



SAN BERNARDINO MICROWAVE SOCIETY, Incorporated

FOUNDED IN 1955

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

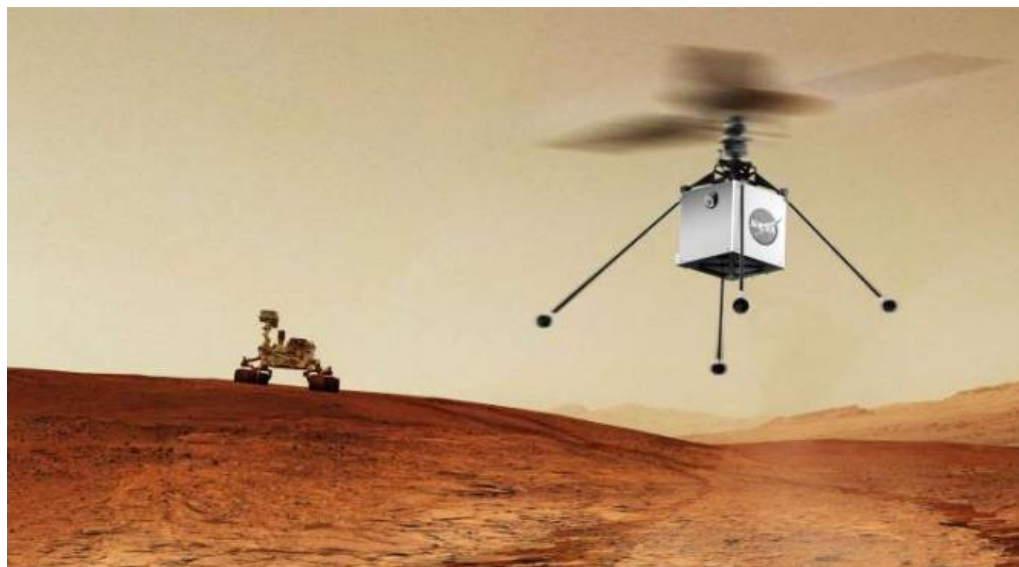
SBMS Newsletter

Before the Meeting: Sizzler's (yet again)

Tech Talk for the Meeting of September 6th

Mars Helicopter Telecom

Courtney Duncan N5BF was first licensed in 1972 as WN5GRZ then WB5GRZ upon upgrading then N5BF when the callsign assignment rules changed in 1978. He holds a BM from Baylor University, a BSEE with Honors from University of Houston and an MSEE in Communications Systems from the University of Southern California. He was Vice President for



Operations of AMSAT-NA from 1988-1991. He has worked at NASA's Jet Propulsion Laboratory for thirty years where he is currently supervisor of the Reprogrammable Signal Processing Group in the Flight Radios Section. He lives nearby in DM04vf from which he operates 23 cm EME, ventures out for 3 cm contesting, and occasionally tunes around on HF. He is a member of the San Bernardino Microwave Society, the Jet Propulsion Laboratory Amateur Radio Club, Cactus Intertie, IEEE, and Pasadena Covenant Church. Courtney has been married for 40 years to Viann Owens Duncan WD5EHM, a psychiatric nursing professor at Azusa Pacific University and has three adult children, Viannah Duncan KG6GXW, Katherine L. D. Wallin KG6HUI, and John Duncan KG6HCO.

Activities of the July SBMS Meeting (... which would be of interest to the General Ham Radio Community)

Mel Swanberg WA6JBD (Vice President) Presiding

Guests

Darrin Taylor KK6KAZ from Loma Linda.

ATV check-ins

Roland KC6JPG stated that BATC has changed server so online participants are lost tonight.

Old Business

It was moved and passed on a show of hands that we, "Forget about the internet [for this building]."

New Business

Bill Locke N6WL moved that we reimburse Walter Clark for providing lunch at the Tune Up last weekend in Fairview Park, Costa Mesa. The motion was seconded by Mel WA6JBD and passed on a voice vote. Brian Thorson AF6NA presented Walter's bill to Treasurer Dick Bremer WB6DNX. (Slow news day.)

Three Announcements

Pat Coker N6RMJ announced that the 222 And Up Contest was this weekend, Saturday August 11 and Sunday August 12. This contest includes 10 GHz.

Brian Thorson AF6NA passed around SBMS MW Tune Up reports to the participants. Apologized for 24 GHz tests not working. The problem was use of the wrong IF (144 for 10 GHz vs. 432 needed for 24 GHz – forgot to switch) in the test setup. This affected the test for Dick WB6DNX and Brian AF6NA.

Somebody reported that the Baeofeng UV-5R handheld has been cited by the FCC for capability to operate on restricted (land mobile) frequencies and higher power output than allowed. This model has not been tested for compliance in the USA. See FCC file number EB-SED-17-0024360.

What Our Members Are Working On (Activity Reports)

Jason Sogolow WB6IEE (Norco)

replicated Walter's experiment to propagate microwave over a large sheet of metal with his 10 GHz station by working Frank WB6CWN that way in last night's home-to-home, shooting over the roof of his car. Made three contacts with the best DX being Frank, knife edging over Santiago Peak

Courtney Duncan N5BF (Eagle Rock)

brought his rebuilt 10 GHz rig to the Tune Up and did pretty well. Picture to the right: Secret Site 51 from contesting 8/18/18.



Larry Johnston K6HLH (Lake Los Angeles) has his tower down and thinks he's fixed all the problems. Now need to get the tower back up but it's too hot to work out much. Hopes to be on for the contest.

Pat Coker N6RMJ (Lake Los Angeles)

had a vacation in Alaska and was out most of the month. Worked some people last night on home-to-home.

Rein Smit W6SZ (Alta Loma)

tried his rig out at the Tune Up in both open waveguide and illuminated dish configurations.

Chris Williams W6NOB (Los Angeles)

got his rig on the air successfully but did not make the home-to-home last night. His 4-foot dish is sharp for pointing. He is able to work people by bouncing off the mountains and is good for the contest.

Jeff Fort KN6VR (Phelan)

had help from Doug K6JEY and Mel WA6JBD to get a gain distribution issue in his 10 GHz radio solved. It tested out nicely and hears pretty well but is 12 dB down on power output so there is more to look at.

Mel Swanberg WA6JBD (Upland)

hasn't been building much so there is little progress on his new rig or antenna work. In home-to-home last night replaced the omni on his house with a horn he found on E-Bay. The antenna consists of four 7dB horns side by side, fanned out, and fed together (has shown around at prior meetings) and should cover about 180 degrees. This will be the transmit antenna for the 10 GHz narrowband repeater with an omni behind it for receive. With this setup on home-to-home could no longer hear Pat N6RMJ at all. Santiago beacon was about the same as before but with more QSB. Worked Frank WB6CWN in Orange County. Jim KK6MXP had the loudest signal he's ever heard on X-Band.

Bill Locke N6WL (Baker CA)

had an enjoyable time assisting at the Tune Up. (Bill reports that Jeff Fort KN6VR had the best receive score of -102)

Brian Thorson AF6NA (Corona)

tested his radio at the Tune Up assisted by Bill N6WL, Robert KM6RXN, and others. Plans to work with Robert for the contest, starting on a coastal route. (Brian ran the whole tune up. Thank you Brian.)

Steve Barden WA6OXN (Riverside)

helped Brian AF6NA do some machining to adapt a horn to $\frac{3}{4}$ " water pipe. Looking forward to the results.

Eric Fort AF6EP (Phelan)

getting some computers running for a new job doing System Administration.

Robert Carter KM6RXN (Riverside)

had a good time at the Tune Up where he helped with setup. Plans to rove with Brian AF6NA in the contest, beginning at Newport Beach with Gordo WB6NOA then proceeding to San Diego. Was working on his rig last night on the bench and heard a CQ around [10.368].140. This was identified as probably having been Pat N6RMJ working Dave W6DL.

Jim Blum KK6MXP (Ontario)

did a little better in the Tune Up this year than last so his radio is working well. Home-to-home signals last night were strong. He was at the Red Rock turnout on I-15. Worked Mel WA6JBD for a 20-minute rag chew, then Frank WB6CWN, Jason W6IEE, and Pat N6RMJ. The Santiago Beacon was S5-7 from there, best ever.

Dave Laag W6DL (Marino Valley)

said that Silicon Salvage open house is next Saturday 7-11 a.m., bring money. About a third of the business is old microwave stuff. The preamp from Kuhne that oscillates on the 3' dish, does not oscillate on 4' dish with the WA6EXV feed in it. Waveguide in the back goes to waveguide and presumed patch (potted). Made 6 home-to-home contacts last night.

George Kashmar KM6UKI (Irvine)

is working with a filter design program that designs with traces, not parts. Did some tests with a \$112 Filipino signal generator. Passed around results.

Dan Slater AG6HF (Hacienda Heights)

brought in a surplus 100 GHz antenna. It is a slotted waveguide at the focus of a parabola in one axis. The feed is WR-10 with 80 slots. It has a calculated gain of about 50 dB gain. It has a third of a degree beam width in one direction, about one degree in the other. Plans to fire it up and do antenna pattern measurements.



Dick Bremer WB6DNX (Brea)

was at Tune Up. His 24 G rig is broken. Field replaced the local oscillator but it still didn't work.

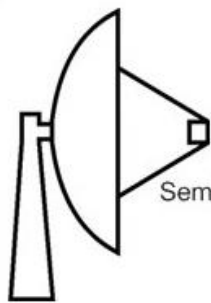
Events of Interest to the Microwave Ham Community

September 8 ARRL VHF (& Up) Contest – Theme is: get on the microwave bands!

September 15 ARRL 10 GHz & Up Contest
– 2nd weekend

September 29, 30 ARRL EME Contest – 2.3 GHz & Up
<http://www.arrl.org/eme-contest>

October 4 SBMS Meeting



Microwave Update 2018

October 11-14, Dayton OH

An International ARRL Technical Conference

Seminar Presentations * Test & Measurement Lab
Antenna Gain Measurements

Banquet & Door Prizes
Thursday Tour: Voice of America
Sunday Tour: US Air Force Museum



www.MicrowaveUpdate.org

October 27 - 28 ARRL EME Contest – 1.2 GHz & Down
– 1st weekend

November 1 SBMS Meeting

November 24 - 25 ARRL EME Contest – 1.2 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.**

From Joe WA8OGS On Microwave Update 2018 . . .

Microwave Update 2018 will be held in Dayton Ohio on October 11-14, 2018. This international conference is an ARRL sanctioned event with published Proceedings - dedicated to microwave equipment design, construction, and operation.

See the program schedule at <http://www.microwaveupdate.org/schedule.php>
Includes a **Free** optional tour of the Voice of America on Thursday 2-5pm.

Free for Students with ID: Attend the seminars/forums/tours, and observe and/or participate in the Test & Measurement Lab activities, the Antenna Gain Measurements. (Note: Free participation does not include any meals or proceedings.) See the website for program details.

Here's a link to the results page for the SBMS 2 GHz & UP Contest

<http://n6nb.com/sbms2018article.pdf>

That's Dave Rice W6NUC (Paradise California)



This is Courtney's truck at Secret Site 51. It demonstrates that he's able to have a level radio mount in an un-level parking spot.

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 (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.**



**The Wednesday before the
meeting: 10,368.100 MHz, CW or
SSB.**

WA6JDB, N6RMJ and W6SZ will be looking/listening for your signals. 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

"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 →

You do not need to log in to be able to watch the video and participate in the chat. In case you are not 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.

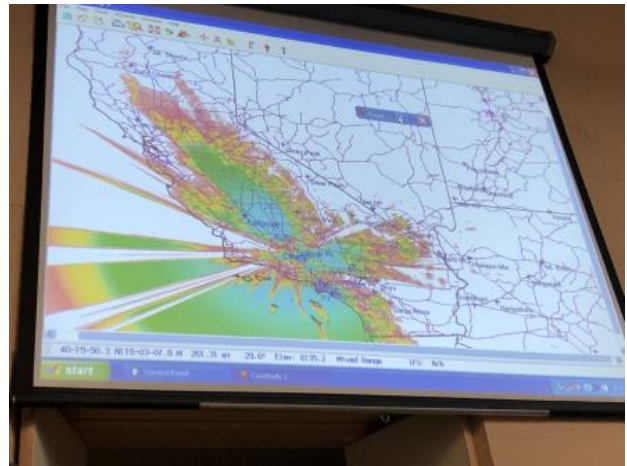
The ATN network linking is all done using FM microwave links on 2.4 GHz and 5 GHz bands. All ATN repeaters in Arizona, California and Nevada now have DVB-T (Digital Video Broadcast-Terrestrial) on 434 MHz input. Analog on 434 still works as well as the FM standard on 2,441.5 MHz. The DVB-T is the European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

August Meeting Tech Talk:

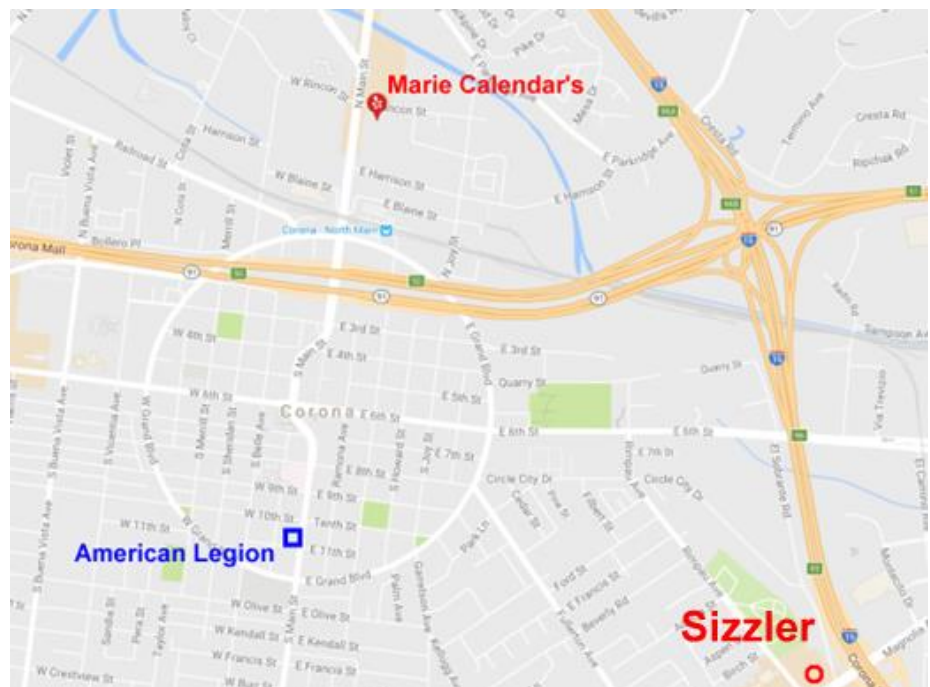
Was a discussion led by Mel Swanberg WA6JBD using a software package, ComStudy 2 to evaluate contest / operating sites. The meeting was devoted to reporting and coordinating contest plans for the upcoming 10 GHz and up contest and motivating operators to get out and operate. Given latitude and longitude and parameter adjustments based on experience, the CommStudy-2 program makes plot maps showing how well a location is expected to work. See photo.



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)

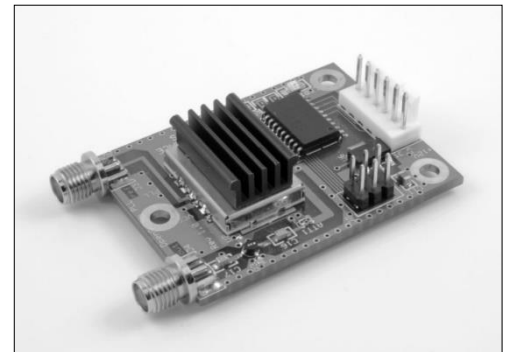
For those who prefer attractive waitresses and fine dining. Marie Calendar’s is available.



Needs, Wants and For Sale

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.

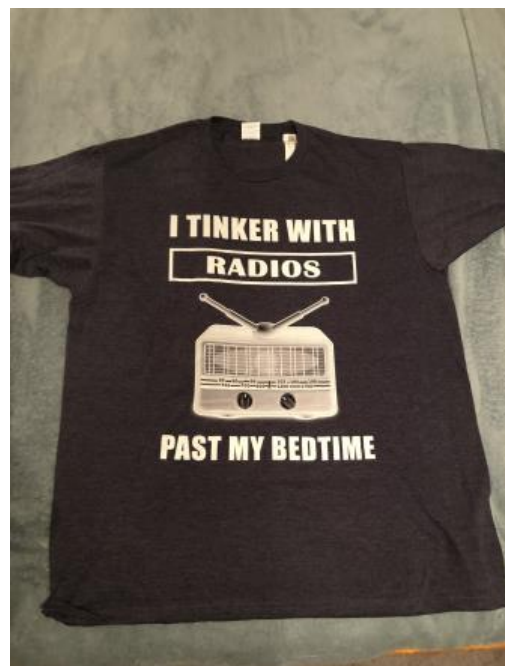
- ⌘ Low phase noise, Buffered output
- ⌘ Ultra low noise voltage regulators
- ⌘ Open Source code and design, made to be modified
- ⌘ 2" x 1.5", 12V @ 140 mA typical



Available at <http://reactancelabs.com>

REACTANCE LABS


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

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.

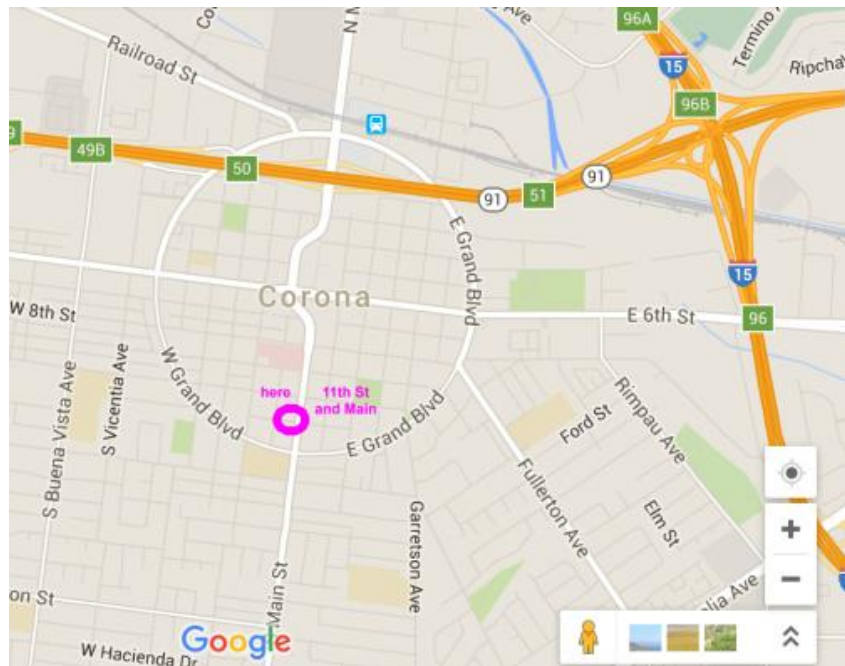
**Meetings are first
Thursday of the
month, 7:00 PM**

**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

- 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:

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