

- Nets are valuable.
- Digital modes are valuable.



- So how might you hold a digital net to check-in stations and send text messages and/or files?



- So how might you hold a digital net to check-in stations and send text messages and/or files?

Lots of possibilities: but there is one that is on the “fun” side ...



Fun!

# FSQ Digital Mode “Fast Simple QSO”

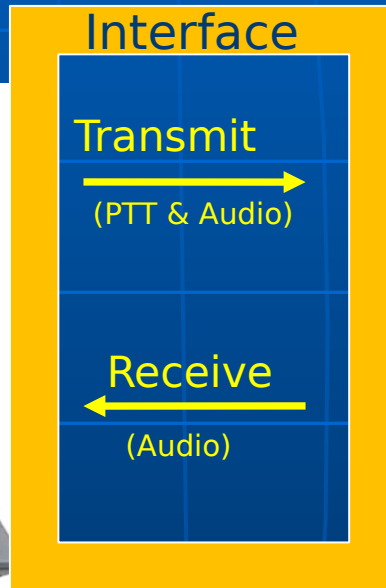
Hoop K9QJS  
[K9QJS@arrl.net](mailto:K9QJS@arrl.net)



# Digital Mode Implementation



Computer & Software

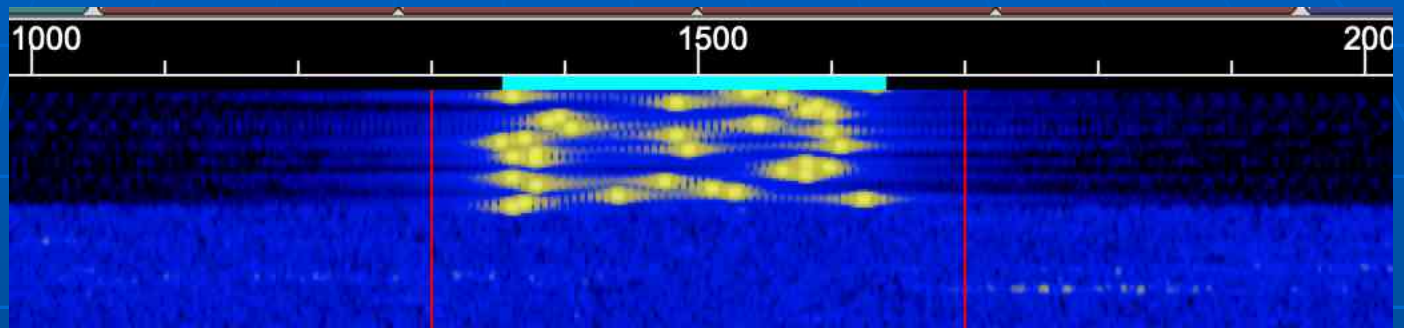


HF or VHF/UHF Transceiver

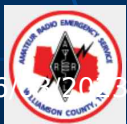
Details of config are not discussed in these slides.



- What is FSQ?



- Frequency-shift digital mode
- Rather like phone text messaging
- 300 Hz wide and 20 to 60 wpm
- "Highly suited to net operation"
- Implemented by FLDIGI and FSQCall
- No error checking to speak of



- Benefits of FSQ
  - No sync, moderately drift proof, & arbitrary sending speed
  - Supported by multi-platform FLDIGI
  - "Heard stations" and signal strength
  - Trigger commands can be sent to listening stations
    - Inquire of listening stations
    - Send files & images
    - Relay capability



- History of FSQ

- First frequency shift digital mode RTTY – radio teletype
- Mode MFSK16 in 1999 to improve DX QSOs, spec'd by Murray ZL1BPU
- Proliferation of other MFSK modes
- FSQ in 2014 by Con ZL2AFP and ZL1BPU (sk 2022)





- FSQ appears to have influenced (IMO)
  - JS8Call – FT8-derivative chat mode
  - VarAC – Vara chat mode
- Use FSQ:
  - On HF in data mode.  
VFO Frequencies in Americas  
(Source: Facebook group)
    - 3.594 MHz, 7.105 MHz, 10.144 MHz  
7.107 MHz suggested middle TN
  - On VHF/UHF in FM mode
    - Suggest 145.58 MHz simplex



# FSQ Mode FLDIGI implementation

FSQ Mode

The screenshot displays the FLDIGI software interface with the following components:

- Top Panel:** Shows the frequency **7107.000** and various control buttons like **On**, **Off**, **In**, **Out**, **Cnty/Cntry**, and **Notes**.
- Received text panel:** A yellow area containing received messages such as "allcall jon do you copy?" and "kk4aiz: Hello K9QJS this is kk4aiz".
- Transmitted text panel:** A light blue area for typing and sending messages.
- Monitor, FSQ-On, Active:** A control panel with buttons for **FSQ-ON**, **ACTIVE**, **MON**, **QTH**, **QTC**, and **CQ**.
- Waterfall:** A spectral display at the bottom showing signal activity, with a yellow arrow pointing to the **Noise floor & Squelch** level.
- FSQ Mode:** A label at the bottom left with a red arrow pointing to the **FSQ-6** button.

Received text panel

Heard list panel with sig strength

Type here - Transmitted text panel

Monitor, FSQ-On, Active

FSQ Mode

Waterfall

Noise floor & Squelch

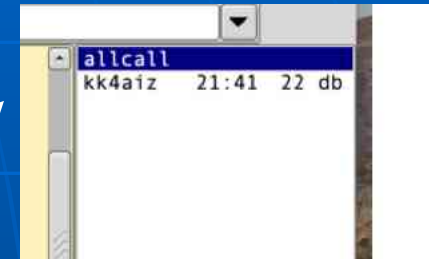
# WHAT YOU TYPE

- Undirected Mode

**allcall**

- Directed Mode

**kk4aiz**



Heard List Panel

- double-click on "allcall"  
or "kk4aiz"

- FSQ Trigger Commands - 1 char

# SPACE is a command!

allcallcan anyone hear me? Is NOT correct.

allcall can anyone hear me? IS CORRECT

Will appear in  
receive text panel



Space after "allcall" or callsign

# WHAT FSQ TRANSMITS

- Undirected Mode

k9qjs:39allcall can anyone hear me?<BS>



“39” - Unique checksum-like identifier

- Directed Mode

k9qjs:39kk4aiz can you hear me?<BS>

# FSQ Mode FLDIGI implementation

7107.000

Received text panel

Heard list panel with sig strength

Type here - Transmitted text panel

Monitor, FSQ-On, Active

FSQ Mode

Waterfall

Noise floor & squelch slider

FSQ-6 06/03/2025



# FLDIGI Optional Monitor Window

The screenshot shows a window titled "FSQ monitor" with a yellow background. The text inside is a log of radio communication. Red arrows point to specific lines of text with explanatory labels:

- A red arrow points to the line "k9qjs:39allcall cq cq cq de k9qjs <BS> zb.td5tolVjCeqike:h`<LF>" with the label "Sending station callsign".
- A red arrow points to the line "k9qjs:39allcalljon - this is working perfectly. great copy on you. signal report for you is 19 db <BS> qzvs {<LF>" with the label "NOT CORRECT! Won't appear in received text panel."
- A red arrow points to the line "k9qjs de kk4aiz this is another test of the kessell broadcasting company ... not. <BS><eot> hk <LF>" with the label "Allcall" or callsign of directed station".

The text in the window includes:

```
k9qjs:39;/:/';./;:;./;:;: <BS> cr.+ ehkq3qjbbr <LF>
k9qjs:39allcall cq cq cq de k9qjs <BS> zb.td5tolVjCeqike:h`<LF>
v=jyausa=U±da.ce zfwmTfok nlcqgqx[v h<LF>
01/05 21:41:21 <bot>9 <LF>
01/05 21:41:22 <bot>kk4aiz:1callcall Hello K9QJS this is kk4aiz <BS><eot> drlsksFnsn
amynptolxdR-dztd<LF>
klw~<LF>
d (aukb)aggdgcavawbbvb rolwnirxuks <LF>
01/05 21:42:07 <bot>b<LF>
ey<LF>
J<LF>
gg.zbrhrtauw<LF>
uatc xj .mmwabybaezvs=qsale <LF>
01/05 21:42:43 <bot>kk4aiz:1callcall k9qjs de kk4aiz this is another test of the kessell
broadcasting company ... not. <BS><eot> hk <LF>
k9qjs:39allcalljon - this is working perfectly. great copy on you. signal report for you is
19 db <BS> qzvs {<LF>
e4xu
```

Close

# • FSQ Trigger Command Example

\* Turn FSQ “active” on and send ACK

allcall\* Heard stations will send “ACK”  
tho there may be some “contention”  
w/ multiple stations trying to  
transmit at same time.



# • FSQ Trigger Command Example

? Return signal report from callsign

callsign? "Callsign" to respond w/ signal report

- FSQ Trigger Command Example

\$ Ask stations to respond w/ heard list \*

callsign\$ callsign station to respond w/ heard list

- FSQ Trigger Command Example

;  
Station to retransmit text

**callsign1;callsign2 text** Callsign1 to retransmit “text”  
to callsign2

**callsign1;callsign2\$** Callsign1 to retransmit to callsign2  
a request for callsign2 heard list

# • FSQ Operating Recommendations

- Use lowercase (transmits faster)  
esp. callsigns  
FSQ is CASE SENSITIVE! k9qjs is not K9QJS
- Use “allcall” for normal chat
- Short messages
- Use CW ‘shorthand’ and Q-signals
- Use FLDIGI TX “Time out” in config



# FSQ Configuration

Speed

Center freq

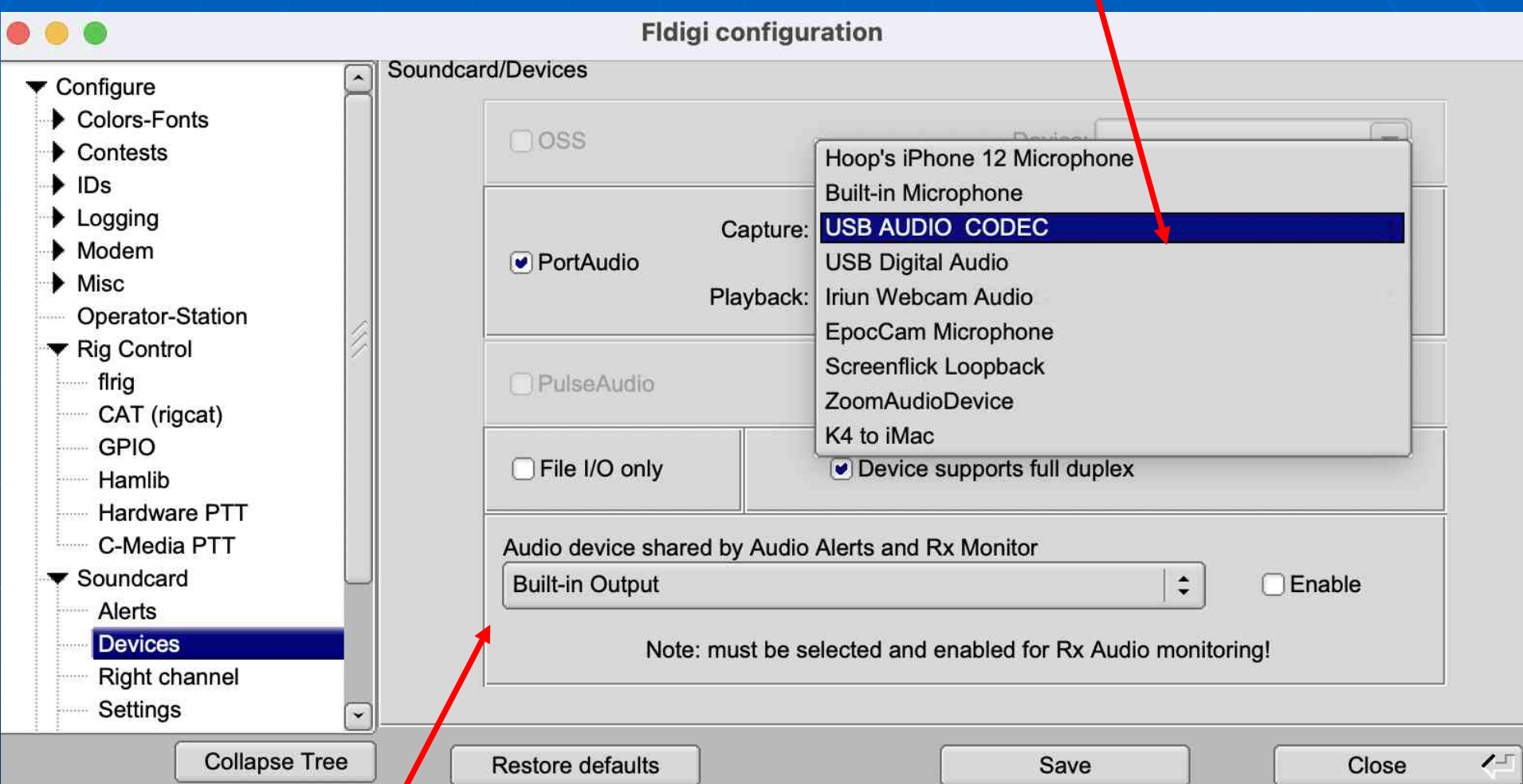
Lower case

Stop transmission after "x" secs

Delays your transmission until clear frequency (?)

# FLDIGI Audio

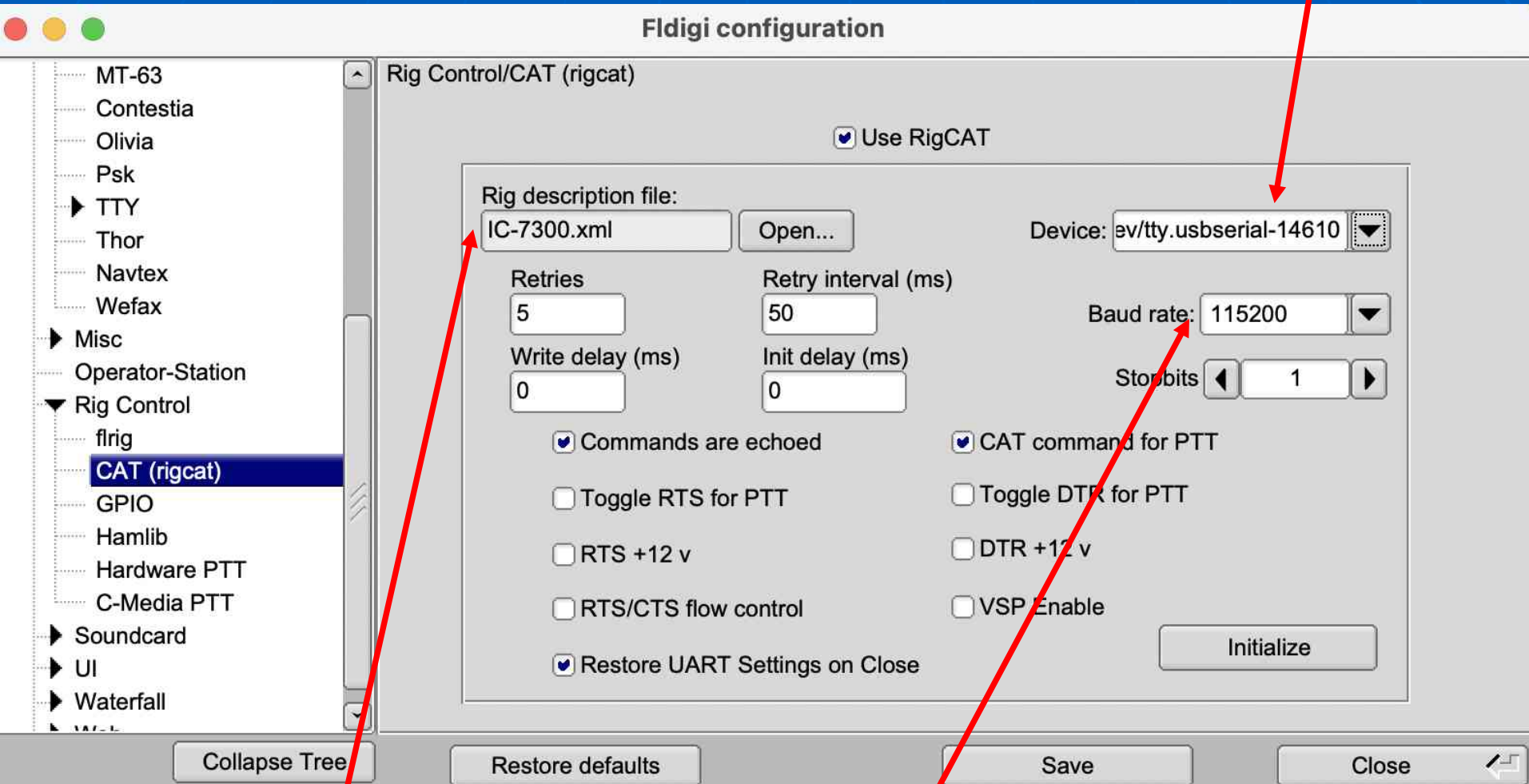
Audio in/out



Computer speaker typically

# FLDIGI Rig Control

Port



Rigcat xml file

Baud rate MUST match transceiver rate

- Next Steps
  - Want to give it a try and have some new digital fun?
  - Pick a time and frequency and get on the air!
  - FSQ works fine in FM mode on 2m. Works thru repeaters, too, though permission needed.





## • Resources

- Facebook group

<https://www.facebook.com/groups/fsq.on.hf>

- ZL2AFP FSQ

<https://www.qsl.net/zl1bpu/MFSK/FSQweb.htm>

- FSQ Tutorial (faint font though)

<http://n0jds.com/fsq-tutorial/>

- FLDIGI section on FSQ

[http://www.w1hkj.com/FldigiHelp/fsq\\_page.html](http://www.w1hkj.com/FldigiHelp/fsq_page.html)

- FSQ Cheat sheets from K9QJS@arrl.net

- Sounds of digital modes (excl FSQ)

<http://www.w1hkj.com/Modes/index.htm>

