

Grow Equipment RFI [SOLVED]

The Hunt

Over the past few days/weeks, I've been noticing a (local?) noise on HF (80m and 40m) that starts at 7pm and lasts all night until 1pm the next day.



To find the source, I used an [RTL-SDR](#) dongle with a mobile screwdriver antenna, and Justine and I went for a drive:

- We went up and down Roberts Creek rd (North - South), noted where the noise was the strongest, and drew an imaginary horizontal line on the map.
- We went up and down Lockyer rd / Hansen rd (East - West), found where the noise was strongest, and drew an imaginary vertical line on the map.
- Looking at where the two lines crossed gave us a pretty good idea where the noise was coming from. We drove down their driveway and it looks like we found the house...

Here's what the noise looks like at my house on the SDR with the mobile antenna:



And here's what it looks like in front of their house:



The Resolution

Once we located the house, we drove back home and I walked back to introduce myself and explain the situation. They were very receptive and at first didn't really know what could be causing it. We exchanged numbers and I went back home. A few minutes later, I noticed that the noise stopped for a few minutes and restarted again, which I'd never seen do outside of the 7pm - 1pm schedule.

The next day, they contacted me to tell me that they think they found the issue:

“

It appears to be us causing the interference, but we don't know what we can do about it. We are attempting to build an indoor garden for growing in the winter (based on the current global events), and so we picked up some growing equipment. [...] What we don't understand though is that it is one light and one ballast. How could that cause interference? [...] Any ideas? ”

We coordinated a quick turn-off-and-back-on test and confirmed that it was indeed their growing equipment:



I offered to do a bit of research to see if the RFI could be filtered for their equipment. They told me they're using a [Hilux Grow Light \(AHS 1000\)](#) (a High Pressure Sodium Bulb) and a BCBallast (NL-HS1000/CGD2E) that I couldn't find

any information about. Reading up a bit, it seems that it's the cheaper ballasts (not the bulbs) that are to blame for most of the RFI.

This [site](#) explains various experiments with filtering the input and output of the ballast and links to [this set of filters](#) that seems promising. Failing that, the [Galaxy Ballasts](#) seem to have very good filtering and low RFI.

After explaining how important it is to stop using their equipment until the RFI issue is resolved (and pointing them to the [Radiocommunication Act](#)), they agreed to keep their light off until they get a filter set.

After a few days, they told me that they didn't buy the filters because of the minimum order quantity of six. However, they did get an "analog" ballast (not sure what that means), and as far as I can tell, it doesn't generate

any noise! 😬

I've been very impressed at how receptive they were to fixing a problem they can't really notice themselves. I'm very grateful to have such neighbourly neighbours.

ISED Canada

Before my neighbour got back to me the next day, I sent an email to the [ISED Canada Lower Mainland District Office](#) to see what the next steps would be in case they didn't want to cooperate:

“ To: ic.spectrumsurrey-surreyspectre.ic@canada.ca

Hello,

I live on the Sunshine Coast and a few days / weeks ago, I noticed a very strong noise on 80m and 40m between 7pm and 1pm (18 hours a day). We drove around with an SDR and a computer and pin pointed the noise to one or two houses.

I talked to one of them to ask them if they had recently bough a new piece of equipment on a timer but they couldn't think of anything. A few minutes after I got home, the noise stopped for a minute and started again (I had never noticed it stop between 7p ad 1pm before).

I'll continue trying to work with them to isolate and hopefully fix the equipment that's causing the interference, but in the event that they refuse to cooperate, what would be the next steps. The noise is so bad that it's making the 80m and 40m band unusable for 18 hours a day in a 200 m radius of that house.

Thanks,

Patrick Truchon, VA7FI ”

I got a response six days later:

“ Hello Patrick,

I have received your email concern regarding interference on 80m and 40m.

We really appreciate you trying to deal with this situation yourself first. In the past, sometimes this interference was pin pointed by the breaker test. This test can isolate more clearly where the interference is coming from.

I am hoping you can figure this issue out with the home owners because due to COVID-19 restrictions, our travel has been suspended and we have limited resources at this time. The department must prioritize public safety services.

Please feel free to contact me if you have any other questions.

<Name Redacted> ”

I informed him that my neighbour and resolved this issue and he responded “That is great to hear. Very interesting resolution!”