ	30d	-04 dB	1826 H
NAVLF	92d	+05 dB	1363 H
WS3H	now	-11 dB	801 Hz
KB8HTU	15s	+03 dB	841 Hz
KD5UFQ	4m	-08 dB	1798 Hz
NO1ZE	10m	-16 dB	1443 Hz
NOJUH	39m	-20 dB	851 Hz
WBAPP	39m	+05 dB	1939 Hz
W9HVV	1h	-15 dB	1591 Hz
KV4ATV	1h	-20 dB	888 Hz
W8WQU	1h	-02 dB	2032 Hz
KM4ACK	1h	-21 dB	596 Hz

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

Receiving JS8 Last Tx: VE3TRQ: HB AUTO RELAY SPOT EN93 7/15

Set a Custom Frequency...

160m: 1.842 000 MHz
80m: 3.578 000 MHz
40m: 7.078 000 MHz
30m: 10.130 000 MHz
20m: 14.078 000 MHz
17m: 18.104 000 MHz
15m: 21.078 000 MHz
12m: 24.922 000 MHz
10m: 28.078 000 MHz
6m: 50.318 000 MHz
2m: 144.178 000 MHz

JS8Call Frequencies

Suggested “watering hole” frequencies are built in to the application. This ensures that QSOs happen in the same frequency range and will be seen.

JS8Call Saved Messages (Macros)

1E ONS , SNR <SNR>, 73 GL, TED VE3TRQ
1E ONS, 73 GL, TED
SNR <SNR>, WATERLOO, ON , THKS 73 GL, TED, 25W
TNX 73 - TED

Edit Saved Messages

Save Current Message

JS8Call Stored Message Box

Messages: WA8WQU

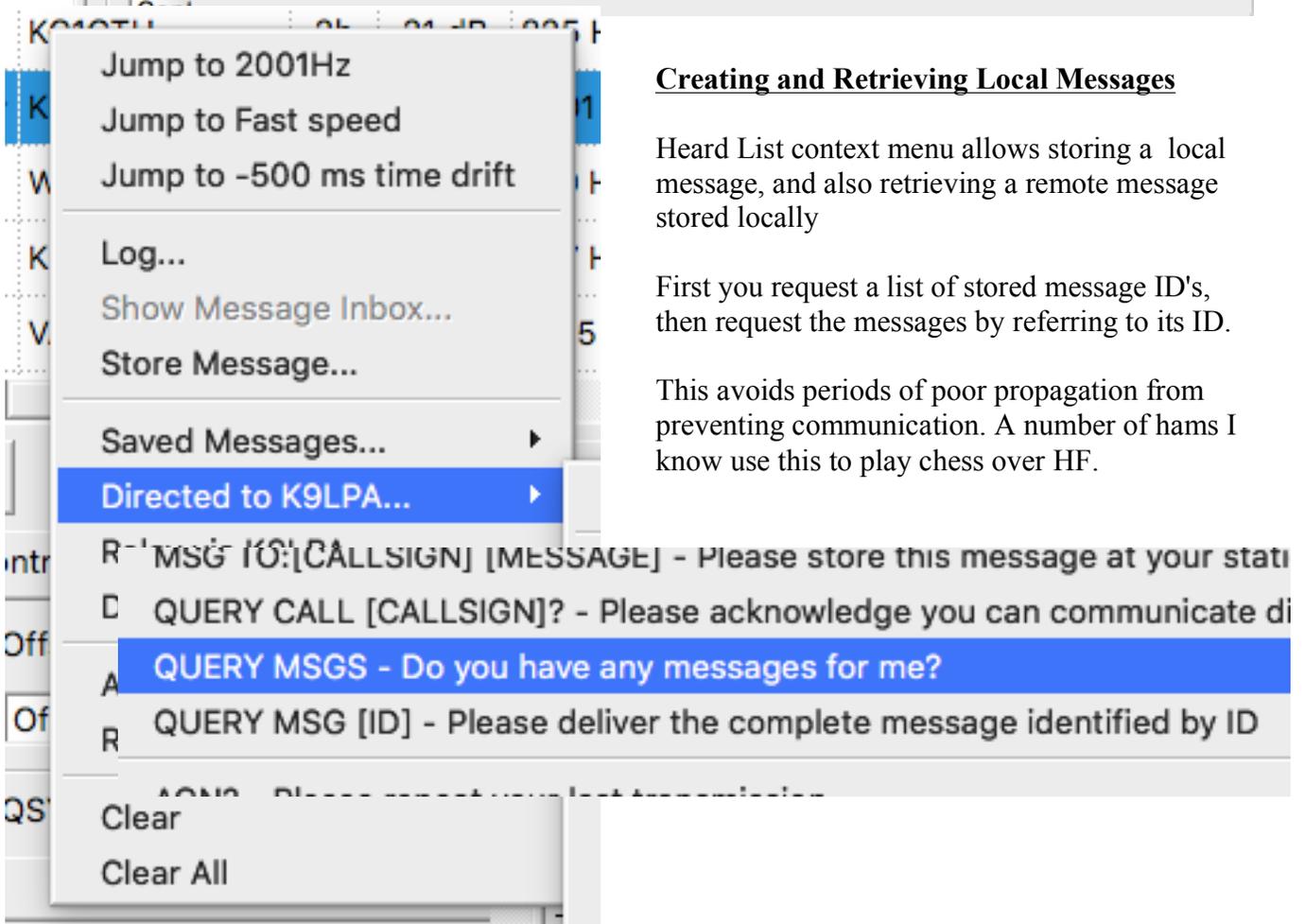
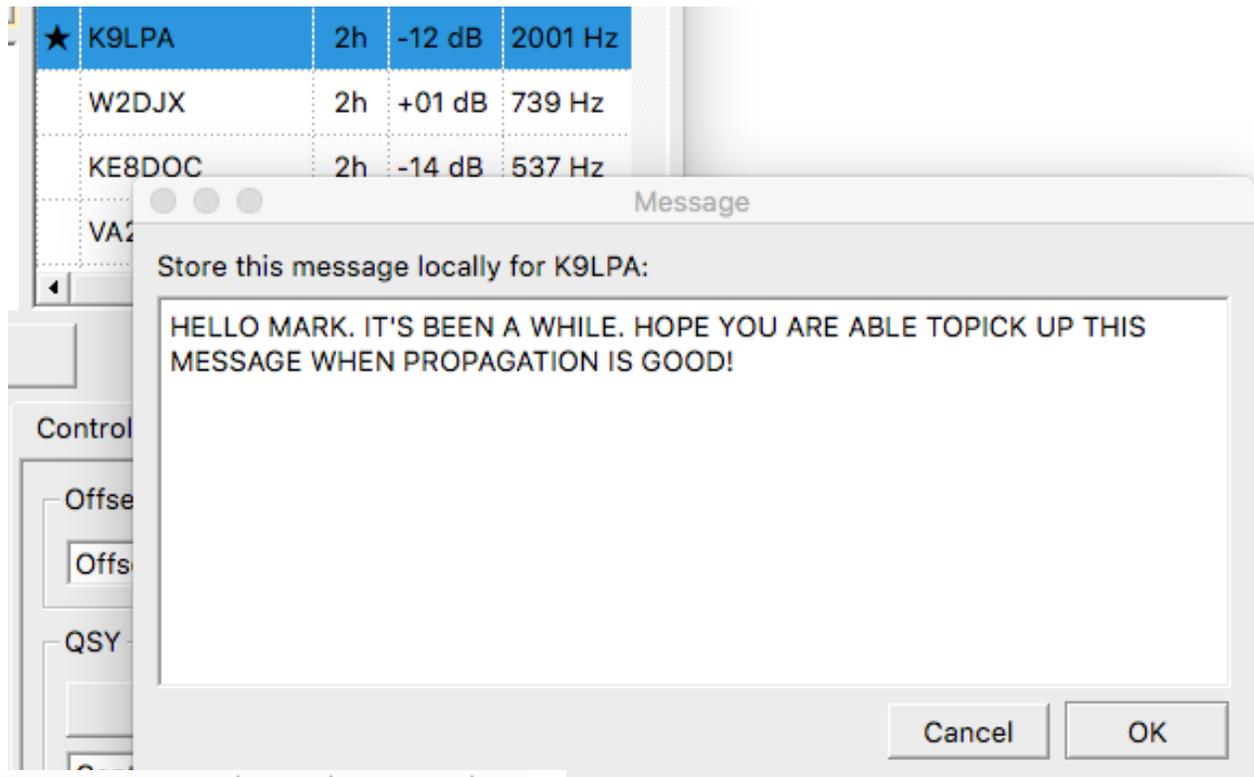
ID	Date	Frequency	From	To	Message
32	Wed Jun 17 16:52:43 2020	7.078 000 MHz	WA8WQU	VE3TRQ	FORGOT ABT UR GRAVE ANTENNA. U WERE +17DB ...
31	Wed Jun 17 16:45:58 2020	7.078 000 MHz	WA8WQU	VE3TRQ	DOWN FROM WHERE? KITCHEN IN BASEMENT? :-)
30	Wed Jun 17 16:40:28 2020	7.078 000 MHz	WA8WQU	VE3TRQ	SUNSHINE IS ALMOST TOO MUCH FOR A BIKE RIDE...
29	Wed Jun 17 16:37:13 2020	7.078 000 MHz	WA8WQU	VE3TRQ	DOING WELL HERE. HOPE ALL IS WELL THERE. (LO...
28	Wed Jun 17 16:33:58 2020	7.078 000 MHz	WA8WQU	VE3TRQ	G A TED, SURF'S UP: SNR +15 FOR MILLISECOND. 7...

FORGOT ABT UR GRAVE ANTENNA. U WERE +17DB HERE, GOOD SURFING. OK. IM GONNA GET SOME TUNA MYSELF, HAPPY HEALTHY AND SAFE WEEK. TNX, 73.

Reply

Directed messages to the station are collected and may be read and responded to later.

JS8Call allows you to save a message for a given callsign, waiting for better propagation to be picked up.



Creating and Retrieving Local Messages

Heard List context menu allows storing a local message, and also retrieving a remote message stored locally

First you request a list of stored message ID's, then request the messages by referring to its ID.

This avoids periods of poor propagation from preventing communication. A number of hams I know use this to play chess over HF.

APRS - JS8Call Interface

JS8Call can send APRS location messages, as well as arbitrary commands such as send a text message. Of course your JS8 message must be received by someone with reporting enabled.

The @APRSIS group is an experimental feature allowing APRS messages to be spotted to the APRS-IS gateway. Two message commands are available, GRID for spotting your callsign at a specific location and CMD for sending a raw APRS packet.

- For example, any station receiving my message:

```
VE3TRQ: @APRSIS GRID EN93RL21
```

Will submit that spot to JS8NET and spot my callsign at that location to the APRS network. You would then be able to query that spot in an APRS client, like <https://aprs.fi>

- To send a raw frame (say a direct APRS message to SMSGTE), we'd send:

```
VE3TRQ: @APRSIS CMD :SMSGTE :@5551212 TEST
```

Everything after the CMD frame is forwarded in an APRS packet, like:

```
VE3TRQ>APZJS8,qAS,VE3TRQ::SMSGTE :@5551212 TEST
```

and thus send an SMS message "Test" to 555-1212.

More information

- In the manual

<https://docs.google.com/document/d/159S4wqMUVdMA7qBgaSWmU-iDI4C9wd4CuWnetN68O9U/edit?usp=sharing>

- On the web site

<http://js8call.com>