



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 July 7th Meeting . . .

Mimosa Networks and the 10 GHz Amateur Band

At the July 2016 SBMS Meeting this week, Brian, AF6NA will present Mimosa's request and a few details about the company and their product line based on their public web site. The presentation will be short and the floor will be opened up for discussion and comment from our members in attendance.

mimosa



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Mimosa Networks is a supplier of commercial wireless products and solutions for computer networking and internet access. Their wireless product line connects servers, routers, and end users to the internet or private commercial computing networks.

They applied to use the 10.0-10.5 GHz band for their networking products a couple years ago, but it was not approved.

Background on the Mimosa Discussion

The CEO has reached out to SBMS through emails to Brian, AF6NA twice in less than a year. He has proposed supplying equipment ready for the 10.0-10.5 GHz band to Amateur microwave operators. The suggestion has been that we try out the equipment and networking software. His most recent contact included a request for a paper on the performance.

The SBMS President and Vice President are working with ARRL Regional leadership on this and will respond to Mimosa by the end of the week after considering officers' and members' input, FCC rules, and ARRL guidance.

This promises to be a stimulating and educational meeting as we consider some cutting-edge commercial microwave technology.
Please attend if at all possible.

Those not able to attend will have the opportunity to respond by email after the meeting has adjourned.

Brian, AF6NA



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

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>

Activities at the June SBMS Meeting

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

Presiding: Rein Smit W6SZ

(17 in attendance... 12 last month)

Guests Or Members Not Seen In a Long Time

Larry McDavid W6FUB a friend of Walter Clark from the TAG (Technical Adjunct Group) of the Fullerton Radio Club.

Internet Check-ins

Internet: 5 guests and three others.

New Business

Old Business

The June meeting was an informal one with pizza, soft drinks, vector network analyzer measurements of microwave, so new business and old business were not discussed.

Mel Swanberg WA6JBD was the center of attention for this meeting. He measured various microwave items brought in by participants on his HP 8719C Vector Network Analyzer.

Video Archive Event

- **Mel Swanberg WA6JBD** described and demonstrated this test setup for the Roland Hoffman's camera. These measurements went on throughout the meeting.
- **Dave Laag W6DL** interviewed Ed Munn W6OYJ about the history with the San Bernardino Microwave Society and co-founder Tommy Tompkins WA6IFE (SK).
- **Marty Woll N6VI** introduced Dave and Ed.

Roland Hoffman KC6JPG has arranged to record these videos for distribution on the internet, hopefully as a regular event of SBMS.

Dinner Before the Upcoming Meeting . . .

“Dinner-Before” is like a buffer or a capacitor in that it is a gathering place for people who are trying to beat the traffic and have a variety of distances to come from. Some arrive as early as 3:30.

*For July We are all back at Sizzler's (1461 S Rimpau Ave Corona, CA 92879).
Magnolia off-ramp of the 15 a mile south of the 91.*

So there's no fixed time of arrival, and even leaving there depends on if you are involved with setting up the meeting (around 6:40)

Upcoming Events

- July 30: SBMS Microwave Tune-Up
Fairview Park, Costa Mesa
- July 18 – 31: Central States VHF Conference,
Rochester, MN
- August 4: SBMS Meeting
- August 6-7: UHF Contest (222 MHz and up)
- August 20-21: ARRL 10 GHz & Up Contest 1st Weekend
- September 1: SBMS Meeting
- Sept 10-12: ARRL VHF Contest
- Sept 17-18: ditto (2nd Weekend)
- Sept 24–25: ARRL EME Contest – 2 GHz and up
- Sept 24–25: ARI EME Contest – Autumn Section
(144 MHz through 10 GHz)
- October 22–23: ARRL EME Contest –
50 MHz through 1296 MHz part 1
- Nov 19–20: ARRL EME Contest
50 MHz through 1296 MHz part 2

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:

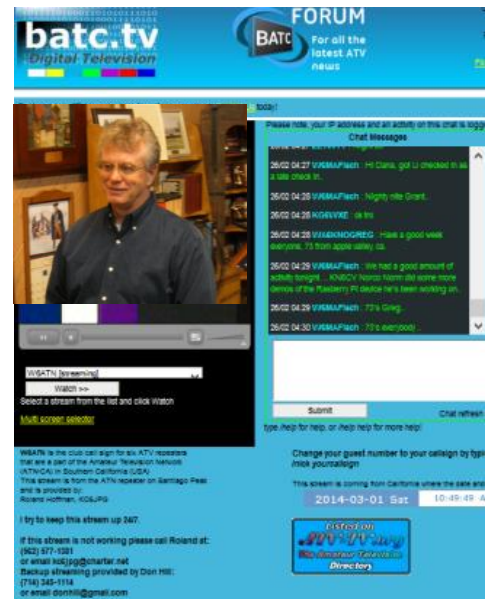
<http://atn-tv.org/live>

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. 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).

What Our Members Are Working On

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

Mel Swanberg WA6JBD (Upland)

is working on the 2.3 GHz beacon project. He has breadboard assemblies and made some calibration kits for his HP 8719C vector network analyzer which was there at the meeting for microwave gadget tests.

Courtney Duncan N5BF (Eagle Rock)

Said his Rohn 25 tower is up, AlfaSpid rotator is here, actual EME antenna to be announced. Need to fix last year's field repairs of 10 GHz rig before next month's tuneup.

Doug Millar K6JEY (Long Beach)

passed around RF Explorer Sig Gen - 10 MHz to 4 GHz. Battery charges on USB jack. Fits in his Agilent box. He has tested his 2304 EME rig: 0.3 dB NF on the feed on the 7' dish. Amplifier has 80 Watts output today. KL6M to get on and talk to Doug and Bill N6MN when they are ready. Next step is to put the LNA and amplifier on the dish. Riverside Telescope Maker's Conference drew 400-500 people. Looked through a 20" F4.5 telescope. Saw all details of M51. Acquiring a Titan 3 Amplifier (CX-800). It's the only way to get beyond 260 countries on HF.

**Jim Blum KK6MXP (Ontario)**

is working on his parts list for 10 GHz. Wants to go over it with someone. Hopes to be on the air after the tuneup.

Bill McNally N6MN (Seal Beach)

is shadowing Doug on 2.3 GHz EME, trailing behind a bit. Going directly to a 180 W amplifier.

Frank Kromann AG6QV (Trabuco Canyon)

has just finished writing a book on PSP programming to be published in July. Looking forward to getting back to radio.

Larry McDavid - W6FUB (Anaheim)

was licensed nearly 60 years. He's been involved in many things including cruise control and collision avoidance. In retirement he does time and frequency stuff. Has a Trimble GPS from China. GPS antenna, 6 V, output 10 MHz at 1e-11 to 1e-13 stability that could be used as reference. Can also be bought pre-packaged with RS-232 on E-Bay. (Doug K6JEY has one that has been running for months.) It is very stable and when GPS is lost, switches automatically to crystal.) Both units have double oven crystal tuned oscillator. Stays near frequency even when powered off. Active GPS antenna is best. Unit supplies 5 V up the antenna line. Total current draw is 130 mA with double oven after oven warmup.

Don Hill KE6BXT (Mission Viejo)

went to Dayton and set up a MESH node in the ATV booth. Did VOIP (Voice Over Internet Protocol) between theirs and Ohio group booths including cameras and pictures. Data was also routed back to California. The two groups were impressed with each other.

Marty Woll N6VI (Chatsworth)

set up 1.2 GHz low power beacon at San Mateo Maker Faire a few weeks ago with Wayne N6NB and Dennis W6DQ at the "Not your grandpa's ham radio" exhibit. Maker Faire typically has 120,000 attendees. Has a friend amateur machinist working on a septum feed for 10 GHz 1 meter dish, next problem is non-trivial: to mount dish.

Dave Laag W6DL Marino Valley

is working on the quality of dishes he has including a 1.2 M VSAT antenna that he got because it didn't work out of the box for the original customer. Figuring out why now. Doing sun noise measurements.

Bill Locke N6WL (Baker CA)

is on Spring Vacation; just back from Dayton and had an enjoyable time.

Walter Clark Fullerton

is working on another electrodynamic lectures. The demo for it will be a motor/generator that will illustrate the notion of field lines as fiction. He brought in the parts to a 100 amp homopolar motor and demonstrated a small D-cell, nail and small magnet version.

**Ed Munn W6OYF San Diego**

found something really old - Naval Weapons Center Corona Newsletter. It was an article about the death of Tommy Thompson, one of the two founders of SBMS. Ed gave us some background information on the founding and Tommy himself. For example, in 1940 Tommy was on a navy ship that pulled away from the harbor during Pearl Harbor attack. Tommy was Ed's boss for many years and Ed reports Tommy was a terrific guy.

Dick Bremer WB6DNX (Brea)

bought a new car recently and pulled an amazing amount of electrical stuff out of his old car that he was sure the new owner wouldn't want.

Brian Thorson AF6NA (Corona)

showed the 11,880 MHz oscillator from DB6NT in a box for the 24 GHz section of the fixture that will be used. See picture. Doug K6JEY offered to do some testing in his lab next week. Mel WA6JBD donated a 10 GHz filter to the setup and Dave WA6CGR donated the mixer. Is now working on the oscillator. Discussed with Ed W6OYJ about using Tommy's callsign: WA6IFE, now our club call, in some form of tribute in this year's contest. Ed knows where Tommy used to live, on the other side of what is now the 15 freeway here. Brian is going to start out on a hill close to that location where Tommy used to make lots of contacts, but not in the actual box canyon. Dave W6DL recalled an historic Rock Lock contact from there to some other canyon. Tommy also was working on one way contacts to K6HIJ Dick Kolbly (SK) in Barstow.

Pictures from the June Meeting

- Ed W6OYJ being interviewed by Dave W6DL about the history of SBMS
- Roland KC6JPG is running the ATV and TV recording system, and
- Mel WA6JBD is seen testing items on his HP 8719C vector network analyzer with Dave W6DL, and Doug K6JEY.



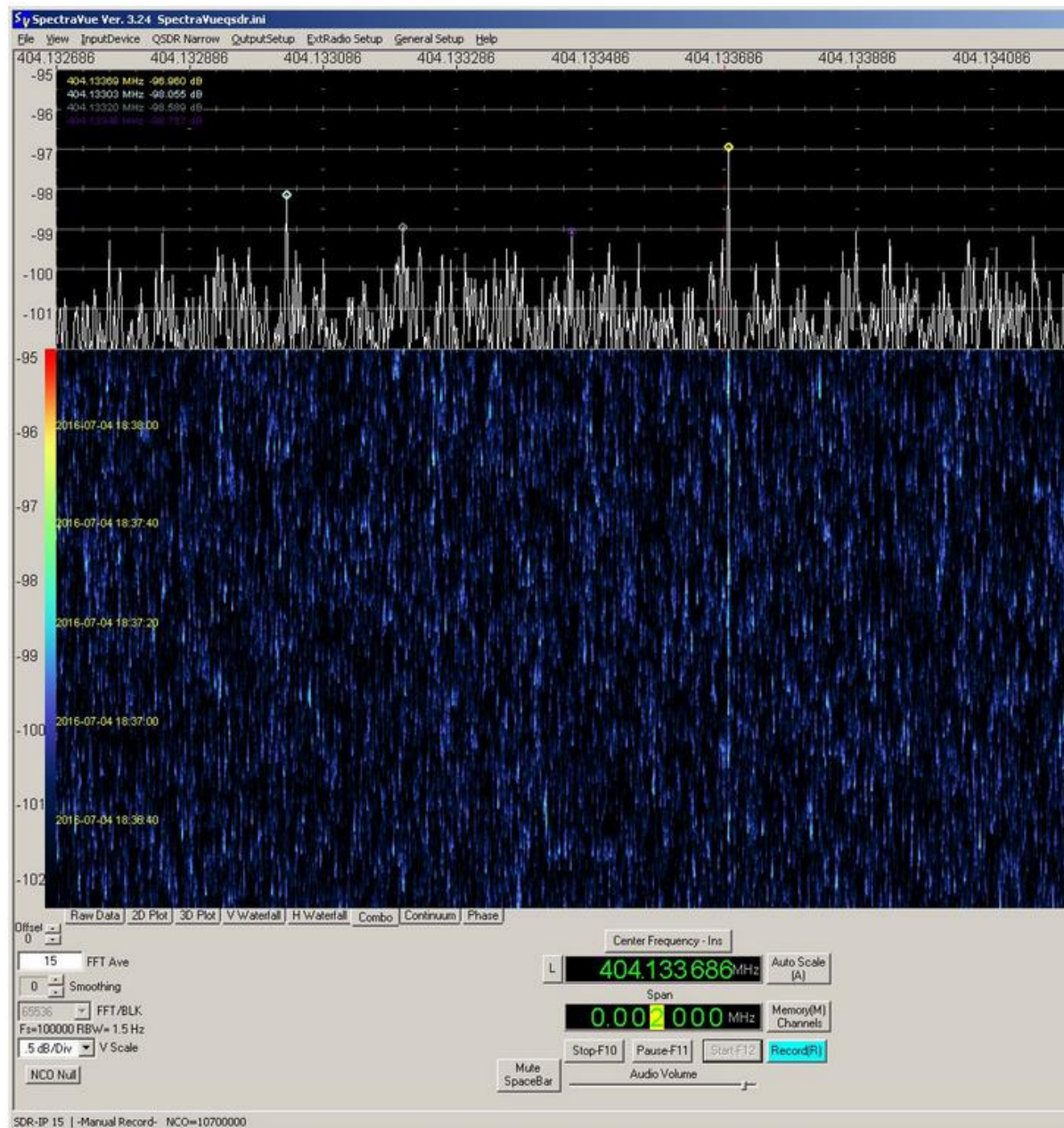
Meeting Notes and pictures: Courtney Duncan N5BF

Dishes Pointed UP

As I often remind you there are other groups that do interesting things with microwave. One of them is Amateur Deep Space Network which is a bunch of guys throughout the world who point their dishes up with amplifiers of extraordinarily low bandwidth. In England, Paul J Marsh recorded a signal from Juno as it entered orbit around Jupiter. That's a billion mile DX.

Here is Paul (callsign: M0EYT) on his observation of Spacecraft Juno:

I had a go this evening, and can report a weak but readable carrier, Doppler corrected on the correct s/c TX frequency. FFT bin of 1.5Hz with an averaging factor of X15. Not bad DX using my 1.8M dish around 850M Km.



SARA (Society of Amateur Radio Astronomers)

is the other radio science amateur group that has a presence on the internet. This group has bigger dishes and extraordinarily wide bandwidths. It is a very active email group with several emails each day! (The Amateur DSN emails come in bunches when there's a spacecraft doing something special.) Neither the DSN nor SARA have local clubs. Here's a link to SARA's superb newsletter:

http://radio-astronomy.org/pdf/2013_aug_hi_res.pdf

The SARA Annual Conference is July 10-13, 2016 at NRAO Green Bank WV

They also have Western Regional Conferences

- Socorro NM
- Prescott AZ
- Stanford University
- Owens Valley

<https://www.flickr.com/photos/tnskynet/sets/72157643176906413/>



<http://www.radio-astronomy.org/?q=node/226>



The Shack is Back



For more . . .

<http://electronicdesign.com/blog/shack-back>

For the Record . . .

SAN BERNARDINO MICROWAVE SOCIETY 2 GIGAHERTZ & UP CONTEST 2016 RESULTS - INDIVIDUAL COMPETITION

CALLSIGN	2 GHz	3 GHz	5 GHz	10 GHz	24 GHz	TOTAL	Best DX	Club
N6NB	4,549	4,732	4,617	5,193	601	20,097	222 KM	So.Calif. Contest Club
K6ML	-	-	-	13,432	-	13,432	381 km	50 MHz & Up
W6IT	2,029	1,807	1,660	3,696	501	9,693	328 km	So.Calif. Contest Club
N1BKB	1,616	1,616	1,470	1,825	-	6,527	158 km	So.Calif. Contest Club
N6HC	1,516	1,516	1,420	1,998	-	6,450	158 km	So.Calif. Contest Club
N6RMJ	-	-	-	5,161	-	5,161	308 km	SBMS
WA6QDP	-	-	-	3,790	467	4,257	267 km	50 MHz & Up
AF6O	802	802	802	826	-	3,232	182 km	So.Calif. Contest Club
KB6BA	-	-	-	2,079	-	2,079	276 km	50 MHz & Up
AD6FP	-	-	-	1,875	-	1,875	228 km	50 MHz & Up
N0HZO	-	-	-	1,792	-	1,792	102 km	Northern Lights
KA0CRO	-	-	-	1,792	-	1,792	102 km	Northern Lights
W6TAI	412	412	412	412	101	1,749	3 km	So.Calif. Contest Club
KC0P	-	-	-	1,658	-	1,658	102 km	Northern Lights
W6DXJ	120	-	-	823	240	1,063	162 km	50 MHz & Up
K0KFC	-	-	-	852	162	1,014	212 km	Northern Lights
N0NAS	-	-	-	463	-	463	57 KM	Northern Lights

Bold denotes top single-band score

More for the Record (in order by club)

We should thank Bill Burns, WA6QYR, for compiling the results so quickly after the deadline for log submissions and thank Marty Woll, N6VI, for putting them into the Excel format



CALLSIGN	SCORE	CLUB
N6NB	20,097	So.Calif. Contest Club
W6IT	9,693	So.Calif. Contest Club
N1BKB	6,527	So.Calif. Contest Club
N6HC	6,450	So.Calif. Contest Club
AF6O	3,232	So.Calif. Contest Club
W6TAI	1,749	So.Calif. Contest Club
Club	Total	47,748
K6ML	13,432	50 MHz & Up
WA6QDP	4,257	50 MHz & Up
KB6BA	2,079	50 MHz & Up
AD6FP	1,875	50 MHz & Up
W6DXJ	1,063	50 MHz & Up
Club	Total	22,706
N0HZO	1,792	Northern Lights
KA0CRO	1,792	Northern Lights
KC0P	1,658	Northern Lights
K0KFC	1,014	Northern Lights
N0NAS	463	Northern Lights
Club	Total	6,719
N6RMJ	5,161	SBMS
Club	Total	5,161

Microwave Mystery Gizmo of the Month



If you can identify why, 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@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)

Last Month's Tech Talk

Pizza Night →

Also, Mel, WA6JBD, brought his HP 8719C to the meeting and performed tests on parts and assemblies our members brought to the meeting.



Needs, Wants and For Sale (Updated 1 May 2016)

For Sale from Bill Burns: Bill will only rarely come 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

His address is: 247 Rebel Road Ridgecrest CA 93555

- Andrews Microwave dish 8 ft solid aluminum *free*
- Long lengths of heavy tower guywire with insulators *free*
- Lengths of aluminum tubing, ½ inch to 3 inch diameters *free*
- Earth screws for anchors of guy wires *free*
- 1296 antenna 8 bays of 3 element Yagis \$5
- Radio Shack PRO 651 handheld digital trunking Police scanner and manual (paid \$400) and USB cable (paid \$35) all for **\$150**. Still new. Receives local weather channel just fine. Will receive all 3 modes of trunk radio signals as well as normal analog stations. AA battery holder and rechargeable battery holder. Receives 25-174 MHz, 216-512 MHz, 764-960 MHz (cell blocked), 1240-1300 MHz.

Member Ads

Sixty North Electronics (as if May 2)

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 will no longer be able to offer to build Down East Microwave kits due to DEMI management entering into an agreement with a subcontractor to build all their transverters which precludes selling to any other reseller.

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, directly.

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

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>

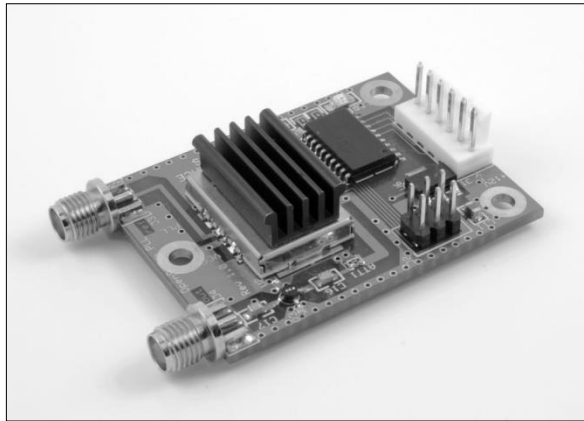
For examples of his work click on... <http://www.kl7uw.com/kits.htm>



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).***

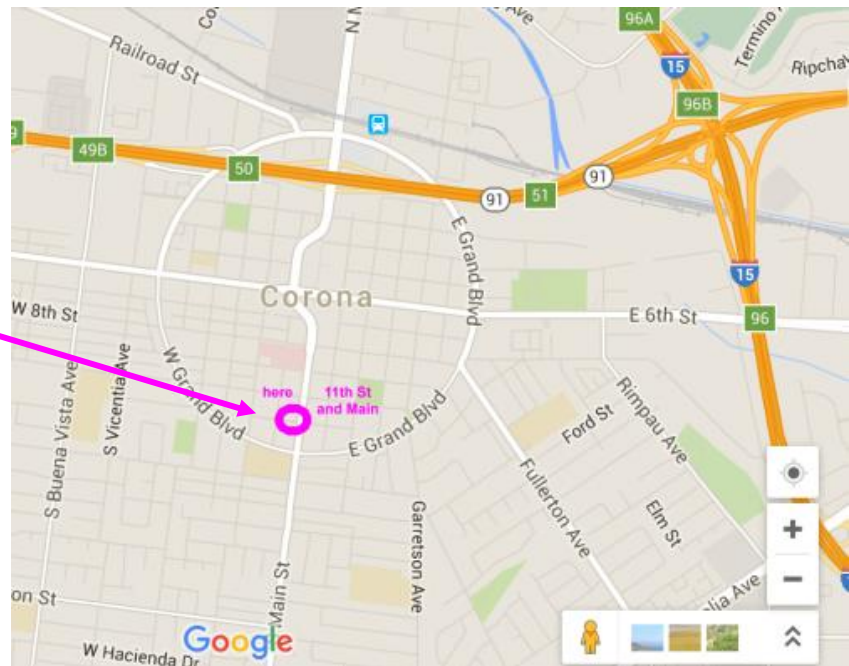
Official Address

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:
American Legion
Hall, Corona, CA**



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

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

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: walterclark at-symbol roadrunner.com

Contact San Bernardino Microwave Society (SBMS)

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email: [wa6cgr at-symbol ham-radio.com](mailto:wa6cgr@symbol.ham-radio.com)

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- Time sensitive questions, reports or just plain bragging is for the SBMS Reflector. Send your email message to: [sbms at-symbol ham-radio.com](mailto:sbms@symbol.ham-radio.com). To sign up go to: <http://lists.altadena.net/mailman/listinfo/sbms>