



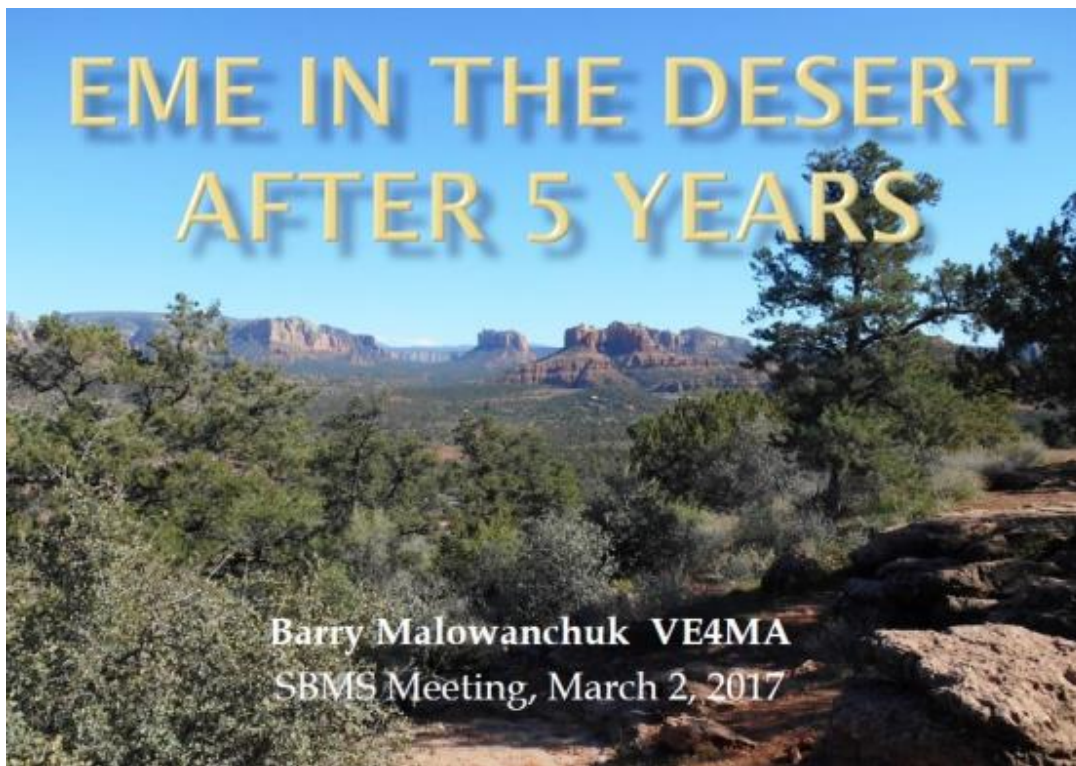
SAN BERNARDINO MICROWAVE SOCIETY, Incorporated

FOUNDED IN 1955

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

San Bernardino Microwave Society Newsletter

Tech Talk for the March 2nd Meeting . . .



Yes, Barry Malowanchuk VE4MA is in town . . .

**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)

More on this Thursday's Tech Talk

Barry - VE4MA is one of the most accomplished Earth-Moon-Earth (EME) radio operators.



His accomplishments are too many to list but just a couple of points:

Inventor of the VE4MA circular polarization feed horn. He is one of the few individuals to complete EME contacts on 79 GHz.

Barry has been spending his winters in Arizona the last several years and will share with us about EME in the Desert.

He will share details of a multi-band system from 902 MHz through 5.7 GHz.

Activities of the November SBMS Meeting

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

Presiding: Rein Smit W6SZ (16 in attendance... 14 last month)

Guests or Members Not Seen in a Long Time

Viann Duncan WD5EHM - XYL of N5BF

ATN Check-ins None

ATV Check-Ins None

Chatroom Check as reported by Pat Coker N6RMJ...

Over a dozen stations logged on.

Old Business

- Dick WB6DNX announced that dues will be due in April.
- Dave Laag W6DL relayed a request from the San Diego group which had loaned Chuck WA6EXV a spectrum analyzer and wants to find out if it's at Chuck's place and if they can retrieve it.
Mel WA6JBD reported that Dennis Kidder W6DQ is going to organize a trip to Chuck's place soon to help with Chuck's ham gear and plans to look for it.

New Business

- Dave Laag W6DL has done nothing on the new badges in the last month.
Bill Locke N6WL volunteered to help.

What Our Members Are Working On

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

Pat Coker N6RMJ (Lake Los Angeles)

has his 10 GHz at home station working thanks to several visits to the SBMS (WA6CGR) lab. Passed around pictures of the system which is installed at 90 feet on his tower and runs 9 Watts with a 1.8 dB receive noise figure. The system works from 2 meter intermediate frequency on cables down the tower and is measured to be within 3 Hz of design frequency. Pat is ready to work people but was not home in time for the Home-2-Home event last night.

At the right is Courtney Duncan's gift to Pat.



Rein Smit W6SZ (Alta Loma)

is trying to get WSJT-X running on Linux on Raspberry Pi platform which means that he must compile from source. He is corresponding with other people to learn how to do this. WSJT is 2-3 dB better than JT65 - significant for EME.

Mel Swanberg WA6JBD (Upland)

needs to do antenna work on a 10 GHz omni and a 2 GHz omni but his available time and dry weather have not yet coincided. Last month he acquired a nice Watkins-Johnson HF receiver and has been having fun with it. The winner of a home-brew contest in a 1982 article in 73 Magazine was a voice detecting SSB squelch. Mel built one and it works well with this HF receiver on 80 meters. He suggested that this could be done on microwave. Those with home rigs could put them on 10.368.1 and listen all the time with this circuit that reduces the unsquelched radio annoyance factor. He is working on a circuit board and parts list and may be able to kit it up. The design could have a relay closure output from an open collector transistor and runs on speaker audio output looking for the 3 Hz syllabic rate using a couple of filter stages. The hang time is adjustable with an RC circuit.

Walter Clark (Fullerton)

attended the mini Maker Faire in Fullerton. He brought in the event badge (see picture) which had a circuit that sensed the electric field in the vicinity. The circuit was a take home demo from the talk on "How to Work with SMD". The rather gaudy badge also demonstrated the interest in art on the part of Maker Faire participants. The host of the maker faire was a group called 23b which has machine shop, welding equipment, 3D printers and laser cutter. They can make and populate surface mount technology (SMT) circuit boards and they give classes in how to do it with home equipment.

Walter's part was an hour long lecture (both days) on how to transfer solderless breadboard circuits to actual PCBs and how to use SparkFun breakout boards that are sensors. Next to him is Ed Murashie.



Ed Murashie WX6DX (Santa Ana)

got an Airspy software defined radio (SDR) receiver. Airspy came from a NOAA contract with Aerospace to come up with a cheap receiver, based on Ettus SDRs. Ed would like to talk to someone who has used Airspy. In particular, he is looking for geostationary low resolution 400 kbps satellites software. Wants to use NOAA's processing and display package on this platform.

Jason Sogolow WB6IEE (Now of Norco)

is doing Microwave work at work at 4.9 GHz - working on airborne radars.

Dave Laag W6DL (Marino Valley)

has been in the lab messing around with the 10 GHz one watt power amplifiers, testing them on them on the bench and measuring their output. just got back from Quartzfest. Did an ISS pass at a school so kids had a chance to talk to astronauts. Gordon West WB6NOA got some video of the event. Had 720 people sign up. Lots of kids out there are getting their ham licenses.

Bill Locke N6WL (Baker)

did only VHF UHF activity over the last month.

Courtney Duncan N5BF (Eagle Rock)

passed out QSL cards from 2016 10 GHz contest contacts to N6RMJ, N6WL, WA6JBD, W6DL, and W6IEE. He also has QSLs for several who were not in attendance and will QSL any contact for which anyone wants one. It was suggested that he could attempt to file for VUCC based on QSL receipts that might result. Courtney gave Pat N6RMJ a T-Shirt that says, "I want to work you Now! Now! Now! Now! Now!" on the back, in commemoration of his 2016 contest win. Also passed around EME QSL cards and pictures of EME stations worked on 23 cm.



Events of Interest to the Microwave Ham Community

March 4	CACTUS Annual Meeting (for those who are members)
April 6	SBMS Meeting
May 4	SBMS Meeting
May 6, 7	SBMS 2 GHz & Up Contest & CSVHF Microwave Sprint
May 19, 20	Bay Area Maker Faire (world's largest)
June 1	SBMS Meeting
June 10, 11	ARRL June VHF Contest (Six meters through light)
June 24, 25	ARRL Field Day
July 6	SBMS meeting
August 3	SBMS meeting
August 5, 6	ARRL 222 MHz & Up Contest (Inaugural; distance-based)
Aug 19, 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 nd 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.

When it comes to EME, there's something of whole-earth interest.

**Europe EME Contest 2017 *sponsored by DUBUS and REF*
(CW / SSB only)**

Contest Dates

First weekend February 11 / 12
Second weekend March 11 / 12
Third weekend April 1 / 2
Fourth weekend April 29 / 30 00
Fifth weekend May 27 / 28
Sixth weekend June 24 / 25

Bands

144 & 432 MHz
2.3 GHz
1.2 GHz
3.4 GHz
5.7 GHz
10 GHz + up

Here's the link to where you can find the details of these events.
<http://www.marsport.org.uk/dubus/EMEContest2017.pdf>

Dinner Before the Up Coming Meeting . . .

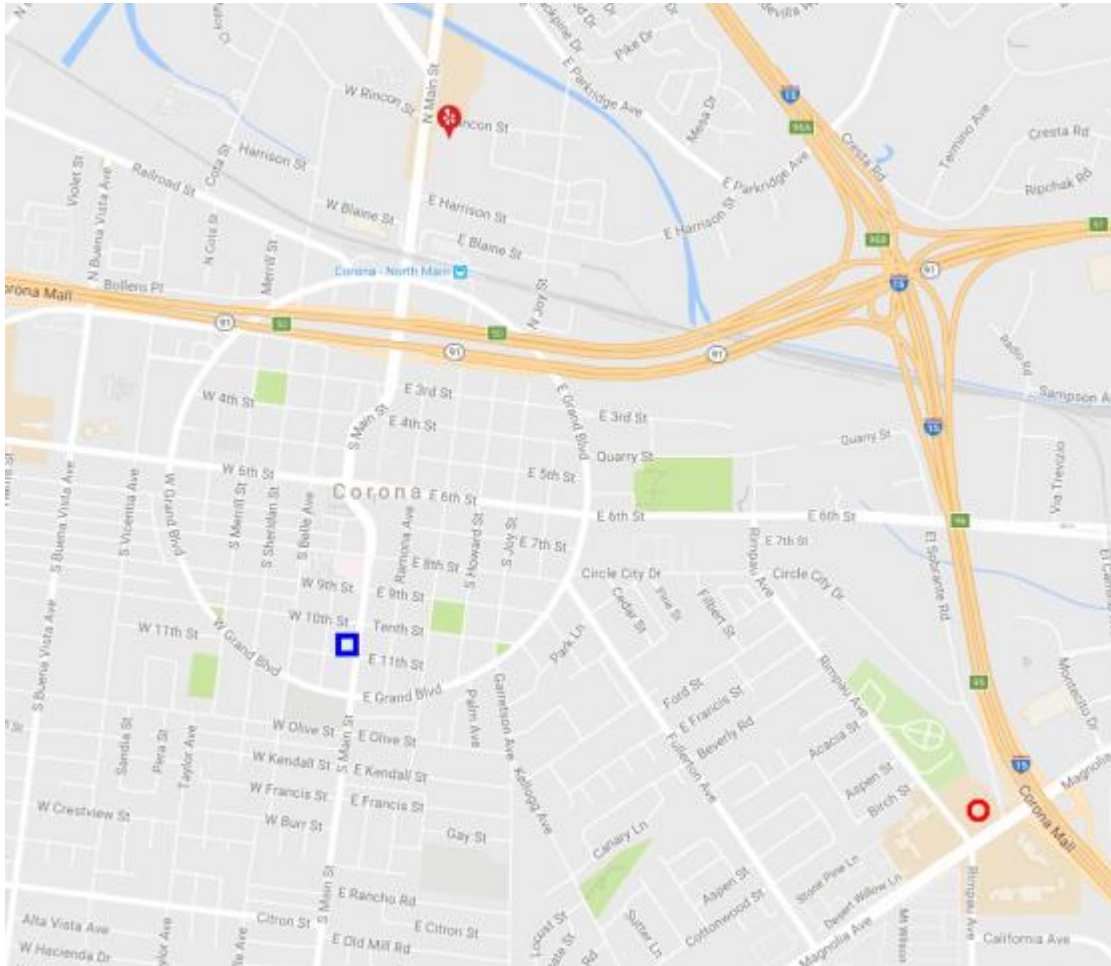
“Dinner-Before” is like a people capacitor in that it is a gathering place for those who are trying to beat the traffic and have a variety of distances to come from. Some arrive as early as 4:00.

This month: Sizzler . . . yet again. (crap, I’m getting tired of that food)

Doesn’t anybody have an idea for some other place? Jeeeeeeeeze.

Marie Calendar’s... that Mexican place next to the Toasted Barrel? Anything. . . .

Maries Calendar’s is on the other side of the 91 but as you can see here, not any further than Sizzler is from the American Legion.



Dick and Walt will check it to see if they can accommodate a group, for possibly an April do.

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 chate. On the right choose "Repeaters" and then on the left, you have to pick a stream. The stream to choose is: **W6ATN**. This should be easy to memorize: W6 for California, then ATN as in 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 its signal to the ATN repeater on Santiago Peak maintained by Mike Collis WA6SVT. From there Roland Hoffman, KC6JPG puts it on the internet by way of 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 RF signal that goes to the Amateur Television Network (ATN) uses 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.



Home to Home This Wednesday Evening; (don't forget)

Rein Smit, W6SZ (Alta Loma), 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 March 1st, 10,368.100 MHz, CW or SSB.
WA6JDB, N6RMJ and W6SZ will be looking/listening for your signals.



Here's Pat Coker's Prodelin dish, 9 watts at 75 feet. (Tower down on the right.) N6RMJ



Microwave Mystery Gizmo of Last Month



It is the shell of a Mattel Hot Wheels microwave speed gun. And it really worked!



The microwave part is a 10.5 GHz DRO motion sensor. There was no circulator to combine the transmit and receive antennas into one aperture. Instead the separate patch antennas were behind a 7" long tube which narrowed the field of view without any focusing device. (A dish, even a horn would have made separate beam angles for the two functions.) Clever trick.

I used it with a 24 GHz motion sensor that did have a circulator. That way I could use a dish. Note the polyrod spike leading to the secondary. The tricky part is turning the Doppler tone into a MPH reading. For that I used the Mattel circuit that was behind microwave circuit board.

Walt, Newsletter editor

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@symbol.lists.altadena.net)

If you don't have an account sign up at this website:

[sbms at-symbol ham-radio.com](http://sbms@symbol.ham-radio.com)

The February Tech Talk . . .

Was actually a Pat Coker N6RMJ appreciation night. And on how well the west coast clubs did on the recent 10 GHz and Up Contest.



Needs, Wants and For Sale (updated 29 January)

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@symbolmediacombb.net

His address is: 247 Rebel Road Ridgecrest CA 93555

- 1 meter offset feed dish and 10 GH feed \$20.
- Andrews Microwave dish 8 ft solid aluminum **free**
- Steel TV push-up masts **free**
- Lengths of aluminum tubing, ½ inch to 3 inch diameters, 1/16th wall **free**
- Stainless steel powder cans 15 inches in diameter by 23 inches high with lids **free**
- Rocket boxes 11 inches by 11 inches by 28 inches **free**
- Power pole 14.5 ft tall by 1 ft diameter **free**
- Many round meters, ma, volt, frequency, misc. **free**

- Mobile HF antenna elements (poles \$20 and resonators \$20) for mounting on a spring on your bumper (if you happen to have a bumper on you late model car).

Member Ads

Sixty North Electronics (as of October 1)

Ed Cole has begun a new line of 2m 80w Linear Amplifiers which can be seen on my website:

<http://www.kl7uw.com/kits.htm>

Ed can no longer order kits from Down East Microwave which are to be resold as assembled units. However if you have purchased a kit and decide not to build it yourself, he can assemble that kit and for no shipping charge, send the working radio back to you. You will have to pay DEMI for shipping and of course pay for shipping the kit to Ed. For details and assembly rates contact Ed at the email address on the next page.

Ed can now do PayPal Sales of the popular "WA2ODO" preamps built by Pete Manfre. This covers 50-MHz thru 2.3 GHz. If not wanting to use PayPal contact "Pete Manfre" [pmanfre at-symbol gmail.com](mailto:pmanfre@symbolgmail.com), directly. [http://www.kl7uw.com/WA2ODO PayPal Sales.htm](http://www.kl7uw.com/WA2ODO_PayPal_Sales.htm)

He will also make many of the kits offered by Jim Klitzing - W6PQL: [http://www.w6pql.com/parts i can provide.htm](http://www.w6pql.com/parts_i_can_provide.htm)

Contact Ed for a quote.

All of Ed's work is covered with a 90-day warrantee on workmanship.
Ed Cole <kl7uw at-symbol acsalaska.net>

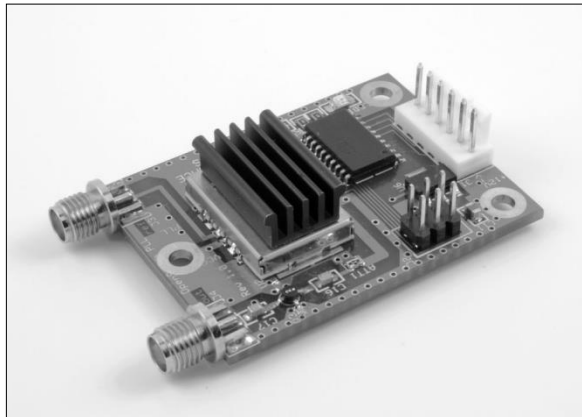
For examples of his work click on... <http://www.kl7uw.com/kits.htm>



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

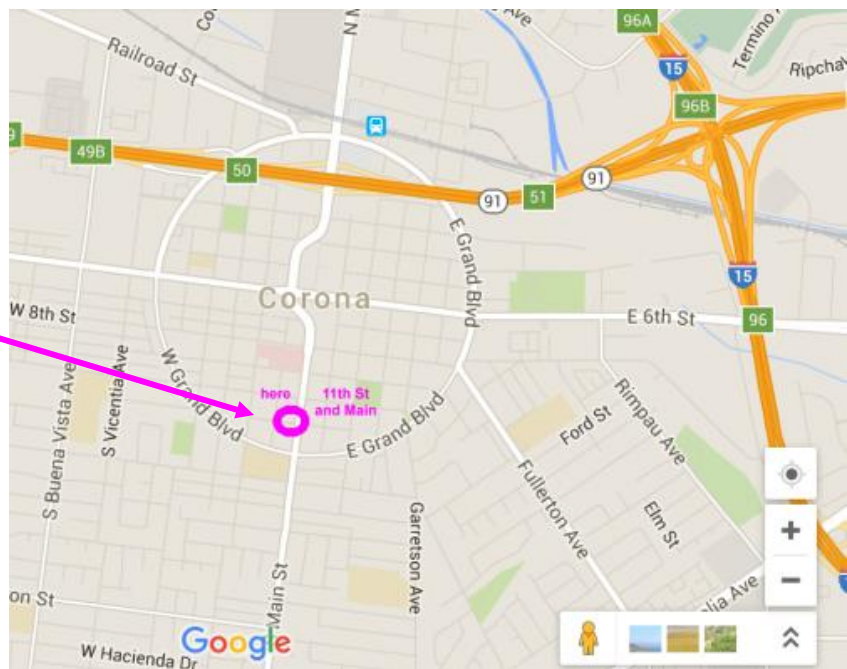
SBMS dues are \$15 per year, which includes a badge and that's about it. The dues are more in the way of a donation to pay for outreach things such as video portals, a bank account, and rent for the building. When to pay is not a matter of remembering. The Corresponding Secretary will contact you by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

The newsletter is distributed by way of 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 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>

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