

SAN BERNARDINO MICROWAVE SOCIETY, Incorporated

FOUNDED IN 1955

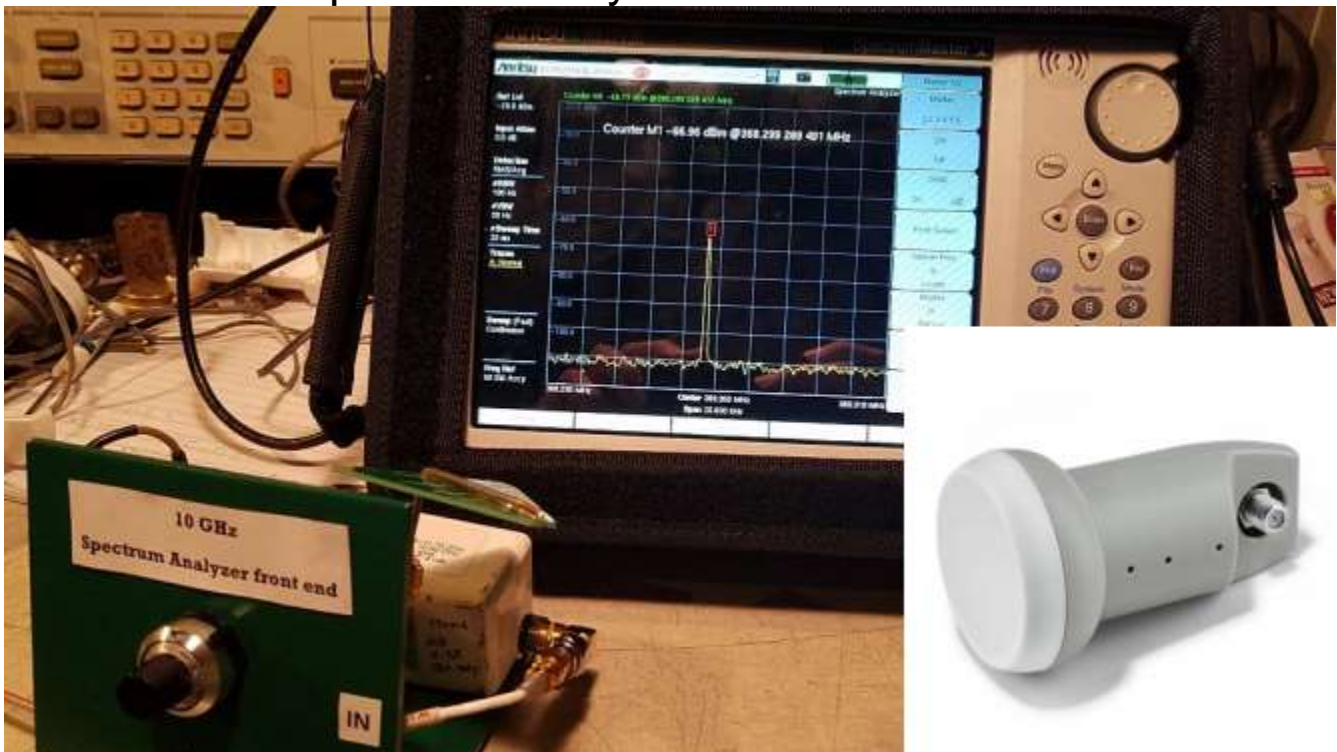
A NON-PROFIT AMATEUR TECHNICAL ORGANIZATION DEDICATED
TO THE ADVANCEMENT OF COMMUNICATIONS ABOVE 1000 MC.

SBMS Newsletter (for March 2019)

Dinner Before the next Meeting; Sizzler: –see map way below)

Tech Talk for the March 7th meeting . . .

Doug Millar K6JEY will show us how Kuband LNBS can be used as receivers and spectrum analyzer front ends.



Activities of the January 2019 SBMS Meeting

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

Mel Swanberg WA6JBD, Vice President presiding

Guests (or Not-Seen-In-A-Long-Time)

- Chris Shoaff N9RIN, San Clemente, past SBMS President, was able to get away from his house remodel for a few hours.
- Tom Gaccione WB2LRH is a recently retired microwave engineer from Hughes Raytheon. Invited by friends from the Fullerton ARC: Walter Clark and Dan Slater AG6HF.

Old Business

Dick Bremer informed us that dues are first of the year. That means this meeting everyone !!

New Business

Mel WA6JBD has learned that the estate of former SBMS member Dan Welch W6DFW is being closed out by the family. There are some CNC (computer numerical control) files for his mills used in production of the antennas designs that Dan fabricated. On behalf of SBMS, Mel offered \$250 for these files. *Jason Sogolow W6IEE moved to authorize this purchase. Brian Thorson AF6NA seconded and the motion passed by acclamation.* Steve Barden WA6OXN has access to capability to make use of the files once we have them.

Announcement

Pat Coker N6RMJ is moving to Bullhead City, Arizona in 3-4 months due to California prices and politics. Plans to be in DM25re overlooking the Colorado River with a 4' dish and 10 watts and a nice shot back this direction. Expects to work us all and will continue participation in home-to-home and microwave contesting. At 185 miles each way, will not attend SBMS every month. Pat had stuff for sale, giveaway, and junk resulting from this move available at the meeting and he auctioned off his quick disconnect waveguide which works on either WR-75 or WR-90. The winner was Brian AF6NA at \$25 with proceeds going to SBMS.

What Our Members Are Working On (Activity Reports)

(Notes on the Activity Reports were taken at the meeting by Courtney Duncan)

Pat Coker N6RMJ (Lake Los Angeles)

--tore down his microwave dish getting ready to move to Bullhead City, Az. The system worked on 2 and 6 meters and 10 GHz before dismantling. Mel WA6JBD claims he will be first to work Pat in Arizona. Pat would be happy to put up a beacon in Bullhead City if someone wants to donate one.

Jim Blum KK6MXP (Ontario)

--heard Rein W6SZ and Mel WA6JBD on liaison for the Home-to-Home. Jim is collecting recipes for sequencers and local oscillators. Wants to catalog some things for a yet undisclosed project: Requests that schematics, specifications, photos, PDFs, etc., be sent to kk6mvp@yahoo.com.

Courtney Duncan N5BF (Eagle Rock)

--received a QSL via Bureau for a 1998 QSO with Japan on 160 meters. Now have three countries confirmed on Top Band. The preamp switching FET repair in the 1296 amplifier in November was incorrect and as a result the FET welded itself to the chassis, resulting in a *fourth* blown preamp. This is now repaired, again,

this time thought to be correct and triply fused. Worked N6ZE in the January VHF contest on 927.5 MHz FM simplex from the La Canada YMCA upper parking lot in DM04vf30 to Palos Verdes DM03ts68. This 53 km contact was more difficult than expected (mobile with gain whip to hand held on gain yagi) and is my first direct (i.e., non-repeater) contact on 900. Acquired a portable LCD Digital Microscope for close in electronic work and an AAI RF Vector Impedance Analyzer N1201SA with which he plans to perform all of the “Antenna Analyzer Pet Tricks” described in Paul Wade W1GHZ’s January/February 2019 QEX article.

Chris Shoaff N9RIN (San Clemente)

--is working on Ku-Band at work for satellite antennas. Picked up a TI LMX2594 evaluation board (more than \$400) which works up to 15 GHz and also has an optional reference input, two outputs, lower band and higher band and can combine signals with a balun for higher output. The board also has reference out, sync, Vcc, etc. A lot of these are used to drive lasers. Also picked up a LimeSDR (<https://limemicro.com/products/boards/limesdr-mini/>) but hasn’t done anything with it yet. Both 10 GHz radios are buried under stuff stored in his lab.



Robert Carter KM6RXN (Riverside)

--worked Brian AF6NA on 10 GHz reflection off a house across the street from Box Springs behind the Riverside Airport to Santiago to Brian with about 15 people watching.

Dave Laag W6DL (Marino Valley)

--is doing Ku-Band for a client. In amateur activity he has a pile of parts for a 3400 MHz beacon and an antenna that he is working on verifying.

Steve Barden WA6OXN (Riverside)

--has been playing around with the HackRF One SDR (software defined radio) up to 5 GHz. He has been looking for WA6JBD’s beacon from ground level in Riverside and has seen birdies but not the beacon. Bought a USB power analyzer for \$18 on E-Bay which has different types of USB inputs and outputs and features color screen, graphs, voltage and current readings and storage.

Ed Murashie WX6DX (Santa Ana)

--finished a bucket list project: Built a feed horn that gives RHCP and LHCP at 1.7 GHz. (See picture of Ed holding his circular “coffee can” feed that works while Robert Carter KM6RXN in the background, examines the rectangular one that does not work as well. The weather satellites have several channels with various views and resolutions and update rates. Ed will give the Tech Talk next month on this.

Wayne Overbeck N6NB (Tustin)

--did the “Winter Field Day in Orange County and won by using microwave bands for additional multipliers. While a typical multiplier in this event is 10 to 12, Chip Margelli K7JA had an idea to add microwave bands to increase that number. He came over and borrowed a ten-band toolbox and used it to work Wayne on all bands from 6 meters to 3 centimeters. Then, since CW and phone count as separate bands, they hooked up a keyer and reworked all the same bands for double multiplier credit. The final multiplier was 32 which won the contest countrywide, by a factor of two in score. The group also did microwave outreach at the Orange County Emergency Operations Center (EOC) with a lot of public exposure.

Brian Thorson AF6NA (Corona)

--offered to give his general audience presentations on microwaves if Wayne Overbeck can find an audience. (Wayne is involved with students.)

Eric Fort AF6EP (Phelan)

has been working with GNU radio and RTL-SDR Dongle over the last month. Programming and flow graphs are extremely easy; you just paste together pieces on the screen by dragging and dropping into a block diagram and build a radio just like one in a textbook.

More Tech Talks, Please

Please think about putting together a Tech Talk. Everyone would be so grateful. It doesn't have to be long or even very good. Just take pictures and put them on a flash drive. Then put them in an order that you can narrate for us.

Contact Mel Swanberg (email: wa6jbd (at-symbol) Verizon dot net)

ATN Transmits SBMS by Digital Remote during January's Meeting

Hams from around the country have enjoyed the SBMS presentation by way of the Amateur Television Network. Not only hams whose faces show up on one of the screens at the meetings but anyone using their browser can watch the SBMS meetings on the BATC-TV internet website. At the January 2019 meeting the ATN mobile unit was out of commission so Roland - KC6JPG brought his portable studio to the meeting to ensure the SBMS meeting will be on the air for the 1st meeting of the new year. The following describes his setup and how the video gets to England where it gets on the internet. (See below if you want the link to that video service.)

Roland remodeled his own ATV studio in 2018 which is now equipped to bring in live IP-video from anywhere in the world to his master control / production suite. The stream is converted, processed, and transmitted via DVB-T to Santiago Peak ATV repeater, our main hub linking to our 6 repeaters in Southern California and Nevada. His studio also streams the ATN network 24 hours a day / 7 days a week to the British Amateur Television Club's video streaming system. BATC's new streaming system can now handle 16:9 HD video as well as 4:3 SD video.



When Gary is there with the ATN Mobile Unit, the signal goes to the ATN repeater and then through Roland's studio and then on to the internet. But when the Mobile Unit is not there it goes in the other direction. From internet, then to the ATN network. Roland brings his portable studio to the meeting where he gets the signal to the ATN network by way of the internet. This is done with a hotspot router or by way of an "off the grid" AREDN MESH system".

So, how was that done?

By the door of the American Legion meeting room is a podium and some sort of register. (Picture to the right.) On it was Roland's "JetPak" hot spot/router. It goes between the video switcher and the cellphone towers. Your cellphone can do that, but not as reliably. The



JetPak is a great way to connect your wireless devices to the local cell site and into the internet without being interrupted by a phone call.

Roland brought two of his HD cameras to the meeting and coupled the cameras into his Cerevo Livewedge video production switcher. This switcher is a native HDMI 4 channel production mixer, with analog audio inputs to connect from an audio mixer.



Its onboard WiFi connects without wires to the JetPak hot spot mentioned above. The Cerevo Livewedge is controlled either by the four buttons on the hardware, or through a digital interface, in this case, the Asus tablet to switch cameras and to insert graphics (Callsign ID) during the meeting.

In conclusion, the Amateur Television Network is proud of its technological accomplishments during the last 4 years in support with the SBMS group. In the future, the ATN continues to implement, install, and utilize new technology which will include converting our Mt. Wilson ATV repeater into a full bandwidth DVB-T HDTV system.

-- Roland Hoffman kc6jpg

Events of Interest to the Microwave Ham Community

Thank you Marty Woll N6VI

April 4	SBMS Meeting
May 2	SBMS Meeting
May 4	CSVHF Microwave Spring Sprint (902 MHz & Up)
May 4 – 5	SBMS 2 GHz & Up Contest
May 17 – 19	Maker Faire, San Mateo, CA
June 6	SBMS Meeting
June 8 – 10	ARRL June VHF Contest
July 4 (?)	SBMS Meeting
July (date TBD)	SBMS Microwave Tune-up
August 1	SBMS Meeting

August 3 – 4	ARRL 222 MHz & Up Distance Contest
August 17 – 18	ARRL 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 5 – 6	Maker Faire, San Diego, CA
October (date TBD)	Microwave Update, Dallas, TX
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

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
DM14ed -117 39 06.0 34 09 14.0 6436'

Frazier Mtn. 10368.310MHz N6CA/B 1.3W in repair
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 (email: wa6jbd (at-symbol) Verizon dot net)

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.

Wednesday before the meeting:

10,368.100 MHz, SSB, CW and Digital available.

WA6JDB, N6RMJ and W6SZ will be looking/listening for your signals. For liaison, we will use the Cactus repeater located on Heaps Peak, so 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

"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

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:

<https://batc.org.uk/live/w6atn> That should take you directly to the camera at the SBMS meeting. (batc.tv is British website, W6ATN is the local callsign.)

← What you will see is this

not need to log in to be able to watch the video and participate in the chat. In case you are not automatically put right video channel. It is W6ATN. The "W6" for California of and the ATN is for Amateur Television Network. W6ATN is the sign for eight ATV repeaters that are a part of the Amateur Network in Southern California. (ATN-CA)

Gary Heston's mobile studio beams a 2.4415 GHz FM video signal to the ATN repeater on Santiago Peak maintained by 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.



You do
into the
course
club call
Television

(analog)
Mike

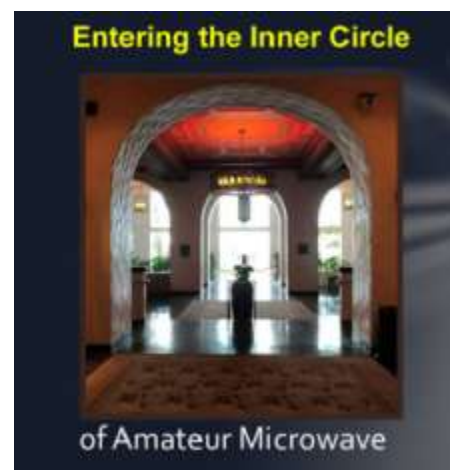
The ATN network linking is all done using FM microwave links on 2.4 GHz and 5 GHz bands. All ATN repeaters in Arizona, California and Nevada now have DVB-T (Digital Video Broadcast-Terrestrial) on 434 MHz input. Analog on 434 still works as well as the FM standard on 2,441.5 MHz. The DVB-T is the European 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.

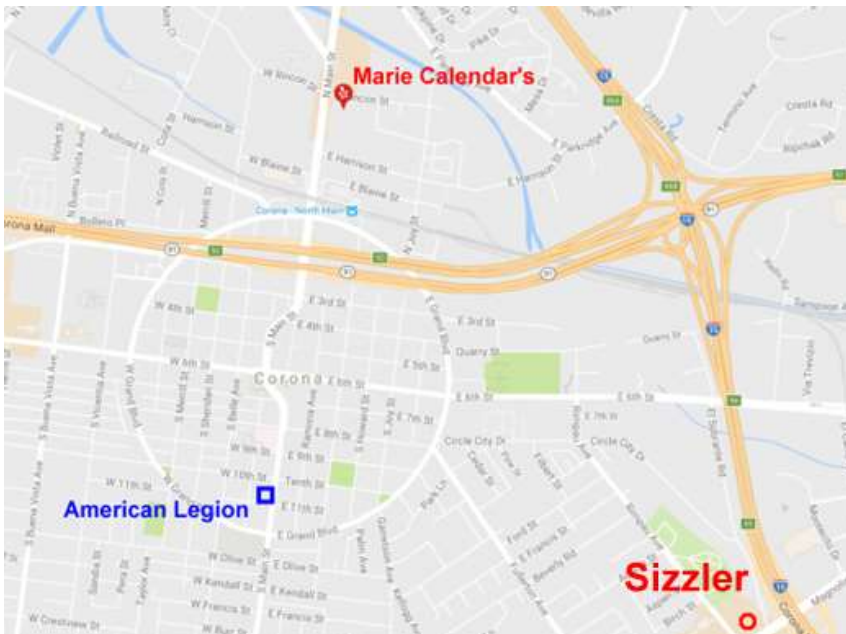
When Roland Hoffman is substituting for Gary Heston, he streams to the internet directly by way of a mobile hotspot to a cell phone tower, thereby eliminating two lower bandwidth RF paths (SBMS to Santiago and Santiago to Roland's QTH).

What the February Tech Talk was About

This was the nicest talks I think that was ever presented at an SBMS meeting. It turns out we were all in the inner circle. He had nice things to say about all the active members. (It choked me up. Ed.) Brian also pointed out the unique excitement in making a microwave contact with the radio you designed and built. And unlike any other band you can't go out and buy a rig. Some SBMS members have built several and loan out their radios to newcomers, enabling others to catch the excitement just as they have. He also threw out "the SBMS Challenge" for 2019. . .



***"Bring a radio you built yourself
to the 10 GHz and Up Contest."***



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)

For those who prefer attractive waitresses and fine dining, Marie Calendar's is available.

Needs, Wants and For Sale

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](mailto:WalterClark@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.

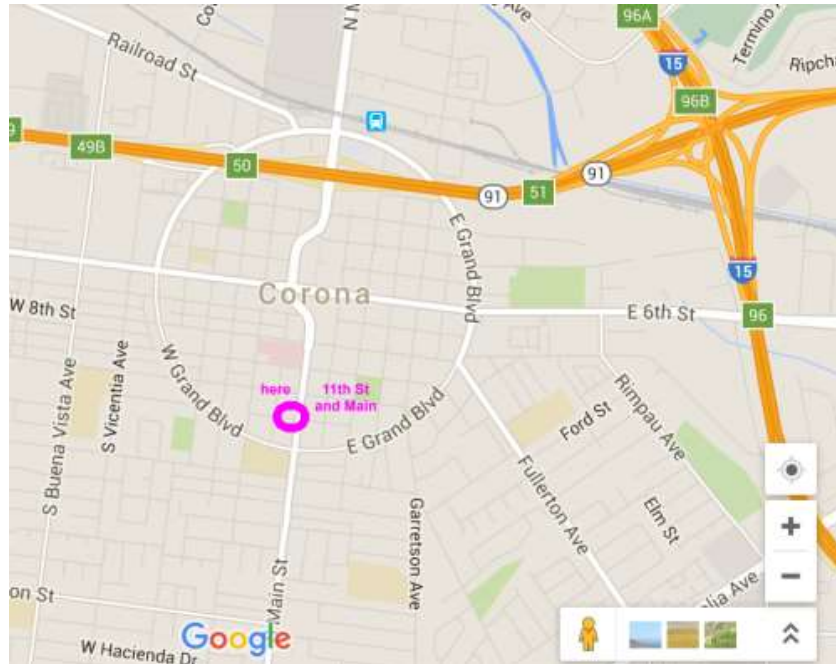
Meetings are first of the month, 7:00

Google Map: Keywords: Legion Hall, Corona

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

If you can't make it: online through Gary mobile video facility way of the internet out

<http://atn-tv.org/live> (More details on that above.)



Thursday PM

American

Orange

watch Heston's W6KVC by of England:

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

- 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:

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: Mel Swanberg WA6JBD

12223 Highland Ave STE 262

Rancho Cucamonga, CA 91739

email: wa6jbd (at-symbol) Verizon dot net

Phone: (951) 212-8245

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: jnfort 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

100 E. MacArthur Blvd., #559

Santa Ana, CA 92707 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