

**TORC newsletter Fifth edition**



Photo by Chris Seger

Photo by John Payton



*MERRY CHRISTMAS*

*HAPPY NEW YEAR*

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**METEOR SCATTER**

**IC-705 Setup**

**FOR SALE**

**PURPOSE**

## 'Tis the Season

Maybe it's time to try Winter Field Day again. We did it with the other club, which shall remain nameless, a few years ago on an outing to Riverside Park in Oro Valley. We were disappointed by the paucity of on-air activity and we had more fun playing with NG7A's tennis ball launcher than we did on the radio.

Although WFD owners (yes, it actually has owners!) have not been sponsored or supported by ARRL or CQ Magazine, they have grown participation greatly in the past 3 years. Their results page on the website ([winterfieldday.com](http://winterfieldday.com)) shows January 2020 had logs submitted by 300 outdoor stations, 560 home stations, and 170 indoor stations. While that's a far cry from ARRL's June FD, it is pretty respectable, and with hams staying home during the plague, there will likely be even more stations participating this year.

Date for 2021 is January 30-31, begins at 1900 UTC (Noon MST) Saturday and runs through 1900 UTC Sunday. Like summer FD, setup is limited to 12 hours total. Exchange is determined by *Category (Home, Indoor, or Outdoor)* and *Class (number of transmitters capable of transmitting simultaneously)*. All modes are acceptable but FT8 and FT4 will not handle the exchange. I won't detail all the rules because there are more arcane rules than are found in the Talmud, but you can find all 7 pages at:

[https://a2a53e2b-2285-4083-9cff-c99fe5ba1658.filesusr.com/ugd/1c7085\\_2445ed4b22f74e048fe9bd41c8dba103.pdf](https://a2a53e2b-2285-4083-9cff-c99fe5ba1658.filesusr.com/ugd/1c7085_2445ed4b22f74e048fe9bd41c8dba103.pdf)

Due to continued COVID problems, operating in a large group is not recommended. Last June's FD was highly successful with dozens of members setting up their own stations and submitting logs. WFD will also encourage naming your club affiliation on your log submission. Make sure you give credit to Tortolita Radio Club. Let me know if you want to use the club callsign KT7RC.

Bonus points are available for stations operating outdoors, for emergency power, but not for low ambient temperature as in the Freeze Your Butt Off (FYBO) contest, which no longer exists. So we are at an advantage operating in the tropics while northerners will be FYBO on the tundra. Just do it!

73 de W8TK

Formerly from the tundra

**CLUB OFFICERS**

**President                                    (K7AZT Paul Seger)**



**Vice President                            (W8TK TOM Kravek)**



**Secretary                                    (W7HD Ron Herring)  
& Newsletter Editor**



**Treasurer                                    (AE9Q Dave Dostie)**



## GROUPS.IO

Scott K7ADX has set up a groups.io board for TORC.

They click the address [ToRC+subscribe@groups.io](mailto:ToRC+subscribe@groups.io) or copy and paste that address and send an email. They have to get an account – really simple. It only takes a minute.

Once they ask to join I will accept them and off we go.

Send members here: <https://groups.io/g/ToRC>

Once folks get in we can start communicating that way along with email, set up some topics where folks can interact, etc.

## TORTOLITA RADIO CLUB

*Serving the Greater Tucson Area*



**The ToRC website is up and running and can be viewed at**

**<https://tortolita-rc.com>.**

**It has the essentials on it for now. We can improve on it as things settle down.**

**When an email is sent to [contact@tortolita-rc.com](mailto:contact@tortolita-rc.com) I receive it and forward it on to the appropriate person.**

**Comments and suggestions are welcome.**

**73**

**Frank N1UW**

## TIPS, TRICKS, AND LINKS

### Major new release of Raspberry Pi OS

- **A major update of Raspberry Pi OS has been recently announced.**
- <https://www.raspberrypi.org/blog/new-raspberry-pi-os-release-december-2020/>
- I installed this update on my Raspberry Pi 3B+ tablet. Fldigi and Flrig both work. So does remote operating and audio streaming with NoMachine.
- 73, Harry Bloomberg W3YJ

### fldigi 4.1.17 / flrig 1.3.53 posted

- Refer to the readme.txt for fldigi and flrig for information on specific changes. fldigi / flrig are being distributed as a matched set. Both versions are required to exploit the newly added *send CW using CAT text strings*. See [http://www.w1hkj.com/FldigiHelp/cw\\_cat\\_keying.html](http://www.w1hkj.com/FldigiHelp/cw_cat_keying.html) for details.

### Raspberry Pi 4 USB3 ports

- Just a FYI for those using the RPi4 with USB3 devices. Most of the users probably have already found out the hard way like I did. Putting a USB3 device in one of the USB3 ports on the Pi4 causes both USB3 ports to go to into USB3 mode. That means if there is a USB2 device in the other USB3 port that the USB2 device becomes inoperative. At least that is what I've found on two different RPi4 boards. If anyone has found a fix for that I'd be very glad to hear it, but it seems to me that it probably is a hardware design issue.  
73, Cliff, AE5ZA

### Setup IC-705 with fldigi and either flrig or rigcat control

- Flrig is the easiest way to interface your IC-705 to a computer. No Rigcat XML files are required, and you can easily interface to WSJT-X by selecting Flrig as your radio.
- **Icom IC-705 GPS Cheat Sheet for Linux**
- This is my configuration for using the GPS receiver in the Icom IC-705 as a time standard for a Raspberry Pi.
- First, you must make the GPS signal available on the IC-705's USB cable. Do the following: MENU button -> SET -> Connectors -> USB (B) Function -> GPS Out, set to ON.

### How to Manage Linux Servers with the Cockpit Web Interface

- You can easily monitor and manage multiple Linux computers with Cockpit, a browser-based administration and dashboard tool. It's self-contained, simple to set up, and easy to use. We'll show you how to get started.

### How to Use DB Browser for SQLite on Linux

- DB Browser for SQLite lets you view and edit SQLite databases on Linux. You can design, create, and edit these database files, and peek inside the inner workings of other applications. Here's how to use this SQLite GUI.

### How to Buy a Laptop for Linux

- If you're buying a new laptop for Linux, you shouldn't just buy the Windows laptop you like and hope for the best—you should plan your purchase to ensure it will work well with Linux. Thankfully, Linux hardware compatibility is better than ever.

### Why I'm not concerned about the rise in Linux attacks

- Jack Wallen explains why he's not worried that the rise in popularity of the Linux operating system will mean your open source platforms will be vulnerable to attacks.

**VK7HH Ham Member** [QRZ Page](#)

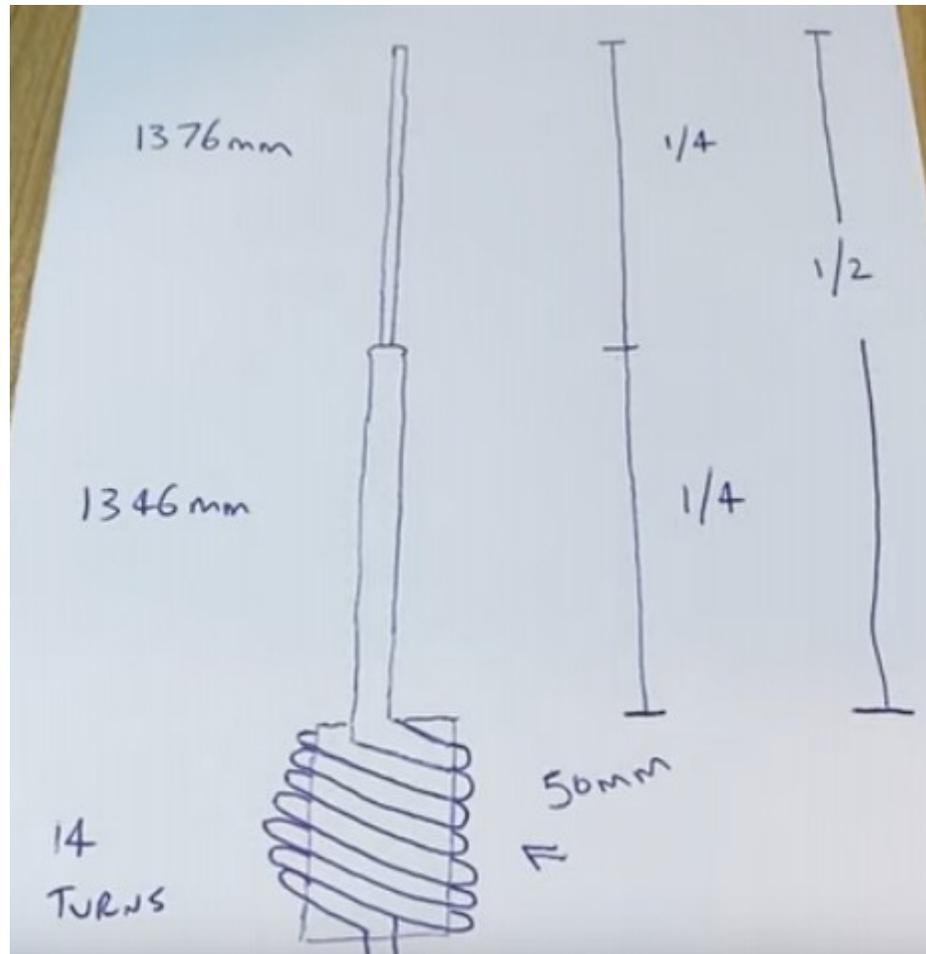
**This is a really simple and easy to construct antenna that will get you on the air on the six meter band using only RG-58 coax!**

**I needed a quick and simple antenna for my WSPR beacon over the summer season. Enter the coaxial dipole or aka flowerpot antenna!**

**1376 mm =  
54.1732283465 in**

**1346 mm =  
52.9921259843 in**

RG-58 COAX



<https://forums.qrz.com/index.php?forums/amateur-radio-news.9/>

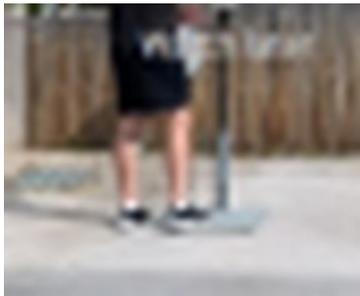
Here's how the antenna works---

COAX is a transmission line system where RF current flows in the center conductor. This produces a counter current in the shield which is out of phase. The two cancel in the far field.

When you expose an electrical quarter wave of the center conductor-the currents become unbalanced and the coax radiates. The short length below the unshielded center section is essential the 'ground' part of a vertical dipole. The multi turns are an RF choke, stopping the coax from radiating **below** that point. You can use ferrite instead of the coil-choke.

I strongly suggest CPVC if available: PVC is lossy at this frequency.

The fishing line is purely a mechanical strain relief and keeps the coax straight in the tube.



<http://hamradiodx.net>

VK7HH, Tuesday at 9:42 PM [Report](#)

## FROM OUR MEMBERS

### Good Knob, Bad Knob

There are two knobs on your radio, one of which you should use but probably don't, and the other you probably use and shouldn't.

Good Knob is the RF Gain control. I recommend reading an article in November 2018 QST, RF Gain: Doing More with Less, by Steve Ford, recently retired editor of QST. He begins, "When I was gifted with my first HF receiver, I immediately noticed a prominent RF Gain knob. *What a pointless control*, I thought as I turned the knob to its full clockwise position. *Why would anyone set RF Gain to anything less than maximum?*

Steve changed his mind when he tried his first contest. With a band wall-to-wall with strong signals, he couldn't copy any of them because of the cacophony. So he backed off the RF Gain and even turned on the attenuator and signals miraculously emerged from the noise. The same works for trying to copy weak signals on a noisy band. And it's even more important with a modern SDR receiver with an analog-digital converter front end which can be overloaded by strong signals. If your IC-7300 displays OVL message on the display, your ADC is overloaded. Using your receiver's pre-amplifier even makes things worse. Give the RF Gain knob a try and you will be amazed how easy copy can be on a noisy band.

Bad Knob is the one labeled "RIT" (receiver incremental tuning) or "Clarifier" on Yaesu radios. This one tunes the receiver frequency off the transmit frequency so you can better copy a station calling you off frequency. That's not bad in itself, but if you forget to turn it off or zero it out after the contact, you may never make another contact because you will be off frequency for every call you make, and therefore unintelligible or out of the other station's passband. N1MM Logger even has a command you can imbed in your function keys called {clearrit}. If you're going to use RIT, observe that there is an indicator light on the panel or display that tells you it's on. If you must use it, after the contact, TURN IT OFF!

73 de W8TK Tom Kravec

Very good point, thanks for sharing.

It seems like the RF gain one is the most counter-intuitive for most folks. But if you understand that keeping an amplifier out of compression, or better yet operating in it's linear region, it makes sense. These days with SDRs, stuff just clips. Someday the FPGAs will be wide and deep enough to handle contested (pun intended) environments .... but these days the superhet / digital combination with roofing filters still outperforms in terms of dynamic range.

73, George NG7A

Here's another Bad Knob:

The **speech compressor** (Speech Processor) should be glued in the "off" position, improperly used it causes more harm than good.

Over driven speech compressors sound terrible. No one wants to be chastised during a DX pileup, but on more than one occasion I've asked a caller to turn off the speech processor so I could understand them (and stop the splatter).

Mic gain should be carefully adjusted. Some people think that more mic gain will give them a better chance in the pileup, in reality, it's just the opposite.

In an SSB pileup your goal is to stand out in the crowd, not be obnoxious. You can accomplish this with many new rigs by "tuning" the rig's transmit audio characteristics and/or using a mic that accentuates the highs (but not too much). The Heil HC-4 mic element was called the DX Dream Machine, it's no longer manufactured, but still available from some sources, and was used in many of Heil's headsets and I think a few hand mics..

Many years ago Bob Heil sold a Microphone Equalizer EQ300 that allowed the user to quickly adjust the highs / lows. Properly adjusted for a DX pile-up it does make a big difference, but for a rag chew the operator on the other end will often notice the abundance of highs and the absence of lows.

Cheers,  
Gwene K5GS

If you ever wondered why big contest stations like K3LR have multiple Yagi antennas for the same band stacked at different heights, or wondered if raising your antenna on your tower would produce better contest results (maybe not!), then this presentation is for you. This thorough hour-plus video is packed with graphs of antennas, antenna patterns, signal paths, and how it all interacts. Fascinating.

<https://www.youtube.com/watch?v=dE40GWnfJbU>

73, Paul / K7AZT

Good Morning ToRC members,

I am also a long standing member of W6ZE radio club (a no repeater club) in Orange County, CA. Last months meeting was a presentation by W6DQ showing the dismantling of the Collins 250 KW AM transmitter at the VOA site in Delano, CA. If you would like to see a really big transmitter and curtain array antennas I have attached the link to the ZOOM presentation that has been recorded for viewing on YouTube. The presentation is just over an hour long.

73 Ron W6ZQ

<https://youtu.be/ULIENAstfxM>

## SEALING UP COAX CONNECTORS, ETC FROM MOISTURE

One available product is COAX-SEAL I usually get mine through an internet purchase from HRO or DX Engineering. You do not get very much for a \$4 roll.

How about this? ACE HARDWARE sells a one pound block of DUCT SEAL - in their electrical department. You get a lot of it for a lot less money. Seals against moisture, dust, etc. Does not harden. Has a long list of stuff it adheres to.

Today I am going to use it to seal up a barrel connector in a coax line running across my roof. I first wrap the joints with black plastic electrician's tape. Then I apply the COAX SEAL. The tape under the sealing stuff makes it real easy to open the joint if needed in the future. So today I will try the DUCT SEAL

Have any of you tried DUCT SEAL?

k7nsw Richard Schmidt

Hi Richard,

Hate to burst your bubble, but that product is NOT MEANT FOR OUTDOOR USE!  
I found another outlet with the same GB product & it clearly says it's not for outdoor use.

Link:

[https://www.farmandfleet.com/products/009601-gardner-bender-duct-seal-compound.html?](https://www.farmandfleet.com/products/009601-gardner-bender-duct-seal-compound.html?blaintm_source=google&blaintm_medium=pla&gclid=Cj0KCQiA2af-BRDzARIsAIVQUOfi2ekzCbXYaMcDwJmfa4-J7s9Zo6Olpoi7pwW9vsNUKTFnuhGf5o0aAiUaEALw_wcB)

[blaintm\\_source=google&blaintm\\_medium=pla&gclid=Cj0KCQiA2af-BRDzARIsAIVQUOfi2ekzCbXYaMcDwJmfa4-J7s9Zo6Olpoi7pwW9vsNUKTFnuhGf5o0aAiUaEALw\\_wcB](https://www.farmandfleet.com/products/009601-gardner-bender-duct-seal-compound.html?blaintm_source=google&blaintm_medium=pla&gclid=Cj0KCQiA2af-BRDzARIsAIVQUOfi2ekzCbXYaMcDwJmfa4-J7s9Zo6Olpoi7pwW9vsNUKTFnuhGf5o0aAiUaEALw_wcB)

Sorry for the bad news,  
73 - John - N7GHZ

No need to apologize for raining on my parade. I am glad for the responses. Now I know and can remove it before disaster strikes. This is proof of the value of community.

Electrician's duct seal may not be great for outdoors in general, but it is a good product for stuffing / sealing feedthrough PVC pipe to get coax and window line through walls to the outside. It is mostly protected from the weather in this application. Only the skin of the outside face sees the elements where it develops a hardened skin, a good thing. The bulk remains pliant, easily removed for adding additional cables. It is reusable.

73, Paul  
K7AZT

#### Other Possible Alternates:

<https://www.farmandfleet.com/products/1044454-nashua-tape-products-black-stretch-and-seal-tape.html>

[https://www.amazon.com/X-Treme-Tape-TPE-XR1510ZLB-Silicone-Rectangular/dp/B00HWROO7E/ref=sr\\_1\\_5?dchild=1&keywords=coax+sealant&qid=1607125708&sr=8-5](https://www.amazon.com/X-Treme-Tape-TPE-XR1510ZLB-Silicone-Rectangular/dp/B00HWROO7E/ref=sr_1_5?dchild=1&keywords=coax+sealant&qid=1607125708&sr=8-5)

[https://www.amazon.com/Kohree-Sealant-30-Foot-Sealing-Patching/dp/B07V366FCM/ref=sr\\_1\\_22?dchild=1&keywords=coax+sealant&qid=1607125708&sr=8-22](https://www.amazon.com/Kohree-Sealant-30-Foot-Sealing-Patching/dp/B07V366FCM/ref=sr_1_22?dchild=1&keywords=coax+sealant&qid=1607125708&sr=8-22)

[https://www.amazon.com/X-Treme-Tape-TPE-X36ZLB-Silicone-Triangular/dp/B00HWROLIG/ref=sr\\_1\\_84?dchild=1&keywords=coax+sealant&qid=1607125708&sr=8-84](https://www.amazon.com/X-Treme-Tape-TPE-X36ZLB-Silicone-Triangular/dp/B00HWROLIG/ref=sr_1_84?dchild=1&keywords=coax+sealant&qid=1607125708&sr=8-84)

[https://www.amazon.com/X-Treme-Tape-TPE-XT2036ZLCLR-Silicone-Triangular/dp/B00HWROYCO/ref=sr\\_1\\_99?dchild=1&keywords=coax+sealant&qid=1607125708&sr=8-99](https://www.amazon.com/X-Treme-Tape-TPE-XT2036ZLCLR-Silicone-Triangular/dp/B00HWROYCO/ref=sr_1_99?dchild=1&keywords=coax+sealant&qid=1607125708&sr=8-99)

[https://www.amazon.com/ATack-Waterproof-Weatherproof-Self-Fusing-Emergency/dp/B08FBYZSVT/ref=sr\\_1\\_131?dchild=1&keywords=coax+sealant&qid=1607125956&sr=8-131](https://www.amazon.com/ATack-Waterproof-Weatherproof-Self-Fusing-Emergency/dp/B08FBYZSVT/ref=sr_1_131?dchild=1&keywords=coax+sealant&qid=1607125956&sr=8-131)

w7hd Ron Herring

#### Electricians tip...

Place the duct seal in the SUN ..to make it easier to work with. OR...place it in the microwave on HIGH...for :30 to :60 sec at a time...to warm it up and make it much easier to work with....you can use the SAME process to RE ENERGIZE the duct seal when it has be installed previously.....

As for waterproofing. I like to use liquid tape...put on a coat or two...allowing it to cure between coats( this depends on temp on a warm day.....maybe 15min ) ...the first coat will go on thin...but will seep into the cracks ad crevasses...

After 3 coats follow up with 3m 33 electrical tape ..( one or two wraps tightly wound works great ) cut the end of the wrap with scissors dont pull it to break it...try to end in the middle of the connector..secure in place with a small zip tie followed by one light coat of liquid tape....

All sealed...and VERY easy to remove...but WATER TIGHT..

KE0SSM Dave Watson

I am not contradicting those of you who said it is not for outside use. But this is what Gardner Bender says "We say not for outside use because of the fact that after time, when exposed to various weather conditions like high temperatures and dry well the duct seal itself will eventually dry out. It is possible to use it for outdoor purposes, but there will need to be general upkeep every few years."

One individual says "I have used this outdoors, it works okay. The only problem is every five years or so you will have to rework it as sun and the elements shrink/wear it a little."

My conclusion: probably better to not use it for installations which are basically permanent - such as yagis on towers, etc. Stuff like that is generally up for years. However, I am often pulling up different wire antennas. None of them stay up for more than a year or two. So it will probably be OK for me. I am going to give it a go and see what happens.

It is interesting to note that nowhere on the product wrapper does it say not for outdoor use. I had to go to the Home Depot web page to learn that. Even then it was not immediately stated. I had to read through the FAQs. Only when someone directly asked if it is ok for outdoor use did GB say that which I quoted above.

So thanks to you who responded. Fighting the elements is always an interesting topic.

K7NSW

[One of my favorite products for sealing coax connectors has been "Rescue Tape". It's a strip of silicone that you stretch while wrapping around, and although it's not in the least bit sticky, it fuses itself together to create a rubber-like seal. There was a guy selling it at Dayton 10 or 15 years ago and I took a chance, and ever since I've used it. Most recently on my mobile screwdriver install.](#)

Back when I had a tower and several antennas up (pre-HOA days), it worked perfectly and I never had any issues. And best of all, when you remove it, you just slice it with a knife and it peels off leaving what's underneath looking brand-new. Coax-Seal is also great, but once you have used it you'll find it difficult to cleanly unscrew your connectors which will be all gooped up.

It comes in colors, insulates, and overall isn't very expensive. You can find it easily online.

73, Keith KR7RK

"In the military, we called it ordinance tape - it is orange with a green center stripe. "

73 - John – N7GHZ

In the civilian world it's called "self vulcanizing", and commonly available.

I also use Scotch 33+, Scotch 88 and Scotch 35, each a good taping solution, typically bought at Dayton flea market.

I used Coax Seal one time, never again.

Any of the above tapes, when properly installed, will seal a coax connector and withstand the WX and UV.

Another potential solution is heat shrink tubing which I used a couple of times with good results. An inexpensive Harbor Freight heat gun does the job.

Cheers,  
GS K5GS

I was a founding member of the club that operates the PJ2T contest station (pj2t.org). The station is situated on a bluff above the sea, facing SW. Because of the hot and humid climate and continuous salt spray, metal disintegrates rapidly and ferrous metals just disappear. We tried lots of techniques but the one that worked best was an initial wrap of Scotch 33 (we bought it by the case and wouldn't use anything else), followed by duct seal from the hardware store, followed by another wrap of Scotch 33. The initial wrap makes the duct seal easy to remove and the final wrap keeps sunlight and air off the duct seal so it doesn't degrade.. Duct seal is much cheaper than Coax-seal and we bought it by the case. Any hardware store has it in 1 pound bricks. Scotch 33 is available in 2 inch width but that isn't easy to find.

de W8TK

Keith ... agree that coax seal buggers up the threads and makes it hard to screw on the connectors.

Love the vulcanizing rubber stuff .... very easy to work with and I echo what Kieth says.

W8TK turned me onto the putty from Home Depot .... that actually works much better than coax seal in terms of not bugging up the threads. A rather surprising downside: the deer like to munch on it in the winter time and I've actually lost a Beverage transformer that way!

I do go back to using the scotch electrical tape Gene mentions .... soft, pliable and pretty cheap when bought in bulk .... an important factor when making lots of configuration changes.

73, George NG7A

2020 FT Roundup wrap up!

Howdy folks, hope that all of you that participated in this year's FT Roundup had a lot of fun!

As for myself, I started a few days ago, with preliminary setups and David – AK2L helped with a hint of setting up two extra configurations within the WSJT-X program, one for each – FT4 & FT8. Inside of that, there was the adding of all of the 4 frequencies, for each of the 5 bands. Pretty simple.

Then came live practice a couple of days ago, which is really a good thing to do for future reference, as the program takes on a different feel – and timing – that you need to get used to, especially in the already fast pace of FT4.

Preps done, I started promptly at 11 yesterday morning... and did the best to keep going for a very long time; for me, about 28 hours. The contest lasts for 30 hours, but only the first 24 count. However, one of the great things about this contest, is that you can take up to 2 breaks, each a minimum of 30 minutes, for a total of up to 6 hours added for meals, rest, etc. A very good thing, as I don't have the stamina I did even 15 years ago. I took a 1 hour break last night, came back, ran some more and then just ran out of gas around midnight. Good thing there was another break allowed, so I hit the sack for 3 hours (I should have went for 4). Those breaks added 4 hours for me, and I finished @ 3 PM today. And whewwww, I am quite tired... and everything hurts sitting in that chair for most of a day. Hint, do what I did, and get yourself a very good cushion for your chair, your back will love you for it.

So... how did I do?

Well, for my very first FT Roundup; and after my experience with Field Day at home, I have to say I think I did pretty well, some may even say – great... and I do as well for the most part, as I gathered up several hundred QSO's; and I know not nearly as many as others, judging by their serial number counts. Where I did very well, and this proves the power of the Digital – FT based radio communications... I worked ALL 50 States! In just under 24 hours! It took me 3 months the first time as a newbie. The only miss on the FT roundup, is that they also include D.C., the District of Columbia as an extra entity for multiplier purposes, and while I saw a lone D.C. fellow a couple of times last night, every time I saw him, some... uh, bozo... kept swamping out the D.C. fellow. (This bozo... was in S. Carolina, who could not possibly have been running legal power as his signal was a whopping +28 (from 1700 miles away... come on...), I mean the signal splattered over 200 Hz wide – normal is about 50. He was louder than another of our members who only lives about 3 miles from me.

Anyway, beside the W.A.S. victory, I also got 7 of the Canadian provinces, including Nova Scotia & New Brunswick. Curiously, where I normally see them all of the time during regular



By midnight, the FT4 side is devoid of anyone! On both nighttime bands; 40 & 80. Forcing you to use FT8 with it relative "glacial" pace after you've run FT4 for hours. I think that's what wore me down to where I had to go to bed for a few hours.

Now for "MY" control of slowness... frankly, I had a plan to gain as many multipliers on this contest as I could. Then I realized that I was collecting a lot of states & decided to see if I could work all 50 states as I did. So I was then being a bit more selective and missed tx cycles as I was scanning & looking for new states, prov. & Dxcc to work. I also spent more time & cycles on some of those than I should have. Slower pace, but more "quality" in the end for score; I think.

Overall, I think it was a fun exercise that proved that with some planning & good luck (actually having everyone show up from all states) that you can run a W.A.S. in less than 24 hours (23 hrs. & 28min., didn't think SD & WY would ever show up to the party) Woo-hoo!

In the end, I would like to see more of these FT parties throughout the year, maybe quarterly; though shorter (6 to 8 hours) - if for no other reason than for practice for this annual big event.

...oh, almost forgot... frequencies! U liked that they set up similar frequencies on each of the 5 bands, 4 frequencies each; but almost nobody used those alternatives when the primaries got very busy! I only worked a few once on a secondary, and then nobody was left to work, so back to the overcrowded part...

Thanks again George,

73 - John – N

Hello fellow TORC members,

To further my writings earlier on the FT Roundup, and to assist for the next time; which will be the ARRL RTTY Roundup ( [www.arrl.org/rty-roundup](http://www.arrl.org/rty-roundup) ) - Jan. 2-3, 2021 – 11AM Sat. to 1659 (4:59 PM) on Sun. Local time. On this page are the rules & needed links for other information.

As for setup for FT8 & FT4 modes, the best setup directions are at the FT Roundup website ( <https://www.rttycontesting.com/ft-roundup/preparation/> ) which gives WSJT-X setup up – very easy, and other notes for preparation for these contests.

My other prep was to setup a list of U.S. States & Canadian Provinces to use as a reference for multiplies, as was my strategy to increase my score by gaining as many multipliers – “mults” as possible.

As such, I also run mostly a “search & pounce” mode. This is due to the fact that I can select whom I want to call; i.e. chase... and I find that when you “run” (call CQ & wait for a reply), that you often have to take several cycles for a response, and then... they all hit you at once.

NOTE HERE: Because WSJT-X still has some ‘bugs’, when a bunch of stations call you, things can get lost in the mess.

An important strategy also, is run primarily on FT4! Because these contests are specifically for these modes, it makes sense to operate and work as fast as possible in the fastest mode – FT4!

That said, it should be noted, that by midnight, everybody seems to have abandoned FT4, so don’t be afraid to swap over to FT8. When FT8 dies down, and it will – this is a good time for your sleep break – don’t forget to set your alarm!

With that said, it is only when I run out of other folks calling CQ, and/or my band activity screen is green from working nearly everyone, that I will call CQ & ‘run’. If I don’t get many or any replies, it is then time to change modes, or bands to check what activity is going on elsewhere.

As far as other tips... WATER! Have a cup of water handy. You can do coffee, but in the long run, the coffee can & will make you crash later on.

The other tip is... protect your tailbone! As I have gotten older, and already having a bad back, I put down my pillow that I bought for our outings that I use with my heavy, all-steel folding chair. Great, sturdy chair, but hard on the tailbone! The pillow helped a great deal! I was getting pretty miserable during Field Day due to my back & rear hurting; this time, I was pretty comfortable. However, to improve matters more, I went to wally-world and bought a Coccyx Cushion (located in the health section on the back wall), for about \$15. Already, I know it is very comfortable.

Lastly, I used my 80-10 Meter OCFD (Off Center Fed Dipole), that I got from Gary – KT7AZ.

I can tune almost all of the bands with my Kenwood TS-440SAT internal tuner, and if not, I use a fully manual Yaesu FC-301 tuner.

It runs as follows; the short (45') section runs from the feed point balun (RED Triangle - at 30 feet up on a wood light pole), to the South-southwest and down to about 17 feet off of the ground. The long side (94 feet), runs due north (top of image) from the feed point for about 60-65 feet, and then turns about 80 degrees to the east-northeast for the remaining 30 or so feet, and ends about 12 feet off of the ground. This is a proven successful radiator, as I have communicated all over the world with it, with only 100 Watts, max. Frequently, only 40-50 W.



John N7GHZ

High SWR on a low loss line (e.g. ladder line / twin lead / LMR-400) is not a big deal, especially if you have a short and/or low loss transmission line.

For instance at 3:1 VSWR 75% of the power is transmitted and 25% is reflected. HOWEVER, on the next cycle that 25% is again bounced back and 75% of it (25% minus the two way loss on the line) is radiated. That's one of the reasons when you see the 250 KW transmitters used open wire transmission lines, where loss is measured in about a quarter of a dB per 100 feet.

Yes, there are higher voltages on the line because of the standing waves. Arching is the main concern. Heating will occur mostly due to the losses in the transmission line in addition to the IR losses on your tuner's inductor. At 175 watts, it should not hurt anything.

73, George NG7A

I copied this from another reflector I subscribe to. I found my novice callsign in the 1965 summer edition. WN7CXH

Also lot of old callbooks as well as old magazines for download in <https://archive.org>

Callbooks link is <https://archive.org/search>.

Link for search by callsign (as example W7DX)

<https://archive.org/search>. include pre-war publications

Paul Beringer

Hello TORC members, A very Merry Christmas to all of you.

Today is the 50th Anniversary of the First Flight of the Navy's F-14 Tomcat (Dec. 21, 1970).  
[Yesterday by the time you read this, due to publishing time]

I know, this is a radio forum... but consider the following -

A single F-14 Tomcat was equipped with:

- 2 - UHF 2-way radios
- A radio direction finder
- An IFF/Transponder
- An IFF Interrogator
- TACAN Navigation (similar to Vortac)
- Radar Altimeter
- Data-Link
- Scrambler units
- Instrument Landing System
- Jammers
- GPS (1983>)
- Main Radar
- Various sub-transmitters for weapons



Post 9/11... VHF/UHF Ability to communicate with civilian aircraft & ground stations

Oh, and other "stuff" we still can't talk about!

The point...?

A single F-14 fighter had more radio frequency transmitters than an entire World War II fighter squadron!!!

It was a great privilege & honor to work on, maintain & repair the best-of-the-best!

P.S. For the record, the F-14 weighed about 42,000 pounds without weapons; about 7,000 pounds of that was wiring! So very many wires...

73 - John - N7GHZ



Working great on my truck battery.

Also has 2 USB charging ports in addition to the 12v output.

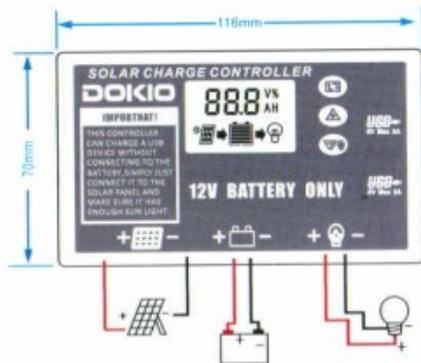
**DOKIO 200W Foldable Solar Panel Kit**  
Lightweight(11lb,28x20 inch)  
Monocrystalline(HIGH Efficiency) with  
Controller USB Output to Charge 12V  
Batteries (All Types: Vented AGM Gel)  
RV Camper Boat

Brand: DOKIO

★★★★☆ 69 ratings

Price: \$239.99 ✓prime & FREE Returns

Supports AGM, SLA and LiFe



batteries

W7HD Ron Herring

Hi All,

**METEOR SCATTER**

Curt / K7ZOO Mon, 14 Dec 2020 21:20:07 -0700

**BACKGROUND**

First of all, I wanted to thank all the people that participated in last night's meteor shower and tried to contact me. It was exciting to anticipate and prepare for the afternoon / evening operation. I thought some of you might find it interesting to hear and see some of the backstory details about operating portable meteor scatter.

Portable ops are definitely my passion. I have worked NPOTA, SOTA and POTA with something like 150 operations. You would think there's nothing left to learn, right? Meteor scatter portable ops are a bit different animal than my previous activity, though, involving: digital transmissions at full power, 50% duty cycle of operation (15 sec on, 15 sec off), need a view of a low horizon, and no sunlight.

**CONTACTS MADE**

Longest distance: 803 miles to XE2AT. I was operating at the red dot.

Call sign	Worked	Date/Time	Band	Mode	Freq	QSL
K7ZOO	W7FSI	2020-12-14 05:45:00	6M	MSK144	50.26150	<a href="#">UNITED STATES OF AMERICA</a>
K7ZOO	XE2AT	2020-12-14 05:03:30	6M	MSK144	50.26150	<a href="#">MEXICO</a>
K7ZOO	NJ7A	2020-12-14 03:28:15	6M	MSK144	50.26150	
K7ZOO	N5JEH	2020-12-14 03:27:30	6M	MSK144	50.26150	
K7ZOO	W9RM	2020-12-14 03:10:15	6M	MSK144	50.26150	<a href="#">UNITED STATES OF AMERICA</a>
K7ZOO	K0GU	2020-12-14 02:44:30	6M	MSK144	50.26150	
K7ZOO	KJ7OG	2020-12-14 00:56:15	6M	MSK144	50.26150	<a href="#">UNITED STATES OF AMERICA</a>
K7ZOO	N1UW	2020-12-13 22:18:45	6M	FT8	50.31450	
K7ZOO	KA7CVJ	2020-12-13 21:49:00	6M	FT8	50.31450	<a href="#">UNITED STATES OF AMERICA</a>
K7ZOO	K7GZB	2020-12-13 20:13:30	6M	FT8	50.31459	

## OPERATING LOCATION

Organ Pipe Cactus National Monument is an easy drive, about 2.5 hours from my home in Tucson. I planned to operate from the campground, as I've been there many times. On arrival though, I evaluated the area from a new perspective: How clear is access to the horizon? Using my compass I judged that the only decent clearance (at the campground) was down to Mexico (XE2AT), so I needed a better location. There is a picnic area about 15 minutes north, so I let the staff at the Visitors Center know I would be operating there. The picnic area turned out to be very good, with a nice view of the needed horizons.

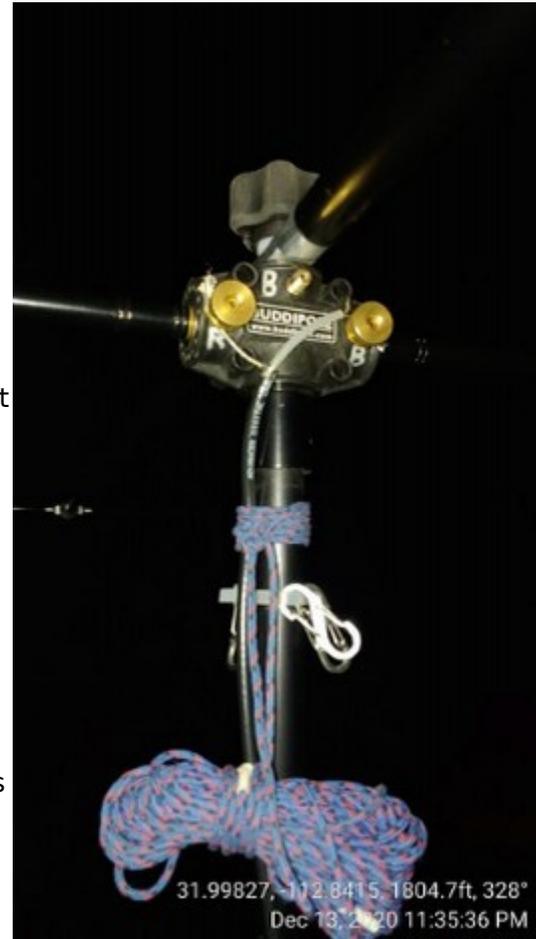
## DC POWER

To prep for a portable op I create an extremely detailed checklist, describing all the equipment / boxes needed. For this event I also looked at my current battery capacity of 70 amp-hrs (as generators are usually not allowed after dark in national parks). It became obvious that 70 amp-hours would not be sufficient for post-sunset hours (I use a 100w solar panel + batteries for daytime ops). I put together a cable with auto battery "claws" on one end and PowerPole connectors on the other, with the intent of using the vehicle's battery / alternator for power.

My car's in the shop so I'm using a rental truck. Right after sunset I went to open the hood of the truck -- and literally could not find the hood latch! My inner voice said: "Oh No... the car rental company uses vehicles with locked hoods, so the renter can't mess with the engine!!!" Yikes. After looking three separate times I finally found the latch, colored black, not labelled anywhere, tucked almost out of sight. I attached my power cable to the battery without further issue.

I planned to hook up the transceiver to the car and not connect my SLA batteries in parallel. On first transmission the transceiver shut down! Clearly the car's electrical system could not keep the voltage sufficiently high at about 16 A draw. I hooked up my SLAB's and decreased power to 70 W (sorry!) and the voltage drop was acceptable (Note to self: explore adding a voltage booster).

Throughout the evening the voltage dropped lower and lower, creeping towards the cutoff voltage for the radio. Thinking the batteries' chemistry was getting colder (they were cold to the touch) contributing to the voltage drop, I put a sweatshirt over the battery and placed them near the



warm exhaust of the truck. Cool idea, eh? Not so much -- after only 3 hours the sweatshirt was damp and a small amount of water on the batteries, due to the water vapor in the engine's exhaust.

I closely monitored the voltage throughout the day / evening, seeing the voltage drop to as low as 11.65 VDC during transmission at the end of the evening. I kept backing the power down further and further to avoid shutting down the transceiver again. Not optimal of course, so at the end of the operation I was running only 40 watts. So if you made a successful contact, THANK YOU for pulling my puny signal out of thin air. Note: the longest contact (XE2AT) at 830 miles was made with 40 watts.

My detailed calculations show that 140 amp-hour should suffice for an evening MS ops. I will purchase two more SLAB's for \$130. A battery booster is another option I'm considering.

### **BALUN**

I use a 3-element Buddipole yagi, which is very portable, reliable, easy to set up. I keep all the "TinkerToy" parts in two clear boxes. Except for this past weekend (ouch), when I had removed the 1:1 balun (this 1:1 balun also adapts a BNC connector to the 1/4 in binding posts on the Buddipole). I discovered I was missing the balun when I got on site, but thankfully I carry a complete set of tools. I cut an inexpensive RG-58u 3-ft cable (with BNC connectors) in half, stripped back the insulation and could connect it to the binding posts on the antenna. I took another 25-ft section of RG-58u and looped it into a 9-turn balun and installed it. Whew.

*Yes, you need a battery booster! This has been discussed here in the past. Solid state transceivers are not happy with a voltage less than 13.5 vdc. I have 4 different boosters and they all work. Top of the line is by West Mountain Radio but it costs about \$275. W7RMM found a booster on ebay for less than \$30 and it works just fine. It will maintain 13.8 vdc output until the supply battery goes below 10 v. It is RF quiet and produces minimal heat. Its output is not variable like the WMR version but fixed at 13.8 vdc is exactly what your transceiver likes.*

*See the cheapo booster here: <https://www.ebay.com/itm/DC-12V-Step-Up-To-DC-13-8V-25A-345W-Boost-Power-Converter-Regulator-Module-Tools/192312650240?hash=item2cc6ba2a00:g:00wAAOSwdPBZw3Rp>*

*tkravec*

*I have the West Mountain Radio booster and it is a solid investment it has several additional features that allow for more flexible setup and operations. All things considered when you evaluate what your investment is in transceiver antenna and power source a battery booster is just as important. I have a golden rule that I follow on remote locations never use the battery on the vehicle that provides safe egress unless your having an emergency*

Jim Perkins from my iPhone

## **ANTENNA**

I rotate the yagi by hand and use a compass to achieve pointing accuracy. After dark, though, the front and rear end of the antenna started to look somewhat similar! Wanting to make it easier to see the yagi's forward direction in the dark, I made a mental note to put a piece of orange flagging tape on the director element.

## **TIMING / SCHEDULE**

Allowing a half hour to each azimuth angle seemed to work pretty well. I was able to stick to this schedule with only an exception, when running a potential QSO I blew right through a half-hour azimuth change. The half-hour schedule worked very well, especially to connect with XE2AT. If I operate from an area without cell service, creating and using a schedule provides good focus points for participating stations.

## **METEOR VIEWING**

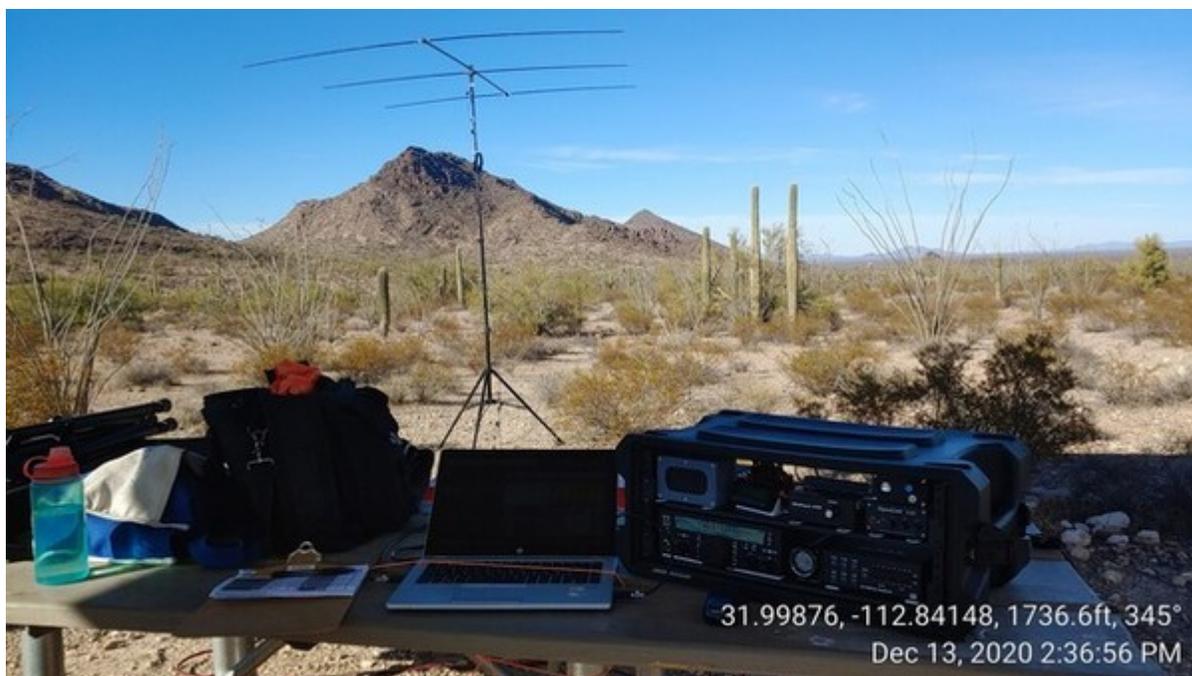
One of my friends that lives in the lights of Tucson mentioned "Being out there in the dark, it must've been great to see all the meteors in the sky, right?" Except that I spent the evening looking at a laptop screen!

## **EVERYTHING ELSE**

Went well. :)

Thank you again for participating. Two more pictures below.

Curt / K7ZOO



[https://sourceforge.net/p/fldigi/wiki/IC-705\\_Setup](https://sourceforge.net/p/fldigi/wiki/IC-705_Setup)

## IC-705 Setup

# Flrig and Fldigi Configuration

Unless noted, screenshots are from a Raspberry Pi, but the applications will appear similar for other distributions of Linux, MacOS, and Windows. The primary differences will be the names of USB devices.

No external USB device drivers are required to connect the IC-705 on either MacOS or Linux. A USB device driver for Windows for the IC-705 is available for download from Icom Japan. [Icom Japan Download for IC-705 USB Device Driver](#)

## Flrig Configuration

Flrig is the easiest way to interface your IC-705 to a computer. No Rigcat XML files are required, and you can easily interface to WSJT-X by selecting Frig as your radio.

You must provide Frig with the device name of the IC-705's USB interface. This device name will be different for each operating system.

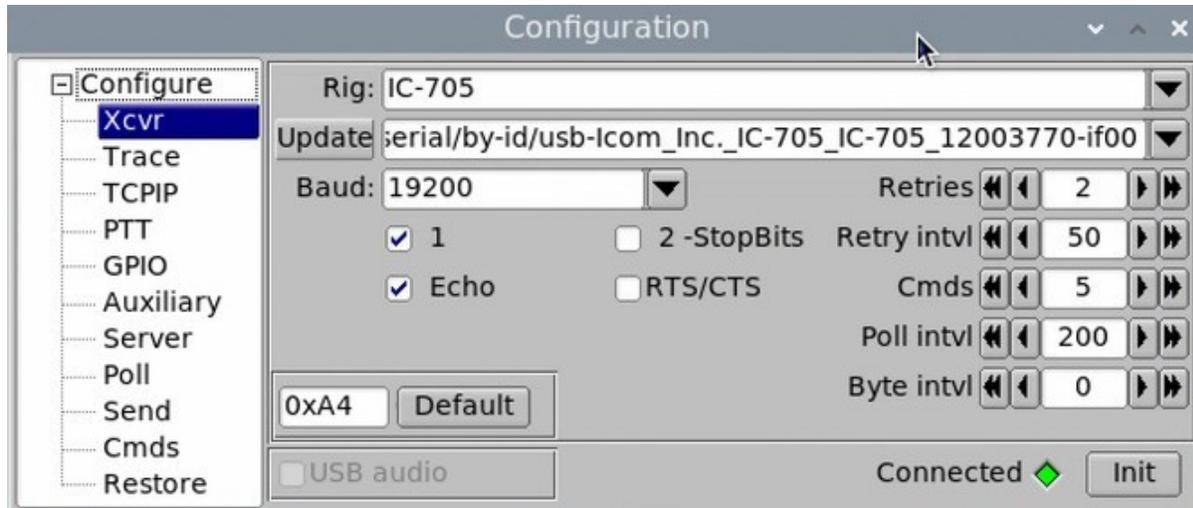
For Linux systems, it's easiest to identify the IC-705's USB interface on by looking in `/dev/serial/by-id`. You will see two devices here with very long filenames. The one ending with `if00` is the rig control and audio. The one ending with `if02` can provide GPS data. It is tempting to select a shortcut name like `/dev/ttyUSB0` or `/dev/tty/ACM0`, but these names may change if you attach other USB devices. The `by-id` name is harder to deal with because it is so long but it will be more stable.

On Windows systems, the name of the USB device will be something similar to `COMn` where `n` is the number associated with the comm port. If you have many USB devices, `n` may be two digits.

Identifying the name of the USB device under MacOS is described in the section of this document about [MacOS](#).

Note that Frig will correctly enter the Icom CIV address as `0xA4` (A4 in hexadecimal) and you do not need to pretend that your radio is an IC-7300 by entering the IC-7300's CIV address of `0x94`.

This is a screenshot of the Frig from a Linux system. It is similar to what you will see under Windows and MacOS.



You must now configure Fldigi to use Flrig rig control in the Fldigi configuration. In Fldigi go to Configure -> Config Dialog -> and navigate to flrig. Click on the checkbox for "Enable flrig xcvr control with fldigi as client".

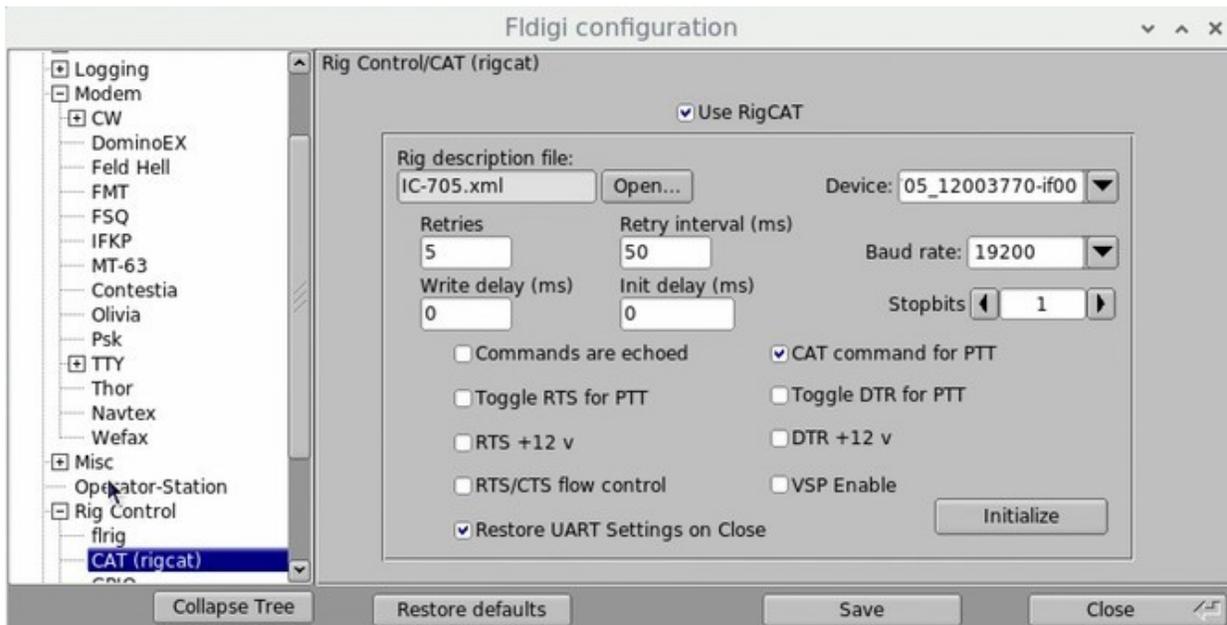
If all is working, Flrig will begin communicating with Fldigi. The frequency displayed in Fldigi should match what is displayed in Flrig, and you should be able to change mode and filter bandwidth in Fldigi.



## Fldigi Configuration with Rigcat

If you'd prefer to not use Fldigi and interface your radio directly to Fldigi, you must first download the IC-705 XML file for Rigcat from <https://sourceforge.net/projects/fldigi/files/xmls/icom/> . It does matter where you save IC-705.xml, but your home directory will work.

The next step is to configure Rigcat rig control in Fldigi. Go to Config -> Config Dialog -> Rig Control -> CAT (rigcat). Push the Open button next to the Rig description file box and navigate to your IC-705.xml file. Select your IC-705's USB device in the Device box. The name of the IC-705's USB interface is discussed in the Fldigi section of this document. Click on the Use RigCAT checkbox, push the Initialize button, and then push the Save button. If you were previously using Fldigi, you will need to quit Fldigi and then start again for Rigcat rig control to work.

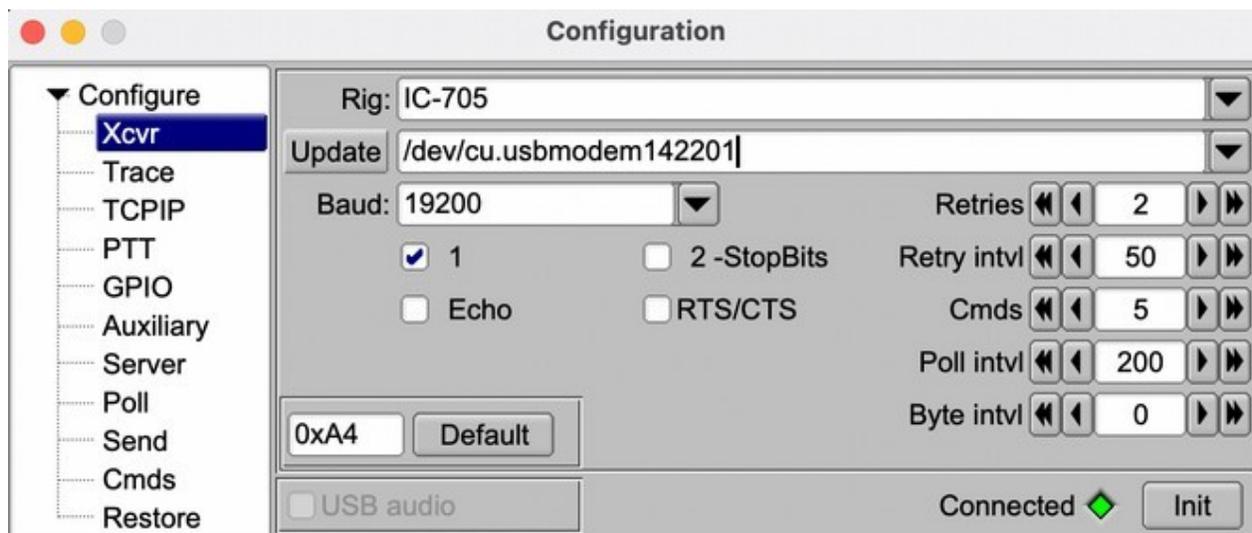


## Identifying the USB device on MacOS with either Flrig or Fldigi

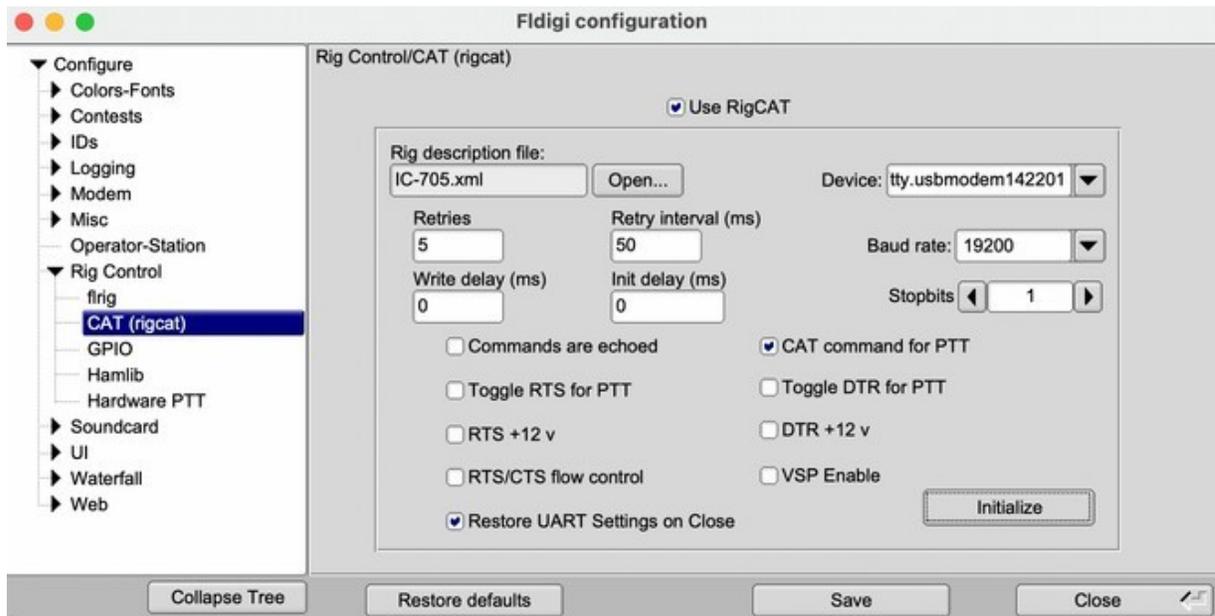
To interface your IC-705 to a Mac with Flrig, you must first identify the name of the IC-705's USB interface. Open a terminal window and cd into the /dev directory. Look for devices with names starting with "cu.usbmodem". In the image below, you'll see two devices with the name "usbmodem". On this Mac /dev/cu.usbmodem142201 is the rig control interface and /dev/cu.usbmodem142203 provides GPS data. Note that the last 5 digits in these filenames may vary from Mac to Mac, so you'll have to examine the /dev directory to find the correct filename on your Mac. The device with the lower value in the last 5 digits is the rig control interface.

```
MacBook-Pro:~ hpb$ cd /dev
MacBook-Pro:dev hpb$ ls cu.usbmodem*
cu.usbmodem142201      cu.usbmodem142203
```

Now that you've identified the USB device for rig control, you must enter it into Flrig. Unfortunately, Flrig does not identify these devices automatically, so you'll need to enter the device name manually. Once you've entered the full name of the USB device, push the Init button and your Mac should connect to your IC-705. Make sure you enter the complete device name starting with "/dev".



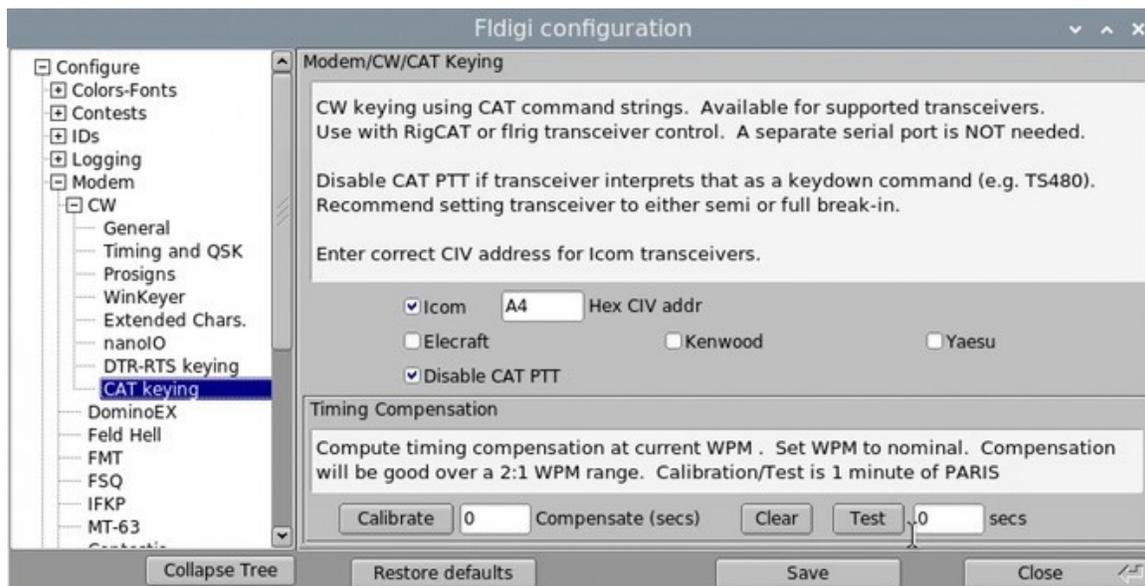
Should you decide to not use Flrig and wish to use Flrigi and Rigcat for rig control, Fldigi under MacOS will find the USB devices for your IC-705, so there's no need to enter the device name manually.



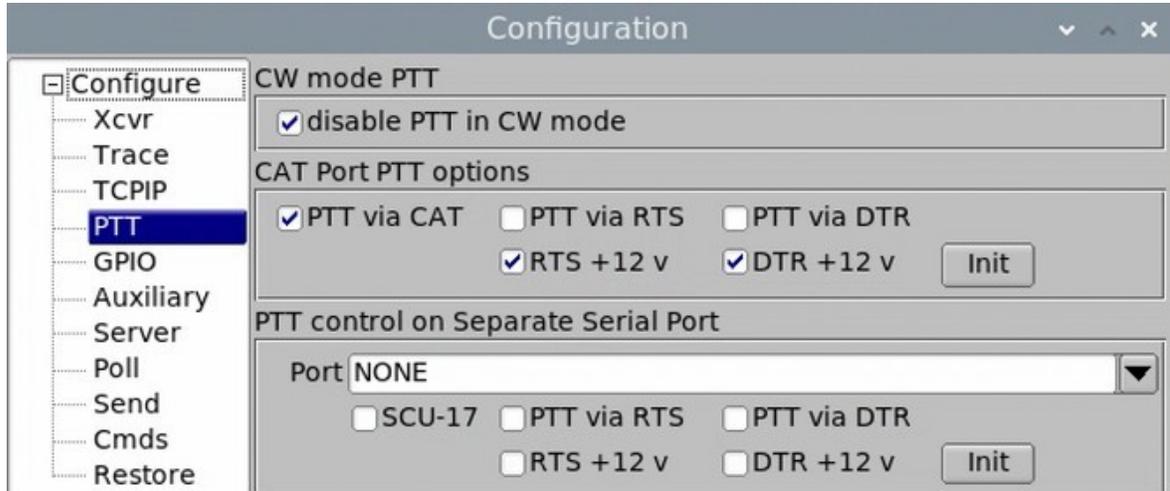
## Sending CW using CAT

You may configure Fldigi to send CW by using CAT to key your radio. You can do this by using Fldigi and Rigcat, or by using Flrig for rig control. This means you do not need an external CW keyer to send CW. This works the same way under Linux, MacOS and Windows.

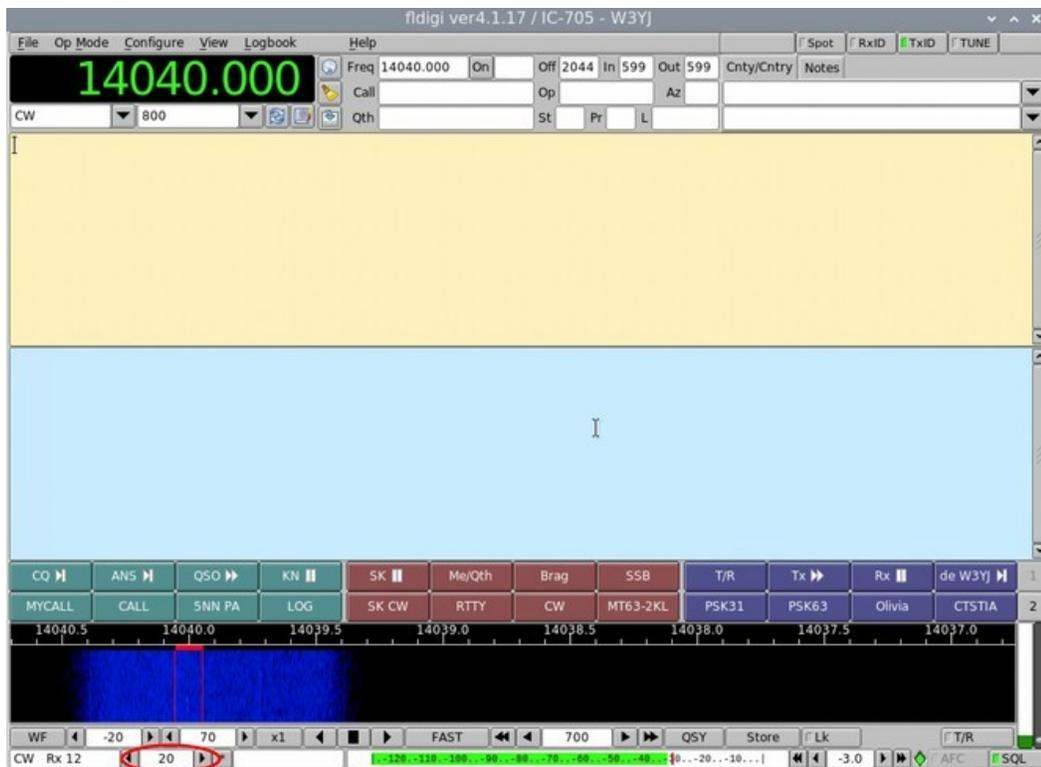
To configure this feature, go to Fldigi and navigate to Configure -> Config Dialog -> Modem -> CW -> CAT keying. Click on the box for Icom. Make sure the IC-705's CIV address of A4 is entered in the CIV box. If you want full break-in keying, click on the box for Disable CAT PTT. To send CW, use either Fldigi or Flrig to change the mode to CW. You can now send CW from a macro button. You may also send CW by first entering text into the blue Fldigi transmit pane. Then push the T/R macro key to start transmitting. Push the Rx || macro button to end transmitting.



If you want full break-in, in addition to disabling CAT PTT in Fldigi, you must also disable it in Flrig. Go to Config-> Setup -> PTT and check the "disable PTT in CW mode" checkbox under CW mode PTT.



You select the CW speed using the controls at the lower left of Fldigi. These are circled in the following screenshot. The number displayed is the selected CW speed, which for the IC-705 has a range of 6-48 WPM.



## Using the IC-705's GPS receiver as a time standard for your Linux system

You can use the IC-705's built-in GPS receiver to set the time on your Linux system, even if you're operating from a very remote location with no Internet access. This is important if you're using a mode that requires precise timekeeping like WSJT-X or if you're using a Raspberry Pi which has no on-board Real Time Clock (RTC).

First, you must make the GPS signal available on the IC-705's USB cable. Do the following:

MENU button -> SET -> Connectors -> USB (B) Function -> GPS Out, set to ON

[Icom IC-705 GPS Cheat Sheet for Linux](#)

## FOR SALE

Items must be listed with an asking price and include contact information, condition and your call. Items will only be listed for one issue.

MFJ-939i auto-tuner still new in box with all manuals, cables, etc. Excess to my needs (I have two more in use). Asking \$125 OBO + shipping (pickup preferred). \$194 is price on Amazon.



The tuner includes a highly efficient switching L-network with wide matching capability, 1.8 to 30 MHz coverage, a radio interface port, and heavy-duty 10 amp/1000 volt relays. It is rated at 200 watts SSB/CW. Needs 2 watts minimum to tune.

Also listing complete new tested and assembled AL705 Alpha Loop enhancement kit \$263.86 cost (asking \$225)

Enhancement Kit for the ICOM IC-705 and AL-705 magnetic loop antenna with Optional RM-705 Rig Mount, Optional Field Bag

Enhancement Kit for the ICOM AL-705 magnetic loop antenna includes:

Adds 60 & 80 Meters      Adds 20-40M efficiency  
with Tripod & adapters

\$299.95 cost (Asking \$225)

Plus the AL-705 magnetic loop tested and assembled

The QRP magnetic loop antenna, designed specifically for ICOM transceivers by alpha antenna™, is build to compliment transceivers such as the IC-705. With band coverage from 40 though 10 meters, this antenna can handle up to 20W SSB and 10W CW and Digital.



Included is 25 ft. of coax cable with BNC and PL-259 connectors.

\$563.81 total cost

Asking \$375 OBO for complete AL-705 package pickup only,

Ron W7HD [w7hd.torc@gmail.com](mailto:w7hd.torc@gmail.com)

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\$150.00 firm: Yaesu FTM-350 vhf/uhf fm radio. With Anderson powerpole power connection and mobile mount. Used for many years and still in good shape. With manuals on CD. Local pickup only. Two independent receivers/transmitters for simultaneous monitoring

- Dual speakers on rear of control head
- Original price was \$640.00 plus GPS and Bluetooth modules

Current price on AliExpress is \$530.66

Ron W7HD [w7hd.torc@gmail.com](mailto:w7hd.torc@gmail.com)



I have a working Ameritron AL-1200 for sale. I am asking a mere \$1400. I replaced it with an amplifier that covers HF+6 meters.

List price \$4,899.95.

Carl KB7AZ 520-906-8145 or

[carlfoster@cactuscomm.net](mailto:carlfoster@cactuscomm.net)



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I am looking for the software to program a Yaesu FTM-350 AR/AE. I have the cables but the not the ADMS-350 software. n7bxx@q.com

Thanx and hope you have a merry Christmas and a Happy New Year.    Gail N7BXX

## PURPOSE

### TORTOLITA RADIO CLUB TORC

A group of amateur radio operators aiming to just have fun

located south of the Tortolita mountains near Marana

Serving the greater northwest Tucson area and beyond.

- No formalities
- No regular meetings - just occasional weekend outings
- Occasional newsletters will cover items of interest to the group
- **NO DUES**
- No repeaters
- Emphasis is on **having fun**
- **No bureaucracy**



**Newsletter editor:** Ron Herring W7HD

Material in this newsletter is public domain and may be freely shared.

Credit may be given as follows: ***Courtesy of Tortolita Radio Club***

Of course, we are just starting out, so there is a lot yet to come. Your feedback and articles are very much wanted. Please feel free to email me with **suggestions and articles** at [w7hd.torc@gmail.com](mailto:w7hd.torc@gmail.com) ...

If you are contributing an article, please include a photo of yourself as an attachment. The members would really like to be able to recognize you if they see you out in public (should that ever happen).

The word *tortolita* means little dove and is used here as a reference to the Tortolita Mountains north of Tucson, AZ USA. The cactus field photo is courtesy of Chris Seger KI7DET. The flag photo is courtesy of Ron Herring W7HD and was taken from my front porch.