

# ***THE SAN BERNARDINO MICROWAVE SOCIETY (SBMS)***

***“Communicating at 1 GHz and Above – Since 1955”***

## **August 2019 Updates, Activity and News**



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### **The SBMS Big Event – ARRL 10 GHz and Up Contest**



Just a few weeks away now, this year's 10 GHz and Up Contest will begin on Saturday August 17<sup>th</sup> and Sunday the 18<sup>th</sup>. SBMS members come out with their newly-upgraded radios and go for the points. Some will rove with a portable radio, stopping at several operating spots. Others will set up their "Big Radios" at a hilltop or mountain peak, offering easy and long-distance QSOs to the rest of the operators. Contest Log forms, rules and details can be downloaded at the following link. <http://www.arrl.org/10-ghz-up/>

For those new to “radio sport,” the contest objective is to amass the highest possible number of points by number of unique call signs and distance of the contacts in kilometers. But the most rewarding part of the contest is connecting with friends, via microwaves and teaming up to contest together. There is a lot to be learned contesting with someone more experienced. Helping a new Ham is also a big thrill. So, try and hook up with someone you don’t know so well and make a new friend. Remember the big goal here is to “have fun with our radios” and with others. Plus, make a bunch of points in the process.



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## July 2019 Technical Presentation

### Promoting Amateur Microwave – An Activity for All Members

At the July 11<sup>th</sup> SBMS meeting, Robert, KM6RXN and other SBMS attendees discussed ways to promote Amateur Microwave. This was an interactive discussion where many members contributed in person and via Amateur TV.

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## Upcoming August 1<sup>st</sup> 2019 SBMS Meeting Technical Presentation

### 10 GHz and Up Contest Planning

The next SBMS meeting will be on Thursday, August 1<sup>st</sup>. In preparation for the annual ARRL 10 GHz and Up Contest, SBMS past Vice President, Mel Swanberg, WA6JBD, will present a number of RF and microwave propagation prediction maps from various locations our members may be operating from. Mel uses a commercial software tool to calculate and display the propagation probability in color maps that indicate RF signal strength. Members can ask to see a variety of locations already loaded into the program.

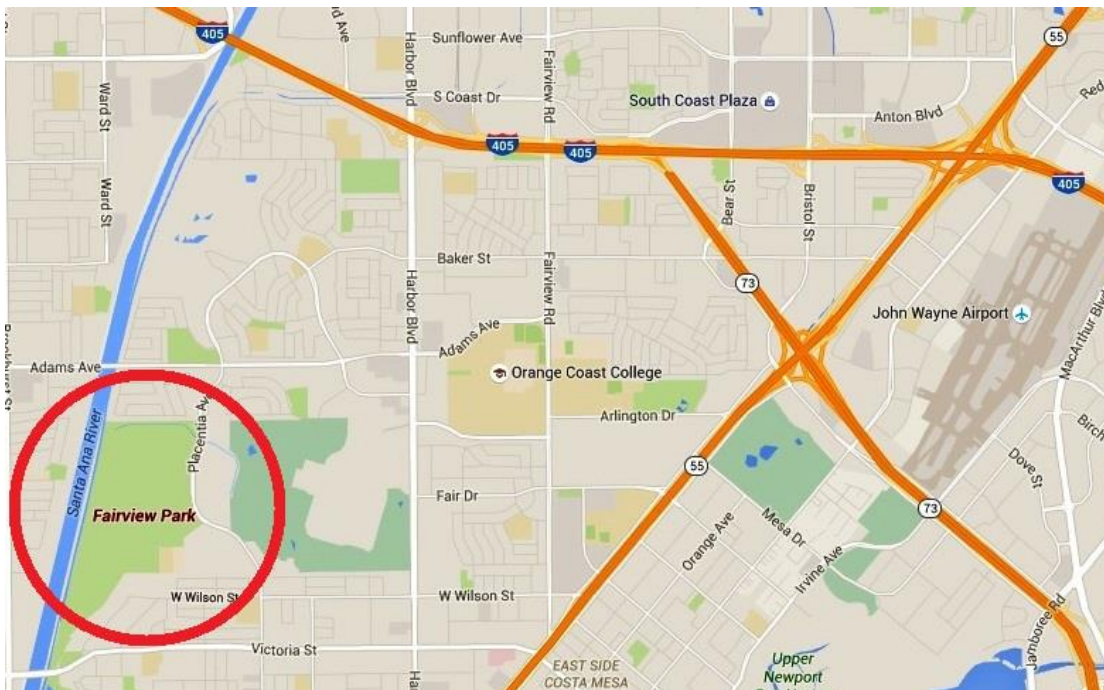
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## The 2019 SBMS Microwave Tune-Up

**This Saturday, July 27<sup>th</sup>**, the SBMS annual Microwave Tune Up will be in full swing. SBMS members, friends, and interested parties will gather at Fairview Park in Costa Mesa. Tests of Effective Isotropic Radiated Power (EIRP) and Minimum Discernible Signal (MDS) will be performed on 10 and 24 GHz radios.



This is a great way to get started in Amateur Microwave or to connect with and learn from experienced microwave radio operators. We will be equipped to test 10.368 GHz and 24.192 GHz radios this year. Fairview Park is a no-barbecue park, but sandwiches and snacks are fine as long as we manage the trash responsibly. Get your systems out and ready for the last Saturday in July. Testing commences at 9:00 AM. A Freeway map and Fairview Park location is shown below.



**Fairview Park – 2525 Placentia Ave, Costa Mesa, CA 92628**



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## July 2019 Attendee Microwave Activity Reports

Robert KM6RXN – Did a 10 GHz demonstration for ARRL Field Day, making three QSOs and 300 bonus points (100 each for mobile operation, club affiliation, and solar power). He also contacted Mel WA6JBD and Rein W6SZ on home-to-home last night.

Jason W6IEE – No non-work microwave activity this month but has a cheap beacon controller and plans a future demo with WA6IFE/B.

Courtney N5BF – Is in possession of three linear amplifiers that N6CV is selling: A Henry 4K Ultra (high frequency), an Alpha 87A (high frequency), and a Henry 3006 (6 meters). He also has some junk boxes with some microwave parts in them that he will eventually bring to SBMS. A claim of a QSO using a moon-orbiting satellite has been reported at

<http://www.arrl.org/news/historic-amateur-radio-contact-reported-via-moon-orbiting-satellite>

Mel WA6JBD – Showed the ID-Matic that SBMS purchased for the 2 GHz beacon. It is made to modulate which is not what is needed for this project, so he built up two controllers. Now we are positioned to build some more beacons in the future. Worked a little on his X-Band transverter. Eric AF6EP spent some time working on the LO for his X-Band radio. Mel worked Robert KM6RXN and Rein W6SZ in last night's home-to-home.

Steve WA6OXN – Is in night school for a couple of months. Was able to get half a software defined radio working with a yagi in his office to hear the 2 GHz Heaps beacon.

Eric AF6EP – Got his LO for 10 GHz going working with Mel WA6JBD. Today worked on mixers and switches and will be putting the rig together in future weeks.

Rein W6SZ – Worked Mel WA6JBD and Robert KM6RXN in last night's home-to-home and also worked Robert on his Field Day station.

Larry K6HLH – Tried with Robert KM6RXN in last night's home-to-home but did not complete. Robert barely heard him.

Dave W6DL – Tomorrow night is the KPH annual event 476 KHz – [kph.org](http://kph.org) – which is associated with a National Park. Also see [radiomarine.org](http://radiomarine.org).

Bill N6WL – Has listened to both KPH and KFS in the past, practicing CW on their broadcasts for his Extra upgrade (back when there was a code test). If you have a commercial operator's license you can go up to KPH and operate. They also have a K6KPH station for ham operation using rhombics antennas.

George KM6UKI – Is working on his spectrum analyzer.

KC6JPG – Put up a 5 GHz mesh dish connected to Pleasant's Peak as a link in the ATN. It is associated with the Grand Stream phone system. Grand Stream phones can check in. We now stream ATN on Utube and 24/7 on the Santiago repeater. A new ATV repeater is going up in Florida. Others are already up Philadelphia, Delaware, Ohio, and Arizona. The utube site automatically switches to their nets at their net times. See [www.utube.com](http://www.utube.com) and search for ATN or Amateur Television Network. You can also access the network on [atn.tv.org](http://atn.tv.org) through your computer microphone and camera via the TV studio at the KC6JPG QTH. The Mount Wilson repeater is being upgraded to digital.

Chris W6NOB – Is anxious for the Tune Up in July and the August contest weekend.

Chris N9RIN – No microwave activity this month.

Mike WA6SVT is on vacation this week from his Mt. Wilson transmitter operation job. Got a link amplifier for the mesa repeater (Lemmon to White Tanks in the Arizona chapter) but rent is up to \$50/month, so he is

going out this weekend to move from White Tanks to Mesa. The 3.5 W amplifier is now burning in on the bench and he also has a DEMI preamp and waveguide filter for 5910 MHz. The new transmitter for the ATN truck will provide 30 watts at the antenna which should make a big difference. Need to get back to Santiago and repair the LNA at the 125' level on the tower where the DC cable finally split and has water in it. With nearly no center conductor left he improvised a replacement (since he didn't have a connector with him) and improved LNA performance by 8 dB.

Gary W6KVC – Is doing his bi-annual instructing in the C-Cadet program (Navy and Coast Guard, middle school to age 18) next week. This is a STEM course involving ham Radio and robotics. Some students get ham tickets. This goes on 16 hours a day for two weeks.

KK6MXP – Took his 10 GHz rig apart this month. Went to Twin Peaks for Field Day. The operation included a Volunteer Examiner test site. As his ticket was about to expire in two weeks anyway, Jim took the General test cold (not wanting to buy a \$30 book) and passed. He was then given three issues of CQ Magazine and latest issue of Nuts and Volts. Operated 40 and 20 meters on the Field Day station.

WB6DNX – Test equipment: His 10 MHz source a little off. It's OK at home but is off in the field or in the garage. He has an extra Rubidium standard mounted in a box and now needs a power supply and heat sink material.

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## **AF6NA Visits the Dominion Radio Astrophysical Observatory in Penticton, BC, Canada**

During our family vacation in Spokane, WA and British Columbia (BC), I made it a point to visit the Canadian radio observatory located just a few kilometers southwest of Penticton.



The observatory has several projects going, but of particular interest to me is that this is one of 5 sites in the world that collects microwave solar flux data. This information is useful in analyzing sun vs. sky measurements of microwave receive systems. Anyone who has done Sun vs. Sky measurements can appreciate that the Solar flux value is monitored by calibrated receivers at several observatories around the world. Values that can be interpolated to 10.368 Ghz can be found here: <http://www.sws.bom.gov.au/Solar/3/4/2>

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## Microwave Mystery Device

Continuing a popular SBMS newsletter item, we have a mystery afoot that may have something to do with microwaves. That is your only clue. Some SBMS members may be able to correctly identify the device in the photo below. Those who know what this is can post their (final) answer on the SBMS email reflector.



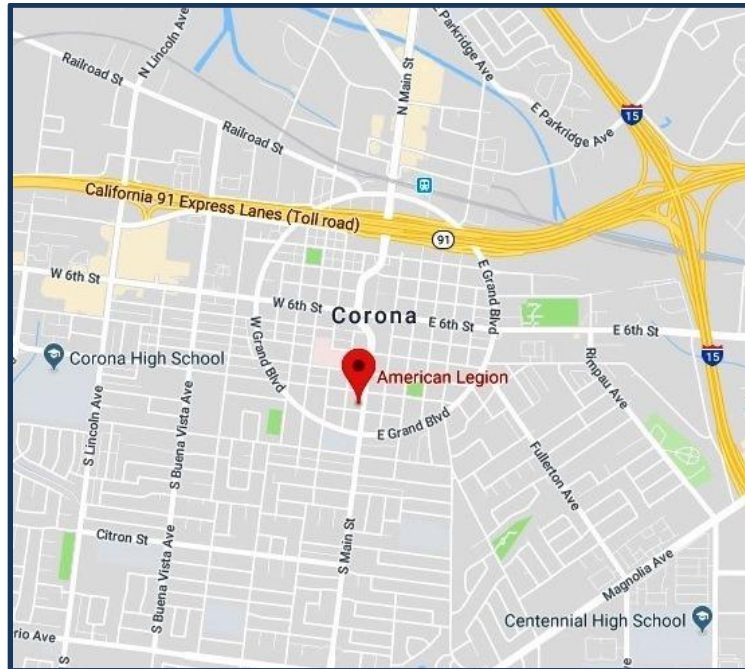
**Can You Identify This Microwave Mystery Device?**

X.

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**SBMS Monthly Meetings:** First Thursday of the month – 7:00 PM

**American Legion Hall  
1024 South Main St.  
Corona, CA 92882**



**Contact SBMS:**

Feel free to get in touch with SBMS with questions about Amateur microwave systems, operation, design, club activities or meetings.

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Dave Glawson	WA6CGR	wa6cgr-at-ham-radio.com	
Rein Smit:	W6SZ	rein0zn-at-ix.netcom.com	

**The SBMS E-Mail Reflector**

For hardware requests, technical help, microwave theory questions, reach all SBMS members on the email reflector list at the following address:

**sbms -at- ham-radio.com**

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## Amateur Microwave Beacons in Southern California:

Radio Beacons are dependable signals always on the air that builders and makers can tune in to and receive. They give the users an indication that their receiver is working, whether it is on frequency, and a rough idea of receiver sensitivity. The following beacons may be useful in microwave system development and testing.

### Los Angeles Area:

Name	Freq. MHz	Call	Altitude	Output	Grid Square	W Long.	N Lat.
Heaps Peak	2304.325	W6IFE/B	6435 ft.	27 dBm (0.5W)	DM14kf	- 117.797	34.152
Santiago Peak	10368.330	AF6HP	5681 ft.	33 dBm (2W)	DM13fr	- 117.534	33.711

### San Diego:

Name	Freq. MHz	Call	Altitude	Output	Grid Square	W Long.	N Lat.
San Miguel	1296.297	K6QPV/B	2500 ft.	40.8 dBm	DM12mq	- 116.935	32.569
San Miguel	3456.360	K6QPV/B	"	40 dBm	"	"	"
San Miguel	5760.000	K6QPV/B	"	33 dBm	"	"	"
San Miguel	10368.360	K6QPV/B	"	27 dBm	"	"	"

### Phoenix:

Name	Freq. MHz	Call	Altitude	Output	Grid Square	W Long.	N Lat.
White Tanks	1296.270	W7ATN/B	3992 ft.	40 dBm (10W)	DM33rn	-112.560	33.560
White Tanks	10368.375	W7ATN/B	"	33 dBm	"	"	"

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## Events of Interest to the Amateur Microwave Community in 2019:

July 27	SBMS Microwave Tune-up
August 1	SBMS Meeting
August 3 – 4	ARRL 222 MHz & Up Distance Contest
August 17 – 18	10 GHz & Up Contest – Part 1
September 5	SBMS Meeting
September 14 – 16	ARRL September VHF Contest
September 21 – 22	ARRL 10 GHz & Up Contest – Part 2
September 29 – 30	ARRL EME Contest, 2.3 GHz & Up
October 3	SBMS Meeting
October 3 – 5	Microwave Update, Dallas, TX
October 5 – 6	Maker Faire, San Diego, CA
October 27 – 28	ARRL EME Contest, 50 to 1296 MHz. Part 1
November 7	SBMS Meeting
November 24 – 25	ARRL EME Contest, 50 to 1296 MHz. Part 2
December 5	SBMS Meeting

(Thanks to Marty Woll, N6VI for content) If you have other events or more information on the ones listed, please email it to [brianaf6na-at-gmail.com](mailto:brianaf6na-at-gmail.com) or text it to 951-768-0960.