Tamaqua Wireless Association Inc.

SPLATTER

THE AMATEUR RADIO NEWSLETTER OF SCHUYLKILL COUNTY

Since 1967 Vol. III #4 2018

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Schuylkill County now has linked repeaters.

- Need Emergency Service in Schuylkill County, dial 911
- Need Amateur Radio Service, contact one of the officers above
- We are here to serve the community. If you need radio communications for an event email one of the officers above and we will gladly help you.

W3TWA Home Page:
www.w3twa.org
Facebook:
TWA Tamaqua Wireless Association
YouTube Channel:
https://www.youtube.com/channel/UCqHQWwP6--piClV-YiiNzfA

April 2018

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1 Easter	**2**	**3** Schuylkill County Emergency Services Net @ 8PM on 145.370 N3RZI	**4** Round Table hosted on The TWA Repeater Network 7PM with Bill, WY3K	**5** The Chew with JD @8PM on 145.370 KB3JD	**6**	**7** Our 2nd amateur radio test, 9AM at the Tamaqua Borough Hall. Please use the back entrance.
8	**9**	**10** Schuylkill County Emergency Services Net @ 8PM on 145.370 N3RZI	**11** Round Table hosted on The TWA Repeater Network 7PM with Tom KC3CRS	**12** The Chew with Roy @8PM on 145.370 W3TKR	**13** SARA Club Meeting at Schuylkill Medical Center Pottsville 8PM	**14**
15 ARRL SSB Rookie Roundup	**16**	**17** Tax Day (Taxes Due) Schuylkill County Emergency Services Net @ 8PM on 145.370 K3VNN	**18** Round Table hosted on The TWA Repeater Network 7PM with Frank KB2MXV	**19** Club Announcements on the TWA Network @7:30PM The Chew with Kevin@8PM on 145.370 K3VNN	**20** TWA Club Meeting at The American Legion or The Grove, Barnesville – stay tune 7PM	**21**
22 Earth Day	**23** World Immunization Week (Start)	**24** Schuylkill County Emergency Services Net @ 8PM on 145.370 W3TRK	**25** Administrative Professionals Round Table hosted on The TWA Repeater Network 7PM with Bill, WY3K	**26** The Chew with Roy @8PM on 145.370 W3TKR	**27** Arbor Day	**28**
29	**30**	If anyone attends a SARA meeting and want the information in this newsletter please email Tom Lesisko at tlesisko@ptd.net I will gladly include it.				

Amateur Radio Tests

Tamaqua Wireless Association offers amateur radio test sessions four times a year. If you are unable to attend one of the regularly scheduled test sessions our VE team is available to register and conduct additional test session(s) to accommodate individuals or groups if you cannot make one of our test sessions. Please contact Bill Dale at bdalejr@ptd.net. Otherwise, **our tests start at 9AM on the dates given below. The tests sessions are at the Tamaqua Borough Municipal Building 320 East Broad Street in Tamaqua.** If you are new to amateur radio and need help, studying for the technician test, our website www.w3cma.org has a study guide posted on it or you can contact Bill and he will put you in touch with a member to help you. Just so, you know you do not need Morse code anymore. Cost is $15.00 for an FCC license that could last you a lifetime.

Test Sessions 2018

- ~~February 17th~~
- April 7th
- June 2nd
- August 4th
- November 3rd



Volunteer Examiner

Are you a VE and want to help with TWA's test session(s), are you interested in becoming a Volunteer Examiner (VE)? If you answered "Yes" to either of these questions, please contact Bill Dale. Bill has been our VE liaison for over 25 years and has the answers for you. His email is bdalejr@ptd.net. If you would like to become a VE, contact Frank D'Amato or Jim Shellhamer; these two recently received their VE credentials and would be the go to for answers. Their emails are Frank – kb2mxv@gmail.com and Jim - kc3dxs@ptd.net. We would love to see you at a test session…

REPEATERS

TWA maintains two VHF repeaters and a UHF repeater. One 2-meter repeater is located on top of the ABC High Rise building in Tamaqua the other is currently on top of the Clamtown Hill in West Penn Township. Our newest repeater is UHF. It is located on top of the Vulcan Hill near the Mountain Valley Golf Course. We are currently waiting on frequency coordination. Anyone with a valid amateur radio license can use them. We encourage repeater etiquette and limit your "kurchunking" with your call sign to a minimum please. The Tamaqua site is strictly analog FM, the Clamtown location is a Fusion repeater that can do C4FM and analog FM, the UHF is analog FM.

TWA Repeaters

146.490 / 147.490 (PL 123.0)

147.270 / 147.870 (PL 131.8)

449.775 / 444.775 (PL 131.8)

147.270 is our Fusion repeater

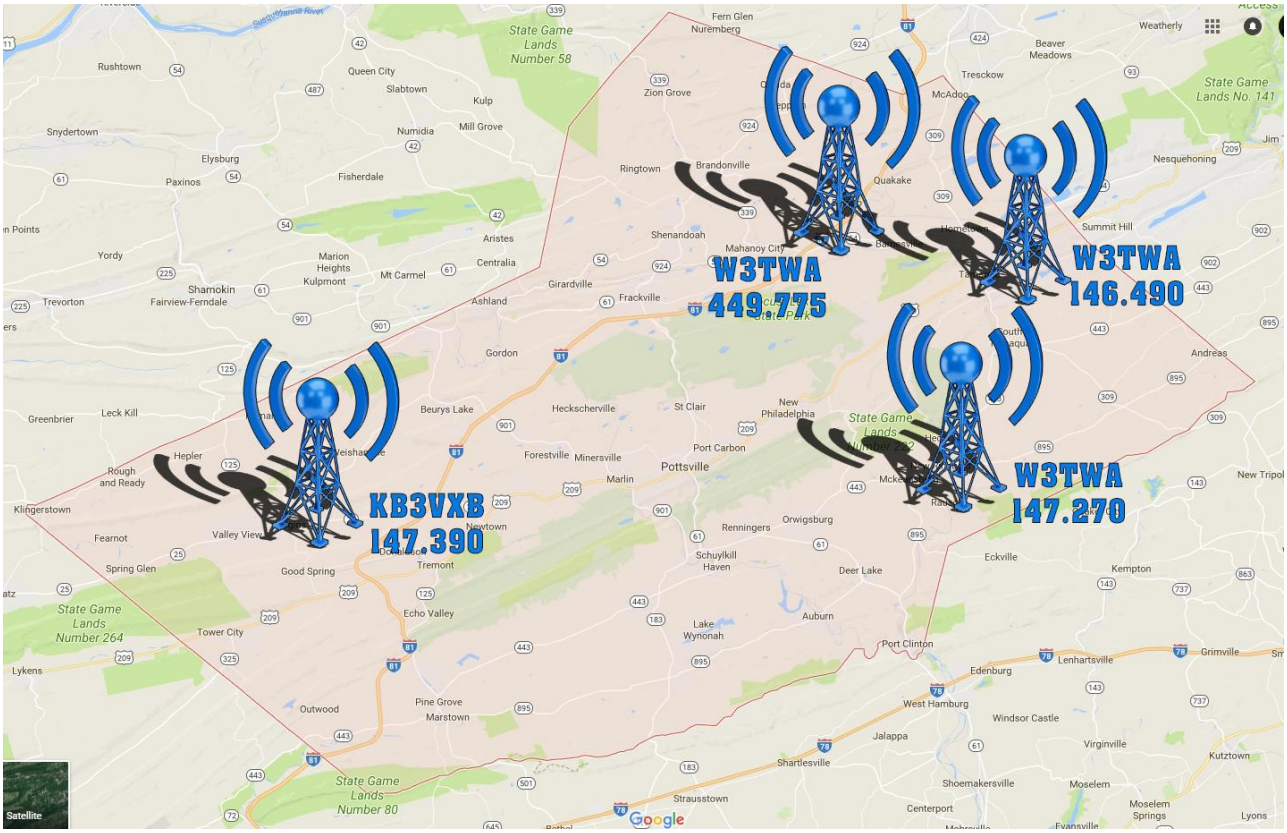
Simplex: 146.550

~~REPEATER FUND~~ TOWER FUND

We really could use your help. Our 440 repeater at Mountain Valley did not survive the storm on Friday March 2nd. The North guy wire failed causing the tower to come down. We have been in touch with the owner of the property and he has agreed to allow us to reinstall a tower. The tower we had has three bad sections. We need to replace these. If you could afford to donate towards the tower, we would be greatly appreciative. There will be a cost to the tower installer, lift, etc. Thank you. Contact Bill, WY3K at bdalejr@ptd.net and he could give you more information.

LINKED REPEATER COVERAGE

TWA has you covered in Schuylkill County, thanks to Frank KB2MXV for the coverage map of Schuylkill County if you are anywhere in the county now just tune to one of the frequencies below and you can talk to anyone, they are all linked. **Please pause for a second before transmitting, it takes time to turn-on all the repeaters with an RF Link**.



SCHUYLKILL COUNTY REPEATER NETWORK

Our network of repeaters links Schuylkill County with very good coverage. The repeater frequencies are listed above. Two of the three repeaters are coordinated through ARCC (Area Repeater Coordinating Council) if you feel we need to add another repeater to make our network even stronger in the county please attend a meeting and tell us about it. As you know, Schuylkill County is not flat. We are always open for better coverage in the county.

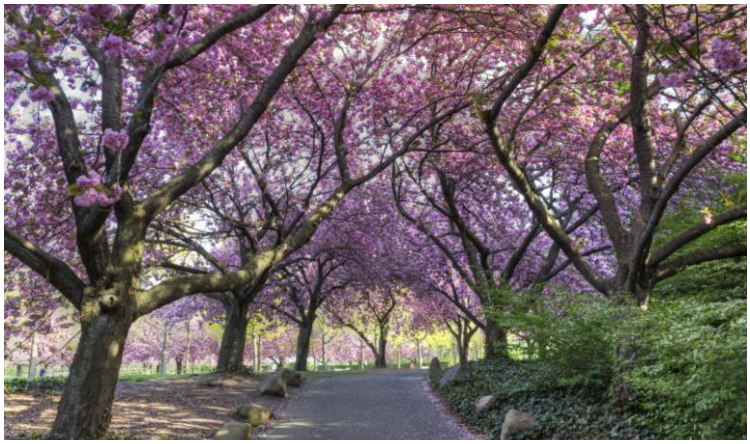
CALENDAR OF EVENTS:

- May 2nd, 9th, 16th, 23rd, and 30th are our Wednesday night Net's on TWA's repeater network.
- May 17th Club Announcements @ 7:30PM on TWA's Repeater Network
- May 18th Club Meeting at The Grove 7:00PM
- May 18th, 19th, and 20th Hamvention 2018
- June 9th to 11th VHF Contest





- June 13th Club Announcements @ 7:30PM on TWA's Repeater Network
- June 15th Club Meeting at the Grove 7:00PM
- June 16th Set up for Field Day 2018 11AM at the grove
- June16th Kids Day
- June 20th Rain date for Field Day 2018 6PM at the grove.
- July 8th-9th IARU HF World Championship
- July 19th Club Announcements @7:30PM
- July 20th Club Meeting at the Grove 7:00PM
- August 5th - 6th 222MHz and Up Distance Contest
- August 16th Club Announcements @7:30PM
- August 17th Club Meeting at the Grove 7:00PM
- August 19th- 20th 10GHz and Up – Round 1
- August 20th Rookie Roundup – RTTY



WHAT'S NEW WITH TWA

- March's meeting minutes are now in the newsletter. See below.
- Have you noticed the "Calendar of Events" lately? It is being filled in. It is nice to see more amateur radio activity in Schuylkill County.
- A lot of activity in March, the activity you do not want to have. On March 2nd we lost our 440 repeater and linking system. Jim Moyer has a detailed report in this newsletter.
- On Sunday March 4th Tom Smith, Ed Boerner, Jim Moyer, and myself disassembled the tower, removed the electronics and cleaned up the site. Tom Lesisko took the duplexer and amplifier to work to make sure the equipment was not damaged because the repeater was still transmitting while the antenna was on the ground.
- Tom Smith and Frank D'Amato tested the antenna to make sure it survived the fall. The SWR's were low, and the antenna seems to be in working order.
- Bill Dale, Jim Moyer, Tom Smith, Frank D'Amato and myself attended a meeting at McDonalds in Hometown. The purpose of the meeting is to discuss the future of the Mountain Valley repeater. Jim Moyer was asked to contact Mountain Valley to see if they will let us reinstall the tower. On Friday, Jim did contact them and the owner wants a letter explaining what we want to do.
- Tom Smith, Frank D'Amato, and myself spent about two hours installing the 440 controller and linking radios at the 27 location. Our first attempt to link Hegins with the 27 did not go too well. On our second attempt to link Hegins we were successful! We now have the Hegins repeater linked to the 27. We are working on getting the 49 repeater in Tamaqua linked too.
- **Congratulations go out to Kevin K3VNN. He has agreed to fill the treasurer's position for the rest of the year**. Kevin will meet with Ed and get the account information changed over to him.
- Bill WY3K is working on securing a Rohn 25 tower for Mountain Valley.
- We will schedule a meeting with Mountain Valley to see if we could secure a temporary site on their property to get our 440 repeater up and working again. Stay tune.
- On Tessco's website a new Rohn 45tower, 45'self-standing costs $1680 and a Rohn 55, 50' self-standing costs $2400. Both prices do not include freight.
- I would like to thank Frank KB2MXV for updating TWA's website. If you have sometime and are surfacing the web, stop by and check it out.
- Ed, KB3AYY stopped by the Tamaqua site to see if he could get the Echo Link and the 49 repeater linked on a snowy Wednesday. The area got about 10" of snow.
- There was a Technical Committee meeting at McDonald's on Thursday 22nd we did an inventory of what equipment we have to get a tower reinstalled and what we need to come up with to get the tower back up. There will be a letter sent to Mountain Valley as requested by them.

FROM THE PRESIDENT'S DESK

WHAT A MONTH

It seems like yesterday I was completing my article for the March edition of Splatter, and here I am with fingers to key board typing away for the April fool's edition. Some may remember how our previous editor (W3TI SK) would always hide some type of April fool's joke within the pages of Splatter. Let's see if Tom has a surprise for us.

As I said, this month just seemed to fly by and I am glad it did. With one storm after another, it was a March to remember. This is the year that we will not only remember the horrific weather, but the first storm of the month that took down our Mountain Valley tower. And for the second year in a row, the Girardville St. Patrick's Day parade was postponed and rescheduled for a later date. As they say, in like a lion and out like a lamb. But this year the lion did not want to exit, so we will have to reserve April for the lamb. The good news is I have spotted a hand full of robins in my yard and K3TE reported that the bears have awakened from their hibernation and destroyed his bird feeder.

In other news, the new format for the monthly business meetings was implemented and it appears to be a good fix. We will continue to fine-tune our procedures in hope that we can continue to make TWA a truly diverse organization with opportunities for all aspects of amateur radio.

As mentioned at the March business meeting, Tamaqua will be recognizing the 150th anniversary of Memorial Day with a number of events planned throughout the month. The Tamaqua Remembers Committee will kick off the month long celebration with an opening ceremony beginning at 6 p.m. on May 1st in the parking lot adjacent to the American Legion with the announcement of the name selected for the renaming of a section of South Nescopeck Street. The celebration will conclude on May 28th with the annual Memorial Day parade, followed by cemetery services, community picnic and a fireworks display.

Last year TWA was asked to assist with communications for the parade. As of now we have not heard if our assistance will be required, but in the event we are asked, the membership agreed that we will provide any necessary assistance.

Don't forget we have another VE exam session scheduled for Saturday, April 7th. As of now I received three inquiries of interested individuals wishing to test.

MARCH MEETING MINUTES

Minutes of March 16, 2018 TWA Meeting

The regular monthly meeting of TWA was held on March 16th, 2018 at the American Legion hall in Tamaqua PA. Presiding was WY3K. The meeting was called to order at 19:00hrs. The following members were present; WY3K, KC3CRS, K3TE, K3VNN, W3OFD, KA3FUL, N3RZI, KB2MXV
The minutes of the February 2018 regular monthly meeting have not been posted to the club website as of yet.

There was no Treasurer's Report given.

Committees:
ARES County EC: N3RZI
N3RZI spoke of the Girardville St. Patrick's Day parade is set for March 24th, 2018. He has 10 volunteers, pre-parade meeting starts at 10Am at the Borough Hall in Girardville. Parade starts at noon.

VE Session: WY3K
The February 17th VE session produced Two Technicians, One General, and One Extra class licensees. April 7th is the next test session at the Municipal building in Tamaqua.

Schuylkill County Emergency and Traffic Net Manager: N3RZI
Additional Net Controllers are needed. Include W3TWA once the repeater system is back online.

Roundtable Net: KC3CRS
The net will be held on the 27 repeater until further notice. April net controllers will be WY3K, KC3CRS, KB2MXV, WY3K.

Application for membership: Secretary
No applications.

Technical Committee Chairman: K3TE
The UHF tower at MVGC collapsed during the March 2nd snow storm. All the equipment has been secured from the site. MVGC advised WA3WIJ that the club is welcomed back and to provide the golf course with a letter of future tower plans.
KB2MXV, K3TE and KC3CRS attempted to link the 27 machine to the KB3VXB repeater by erecting a second antenna at the 27 repeater site. Initial tests were unsuccessful, and further tests will take place this weekend.

Antenna Crew: KA3FUL
Nothing to report.

Club Bulletin - Splatter: K3TE
Will be out by the end of the month with an article on duplexers by K3TE.

TWA Website: K3VNN
K3VNN will perform minor updates to site, and will give KB2MXV administrator access to help update website as needed.

Club Archives: K3TE
Nothing to report

Old Business & Correspondence:
James Munley KB3FET has all 501-c3 forms ready to go. The filing fee is $400. The following members agreed to donate the following amounts for the filing fee. $75 by K3TE and N3RZI. $50 by K3VNN, WY3K, KB2MXV, KC3CRS, W3OFD. A motion was made by KC3CRS and seconded by N3RZI to proceed with filing. Motion passed unanimously.
Letters of incorporation need to be sent to Representative Goodman and Mrs. T's by KC3DXS.
2017 Tax Return is due by May. WY3K informed the club that an accountant has volunteered to prepare and E-File our taxes for no fee. WY3K is awaiting financial information from KB3AYY.
There will be no Summer Fest for 2018 due to road construction in Tamaqua. The club will participate in the Heritage Day festival in October. K3VNN will look into the cost of equipment insurance from the ARRL in the amount of $10,000

New Business:
KB3AYY has resigned his position as Treasurer. A special election was held and K3VNN was nominated Treasurer for the remainder of 2018. A Motion was made by KC3CRS and second by K3TE. Motion passed unanimously.

A letter will be created by WY3K for MVGC once the club has secured a replacement tower. The letter will include all necessary construction needs as well as technical specs of tower system and antenna.
N3RZI provided a map for the Girardville St. Patrick's Day parade, with street closures and meeting time. (see ARES County EC). N3RZI requested W3TWA submit to him all man hours used during recent parades and public events performed by its members so he can forward information to ARRL.
WY3K advised that he is awaiting confirmation from Lehigh Paving on donating their current radio tower to the club. It was recommended that a site visit be scheduled to confirm the tower meets our needs.

Discussions took place on short term and long term goals to get the UHF MVGC repeater back online. A meeting will be scheduled with John Rizzo once a decision is made on our tower options.
K3TE is awaiting a response from KB3AYY if he can re-program the link radio at the 49 machine to see if we can link to KB3VXB.

KA3FUL advised the club of the passing of K3KNL Michael Cuttic that occurred this afternoon.

Motion to Adjourn made K3TE and seconded by W3OFD

Respectfully Submitted
Frank D'Amato – KB2MXV

WHAT IS A DUPLEXER?

When I first got into two-way radios back in the 90's I came across a device called a duplexer. To me, a duplexer was a printer that printed on both sides. Unbeknownst to me that a duplexer in radio communications was used to transmit and receive two frequencies at the same time. I found this definition on the web - ***A duplexer is an electronic device that allows bi-directional (duplex) communication over a single path. In radar and radio communications systems, it isolates the receiver from the transmitter while permitting them to share a common antenna. Most radio repeater systems include a duplexer.***

There are two main types of duplexers. Pass/Reject and Reject.





A pass/reject filter is on the left and the reject or notch filter is on the right. One could argue that the pass reject filter is better than the reject filter but that depends on where you are going to install the repeater. If you plan on installing your repeater at a site that is very popular with other repeaters you will need a pass/reject filter. The pass will be tuned to one of your frequencies and the reject with attenuate the other. This type of filter will have a pass "roll off" that is very tight to your tuned pass frequency. This means that if you are tuned to 444.600MHz and another repeater in the area is tuned to 444.150MHz you will need a pass/reject filter. You will want to pass your frequency but attenuate 444.150MHz.

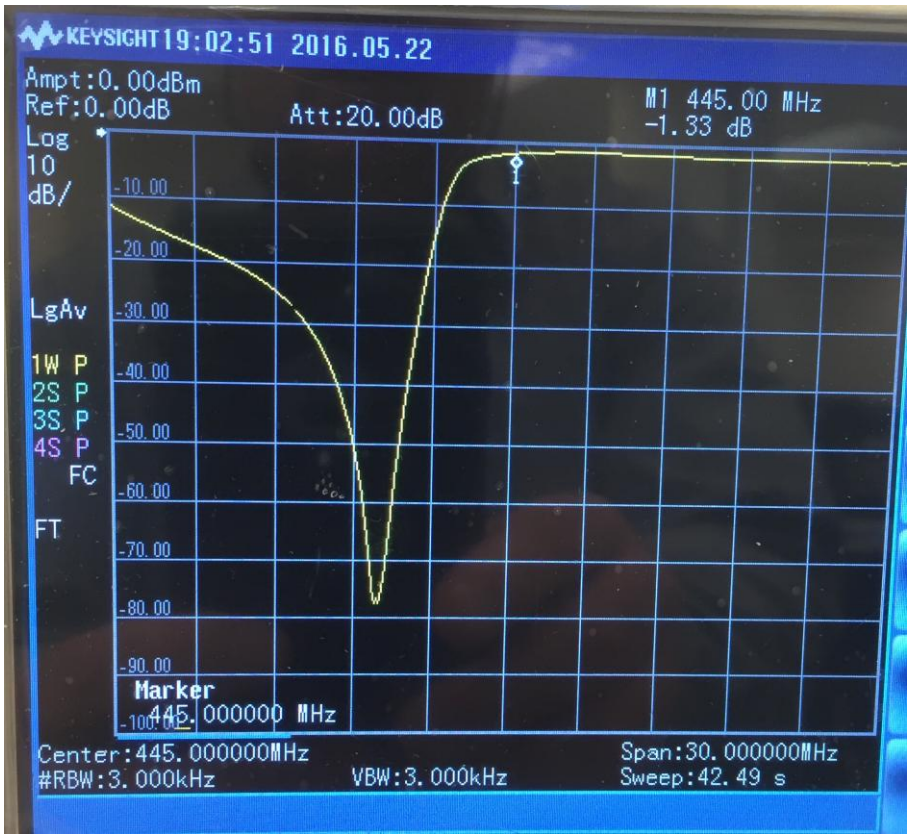
The reject filter on the right is a picture of a "mobile" duplexer. These types of duplexers do not have a specific pass frequency. This type of filter would pass 444.150MHz and 444.600MHz causing interference with your repeater. This duplexer

would be used where you do not have a lot of RF in the air to interfere with your frequency.

The easiest way to tune a duplexer is to use a spectrum analyzer with a tracking generator built in. A tracking generator will generate a frequency that the analyzer will follow. In other words, they are synchronized with each other. Buying a spectrum analyzer without a tracking generator is like buying a car without an engine. I will probably do another story about spectrum analyzers another time.

REJECT OR NOTCH FILTER

Look at the photo to the right. This is what a reject or "notch" duplexer produces. The reject "notch" is almost -78dB of isolation. The notch frequency is 440MHz. Notice how the notch looks like a knife-edge. That is what you need; a miss-tuned notch will decrease your sensitivity of your repeater and cause some desensing. This would not be acceptable. In electronics, this waveform is known as a band-stop.



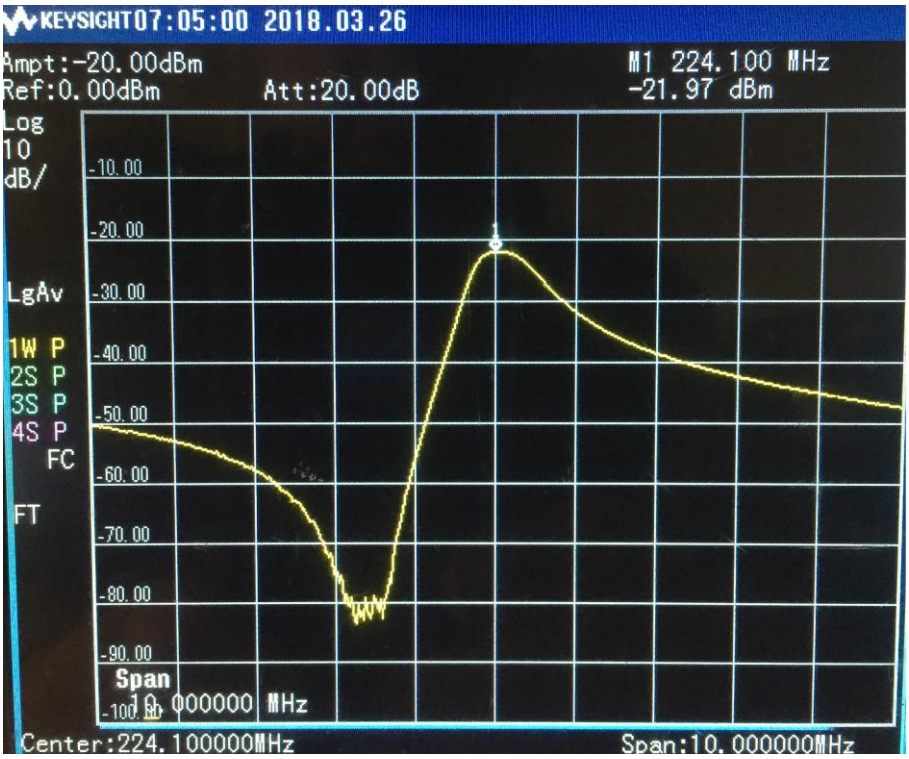
As for the "pass," the center frequency is located at 445MHz.

The marker on the top right is showing 445 MHz at -1.33dB. What that means is the duplexer is soaking up 1.33dB of signal. Say your amplifier was producing 10 watts with a -1.33dB loss the output of the duplexer would be 7.36 watts. That is as if you buy a $2 hamburger and the chef takes a small bite out of your burger before he gives it to you. Paying for 10 gallons of gas but only receiving 7.36. Hmmm…

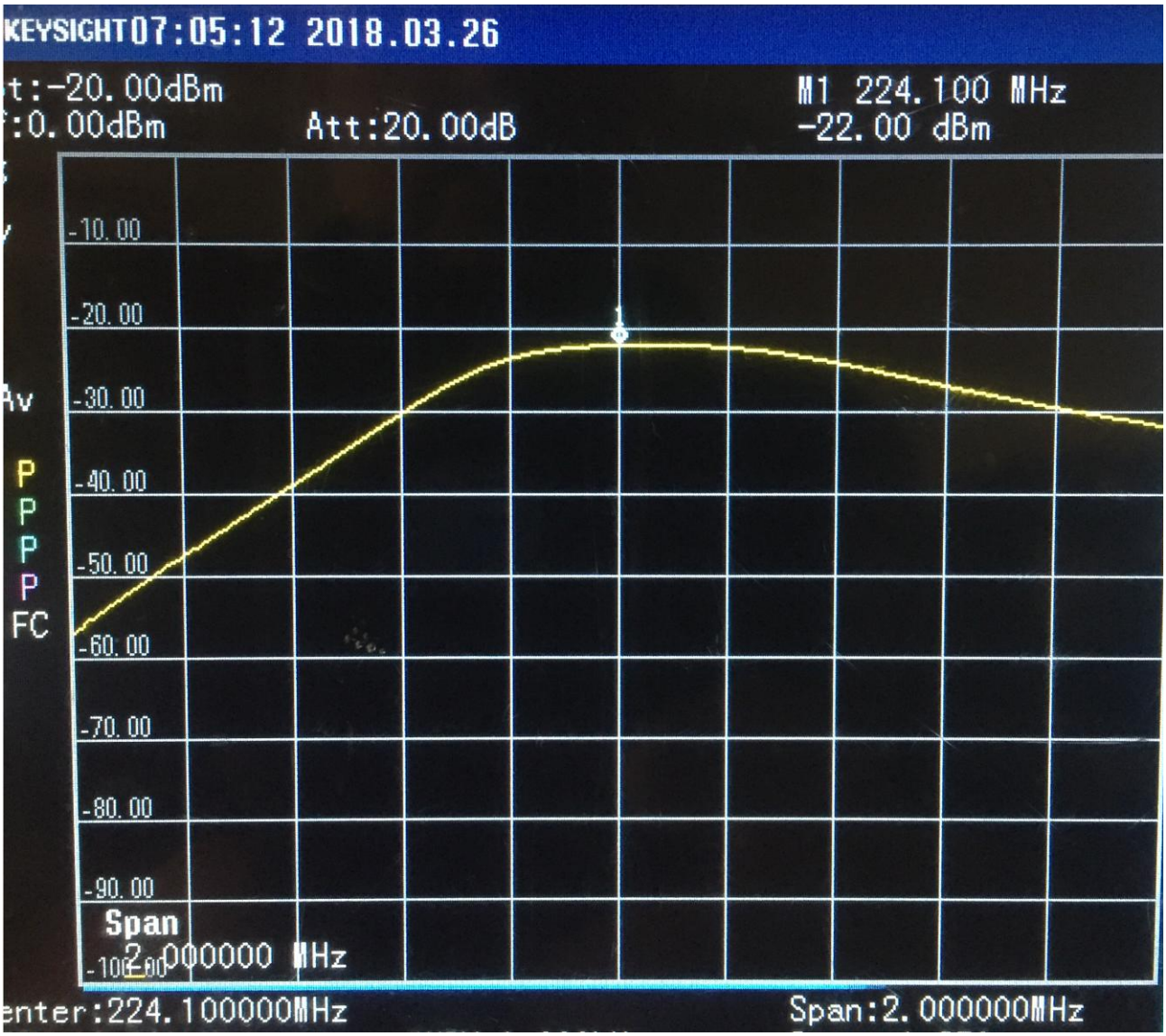
Look how flat the frequency stays on the top. That is not good if you are on a mountain with many antennas. Your duplexer is passing 445 to 450MHz. In other

words, your duplexer is passing 15MHz above your actual frequency. This is not good if you are on a tower with many antennas. Now let us look at the

PASS/NOTCH DUPLEXER



The Notch is the same for any duplexer; you want the bottom to look like a knife-edge, as deep as possible. A Pass/Notch duplexer signal differs in the "pass" frequency. As the above duplexer is passing 15MHz of input frequency, this duplexer is passing quite less. Look at the top of the screen; it looks like there is a bump at the top, this is the "pass" frequency. Comparing that to the Notch duplexer the "pass" is much tighter allowing a small frequency band to pass. Unlike the Notch, duplexer that is passing 15MHz. this duplexer is only passing 500Hz. As for the knife-edge, called the Notch (this is sometimes referred to as Band-Stop) this is the same as the Notch duplexer. You want that as "sharp" as you can get it, as low as it can go. I was once told that a repeater sometimes acts like an elephant or an alligator. An elephant could hear well but cannot transmit well. An alligator can transmit well but its ears are tiny making the repeater deaf. You want to find a happy medium with the two so your repeater is not an elephant or an alligator in the room. That is where the duplexer needs to be tuned properly. A miss-tuned duplexer will make your repeater weak in covering distance or deaf in hearing distant radios.



In the above photo, I have dropped the span from 10MHz down two 2MHz. This is the "pass" frequency. The pass frequency is 224.100MHz. If you notice, -22 dBm, the reference is -20 dBm that means the duplexer is taking -2 dBm from the signal. The 3 dB down point, also known as the "half power point" will give a bandwidth of 700 KHz. That is +/- 350 KHz on each side of the center frequency. This is a much tighter frequency response in passing a specific frequency than just a Notch filter. Remember the Notch filter passing 15MHz! Until next time, this is K3TE

MONTHLY REMINDERS FOR SARA AND 145.370

Thursday Night Chew



Roy
W3TKR



Kevin
K3VNN



JD
KB3JD

Check out the Rag Chew Crew @ 8PM on 145.370 Tone of 123.0. Stop by and bend their ear for a while. You can find these guys running the Chew every Thursday. Check them out; they would love to hear from you.

Schuylkill County
Emergency
Services NET

Check-In Every Tuesday Night

145.370 (PL Tone 123.0)

Alternate Frequency 147.345 (PL Tone 123.0) The Net begins at 8:00 pm local time

The Net is hosted on SARA's Repeater

The Schuylkill Amateur Radio Association (SARA) meets every 2nd Friday of the month at the Schuylkill Medical Center on South Jackson Street in Pottsville. They meet at 8PM, walk in the main door and walk all the way back. Their website is http://www.vpnavy01.com/websites/sara/ for more information.

TOWER FAILURE

I conducted a failure analysis of the fallen tower and am 100% sure that the northern guy wire rubbing in the trees, failed and broke apart. The blue plastic jacket rubbed away, causing the cable to rust in three places. The tension at the weakest rusted section where some strands were missing caused the break. The failure of the Northern guy wire caused the tower to fall south.

Jim Moyer.





Silent Key

Michael Cuttic, 73, of Frackville, passed away Friday evening the Penn State Health St. Joseph Center, Reading. Michael was a veteran of the Navy, having served as a radio operator. Mike was active in the club, helping on field day and other events. Michael is survived by his wife of 46 years, Carol Kurchock Cuttic, Frackville; and four sons. Rest in peace K3KNL



ROUND TABLE NET SUMMARY

Month	Number of Weeks	Number of Check-Ins
January	5	63
February	4	32
March	3	21
April		
May		
June		
July		
August		
September		
October		
November		
December		



With the winter storm that blew through our area on Friday March 2nd we lost our tower at Mountain Valley. It took us a little time to get the New Ringgold repeater, Tamaqua repeater and Hegins repeater linked. We are still down at the Mountain Valley site but for the time being we have the county about 75% connected. We did not have a NET on the 1st Wednesday in March but it seems as if we are going to finish strong with the check-ins. If you are in the area and could hit one of the repeaters, check-in on Wednesday, 7PM we would love to hear from you.

MOUNTAIN VALLEY UPDATE

We are currently reinstalling the tower at MVGC. We hope to be back on-line sometime in April. Stay tune…

MONTHLY REMINDERS ON TWA REPEATER NETWORK

Check in every Wednesday at 7:00PM on the TWA Repeater Network. Check the schedule in the Calendar of Events to see who is running the Roundtable. We would love to hear from you! You do not need to be a member of TWA to check into the net. Any amateur radio operator can do so. We would love to hear from you!



TWA Repeater Network Frequencies:

146.490 + 1MHz Tone Squelch 123.0
147.270 + 600KHz Tone Squelch 131.8
147.390 + 600KHz Tone Squelch 82.5
449.775 - 5MHz Tone Squelch 131.8

Monthly TWA Club Announcements

Third Thursday of the month in April @ 7:30PM
Club announcements will be heard at this time.
Tune in to TWA's Repeater Network
If you cannot make the meeting, tune in and you will hear what will be discussed.

ARRL WEBSITE

1. ARRL Requests Expanded HF Privileges for Technician Class License.

http://www.arrl.org/news/arrl-requests-expanded-hf-privileges-for-technician-licensees

Until next time de K3TE – 73's