

San Bernardino Microwave Society Newsletter

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

Tech Talk for the June 1st Meeting . . .

Walter Clark, your Newsletter Editor, will be giving a talk on **Electrostatics**. The talk is at a first year college physics level but is wrapped around the equipment I have. It is better of course for the demo to be chosen in support of the physics but this way is more fun. And quicker too because there's only so much that can easily be demonstrated.



All physics demonstrations, not just static electricity, tend to be historically the oldest discoveries in physics; typically 19th Century. The reason is that easy experiments are quite discoverable. Some demonstrations don't reveal much in the way of understanding but were quite popular so they took on names like the "electrophorus" which will be demonstrated. The talk is the inspiration of Pat Coker N6RMJ who gave me the Wimshurst Machine shown here.

To make it relevant to the microwave audience, I will try to tie the fields associated with static electricity to the electrodynamic fields that become detached from their source and become radio waves.

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)

Activities of the November SBMS Meeting

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

Presiding: Jason Sogolow WB6IEE (30 in attendance; 18 last month)

- Visitor and those not seen in while:

 BB Odenthal KG6YGC (Corona), friend of Walter's and of Jason's.
- Oliver Barrett KB6BA from the Bay Area 50 MHz Up group, here for 2 GHz and Up this weekend,
- Burt Werner K6OQK, Glendale (very interested in joining)
- Stuart Landau K6YAZ, West Hills (western San Fernando Valley)
- Frank Kelly WB6CWN who was a member of SBMS 45 years ago,
- Wayne Yoshida KH6WZ

Before the Meeting

Much equipment from Chuck Swedblom's (WA6EXV) shack was there at the May meeting. Mel Swanberg encouraged attendees to take whatever they could use. Two rules:

- Nothing to E-Bay, no one is to make money off this per the family.
- This equipment is for club use. (And, Mel wants his boxes back.)

Old Business

- Last month there was a motion to buy something, so this month Mel Swanberg WA6JBD explained: Last month Dave Laag W6DL brought a 10 GHz amplifier for sale and Mel thought it would be useful for a beacon, so recommended that we should buy it as a club. This month the expenditure for the dollar amount was approved.
- Dave Laag W6DL needs a list of callsigns for the badges. (a form was sent around for those present) as for those not present . . .
 - Marty Woll N6VI has a membership list, contingent on dues updates.

- Dave Laag and Badges, Continued
 - Pat Coker W6RMJ: Those who paid for one at Microwave Update 2015 need to be first.
 - Dick Bremer WB6DNX: The PayPal information from Microwave Update doesn't have enough information for badges.
 - Marty thinks he has the breakout in a spreadsheet.
 - Jim Blum KK6MXP said Marty's information is what is needed.
 - Treasurer Dick Bremer now has an up to date version of dues.
 - Jason Sogolow W6IEE: There are two categories: people who paid for a badge in the past, and people who are up to date on their dues now.
 - Dave: you are supposed to get a badge when you join. When Dick Kolbly K6HIJ got sick we stopped making badges and that has been the problem ever since.
 - Rule Suggested: Whoever has joined and wants a badge gets one.
 - Pat: What do the badges cost? Dave: William Locke N6WL bought the machine and the badges. It is time to make them.
 - Mel: Make a badge for everyone.
 - Question: Should we retain the quotes around the name? Argument for: This is the way it was historically done.
 - A hand Vote was held concerning quotes around the name on the badges. Passed.

Continuing Business

 Marty - compliance filings are now due. These are due every other year after May 1: California Secretary of State, California Franchise Tax Board, and Department of Justice. Pat Coker asked if there are fees? Marty: Yes. Will pay them (\$20 class).

New Business

- Mel Swanberg WA6JBD reported that he and Dennis Kidder W6DQ had made three trips to Chuck Swedblom WA6EXV's house from which the amateur radio equipment is being cleared. One item given to SBMS is Chuck's trailer in which he had his station and his lab. Dennis has written a proposal (Mel gave copies to the officers) that SBMS funds moving of the trailer, for which he has an estimate of \$350. Should be towable after the skirts are removed and the tires are back on. It's going about 10 miles on Highway 178 Ridgecrest from Chuck's house to Dennis Kidder's house where it will be set up as an SBMS owned and operated EME station, lab, gathering place, and memorial for Chuck. Also about \$1000 will be needed for minor repairs, water for a swamp cooler, etc.
- Doug commented that antennas could be set up and that members could have a locked locker in the station for their gear. And we could go up and do EME on the weekends when there's activity. On Dennis's property. Could sleep there overnight, do astronomy, etc. It is a quiet location for high frequency too.
- The immediate need is to get the trailer moved. The family is preparing the property for sale and the buyer doesn't want

the trailer there. Mel wants to vote on the \$350 tonight for that reason. The rest of the expenses can be discussed at some future time including recurring costs of electricity and internet. The \$350 is a real estimate from a real tow operator.

- A motion carried to authorize expenditure of approximately \$350 to apprehend and rescue the WA6EXV trailer.
- Mel continues: It's been pretty overwhelming in there. So much stuff. Lots of equipment in excellent shape. Several radios rack mounted. Antenna range. Pedestal for EME antenna. All of this gets relocated with the trailer. There will be a lot of repair of things and maybe a lot of things to throw out. Virtually none of that outside stuff in operable condition. The future expectation is that members will donate parts and time/labor to get the things running.
- Dave Laag W6DL: Two Items of historical interest.
 - Mel found WA6EXV's personal notebook. Including a copy of the original Constitution of SBMS. 1955. Will scan it so we can put it on the website.
 - Frank Kelley WB6CWN came up with a book that has a bunch of meeting notes from the 1980s when WA6ECD was the recording secretary. He's going to get a Banker's Box for this and pass it along to the present recording secretary.

What Our Members Are Working On

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

Dave Glawson WA6CGR (Wilmington)

Is sorting through the pile of equipment that Frank brought to the lab. Brought the good stuff here to the meeting. Brought an 8410 network analyzer: 100 MHz to 12.4 GHz. All pieces are there and it's free. (W6IEE took it.) Doing what he can to improve reception of the 2 G beacon at his house. Beacon frequency is 2304.322 MHz. How many guys here on 2 G? (About half by a show of hands.) Doug: There is an SBMS Meeting at the lab in July. South Bay Microwave Society meets at the lab to build stuff. Hands on equipment use and training. Date in July to be announced.

Dick Bremer WB6DNX (Brea)

is trying to get a 2 GHz receiver working. It is based on Chuck WA6EXV's original design. Will bring it in to show next month.

Larry Johnston K6HLH (Lake Los Angeles)

got the tower cranked up. 1296 works but 10 GHz doesn't work properly. Switch from Omni to Dish signal level stays the same. Can't hear Frazier. Not good.

Jason Sogolow WB6IEE (Norco)

is working on contest plans for this weekend. May operate from NorCo.

Chris Shoaff N9RIN (San Clemente)

is still working on his house which is in a state of disassembly. Picked up a Wallabot which allows you to look inside walls, concrete. It is wide-band 1.3-10 GHz. His particular unit is 4-6 GHz and connects to smartphone - see picture. About \$250. He demonstrated that he could see his hand under the table using this hand-held radar.

Doug Millar K6JEY (Long Beach)

is on On 1296 is changing his transverter to Down East Microwave with IF at 28 MHz to his K3. Has two TS-790s for sale as a result. One set up for EME with 1296 phase lock. The other works on all bands. 2, 432, 1296. Is asking \$600 for the second radio.

Courtney Duncan N5BF (Eagle Rock)

is now has nearly 140 Qs, 70 initials on 1296 EME. Hasn't worked France yet. Made skeds last Friday and added several new ones. PA3DZL came back from a restaurant barely before his moonset to make a QSO. Doing all this operating hurts my getting station upgrades and tests done. Moved 10 GHz up to shed so I can easily get on and will be on from the back yard this Saturday for the contest. Other operation will depend on the weather. Will be on liaison whenever I'm around

Brian Thorson AF6NA (Norco)

will be the speaker tonight

Pat Coker N6RMJ (Lake Los Angeles)

did Home-to-home last night but heard nothing except the Santiago and Frazier beacons. Some people heard him. 2-3 dB out of noise to nothing on beacons. Don't know what this propagation is. Will be on this weekend 10 GHz from home. Has available a 36 foot crackup tower with base that goes into L shaped bolts in concrete. Very good condition.

Dave Laag W6DL (Marino Valley)

asked if anybody has a Theramin for Walter's Steampunk machine? Dave brought his software defined radio (SDR) for people to look at this meeting. It consists of a very stable LNB for home satellite dishes plat a \$160 SDR. He is able to see the Santiago beacon just by pointing the small horn out the door.

Rein Smit W6SZ (Alta Loma)

was listening last night on Home to Home and found it very successful. Four or five guys on and the band was sometimes quite busy.

Mel Swanberg WA6JBD (Upland)

said that Cactus will be open for coordination this weekend as usual. Not going to do anything special but expect Arizona to snip us at some point. If you need to work out that way, connections will be worked. Non members are invited to inquire about membership. Most participants are already Cactus members.

Walter Clark (Fullerton)

showed off the Wimshurst machine that Pat gave him last month. See picture below. After restoring it, he was inspired to spent \$92 on demonstration equipment to go along with it.

BB Odenthal KG6YGC (Corona)

has never transmitted above 1 GHz. Pat RMJ suggested he go out with someone during the contest. Jason then offered to come over to his place.

Marty Woll N6VI (Chatsworth)

is in the process of mechanical assembly of his 24 GHz setup. It is almost finished. He will not be ready this weekend but definitely in August. He is so building a second one from parts from Pat for a loaner.

- Contest this weekend: Frazier Saturday only, weather is expected Saturday night and Sunday. Nobody has mentioned 2, 3, 5 GHz yet. Can do 10 GHz only if that's all anyone else has. William N6WL can be on 2.3 GHz.
- This is Marty's last meeting as ARRL Vice Director. Votes will be counted and the winner declared about the time of the Friday of Dayton. Was Division Vice Director for 9.5 years.
- Hands Free Driving Law: A new law to fix the previous one is ready for a vote in the California Assembly. It is not much better, but did take out reference to specialized wireless communication devices which some law enforcement had interpreted as "any radio." We have official CHP judgment: Any microphone in an installed radio is not a violation. A hand-held radio is a violation.

William Locke N6WL (Baker)

bought a radio from Mel on 2.3 GHz and will be on Turquoise with it this Saturday.

Gary Heston W6KVC (Running Springs, Blue Jay)

will be at Dayton two weeks from today, at the new venue.

Jim Blum KK6MXP (Ontario)

is running camera tonight.

Oliver R Barrett KB6BA (Sunnyvale)

is visiting us all the way from NorCal. He is in the process of upgrading his 2 meter diameter dish microwave system, replacing the microwave PL synth board and Orion board. This weekend will be on Signal Peak on 10 GHz.

Wayne Yoshida KH6WZ (Laguna Niguel)

thanked Mel, and repeated the call that all of that stuff should be used. He hasn't done anything in a long time but is preparing for the upcoming MakerFaire which conflicts with the Dayton Hamvention. Dennis W6DQ and couple of NorCal guys will be accompanying him.

Frank Kelly WB6CWN (Santa Ana)

as been off the air a number of years. Gear is dusty but still working after many years and it is kind of fun getting back on the air again. Was sidetracked by photography. Met Chuck WA6EXV many years ago as an 11 year old Novice. Rode bike 3-4 miles out to Mojave trailer he had and has many stories to share. Loves the man, heart, knowledge, skill, very giving.

Burt Werner K6OQK (Glendale)

hasn't been on the air a lot. Mostly Saturday morning 7163 old broadcast engineers. Played around with microwaves back in the 70s using a broadcast system at 5 GHz ("Junior") to control his Mt. Wilson repeater.

Stuart Landau K6YAZ (West Hills)

was first licensed in 60s. The drive here is bad but met with this group for a long time. Is chief engineer for 110KW broadcast station. Will be on Wilson Saturday, no operation planned. Has talked to Pat with little radio, and Malibu from there. Sells on E-Bay, many microwave cables up to 40 G. Has a complete home lab and is mostly interested in testing rather than getting on the air. 10 GHz now is like 2 m was in the 1950s, you call someone on the phone to get them on the air. The propagation is interesting and varies quickly.



At the meeting; from left to right: BB Odenthal KG6YGC, Walter Clark, Dan Slater AG6HF, Dave Laag W6DL and Marty Woll N6VI.

At Marie Calendars





The guys on the right below here, already have one of everything.





Events of Interest to the Microwave Ham Community

June 10, 11 ARRL June VHF Contest (Six meters through light) June 24, 25 ARRL Field Day SBMS meeting July 6 August 3 SBMS meeting ARRL 222 MHz & Up Contest (Inaugural; distance-based) August 5, 6 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^{nd} weekend

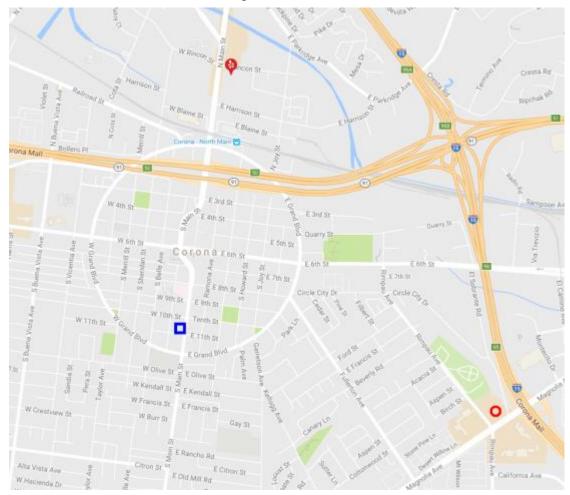
If you have other events or more information on the ones listed; information that would help people decide whether to go or not, please send it to the editor at the email address below.

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.

This month: Let's ask for the "Library Room". It is smaller and quieter.

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.



Again This Month

There will be a large number of items brought to the meeting from Chuck, WA6EXV's station and lab. Chuck is no longer able to remain active, so at his and his family's request, these items are



being given to SBMS members. There will be amplifiers, attenuators, oscillators, waveguide, coax and waveguide switches, RF adapters, filters, antennas, N, SMA, etc. etc. etc.

You really don't want to miss this. These items are

free, not to be sold, through the generosity of Chuck and his family. They very much want these items to be passed on to get reused and repurposed. This is good stuff, not junk. As this is more than one car load, this will be ongoing at the meetings until everything is gone.

Mel - WA6JBD

Microwave Beacons

Starting next month this newsletter will maintain a list of beacons visible from Southern California. This month is only an introduction to the idea and your comments (on SBMS Reflector) about reception or use are welcome for including in the comments column.

The only **2 GHz beacons** are on Mel Swanberg House. (Rancho Cucamonga 2.304-320 GHz. Call is W6IFE/B. Power output is 0.5 watts. Antenna is a 6 dB gain horizontal omni. Grid square transmitted is for Johnstone Peak, but it's actually located in DM14ed.

This from 50 MHz and Up . . . (http://www.50mhzandup.org) Microwave Beacons in operation known to be operating as of April 2016:

Name	Grid	Coords	Freq	Call	Power	Ant	Comments
Mt Vaca	CM88wj	38.415, - 122.116	10368.325	W6ASL	+30dBm	10dBi omni	CW ID
Mt Allison	CM97bl	37.500, - 121.872	10369.192 10369.225 10368.625 24192.010 47061.017	W6QI/B	+17dBm +30dBm total out +17dBm +12dBm	omni 12dBi	CW ID, drifts ~10 kHz Linear translator: Output is 11-55 kHz above beacon Input 600 kHz below desired output CW ID FM ID, aimed to Los Gatos
Mt Leeson	CM97ae	37.167, - 121.924	10367.990 24191.975 47087.99 79919.92	KF6KVG	+20dBm	2.5" horn 1.5" horn 1.25" horn 0.6" horn	FM ID, locked, aimed NW FM ID, locked, aimed NW FM ID, unlocked, aimed NW no ID, locked, aimed NW
Bear Mtn.	DM06ir	37.747, - 119.281	24191.990	W6BY/B	+27dBm	20 slot omni	locked, IDs as DM07IC, will fix
Mt Frazier	DM04ms	34.775, - 118.969	10368.310	N6CA/B	+31dBm	14dBi omni	CW ID, locked
Heaps Peak	DM14kf	34.235, - 117.141	10368.370	?	+?? dBm	??dBi omni	CW ID
Palos Verdes	DM03ts	33.747, - 118.336	10368.300	N6CA/B	+32dBm	14dBi omni	OFF THE AIR for now
Santiago	DM13fr	33.712, - 117.534	10368.330	KE6JUV	+27dBm	10dBi omni	CW ID, locked
San Miguel	DM12mq	32.697, - 116.935	5760.000 10368.360 24192.050		+34dBm +27dBm +34dBm EIRP	omni	- CW ID, locked CW ID, locked, aimed to LA

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.

Wednesday April 5th, 10,368.100 MHz, CW or SSB. WA6JDB, N6RMJ and W6SZ will be looking/listening for your signals.



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

Don't forget, this Wednesday, May 31st is . . 10 GHz activity night. We'll be listening on 10368.100 starting at 21:00 PDT. I'll actually start listening at around 20:30, time permitting.

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

"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

If you don't have an account sign up at this website: sbms at-symbol ham-radio.com

From last month . . .

To use one, you have to have a front panel connector. That's the hard part.

This is officially a Winchell crown planar front panel adapter. Few have actually seen one.



Doug

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 Hesten 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 May Tech Talk was Given by . . .

Brian Thorson AF6NA (Corona)

"Offset Reflector Feed Horns" – Measured Results from Several Ku Band (very affordable) Satellite TV LNBs



At the SBMS May meeting Brian Thorson presented feed horn patterns and shared which ones he found to be best suited to his offset reflectors. So now everyone who attended will stop spilling expensive microwave power over the sides of their dishes.

Needs, Wants and For Sale (updated 29 April 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

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, 1/16th 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

73, Ed - KL7UW http://www.kl7uw.com
Dubus-NA Business mail: dubususa@gmail.com

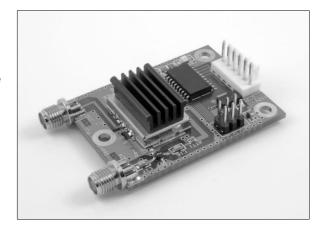


Introducing the OpenSynth line of frequency synthesizer kits. Available in standard frequencies of 2556,

2952, 2160, 1152, 3312, 3006 MHz, also available from 400 MHz to 3500 MHz.

- ▲ Low phase noise, Buffered output
- A 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

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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 - o come to the meetings and share their progress
 - o 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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