



ROUND TABLE

February 2008

The Denver Radio Club Newsletter

Since 1917

PRESIDENT'S MESSAGE

By Gerry Villhauer-W0GV

Greetings DRC Members,

I hope you all are surviving the cold weather. Although today, as I write this, is a beautiful day, it seems this winter has been colder than usual. I never did understand those Snowbirds who travel south in the winter but maybe they have a better idea than I thought before.

DRC activities have begun to pick up the pace. We had a very good session with the Salvation Army this past week at their garage. We had a group of about 20 show up to elevate the trailer-mounted tower to its full height of 50 feet and check out their business band radio system. The good thing was, most all of the hams attending were DRC members. Thanks for supporting this important activity.



This was a wonderful month for new members; I would

like to welcome new DRC members Norman Chichester, KB0ADG, David Feldman, WB0GAZ, Mike Gelski, KB0PVD, Timothy Gillespie, KC8WQO, Don Johnson, KD0COG, Anthony Kinney, KC0ZHS, Michael Lozano, KD0CQC, Brian C. Olson, W0FPE, Steven Reiley, KD0CPE, Michael Reiley, KI6NVA, Justino Sandoval, KD0BMA, Paul Schoessow, KB9SAT, and Bob St. Marie, KK7KR. Thank you for choosing the Denver Radio Club as your club. Please come to the meetings and activities and be an active member.

Last month's program on software defined radio was very well attended considering the outside temperature was near zero degrees. Thank you to Dave Feldman, WB0GAZ, for a truly great presentation. I would like to have him return at a later time for more on this interesting subject. This month's program is on NVIS HF propagation and will be presented by Ron Hranac, N0IVN, and Bill, W6OAV. There is further explanation of the program in the body of this Round Table. This type of propagation is very important to our emergency response communications; we need to learn all we can about it.

See you all at the meeting February 20th at the St. Joseph's Episcopal Church, 11202 West Jewell Ave., Lakewood. That is about two blocks West of Kipling on South Jewell. And remember to check our website, w0tx.org, for lots of important information about the DRC. The Elmer Session and Tech Meeting start at 6:30 p.m. followed by the Regular Meeting and Program at 7:30 p.m.

73,
Gerry, W0GV
President

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TECHNICAL COMMITTEE REPORT

BY BILL - W6OAV

The regular meeting agenda was preempted due to the fact that two last minutes issues required discussion.

DRC RELATIONSHIP WITH THE SALVATION ARMY

The committee discussed at length the fact that there is no defined relationship between the SA groups and the DRC. Several possible scenarios were discussed. A decision was made to meet with Mike Gelski in the near future to resolve this issue.

DRC IMPLEMENTATION OF D STAR

The committee discussed whether to become involved with the ICOM offer to supply a D STAR repeater to any club willing to install and use a D Star system for 5 years.

The consensus was not to become involved because of the following:

- The high expense of providing duplexers, antennas, hardline, server, router, etc.
- The problem of obtaining frequency pairs.
- The problem of getting members to spend \$350 to \$650 for D Star capable radios. Other clubs have had this problem.
- D Star is more suitable for ARES type of operations..

147.33 REPEATER PROJECT

- WA9TVH has received the 147.33 ICOMs from N0YIX. Before installing them at the Hudson site, he will test them at the Station 4 repeater.
- KCOCUA has not yet received a response for the Hudson site from the CCARC.

JANUARY MEETING - What'd I Miss?

JANUARY DRC ELMER SESSION

BY ROB - AJ0C

The following activities occurred during the January DRC Elmer Session which occurred before the January regular monthly meeting.

Recognized new amateurs Don Johnson (KD0COG) and Mike Lozano (KD0CQC). Mike's license was less than 12 hours old.

Cloning of radio configurations was discussed and then demonstrated by cloning AJ0C's VX-7R configuration onto KD0COG's brand new VX-7R.

KD0COG then made his very first amateur radio two-way simplex contact. Also discussed how to improve the efficiency of a handheld radio by adding a "Tigertail" (1/4 wave counterpoise) at the base of the rig's antenna. The "Tigertail" was given away to one of the prospective hams.



Briefly talked about "Blue-tooth" headsets and how to use them with virtually any amateur radio.

Talked about upcoming activities in the Denver area: Ham Radio Brunch, Portable J-Pole construction class, VHF SATERN Group Meeting, Digital Communications Workshop, and the Aurora Repeater Association Ham Fest.

Reminded everyone about the DRC Learning Net where they can have their amateur radio questions answered between club meetings.

January DRC Meeting Report

By Bill - W6OAV

This month's meeting had a great turnout. There were 52 people in attendance. A short business meeting was followed by the feature presentation.

Dave, WB0GAZ, gave a visual presentation covering Software Defined Radios (SDR) and, in particular, the SoftRock-40 project. The SoftRock-40 is a small, low-cost (\$30), good-performing 40-meter SDR transceiver board kit. The board plugs into the com-



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puter USB port for power. Other connections are to an antenna and the PC soundcard. Dave also discussed the Rocky 3.32 free software that powers the SoftRock-40. After discussing his experiences with building, troubleshooting and using the board, he gave a real-time demonstration of the SoftRock-40 which was connected to K0TOR's HF mobile outside the meeting place.

Afterwards, DVDs were handed out which contained the SDR software, the evening's presentation material, sample SDR radio signal files, and a variety of other related reading material. For more information or help, contact Dave at WB0GAZ@ hotmail.com.

As is customary, door prizes were handed out at the end of the meeting.

PART 2 W6OAV's "TRAVELER'S DUAL BAND J POLE"

This article details the construction of the "Traveler's J Pole". Part 1 in last month's issue of the "Roundtable" presented an overview and setup of the J Pole. Figure 1 shows the J Pole in it's dissembled or "travel mode".



Figure 1

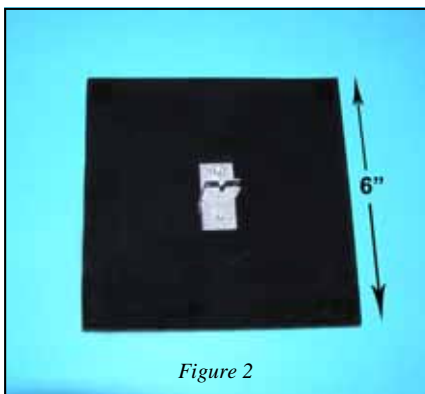


Figure 2

Construction

Base Unit

Referring to Figure 2, the base unit contains two L shaped metal brackets which are used to hold the antenna unit. The brackets are

spaced 1/8" apart which is the width of the antenna unit support. The brackets contain a vertical slot for the bolt used to mount the antenna unit to the base.

Antenna Unit

Referring to Figure 3, the antenna unit contains two collapsible whips which are mounted to a 1" by 12" plastic strip with regular plastic cable clamps. The two whips are spaced 1.5" apart and electrically connected at their bases with a metal shorting bar. Four copper coax feed point straps are soldered to the whips at the locations shown in Figures 3. Holes are drilled in each feed point strap and through the plastic strip to accept a nut and bolt.

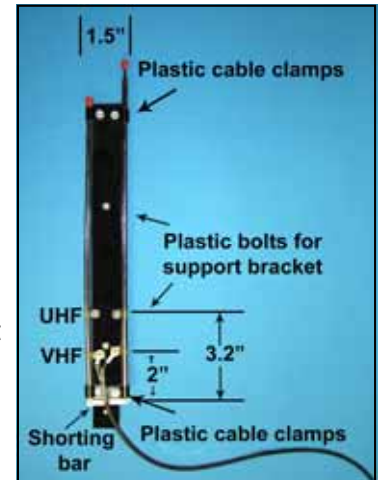


Figure 3

Antenna Support Strip

Referring to Figure 4, the plastic antenna unit is fastened to a 1" by 12" plastic antenna support strip by plastic nuts and bolts

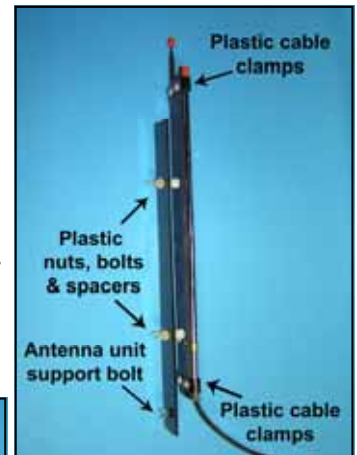


Figure 4



Figure 5

with a 0.5" plastic spacer separating the plastic antenna unit and the plastic support strip. A hole was drilled into the base of the support strip. This hole aligns with the slot in the L shaped brackets on the base unit. Figure 5 shows the antenna unit mounted to the base unit.

Coax

The coax center conductor and shield terminate on ground lugs. The ground lugs are placed onto the VHF or UHF feed point bolts as desired. See Figure 1. Nuts are then placed on the bolts over the ground lugs and tightened down.

OBSERVING BAND EDGES PLAYING BY THE RULES

Bryan – KCØCUA

Many of us are still new to HF operation, and there are a lot of not-so-new HFers that can use a refresher. According to FCC rule 97.307, which reads in part: "Emissions resulting from modulation must be confined to the band or segment available to the control operator."

Well, then if you're a General and set your HF radio on the 14,350 KHz in the 20 meter band and begin to operate SSB what's the problem? You will say that 14,350 is the upper edge of the 20 Meter band and Generals can operate SSB here. Ah, but here's the rub, on 20 Meters the convention is to use the Upper Sideband for transmissions. When you tune your radio to 14,350 that represents the center, or carrier frequency on which you intend to transmit. However, a sideband signal is considered to be 3 KHz wide. In USB (Upper Sideband) the carrier and lower side band signal is suppressed. So now you are transmitting your modulated signal between 14,350 and 14,353. See the problem? In order to stay within the rules you cannot set your radio dial higher than 14,347 KHz.

The same thing applies if you operate on 40 Meters, The lower edge of a General's SSB privileges on this band start at 7,175 KHz. On this band the convention is to use the lower sideband. So, you should not set your radio to a frequency lower than 7,172 KHz. (7,175 – 3 = 7,172)

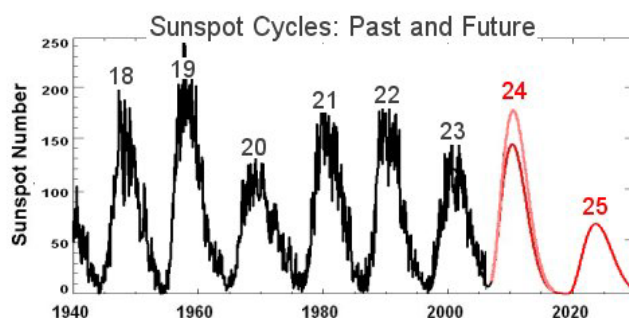
Also be aware that if you overdrive a SSB transmitter it makes your signal unreadable and will cause splatter that can be outside the band. If you operate AM you now have the carrier and BOTH sidebands, so you have to allow yourself room at both ends of the bands. For CW the rule of thumb is 4 times your keying speed. So, at 40 WPM you should have a minimum of 160 Hz above/below the band edge. Band edges also need to be observed when operating all modes permitted in the Amateur service including the digital modes: RTTY, PSK31, Packet, etc.

You need to be especially careful when scanning the bands and listening to someone calling DX or completing a contact near the band edge. They may have a higher class license, with different privileges than you, or even be from a different IARU region with a slightly different band plan. Also, you need to be aware that the accuracy of radios and dials vary, so it is best to leave yourself a little a little extra room for comfort.

Solar Update – Beyond Propagation

By George - AG0S

As HAMs we are very aware and concerned about solar activity and how it will affect propagation. With Solar Cycle 24 on its way we've been hearing it will be a good one but not as good as Cycle 19 which peaked in the late 1950's. Some have said that during Cycle 19 you could work the world with 5 watts and a wet noodle. So what can we expect of the next Solar Cycle and beyond? Two prominent solar physicists, Dr. David Hathaway and Dr. Mausumi Dikpati are a bit at odds with regard to what we should expect but they both agree that the effects of this solar cycle go beyond mere radio propagation.



Above: In red, David Hathaway's predictions for the next two solar cycles and, in pink, Mausumi Dikpati's prediction for cycle 24.

The chart above shows the prediction for both Cycle 24 and Cycle 25. As you can see Hathaway is less optimistic than Dikpati regarding Cycle 24 but both agree that Cycle 25 is going to be very disappointing. Both also agree the sun plays a bigger role in our lives than just providing good DX or wet noodle DX.

There is some speculation whether the sun is a major player in our weather patterns as well as terrestrial heating. Sounds like global warming doesn't it? Or is it just the weird weather we all expect. So let's take a look at what the scientists and other researchers are saying about how the sun impacts our world – Beyond Propagation.

The jury is still out on how much sunspots can (or do) affect the Earth's climate. Times of maximum sunspot activity are associated with a very slight increase in the energy output from the sun. Ultraviolet radiation increases dramatically during high sunspot activity, which can have a large effect on the Earth's atmosphere. From 1645 to 1715, a period of very low sunspot activity (known as the Maunder Minimum) coincided with a number of long winters and severe cold temperatures in Western Europe, called the Little Ice Age. It is not known whether the two phenomena are linked or if it was just coincidence. The reason it is hard to relate maximum and minimum solar activity (sunspots) to the Earth's climate, is due to the complexity of the Earth's climate itself. For example, how can we sort out whether a long-term weather change was caused by sunspots, or maybe a coinciding El Nino or La Nina?

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Increased volcanic eruptions can also affect the Earth's climate by cooling the planet. And what about the burning of fossil fuels and clear cutting rain forests? One thing is more certain, sunspot cycles have been correlated in the width of tree ring growth. So the question remains, do solar minimums help to create periods of cooler than normal weather, and do solar maximums help to cause drought over sections of Earth?

As we try to make sense out of what happens around us we tend to look for the cause and effect in everything. We make correlations which may leave some scratching their heads. Sunspot cycles have been correlated with economic activity, stock market gyrations and even commodity prices. Some experts have even correlated sunspot maximums and minimums with stock market tops and conversely the beginning of recessions. Could all that be simply related to climate and agriculture, or similarly to other aspects of the weather on commerce such as shipping? Or is it just another meaningless correlation?

A little searching in a library or on the internet will uncover supposed correlations between the sunspot cycle and wars, population demographics and other things related to human endeavors. It is true, the climate effects of the Maunder Minimum probably caused the demise of several societies; most notably, the Norse colonies on Greenland, Iceland and North America. It also correlated with the demise of some Central and South American societies. However, the leap to the stock market, wars and other activities seems rather remote, but makes interesting reading. I don't advise either buying or selling any equities based on the coming of cycle 24.

LOCAL SATERN MEETING REPORT

By Bill, W6OAV

As mentioned last month, the DRC supports the Salvation Army (SA) and has an EOC radio station at the SA headquarters in Denver. The SA recently started scheduling the

meetings on the 4th Saturday of the month at 4975 York Street in Denver. The goal of the meetings is to develop a local SATERN (Salvation Army Team Emergency Radio Network) group to support the Salvation Army Emergency Disaster Service, with the DRC at the core.

The January meeting had a good turn out of DRC members. They were N1ETV, N0GWM, KB0YLM, W6OAV, K0HTX, WB5YCU, K0OHU, K0TOR, W0GV, KB0BDZ, AG1M, KC0ZHS, N4ATA and N6LD. Thanks guys for your support. I apologize if I missed anyone.

The meeting began with a visual presentation. The presentation gave an overview of the SA structure, the objectives of SATERN and the processes for the implementation of disaster services.

After the presentation, the portable tower was brought out to the parking area. The objective of the exercise was to raise and lower the tower to get familiar with the process and to look for any issues. Photo shows the tower in the raised configuration. An issue did occur. The nut which kept the tower from tilting to the trailer would not turn off the hold bolt. The bolt had to be broken.



The next meeting is Saturday, February 23rd from 10am to 2pm at 4975 York Street in Denver. Lunch is usually provided.



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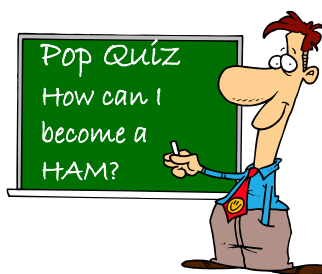
UP COMING EVENTS

FEBRUARY MEETING PRESENTATION

VHF and UHF communications have long been among the tools of amateur radio operators for voice and data. But what happens when an obstructed line-of-sight precludes both simplex and repeater contacts and cell phone coverage is out of range? Colorado's mountainous terrain can be especially challenging! For instance, how could one communicate using amateur radio from an isolated canyon in the rugged Rocky Mountains?

One solution is a form of HF propagation known as NVIS: near vertical incidence skywave (also called near vertical incidence system). Ron Hranac, N0IVN--one of the ARRL's Colorado Section Technical Specialists and a member of ARES D-24--will explain how NVIS propagation works. He will show how NVIS can provide reliable communications in the roughly 50 to 300 miles range, ideal for statewide or regional applications. Ron will demonstrate a simple-to-build Hamstick dipole for 75 meter NVIS that has been used in ARES statewide disaster exercises.

The presentation will conclude with video clips from WWII-vintage German newsreels showing NVIS antennas on their command cars and tanks, along with pictures of some club members' mobile NVIS antenna systems.



Classes Starting Soon!

GENERAL LICENSE CLASS

When: Beginning Friday, Feb. 22nd, 2008 From 7:00PM - 9:00PM

Where: St. Joseph's Episcopal Church @ 11202 W. Jewell Ave. (just 1 1/2 blocks west of intersection of Kipling and Jewell, south side of Jewell Ave.) Meet in the center classroom on the ground floor. Enter through classroom door at the back (west side) of the church.

Materials: "ARRL General Class License Manual", Sixth edition as the study guide. Cost is \$25.00 and is available through HRO or ARRL.

Contact: Jim, KOTOR at 303 798 2351 or general@frupac.net.

TECHNICIAN LICENSE CLASS

When: Starts Saturday, Feb 23rd, From 1:00PM - 3:00PM



Where: LDS Church 6465 W. Jewell Ave, Lakewood, CO

Materials: "ARRL HAM Radio License Manual", Cost is \$19 - if ordered two weeks before class starts. \$25 at HRO.

Contact: Brant, W0BKZ at 303-989-2840 or w0bkz@arrl.net

FEBRUARY 2008

DRC Net Sunday 8:30pm Local

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2 GROUND HOG DAY 
3	4	5	6 Learning Net 7pm	7	8	9
10	11	12	13 Learning Net 7pm	14 	15	16 ARRL International DX (CW) Starts 0000U
17 ARRL International DX (CW) Ends 2400U	18  Presidents' Day	19	20 DRC Meeting Elmer 6:30pm General 7:30pm	21	22 General Class Starts 7:00PM	23 Technician Class Starts 1:00PM
24	25	26	27 Learning Net 7pm	28	29 General Class Starts 7:00PM	

Check www.ARRL.org for More Contests & Rules!

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DRC REPEATERS

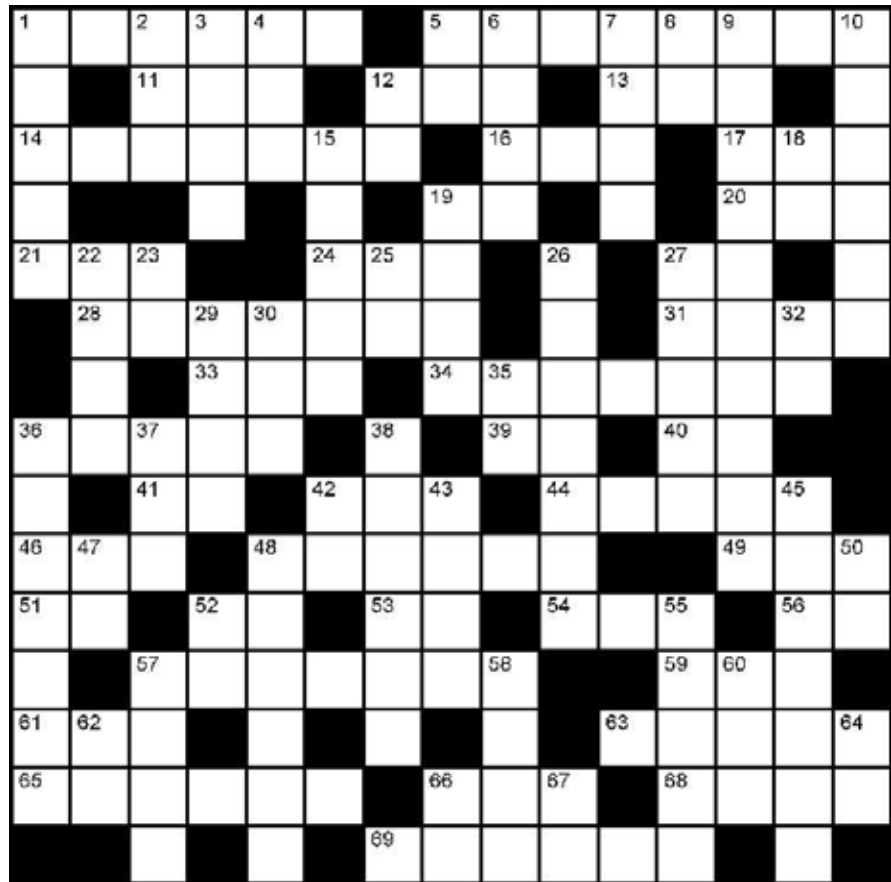
BAND	Freq / Shift / PL Tone	Additional Information
10m	29.620MHz (-100kHz) FM	Temporarily OFF The Air
6m	53.090MHz (-1MHz)	
Packet	145.05MHz<>14.105MHz	
2m	145.490MHz (-) 100Hz PL	Linked to the 70cm - 448.625MHz machine.
2m	147.330MHz (-) 100Hz PL	Members Auto-Patch
1.25m	224.380MHz (-) 100Hz PL	
70cm	448.625MHz (-) 100Hz PL	Linked to the 2m - 145.490MHz machine.
70cm	449.350MHz (-) 100Hz PL	Wide area coverage with Echolink Node # 4140.

EDITOR'S NOTE

DRC members - this is your newsletter. If there is something which is club or amateur radio related that you'd like to see as a regular feature, email suggestions to the editor. Members are the heart and sole of The Denver Radio Club, if you have an expertise or an interest in a particular segment of ham radio that you'd like to write about, you may email your submissions to DRC_RT@comcast.net. **Editor**

Puzzle Page

NOTE: Answer key and words used in this puzzle are located on page 5.



Across

1. Minor amplitude variations
5. Final level of rejection
11. Type of beam antenna
12. VFO that varies inductance
13. Shortest Morse sound
14. Mechanical oscillator element
16. Filter that only changes phase: ...-pass
17. Highest point 19. Stores computer data (abbr)
20. Obtain with great effort
21. Droop
24. Print resolution (abbr)
27. Not off
28. Initial or widest filter
31. Oxidized iron
33. Study of the earth: ...logy
34. Twisted filter
36. Coaxial conductors
39. Good luck (CW abbr)
40. Type of cut for 14 Across
41. Propagation across the equator (abbr)
42. To do
44. Number of capacitors and inductors in a passive filter
46. Filter that rejects high frequencies: ...-pass
48. 3 dB frequency
49. Adjust a control for a particular result
51. Most common passive filter type
52. Reactive power (abbr)
53. Not out
54. Unlicensed UHF radio service (abbr)
56. Son with same name (abbr)
57. Brings back to life
59. Shielded from the wind
61. Sports league with the tallest athletes
63. Filter that rejects a single frequency
65. Slang for edges of filter response
66. Audio interference from ac power
68. Variable resistors
69. Move rapidly back and forth

Down

1. Slang for 14 Across
2. Use a lever to open
3. Allow a signal to flow through
4. On fire or alight
5. World time (abbr)
6. Draw current from
7. Not used
8. State that looks like a mitten (abbr)
9. Reduces in amplitude
10. Knowledgeable individual
12. Sub-audible control tone (abbr)
15. Signals that can be heard
18. All right
19. Filter that rejects low frequencies:-pass
22. Government agency that funded the creation of the Internet (abbr)
23. Not stop
25. Semiconductor junction (abbr)
26. Change in rejection with frequency
27. Popular schematic capture program
29. Stare lasciviously
30. Cost of access
32. Received and understood: Q..
35. Latin abbreviation indicating an example
36. Maker of mechanical filters
37. By the way (abbr)
38. Filter that uses powered components
42. Precious metal (chemical symbol)
43. Single frequency signal