

Raspberry Pi QRP TX Shield for WSPR And Improvements

On an impulse buy at the [Hamvention](#) I picked up a QRP TX shield from the [TAPR](#) booth. I've wanted to try WSPR mode on the Raspberry Pi for a long time, but couldn't convince myself it would be worth it. Regarding another purchase, I have a panadapter working on the the Icom 7300, but it needs some improvement, see below.

TX Shield

The hardware (QRPi Board) is easy to install and the software, WsprryPi, is even easier to install in my opinion. WsprryPi will run from command line, but it is a simple matter of copying and pasting the command and letting it run several transmissions. Easy enough for a newbie like me on the RPi.

See this [PDF](#).

I had some initial problems with WsprryPi running and shutting down WIFI on the Raspberry Pi, but that has been resolved with the addition of an external [7" LCD touchscreen](#).

At this time WsprryPi is running 5 transmissions every hour on 20 meters. The command is run as a cron job. Easy enough to do with a simple GUI app. The app is [GNOME Schedule](#) and it's an easy package install.

The antenna is a coax attached to the TX shield going to a 34' wire in my office. It does pretty well for only 100mW and the transmissions are spotted all over the US and even in Canada. I'd like to put this outdoors some day and get some DX. Then it will really be worth the effort!

To make the hardware a little more secure, I used some silicon

to hold down the TX shield. Silicon is also dabbed on the coax to keep it in place.



Icom 7300 Panadapter

At the end of the last video you'll see the Icom 7300 and HDSDR running as a panadapter. The hardware is a Inrad RX7300, Mini Circuits Splitter and a cheap RTL-SDR dongle. There's a better SDR on the way, but it won't arrive for a week.

I'll be making improvements on the panadapter setup, so look for a video in the near future.

What do you think about a panadapter on the IC-7300?

Thanks for coming by, please comment below, 73 and good DX. – Rich, K0PIR

Sources:

See this [PDF](#).

[GitHub](#)

Icom 7300 WSJT-X Raspberry Pi Operating SPLIT MODE

I'm trying to get the most out of my Icom 7300 and recently I was given some good information by a fellow Ham on Facebook. Operate split mode or as it's called in the user guide, split operation in WSJT-X. I was trying to operate dual mode (JT65 & JT9), but was unable to transmit past 2700 Hz (passband limitations). Since JT9 normally starts above 2500 Hz this didn't leave me much room.

Split Mode, Split Operation

This does a couple of things. 1. Allows me to transmit above 2700 Hz. 2. Produces a cleaner signal.



“Split Operation: Significant advantages result from using Split mode (separate VFOs for Rx and Tx) if your radio supports it. If it does not, WSJT-X can emulate such behavior. Either method will

result in a cleaner transmitted signal, by keeping the Tx audio always in the range 1500 to 2000 Hz so that audio harmonics cannot pass through the Tx sideband filter. Select Rig to use the radio's Split mode, or Fake It to have WSJT-X adjust the VFO frequency as needed, when T/R switching occurs. Choose None if you do not wish to use split operation.” – [WSJT-X User Guice v1.7](#)

I'll write more on split operation and Lock Tx=Rx later, but here's an example of running split using WSJT-X on a Raspberry

Pi. As you can see in the video I found 5 watts to be sufficient. Earlier on 15 Meters I made several contacts in Brazil using just 5 watts.

Of course this can be done on a Windows computer too. It's an function of WSJT-X. I've been using it daily on both of my computers.

I'm always interested in comments, so please send me something below. Best wishes, 73 and good DX. – Rich, K0PIR

Raspberry Pi WSJT-X WSPR

Well it's easier than I thought! The Raspberry Pi WSJT-X installation that is. The Raspberry Pi 3 doesn't take up much room at all! That's the beauty of this little gem (See the photo). It's about the size of a Signalink USB.

It's a simple matter of updating your source.list and installing WSJT-X from the package and it was up and running in no time. Installing from the package is easier than compiling. Sometimes I find it worth it and other times it doesn't make much difference.



I've been using WSJT-X on my Raspberry Pi. It runs very smooth and I haven't had any glitches. I run 5 watts or 2 watts on WSPR. Less is better.

What is WSPR? WSPR (pronounced "whisper") stands for "Weak Signal Propagation Reporter". It is a computer program used for weak-signal radio communication between amateur radio operators. – Wikipedia

If you get a Raspberry Pi 3 and install Raspbian, this is how you can install WSJT-X.

You can buy a [Raspberry Pi on Ebay](#).

Raspberry Pi WSJT-X, WSPR, JT65 Setup and QSO!

UPDATE 4/24/17: See this PDF file, [WSJT-X Install Raspberry Pi](#) then proceed to the bullets below.

- Set the clock to UTC and localisation settings under Preferences and [Raspberry Pi Configuration](#).
- Connect your cables to your radio or Signalink.
- Open WSJT-X. It will be under the Sound & Video Program Group.
- Go to File and Settings. On the General tab you can enter your Station Details.
- On the Radio tab you can enter your Rig, CAT Control and misc settings (see the video). I'm using the IC-7300 and the Prolific [CI-V cable](#).
- On the Audio tab select your Soundcard and that should

do it just to get the program receiving and transmitting.

Visit [WSJT-X User Guide](#) and read the information on that page. You'll find it very useful.

Below is a short video walking you through the install and basic setup. However it shows installing WSJT-X from the GUI and not command line. If your sources.list is updated and you have run update, this is fine.

It takes a month or more to get registered on [WSPR Net](#), so visit and get registered as soon as possible. It's a fun site with a map of WSPR activity as well as a forum.

I hope you find this informative and useful. If you have any comments or questions, please make them below. Have a great day, best 73 and good DX. – Rich, K0PIR

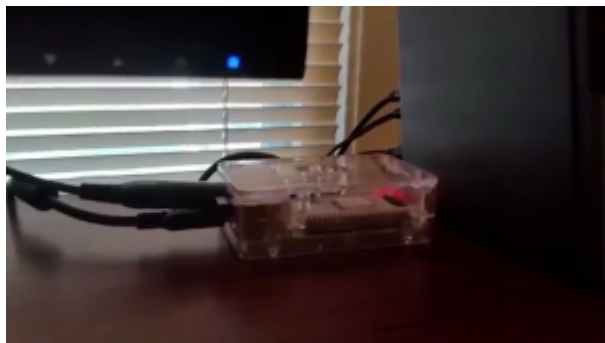
Sources:

[WSPRNET.ORG DEBIAN INSTALLATION](#)

[WSPR via WSJTX on Raspberry Pi 3](#)

Fldigi Running On Raspberry Pi 3 – Icom 7300

Fldigi, Icom 7300, Raspberry Pi 3



I've been looking for some more things to do with the [Raspberry Pi 3](#). DXSpider is running on one of them and the other is used for testing. The one for testing is in my office next to my radio, the Icom IC-7300. I've

tried a few applications with it and I'm happy to say that [Fldigi](#) runs very well on it.

The Raspberry Pi 3 doesn't take up much room at all! See the photo. It's about the size of a Signalink USB.

If you get a [Raspberry Pi 3](#) and install Raspbian, this is how I installed and setup Fldigi.

Raspberry Pi 3, Raspbian, Fldigi, Update, Setup and QSO!

- Update all of it. Run `> sudo apt-get update` and `> sudo apt-get dist-upgrade`
- Set the clock to UTC and localisation settings under Preferences and Raspberry Pi Configuration.
- Connect your cables to your radio or Signalink
- Install [Fldigi](#). Go to the Raspberry Icon > Preferences > Add/Remove Software
- Search for Fldigi and install the packages you want. I installed Fldigi, Flrig and Flmsg
- Open Fldigi. Fldigi will be under the Internet Program Group.
- Go to Configure and setup Rig Control. I'm using the IC-7300.xml and the Prolific CI-V cable.
- Go to Sound Card. I'm using the USB Audio CODEC

I'm happy to say that the software found my cables and all I had to do was select them from the drop down menus in Fldigi.

See the following for more detail. I made this impromptu video

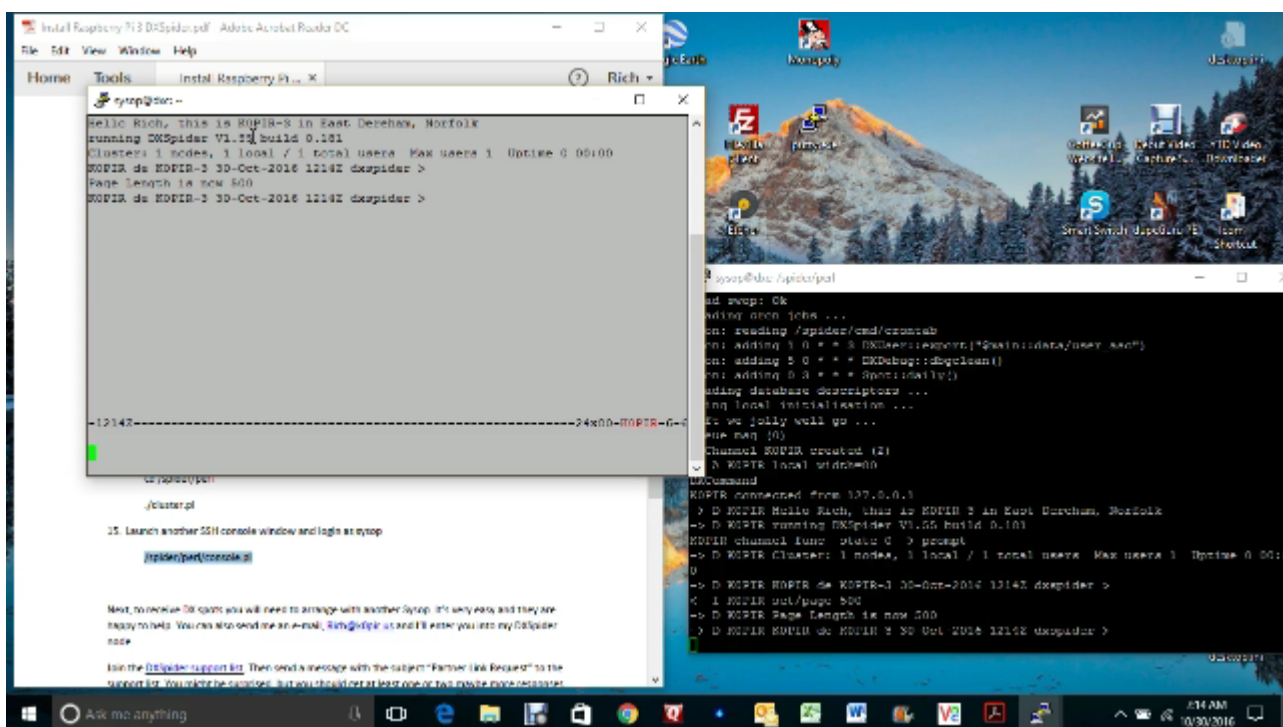
using my phone. You can see the setup and a PSK31 QSO I make. It's pretty awesome!

You can buy a [Raspberry Pi on Ebay](#)

Here's a clip I made over the weekend using the Raspberry Pi 3, Fldigi and my Icom 7300.

Now if I can get WSJT working I'll be a happy camper. Linux requires a bit of patience, but it's worth it. If you have any questions please comment below. I'd love to hear your thoughts on this.

DXSpider Raspberry Pi 3 Configuring Partner Links



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ur DXSpider Raspberry Pi 3 running; the ./cluster.pl launched and we are able to bring up the console, we need to make some

partner links. See my previous post, [Raspberry Pi 3 DXSpider installation](#).

But first, there is the issue of making our DXSpider Raspberry Pi 3 available on the internet.

In the last post I mentioned having a static IP. If you don't have a static IP or fully qualified domain name, one way around that is to use a service. Take a look at [No-IP](#), this should do the trick.

DXSpider Raspberry Pi 3 Partner Links

You can get some partners by joining the [DXSpider support list](#). Your partner will send you a node callsign, the host and port. You'll need to reciprocate by sending them yours. In my example this is k0pir-3, dxc.k0pir.us on port 7300. I've read in the DXSpider manual and I would suggest keeping it simple using just 2 or 3 nodes. Mine are on different continents.

DXSpider Raspberry Pi 3 Configuring Partner Links

I'll post a video and Word file at the end of this article giving the full instructions. Some things to note are:

- The terms "partner node" and "adjacent node" are used interchangeably in my .docx. Meaning the callsign you get from your partner, such as k0pir-3.
- The <adjacent_node_callsign> is entered for example as k0pir-3, without the <> symbols.
- You should be able to copy and paste the scripts and commands in the .docx, however the commands sometimes will not work that way and need to be typed in. If you copy and paste a command and there is an error, please try typing the command.
- We have a couple of scripts that will remove old logs. Courtesy [D07PSL](#).

- We have another script that will make DXSpider run as a service. Courtesy [SV5FRI](#).
- I install and use sysv-rc-conf to enable DXSpider service at boot.
- Backup your DXSpider Raspberry Pi 3. [Buy a 32GB USB stick](#) and back it up.

The Word document worked better for copying and pasting scripts, whereas the PDF document made problems. Here's my Word document for configuring partner links: [running-dxspider-on-raspberry-pi-3-and-configuring-partner-links](#).

You can buy a [Raspberry Pi on Ebay](#)

Thank you for coming by and please comment below.

73, good DX – Rich, K0PIR

Resources for this article include:

[SV5FRI](#)

[D07PSL](#)

UPDATE: I discovered a constant error in /var.log/syslog: “rsyslogd-2007: action ‘action 17’ suspended, next retry is ...” and followed this [solution](#). tail -f /var/log/syslog is your friend! [Logging of application errors](#).