



The Radio Hill Gazette

A publication of the Schaumburg Ham Radio Club (SARC)
January 2018

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From the Editor

Happy New Year to all, we are almost over with January as I write this months RHG and with the cold weather I wonder about Solar Minimum causing a mini ice age, but we shall see on that one. Next weekend is our annual Winter Field Day which starts on at 9:30AM, Saturday January 27th, at the Schaumburg Recreation Center. For anyone new who hasn't been to this, you'll find us in the Northwest area of the SRC campus near a gazebo setting up. Start time for the actual contest is at 1pm CST. I encourage everyone interested in stopping by, and feel free to get on the air with one of our stations we'll be setting up. We could use the help too in setting up the antennas, and getting tarps around the gazebo to block some of the wind.

In this month's edition, it's a little short on some content, but I will be going over the new FT-8 mode in using FT-8. FT-8 is a new digital mode and it's become very popular in the Ham community. It's a great alternative for those days when you turn on your rig and find that the band seems as dead as the stone ages.

Mike K9KQX

From the President

2017 Kept our club busy. Take a look at some of what we accomplished.

- A new net script was implemented and incentives were added for checking in. A total of 557 check ins, or about 14 per net.
- We ran a successful Field Day at a new site. This took a lot of effort moving equipment from our usual location. Total QSO count was 607 with 2890 points earned by 35 participants.
- The VE team granted or upgraded a total of 68 licenses. Thanks to everyone on the team for their dedication on Saturdays.
- Several club members helped to teach a technician class this fall, with at least 3 students getting a license from the class.
- We served the community through 4 public service events. Heat, cold, wind and rain were all battled as part of these events.
- We continued to learn about our repeater and its propagation. And we've put in place several upgrades, some of which will be completed as the weather warms up.
- The construction project continues to have great attendance and is an excellent resource for any ham related questions, even if you're not constructing or fixing anything.

Let's make 2018 another productive year!

Matt
AC9IG



Miscellaneous activities / updates

Construction Project Gary N9VU

Next CP meeting will be Saturday, February 10th and February 24th from 8am till noon.
Location is at the Schaumburg Tennis Plus, 1416 Payne Rd, Schaumburg, IL

Ebay Sales: When time is available at the CP I will go through the closet at the potential sales of items in the far right closet. It's been mounting up and before we lose our space in our storage areas, now may be a good time to go through and prepare some SARC and/or Ebay auctions [ed. There are some recent SK estate donations currently being cared-for in member's garages that can also be evaluated for potential sales].

EMCOMM Bob Langsfeld WB9TZC

Reported on several emergency preparedness events. Monthly Round Table meetings continue at the Hoffman Estates Police Station.

NWCD Volunteer coordinators met last month. I believe ARES is the closest of the groups to resolve all the issues of joint training, exercises and standards. I see this a long way off but it was discussed. One of the biggest challenges was volunteer liability [indemnification of the volunteer's culpability] differences between the various agencies.

Repeater updates - Kent W9KAO reports he's working on a time-out for repeater control. There is a glitch in the link radio system. Plan is to link PL and squelch together and hope the software can handle it. Kenwood TK820 radio interface is the challenge and requesting any engineering capability from the membership.

President's Report - Matt AC9IG will be working to use a recent donation in organizing the sponsoring of two people for W9DXCC this coming year. Matt will continue his search for members able to assist with efforts in developing a more-modern site for us.

Public Service - Rob N9MVO: Rob N9MVO: All Public Service events are over for the year. Next years public service events start in April and May of 2018

Social: Roger Ryan W9RDR not present. Buona Beef has been confirmed for the January Christmas Party on the 18th

Education: Leo N9NBH last reported looking to hold a General Class early next year. Currently trying to coordinate with Library for space again.

Net Check-ins— Leo N9NBH

SARC Net Check In's For Thursday, January 11th, 2017:

The following hams checked in to the net this evening.
N9NBH Leo (Net Control)

Thank you to the following hams that checked in to the net,

N9NBH	Leo
KB9RGU	Jim
W0RI	Dirk
KD9HIJ	Ken
N9VU	Gary
K9JML	Jim



K9KQX	Mike
WQ9M	Mark
KC9SOA	Mike

VE Testing Results

VE Testing: John Shofield provided the following report: **Results January 6th, 2017**

Name	Call	Class
Niese, Harry A	KB9IFK	General
Boyle, Jason J	KD9JYR	Technician
Whelan, William P	KD9JYS	General
Anen, Bradley J	W9BJA	Extra
DeJohn, Joseph D	KD9JYT	Technician
Ottens, Hendrik D	KD9JYU	Technician

Class	
Technician	4
General	3
Extra	1
Total	8

Next examination date: February 3rd, 2018

All of us at SARC would like to congratulate all those that received or upgraded their license this month, and we welcome you to the amateur radio community. Hope to hear you on the air. Should you have any questions, come join SARC at our regular monthly meeting on the 3rd Thursday of the month or stop in at one of the Construction Meetings. Check the [SARC website](#) for times and locations.



WSJT-X and FT8 mode

Mike, K9KQX

There's a new digital mode in town and its causing quite a bit of activity on the bands during this low sun spot cycle. FT8 is the latest mode from Princeton University Physics department. It's similar to JT65 mode for weak signal work, but the timing needed for QSO exchange is drastically shorter.

For those not familiar with either, these particular digital modes are great for weak signal work, with low or modest power necessary to make a contact, it's not a mode for rag chew mode as all transmissions are canned messages with Grid Locator, and signal report based on dB.

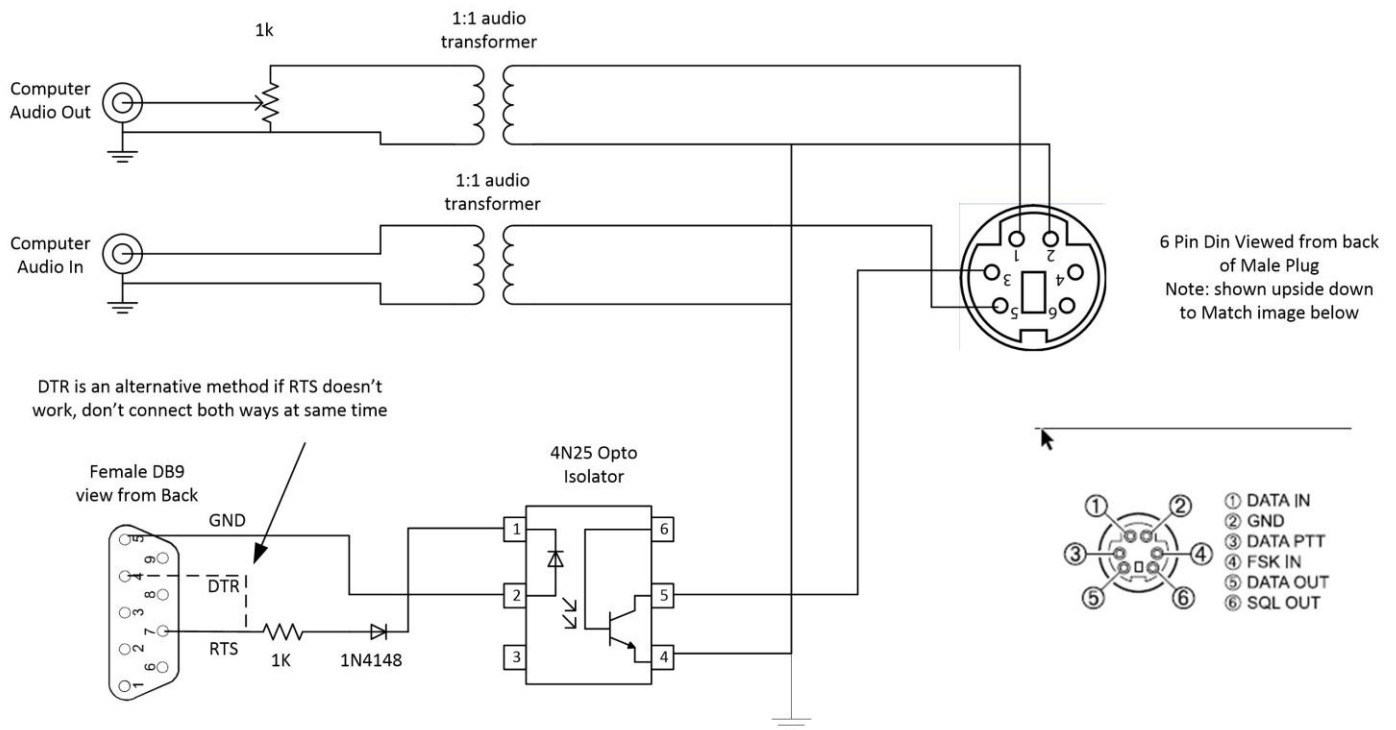
JT65 though slower in QSO exchange, many times can work signals down to -30dB, whereas FT8 can work down to about -21~24dB, so it's not quite as sensitive to working weak signals, but the sheer volume of Hams using this mode more than makes up for this slight decrease in weak signal performance.

To start using this mode, you'll want to get a copy of WSJT-X version 1.8.0 from the following website
<https://physics.princeton.edu/pulsar/k1jt/wsjsx.html>

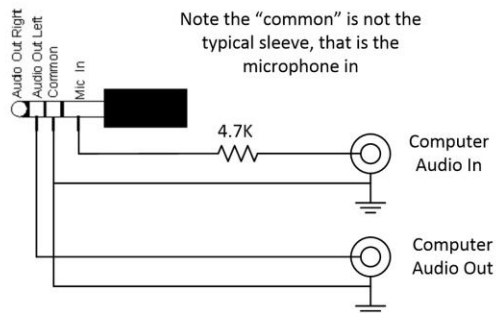
Download and install this on your computer, and configure it to work with your rig. Because there are many different ways to connect rigs to a computer, I can't go through all the possible solutions. If your rig has a USB port for Rig Control, and if the rig manufacture has audio drivers available(USB sound device built into the radio) then this should be pretty easy to configure. Not all transceivers with USB ports have a virtual sound card, I found this out the hard with a Yaesu FT-891. With that the USB port only controls the radio, and will not pass audio through it. For that I have to use the DIN plug marked RTTY/DATA control to interface with my computer. In this situation I need to either build one using some 1:1 audio transformers, and an opto isolator or purchase a Rigblaster or Tigertronics external device as an interface between a computer and the transceiver.

Below is an example of a homemade RTTY/DATA control interface that I had built a few years ago.

(see next page)



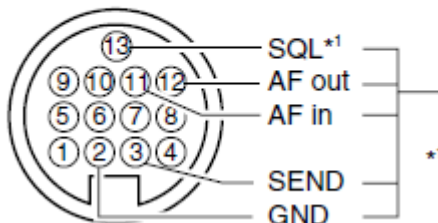
Typical modern computer audio in and out plug



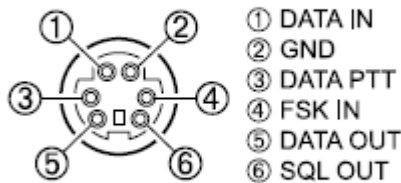
Icom-718 ACC connector looking from back of radio

[ACC] connector

(Rear panel view)

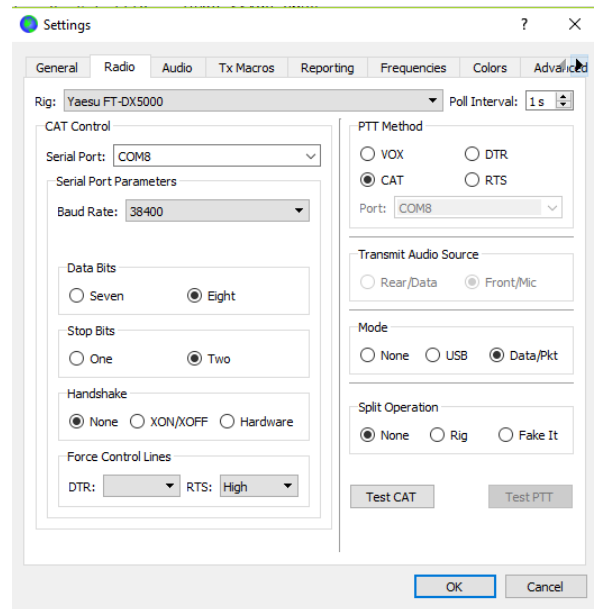
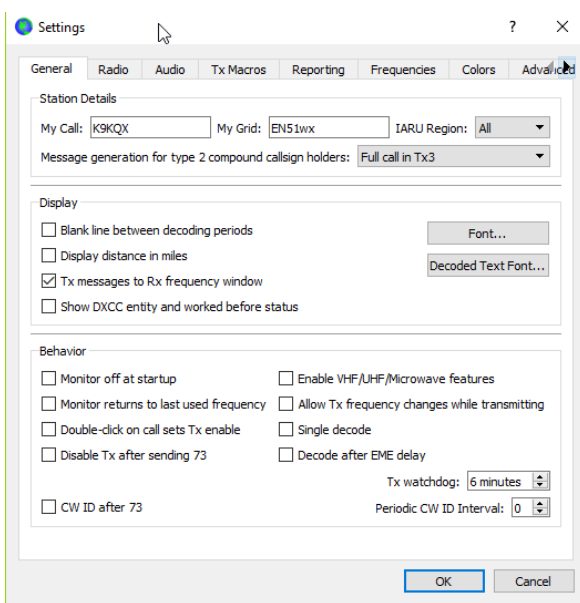


Yaesu 6 pin RTTY/PKT looking from back of radio

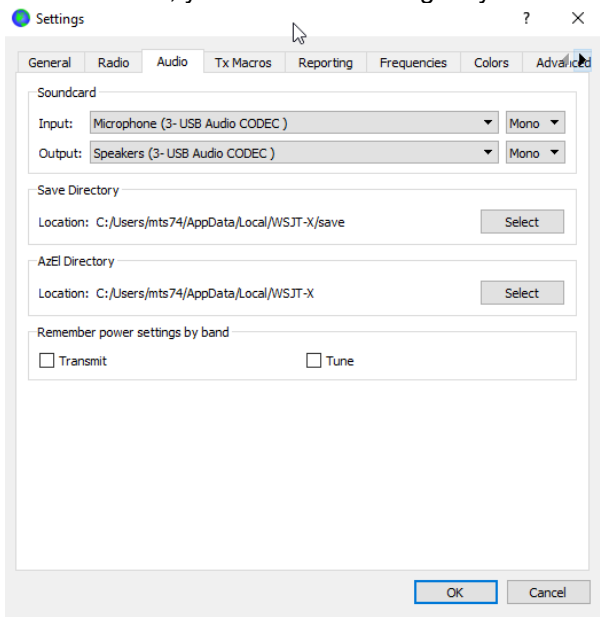


Once you've got an interface configure with your radio, you'll want to follow some guidelines on output and ALC readings. Generally the rule of thumb is to not exceed 50% of the rated output of your transceiver, and to monitor the ALC meter reading to ensure it never or rarely engages, otherwise the transmitted signal won't be clean and will be difficult to decode on the receiving station. Generally 20 to 35 watts is sufficient, but there are times like in Scotty in Star Trek, I'll give it everything she's got and adjust up to 50 watts to make a DX contact.

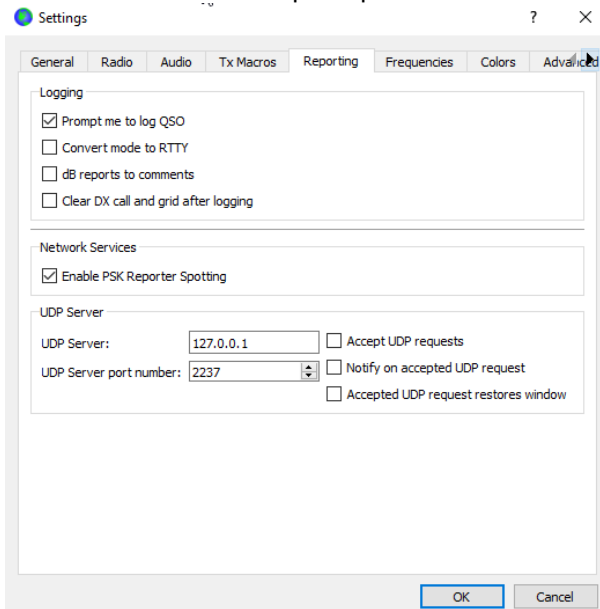
So to start with, open up wsjt-x and answer any questions during the initial start. If it doesn't, then go under file, Settings and on the general tab put in information on your call sign and grid locator. On the radio tab you'll need to configure it to match the settings of your radio or Data interface box.



The Audio tab, you'll set to match again your interface settings.

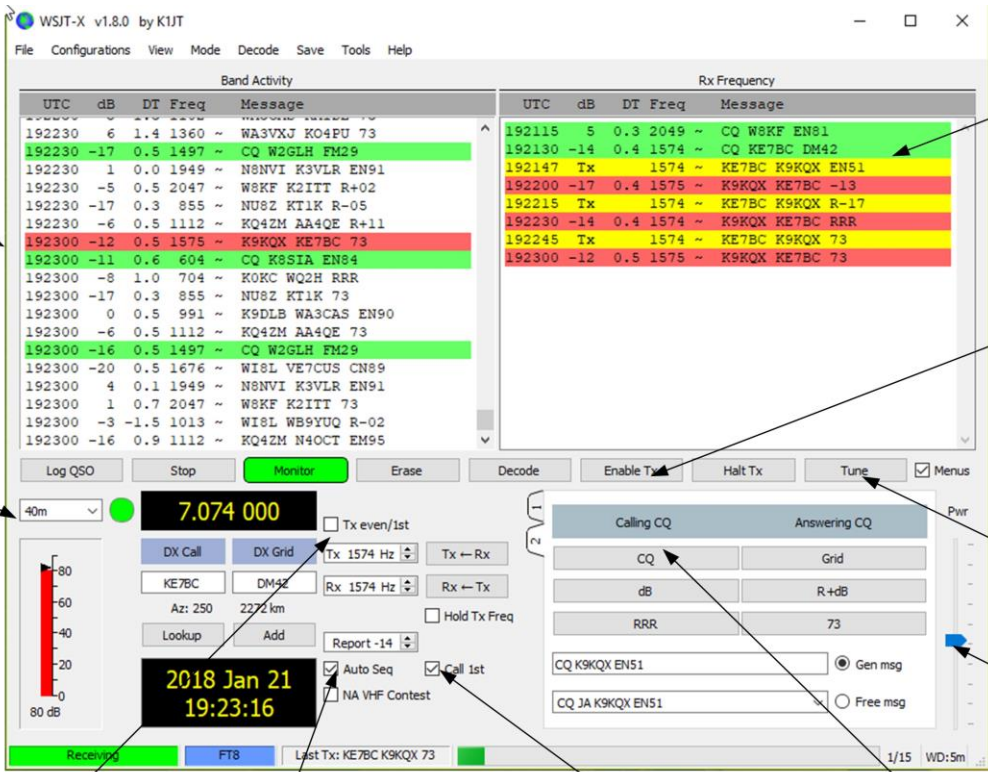


Also to report back to www.Pskreporter.info, the stations you heard, go to the reporting tab and enable the PSK reporter Spotting feature. Optional is to check to prompt me to log QSO, when a RRR confirm has occurred the program will prompt to log the QSO, this data is store in an ADIF file format which you should be able to import into QRZ or TQSL for export up to LOTW. I like using this feature so I don't forget to log contacts



Click OK to save the settings, and to go back to the main screen.

Below is the user interface of wsjt-x



Stations heard (points to the Band Activity table)

Band Selector, Rig should change freq when adj (points to the band dropdown menu)

QSO activity
 Yellow is my TX out message
 Red is RX received message (points to the Rx Frequency table)

Enable TX, must be selected to transmit (points to the Enable Tx button)

Tune button initiates TX of tone to adjust audio out and power out (points to the Tune button)

Adjusts audio level out, which will adjust power out on Transceiver (points to the Pwr slider)

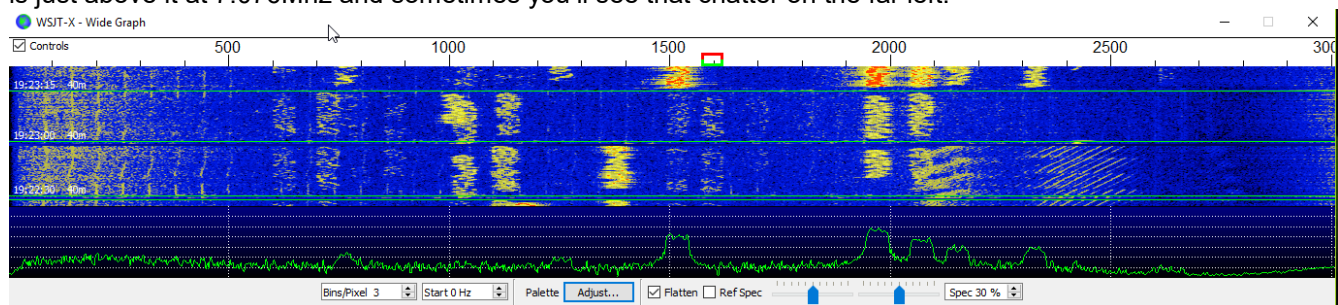
Transmit on even or odd 15 sec intervals, you may alternate occasionally (points to the Tx even/1st checkbox)

Enable to handle auto sequence of QSO exchange, makes it easier and quicker due to short break between transmissions (points to the Auto Seq checkbox)

Used when you are calling CQ to automatically respond to first answer to your call. (points to the Call 1st checkbox)

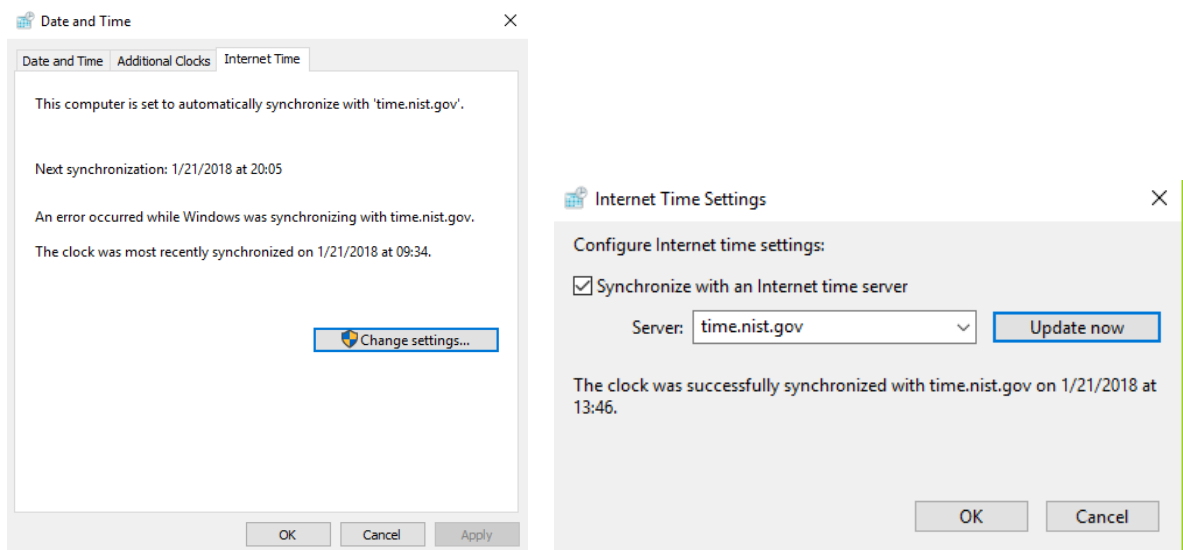
Macro buttons to initiate QSO, or to override automatic QSO exchange sequence (points to the Calling CQ and Answering CQ buttons)

Waterfall display, this shows a 3k wide section of a typical allocated frequency for FT8 at 7.074 Mhz USB. JT65 is just above it at 7.076Mhz and sometimes you'll see that chatter on the far left.



1. Choose the band you want to operate on using the drop down on the left side, it should change the rig frequency to a preselected frequency. Make sure your rig is in USB DATA mode, or USB depending on how your DATA interface works with your rig.
2. Choose the mode you want to operate under Mode at the top of the screen, FT8 and JT65 are the most common choices. The frequency will change automatically if your rig control is configured correctly.

3. I'd highly recommend that auto sequence is checked as this will automatically change to the next macro to transmit when receiving a report from the other side. The breaks between the 15 second transmissions are very short, and if you aren't quick to transmit, the decoding might not occur on the receiving side.
4. When calling CQ I'd also suggest to enable to Call 1st option so that the first station that you hear, is the one you respond to with your signal report. Many times two stations respond and you can't take care of both at the same time. Secondly, when you do it manually the time involved in double clicking on the station answering you is too slow and may require a repeated transmission to begin the QSO.
5. Before beginning to transmit, it's best to hit the tune button on the wsjt-x app, and then adjust the slider on the right side to adjust the sound output from the PC to modulate your transceiver for the desired output power. I always set the transceiver to 100% or 100 watts output, but then adjust the slider to give me the 25~35 watts output. Check to make sure the ALC is not engaging any meter movement. If it is, ensure SWR is ok, and that the rig's power setting is at 100 watts or 100%. If you reduce your rig to 25 watts, what happens is the ALC circuit starts to engage at about 12 watts and thus your power output is half of what the Rig's power is set too. So if the rig is set to 50%, the slider would need to be adjusted so actual transmitter power is 25 watts or less. I find this confusing and it's much simpler to just leave the rig at max power and adjust wsjt-x audio out slider control to achieve the desired output power.
6. Once all that is done, make sure the time is very accurate on your PC to an internet time source(NTP server). This may have to be done daily before using WSJT-X as the clock in a PC can drift, and a 1 to 2 second time difference can mean no decoding of signals on either end of the transmission. To do that open up the clock settings and look for a tab called internet time. In my example you can see it errored out. But initiating a refresh by clicking change settings and update now should fix it



7. Next monitor the left side Band activity, and when you see a station calling CQ, just double click on that station, and then click to enable the TX enable button to begin transmitting. If he hears you, he will respond with your signal strength. If he doesn't the program will repeat another TX on the next 15 second interval. If the response is successful the auto sequence will take over and you'll report back the signal strength you heard of him, and then he'll respond with RRR, and finally 73. All this will occur automatically.

An example of a QSO exchange looks like this.

192130	-14	0.4	1574	~	CQ KE7BC DM42
192147	Tx		1574	~	KE7BC K9KQX EN51
192200	-17	0.4	1575	~	K9KQX KE7BC -13
192215	Tx		1574	~	KE7BC K9KQX R-17
192230	-14	0.4	1574	~	K9KQX KE7BC RRR
192245	Tx		1574	~	KE7BC K9KQX 73
192300	-12	0.5	1575	~	K9KQX KE7BC 73

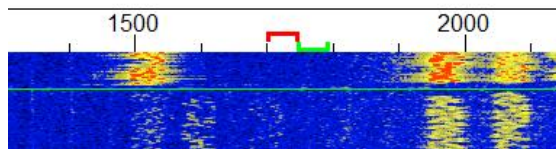
- If either of you don't copy a message the auto Sequence will try to resend the last message until a confirmation is heard. Should you get no confirmation and would like to stop any attempts, just disable the Enable TX button.

Tips:

FT8 has 15 second transmits, with about a 1 second space between TX and RX, it's imperative to make sure your Computer clock is synced with an external time source. Inaccurate time on your PC will prevent decoding of signals. If you see good signals on the waterfall, but very few This could make it difficult in remote portable operations to get an accurate time. In this case you might be able to get pretty close if you monitor the WWV government time frequencies at 5, 10, and 15 Mhz.

If a station doesn't respond to you on numerous attempts, it could be that you and another station are both trying to respond at the same time. In this case halting TX and looking at the waterfall might just show another station trying to work the same station you are. When that happens, the receiving end may have trouble decoding two overlapping signals and will continue to call CQ. You can either try later and give the other station the chance to work them, or adjust the transmit offset with the mouse to not overlapping signals. The red and green bars on the waterfall can help select the TX and RX offset.

↓



I recently learned that many rigs don't necessarily receive well above 2400hz as shown on the waterfall. For the past year I've used mostly the 7300, and it works fine from 2400hz to 3000hz, however my Yaesu FTdx3000 has a filter in the data mode that literally blocks everything above 2400hz and there's no settings to turn it off. Some older rigs may exhibit this as well. So it's been recommended in some newsgroups to stay under 2400hz. If you do decide to work higher up, just manually spin the VFO up 1Mhz to work those stations. Also, I noticed on the 7300 that a lower frequencies below 500hz that transmit power levels seems to drop off, so the majority of activity that I've seen has been between 500hz and 2500hz on the waterfall.

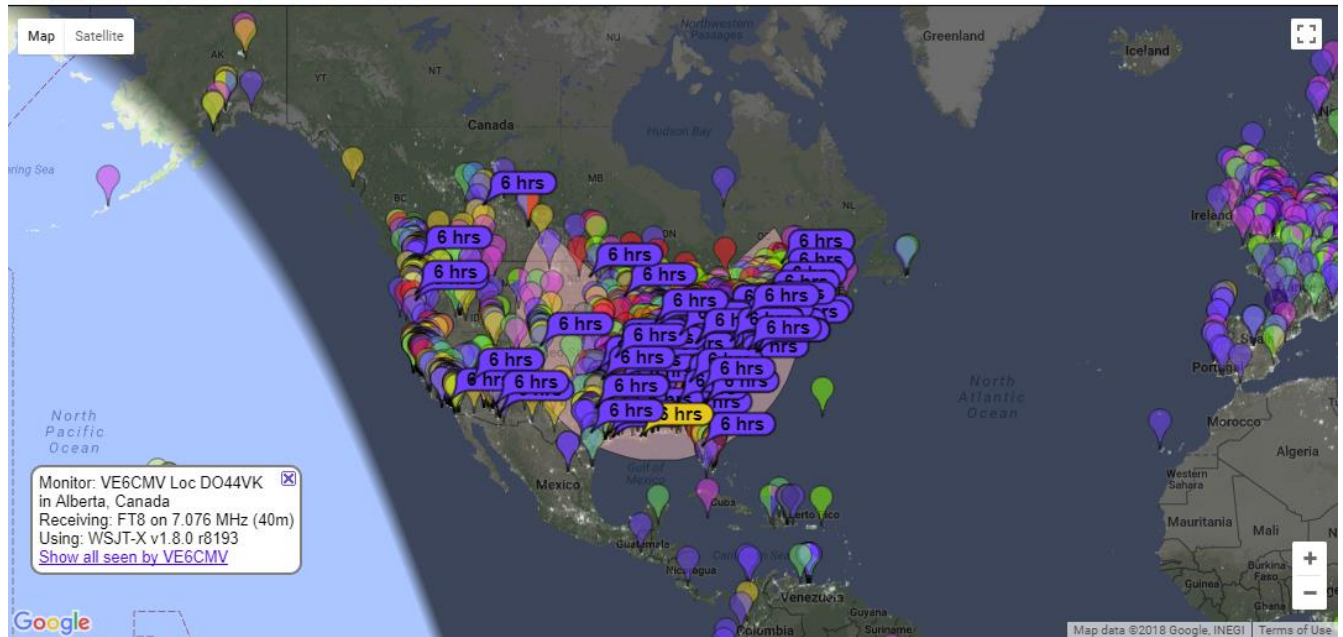
Wrapping up a QSO. Sometimes WSJT-X with the auto sequence doesn't finish up properly if the station you worked uses a custom 73 message. When this happens you may see your side retransmit the 73 macro. If this happens, just halt transmitting to stop.

Anyway, I hope this little primer on using WSJT-X helps you get started in FT8 or JT65. You'll find FT8 is very busy all the time giving a great chance at working DX during the low solar cycle, with modest power and antenna requirements. When you start using this, you might find it really interesting to check out www.pskreporter.info and look up your call sign.

Below is an example of all the stations that heard me earlier in the day on 40m at 2pm

On show sent/rcvd by using over the last [Display options](#)

[Permalink](#)
 Monitoring K9KQX (last heard 6 hrs ago). Automatic refresh in 5 minutes. Small markers are the 61 transmitters ([show logbook](#)) heard ([distance chart](#)) at K9KQX (67 reports, 3 countries last 24 hours; 1388 reports, [14 countries](#) last week).
 There are **2331 active monitors**: **830 on 40m**, **462 on 20m**, **291 on 80m**, **237 on 30m**, **194 on 6m**, **169 on 160m**, **42 on 17m**, **32 on 60m**, **17 on 600m**, 11 on unknown, **8 on 15m**, **6 on 2m**, **4 on 2200m**, **2 on 10m**, **1 on 12m**, **1 on 70cm**. [Legend](#)



Local and Regional Nets

In this new section of the RHG we'd like to build a list of HF, and VHF/UHF nets that might be of interest to our club members. Please send submissions to Leo N9NBH or Mike K9KQX

SARC	Technet	Tuesday's 7:30 CST	K9IIK	145.230mhz
SARC	Club Net	1 st , 2 nd , 4 th , Thursday 8pm	K9IIK	145.230mhz
TALARC Amer Legion		2 nd Sat, 12 noon		14.275Mhz
TALARC Amer Legion		3 rd Sun 5pm		7.245Mhz
TALARC Amer Legion		Wed		3.862 Mhz
EN52 Net		Wed 7PM		50.130Mhz
SUHFARS Do nothing net		Sun 9:00PM		443.250 +5Mhz 114.8hz PL
OMISS Nets		Daily, check times at www.omiss.net		
Airforcesflyersclub.net		Visit site for times.		



SARC January Club Meeting

Schaumburg Amateur Radio Club Business Meeting January 2017

None – Holiday Christmas Party

SARC Board of Directors Meeting

Schaumburg Amateur Radio Club Board of Director's Meeting Jan 3, 2018

Kent Ochs W9KAO Chairman opened the meeting at 7:05 PM.

Attendees:

Gary Bernstein	N9VU	Chris Brewer	AC9GN	Leo Ribordy	N9NBH
Cliff Sowka	K9QD	Matt Walsh	AC9IG	Kent Ochs	W9KAO
Frank Giampa	N9QPD	Russ Schmidt	KC9NUV	Dirk Smith	W0RI
Bob Langsfeld	WB9TZC				

Treasurer's report: Chris Brewer AC9GN reports:

Beginning balance for the month was \$4,037.17. Income was \$660.91. Expense was \$50.29 for data-line. Ending balance is \$4,647.79. Paid Membership is currently 55. Frank N9QPD moved, Leo N9NBH seconded. Report approved.

President's Report: Matt AC9IG will be working to use a recent donation in organizing the sponsoring of two people for W9DXCC this coming year. Matt will continue his search for members able to assist with efforts in developing a more-modern site for us.

SARC Repeaters: Kent W9KAO reports PL (Private Line) tone enable feature for the repeater is fixed in the lab. Installation will be accomplished in better weather.

Secretary's Report: Cliff Sowka K9QD: Approval of Meeting Minutes as published in the RHG.

Construction Project: Gary N9VU: Construction Project: Good turn out for the holiday eve get together on 12/23/17. I am willing to have a sign-in sheet for a few reasons. One for numbers attended, and two to see how many do attend are or are not SARC members. Maybe that'd be a good time to solicit those who are not to join SARC.

Ebay Sales: When time is available at the CP I will go through the closet at the potential sales of items in the far right closet. It's been mounting up and before we lose our space in our storage areas, now may be a good time to go through and prepare some SARC and/or Ebay auctions [ed. There are some recent SK estate donations currently being cared-for in member's garages that can also be evaluated for potential sales].

Social: Roger Ryan W9RDR not present. Cliff K9QD confirmed Buona Beef for January Christmas Party.

Education: Leo N9NBH reported plans for a winter General Class with the Library District but has recently been unable to make contact with Library people to set a plan. Continues to attempt correspondence.



Public Service: Rob N9MVO not present.

EMCOMM: Bob Langsfeld WB9TZC reported on several emergency preparedness events. Monthly Round Table meetings continue at the Hoffman Estates Police Station. NWCD Volunteer coordinators met last month. I believe ARES is the closest of the groups to resolve all the issues of joint training, exercises and standards. I see this a long way off but it was discussed. One of the biggest challenges was volunteer liability [indemnification of the volunteer's culpability] differences between the various agencies.

Membership Committee: Bob Benwitz N9JAX reports:

The following inquiries to our SARC website were contacted via phone message and/or email during the month of December:

12/1 David Bender KD9JKG
12/19 James Stevens (no call sign shown)
12/30 James Farrell KC9HVF

Bob Benwitz N9JAX

Programs: Cliff Sowka K9QD: presentation for February will be a photo tour Mike Clodfelter AC9CG recently made to Tokyo's electronic market. Matt AC9IG considers Skywarn overview for March.

NETS: Matt AC9IG reports average of 16 attendees currently log-in for the Thursday venue.

Ebay Sales: Gary N9VU. Nothing for sale at the moment.

New Business: Frank N9QPD moves Dirk W0RI seconds resolution to allow officers to vote at Board meetings. So moved... Kent W9KAO nominated Frank N9QPD for Chairman Leo N9NBH seconded. So moved. Frank will be our board Chairman for 2018.

Membership currently 55: indicating a year-on-year decline. Chris AC9GN will provide a summary of historical membership records to Dirk. Dirk W0RI will work with Bob Benwitz N9JAX to determine what efforts can be instituted to contact missing membership renewals.

Budget for 2018: Line item review for 2018 planning. Chris will capture the discussion and publish preliminary budget.

Old Business (previous item discussion thwarted during past meeting due to No Quorum). Several inputs from the group regarding inventive items for new members: Free membership upon passing the FCC exam, provide free HTs, other ideas to enhance recruitment. Motion to table both HT and free Membership by Frank N9QPD, Kent W9KAO seconds. So moved.

Adjourn 8:51 PM

Submitted: January 4, 2018. Cliff Sowka K9QD Secretary.