

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 January 5th Meeting . . .

**Dave Laag W6DL:
Frequency Synthesizers
(for the microwave
amateur)**



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

Or watch it on <http://atn-tv.org/live>

Activities of the November SBMS Meeting

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

Presiding: Rein Smit W6SZ (17 in attendance... 14 last month)

Guests or Members Not Seen in a Long Time

Clara Woll KJ6CNO amateur radio traffic handler and holder of several top ten places in roving.

ATN Check-ins **KE6BXT - Don - Mission Viejo**

ATV Check-Ins **Earl KJ6DQR Cathedral City will continue watching.**
Gordo WB6NOA: current issue of CQ discusses SBMS.

Chatroom Check: From ChatRoom

Roland KC6JPG reports: K4QF, KB3DXR, KB6CJZ, KC0ITF, KE6BXT, KF6VR, N6RMJ, N8KH, N9RIN, VE3JGL, W6BY, W6KJB, W6QIW, W8KRZ, WA6SVT and seven guests.

Question from WA6SVT - Is SBMS interested in a 10 GHz beacon on Ord mountain over by Barstow? Yes, we are interested!

Old Business

- Dave Laag W6DL reported on the W6IFE trusteeship moved to W6DL. Today, the last signature was obtained and the documentation has been forwarded to the ARRL for filing.
- New SBMS Badges: no update.
- Rein W6SZ reported on a very good home-to-home QSO party the previous evening with six participants: KK6MXP, WA6JBD, N6RMJ, W6SZ, AF6NA, and AG6QV.
- Mel Swanberg WA6JBD reported progress on the 2304 beacon. Has solved circuit problems to produce a good CW spectrum giving a prototype for beacons on additional bands.

New Business

- Walter Clark received word today from Dennis Kidder W6DQ that Chuck Swedblom KA6EXV is now in a nursing home and would like to donate some equipment in his home to SBMS. Dennis would like several people to come help with the evaluation and relocation effort. Wayne Overbeck N6NB pointed out the historical value this equipment has for southern California VHF/UHF activity.

Events of Interest to the Microwave Ham Community

Jan 21-23 January HF contest, ARRL sponsored VHF Contest
50 MHz and up.

January 5 SBMS Meeting

Jan 21, 23 ARRL VHF Contest (Six meters through light)

February 2 SBMS Meeting

Note: Dates for ARRL EME Contest
have not yet been announced.

March 2 SBMS Meeting

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)

Aug19, 20 ARRL 10 GHz & Up – Weekend #1

September 7 SBMS Meeting

Sept 16, 17 ARRL 10 GHz & Up – Weekend #2

October 5 SBMS Meeting

November 2 SBMS Meeting

December 7 SBMS Meeting

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.

Sizzler . . . yet again. (damn)

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).



Some nights, Roland Hoffman is broadcasting but not as described above. He runs DVGT digital video. Excellent picture quality. The T in the DVGT acronym means “terrestrial”. It is a format that is better with multipath.

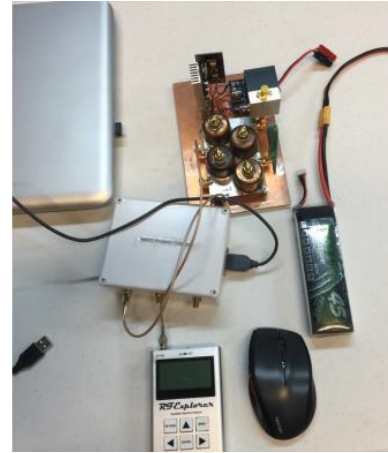
- He transmits analog first.
- Snow Peak is the first digital station.
- There is a 2-3 second delay to digital users.
- There are also nodes on Mt. Potosi and Mt. Lemmon.
- Note: some meetings are recorded for archive.

What Our Members Are Working On

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

Larry Johnston K6HLH (Lake Los Angeles)

hopes to put his 2304 MHz project (pictured) on his tower with 2' dish in a few weeks. Consists of a W1GHz transverter to dongle on 2 meters, and computer, and puts out two watts. Not sure if he can hear Johnstone Peak or not.



Brian Thorson AF6NA (Corona)

showed his 1.2 m offset fed dish on tripod. Mostly mechanical engineering work this month. The 10 GHz Santiago beacon is now being repaired. The power amplifier was blown.

Wayne Overbeck N6NB (Tustin)

brought his 10 band station so we could listen on 2304 to the WA6JBD beacon demonstration. Used a WA5VJB log periodic antenna for which his best DX is 125 miles.

Courtney Duncan N5BF (Eagle Rock)

passed around his 1296 ARRL EME contest log (93.6k points).

Bill Locke N6WL (Baker)

was on for the home to home event last night, transmitting this time. Called AF6NA and N6RMJ but didn't hear anything from Baker.

Marty Woll N6VI (Chatsworth)

said that a lot of our mountaintops are on US Forest Service land. The Forest Service is doing a pilot program, of which Angeles National Forest will be first, requiring that mountaintop users post a bond to restore the sites after vacation, to include removal of concrete, roads, towers, equipment, buildings, etc. WA6CDR and N6VI had a meeting with the ranger in charge representing hams and smaller commercial users, to come up with a workable alternative. A typical amateur site would run \$30K to \$100K and the user would either have to put up a bond or put up the cash and leave it sitting there for 30 years. Commercial bonds would be more expensive because they don't have volunteer labor. Some permits have expired and are waiting on resolution. We need to get this right locally since the Angeles National Forest will be the model for other Forest Service sites, then Bureau of Land Management sites. Marty was in Croatia at the end of October for the CQ World Wide competition as 9A1A - where all equipment was built from scratch by the local hams. Looks like they were the top station in Europe. Operating from the middle of Europe is a real challenge.

Mel Swanberg WA6JBD (Upland)

was on the home to home event last night and heard everyone but N6WL, for whom there is no path, and W6SZ, who wasn't transmitting. Exchanged tones with N6RMJ. Worked N6NB and AF6NA, both loud. Lot of fun trying things out.

Dave Laag W6DL (Marino Valley)

showed Harris Urban Net 10 GHz amplifiers that are available on E-Bay.

Walter Clark (tonight's speaker)

read a message from Dennis Kidder W6DQ that Jim WA6TFZ had passed away in November. Some will know Jim from 6/2 meter activity in past years.



Rein Smit W6SZ (Alta Loma)

supported the KL7M EME attempt with K6JEY on 2304 which didn't work at all. They had problems receiving and think its WiFi interference. Will do more work on the receive side and try again next year.

Gary Heston W6KVC (Running Springs)

is going to do digital ATV at Quartzite in January. Anyone coming should bring microwaves. Dates are 1/22/17 to 1/28/17.

DWH: Driving While Hamming By Marty Woll N6VI

The recent signing of California Assembly Bill 1785 into law has rekindled the issue of operating radios while driving. The stated intent of the new law is to add streaming broadband services to the existing prohibition on the use of cellular phones that are not hands-free while driving. The wording of the law, however, is broad and includes undefined terms such as “specialized communications device” that could be interpreted to cover all two-way radios, commercial and Amateur. Since the bill’s author has not been responsive to requests for clarification, it will probably take either a letter from the state Attorney General’s office or a court case to resolve the matter of the legality of operating push-to-talk radios while driving. We’re working on the former.

Notwithstanding this change in the legal landscape, the question remains as to whether operating a radio contributes to “distracted driving”. In Dave Sumner’s editorial devoted to this subject in February 2012 QST, he noted that . . . “safety must be our number one concern. Guiding a motor vehicle is an awesome responsibility. Radio amateurs have been operating mobile for decades without being perceived as a threat to public safety, but if there is ever any doubt in your mind about your ability to discharge that responsibility you should either pull off the road (if it is safe to do so) or turn off the radio.”



Sumner went on to point out the letter the League received from the president of the National Safety Council, who wrote, “Until such time as compelling, peer-reviewed scientific research is presented that denotes significant risks associated with the use of Amateur Radios, two-way radios or other communications devices, the NSC does not support legislative bans or prohibitions on their use.” The updated ARRL policy statement may be found here: <http://www.arrl.org/news/arrl-executive-committee-adopts-mobile-amateur-radio-operation-policy>

As one who has done a lot of mobile operating and one who has lost friends to accidents caused by distracted driving, here’s my opinion, for what it’s worth. There is considerable variation among people in their ability to drive under any circumstances. There is further variation in the ability to multi-task. Some people shouldn’t drive, period. Some shouldn’t drive with any distraction at all, including talking with passengers, zoning out to a favorite song or munching a hamburger. Some are okay with a variety of simple activities. No one, I believe, should drive while their visual

attention is focused inside the vehicle for more time than it takes to change a radio channel, glance at the GPS or adjust the climate controls.

Those of us who have piloted aircraft know that multi-tasking is essential to safe flying. Scanning the gauges, scanning the horizon, using one hand to adjust trim, mixture, throttle or radio setting while the other is on the yoke – it's all part of maintaining control and situational awareness while remaining connected to ATC, the flight-safety communications system. Pushing the PTT on a microphone while “keeping your head on a swivel” is a normal and necessary part of flying an aircraft.

Unlike staring at the screen of a smart-phone, talking on a two-way radio does not occupy the operator visually. The “hands-free” requirement that applies to cellular telephones is not, I believe, an essential element of safety unless one is in heavy or merging traffic that requires two hands on the wheel. In such situations, you'll often hear me say “I'm going to two-hand it” over the radio as I put the mic down. I'll resume the discussion when it's safe to do so. Each of you probably has a pretty good idea as to his or her limits of concentration, and you should manage your activities while driving accordingly. For me, talking on a channelized radio is no more distracting than talking with a passenger. Tuning for contacts and trying to scribble a log entry is a bit too much for me; I've done it on deserted highways in the middle of nowhere (well, okay, it was actually the middle of Kansas), but generally I consider that out of bounds for me.

The bottom line is that one size does not fit all. You need to know and periodically reassess your own capabilities and avoid doing anything that gets between you and your ability to drive safely.

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 January 4th, 10,368.100 MHz, CW or SSB.
WA6JDB and W6SZ will be looking/listening for your signals.

Microwave Mystery Gizmo of the Month



If you can identify this, or would like to discuss this, use the SBMS Reflector by sending an e-mail letter to . . .

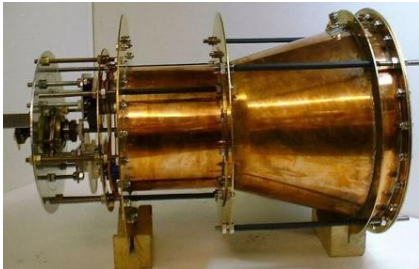
SBMS at-symbol lists.altadena.net

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

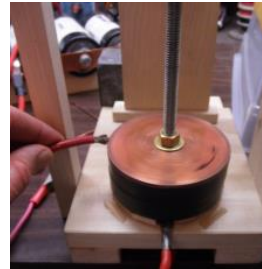
sbms at-symbol ham-radio.com

December Tech Talk was on . . .

Microwave Interplanetary Space Drive and Other Pseudo Science... Explained Away



**The EM Drive
action without reaction**



**and the Homopolar Motor
torque without counter torque**

Walter Clark has been tinkering with extremely high current generators and motors and finally found a way to tie it in with microwaves. It turns out some obscure NASA department (Eagle Works) recently tested a controversial microwave rocket ship motor straight out of the Tesla, free energy, hobby world. This gave it a legitimacy that surely JPL radio science department personnel are tearing their hair out on. Well the enthusiasm of the Homopolar Motor, is from that same Tomorrowland world. And although Walter couldn't explain away the EM Drive, he feels he did identify the missing counter-torque in the other pseudo-science play thing.

In the picture on the right, he is demonstrating how little force there is in single loop of wire with 230 amps. His motors run on currents approaching that but with only millivolts across the load. It is a strange, unfamiliar world indeed. It is the unfamiliarity of the physics that allows the charlatan to make spectacular claims.

The spooky words of the EM drive enthusiasts are "resonant cavity" (where the intensity between reflectors can be a hundred fold more than the input power), and "group velocity" in a tapered waveguide which is difficult enough to understand with straight sides.



Needs, Wants and For Sale (updated 27 Nov)

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@symbolmediacombb.net

His address is: 247 Rebel Road Ridgecrest CA 93555

- Andrews Microwave dish 8 ft solid aluminum . . . *free*
- Steel TV 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*
- 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.
- 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 below.

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>

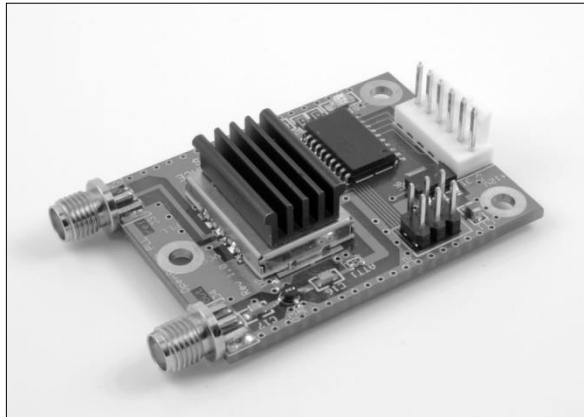
For examples of his work click on... <http://www.kl7uw.com/kits.htm>



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](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

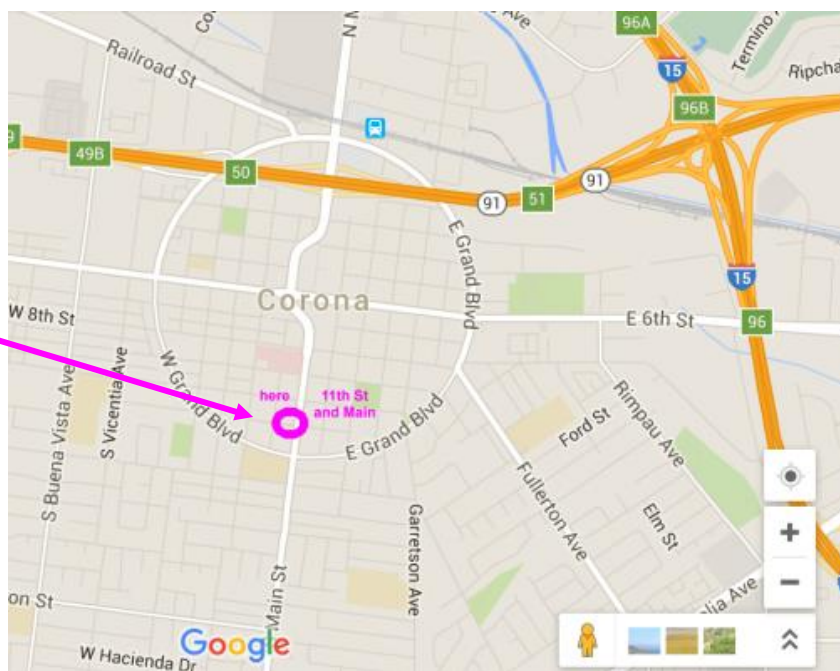
San Bernardino Microwave Society
417 South Associated Road #146
Brea, CA 92821

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
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



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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 - 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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email: wa6cgr at-symbol ham-radio.com