



QRO

MONTHLY NEWSLETTER OF THE PALOS VERDES AMATEUR RADIO CLUB

JULY 2017

Direct Sampling Software Defined Radios

The PVARC's July 6, 2017, monthly meeting presentation is on direct sampling software defined radios, of which the "hottest" (in popularity, not thermally) HF transceiver now on the market is Icom's IC-7300. Presenting will be PVARC members Ray Day, N6HE, and Clay Davis, AB9A, who both own this radio. Ray brought his IC-7300 to Two Harbors on Catalina Island for our recent IOTA DXpedition and his IC-7300 was heavily used. Even during our non-stop participation in the North American RTTY QSO Party the IC-7300 never got warm to the touch. Ray and Clay will also discuss some new developments in SDR radios announced at the Dayton Hamvention.

We will have an HD video camera connected to a 2nd projector at the meeting so everyone can see the details of these radios. We hope to see you in our new meeting room at Hesse Park. ■

Direct Sampling Software Defined Radios

**Ray Day, N6HE, and
Clay Davis, AB9A**

PVARC Monthly Meeting,
Thursday, July 6, 2017,
7:30 pm at Fred Hesse
Community Park,
29301 Hawthorne Blvd.,
Rancho Palos Verdes,
Visitors Welcome.

Optional no-host pre-meeting dinner
5:30-7:00 pm. Red Onion Restaurant,
706 Silver Spur Road, Rolling Hills
Estates. (No reservation required,
order what you wish.)

K6PV Field Day results...in perspective



Field Day Year * FD operations disrupted by sprinklers overnight	(A) K6PV (2A Station) Total Points	(B) K6PV Rank of all U.S. & Canada Field Day stations (all classes)	(C) K6PV of all 2A stations, ARRL Southwestern Division	(D) K6PV of all 2A stations, ARRL LAX Section
2017	4,208	???	???	???
2016	4,742	243 rd of 2,696 (top 9% of all U.S. FD stations)	2 nd of 31	1 st of 9
2015	5,780	193 rd of 2,270 (top 7% of all U.S. FD stations)	4 th of 27	3 rd of 9
2014	4,932	252 nd of 2,686 (top 9% of all U.S. FD stations)	4 th of 32	2 nd of 9
2013*	4,248	331 st of 2,548	5 th of 26	1 st of 5
2012	5,188	259 th of 2,617	5 th of 24	1 st of 8
2011*	4,492	341 st of 2,632	6 th of 24	1 st of 5
2010	5,468	219 th of 2,617	5 th of 31	1 st of 8
2009*	3,930	391 st of 2,603	9 th of 27	3 rd of 7
2008	4,160	332 nd of 2,409	4 th of 27	1 st of 9
2007	3,216	511 th of 2,331	6 th of 28	2 nd of 7
2006	5,242	223 rd of 2,169	4 th of 30	2 nd of 5
2005	6,216	162 nd of 2,199	3 rd of 32	2 nd of 8
2004	7,118	126 th of 2,242	3 rd of 30	2 nd of 7
2003	6,192	126 th of 2,079	4 th of 37	3 rd of 8
2002	6,246	194 th of 2,099	3 rd of 28	1 st of 7

The PVARC's 2017 Field Day operation scored fewer points than in recent years but should still rank high within category 2A stations in the ARRL Southwestern Division and LAX Section.

Band conditions were not ideal this year. 15-meters was almost unusable and a long front of thunderstorms along the East Coast on Saturday prevented stations there from either operating or hearing West Coast stations.

As shown in the table at left, our 2016 score dropped over 1,000 points from 2015 yet we ranked higher regionally in 2016 than 2015.

So...standby for the final rankings to be reported in early November 2017.

For more about our Field Day, see the following pages.

Continued on next page ►

K6PV Field Day results by band vary from year to year with solar cycle, other factors

► *From previous page*

Field Day 2017's big story was the near-total disappearance of 15-meter contacts—offset by more 80- and 40-meter operations. That's the current solar cycle decline at work.

Our CW team had a great run under these conditions, making 692 contacts. Rocco Lardiere, N6KN, again was our lead CW operator, working 10 of Field Day's 24 hours. Our other CW operators were Clay Davis, AB9A; Carlos Lemmi, WD9Y; Jeff Wolf, K6JW; Gary Lopes, WA6MEM; and Jerry Kendrick, NG6R, who worked the midnight to 6 am shift.

Our HF SSB team included Bob Closson, W6HIP; Peter Landon, KE6JPM; John Cashen, W5UG; Tom Essenpreis, KB9ENS; Hugo Dominguez, KM6DMQ; Diana Feinberg, AI6DF; and Bob Millard, KE6JI, handling VHF/UHF SSB.



Field Day	K6PV CW QSOs						K6PV Phone QSOs					
	2017	2016	2015	2014	2013	2012	2017	2016	2015	2014	2013	2012
160 m	--	--	--	--	--	--	--	--	--	--	--	--
80m	--	64	--	--	--	--	115	--	99	24	53	31
40m	257	150	121	160	206	--	--	55	19	107	27	24
20m	400	608	371	208	209	319	217	118	172	241	297	310
15m	35	104	364	180	167	389	3	9	113	211	91	273
10m	--	5	18	46	--	--	--	--	--	--	3	1
6m	--	--	--	--	--	--	27	28	99	115	55	47
2m	--	--	--	--	--	--	29	20	9	11	19	29
1.25 m	--	--	--	--	--	--	--	--	--	3	--	--
70 cm	--	--	--	--	--	--	4	4	--	4	5	7
Sat.	--	--	--	--	--	--	--	--	1	1	--	1
GO-TA	--	--	--	--	--	--	--	--	50	46	25	--
Total	692	931	874	594	582	708	395	234	562	763	575	723

This year's K6PV Field Day set-up was in the clouds at our Ridgecrest high-level site



Above: Gary Lopes, WA6MEM, and Clay Davis, AB9A, assemble our multi-band hexbeam HF antenna primarily used at our CW station. **Below:** Our tower trailer with hexbeam mounted on the mast is raised in the fog at 10 am Saturday.. From left to right, Clay Davis, AB9A; Rocco Lardiere, N6KN; Gary Lopes, WA6MEM; and Sid Wielin, KF6QFH. PHOTOS: DIANA FEINBERG, AI6DF





Left: Tri-band Yagi antenna and mast loaned by Dale Hanks, N6NNW, served our SSB station, with a 40-meter wire dipole added.

Below: Bob Millard, KE6JI, operating and XYL Daisy Millar logging at our VHF/UHF station in the Ridgcrest Intermediate School lower parking lot..

PHOTOS: MALIN DOLLINGER, KO6MD



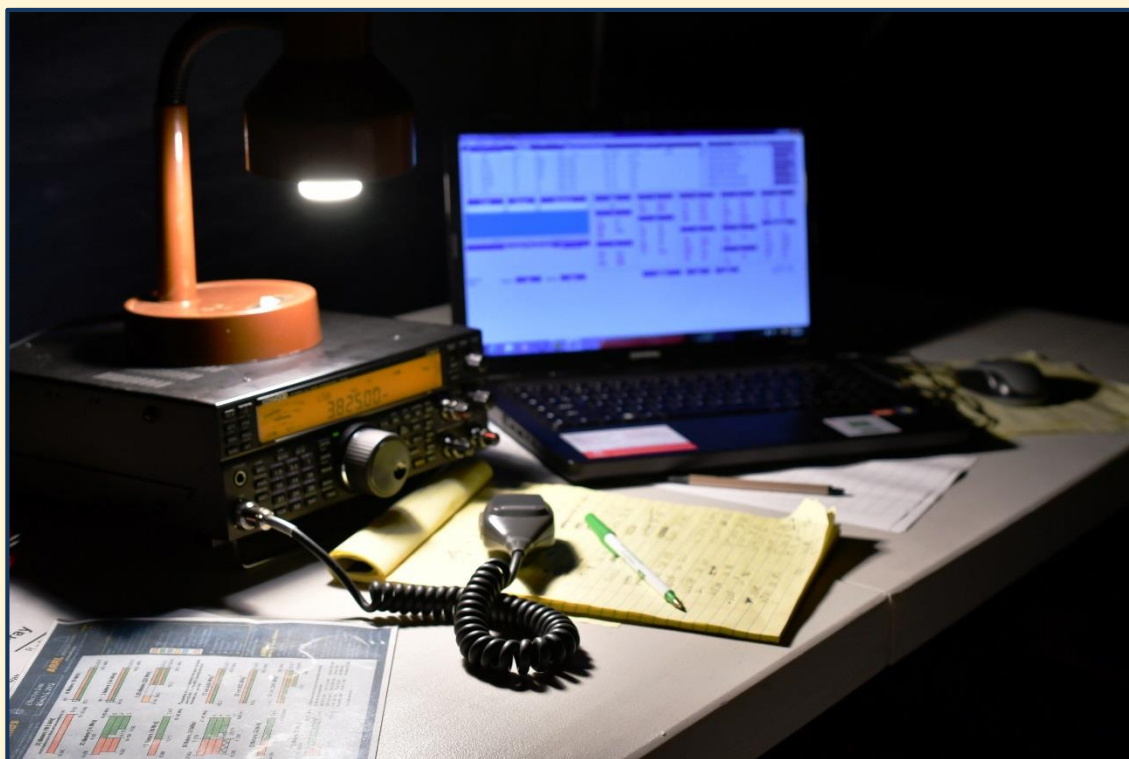
(More Field Day photos will be on our website soon)

Like a casino, Field Day operates around the clock...and sometimes you lose track of time



Above: Our two operating tents at 2:30 am Sunday (CW tent on left; SSB tent at right.)

Below: Inside the SSB station during an overnight break, showing Kenwood TS-590S transceiver and N3FJP Field Day logging software.. PHOTOS: DIANA FEINBERG, AI6DF.





Thank you to everyone who made our 2017 Field Day a success...your help and participation were greatly appreciated

Operators, Loggers, and Attendees at K6PV

W6HIP	Bob Closson
WD6Y	Carlos Lemmi
AB9A	Clay Davis
KE6JI/XYL	Daisy Millard
N6NNW	Dale Hanks
AI6DF	Diana Feinberg
KF6QFG	Fran Wielin
KD6UAM	Fred Spain
WA6MEM	Gary Lopes
KK6QLT	Greg Hough
KM6DQU	Hugo Dominguez, Jr.
--	Hugo Dominguez, Sr.
K6JW	Jeff Wolf
NG6R	Jerry Kendrick
W5UG	John Cashen
W5UG/XYL	Maggy Rivas
KO6MD	Malin Dollinger
KE6JPM	Peter Landon
KM6GXZ	Rick Heaston
K6WXA	Rick Murray
KE6JI	Robert Millard
N6KN	Rocco Lardiere
KE6SGP	Ronnie Lemmi
KF6QFH	Sid Wielin
KB9ENS	Tom Essenpreis

We also thank the Palos Verdes Peninsula Unified School District and Ridgecrest Intermediate School for allowing us to use their campus. ■

Radios, Antennas, Masts

KE6JI	Bob Millard
N6NNW	Dale Hanks
AI6DF	Diana Feinberg
N6KN	Rocco Lardiere

Generators (incl. back-ups) & Solar Power

W6HIP	Bob Closson
AB6SY	Bob Sylvest
N6NNW	Dale Hanks
W6DC	Dan Colburn
NG6R	Jerry Kendrick
K1DFO	Walt Ordway

Tents & Furniture

KE6JI	Bob & Daisy Millard
AI6DF	Diana Feinberg
KF6QDG	Fran Wielin
KE6JPM	Peter Landon
KF6QFH	Sid Wielin

Site Setup & Take-Down

W6HIP	Bob Closson
KE6JI	Bob & Daisy Millard
AB9A	Clay Davis
N6NNW	Dale Hanks
AI6DF	Diana Feinberg
WA6MEM	Gary Lopes
KM6DQU	Hugo Dominguez
NG6R	Jerry Kendrick
W5UG	John Cashen / Maggy Rivas
KE6JPM	Peter Landon
N6KN	Rocco Lardiere
KF6QFH	Sid Wielin

Smith Charts

By Jerry Kendrick, NG6R

Smith charts, invented by Phillip H. Smith in 1939, have utility for any ham who wants to get the most performance from his/her antenna(s). You've used your antenna analyzer (or one you borrowed from a friend) to learn that your antenna has a standing wave ratio (SWR) that is troublingly large (say, >3:1) but you aren't sure if simply shortening it or lengthening it will solve the problem. This article demonstrates how to use Smith charts to get from the impedance you have to the impedance you want. Furthermore, this article will meet that goal without resorting to even a single mathematical equation . . . well, maybe one or two! The purpose is not to focus on the derivation or theory that led to this marvelous invention, but instead on its basic general construct, its utility for visualizing complex impedance and, in turn, how that impedance can be altered using this graphical tool to improve performance.

When Phillip Smith (early ham radio call sign 1ANB) was an electrical engineer at Bell Labs, he was always fascinated with the concept of understanding complex mathematical relationships and then plotting those relationships in some form of graphical visual display so that they could be exploited by others not as ingrained as he was in mathematics. [1, 2] After much experimentation and unsuccessful trials, he finally in 1939 came up with a way to visualize and manipulate complex impedances using a relatively simple chart, which still bears his name, shown in normalized form in figure 1.

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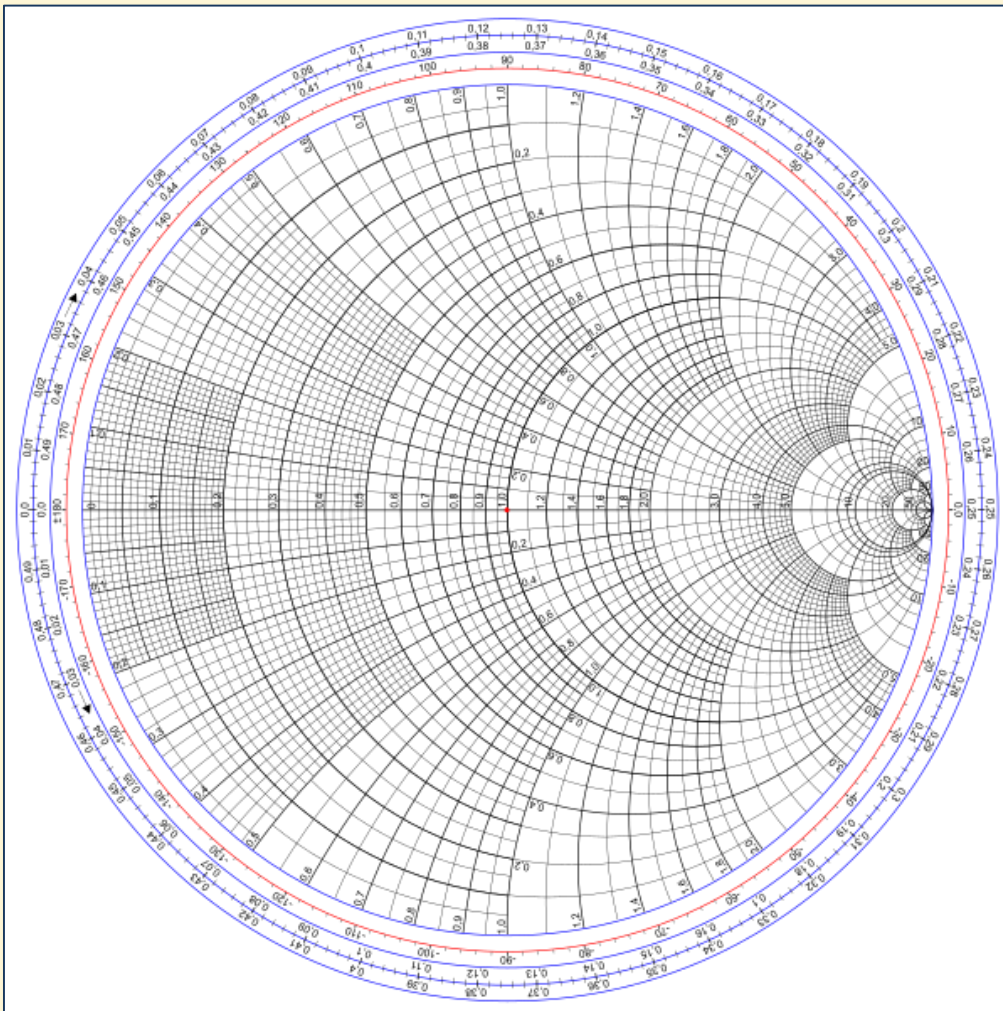


Figure 1. Normalized form of the Smith chart; note how it is formed from two types of perpendicularly intersecting circles (or circular arcs). Interesting how it's like peering down inside a Thanksgiving cornucopia—is that really a coincidence?!

Smith Charts

► *From previous page*

Remember from previous **QRO** articles [3, 4] in which we've expressed impedance as a complex number, with a real (resistive) component and an imaginary (reactive) component, i.e., $Z = R + jX$ where Z is complex impedance, R is resistance in ohms, X is reactance [either inductive (+) or capacitive (-)] in ohms, and j is $\sqrt{-1}$. The factor "j" is just a reminder from complex math that R and X can't be added directly—they are plotted on separate perpendicular axes.

Just one more concept before describing construction of the Smith chart: impedance normalization. We hams, more frequently than not, use transceivers, amplifiers, coax cables, antennas and other components that are based on a characteristic impedance of 50 ohms. Other characteristic impedances, such as 75 ohms or 300 ohms, sometimes enter into our ham radio activities, but by far the most prevalent impedance is 50 ohms. But, because different impedances can be used in various RF systems, Smith didn't base the chart on 50 ohms (or any other favorite characteristic impedance). Instead, he normalized the chart so that any characteristic impedance can be used. Note the number 1.0 in the exact center of the chart shown in figure 1. If this chart were created just for 50 ohms characteristic impedance, that value would read 50 instead. I.E., the chart has been normalized to allow for any characteristic impedance. We have to remember that fact when we plot up our measurement data. Now to describe the basic construction of the Smith chart.

Note in figure 1 that there are essentially two types of circles or circular arcs. The full circles whose right edges all appear to go through the right center edge of the chart are circles of constant non-negative R . (Remember that resistance R can only be positive or zero, never negative.) Think of the main diameter that cuts horizontally through the center of the chart as representing $X = 0$, i.e., the dividing line between (+) inductive reactance (above) and (-) capacitive reactance (below). The circular arcs that appear to be always perpendicular to the circles represent different values of constant X . Those constant- X arcs are positive (representing inductive reactance) above the center horizontal line and negative (representing capacitive reactance) below the center horizontal line. Note the significance of the various size circles, the horizontal diameter and the regions above and below the horizontal diameter by studying the notional figure 2 and comparing it to the larger and more complete figure 1.

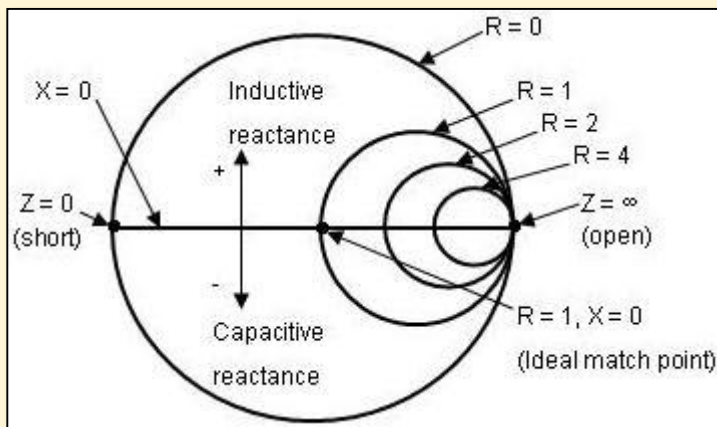


Figure 2. Simplified features of the normalized Smith chart showing constant- R circles; the $X=0$ horizontal line; the inductive reactance region above the horizontal line and the capacitive reactance region below the line; the short-circuit $Z=0$ point, the open-circuit $Z=\infty$ point; and, finally, the $R=1$, $X=0$ ideal match point in the center. Remember that actual measured R and X values must be divided by the characteristic impedance (e.g., 50 ohms) prior to plotting on a normalized Smith chart.

The large diameter circle in figure 2 is the largest circle in the Smith chart and represents $R = 0$. Successively smaller circles represent successively larger values of normalized R . The horizontal diameter line represents zero reactance, $X=0$, with positive (inductive) reactance on arcs above the line and negative (capacitive) reactance on arcs below the line. Note that the intersection of the $R=0$ circle with the $X=0$ horizontal line on the left represents a short circuit, $Z=0$. Similarly, the right tip of the horizontal line represents an open circuit, $Z=\infty$.

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Smith Charts

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The ideal match point of $R=50$ ohms and zero reactance—or $R=1, X=0$ in normalized terms—is shown in the center of figure 2. Not shown in figure 2 are the various circular arcs representing the family of constant- X contours. Referring back to figure 1, the circular arcs appearing to emanate from the center right node and arcing up and above the horizontal diameter line represent constant positive (inductive) reactance values. Similarly, the contours that arc down and below the horizontal diameter line represent constant negative (capacitive) reactance values.

We'll now look at some examples to gain familiarity with how various measurements from your antenna analyzer would translate into a display on the Smith chart. Don't forget that usually you would like to see a pure 50-ohm resistive load presented to the source (whether it's a transceiver, amplifier, antenna or whatever). Note that the place on the Smith chart where this ideal condition resides is in the exact center, which represents 50 ohms resistive with no reactance. Or, in normalized terms, $R=1, X=0$.

The table below shows a few examples of complex impedances that we might measure using our analyzer. Normalized impedance is indicated by dividing the analyzer measurement by 50 ohms. The table also indicates for completeness the magnitude of impedance, $|Z|$, and the SWR for each point. (Formulas for these two parameters are shown in Reference [5].) The sample points are plotted on the Smith chart in figure 3.

Example	Analyzer Measurement	Normalized Impedance	$ Z $ (ohms) [5]	SWR [5]
Z1	$Z = 0 + j0$	$Z1=0+j0$	0	∞
Z2	$Z = 15 - j10$	$Z2=0.3-j0.2$	18	3.48
Z3	$Z = 25 + j25$	$Z3=0.5+j0.5$	35.4	2.62
Z4	$Z = 50 + j0$	$Z4=1.0+j0$	50	1.0
Z5	$Z = 100 - j50$	$Z5=2.0-j1.0$	111.8	2.62
Z6	$Z = 250 + j0$	$Z6=5.0+j0$	250	5.0

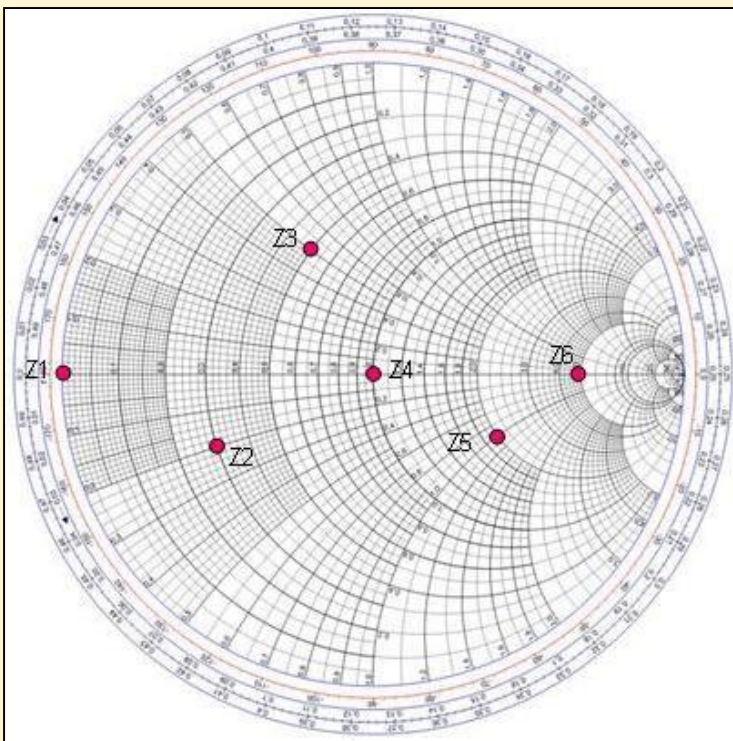


Figure 3. Smith chart showing several sample analyzer measurements that have been normalized by dividing by 50 ohms. Reiterating, Smith chart circles are contours of constant R and circular arcs are contours of constant X .

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Smith Charts

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Looking at the column of SWR for these points, note that Z3 and Z5 have the same SWR even though their impedance values are considerably different. Placing a ruler on the chart, you'll note that the radial distance from the center (Z4) to Z3 and from Z4 to Z5 are the same. An interesting consequence of this particular projection invented by Phillip Smith is that impedances of equal SWR lie on a circle centered at $R=1, X=0$. So, any impedance point that lies on the circle centered at $R=1, X=0$ that passes through Z3 and Z5 will have that same SWR of 2.62. Another fascinating feature of the Smith chart!

Sometimes problems arise in which a system element impedance has been measured using an analyzer and it is desired to transform that impedance, as close as practical, to 50 ohms resistive. This scenario is very common in the use of matchboxes (also called antenna tuners) to tune an antenna system for low SWR and improve transmit performance. Such a problem was solved in a previous QRO article [3] in which an antenna impedance, $Z = 32.1 - j52.1$ ohms was measured and a matchbox was synthesized with a simple LC circuit so that the antenna system impedance was corrected to the ideal match point of $Z = 50 + j0$ ohms. In that article, a free downloadable Smith chart program was employed to make this transformation. In that example, simply placing the right inductor across the antenna load and a suitably valued capacitor in series with the antenna transformed the measured impedance (that had originally resulted in an SWR of 3.6) to an SWR very close to the ideal of 1.0. Those L and C component values were calculated using the free Smith chart computer program, cited again here:

<http://www.dxzone.com/dx30972/smith-v3-10.html>.

A Smith chart isn't just for electrical engineers! It's not necessary to understand its theoretical derivation any more than to master auto mechanics in order to drive a car. A Smith chart is a very useful tool that can provide significant insight into why your antenna system isn't performing as it should. Just find a friend with an impedance analyzer—of which there are several in the club—print out a blank Smith chart (or download the free computer version from the Internet) and start to understand that ill-performing antenna. 73 ■

References:

1. http://ethw.org/Oral-History:Philip_H_Smith
2. https://en.wikipedia.org/wiki/Phillip_Hagar_Smith
3. <http://www.n6rpv.net/pvarc/2016QRO/QROApr2016.pdf>, pages 5-9
4. <http://www.n6rpv.net/pvarc/2017QRO/QROMay2017.pdf>, pages 7-10
5. $|Z| = \sqrt{R^2 + X^2}$; $SWR = (1+\rho)/(1-\rho)$ where $\rho = \sqrt{[(R-50)^2 + X^2]} / \sqrt{[(R+50)^2 + X^2]}$
6. https://en.wikipedia.org/wiki/File:Smith_chart_explanation.svg

PVARC's Monthly "HF Enthusiasts Group" Meeting

The above "Smith Charts" article by Jerry Kendrick, NG6R, arose from a question posed at one of the PVARC's monthly "HF Enthusiasts Group" meetings. The next "HF Enthusiasts Group" meeting is Saturday, July 8, 2017, from 10:00 am to Noon. If interested in attending this month's meeting please advise Carlos Lemmi, WD6Y (ex-WB6MCW) at wb6mcw@aol.com to ensure sufficient seating and confirm the meeting location. ■

HAMCON 2017 / ARRL SW Division Convention comes to Torrance in Sept.

Save the dates: The PVARC is one of 12 Los Angeles and Orange County radio clubs sponsoring HAMCON 2017, September 15-17, at the Torrance Marriott Redondo Beach Hotel (Del Amo Center).

HAMCON 2017 is also the 2017 ARRL Southwestern Division Convention, with a full array of technical talks on all aspects of amateur radio. Equally interesting to many will be the 63-booth Vendor Hall with many major ham radio manufacturers. If you want to see or touch Elecraft, FlexRadio, BridgeCom products, for example, HAMCON 2017 is your place.

The PVARC is again staffing HAMCON's Information Desk during Convention operating hours. In August we'll be asking for club members to volunteer working in two-person shifts of two hours at the Information Desk. The PVARC also participates in HAMCON 2017 with Diana, AI6DF, again serving as convention Chair and Jeff, K6JW, as our club's delegate on HAMCON's planning committee.

Save the dates of September 15-17 for a great convention—an ARRL Divisional Convention doesn't get closer to home than this. Register now for the early registration discount (www.hamconinc.org). ■



For us, it's conveniently held at the Torrance Marriott Redondo Beach Hotel next to Del Amo Fashion Center.

Palos Verdes Amateur Radio Club

An American Radio Relay League Affiliated-Club

Board of Directors:

President	Diana Feinberg, AI6DF
Vice President	Ray Day, N6HE
Treasurer	Peter Landon, KE6JPM
Secretary	Ron Wagner, AC6RW
Directors	Clay Davis, AB9A, Gary Lopes, WA6MEM

Appointed Offices:

QRO Editor	Diana Feinberg, AI6DF
Webmaster	Kel Vanderlip, W6KCV
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K6PV QSL Manager	Jeff Wolf, K6JW
K6PV Repeater Trustee	Mel Hughes, K6SY
LAACARC Delegate	Jeff Wolf, K6JW
VE Coordinator	Dave Scholler, KG6BPH
VE ARRL Liaison	Jerry Shaw, KI6RRD
Net Control Operators	Malin Dollinger, KO6MD, Dale Hanks, N6NNW, Bob Sylvest, AB6SY, Ron Wagner, AC6RW, Dan Yang, K6DPY

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Mailing Address:

Palos Verdes Amateur Radio Club
PO Box 2316
Palos Verdes Peninsula, CA 90274-8316

Monthly Meetings:

1st Thursday (except August and December) at 7:30 pm at Fred Hesse Park, 29301 Hawthorne Blvd., Rancho Palos Verdes, CA. Visitors always welcome.

Repeaters (Open, though often listed as "Closed"):

Club: K6PV, 447.120 MHz (-), PL 100.0, CTCSS
"PV-West": K6IUM, 449.980 MHz (-), PL 173.8, CTCSS

To order a Club badge:

Gary Lopes, WA6MEM, gary@wa6mem.com

To order a Club jacket or patch:

Dave Scholler, KG6BPH, 310-373-8166

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Front page photo — *The Pt. Vicente Lighthouse at dusk on Saturday, June 17, 2017.*

PHOTO: DIANA FEINBERG, AI6DF

◆ PVARC's financial report is available upon request to any member.

PVARC Short News Items

The PVARC's upcoming meeting topics...

There's no PVARC monthly meeting in August...instead we hold our annual family picnic at the Pt. Vicente Lighthouse on Sunday, August 20.

At our September 7th monthly meeting PVARC member Alan LaFever, AK6G, will give a very informative presentation on "3-D Printing" and how you can get into it. Alan has fabricated numerous parts using 3-D printing in his home garage---and prices of many 3-D printers have dropped lately.

The October 5th monthly PVARC meeting features a new presentation by your **QRO** Editor Diana AI6DF explaining the various member-supported VHF/UHF repeater networks operating in California (including well-known ones such as the PAPA System, CACTUS System, DARN System, WIN System, and RABBIT System...plus some more-private ones.)

Elsewhere...your **QRO** Editor Diana. AI6DF, is speaking at the Crescenta Valley Radio Club's monthly meeting on July 13 and at the Los Angeles Amateur Radio Club's August 6 meeting with our International Lighthouse Weekend presentation. She is also speaking about the recent Dayton Hamvention at the San Fernando Valley Amateur Radio Club's July 21 meeting and about 220 MHz radio at the Antelope Valley Amateur Radio Club in Lancaster on July 26. Additionally our club Vice President Ray Day, N6HE, will be speaking at the Downey Amateur Radio Club in that city on August 3 and the Western Amateur Radio Association in Fullerton on October 2 about the PVARC's 2017 Catalina Island DXpedition. ■

...plus later this year

Our 2017 Holiday Dinner is at Ports O'Call Restaurant on San Pedro's waterfront Thursday, December 14, 2017, in the upstairs "Breakwater Room." Returning then for an encore guest speaking engagement is Dr. Jay Jones, WB9FPM and Professor of Biology at University of La Verne. Jay spoke at our December 2011 Holiday Dinner and his presentation then was very well received. More information to follow. ■



Need a PVARC patch?

If you want a PVARC logo patch for a hat, shirt, jacket, soft-side bag or whatever we have a new batch with higher-resolution stitching.

New patches are available for \$4 each at all our meetings or by contacting Dave Scholler, KG6BPH, at 310-373-8166 (or email him at: jdavidsscholler@hotmail.com .) If you order a PVARC club jacket one patch is sewn onto the jacket's left front and included in the cost. These jackets may also be ordered through Dave Scholler. ■

Short News Items

California Distracted Driver Law amendment status

The modified California Distracted Driver Law that took effect January 1 removed any protection for mobile amateur radio operation while driving. But that bill's author has tried to make amends in 2017 with a modification currently awaiting passage in the California Senate.

Assemblyman Bill Quirk (Hayward) authored the 2016 legislation that--while in its final committee process--somehow chopped a previous exemption for mobile amateur radio operation while driving. In February 2017 Assemblyman Quirk introduced an amendment to his 2016 bill that would remove "specialized mobile radio devices" as prohibited products in the 2016 Distracted Driver Law. While amateur radio units seemingly appear to be "specialized mobile radio devices" some hams in California were upset this amendment did not specifically exempt amateur radio use while driving.

Assemblyman Quirk's amendment as AB1222 passed unanimously in the Assembly during mid-May and then sent to the California Senate where it was assigned to the Senate Transportation and Housing Committee for review...and hopefully passage by the full Senate later this year. ■

Helpful guidelines when submitting QRO articles

Our **QRO** newsletter welcomes articles about technical subjects and PVARC member activities.

To facilitate layout and editing please send your article as two separate files: 1) all the text as a straight Microsoft Word file and 2) any photos, illustrations, or diagrams in a second file or as separate JPEG files. If possible please keep the text portion to not exceed 800 words. Thanks! ■

WELCOME NEW MEMBERS OF THE PALOS VERDES AMATEUR RADIO CLUB

IN 2016-2017

BRUCE GILBERT, KM6DQX

CARL HINDMAN, KM6DRB

HUGO DOMINGUEZ, JR., KM6DQU,

JARED BOCKOFF, KM6DQV

STEVE WRAY, KM6DQW

THEODORE LEY, KM6DRC

JOE BARGER, N6KK

DENISE ANN HUGHES-MURPHY, K6DAH

STEFAN FERRIER, KM6GXW

CINDY SNYDER, KM6GYG

MICHAEL LYNCH, KM6GYA

STUART MASTROIANNA, KM6GYK

THOMAS ESSENPREIS, KB9ENS

MARK GREENBERG, KM6GYC

LORI TANIMURA, KM6GXY

CHERI TANIMURA, KM6GXX

HEIDI STROMBURG, KG0GGY

MIKE SEMOS, N6DBS (RETURNING MEMBER)

RICK HEASTON, KM6GXZ

LARRY FADDEN, KK6TXN

STEVE SHERIDAN, KM6IQO

Palos Verdes Amateur Radio Club Calendar 2017

JANUARY							FEBRUARY							MARCH							APRIL						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	29	30	31	1	2	3	4	26	27	28	1	2	3	4	26	27	28	29	30	31	1
8	9	10	11	12	13	14	5	6	7	8	9	10	11	5	6	7	8	9	10	11	2	3	4	5	6	7	8
15	16	17	18	19	20	21	12	13	14	15	16	17	18	12	13	14	15	16	17	18	9	10	11	12	13	14	15
22	23	24	25	26	27	28	19	20	21	22	23	24	25	19	20	21	22	23	24	25	16	17	18	19	20	21	22
29	30	31	1	2	3	4	26	27	28	1	2	3	4	26	27	28	29	30	31	1	23	24	25	26	27	28	29
5	6	7	8	9	10	11	5	6	7	8	9	10	11	2	3	4	5	6	7	8	30	1	2	3	4	5	6

MAY							JUNE							JULY							AUGUST						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
30	1	2	3	4	5	6	28	29	30	31	1	2	3	25	26	27	28	29	30	1	30	31	1	2	3	4	5
7	8	9	10	11	12	13	4	5	6	7	8	9	10	2	3	4	5	6	7	8	6	7	8	9	10	11	12
14	15	16	17	18	19	20	11	12	13	14	15	16	17	9	10	11	12	13	14	15	13	14	15	16	17	18	19
21	22	23	24	25	26	27	18	19	20	21	22	23	24	16	17	18	19	20	21	22	20	21	22	23	24	25	26
28	29	30	31	1	2	3	25	26	27	28	29	30	1	23	24	25	26	27	28	29	27	28	29	30	31	1	2
4	5	6	7	8	9	10	2	3	4	5	6	7	8	30	31	1	2	3	4	5	3	4	5	6	7	8	9

SEPTEMBER							OCTOBER							NOVEMBER							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
27	28	29	30	31	1	2	1	2	3	4	5	6	7	29	30	31	1	2	3	4	26	27	28	29	30	1	2
3	4	5	6	7	8	9	8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9
10	11	12	13	14	15	16	15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16
17	18	19	20	21	22	23	22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23
24	25	26	27	28	29	30	29	30	31	1	2	3	4	26	27	28	29	30	1	2	24	25	26	27	28	29	30
1	2	3	4	5	6	7	5	6	7	8	9	10	11	3	4	5	6	7	8	9	31	1	2	3	4	5	6

2017 Major Contest Dates

- Jan. 21: North American SSB QSO Party
- Jan. 27-29: CQ Worldwide 160-Meter (CW)
- Feb. 10-12: CQ Worldwide RTTY WPX
- Feb. 17-19: ARRL DX (CW)
- Feb. 25: North American RTTY QSO Party
- Feb. 24-26: CQ Worldwide 160-Meter (SSB)
- Mar. 3-5: ARRL DX (SSB)
- Mar. 24-26: CQ Worldwide SSB WPX
- May 26-28: CQ Worldwide CW WPX
- Jun. 10-11: ARRL June VHF Contest
- Jun. 24-25: ARRL Field Day

- July 8-9: IARU World Championships
- July 15-16: CQ Worldwide VHF
- July 15: North American RTTY QSO Party
- Aug. 19: North American SSB QSO Party
- Sept. 9-10: ARRL September VHF Contest
- Sept. 22-24: CQ Worldwide RTTY DX
- Oct. 7-8: California QSO Party
- Oct. 27-29: CQ Worldwide SSB DX
- Nov. 4-5: ARRL Sweepstakes (CW)
- Nov. 18-19: ARRL Sweepstakes (SSB)
- Nov. 24-26: CQ Worldwide CW DX
- Dec. 8-10: ARRL 10-Meter Contest

PVARC Nets
Tuesdays at 7:30 pm
on K6PV, 447.120
MHz (-), PL 100.0, and
144.910 MHz, Tone
Squelch, PL 156.7

PVARC Meetings & Meals

Meetings 7:30 pm **1st Thursdays** (eff. 6/1) except August and December at Fred Hesse Park, 29301 Hawthorne Blvd., Rancho Palos Verdes. Guests welcome.

No-host dinner at 5:30 pm before club meetings at Red Onion Restaurant, 736 Silver Spur Road, Rolling Hills Estates.

2nd Saturday each month: PVARC "HF Enthusiasts Group", 10:00 am

3rd Sunday in August: Annual family picnic at Pt. Vicente Lighthouse.

December 14: Holiday Dinner, Ports O'Call Restaurant, San Pedro.

PVARC Public Service Events

- Apr. 23:** Ridgecrest Int. School 5K
- Aug. 12:** Rolling Hills Estates "Hills Are Alive" 5K/10K
- Sept. 4:** "Conquer the Bridge" Race
- Oct. 14:** RAT Beach Bike Tour
- Nov. 18:** P.V. Half-Marathon/10K

Major Ham Radio Conventions

- Feb. 4:** Palm Springs Hamfest
- Feb. 17-18:** Yuma Hamfest, Yuma, AZ
- Apr. 21-23:** International DX Convention, Visalia, CA
- May 19-21:** HamVention, Xenia OH
- Sep. 15-17:** **HAMCON 2017, Torrance**
- Oct. 20-22:** Pacificon, Santa Clara, CA

PVARC HF Operating Events

- Feb. 22-26:** Islands On The Air DXpedition, Catalina Island;
- June 24-25:** ARRL Field Day;
- Aug. 18-20:** Intl. Lighthouse Weekend, Pt. Vicente Lighthouse

PVARC Ham License Classes

Fred Hesse Park (Fireside Room), 29301 Hawthorne Blvd., Rancho P.V.

Feb. 4 & 11; May 27 & June 3; August 5 & 19; also TBA in the Fall months.



Palos Verdes Amateur Radio Club
P.O. Box 2316
Palos Verdes Peninsula, CA 90274

www.n6rpv.net/pvarc or www.k6pv.org

NEW MEMBER & MEMBERSHIP RENEWAL FORM

NEW: _____ or RENEWAL: _____ MEMBERSHIP DATE: _____

Last Name: _____ First Name: _____ Spouse: _____

Street Address: _____

City: _____ Zip: _____

Phone: Home _____ Work _____ Cell _____

Email address: _____

(Unless otherwise noted emails will be sent to the applying member only)

License Call: _____ License Class: _____ ARRL Member? _____ Birth Mo./Day: _____

Other amateur radio groups you belong to: _____

Additional Household and/or Family Members (if Applicable):

Name _____ Call _____ Class _____ ARRL _____ Birth Mo./Day: _____

Name _____ Call _____ Class _____ ARRL _____ Birth Mo./Day: _____

Name _____ Call _____ Class _____ ARRL _____ Birth Mo./Day: _____

Individual membership (\$15.00) \$ _____

Household and/or Family membership (\$20.00) \$ _____

Additional donation to support PVARC activities \$ _____

Cash: _____ or Check #: _____ Date _____ TOTAL \$ _____

Please make checks payable to: Palos Verdes Amateur Radio Club; Dues based on January 1st to December 31st year.

All New and Renewal Member applications must be signed below.

I am applying for a new or renewal membership in the Palos Verdes Amateur Radio Club and understand that by accepting membership I agree to abide by the Club's constitution and by-laws (available on-line at: http://www.n6rpv.net/pvarc/constitution.htm or upon request.)

Signature: _____ Date: _____

Family Member Signature: _____ Date: _____

Family Member Signature: _____ Date: _____

HAMCON 2017

ARRL Southwestern Division Convention

September 15-17, 2017

Torrance Marriott Redondo Beach Hotel
3635 Fashion Way
Torrance, CA 90503



Hamcon, Inc. is a 501(c)3 Non Profit Organization
Donations to Hamcon, Inc. are tax deductible

"Ham Radio for Everyone" is our theme with much to see and do at HAMCON 2017

- Full range of talks by experts on radio equipment, operating techniques, public service, DXing, technical subjects, and much more
- 10,300 sq. ft. Vendor/Exhibit Hall with 63 booth spaces
- Distinguished speakers at Saturday lunch and dinner, and Sunday breakfast
- Extensive prize drawings
- W1AW/6 Special Event station
- ARRL Forums, Ham License test sessions
- Young ham forum
- Sunday swap meet
- Discount hotel room rates (available through the Marriott link on our website)
- With more to come . . .

AND FOR THE FIRST TIME EVER

Special Friday Afternoon tour of the **Battleship Iowa**

- Includes Catered Buffet Dinner in the Officer's Wardroom
- Tour the Radio Room (not open to the general public) and operate the ship's NI6BB amateur station
- Bus transportation to and from the Marriott Hotel included
- Limited to 80 guests, so register early

For complete convention details, registration and hotel bookings log onto:

WWW.HAMCONINC.ORG

Register for HAMCON 2017, the 2017 ARRL Southwestern Division Convention, by mail or online at www.hamconinc.org



HAMCON 2017 2017 ARRL Southwestern Division Convention

September 15-17, 2017
Torrance Marriott Redondo Beach Hotel
3635 Fashion Way, Torrance, CA 90503

Convention Registration Form

Visit us at: www.hamconinc.org/

All attendees over 18 years old must have a separate paid registration; no charge for registered minors 18 or younger when accompanied by paid Adult registrant.

Call Sign: _____

Last name: _____ **First name:** _____

Street or mailing address: _____

City: _____ **State & ZIP Code:** _____

E-mail address: _____ **Phone:** _____

Additional Attendee #1 Call Sign: _____ Adult: Minor:

Last name: _____ First name: _____

Additional Attendee #2 Call Sign: _____ Adult: Minor:

Last name: _____ First name: _____

Additional Attendee #3 Call Sign: _____ Adult: Minor:

Last name: _____ First name: _____

	Per Person	x	Number	= \$ Total
Early Registration, postmarked by Aug. 15, 2017:	\$20			
Regular Registration, Aug. 16 to Sept. 17, 2017:	\$25			
BEST VALUE: Registration and all three meals	\$135			
Saturday Lunch**: ___ # Chicken ___ # Vegetarian	\$36			
Saturday Dinner**: ___ # Chicken ___ # Vegetarian	\$55			
Sunday Breakfast**	\$29			
Battleship Iowa Special Event (bus departs Torrance Marriott at 2:15 pm, Friday, Sept. 15)	\$50			

I want to operate NI6BB station aboard the Iowa

** Each meal has a special prize drawing exclusively for attendees

Each Adult paid Early Registrant receives one ticket for the Early Registration Prize drawing. All Adult paid registrants receive two free Prize Drawing tickets.

Total Amount Paid:

Cash	Check
------	-------

Please send Registration Form and Check to:

For HAMCON staff use:

Registration received by: _____

Date received & registration #: _____

Amount received: \$ _____

HAMCON Inc.
c/o Margie Hoffman, KG6TBR
21612 Grovepark Dr.
Santa Clarita, CA 91350

Tell your friends and relatives about the PVARC's next Technician and General license classes at Hesse Park on August 5th and 19th

Two Free Amateur Radio Courses

FCC "Technician" course (entry level)

FCC "General" course (2nd level)

Each course is 2 sessions

The sessions will be on 5 and 19 August 2017

Technician 9:30 AM to 1:30 PM both Saturdays (bring your lunch)

General 1:30 PM to 5:00 PM both Saturdays

The FCC tests will be 10:00 AM to noon on 26 August 2017

At the start of the 5 August Technician course, the Palos Verdes Amateur Radio Club will give a 30 minute presentation on how to get further involved with amateur radio.

The class location is at Fred Hesse Community Park,
29301 Hawthorne Blvd., Rancho Palos Verdes.

Confirm your attendance to Walt, K1DFO at waltordway@juno.com

There is no fee for either course.

Taking the FCC test is \$15.

Optional Material (sold at cost)

Gordon West books with all the FCC test questions,

\$22 for the Technician and \$26 for the General

Paper copy of Walt's Power Point charts,

\$22 for the Technician and \$22 for the General -

For courses sponsored by the Palos Verdes Amateur Radio Club, students thru grade 12 who pass their examination at a PVARC VE test session will, upon application to the Club, be eligible for reimbursement up to a maximum of \$50 to cover the cost of materials and the examination fee.

Everyone who obtains their first ham radio license through a PVARC VE test session, regardless of age, will receive a free membership in the Palos Verdes Amateur Radio Club for the remainder of the current calendar year.