



SAN BERNARDINO MICROWAVE SOCIETY, Incorporated

FOUNDED IN 1955

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

# San Bernardino Microwave Society Newsletter

**Dinner before the July Meeting Marie Calendar's (see below)**

## **Tech Talk for the August 3rd Meeting . . .**

At the meeting, there will be a brief review of the most popular So. Cal. microwave operating sites then it will be an evening of un-structured networking, giving members an opportunity to plan their contest activities and exchange information with others in attendance.

**Come and join SBMS at the American Legion Hall, Corona:  
11th and Main (See map below.)**

**Or watch the meeting "live" on the internet: <http://atn-tv.org/live> (see below for more)**

Brian will be hosting the meeting which will involve contest planning. His suggested focus for this year's contest will be to emphasize a social theme; bringing someone new to the contest is not only a way of increasing activity in years to come, but it's a great way to make a new friend.

He will be encouraging SBMS members to invite someone, licensed Ham or not, to come along with you, even if only for a couple of hours this year. This may mean that you spend a day or half-a-day going at a slightly slower pace than normal and putting on your "Mentor Hat." If you can get access to a "loaner" radio for your microwave newcomer, by all means do so. If not, letting someone operate your microwave radio and make a contact passes on the excitement of 10 and 24 GHz that we all look forward to.

# Annual Fairview Park Tuneup





# **Activities of the November SBMS Meeting**

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

**Presiding: Jason Sogolow WB6IEE (Norco)**

## **Visitor and those not seen in while:**

- Michael Owens from Austin, Texas.  
(Brother-in-law of Courtney Duncan N5BF)
- Robert Carter KA6MQQ, optical engineer.

## **Old Business**

- Mel Swanberg WA6JBD reported that Chuck Swedblom WA6EXV's trailer is hooked up to the tow vehicle and that tomorrow his ten foot EME dish and pedestal were to be moved. The tower is down on its side waiting for the new owner to pick it up. During the meeting Mel received a text from Dennis Kidder W6DQ requisition help working with the dish and pedestal tomorrow.
- Brian Thorson AF6NA has the Use Permit for Fairview Park Costa Mesa for the Tune Up Party Saturday morning July 22, 2017 at 0800. Test signals for 10 and 24 GHz will be offered.
- Pat Coker N6RMJ passed around the box of waveguide templates for the SBMS badge packages and for those in attendance tonight to pick up one or two.
- Dave Laag W6DL reported on progress with making SBMS badges. He has obtained the magic film for the red callsign printing. The name/callsign list from Marty Woll N6VI is ready for production and anyone who signs up tonight can also get a badge in this run.
- Mel WA6JBD reported on the 2 GHz beacon that has been operating at his house. The club had purchased a 2 meter all mode rig to be the basis for the beacon but it will not be used. He does not remember the exact model but it is a 25 watt class rig. Mel suggests that someone take the 2 meter all mode rig and build a loaner from it. He has it in his car this evening if someone wants to take it.



## **New Business**

- Jim Blum KK6MXP reported that Gary Heston W6KVC is fighting a fire somewhere this evening so there is no amateur TV or connection to the ATN network. Jim suggested that there needed to be a way to record meetings without such coverage for archiving.
- It was also mentioned that passing the microphone around during reports and discussion wasn't working for over the air coverage very well. The boom mounts on the cameras worked better when used. Brian Thorson AF6NA suggested that we discuss possible microphone arrangements with Roland Hoffman KC6JPG. (Roland ordinarily helps with the media setup, production, and distribution but was also absent this evening.) Walter Clark volunteered to contact Roland.

# What Our Members Are Working On

(Remember you can watch these reports live on <http://atn-tv.org/live>)

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

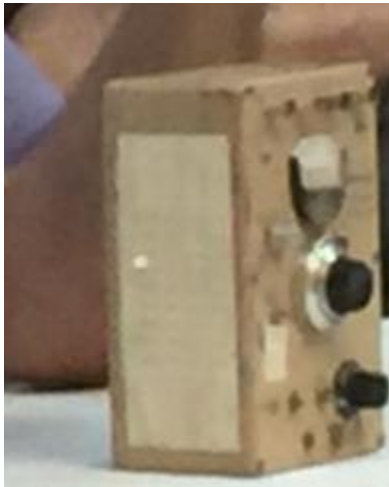
is preparing to go north to view the eclipse next month. Showed a 750 MHz to 6 GHz Vivaldi antenna (see picture). One could put a few hundred watts into it, probably limited by the SMA connector.

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

Is in the market for a Gunplexer (see picture). Amateurs got really excited about Gunn diodes because up until then they had been using Klystrons at greater than 300 volts in multiple board configurations. Chuck WA6EXV designed a board and the whole IF system



to make it a communication device with a 30 MHz IF. He built at least two of these and Dick has "the other one." Chuck and Dave set a 24 GHz record on it from Heaps Peak to Walt's point up the Owens Valley. Got lined up on Bill for the QSO and Chuck, who was twice as far away captured (FM) and that contact set the record. This was all full duplex FM, like talking on a telephone. At the time everybody thought they were building links; no one thought they would be using CW/SSB. Tried in vain to get the northern California guys to point down this way. Finally Dave drove up to northern California and worked Dave WA6CGR back on Signal Hill. Ron K6GZA was always a believer and was always trying. W6ASL also tried but neither was big enough.



**Robert Carter KA6MQQ Riverside**

does laser locking in the park using mirrors. Most of his microwave work was in the lab where he worked for all Optical Networks. Beat two lasers together to make the microwave frequency needed, in the 200 GHz range. Has a lot of optical equipment.

**Mel Swanberg WA6JBD (Upland)**

is adjusting 860 MHz combiners into 850 MHz combiners. Was on home-to-home activity last night. Afterwards did phase noise measurements on Larry K6HLH's oscillator. It is good enough to be used for some local work but not for DXing.

**Wayne Yoshida KH6WZ (Laguna Niguel)**

is planning to get on 2 GHz in the future to be part of future Maker Faires. Has given up on getting 24 GHz working for now. Recommends putting your callsign in at least three different places on anything you build in case someone takes pictures.

**Chris W6NOB Wrightwood**

is looking forward to getting active. Is a former SBMS member but under a different callsign.

**Pat Coker N6RMJ (Lake Los Angeles)**

is working on his patio so he can move exercise equipment out of his radio room.

**Jim Blum KK6MXP (Ontario)**

was on the home-to-home last night for a clean sweep second month in a row. Had a push to talk circuit that acted like a bias-T with a bad cap on it. Operated from southeast Ontario on the Kayser parking lot 7th floor. Has worked Anaheim and NorCo and has picked up San Miguel on occasion. Can't yet get Frazier, it seems there is a Noise Source in that direction. Pointing at Santiago, could hear Brian and Rein and Mel carrying on a conversation.

**Stuart H Landau K6YAZ  
(West Hills)**

had on the air activity but lots of bench work this month and is acquiring new test equipment. Offered to bring portable equipment to the tuneup.



**Brian Thorson AF6NA  
(Corona)**

was on home-to-home last night. See feed (pictured, being held by Jason). Mirrors bonded to dishes work a lot better than reflective tape and gave the focus point indicated by the W1GHZ knotted string method.

**Dave Glawson WA6CGR (Wilmington)**

worked home-to-home last night. Brian AF6NA and Jim KK6MXP got the ***Worked All Wilmington Award***. Rein W6SZ Was easy. Exchanged tones with Mel WA6JBD but not SSB. The attempt was omni to omni. Test equipment and parts are ready for the lab meeting later this month, July 22, 2017, to be co-hosted by Doug K6JEY. They will have some inexpensive Paul Wade W1GHZ kits in the form of PC boards, filters, pipe capacitors, other parts, etc., to get people started. Suggested that the home-to-home events could include other bands. Dave also told the story about how Doug was officially banned from soldering some years ago, and was presented with an official SBMS certificate to that effect.

**Rein Smit W6SZ (Alta Loma)**

Made home-to-home contacts last night with five stations: Mel WA6JBD, Brian AF6NA, Jim KK6MXP, Dave WA6CGR, and Rein W6SZ.



**Robert Carter KA6MQQ Riverside**

does laser locking in the park using mirrors. Most of his microwave work was in the lab where he worked for all Optical Networks. Beat two lasers together to make the microwave frequency needed, in the 200 GHz range. Has a lot of optical equipment.

**Courtney Duncan N5BF (Eagle Rock)**

will not be in state for August 10 GHz weekend due to a solar eclipse across North America the following Monday. He will be Wyoming with no more than hand held amateur radio gear. Plans to participate in the September 10 GHz weekend but has no itinerary yet. After this contest season plans to rebuild his 10 GHz rig "Astro Velcro" for next year and extends thanks to Brian AF6NA for major contributions to the original construction. On 23 cm EME has finally worked France and is up to 80 unique callsigns on the band with about 27 DXCC. Most contacts use digital JT65C mode but many are CW and one is SSB. Is preparing a talk on the station and the peculiarities of operating 23 cm EME and will offer it to Microwave Update in October with a pre-presentation to SBMS.

**Robin Critchell WA6CDR (Fountain Valley)**

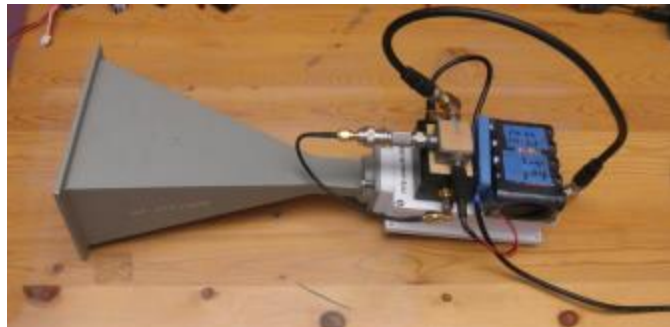
his microwave activity is working on the coordination support system (CACTUS) and moving his own microwave system (a 6 foot dish) to where he can find it.

**Jason Sogolow WB6IEE (Norco)**

All microwave activity as been working on Boeing 747 radars at work generating 18 microsecond pulses into dummy loads.

**Walter Clark (Fullerton)**

finally gets to report on microwave activity: He has been playing with the \$12 LNBS on dishes for long range motion sensing applications, but hasn't done anything on the ham bands. Dave Laag provided a highly stable replacement for the \$12 LNB. Walter then bought



an AirSpy (\$160) for it, made a bias Tee and assembled those on the back of a 17 dB horn. It made a nice neat unit. From Fullerton Hillcrest Park he was able to see Frazier and Santiago with an impressive SNR. He moved around on top of the hill to catch one as a reflection from trees and the other straight through so he could see both on the same waterfall display 20 MHz apart.

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

August 5, 6	ARRL 222 MHz & Up Contest (Inaugural; distance-based)
Aug19, 20	ARRL 10 GHz & Up – Weekend #1
September 7	SBMS Meeting
September 9 – 10	ARRL EME Contest, 2.3 GHz & Up
Sept 16, 17	ARRL 10 GHz & Up – Weekend #2
October 5	SBMS Meeting
October 7 – 8	ARRL EME Contest, 50 – 1296 MHz, 1st weekend
October 27 – 29	Microwave Update 2017, Santa Clara, CA
November 4 – 5	ARRL EME Contest, 50 – 1296 MHz, 2 <sup>nd</sup> 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.**

## Progress in Inyokern



Removal of the dish from Chuck's (WA6EXV) EME station.

Below, Chuck's station relocated to W6DQ's QTH.

All equipment has been relocated to W6DQ, including two AZ-EL positioners and the original pedestal.

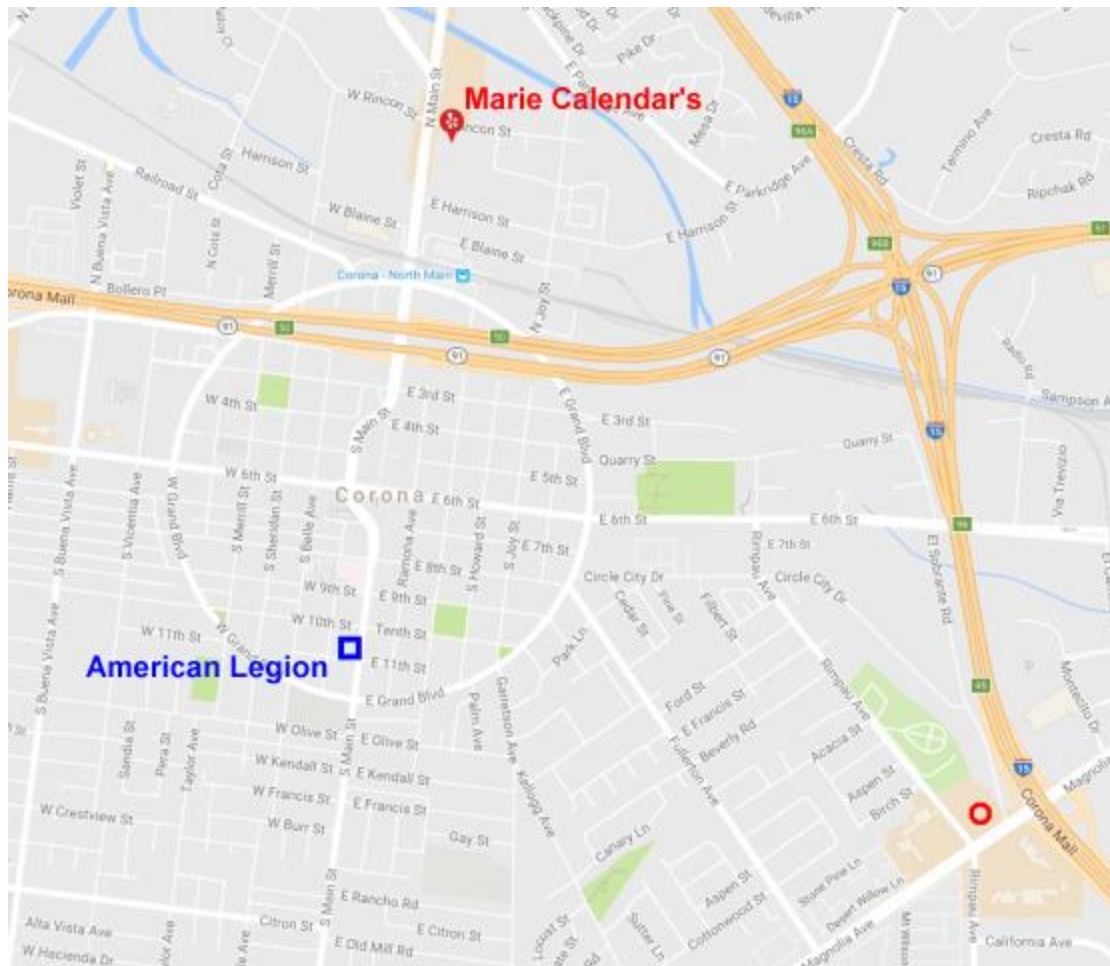
73,-dennis W6DQ  
Inyokern CA DM15bs



## Dinner before the upcoming meeting Marie Calendar's:

“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.

Marie Calendar's is on the north side of the 91 and as you can see on the map, both easy to get to from the freeway and easy to get to our meeting place from there; north on Main, over the train tracks and right on Rincon about 80 feet.



# Microwave Beacons for Southern California

<b>San Antonio Heights</b> DM14ed 34° 9'14.08"N 117°39'5.26"W	2304.320 (Transmitting grid for Johnstone Peak)	W6IFE	+27dBm	6dB Omni
<b>San Miguel</b>	10,368.360	N6IZW/B	0.5 watts	Horn
<b>San Miguel</b>	5,756.300	K6QPV/B	2 watts	10dBi omni
<b>San Miguel</b> (Dan Bubke K6UKC)	3,456.300	K6QPV/B	2 watts	12dBi omni
<b>San Miguel</b> (Jack Henry, N6XQ) DM12mq 32.697950°N, -116.935150°W	1,296.300	K6QPV/B	12 watts	12dBi omni
<b>Palos Verdes</b> DM03ts 33°44'47.45"N 118°20'10.60"W	10368.300 (OFF THE AIR for now)	N6CA/B	+32dBm	14dBi omni
<b>Mt Frazier</b> DM04ms 34°46'29.85"N 118°58'8.38"W	10368.310	N6CA/B	+31dBm	14dBi omni
<b>Santiago</b> DM13fr 33°42'37.56"N 117°32'3.43"W	10368.330 (OFF THE AIR for now)	KE6JUV	+27dBm	10dBi omni

All beacons are horizontally polarized.

(see Mel Swanberg to update this list)



# **Home to Home**

## **This Wednesday Evening; (don't forget)**

### **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,

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

Mel - WA6JB

Pat Coker's Prodelin on  
his tower. 9 watts at 75'

"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

# Microwave Mystery Gizmo of the Month



If you 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 sign up at this website:

[sbms at-symbol ham-radio.com](http://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://atn-tv.org/live>

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.



When Roland Hoffman is substituting for Gary Heston at the SBMS meeting, 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).

The ATN network linking is all done using FM microwave links on 2.4 GHz and 5 GHz bands. When they go digital, they use DVGT (Digital Video Broadcast-Terrestrial) standard. It is the European standard for over the air TV. The "terrestrial" part is a format that is better with multipath. The only difference ATN has done is use 2 MHz B/W to fit within the 433-435 space between the weak signal and satellite sub bands.

- He 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.

# The June Meeting Tech Talk was given by Wayne Yoshida (KH6WZ)

Along with Wayne at the May 2017 Maker Fair, was from left to right, Dennis Kidder W6DQ, Lisa Gibbons KF6QNG, Wayne himself, Marty Woll N6VI, Patricia Yee, and Brian Yee W6BY. They and other SBMSers have been re-defining the concept of "Demonstration Station" and exhibiting at Maker Faire events in Southern and Northern Calif over the last 6 years.

The presentation last month covered the Maker Faire mission statement. Wayne also showed some of the projects exhibited.



Don't miss this slide show on the 2017 Maker Faire:

<http://makerfaire.com/bay-area-2017/slideshow/slideshow-day-one/>



## Lightning Detector

Detected  
sparks from  
Walt's static  
generator

## Needs, Wants and For Sale (updated 1 June 2017)

**For Sale from Bill Burns:** Bill will only rarely comes to the meetings, so if you want any of this, please contact him by phone or email.

phone: 760-375-8566      email: [bburns\\_at-symbol\\_mediacombb.net](mailto:bburns_at-symbol_mediacombb.net)

His address is: 247 Rebel Road Ridgecrest CA 93555

- Three IC-22S two meter FM rigs **free**
- 1 meter offset feed dish and 10 GHz feed \$20.
- Steel TV push-up masts **free**
- aluminum tubing, ½ inch to 3 inch diameters, 1/16<sup>th</sup> wall **free**
- Stainless steel powder cans 15 inches in diameter by 23 inches high with lids **free**
- Power pole 14.5 ft tall by 1 ft diameter **free**
- Many round meters, ma, volt, frequency, misc. **free**

## Sixty North Electronics (as of April 29, 2017)

"Thank you for allowing me to advertise my small kit making business in the SBMS Newsletter.

I am discontinuing my kit making service at this time. I want to thank all my customers for allowing me to build their kits. We are going to do some retirement travel and enjoy having more time for my own ham radio endeavors. This applies to both the DEMI kits and W6PQL amplifiers that I constructed.

I will continue to service PayPal orders of WA2ODO preamps:

[http://www.kl7uw.com/WA2ODO\\_PayPal\\_Sales.htm](http://www.kl7uw.com/WA2ODO_PayPal_Sales.htm)

73, Ed - KL7UW <http://www.kl7uw.com>

Dubus-NA Business mail: [dubususa@gmail.com](mailto:dubususa@gmail.com)

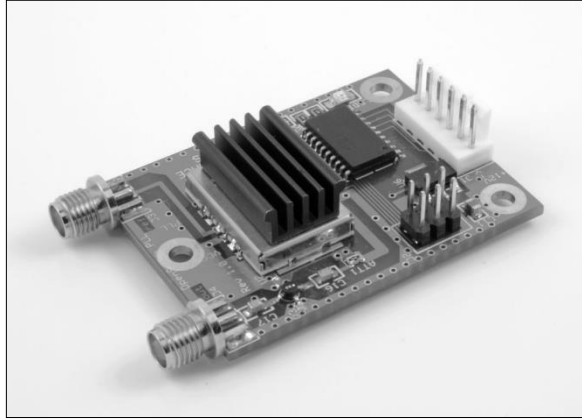




Introducing the **OpenSynth** line of frequency synthesizer kits. Available in standard frequencies of 2556, 2952, 2160, 1152, 3312, 3006 MHz, also available from 400 MHz to 3500 MHz.

- ⤴ 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

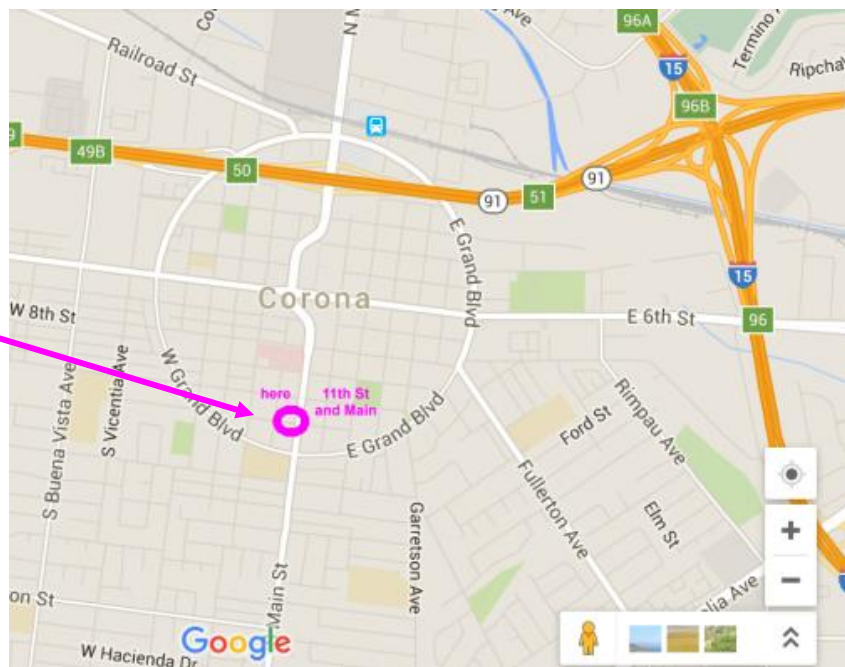
SBMS dues are \$15 per year, which includes a badge and that's about it. The dues are more in the way of a donation to pay for outreach things such as video portals, a bank account, and rent for the building. When to pay is not a matter of remembering. The Corresponding Secretary will contact you by 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>



# 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.

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

The newsletter is distributed by way of 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 the above

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  - 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>

# Contact San Bernardino Microwave Society (SBMS)

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email: rein0zn at-symbol ix.netcom.com

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email: brianaf6na at-symbol gmail.com

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email: wa6cgr at-symbol ham-radio.com