



SAN BERNARDINO MICROWAVE SOCIETY, Incorporated

FOUNDED IN 1955

A NON-PROFIT AMATEUR TECHNICAL ORGANIZATION DEDICATED  
TO THE ADVANCEMENT OF COMMUNICATIONS ABOVE 1000 MC.

## SBMS Newsletter

***Before the Meeting:*** Sizzler's (yet again darn it)

### Tech Talk for the Meeting of July 5<sup>th</sup> . . .

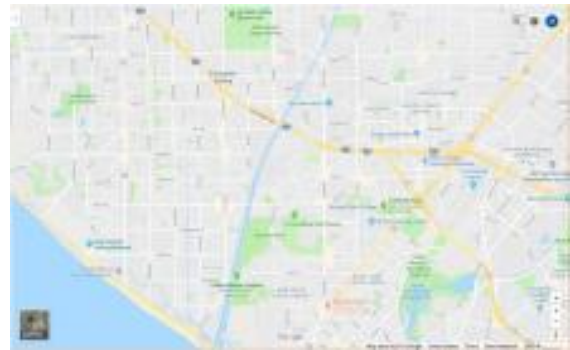
Our own Mel Swanberg will bring an HP 8719C Vector Network Analyzer, cables, cal kits, and other accoutrements. If you have filters, antennas, amplifiers, etc. that you wish to have tested, bring 'em! I can interface to 3.5mm (SMA), Type N, and WR90. Frequency range 50 to 13,000 megacycles. Power levels in the 0 dBm class. If you have higher power devices, please make arrangements in advance.

Please bring any necessary RF adapters, attenuators, and power supplies. Screen shots can be saved, bring your own thumb drive.



### **Party, After the Tune Up**

Fairview Park in Costa Mesa has been reserved. It is July 28<sup>th</sup>. Traditionally there's been a BBQ at Dennis Kidder's when he lived in Fullerton. Twice it has been at Walter Clark's also Fullerton. Walter would be delighted to host it again but his house is 15 miles away. It was decided this year to have it during or after the tuneup. Bar B Qing at the



park is no longer allowed, but food brought in from the outside is OK. We have decided to have pizza. Walter volunteered to count interested parties and drive to some nearby place to buy it. At the meeting Thursday Walter will try to get a motion passed that will get the club to pay for pizza and soda. Insert this into your internet browser and get a large (and interactive) version of this map.

<https://www.google.com/maps/place/Fairview+Park/@33.6799997,-117.9310157,13.33z/data=!4m5!3m4!1s0x80dd20923a8d8661:0xfce67c94590d4dec!8m2!3d33.6633976!4d-117.9381694>

## **Activities of the June SBMS Meeting**

(... which would be of interest to the General Ham Radio Community)

Jason Sogolow W6IEE Presiding

### **Guests, or been gone a while**

(None)

### **ATV check-ins.**

One attempt was made without audio. (Couldn't get the call sign.)

### **ATC chat-room check-ins (internet comments on the <http://www.batc.tv/>)**

were reported by Roland KC6JPG.

## New Business

- ATN (Amateur Television Network) has received donation of a surplus news van that can be used here to get us past the palm trees. Roland KC6JPG will show pictures during activity reports this evening. This is very good news also for SBMS. Most technical problems of getting the SBMS meeting signal out was right there at the front door of the meeting place. Now there will be a tower and a van out front. That should bring some attention to us.
- Walter Clark offered to coordinate the food for lunch in Costa Mesa Park July 28, 2018 after the annual tuneup party there that morning.

## What Our Members Are Working On (Activity Reports)

### Larry K6HLH Lake Los Angeles

went to the San Diego Microwave Group meeting last month. At our meeting he demonstrated his new microscope (pictured) and showed an Arduino board that produces signals at 56 Hz to 13 GHz but with a noisy output. Built a cleaner power supply board for it and passed around “before” and “after” spectrum charts. He got 10 GHz working on his tower, for about a day. When he tried working Pat N6RMJ again it wasn't working again, so it needs to be taken down for more troubleshooting.

### Brian Thorson AF6NA Corona

went to Frazier with Marty N6VI and Robert KM6RXN on May 6 and made about 3400 points. All logs are submitted. The tuneup test fixture is now complete.



### Roland Hoffman KC6JPG.

showed slides of the 1999 GMC K2500 ENG (Electronic News Gathering) truck with 35' mast donated to the Amateur Television Network (ATN). The vehicle was first released by ABC to the city of Las Vegas who took it to the Red Rock Search and Rescue Team who were unable to make good use of it and so it ended up with the ATN (over which SBMS meetings are carried monthly). Roland KC6JPG drove out to Las Vegas with

Mike WA6SVT and checked it out finding everything is in great shape including the mast and seals. Then they changed the oil and lubricated the mast and now the vehicle is at Mike's in Crestline. It is four wheel drive so it can go to mountains and act as a repeater. The vehicle now has California plates which will be upgraded to "W6ATN" along with a change of paint to "ATN Blue." W6ATN will feature 2.4 GHz transmit with 1.2 GHz and 5.9 GHz receive and will also have 144/440/222 MHz FM and mesh video powered by a 120 volt generator on the engine itself (which is left idling in normal operation). Shore power or battery power are also supported.

### **Rein Smit W6SZ W6SZ (Alta Loma)**

also attended last month's San Diego Microwave Group meeting. In the Home-to-home last night, made six contacts including W6DL in Temecula.

### **Robert Carter KM6RXN**

did some 10 GHz work on the 2 GHz and Up Contest, logging 27 QSOs (3962 points) from Frazier. He is now building his 10 GHz rig which can also be used on 2 GHz. IF is 432 MHz. He also built a 10 GHz omni out of copper pipe with circular holes in it (see picture to the right). Insertion loss is about 1 dB with no measurable azimuth side-lobes. He used the slot waveguide concept but just drilled holes instead of cutting slots in the indicated places.



### **Eric Forte AF6EP (Phelan)**

has been working on gathering parts for his 10 GHz radio.

### **Bill Locke N6WL (Baker)**

went to Dayton Hamfest which has recently moved to a new location with much less mud. There was hardly anyone there with any microwave equipment but he did pick up a couple of WR90 horns, a square one and a circular one.

### **Dave Laag W6DL (Marino Valley)**

worked all six other stations from Temecula on home-to-home last night. This is the new 10 GHz radio after 20+ years and Dave will eventually give a presentation about it. Initially the preamp oscillated when connected to the antenna and he used the old "cable-tie trick" to fix it.

### **Dan Slater AG6HF (La Habra Heights)**

received two of the lunar satellites on S-Band.

**Dick Bremer WB6DNX (Brea)**

is working with his 10 GHz downconverter. It is not quite working yet but is assembled on a board and will require a local oscillator, amplifiers, and filters.

**Jason Sogolow W6IEE (Norco)**

gets a lot of 10 GHz at work. No amateur microwave activity to report.

**Jim Blum KK6MXP (Ontario)**

Went to Ontario for the 2 GHz and Up contest and had trouble working north. Also his radio is not hearing as well as it used to; the liaison radio knocks it out of lock. Worked four out of six on home-to-home last night. He usually goes to the seven story parking structure in Ontario but this time to a location in Corona, where he heard nothing from his usual two guaranteed contacts: WA6CGR and W6SZ but did work W6DL in Temecula and WB6CWN. This is 14 miles south of his usual location and the path to Lake Los Angeles was S9+. Showed some Cactus surplus rear, all 2 GHz stuff for projects that are not going to happen including various filters, PROM programmer, 900 MHz antenna panels, circulators, etc.

**Courtney Duncan N5BF (Eagle Rock)**

Logged about 1900 points in the 2 GHz and Up contest from two sites, one experimental one that was hard to get to and not very good and the other one from a location atop Mount Wilson that was not that great either. Also, his rubidium oscillator failed on Mount Wilson pulling everything off by 55 KHz and popping in and out intermittently, so he disconnected it and made contacts off the moderately quickly drifting internal crystal oscillator in the transverter. On 23 cm EME, completed 16 QSOs in the Italian ARI EME Spring Trophy event including five Italian stations, which are the multipliers. And, N5BF finally received his SBMS Badge after nearly seven years attending.





## **Events of Interest to the Microwave Ham Community**

July 28	SBMS Microwave Tune Up Fairview Park Costa Mesa, 9:00 AM until Noon
August 4 – 5	ARRL 222 MHz & Up Contest – Theme is: distance
August 18 – 19	ARRL 10 GHz & Up Contest – 1 <sup>st</sup> weekend
September 6	SBMS Meeting
September 8	ARRL VHF (& Up) Contest – get on the microwave bands!
September 15	ARRL 10 GHz & Up Contest – 2 <sup>nd</sup> weekend
September 29, 30	ARRL EME Contest – 2.3 GHz & Up <a href="http://www.arrl.org/eme-contest">http://www.arrl.org/eme-contest</a>
October 4	SBMS Meeting
October 12 – 13	Microwave Update 2018 – Fairborn, OH Holiday Inn
October ? - ?	ARRL EME Contest – 1.3 GHz & Down – 1 <sup>st</sup> weekend
November 1	SBMS Meeting
November ? - ?	ARRL EME Contest – 1.3 GHz & Down – 2nd weekend

**If you have other events or more information on the ones listed --information that would help people decide whether to go or not-- please send it to the editor at the email address below.**

# Microwave Beacons for Southern California

## Los Angeles

San Antonio Heights    2304.320 MHz    W6IFE/B    27dBm

Transmitting grid for Johnstone PK

DM14ed    -117 39 06.0    34 09 14.0 6436'

Frazier Mtn.    10368.310MHz    N6CA/B    1.3W

DM04ms    -118.96948    34.7751    8027'

Santiago Peak    10368.330MHz    AF6HP    2W

DM13fr    -117.53401    33.71098    5681'

Palos Verdes    10368.300MHz    N6CA/B    1.6W Out of Service

DM03ts    -118.37642    33.76761    1200'

## Phoenix

White Tanks    10368.375MHz    W7ATN/B    2W

1296.270MHz    W7ATN/B    10W

DM33rn    -112.56000    33.56861    3992'

## San Diego

Mt. San Miguel    10368.360MHz    K6QPV/B    1W

5760.300MHz    K6QPV/B    2W

3456.300MHz    K6QPV/B    10W

1296.300MHz    K6QPV/B    12W

DM12mq    -116.93516    32.69793    2500'

All beacons are horizontally polarized.

To update this list:

- contact Mel Swanberg or if you don't have his email,
- use the Reflector. Mel or the Newsletter
- Editor will see it there.

## **New Beacon Update**

A strange beacon was recently spotted on 10368.380 by Rein, W6SZ, who first spotted it with a bare PLL LNB aimed at the mountains. After adding 30 inches worth of dish gain, he was able to copy the ID - WB6CWN. What Rein found is the beacon Frank is building for Mt. Potosi, for installation sometime in the upcoming year.

The beacon is a result of the Cactus Interties offer of 'throw beacons at us and we'll find places to stick them that's been in effect for several years. Frank has been working independently to design, furnish, and build the beacon.

Once complete, it will added to the SBMS beacon list. It's probably a year from installation. Potosi is a very difficult site to get to. Impassable in winter, hard on vehicles in the summer. One trip can destroy a set of tires, so installation will wait until we're already going there for something else.

**MeI - WA6JBD**

**Frank, WB6CWN**, had the following to say about it.

"The 2W omnidirectional 10GHz beacon has been running into a dummy load for about 6 months. I started some weekend on-air testing connected to its W6DFW waveguide slot antenna on 10.368.380MHz from my Santa Ana QTH, DM13bq. I can hear it from Ventura to Mt. Soledad and around LA and the inland empire with an 18" dish. N6RMJ gets it from time to time in Palmdale. It's working as expected."

"It's built with parts from a triband Miteq microwave satellite downlink converter including a low noise high stability Wenzel 5MHz reference, a low noise Miteq 4-8GHz synthesizer, Miteq doubler and RF switch (driven by an Arduino ID keyer signal) and a power supply/chassis which also holds a 1W 10GHz SSPA used as a coax driver to the tower mounted JCA 2W SSPA final amplifier. Feedline between the indoor and outdoor units is 3/8" or 1/2" Heliax which has about 15dB loss/100' at 10GHz. Bias-Tees are used at both ends to run 600mA amplifier power through the coax."

"Built like this, the indoor unit has everything needed to generate a low power beacon signal having enough RF output to overcome the loss of the feedline used to get the signal up the tower where it can be amplified again at the antenna. The design does not require a long waveguide feedline and has minimal loss between the PA and antenna."

"The disadvantage is the 2W power amplifier at the antenna is active with power and the weather to deal with. Potosi gets ice and wind in the winter so the design needs weatherproof. Currently the outdoor unit needs to be completed and then environmentally tested this summer."



# Home to Home This Wednesday Evening

## Rein Smit, W6SZ (Alta Loma), Past President SBMS

is encouraging all Southern California microwave hams to try contacting each other from their QTH the night before the SBMS meeting.

**The intent is to learn home to home capabilities and to discover tricks to use them.**

The Wednesday before the meeting: 10,368.100 MHz, CW or SSB.  
WA6JDB, N6RMJ and W6SZ will be looking/listening for your signals.



We'll be listening on 10368.100 starting at 21:00 PDT. We have been using the LARA Santiago repeater for liaison. Since that doesn't cover the high desert, we will use the LARA/Cactus repeater located on Heaps Peak, so the desert dwellers can check in.

**We'll be listening to cactus starting at around 20:00 PDT and going until the last person gives up.**

The frequency is 448.86- PL 100.0 It will be configured in a standalone mode so it doesn't bother anyone.

Mel - WA6JB

Pat Coker's N6RMJ 4ft dish 10watts

With elevation control at 30ft;

"Provided a time sufficiently before or after the QSO party's time, W6SZ can position his radio before his home and can then utilize Keller Pk as a bouncing point for working points to the north.

Rein W6SZ

## Mystery Microwave Gizmo of the Month



What is the name of the spike facing the secondary?

- If you can identify this, or would like to discuss this, use the SBMS Reflector by sending an e-mail letter to . . .  
[SBMS at-symbol lists.altadena.net](mailto:SBMS at-symbol lists.altadena.net)
- If you don't have an account at the Reflector sign up at this website:  
[sbms at-symbol ham-radio.com](mailto:sbms at-symbol ham-radio.com)

# Gary Heston's ATV Mobile Studio W6KVC

Not only can you watch our meetings live (well delayed by 240 milliseconds). You can chat with other viewers about what you are watching (or anything else).

## This is how to watch SBMS meetings from home:

[http://www.batc.tv/ch\\_live.php?ch=2](http://www.batc.tv/ch_live.php?ch=2) then click on “W6ATN” followed by a click on “View Stream”

What you will see is this →

It's a British website (that's the B in batc.tv) You do not need to log in to be able to watch the video and participate in the chat. You will be automatically put into the right video channel. It is W6ATN. The “W6” for California of course and the ATN is for Amateur Television Network. W6ATN is the club call sign for eight ATV repeaters that are a part of the Amateur Television Network in Southern California. (ATN-CA)

Gary Heston's mobile studio beams a 2.4415 GHz FM video (analog) signal to the ATN repeater on Santiago Peak maintained by Mike Collis WA6SVT. (Gary monitors the signal from the repeater on 5 GHz.) From Santiago Peak on 5 GHz Roland Hoffman KC6JPG puts it on the internet by way of the website BATC.TV described above.



The ATN network linking is all done using FM microwave links on 2.4 GHz and 5 GHz bands. All ATN repeaters in Arizona, California and Nevada now have DVB-T (Digital Video Broadcast-Terrestrial) on 434 MHz input. Analog on 434 still works as well as the FM standard on 2,441.5 MHz. The DVB-T is the European standard for over the air TV. The T part, “terrestrial” is a format that is better with multipath. The only difference (which the US based) ATN has done to that standard is use 2 MHz B/W to fit within the 433-435 space between the weak signal and satellite sub bands.

- Gary transmits analog first.
- Snow Peak is the first digital station.
- There is a 2-3 second delay to digital users.
- There are also nodes on Mt. Potosi and Mt. Lemmon.
- Note: some meetings are recorded for archive.

When Roland Hoffman is substituting for Gary Heston, he streams to the internet directly by way of a mobile hotspot to a cell phone tower, thereby eliminating two lower bandwidth RF paths (SBMS to Santiago and Santiago to Roland's QTH).

## June Meeting Tech Talk:

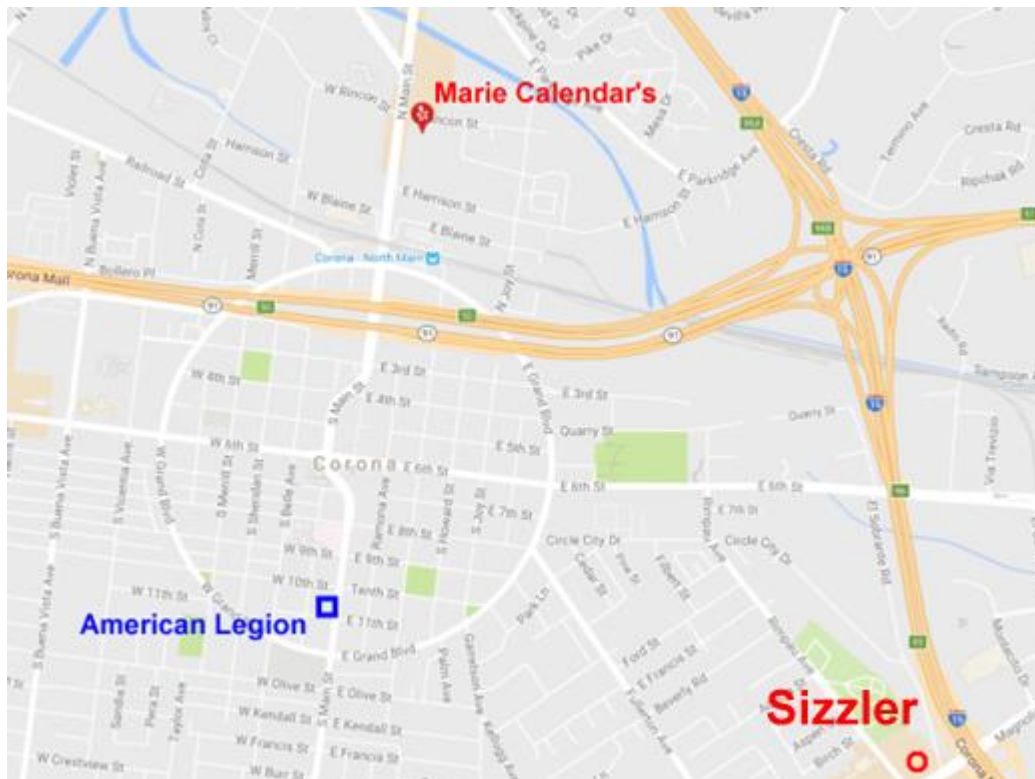
Walter gave a talk on polarization; mostly microwave. Also discussed: linear vs. circular polarization, ground wave vs sky-wave. There was a demonstration of an inside-out wave guide (called a G-line). Also discussed are various confined wave polarizations, orthomode transducers, bistatic radar, and radial polarization.



## Dinner before each meeting **Sizzler**:

“Dinner-Before” is like a people capacitor in that it is a gathering place for those who are trying to beat the traffic and have a variety of distances to come from. Some arrive as early as 4:00. Magnolia exit then two right turns. (I’m Sooo tired of that place. ed)

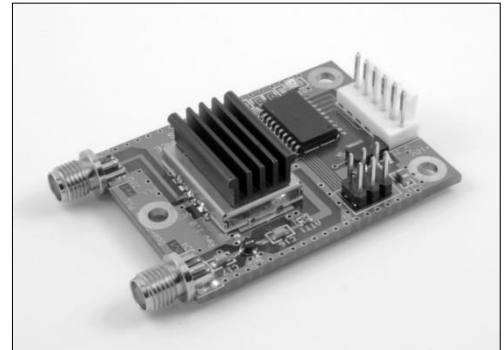
Apparently, most guys don’t like beautiful waitresses and fine dining. Marie Calendar’s is out for now. Dang.



# Needs, Wants and For Sale

Introducing the **OpenSynth** line of frequency synthesizer kits. Available in standard frequencies of 2556, 2952, 2160, 1152, 3312, 3006 MHz, also available from 400 MHz to 3500 MHz.

- ⤴ Low phase noise, Buffered output
- ⤴ Ultra low noise voltage regulators
- ⤴ Open Source code and design, made to be modified
- ⤴ 2" x 1.5", 12V @ 140 mA typical



Available at <http://reactancelabs.com>



If you are a member you can have a picture ad here yourself. For the time being this service is free.  
eMail the editor at: WalterClark at roadrunner.com



## About SBMS

The San Bernardino Microwave Society is a technical amateur radio club affiliated with the ARRL having a membership of over 90 amateurs. The focus of the club is microwave activities in the Southern California. ***Our sister club is San Diego Microwave Group (SDMG).***

### Official Address

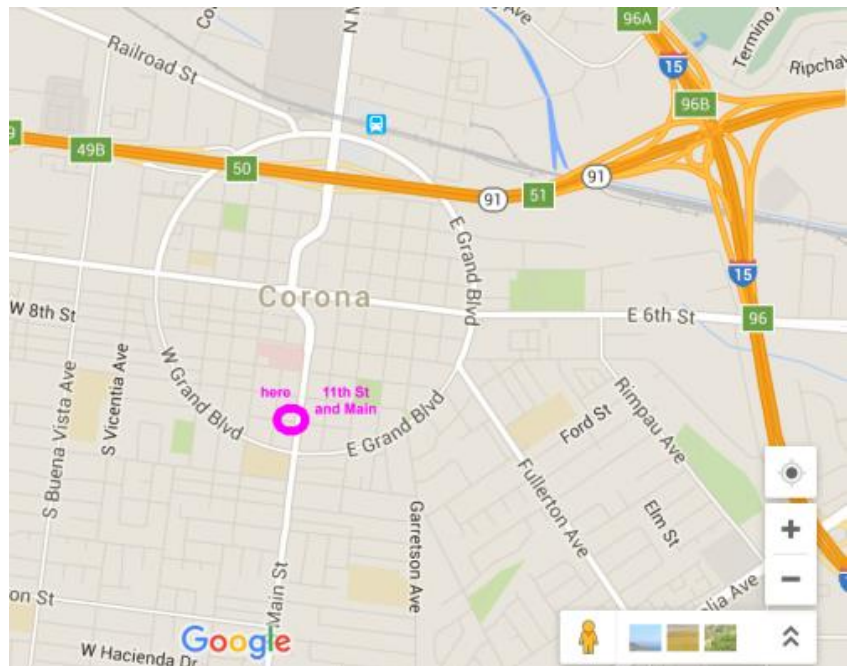
**San Bernardino Microwave Society**  
417 South Associated Road #146  
Brea, CA 92821

SBMS dues are \$15 per year, which includes a badge and that's about it. The dues are more in the way of a donation to pay for outreach things such as video portals, a bank account, and rent for the building. When to pay is not a matter of remembering. The Corresponding Secretary will contact you by email and will then hound you like your own personal PBS telethon. Dues can be handed to the treasurer at the meeting, or mailed to the address of the treasurer listed in the banner below.

**Meetings are first  
Thursday of the  
month, 7:00 PM**

**Google Map:  
Keywords:  
American Legion  
Hall, Corona**

For carpooling from North  
Orange County call  
Dick Bremer at: 714-  
529-2800



If you can't make it: watch online through Gary Heston's mobile video facility W6KVC by way of the internet out of England: <http://atn-tv.org/live> (More details on that above.)



# Services Sponsored by SBMS

**The Reflector (Group Email)** The most active method of information exchange is our group email called the SBMS Reflector. You don't need to be an SBMS member to participate. To subscribe fill out the form at the website: <http://lists.altadena.net/mailman/listinfo/sbms> After that, Send your email message to: sbms at-symbol ham-radio.com. (If you are getting email on the SBMS Reflector now, and you want to write your own message, pull up a recently received message, click on "Reply to List." Don't forget to change the subject line and delete all previous text as appropriate.)  
Responsible person for this: Dave Glawson WA6CGR wa6cgr at-symbol ham-radio.com

**Website: Rein Smit W6SZ:** rein0zn at-symbol ix.netcom.com

The URL is: <http://www.ham-radio.com/sbms/> But you don't have to memorize that or write it down, just enter SBMS into any internet search engine.

The newsletter is distributed by way of a reminder on the reflector to visit a particular URL within the SBMS Website: [www.ham-radio.com/sbms](http://www.ham-radio.com/sbms)

- The purpose of the SBMS Newsletter is to keep hams everywhere in the world informed on current activities of the "active" members of the San Bernardino Microwave Society. Active Members include those who:
  - come to the meetings and share their progress
  - use ATV to report in and describe their projects
  - send by email words and pictures of progress to: walterclark at-symbol roadrunner.com
- Time sensitive questions, reports or just plain bragging is for the SBMS Reflector. Send your email message to: sbms at-symbol ham-radio.com. To sign up go to: <http://lists.altadena.net/mailman/listinfo/sbms>

**Newsletter editor: Walter Clark:** [walterClark at-symbol roadrunner.com](mailto:walterClark at-symbol roadrunner.com)

# Contact San Bernardino Microwave Society (SBMS)

**President: Jason Sogolow WB6IEE**

w6iee.73(at-symbol)gmail(dot)com

**Past President Rein Smit W6SZ**

8333 Pumalo Alta Loma, CA 91701

email: rein0zn at-symbol ix.netcom.com

**Vice President: Brian Thorson AF6NA**

7467 Country Fair Dr Corona, CA 92880 phone: 909-226-2015

email: brianaf6na at-symbol gmail.com

**Recording Secretary Courtney Duncan N5BF**

4402 Rockmere Way

La Canada, CA 91011 phone: 818.957.8455

email: courtney.duncan.n5bf at-symbol gmail.com

**Corresponding Sec Jeff Fort, KN6VR**

10245 White Road Phelan CA 92371 phone: 909-994-2232

email: jinfort at-symbol Verizon.net

**Treasurer Dick Bremer, WB6DNX**

1664 Holly St. Brea CA 92821-5948 phone: 714-529-2800

email: rabremer at-symbol sbcglobal.net

**Newsletter Editor Walter Clark**

824 Valley View Fullerton CA 92835 phone: 714-882-9647

email: walterclark at-symbol roadrunner.com

**ARRL Interface Frank Kelly, WB6CWN**

PO Box 1246, Thousand Oaks, CA 91358 phone: 805 558-6199

mailto:wb6cwn at-symbol gmail

**W6IFE License Trustee is Dave Laag W6DL (call sign for club beacons)**

David E. Laag, P.E, W6DL 11614 Indian Street, Moreno Valley, CA 92557

email: Dave Laag <dlaag at-symbol clubnet.net>

**Lab manager Dave Glawson, WA6CGR**

1644 N. Wilmington Blvd Wilmington, CA 90744 310-977-0916

email: wa6cgr at-symbol ham-radio.com

**SBMS Website Editor and Past President; Rein Smit W6SZ**

8333 Pumalo Alta Loma, CA 91701

email: rein0zn at-symbol ix.netcom.com

**Webmaster Dave Glawson, WA6CGR**

1644 N. Wilmington Blvd Wilmington, CA 90744 310-977-0916

email: wa6cgr at-symbol ham-radio.com