



# QRO

MONTHLY NEWSLETTER OF THE PALOS VERDES AMATEUR RADIO CLUB

JUNE 2019



## Inside this month's QRO

Upcoming monthly meeting speakers .....	2
Field Day is coming, June 22-23 .....	3
Wall Wart Voltage Regulator, <i>by Jerry Kendrick, NG6R</i> .....	4-7
PVARC HF Group meeting; sale pricing? .....	8
A farewell to Bryant, W2RGG .....	9
PVARC club news.....	10-11
Reminder of K6PV DMR vs. Analog use .....	12
Equipment for sale by K6RO .....	13
PVARC Calendar, June 2019 .....	14
K1DFO's June 2019 ham license classes .....	15
PVARC membership renewal / application form .....	16

## “Ground Is A Myth”

**Kristen McIntyre, K6WX**  
(via Skype)

**Thursday, June 6, 2019**

6:30 pm:

- 1) “What’s Next?” group...all ham radio questions welcome, and
- 2) separate DMR Basics group

**7:30 pm: Main meeting**

Fred Hesse Community Park  
(McTaggart Hall)  
29301 Hawthorne Blvd.  
Rancho Palos Verdes, CA  
*Visitors always welcome*

## PVARC's upcoming meeting topics...

Our **June 6** monthly meeting has a fascinating presentation via Skype video....just for us.

Kristen McIntyre, K6WX, will present live from the San Francisco Bay area "Ground is a Myth" at our June meeting...removing some of the mystery and hype about grounding antennas or equipment. Kristen is an MIT graduate in electrical engineering and currently a senior software engineer at Apple. She previously worked (in her words) "at many of the usual suspects in Silicon Valley."



Kristen McIntyre, K6WX

In January 2019 Kristen was named Vice-Director for the ARRL Pacific Division after serving as Technical Coordinator for the ARRL East Bay Section. She also has been president of the Palo Alto Amateur Radio Association for 11 years and is a licensed amateur in Japan as JI1IZZ. Kristen frequently speaks at ARRL conventions on technical topics and you might have seen her talks at HAMCON 2015 or HAMCON 2017 in Torrance. Also in 2017 she was inducted into the CQ Amateur Radio Hall of Fame.

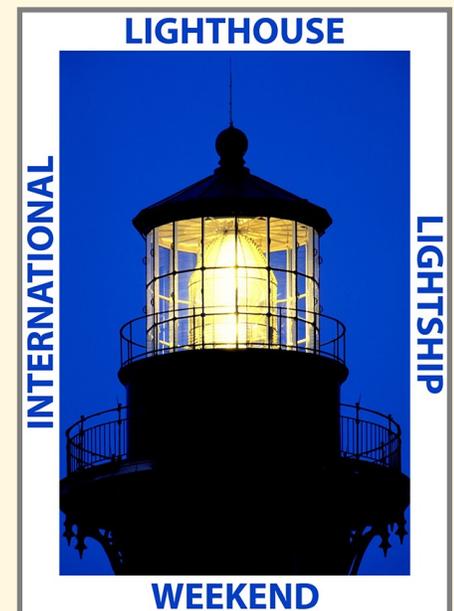
On **July 4** Hesse Park's building will be closed and there's no PVARC meeting that evening. Please enjoy our nation's Independence Day with your family, neighbors, and friends.

Replacing a July meeting will be a special monthly meeting on **August 1**. (We'll still hold our family picnic at Pt. Vicente Lighthouse on Sunday, August 18, during International Lighthouse and Lightship Weekend.) Two topics will be presented on August 1: A new video by your QRO Editor about 2019 ARRL Field Day throughout the ARRL Los Angeles Section including K6PV operations and a new presentation about International Lighthouse and Lightship Weekend.

Bob Closson, W6HIP, is our liaison with the U.S. Coast Guard and reports that our application has been approved to use Pt. Vicente Lighthouse grounds for the PVARCs radio operation and picnic during August 16-18. K6PV at Pt. Vicente is now registered with the ILLW organization along with 214 other lighthouses worldwide (as of June 2). Many other lighthouses will be registered during the weeks leading to ILLW as amateur radio groups obtain approvals or develop plans.

The PVARC's **September 5** meeting will be devoted to Digital Mobile Radio (DMR) and our club's experiences since K6PV became a dual-mode repeater in late March. Our club directors and others are already working on a very-understandable presentation about DMR which demystifies much of its complexity while also clearly explaining the many DMR advantages. We will also have members show various DMR radios and present their knowledge or tips for becoming more proficient with DMR.

Our October and November meeting topics are being planned...so stay tuned. ■



The ILLW logo  
([www.illw.net](http://www.illw.net))

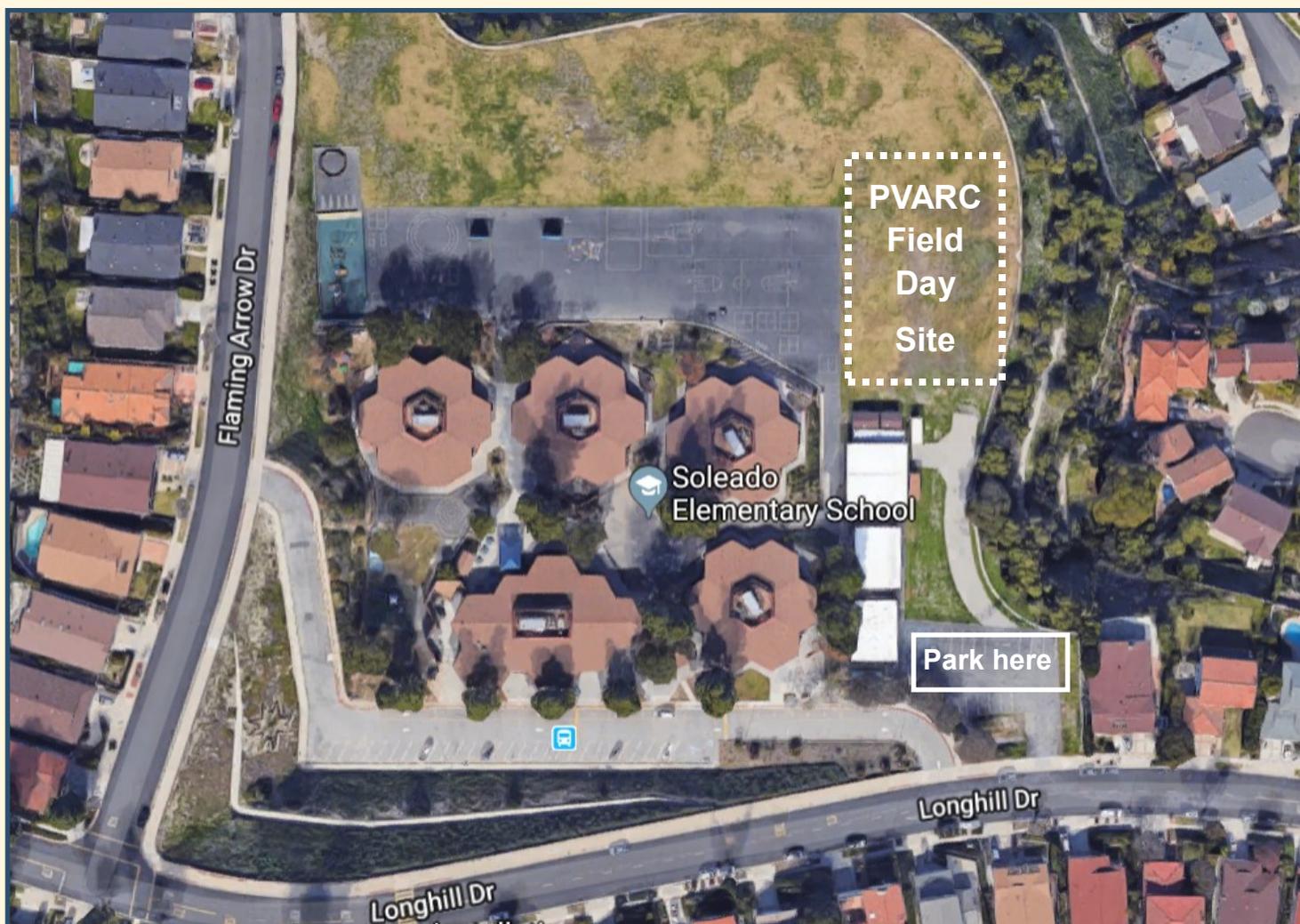
## Field Day is June 22-23 and amateur radio's annual showcase to the public; we'll again be at Soleado Elementary School

This year our Field Day CW and SSB/digital stations will share the PVARC's multi-band hexbeam antenna atop the club's tower trailer using a triplexer with new high-wattage bandpass filters. The advantage: This simplifies antenna setup vs. having two separate masts and both stations can benefit from our hexbeam's versatility. We will also have wire-dipoles for 80- and 40-meters on CW and phone/digital. For the first time, we will also erect a 160-meter long-wire antenna.

A significant change this year is Field Day's inaugural use of FT8...a weak-signal HF mode expected to be widely utilized due to band conditions. FT8 contacts will count as "Digital" QSOs, worth the same multiplier as CW contacts.

Our VHF/UHF station will have a small 6-meter beam and antennas for 2-meters/440 in horizontal polarization for SSB. The Get On The Air station will also use wire-dipoles.

We'll have updated information about Field Day in our Weekly Bulletins sent by email each Tuesday. Stand by for more info...and we hope to see you at Field Day which is amateur radio's "Open House" to the public. ■

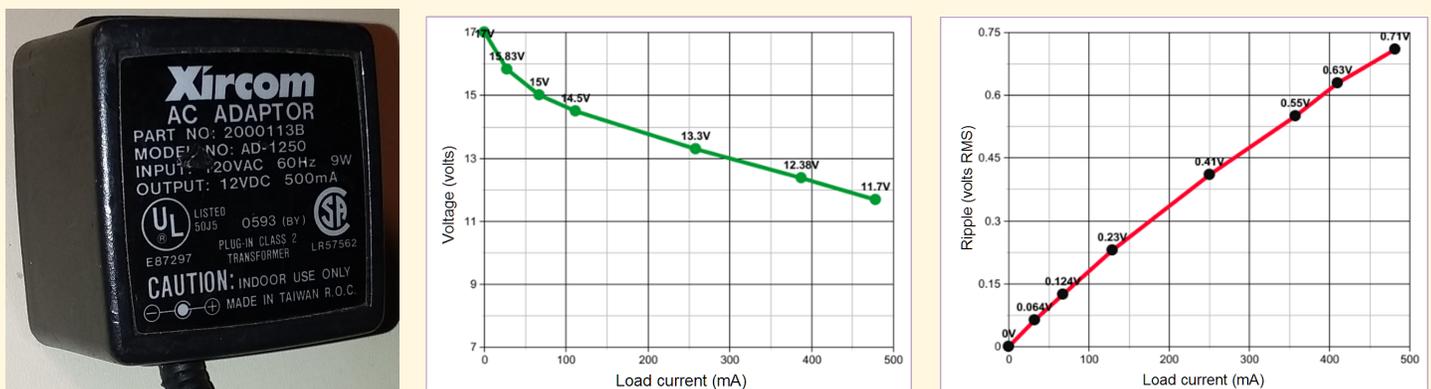


**Above:** Our Field Day site is on the eastern edge of Soleado Elementary School's athletic field. Park in the staff parking lot off Longhill Drive (note: the staff lot has a separate driveway entrance from the school's main entrance.) During our set-up and take-down only a limited number of vehicles will be allowed onto the field. PHOTO: GOOGLE EARTH IMAGE

# Wall Wart Voltage Regulator

By Jerry Kendrick, NG6R

A wall wart is a small power adapter with a 120V AC plug directly attached, used for powering electronic units and other devices. It often has a rated output voltage of 12 volts DC. The wall wart is given this derogatory label because its bulky size and shape make it an aberration on an otherwise smooth AC wall socket and because it usually covers over more than one AC outlet. Except for some recent AC-outlet-plug-in regulated switching-mode supplies, most wall warts simply use a step-down transformer to drop the 120V AC outlet voltage to a considerably lower AC voltage, followed by a full-wave or sometimes half-wave rectifier, and with very minimal internal capacitive filtering. As a result, both the output DC voltage level and the residual AC voltage ripple are highly dependent on the resistive load that the supply is powering. For the typical unregulated 12V wall wart depicted in Figure 1, note the effect on both output DC voltage and AC voltage ripple as load current varies from no load up to the rated maximum load current of 500mA.



**Figure 1. (Left)** Typical transformer-based 12V wall wart used for this project. Note that the output is stated as 12VDC at 500mA. This is only an indicator that at 500mA of load current, the unit should have nominally 12V output voltage. But what if the load current is much less? **(Middle)** The output voltage drops markedly from its no-load value of 17V to slightly less than 12V in the region of 500mA load current. Various junk-box resistors (several watts each) in series and parallel combinations produced the data points shown here. Voltage and resistance values were measured using a good-quality digital multi-meter; the load current values were calculated using Ohm's law by dividing measured voltage by measured resistance. **(Right)** Ripple voltage is almost nonexistent at zero load current but increases to a value of nearly three-quarters of a volt (AC RMS) at the nominal 500mA DC load current operating limit.

Wall warts are convenient and can save considerable manufacturing and consumer costs by not having to place AC-to-DC power conversion capability inside virtually every electronic unit that's dependent upon AC power. However, they aren't necessarily interchangeable, even with the same rated output voltage, and could represent a risk for some applications. If the device we're interested in powering is sensitive to over-voltage, even if it occurs briefly, then the device can be damaged by a wall wart when initially turned on because of its much-higher-than-nominal output voltage. Some electronic devices used in amateur radio require that operating voltage must be kept strictly within 15% of 12V, i.e., in the range of 10.2V to 13.8V. So, an initial applied voltage of 17V, as from the wall wart illustrated above, could potentially cause damage to a sensitive device. Additionally, some electronic units rely on the power supply voltage being reasonably pure DC, i.e., without much AC ripple voltage that could create hum or low frequency hash that is undesirable in some applications.

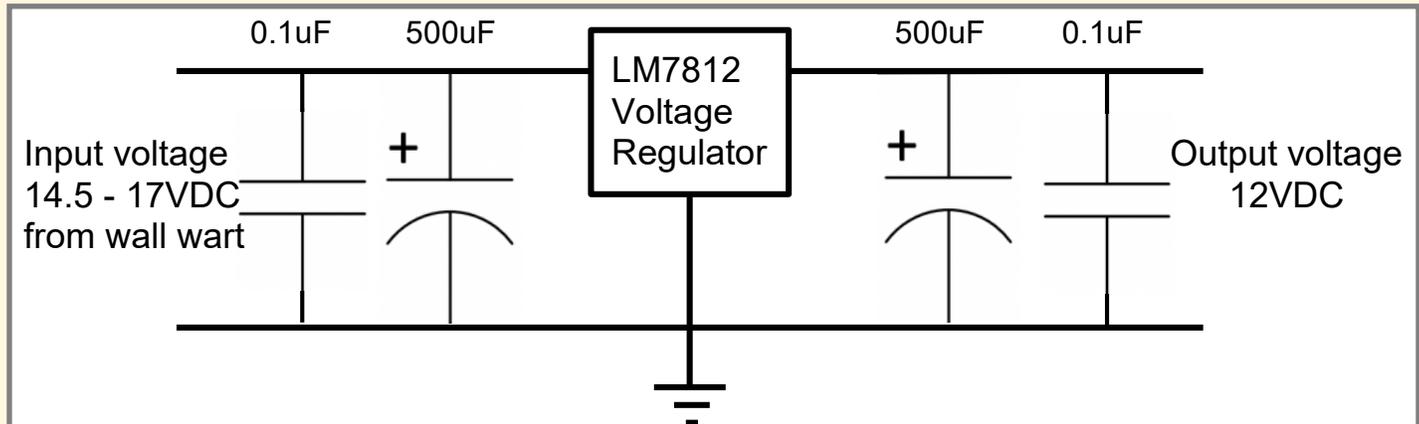
This article demonstrates an effective (yet inexpensive) method to stabilize the output voltage of the wall wart at 12V DC output voltage. This supplement to the basic wall wart has the additional benefit of considerably reducing AC ripple voltage riding on the DC output, as will be demonstrated later. The method uses an LM7812 voltage regulator integrated circuit (IC) device, purchased via eBay for less than 10 cents each for a

*Continued on next page* ▶

## Wall Wart Voltage Regulator

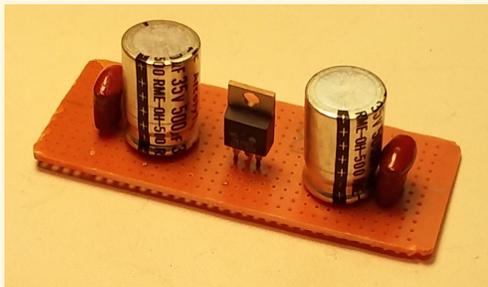
► *Continued from previous page*

quantity of ten (with free shipping!). The only other components needed are a couple of inexpensive electrolytic capacitors and non-polarized Mylar (or ceramic) capacitors for additional filtering, readily available on-line or from the local ham radio swap-meet. The schematic for the simple voltage regulator circuit constructed here is shown in Figure 2.



**Figure 2.** Schematic diagram of the LM7812 voltage regulator and filter circuit built and tested to stabilize the considerable voltage sag and AC ripple voltage of a typical transformer-based wall wart. The small non-polarized capacitors (0.1uF) in parallel with the much larger 500uF electrolytic capacitors are for high frequency noise suppression, otherwise not provided by the high-capacitance electrolytics due to their relatively high equivalent series inductance (ESL). [1] Mylar capacitors of 0.1uF have very low ESL.

The implementation of this circuit is shown in Figure 3. A small container was needed to house the board with its five components. An empty medicine vial makes for an interesting in-line enclosure for these components, which are soldered onto a perforated circuit board. Note that the vial is hard plastic and the LM7812 voltage regulator IC has the potential for heating under load. A quick analysis followed by a test, discussed below, both demonstrate that there is no need for an additional heat sink on the IC, nor is there concern that the plastic housing will be subjected to excessive heating for the target application. [Careful—this conclusion might not be appropriate for high load current applications.]



**Figure 3.** (Left) Implementation of LM7812 voltage regulator and filter circuit built and tested to stabilize the considerable voltage sag and AC ripple voltage of a typical transformer type wall wart. (Middle) Completed component board with pigtailed enclosed within an empty plastic medicine vial. Virtually no heat from the regulator IC for the target application load current of ~30mA, so no need for an IC heat sink or vent holes. (Right) Heat-shrink encapsulated voltage regulator, companion unit to the wall wart, ready to be soldered directly into the electrical line between the wall wart and its device interface DC connector. The project that will use this wall wart and regulator circuit to power 12V relays may be described in a future **QRO** article.

The target application for this particular voltage regulator circuit and wall wart is a set of 12V relays (only one activated at a time) that consume (according to the data sheet [2]) only 0.36W when the relay coil is activated (so, load current during relay activation would be approximately  $0.36\text{W}/12\text{V} = 0.03\text{A} = 30\text{mA}$ ). Referring back to Figure 1, note that at approximately 30mA of load current, the output voltage from the wall wart would be slightly less than 16V. So, the voltage across the operating regulator device (input voltage minus output volt-

*Continued on next page* ►

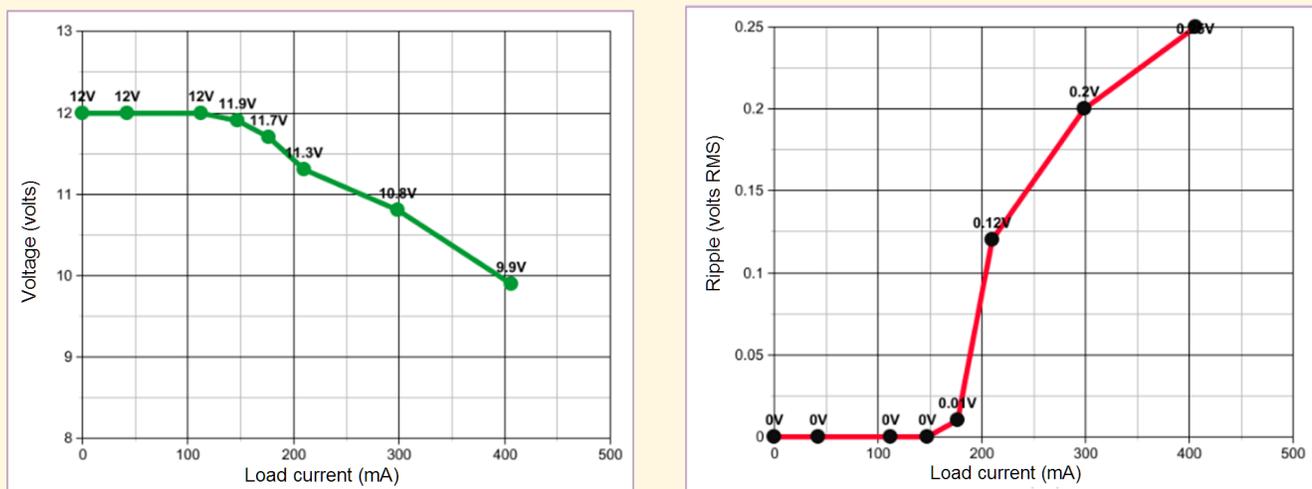
## Wall Wart Voltage Regulator

► *Continued from previous page*

age) would be approximately 4V (16V minus 12V). Thus, the power being consumed by the IC itself during the activation of the relay would be approximately  $4V \times 0.03A = 0.12W$ . This amount of load current (30mA) is very small in relation to the maximum load current capability of this LM7812 IC of 1.0A to 1.5A.

A thermal test was performed to assess the impact of operating the voltage regulator for an extended period with a load current of 30mA while conservatively assuming that the entire 0.12W of consumed power is being radiated as heat. This amount of consumed power did not perceptibly increase the temperature of the IC, even after operating continuously for two hours. So, there is no risk of heat damaging the plastic housing for this application, nor is there a need for holes in the housing to permit heat venting.

The series combination of wall wart and voltage regulator was tested for DC output voltage and AC voltage ripple. These data are shown in Figure 4.



**Figure 4. (Left)** Measured output from the voltage regulator shows a steady 12V DC output up to approximately 120mA of load current, at which value the regulator begins to lose regulation due to reduced input voltage from the wall wart. The datasheet for the LM7812 [3] indicates that a minimum of 2.5V must exist across the device (input voltage minus output voltage) in order for the device to function properly, i.e., provide 12V output voltage. This measured data confirms that information. Again referring back to Figure 1, note that 120mA corresponds to about 14.5V from the wall wart. Note that for the target application load current requirement of only 30mA, this wall wart and voltage regulator combination is more than adequate. **(Right)** Measured AC voltage ripple is virtually zero up to about 140mA of load current, a significant improvement compared to the wall wart without regulation.

### Summary and conclusions

Transformer type wall warts have a high no-load output voltage, making them problematic for some applications that require very little deviation from nominal 12 volts and/or need low AC voltage ripple. The considerable voltage sag and AC ripple from a transformer type wall wart can be significantly reduced by the use of an inexpensive LM78xx voltage regulator IC (where xx = 12 for the 12V application demonstrated here; the LM7805 is available for 5V applications).

Without regulation, the higher the rated maximum load current (500mA for the wall wart in this article), the higher (and potentially more concerning) will be the no-load output voltage. The LM7812 voltage regulator circuit investigated in this article totally eliminated voltage sag up to an operating load current of approximately 120mA; it also eliminated measurable AC ripple up to this same value of load current (plus a few milliamps more). Since the LM7812 requires a minimum of 2.5V across the device, the input voltage must be greater than 14.5V to achieve 12V output voltage, thus potentially limiting applicability for some higher load

*Continued on next page* ►

# Wall Wart Voltage Regulator

► *Continued from previous page*

current uses. [If considerably higher load current is needed for some 12V applications, a wall wart nominally rated for 16V or 18V DC output, or even higher, could be used effectively with this same LM7812 IC, which can accept input voltages up to 30V DC. A heat sink attached to the IC may be required.] For this particular project, the target application will require only 30mA, well below the voltage regulated wall wart load current limit of ~120mA. The voltage regulator and filtering circuit investigated here is inexpensive, requires little electronics hands-on expertise to construct (point-to-point soldering), and provides safer/lower-noise operation for applications needing a more controlled supply of DC power than a wall wart can deliver alone. ■

## References

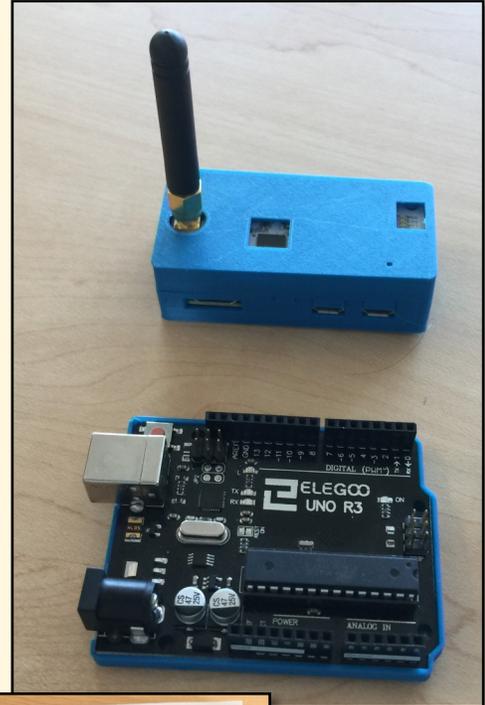
1. <http://www.auraauro.com/circuits-simulations/calculating-esl/>
2. <https://www.rlocman.ru/i/File/2018/02/21/SRD--T73-.pdf>
3. [http://pdf.datasheetcatalog.com/datasheets2/17/179477\\_2.pdf](http://pdf.datasheetcatalog.com/datasheets2/17/179477_2.pdf)

## ***QRO Editor's Note: Complete index of additional NG6R original articles in QRO***

#	QRO Issue	Page	Title
1	Jun 2013	p. 5	Replacing Display Bulbs in Amateur Radio Equipment
2	Aug 2013	p. 8	An Easy PL-259 Connector Installation Trick You Can Do
3	Sept 2013	p. 6	Additional Thoughts On CW...
4	Sep 2013	p. 7	...And Two Morse Key Restoration Projects Demonstrate The "Wire Wheel" Method Works Quite Well
5	Nov 2013	p. 10	A Ham Radio Test Long Remembered: An Unexpected Comment from the FCC
6	Dec 2013	p. 8	Populating Memories in Your VHF/UHF Radio
7	Feb 2014	p. 7	Helpful Hint: Making a VHF/UHF homemade Yagi antenna more portable
8	Mar 2014	p. 7	Morse code is fading away . . . Do something about it!
9	Apr 2014	p. 8	You can work rare DX stations with high-speed CW . . . even if your Morse speed is 8-12 words per minute
10	Jun 2014	p. 6	Eliminating Pesky Adjacent Band Interference in Multi-Station Operations (Catalina IOTA, Field Day, ILLW)
11	Jan 2015	p. 8	"...No such thing as a free lunch" applies to much in life--but sometimes a radio is indeed close to "free"
12	Jul 2015	p. 10	Summits on the Air (SOTA)--A fun ham radio pursuit
13	Apr 2016	p. 5	A Matchbox Design Example (A practical solution to a real-world ham radio problem)
14	Jul 2016	p. 8	Operating with High SWR...just don't forget the matchbox
15	Aug 2016	p. 4	Good question: Why doesn't my VHF/UHF radio have an antenna tuner?
16	Oct 2016	p. 5	Installing Voltage/Current Meter on a DC Power Supply
17	Dec 2016	p. 8	HF Triplexer for the PVARC's Catalina IOTA DXpedition
18	Jan 2017	p. 9	Put some "spice" in your radio and electronics life
19	Apr 2017	p. 5	A bit of HF trivia...but not so trivial after all
20	May 2017	p. 7	Impedance in polar coordinates--not such a complex topic! (Or, is it?)
21	Jul 2017	p. 8	Smith Charts
22	Aug 2017	p. 7	Understanding Resistance, Capacitance, Inductance, Reactance and Impedance
23	Sep 2017	p. 6	USB microscopes are ready for your project's "close-up"
24	Oct 2017	p. 5	Powered speaker, the easy way (plus, an even <u>easier</u> way!)
25	Dec 2017	p. 7	VHF/UHF Antenna Repair Techniques
26	Jan 2018	p. 7	Inexpensive Software Defined Radio Receiver
27	Feb 2018	p. 9	Homemade 17-meter two-element Yagi Antenna
28	Mar 2018	p. 7	Test Fixture for DC Power Supplies
29	May 2018	p. 5	Great Study Aid for Upgrading Your Ham License
30	Jul 2018	p. 11	Astron Linear DC Power Supplies. Part 1, Basic operation and common failure modes
31	Aug 2018	p. 9	Another Matchbox Design Example
32	Sep 2018	p. 6	Astron Linear DC Power Supplies. Part 2, Troubleshooting and repair example, RS-12A
33	Oct 2018	p. 5	Fiat Lux! (Adding LEDs into your next project)
34	Oct 2018	p. 10	Heathkit SB-200 HF linear amplifier for sale
35	Nov 2018	p. 6	Desoldering technique using wicking, Helpful technical hint
36	Dec 2018	p. 7	Adjusting an HF Amplifier Input Impedance
37	Feb 2019	p. 5	Optimizing performance of a 2-port RF device (When a network analyzer is not available!)
38	Mar 2019	p. 5	CW Keyer Renewal with Arduino
39	Apr 2019	p. 3	Chronicle of a DMR Newbie
40	May 2019	p. 4	Catalina Phantom in FT8
41	May 2019	p. 8	FT4, a faster HF digital mode, has just been announced

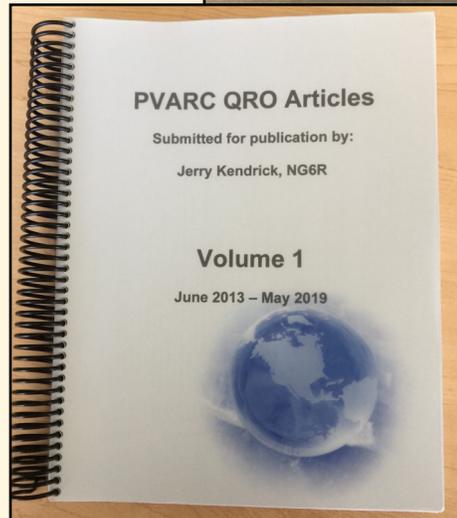


**Above:** Scene from the Purcell Room at the May 11th HF Enthusiasts Group meeting...with 11 attending. **Right:** Homebrew 3D-printed ZUM hotspot with Arduino processor base made by Mike, KK6KCH, shown at HF meeting. **Bottom right:** Jerry, NG6R, showed his compilation of 41 articles written for **QRO** since June 2013. PHOTOS: RAY DAY, N6HE



## Next HF Enthusiasts Group meeting at PV Library is Saturday, June 8

Whether you have an item to show or discuss...or just want to observe...all are welcome at the PVARC's HF Enthusiasts Group monthly meetings on 2nd Saturdays. The Group next meets on June 8 from 10:00 am to Noon at the Palos Verdes Library's main branch (701 Silver Spur Rd / 650 Deep Valley Dr.) in the Purcell Room in the corner behind the Reference Desk. There is plenty of free parking on the Library roof, in a parking structure on Deep Valley Drive, and a small inside parking area accessed from Silver Spur Rd. *Note: On June 8 the annual Rolling Hills Estates Street Fair will close Norris Center Drive and portions of Indian Peak Road.* ■



## A lighter look at electronics on sale: hey, it's still a price reduction...

**BEST BUY** Weekly Ad Deal of the Day Credit Cards For Your Bu

Search Best Buy

Products Brands Deals Services Account... Shopping History

Best Buy > Computers & Tablets > Tablets > Apple iPad > iPad Pro > iPad Pro 11-inch Share Print

Apple - 11-Inch iPad Pro (Latest Model) with Wi-Fi + Cellular - 64GB (AT&T) - Space Gray  
 Model: MU0T2LL/A SKU: 6016291  
 ★★★★★ 4.8 (5 Customers) 4.5 (8 Experts) | 1 Answered Question

~~\$47.50/mo.~~  
**\$47.49/mo.**  
 for 20 months  
 Save \$0 (\$0.01/mo.)  
 Free item with purchase A \$29.99 value

Protection for your Apple Product  
 Learn more about AppleCare

Screen shot from www.bestbuy.com, May 9, 2019. The "Free item with purchase" was also provided at the original selling price.

## A farewell to Bryant Winchell, W2RGG, on his move

Our fellow PVARC member Bryant Winchell, W2RGG, is moving to La Quinta (near Palm Desert) in early June and we will truly miss his presence on the Palos Verdes Peninsula.

Bryant is not only a Past PVARC President (1987) but also founder of Palos Verdes Estates' NART (Neighborhood Amateur Radio Team) and co-founder with Herb Clarkson KM6DD of the 220 MHz disaster amateur radio network for Palos Verdes Peninsula schools (currently 19 public and four private school sites.) Bryant has served as our club Librarian and was a key provider of equipment for amateur radio contacts between the International Space Station and students at Palos Verdes High School and Soleado Elementary School. For many years through 2009 he was also a member of the Los Angeles County Disaster Communication Service unit at the Lomita Sheriff Station.

On May 16, 2019, Bryant was honored at an outdoor reception by NART members and City of Palos Verdes Estates emergency services coordinator Marcelle Herrera. NART's current leader Bob Sylvest, AB6SY and now NART-001, presented Bryant with a crystal glass award of appreciation inscribed, "In Tribute / Bryant Winchell / W2RGG / Forever NART -001."

We wish Bryant all the best on his next chapter. Despite antenna restrictions at his new home he hopes to operate his Flex HF radio remotely through his son's nearby station in La Quinta that doesn't have restrictions. ■



Bryant Winchell, W2RGG (center) receives NART Award of Appreciation inscribed "Forever NART-001" from Bob Sylvest, AB6SY. PHOTO: DIANA FEINBERG, AI6DF

## It's still renewal time for PVARC membership...also consider being an ARRL member

PVARC member dues are collected early each year...so please send your renewal if you haven't. You may also pay at our monthly meetings where we have renewal forms. Additionally, we have set up a PayPal link to renew but it doesn't have our renewal form attached. To pay by PayPal (\$20 individual membership, \$25 for family membership) log onto PayPal and enter as the recipient: [PVARC90274@gmail.com](mailto:PVARC90274@gmail.com).

Additionally please consider joining the American Radio Relay League (ARRL) if you aren't a member. The ARRL is the only national organization representing amateur radio and has another significance for the PVARC: We receive benefits from being an ARRL-affiliated club. But being an ARRL-affiliated club requires at least 51% of club members also be ARRL members. Annual ARRL membership costs \$49 and includes the monthly QST magazine as well as access to numerous web-based materials. Visit: [www.arrl.org/](http://www.arrl.org/) then click on the "Join/Renew" tab. ■

## PVARC Club News

### Seven new licenses earned at PVARC's May 18 VE Session

Following recent ham license classes by Walt Ordway, K1DFO, our Volunteer Examiner testing session on May 18 attracted seven individuals. They earned two Technician, four General, and one Extra Class licenses.

Serving as our Volunteer Examiners were: Jerry Shaw, KI6RRD (Lead VE); Curtis Jones, AE6CJ; Steve Collins, KI6TEQ; Don Putnick, NA6Z; and Ray Grace, WA6OWM. Our next classes are in November 2019. ■

### PVARC badges await pickup at May meeting...or another time

Gary Lopes, WA6MEM, has the following new PVARC badges ready for distribution at our June 6, 2019, monthly meeting at Hesse Park or by special arrangement.

- AJ6JG
- K6MU
- KI6YMD
- KM6YGQ
- NJ6I
- W6BMD
- WJ1P / DU1X

To make special arrangements with Gary (or to order a badge) contact him at: [gary@wa6mem.com](mailto:gary@wa6mem.com). ■

### Embroidered PVARC patches available at monthly meetings

PVARC club patches are available at our monthly meetings for \$4 each. You may sew these onto any cap, jacket, shirt, or bag.



The four illustrations in the patch center are emblems of the Palos Verdes Peninsula's four cities (clockwise from top left: Palos Verdes Estates, Rolling Hills Estates, Rancho Palos Verdes and Rolling Hills.) ■

## 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 Bob Sylvest, AB6SY
Past Vice President	

### Appointed Offices:

QRO Editor	Diana Feinberg, AI6DF
Webmaster	Kel Vanderlip, W6KCV
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

### Contacts:

QRO Editor: 310-544-2917, [ai6df@arrl.net](mailto:ai6df@arrl.net)

Webmaster: 310-742-6123, [kelvin@vanderlip.org](mailto:kelvin@vanderlip.org)

Email us: [k6pv@arrl.net](mailto:k6pv@arrl.net)

Website: [www.k6pv.org](http://www.k6pv.org)

### Mailing Address:

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

### Monthly Meetings:

1<sup>st</sup> Thursday (except July and December in 2019) 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"):

**PVARC:** K6PV, 447.120 MHz

- Analog FM: (-), PL 100.0, CTCSS
- Digital DMR: Talkgroup 31060, Color Code 1, Time Slot 2

**"PV-West":** K6IUM, 449.980 MHz (-), PL 173.8, CTCSS

### To order a Club badge:

Gary Lopes, WA6MEM, [gary@wa6mem.com](mailto:gary@wa6mem.com)

### To order a Club jacket or patch:

Dave Scholler, KG6BPH, 310-373-8166

**QRO** is published monthly by the Palos Verdes Amateur Radio Club, ©2019 all rights reserved. For permission to reprint please contact PVARC at: [k6pv@arrl.net](mailto:k6pv@arrl.net)

Front page photo — Pt. Vicente Lighthouse during twilight after sunset on May 9, 2019. PHOTO: DIANA FEINBERG, AI6DF

## PVARC Club News

### PVARC upcoming dates in 2019

- ◆ **PVARC monthly meeting at Hesse Park, McTaggart Hall**  
1st Thursday each month, 7:30-9:30 pm, except in August and December. 6:30-7:25 pm, "What's Next?" group for newer hams.  
  
In 2019 only: No monthly meeting on July 4 due to Independence Day; special meeting August 1.
- ◆ **HF Enthusiasts Group meetings at Palos Verdes Library, Peninsula Center main branch**  
2nd Saturday every month, 10 am to Noon in the Purcell Room.
- ◆ **Walt Ordway, K1DFO, Technician and General amateur radio license classes at Hesse Park**  
  
Saturdays, November 2 and 9, 2019; license exam, November 16.
- ◆ **Public service events in 2019:**  
  
Hills Are Alive 10K/5K Rolling Hills Estates, **August 10**;  
  
Conquer the Bridge run/walk at Los Angeles Harbor across Vincent Thomas Bridge, **Labor Day, September 2**;  
  
Palos Verdes Half Marathon-10K-5K, **November 16**.
- ◆ **ARRL 2019 Field Day**, Soleado Elementary School, Rancho Palos Verdes, June 22-23.
- ◆ **2019 International Lighthouse & Lightship Weekend**, Pt. Vicente Lighthouse, August 16-18.
- ◆ **PVARC 2019 Holiday Dinner**: Dec. 12, Los Verdes Golf Course, Rancho Palos Verdes

#### Non-PVARC Events of Note:

- ◆ **W6TRW Swap Meet**: last Saturday of each month, Northrop Grumman Space Park, North Redondo Beach, 7:00-11:30 am
- ◆ **PACIFICON** (ARRL Pacific Division Convention) October 18-20, San Ramon, CA ■

### WELCOME NEW MEMBERS OF THE PALOS VERDES AMATEUR RADIO CLUB IN 2018-2019

Thomas Wynne, KM6QVW  
 Frank Attenello, KM6QVU  
 Debra Shrader, KM6QVX  
 Daniel Shrader, KM6QXC  
 Baldomero Fernandez, KM6QVV  
 Brian Keen, KM6QWC  
 Emanuele Rodrigues-Berardini, KM6QVZ  
 Neal Pollack, N6YFM  
 Daniella Ward, KM6TRC  
 Talbot Knighton, KM6TDF  
 Dylan Brown, KM6TDI  
 Robert Cullinan, NJ6I  
 Ellen Tessitore, N6XJM  
 Michael Vulpilat, KJ6RVU  
 Brian Clebowicz, K6BRN  
 Warren Arata, KM6YGR  
 Chris Sundlee, N6CGS  
 Brad Rachielle, KC6NNV  
 Georgiann Keller, KM6GYM  
 Annalise Little, KM6YGS  
 Tim Couture, KM6QWA  
 Frank Brown, KM6YGG  
 Charlie Hansen, AJ6HZ  
 Diana DiDomenico, KM6IQN  
 William McClure, W7QLI  
 Rick Shigio, K6RTS  
 David Calloway, K6DKC  
 Jon Kuroyama, K6LDQ

## A reminder about K6PV DMR Usage Guidelines

K6PV is an open repeater. As with all repeaters—open or private—the repeater owner and trustee may set usage rules. We have just a few rules besides abiding by FCC regulations and common decency standards.



ANALOG



DIGITAL

**K6PV analog or digital usage is on a first-come, first-served basis...use the mode you wish if the repeater frequency is clear.** Look for any signal bars in your radio's display as someone else might be on K6PV using the other mode. Any RF received on 447.120 MHz will show up as signal bars. Push your MONI (Monitor) button or turn the Squelch dial to open the squelch—you might hear an analog or DMR signal...or maybe just the other 447.120 MHz repeater in SoCal located on 8,000-foot Snow Peak above Banning.

**Do not use DMR on K6PV during the following times when analog-only nets are operating...**



ANALOG



NO  
DIGITAL

- ◆ **Monday evenings, 6:45-7:30 pm**, during weekly analog City of Rancho Palos Verdes PVAN nets
- ◆ **Tuesday evenings, 7:15-8:00 pm**, during analog PVARC Weekly Nets
- ◆ **When the Rancho Palos Verdes Emergency Communications Center is activated** for a disaster, scheduled training event, or scheduled public service event using analog FM such as the Palos Verdes Half Marathon.



NO  
ANALOG



DIGITAL

**...and do not use Analog on K6PV during the following times when DMR nets are operating**

- ◆ **Tuesday evenings, 8:00-8:45 pm** during PVARC Weekly DMR Nets ■

### K6PV DMR Repeater Information

**Model:** Hytera RD982i-U1, dual-mode DMR/analog with network connectivity

**Purchased new** by the Palos Verdes Amateur Radio Club, February 2019

**Duplexer:** Celwave 633-6A-2 six-cavity UHF duplexer, donated to PVARC by Gary Lopes, WA6MEM

**K6PV DMR fully operational:** March 22, 2019

**Repeater site:** One of higher points on the Palos Verdes Peninsula

**DMR Network:** Brandmeister (<https://brandmeister.network/>)

**Radio settings (in a DMR transceiver you will want both Analog and Digital channels):**

**Analog FM:** 447.120 MHz, -5.0 MHz TX shift, Tone Squelch (a.k.a. Encode-Decode), PL 100.0 (same as always.) Bandwidth is 25 kHz (single channel), i.e., "Wide FM"

**Digital Mobile Radio (DMR):** 447.120 MHz RX, 442.120 MHz TX, Color Code 1

Time Slot 2: PVARC Talk Group (TG 31060)

Time Slot 2: Local (TG9)

(Note: Time Slot 1 will be configured at a later date)

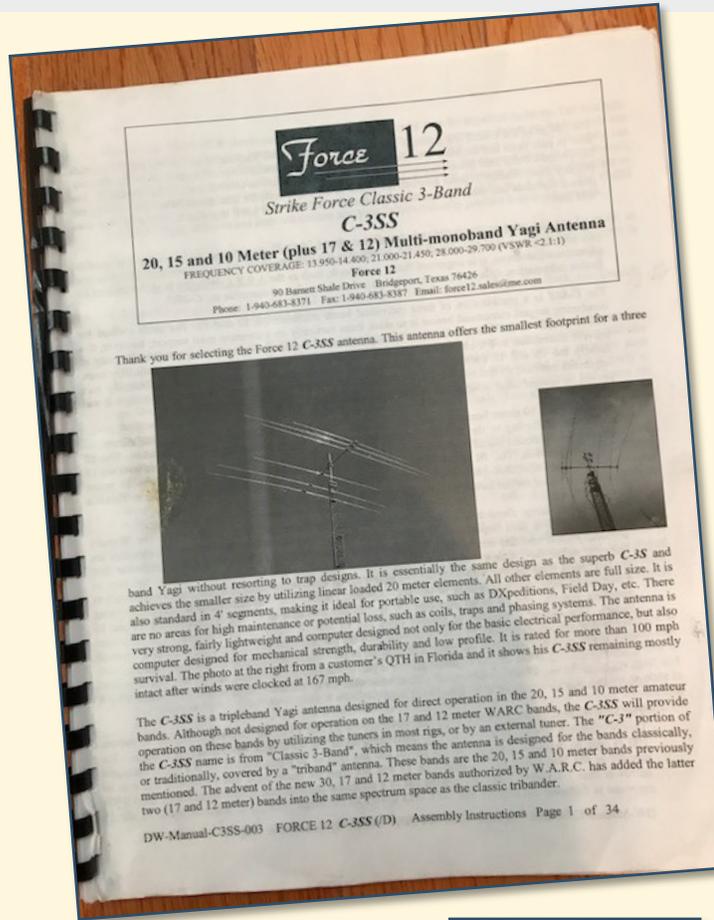
Bandwidth is 12.5 kHz (two separate and simultaneous channel capability)

**Amateur radio equipment offered for sale by PVARC member Larry, K6RO**



**For Sale (above): Palstar AT5K 3500 Watt antenna tuner,**  
 \$1249.00 retail. As new...purchased and never used. With manual. Price: \$1000 firm, or trade for K3 ?

Product information: [https://www.dxengineering.com/parts/palstar-at5k?cm\\_mmc=ppc-google--search--vendors--keyword&utm\\_source=bing&utm\\_medium=cpc&utm\\_term=%2bPalstar+%2bAT5K&utm\\_content=Palstar&utm\\_campaign=Vendors](https://www.dxengineering.com/parts/palstar-at5k?cm_mmc=ppc-google--search--vendors--keyword&utm_source=bing&utm_medium=cpc&utm_term=%2bPalstar+%2bAT5K&utm_content=Palstar&utm_campaign=Vendors)



**For Sale (above): Used Force 12 C3-SS 10/15/20M Yagi..works on 12/17 with a tuner.**

Works great. Retail new, \$1229.00

Make offer. Pick up in Rancho Palos Verdes, comes with owners manual.

**For sale (right): Brand new 10 foot x 2 inches x 1/4 wall 6061-T6 aluminum 10 x .250 x 2**

It cost me \$99.00 each to buy 2, or single mast was \$125.00. Sell at my cost \$99.00....pick up in RPV.



**For Sale (above): Pile of Screwdriver antennas / parts**

These came in another deal, nothing known about them.

Make offer, or trade for something I can use. Pick up in Rancho Palos Verdes



**Contact Larry, K6RO, at: lashap@cox.net**

*As with all equipment offered for sale directly by our members the PVARC does not warrant or guarantee the condition or suitability of any such equipment.*

## PVARC Calendar

June 2019

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4 PVARC weekly net on K6PV repeater & cross-band, 7:30 pm (analog); 8:00 pm (DMR only)	5	6 PVARC monthly meeting, Hesse Park. 6:30 pm, "What's Next?" and DMR Basics; 7:30 pm main	7	8 PVARC HF Enthusiasts Meeting, 10 am-Noon, Palos Verdes Library Peninsula Center
9	10	11 PVARC weekly net on K6PV repeater & cross-band, 7:30 pm (analog); 8:00 pm (DMR only)	12	13	14	15
16	17	18 PVARC weekly net on K6PV repeater & cross-band, 7:30 pm (analog); 8:00 pm (DMR only)	19	20	21	22 ARRL Field Day...PVARC at Soledado School
23 ARRL Field Day...PVARC at Soledado School	24	25 PVARC weekly net on K6PV repeater & cross-band, 7:30 pm (analog); 8:00 pm (DMR only)	26	27	28	29 W6TRW Swap Meet, 7:00-11:30 am at Northrop Grumman, North Redondo Beach.
30						

Tell your friends and family about our upcoming ham license classes at Hesse Park

## Two Free Amateur Radio Courses

FCC "**Technician**" course (entry level)

FCC "**General**" course (2<sup>nd</sup> level)

Each course is 2 sessions

The sessions will be on 2 and 9 November 2019

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

**General** 1:45 PM to 5:00 PM both Saturdays

The FCC tests will be 10:30 AM to noon on 16 November 2019

At the start of the 2 November 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, CA 90275

**Confirm your attendance to Walt, K1DFO at [waltordway@juno.com](mailto: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,

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

Paper copy of Walt's Power Point charts,

\$22 for the Technician and \$18 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.



Palos Verdes Amateur Radio Club
P.O. Box 2316
Palos Verdes Peninsula, CA 90274
www.n6rpv.net/pvarc or 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 (\$20.00) \$ \_\_\_\_\_

Household and/or Family membership (\$25.00) \$ \_\_\_\_\_

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: \_\_\_\_\_