



SAN BERNARDINO MICROWAVE SOCIETY, Incorporated

FOUNDED IN 1955

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

June 2015 Newsletter on the Activities of the San Bernardino Microwave Society

Walter Clark, Editor

Tech Talk for the June 4th Meeting



Andre Hansen, K6AH

Andre Hansen, K6AH, has been a ham for forty-five years and is a frequent speaker at San Diego County radio clubs. A regulatory compliance consultant for Abbott Laboratories by day, he holds an Extra Class license and is a member of the ARRL. He is also the project manager for the AREDN development team, which contributed to the Broadband-Hamnet (BBHN) group receiving the International Association of Emergency Managers' (IAEM) Innovation and Technology Award in both US and International categories. Andre spends much of his spare time working on this project, but also enjoys VHF & HF mobile as well as contesting. In 2013 Andre took first-place overall rover in the ARRL June VHF contest.

AREDN Mesh Implementation Considerations

If you can't make it: watch online: http://www.batc.tv/ch_live.php?ch=2&id=139

Tech Talk Description

Andre will present an overview of the AREDN Project (www.aredn.org), its implementation plan for San Diego County and potential integration points with neighboring counties. He will also describe the recent, significant, advances local hams have contributed to this fast-growing emergency communications technology.

Activities at the April Meeting of the SBMS

(that would be of interest to the general ham radio community)

Business Meeting

Presiding: President Chris Shoaff (N9RIN)

(22 in attendance... 19 last month)

Guests or Members Not Seen In a Long Time

Peter Heins N6ZE Thousand Oaks, DM04ne, etc. member: Pacific NW VHF Society, Central States, have worked in the contests. Guest of Marty Woll N6VI.

Old Business

Ed Munn

asked if the antenna test at the Tune Up Party would be Sunday morning. The members thought that it will be done that way because that's the way it has always been done.

Beacon Project

Someone mentioned that e-mail from Bernardo asking what the status of the project was. Chris said he also needs a second rig.

Mel: We may want to talk to Dennis once he gets moved in and see if he wants to build up something like that. Also, thinks we did build two rigs for them. Get the rig back from Antonio and use that one?

Brian: does he need a whole rig or does he already have an IF radio? We think whole rig. How did he get equipped to begin with?

Mel: Miguel had contact with somebody down there. Pretty active ham club, got a couple of them interested in microwave, we provided them with two turnkey rigs. Initially we were going to send people to work with the and show them the ropes, but didn't (politics). Bernardino said he would work every year, but doesn't show up on the Liaison channel.

Chris: Doesn't come far enough north for 2-foot dish and 1-watt.

Brian: was that done with SBMS funds or personal funds from members?

Mel: People donated pieces and Frank built them.

Chris: He also has a location for a 10 GHz beacon.

Walter asked: What's the value of them having it down there? To which everyone said, to be a source of points for SBMS members.

MUD (Pat absent tonight)

Mel: PayPal situation is straightened out. Some expiration notices.

Courtney: got money back and used it to re-register and the payment was accepted but didn't see my form come through to the registration e-mail. Needs to be worked.

Mel: Also request any information be sent to the website curator.

Brian (and Mel) suggested that we have a monthly meeting apart from SBMS meeting to deal with MUD stuff. Pat and Brian will deal with setting this up offline.

New Business

2 GHz and Up Contest Last Weekend.

Wayne Overbeck explained how to get 3000 points in ten minutes. He said that Marty called him on the phone at dinner, "can you run up the hill with Carrie and work me when you're done." So Wayne worked Marty on 10, 5.7, 3.4, 2.4 and then Wayne handed the Mic. to Carrie and she does the same thing. 800 QSO points plus $150\text{km} * 8 = 1200$ distance points. Hypothetical: If Marty had 24 GHz, 500 more points x 3 (24 G is triple) so that would be more than 3000. Morale: get on more bands darn it."

(N8KH says Marty needs to hold the Mic. closer and aim better. Thinks this is about Frazier.)

Courtney Duncan (N5BF), Recording Secretary

Reminder re. IF Radios

As mentioned in N6VI's 2 GHz contest write-up in last month's SBMS Newsletter, we'd like to know what you are using for an IF radio if it's other than the popular Yaesu FT-817 or it's big brother, the FT-857. Robin WA6CDR and Marty N6VI can use this information in connection with their presentation at the August club meeting. Please let either of them know your low-band rig of choice for microwave weak-signal work.

Marty Woll N6VI

MUD Speaker Slots Still Available

We have filled about half our speaker slots for next October's SBMS-sponsored Microwave Update in San Diego, and we're looking for additions to the line-up. If you know of a good program for MUD, please contact Wayne Overbeck N6NB or Marty Woll N6VI.

Marty Woll N6VI

What Our Members Are Working On

Dick Bremer WB6DNX:

Brought some new PowerWerx products to pass around the room. No microwave activity.

Ed Munn W6OYJ: San Diego

Report from the San Diego group.

Art McBride KC6UQH became Silent Key April 16, 2015 after a lengthy illness. Ed gave biographical details including that Art had been active in 10 GHz and up for many years. Kerry Banke N6IZW has been working on ISS digital 2.4 GHz ATV ground station including a tracking system for 1.8 m. dish. Equipment has been on ISS for some time but had not been turned on until a few days ago. Signals are 2435 MHz DBV-IV, 2 mega symbols per second in a 4 MHz passband. No camera images have been transmitted yet, only blank screen. Most activity will be in Europe. Banke built WiFi blocking filters for all the ground stations on the project.

Walter Clark: Fullerton

demonstrated an application appropriate for hams that he forgot to show as speaker at the April month in his XBee telemetry talk. It was a field strength meter that can be deployed hundreds of feet away while you rotate your antenna and read next to you the signal strength to get an antenna pattern.

Dan Slater AG6HF: La Habra Heights

brought RFX4 spectrum analyzer. It goes out to 2.7 GHz, \$2-300 price range. He also brought an RF source, \$200, up to 6 GHz, CW only. Firmware updates for modulation etc. are available

Rein Smit W6SZ: Alta Loma

made 10 GHz QSOs during the contest and others home to home afterwards. Participated in the April 25, 2015 1296 EME contest with Doug K6JEY. During the activity there were 7-8 people there all the time. Some modifications had been performed on Doug's dish.

Wayne Overbeck N6NB: Tustin

made some contest QSOs. His tenants, who are not into radio contesting, moved out May 1.

Jim Blum KK6MXP: Ontario

is trying to set up a rig. Made contest QSOs with Brian AF6NA and Chris N9RIN bouncing off Santiago. Has mountains all around his QTH. Went to Vantage Point Park, Roland Heights and made lots of contacts. Used another bounce path, Santa Monica Mountains, to get into Frazier.

Gary Heston W6KVC: Running Springs

After 35 years of Advanced Class, has upgraded to Extra. Congratulations!

Peter Heins N6ZE: Thousand Oaks

Guest of N6VI. Was on during the Microwave Sprint last weekend, operating 900 and 1296 MHz.

Marty Woll N6VI: Chatsworth

Recent FCC action with respect to the amateur 74 GHz band went far beyond what automotive industry requested to a policy that would keep all hams off the band. ARRL filed a response saying that Bosch (originator of automotive concept) and the ITU both found that hams and automotive were entirely compatible. 2 GHz and up contest was fun, operating from Frazier on 2.4, 3.4, 5.8, and 10 GHz. Made 61 contacts with best DX of over 400 km on every band. Worked Sacramento CM98 for the first time on 2.4, 3.4, and 5.8. Score was 13.1K, better than 11K last year although conditions were not super. Lower frequencies get into ducts at low elevation. 2.4, 3.4, and 5.8 would be easy while 10 could barely hear BXJ up the valley. Passed around the current MUD speaker schedule with six of the twelve slots filled with placeholder titles.

Bill McNally N6MN: Seal Beach

was involved with Doug K6JEY on the April 1296 EME event for setup. Acquired a 1296 MHz four beam Yagi array antenna from Bob Kocisko K6PF.

Mel Swanberg WA6JBD: Upland

was mostly lurking e-Bay and buying calibration kits for network analyzers which are expensive, and looking for some good quality cable. He is working the antenna range for July tune-up party in Cost Mesa. There won't be anything custom built; and is looking at using stock test equipment and has ideas on how to do it. Chris N9RIN will assist using the N6IZW design for ideas and guidance.

Frank Kromann AG6QV: Trabuco Canyon

brought a friend over from Denmark and worked 2.4 GHz EME.

Eric Fort AF6EP: Phelan

is mostly working on the baseband part of his rig with WJST mode using a Raspberry Pi as the hardware platform.

Jeff Fort KN6VR: Phelan

Read QEX magazine and saw Walter Clark's SBMS article mentioned.

Larry Johnston K6HLH: Lake Los Angeles

participated in a little. Saturday was tough with competing activities but worked about six people and had fun. Has a box from N6RMJ to put on the prize table at MUD. If anyone has a need for parts (GaAsfets, etc.), 20 GHz 2 dB NF parts, couplers, MiniCircuits amplifiers (2-10 GHz, 20 dB gain) come see him.

Courtney Duncan N5BF: La Canada

saw Dan Slater AG6HF at CubeSat Workshop in late April, Cal Poly San Luis Obispo, where 5.8 GHz rigs for satellites discussed. Bought A Kuhne (DB6NT) MKU 10 G3 3cm transverter and had it fail. Sent it back to Germany. New one came, works, and received PV beacon S-8 during last weekend's contest. Also bought a DB6NT 8 W amplifier and SEQ-3 but haven't hooked them up yet. Found an LPRO-101 Rube on E-Bay, which is working fine. And a G4DDK preamp for EME 1296 which was in pounds! (Much higher exchange rate than Euros on the German purchases.) Brian AF6NA is working on the dish/feed/WG switch that will be the antenna for the 10 GHz rig on a tripod scrounged from JPL club. This setup will be shown in tonight's Tech Talk. There was a good article in AMSAT Journal for Jan/Feb 2015 on M4 (p. 12) that mentions that Rein W6SZ was the last receiver of data from the trans-lunar beacon. FINDER (detecting heartbeats in rubble, presented here in October 2013 by Jim W6RMK) has been used to save lives following the recent earthquakes in Nepal.

Brian Thorson AF6NA: Corona

made six contacts in the 2 GHz and Up contest and will give the Tech Talk tonight and later in the month at the Pasadena Amateur Radio Club.

Chris Shoaf N9RIN: San Clemente

contacted WA6CGR from his home in the contest and made some other contacts in the contest. Working on a problem with the 10GHz radio (signal is FMing in SSB mode). Working on pcb layout for signal source that can be used in the beacon project.

The above Activity Report was recorded by
Courtney Duncan (N5BF), Recording Secretary

From Doug Millar... (not at the meeting)

It is getting into contest season. With a combination of getting rigs ready and doing repairs, now is the time to check a few things. Turn on your lab gear and check it. Make sure your frequency source is putting out good frequencies and then test your counter and signal generator. Zero the frequency standard in your spectrum analyzer or at least to a "paper calibration". By that I mean to put a label on your unit of exactly how far it is off and the date. Check that your power meter is working. Even if you don't use it for the contest, you will have done a once a year check to see that it all works. It is amazing how things that just sit there can decide not to work at the oddest times. Yes, I checked my stuff too. My HP 8673B was off by 350 Hz at 26 GHz. I just put a label on it and plugged it into the GPS source.

By the way, many counters and generators have a reference input and output. That means you can run the frequency source into each of them in



series and not need a distribution amp. Test it out, though, just to make sure. Let's say you have a Systron Donner counter with an option 13 oscillator. These are great sources, if calibrated, and you can daisy chain that source into your other gear.

In case you need one, here is a great GPS source and amp. It works very nicely and has settled into

1part in 10x-12 in my lab. Go to eBay and in the search window:
10MHZ Sinewave GPS Disciplined Clock GPSDO + Distribution amplifier
OCXO.

If you need help calibrating, let me know, and I'll be glad to help.

Doug K6JEY

ARRL June VHF Contest: It's For Microwaves, Too!

The largest VHF-and-up operating event in the country (and perhaps in the world) takes place on the second full weekend of June. It's the ARRL June VHF Contest and, despite its name, all bands from 50 MHz through at least 24 GHz are in play. SBMS member Dave W6TE has again assembled a multi-operator team for Frazier Peak, and he now has a capable 24 GHz station to add to all the lower bands. This year's contest, which begins at 11:00 AM PDT / MST on Saturday June 13 and ends at 8:00 PM PDT / MST on Sunday, includes some new rules that allow spotting and coordination among all participants, just as we have in the dedicated microwave contests. I and others will probably be out roving with bands up through 10 GHz, and it would be great for those of you with microwave stations to get on the air and work the mountaintops, the rovers and one another. The exchange is simple: your four-character grid locator. Those of us who are CACTUS members will be monitoring that system, and the Frazier crew will probably be on the NC9RS system as well for liaison to the northern part of the state.

Marty Woll N6VI

SBMS Club Directory

With the help of Club secretary Courtney N5BF, Marty N6VI is putting together an SBMS club directory. A subset of this list will serve to track membership and dues status, but we want the directory to include active microwave operators in the region, whether they are former members, occasional visitors to the club meetings, prospective members or just regulars on the microwave bands. Marty plans to bring a draft to this coming club meeting to fill in some holes in the data. The default listing will include home and cellular phone numbers (for microwave coordination, of course!), so please let Marty know (n6vi@socal.rr.com) if there is any contact info you do not want to appear on this list. We are not planning to publish the Directory on the Web site; rather, it will be sent to members via e-mail (so be sure we have your current e-mail address). Also, please advise Marty or Courtney if your mailing address differs from what appears in the FCC database or on QRZ.COM.

Marty Woll N6VI

Upcoming Events (Identified by Marty Woll N6VI)

- June 13-14: ARRL June VHF Contest –all microwave bands
- July 23 and Sunday July 26th: The Central States VHF Society Annual Conference (See below for details.)
- June 27 – 28: ARRL Field Day (Demonstrate microwaves to the visiting public)
- Aug. 1-2: ARRL UHF Contest – includes all microwave bands
- August 15-16: ARRL 10 GHz & Up Contest – 1st weekend
- Sept. 11-13: ARRL Southwestern Division Convention, Torrance CA (can you offer a microwave program?)
- Sept. 5 - 6: ARRL EME Contest – 2.3 GHz & Up
- Sept. 12-13: ARRL September VHF Contest – includes all microwave bands
- September 19-20: ARRL 10 GHz & Up Contest – 2nd weekend
- Oct. 31 - Nov. 1: ARRL EME Contest – 2.3 GHz & Up
- Nov. 28 - 29: ARRL EME Contest – 50 through 1296 MHz – 1st weekend



- <http://www.ham-radio.com/sbms/mud2015/>

Anyone, (not just SBMS members) . . . if you know of any future 1 GHz and above amateur radio event, please send date and description to the editor:
walterclark@roadrunner.com

The Central States VHF Society Annual Conference for 2015 Thursday July 23rd and Sunday July 26th.

Denver Marriott Westminster, CO Rooms \$109 per night. Saturday evening banquet
Speaker Rick Roderick K5UR First Vice President of ARRL and an avid VHFer
Operating opportunities microwave operating from local mountain
tops <http://2015.csvhfs.org/>
N0POH DM79op

Bay Area Maker Faire 2015

2015 marks the 10th installment of the Bay Area Maker Faire. "Not Your Grandpa's Ham Radio" was there, with members and friends of SBMS and the 50 MHz and Up Group manning the exhibit. There were examples of radio controlled robotics, old vs. new technology antenna matching networks, software defined radios and ARDF hardware. SBMS members assembled a demonstration of Broadband Hamnet, displaying voice, video and data applications. Thanks go out to Brian Yee, W6BY, wife Pat, and daughter, Stephanie; Wayne Yoshida, KH6WZ, Wayne's friend, Patty Winter, N6BIS, and her friend Jordan; Paul Zander, AA6PZ, and Dennis Kidder, W6DQ, and his friend, Lisa Gibbons, KF6QNG.

Members setting up "Not Your Grandpa's Ham Radio" at Bay Area Maker Faire 2015, sharing the booth with 50 MHz and UP Group.

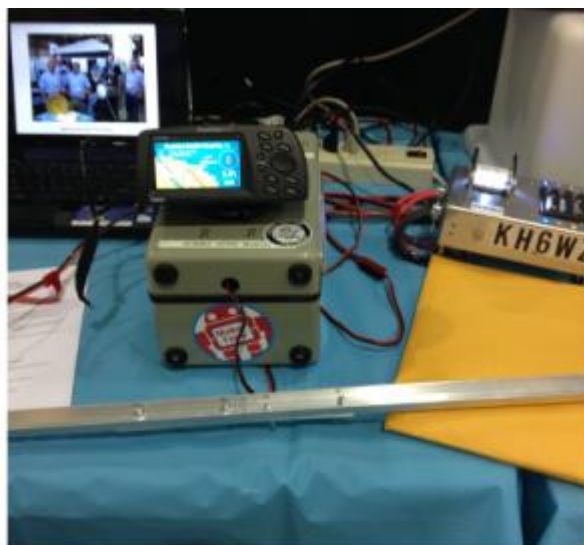


Dennis Kidder W6DQ,
Inyokern CA

Pictures of the 2015 Maker Faire by Lisa Gibbons, KF6QNG



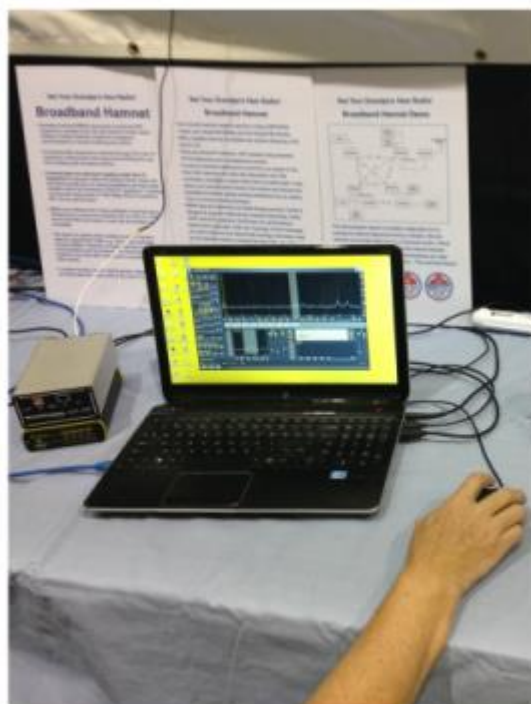
(L to R) Wayne, KH6WZ, Brian, W6BY, and Dennis, W6DQ, doing booth duty



Wayne's, KH6WZ, portable APRS node



Brian's, W6BY, 10 GHz radio



W6DQ's SDR demos with VoIP node on BBHN network

Update on the OVRO Trip in June

Hi Microwavers, We are going to have another OVRO trip on June 19-20. We will have astronomy on Friday night and a tour of the 40 m dish as well as science stuff on Saturday day. Pizza for dinner and night time astronomy. We will also have solar observing at Ha. For more info contact Doug K6JEY at drzarkof56@yahoo.com. Check out the OVRO website as well.

<https://www.ovro.caltech.edu/>



Last Month's Tech Talk:



Brian Thorson on tuning up your dish

Gary Heston's ATV Mobile Studio

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.) Enter the chat room by clicking on the white space on the right of the website described below.

Just as a reminder, this is how you watch SBMS meetings from home:

http://www.batc.tv/ch_live.php?ch=2&id=139

Better yet memorize the following

Keywords: BATC TV

and use Google

The TV part is easy to remember. Think of the BATC as batch without the h. It's a British website (that's the B) Once you are there, and logged in, on the right choose "Repeaters" and then on the left, you have to pick a stream. The stream to choose is: **W6ATN**.

Memorize W6ATN as ATN in California. W6ATN is the club call sign for six 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 which is provided by: Roland Hoffman, KC6JPG



ATV Checkins For the May Meeting

KJ6DQR

WB6NOA

KB6LXT Mission Viejo - chatroom. 8 guests plus K0AWU, K4QF, KE6BXT, KE6PGT, N9RIN, K6KH, VE4MA, W6QIW, WA6EJO, WA8RJS.

Gary: will see Gordy at Dayton next week.

Gordo WB6NOA Costa Mesa (Comments by way of Gary Heston's ATV at the meeting.) Looking forward to Fairview park tune-up in July and Dayton later.

Needs, Wants and For Sale (Updated 28 March)

- **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@mediacombb.net

His address is: 247 Rebel Road Ridgecrest CA 93555

- TVRO dishes 10 ft, 6 ft, and 5 ft free
- 6 ft and 4 ft 19 inch racks free
- Leader LBO514A 15 MHz Dual trace oscilloscope \$75
- HP 5381A 80 MHz counter \$10
- 8 watt 5 GHz TWT's with power supplies \$50 each
- copper wire enamel coated #14 many feet coils \$10 each (coils are like a foot in diameter and maybe a dozen turns or so...30 or 40 ft long wire)
- **For Sale from Doug Millar (drzarkof56@yahoo.com):**
 - a Rohde and Schwarz 309 10-18GHz Signal Generator in perfect shape. It is digitally synthesized and has a pull out instruction card. It has internal modulation and will also sweep. Will accept \$900.
 - I also have an HP432 power meter, cable and head (478) in working order for \$100



Member Ads

Sixty North Electronics

Kits Made by member KL7UW

Let Ed Cole assemble your Down East Microwave kit. For kits in stock, he can deliver an assembled unit to your custom design preferences within 30-days of a paid order. **His prices are the same as you pay DEMI for an assembled transverter, but much quicker delivery time. And comes with 90-day written warrantee on labor (guaranteed to work)!**

Shipping for a transverter is typically that of medium-size flat-rate Priority Mail anywhere in the USA.

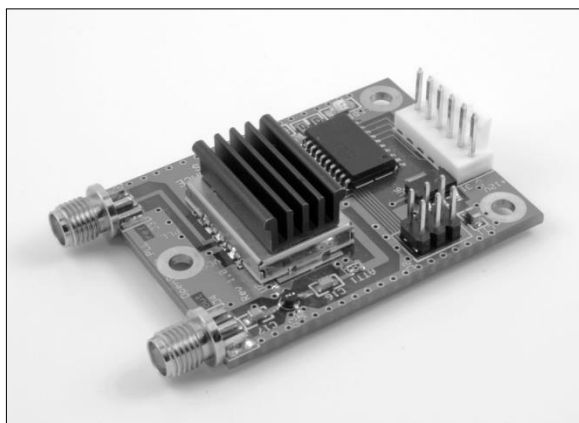
For examples of his work click on... <http://www.kl7uw.com/kits.htm>
Contact him at kl7uw@acsalaska.net



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If you are a member you can have a picture ad here yourself.
For the time being this service is free.
eMail editor at: 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). At least one meeting a year are joint meetings.*** 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 at the American Legion Hall, Corona. For carpooling from North Orange County call Walter Clark @ 714 882-9647

The Reflector (SBMS 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> (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.)

The SBMS Website and Newsletter

The SBMS Reflector is ephemeral. There's no record kept. The Newsletter has a slightly longer life. It is sent to members and past issues are recorded in the website. It's URL is: <http://www.ham-radio.com/sbms/> You don't have to memorize that or write it down, just enter SBMS into any internet search engine.

Newsletter: Walter Clark: walterClark@roadrunner.com

Website: Rein Smit: rein0zn@ix.netcom.com

The newsletter is created about the middle of the month and broadcast as a link inside an eMail letter to the members. This is mailed to you on the weekend prior to each meeting. SBMS Newsletter and website material can be copied as long as SBMS is identified as source.

Official Address

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

Contact San Bernardino Microwave Society (SBMS)

President Chris Shoaff, N9RIN

2911 Calle Heraldo San Clemente CA 92673 phone: 949-370-6249

email: cshoaff@yahoo.com

Vice President: Brian Thorson AF6NA

7467 Country Fair Dr Corona, CA 92880 phone: 909-226-2015

email: brianaf6na@gmail.com

Recording Secretary Courtney Duncan N5BF

4402 Rockmere Way

La Canada, CA 91011 phone: 818.957.8455

email: courtney.duncan.n5bf@gmail.com

Corresponding Sec Jeff Fort, KN6VR

10245 White Road Phelan CA 92371 phone: 909-994-2232

email: jnfort@Verizon.net

Treasurer Dick Bremer, WB6DNX

1664 Holly St. Brea CA 92821-5948 phone: 714-529-2800

email: rabremer@sbcglobal.net

Newsletter Editor Walter Clark

824 Valley View Fullerton CA 92835 phone: 714-882-9647

email: walterclark@roadrunner.com

ARRL Interface Frank Kelly, WB6CWN

PO Box 1246, Thousand Oaks, CA 91358 phone: 805 558-6199 <mailto:wb6cwn@gmail.com>

W6IFE License Trustee Ed Munn, W6OYJ (call sign for club beacons)

6255 Radcliffe Dr. San Diego, CA 92122 phone: 858-453-4563

email: remunn@earthlink.net

Lab manager Dave Glawson, WA6CGR

1644 N. Wilmington Blvd Wilmington, CA 90744 310-977-0916

email: wa6cgr@ham-radio.com

SBMS Website Editor Rein Smit W6SZ

8333 Pumalo Alta Loma, CA 91701

email: rein0zn@ix.netcom.com

Webmaster Dave Glawson, WA6CGR

1644 N. Wilmington Blvd Wilmington, CA 90744 310-977-0916

email: wa6cgr@ham-radio.com