



Short CIRCuits

February
2022

SERVING CENTRAL ILLINOIS AMATEUR RADIO SINCE 1921

IN THIS ISSUE

President Corner

by Jeff Lovell KC9QQM

Greeting everyone,

While I have not been involved in the club for as long as many of you, over all I have enjoyed my 13 years as a member.

Why did I become one? For me this was the second time as being a licensed ham, back in high school under Charles Walters, I got my novice ticket in 1978 and upgraded to Technician and pretty much only did UHF/VHF and was not part of the club. I knew many of the members, back then but didn't know enough or wasn't interested enough to join. I let my license run out in '98.

Fast forward to 2009 and I got the radio bug again and decided this time I wanted to do more than just FM. Once I got licensed again, I visited the club a few times with Eric N9DOA and joined.

What do I see the club as?

A place of fellowship with others with similar hobbies and experiences, a group of friends that can mentor me in amateur radio. What about you? What do you see this club as? Or for?

The last couple of months have been a bit trying for me as I step in this role to lead this club and I certainly need all your help in doing so.

Let's remember that this club exists to be a help to its own and the community we are in.

73,

Jeff KC9QQM

CIRC Happenings

Achievements of our members and club events

Receiver for optimum performance
Gary Huber AB9M

Solar wind Vs. Star Link
Tim Stone

CIRC Happenings

How to set up your receiver for optimum performance...

Gary Huber AB9M

In many if not most cases the receiver RF gain is set too high which leads to higher S-meter readings and increased receiver noise. If there is local interference causing noise, that noise is also amplified and may mask desired signals. It may seem counter-intuitive but reducing the receiver RF-gain may result in weak signals being heard. Here is the process to optimize receiver sensitivity for your given operating conditions:

Find a clear frequency on your VFO.

1. Set the receiver mode to CW and the receiver passband filter to 500 Hz. Turn off any noise reduction, RX EQ, or other option that will add gain to the receive audio. Turn both the AF and RF gain controls to minimum, then increase the AF control until you hear electron noise. Increase the RF gain until you hear an increase in the noise level. Note this setting level
2. Disconnect the antenna - You can select an antenna input with no antenna on it like RX Antenna or transverter port if your radio has one
3. Note the dBm reading or S-meter reading with no antenna connected.
4. Connect the antenna.
5. Note the reading in dBm or S-units This is where an accurate dBm calibrated S meter really counts.
6. If the noise goes **up** about 8-10 dB, you have the optimal RF preamp setting for the noise on your antenna for the given time of day and propagation.
7. If the noise with the antenna connected goes up significantly more than 10 dB, you have too much preamp gain, which will limit dynamic range for large signals. **Reduce preamp gain.**
8. If the noise goes up much less than 8 dB, **increase preamp gain** to get it closer to the 8-10 dBm increase.

g. . If your radio does not have preamp gain settings but does have attenuator settings, you may be able use the attenuator to reduce the noise increase to 8 to 10 dB (or one to two S-units) when the antenna is connected.

Note: These settings will generally provide the total system RF gain required to demodulate weak signals in or close to the noise floor while the AGC is operating. At these settings very strong signals (or noise) outside of the selected bandpass are less likely to cause a reduction in gain from the AGC, which will cause the desired weak signal to be lost (AGC compression). Also note, that each band and changing band conditions will require the above procedures to be redone.

I have used this technique for more than forty years with both analog and digital radios to chase the weak DX down near the existing noise floor of the radio. Although most of this piece is taken from <How to determine the amount of RF Preamp gain to apply for band conditions – FlexRadio > It has been edited, reduced to the detail, and modified for readability by Gary ~ AB9M

Solar wind vs Star Link

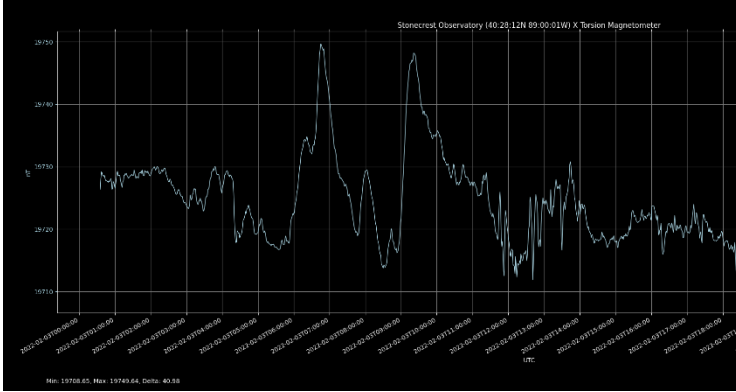
Tim Stone

It's not often that we see such diverse interests as amateur radio, satellite observing, and astronomy come together in a way that is interesting to all three groups of people, but we recently had a case where that is exactly what happened.

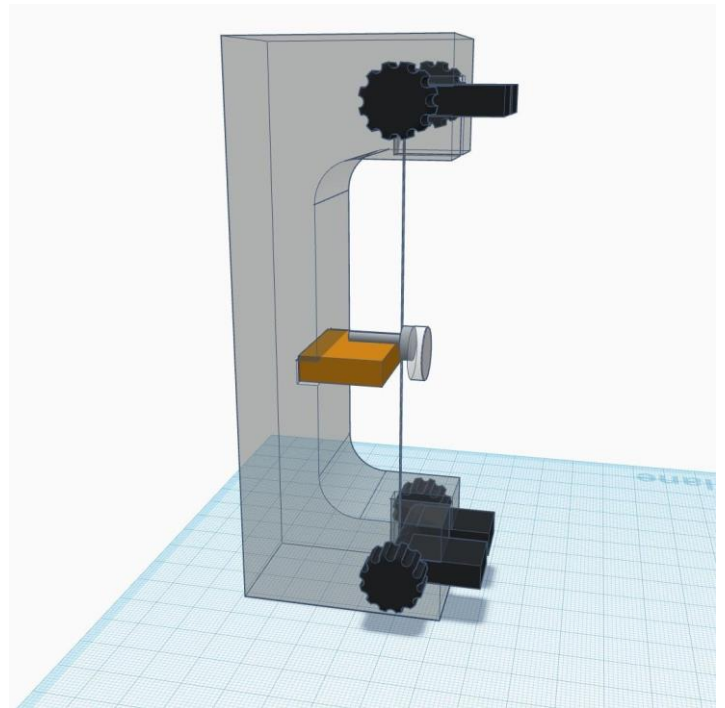
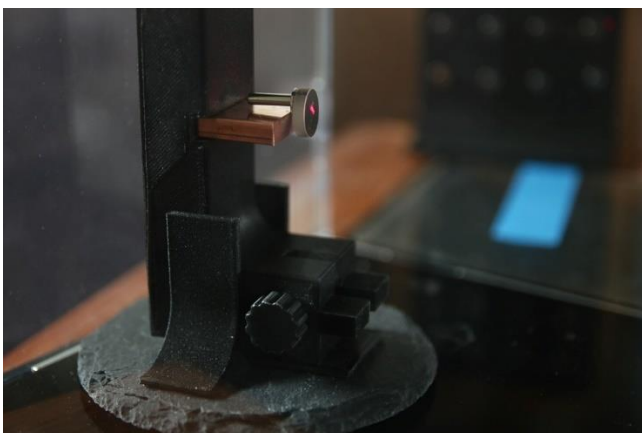
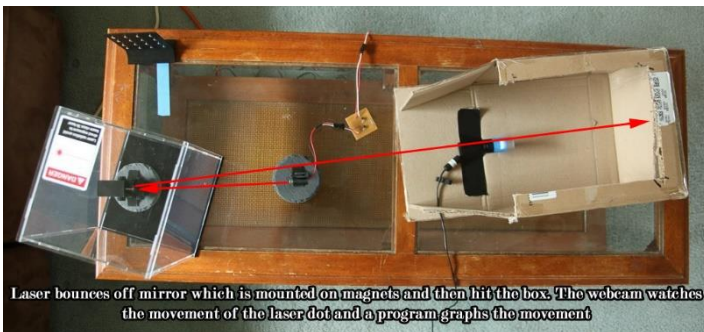
[As reported by Space.com](#), a recent geomagnetic storm resulted in the loss of 40 Starlink satellites on February 8. These satellites were among 49 [launched by SpaceX from Kennedy Space Center](#) just twelve hours after the onset of a relatively weak G1 solar storm, [the result of a Coronal Mass Ejection associated with a M1 class flare originating from Active Region 2936 on January 29](#). This flare produced an R1 level radio blackout, which perhaps some CIRC members experienced. Members of the Twin City Amateur Astronomers visually observed this impressive sunspot group using only solar filters (no telescopes) on January 30.

When these geomagnetic storms occur, their energy typically heats the upper atmosphere which, as with anything else, expands as it gets hotter. This produces

more atmospheric drag on satellites in Low Earth Orbit (LEO). In this case, the newly launched Starlinks deorbited as a result of the increased drag. As solar activity continues its energetic climb to the coming maximum in the next few years, we may very well see more of these deorbit events as many of the growing number of LEO satellites are vulnerable to the powerful storms ahead.



My magnetometer recorded this storm. As you can see, there were two waves of solar particles, primarily electrons, that impacted February 3rd between 06:00 and 10:00 UTC. The earth's magnetic field twists and buckles under such impacts, changing the orientation of the field. As my magnetometer is a relatively simple device which utilizes a suspended magnet, the twisting of the magnetic field physically turns the magnet. The magnetometer records the angle of the twist, and converts that to the strength of the magnetic field that produced the twist.



It's so rewarding to me to be able to personally make observations like this, and see how these events play out in real life!

Tim Stone

AREA NETS

Tuesday 8:30 P.M. 28.450
CIRC Open 10 meter Net

Tuesday 9:00 P.M. 146.640 (156.7PL)
CIRC Open Net

Wednesday 8:00pm 50.140mhz USB
6M net

Thursday 8:00 P.M. 28.450

Thursday 8:00pm 444.950 (97.4pl)

Sunday 08:15 A.M. 1.915
Open 160 meter AM net

AREA EXAM DATES

Following is the schedule for W5YI-VEC Amateur Radio exams for the year 2020. At the Community Room of the Bloomington Public Library located at the intersection of E. Olive St. and S. East St. Entrance off of S. East St.

Please bring two forms of identification. You must have an FCC issued FCC Registration Number (FRN) or Social Security Number. We cannot administer a test without your FRN or SSN. You will need a copy of your Current license plus any CSCE you want to apply.

PLEASE – Contact Keith AC9S at AC9S@Hotmail.com to sign up.

2022 dates
TBD

Exams' in Morton are held at the Morton Public Library, 315 West Pershing at 12:00 Noon the third Saturday of even numbered months and at the Peoria Superfest. ***This might be incorrect with changes due to COVID19.

CIRC Meeting

Fourth Wednesdays of the month at 7:00 p.m. at the American Red Cross

1 Westport Dr.

Bloomington, IL 61704

** Until further notice the meetings are virtual and only for members. We are sorry for any inconvenience. **

Calendar of Events

Daily Coffee Klatch Monday thru Friday

**** The weekly Coffee Klatch has been moved to the 146.64 repeater for the time being. Remember the new PL is 156.7hz *****

9:00 a.m. at Dairy Queen Veterans at Cub's
XYL's Join the OM's Monday and Friday

Weekly 10 Meter Net

Every Tuesday evening at 28.450 MHz- at 8:30 p.m.

Weekly 2 Meter Net

Every Tuesday evening on the 146.640-repeater at 9:00 p.m.

Weekly 6 Meter Net

Every Wednesday evening at 50.135 MHz at 8:00 P.M.

Weekly 160 Meter AM Net

Every Sunday morning at 1.915 MHz at 8:15 A.M.

75 Meter HF Traffic handling nets

NET / TIME	FREQ khz
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NORTH CENTRAL PHONE NET

M-F 7:00 A.M. central time	3912
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ILL. PHONE NET

M-F 4:45 P.M. central time	3857
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SUN. 8:00 A.M. central time	3940
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ILLINOIS SIDEBAND NET

M-SAT. 6:00 P.M. central time	3905
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75 METER INTERSTATE SIDEBAND NET

DAILY 0100 UTC	3985
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ITN INDIANA TRAFFIC NET	3910
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DAILY 1230 UTC	OR
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2200 UTC	3912
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CENTRAL ILLINOIS RADIO CLUB
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WEB PAGE

[HTTP://WWW.QL.NET/W9AML/](http://www.ql.net/w9aml/)

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Secretary: Mike Sallee (KC9FWL)

Treasurer: Larry Gibson (W9BJG)

Member at large: Duane Benjamin (KC9PIM)

Newsletter/Web Editor: Jeff Lovell (KC9QQM)

The CIRC is a not-for-profit ARRL special service club whose purpose is to advance the service of Amateur Radio. Located in Central Illinois, the CIRC and its members welcome all to use the 146.64 and 444.950 repeaters to attend club meetings.

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