



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

before the Meeting Sizzler's (again... oh shoot)

Tech Talk for the Meeting of March 1st . . .

Standby; we're working on it.

As always, the best seats are at the meeting in Corona, CA. But SBMS has an online audience, as well.

Activities of the February SBMS Meeting

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

Jason Sogolow W6iEE Presiding

Guests, or been gone a while

None

Old Business / New Business

Recording Secretary Courtney Duncan N5BF read the compiled list of approved but *still pending* motions over the last year:

- Nov '17 - KC6JPG - Microphone Upgrade (also discussed in October and July)
- Nov '17 - WA6JBD - Pink Slip for WA6EXV Trailer donation (also discussed in August, July, and May)
- Nov '17 - W6DL / WA6CGR / N6WL - SBMS Badges (also discussed in September, August, July, April, January, and back to November 2015 following SBMS hosted MUD in San Diego)
- July '17 - WA6JBD - 2 GHz beacon progress
- July '17 - KK6MXP - Capability to record and archive meetings when ATV is not set up.
- Mar '17 - AF6/NA - Make SBMS meetings into youTubes.
- May '17 - WA6JBD - Early notebook of WA6EXV containing original SBMS Constitution to be put on SBMS website.
- May '17 - WB6CWN - Has a book with SBMS meeting notes from the 1980s from then recording secretary EA6ECD. Plans to pass to current recording secretary.
- Mar '17 - W6DL - LO Project

In addition there was a motion at the January 2018 meeting to approach the American Legion about internet access in this American Legion Hall.

Brian Thorson AF6NA acknowledged Robert Carter for donating a device that can be used to archive meetings.

What Our Members Are Working On (Activity Reports)

Courtney N5BF La Canada - Passed around a picture of the the ISARA (CubeSat) 26 GHz reflect array now being tested in orbit taken from the satellite itself with a fisheye lens. This is thought to be the first reflect-array in space. Reported on EME contest results from 2017. Placed 45th in his category with 18 QSOs in the DUBUS event in April and 8th with 49 QSOs in the ARRL event in October - November. (This was reported in writing last month when I was absent.) The overall average EME QSO rate over the last year and a half is about one per hour as compared to typical 60-90 per hour in popular high frequency contests. Doug K6JEY commented that he had once run a HF-like pileup off the moon when operating from the 40 meter dish in Owens Valley.

Pat N6RMJ Lake Los Angeles - Is still working with his tower mounted 10 GHz system having taken it down and put it back up several times. Lazarus has died and been repaired again. Next it will go back up as a four foot dish at 40 feet instead of a smaller dish at 75 feet. Pat has been working daily with Frank WB6CWN in Irvine, checking propagation as Frank rebuilds his system. Currently Frank operates with 10 watts from his balcony and is working on a 100 watt TWT (traveling wave tube). Pat reported on the recently published results of the 2017 ARRL 10 GHz and Up contest. Several west coast stations were at the top of the listings including first place in both 10 GHz and 10 GHz and Up categories. Best DX was Barry VE4MA. Log submissions were down this year due to the August Eclipse.

Barry VE4MA/K7 Arizona - It has been a quiet winter this year. Arrived earlier than usual in Arizona in order to attend Microwave Update in late October. Operating a little on 2.3 GHz and 5.8 GHz, working stations in spite of a spurious signal in his DownEast Microwave converter. He has a 175 watt TWT amplifier that runs from 40 milliwatt drive but when nobody is on the band he returns to 1296 EME where he worked N5BF among others. Would like to get on 10 GHz EME from Arizona as there are no others in state on that band. On return to Winnipeg later this year plans to get back on 24 GHz and do JT modes on 47 GHz. All of his second operators for the 10 GHz contest in August were out for the eclipse and a big rainstorm on the Saturday morning in September also impacted his participation, but he was able to get on from Arizona and make several schedules and other QSOs.

Kerry N6IZW La Mesa - Has been developing a new power supply system for the Amateur Radio Station on the International Space Station (ARISS) and will show slides on it later in the program. The first unit is going to the ISS later this year. He gave a talk to us on this subject; see below.

Ed W6OYJ San Diego - Microwave activity is attending the local San Diego group meeting and this SBMS meeting tonight.

Greg K6QPV La Mesa - Is working on his EME equipment with encouragement from Kerry and Barry. Ran 100 watts from home last night and checked into the SBMS home-to-home activity.

Mel WA6JBD Rancho Cucamonga - Has been working on outside steerable antennas for 1296, 2304, 5760 MHz and 10 GHz as time is available. Is burning in parts for a 10.368.320 GHz beacon.

Jeff KN6VR Phelan - No microwave activity.

Doug K6JEY Long Beach - has Bill N6MN's incomplete 79 GHz rig available for sale. **Helen KI6LQV** joined us, this evening and she has been helping with 10 GHz moon measurements in the middle of the night while he works on the 10 GHz EME system (featured in tonight's Tech Talk). Working on a 300 watt 1296 amplifier and is getting ready to test it.

Jim KK6MXP Ontario - Participated in the home-to-home activity last night. Has been reading about local oscillators in QEX and has been working on building 10 GHz equipment designed by Tom K5TRA. See <http://k5rmg.com/10-ghz-power-amplifier-tom-apel-k5tra/>. This is the first time Jim has soldered on a printed circuit board.

Dave W6DL Moreno Valley - Needs to produce some circuit boards and wonder if anyone here has experience with open source software that imports Gerber files. (Answer: Eagle). Is producing SBMS badges here tonight and taking requests for additional badges or special styling.

Paul AE6TR Crestline - Has started scavenging parts for a 10 GHz system. Thanks to Brian AF6NA for coming out to a recent SATERN meeting to give his presentation on the "Exciting World of 10 GHz."

Rein W6SZ Alta Loma - Participated with Brian AF6NA, Michele W5NYV, and others to demonstrate 10 GHz amateur radio and related equipment at a recent IEEE meeting in Fullerton. Also attended the SBMS construction workshop last Saturday to begin work on his 5 GHz and 10 GHz boards and had a very successful 10 GHz home-to-home activity last night.

Walter Clark - Fullerton - Big interest now is hiking the 28 miles of trails in Fullerton and documenting them on a website that tries to get senior citizens out doors. Enjoys writing the monthly newsletter for SBMS.

Dick WB6DNX Brea - Attended the SBMS construction workshop last Saturday and started work on his 10 GHz board. The filters and some other parts are now in place. Also tested out some 15 GHz oscillators from E-Bay.

John NS6X Camarillo (reporting from online) - Attended the SBMS construction workshop last weekend and worked on his 10 GHz board.

ATV Checkins: Just one: W6ORG, P4 Thomas Ohara, Arcadia

Events of Interest to the Microwave Ham Community

April 5	SBMS Meeting
May 3	SBMS Meeting
May 5 – 6	SBMS 2 GHz & Up Contest
May 5 (8am – 2pm)	CSVHF Spring Microwave Sprint (902 MHz & up)
June 7	SBMS Meeting
June 9 – 10	ARRL VHF (& Up) Contest – get on the microwave bands
June 23 – 24	ARRL Field Day – do microwave demo for your local club
July 5	SBMS Meeting
August 2	SBMS Meeting
August 4 – 5	ARRL 222 MHz & Up Contest – Theme is: distance
August 18 – 19	ARRL 10 GHz & Up Contest – 1 st weekend
September 6	SBMS Meeting
September 8	ARRL VHF (& Up) Contest – get on the microwave bands!
September 15	ARRL 10 GHz & Up Contest – 2 nd weekend
September	ARRL EME Contest – 2 GHz & Up
October 4	SBMS Meeting
October 12 – 13	Microwave Update 2018 – Fairborn, OH Holiday Inn
October ? - ?	ARRL EME Contest – 1.3 GHz & Down – 1 st weekend
November 1	SBMS Meeting
November ? - ?	ARRL EME Contest – 1.3 GHz & Down – 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.

Microwave Beacons for Southern California

Los Angeles

San Antonio Heights 2304.320 MHz W6IFE/B 27dBm

Transmitting grid for Johnstone PK

DM14ed -117 39 06.0 34 09 14.0 6436'

Frazier Mtn. 10368.310MHz N6CA/B 1.3W

DM04ms -118.96948 34.7751 8027'

Santiago Peak 10368.330MHz AF6HP 2W

DM13fr -117.53401 33.71098 5681'

Palos Verdes 10368.300MHz N6CA/B 1.6W Out of Service

DM03ts -118.37642 33.76761 1200'

Phoenix

White Tanks 10368.375MHz W7ATN/B 2W

1296.270MHz W7ATN/B 10W

DM33rn -112.56000 33.56861 3992'

San Diego

Mt. San Miguel 10368.360MHz K6QPV/B 1W

5760.300MHz K6QPV/B 2W

3456.300MHz K6QPV/B 10W

1296.300MHz K6QPV/B 12W

DM12mq -116.93516 32.69793 2500'

All beacons are horizontally polarized.

To update this list:

- contact Mel Swanberg or if you don't have his email,
- use the Reflector. Mel or the Newsletter Editor will see it there.

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.**

The Wednesday before the meeting: 10,368.100 MHz, CW or SSB.
WA6JDB, N6RMJ and W6SZ will be looking/listening for your signals.

We'll be listening on 10368.100 starting at 21:00 PDT. 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 standalone mode so it doesn't bother anyone. Mel - WA6JB



Pat Coker's Prodelin with 9 watts;
no-longer on his tower but now with
added elevation control.

"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

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.



The ATN network linking is all done using FM microwave links on 2.4 GHz and 5 GHz bands. All ATN repeaters in Arizona, California and Nevada now have DVB-T (Digital Video Broadcast-Terrestrial) on 434 MHz input. Analog on 434 still works as well as the FM standard on 2,441.5 MHz. The DVB-T is the European standard for over the air TV. The T part, "terrestrial" is a format that is better with multipath. The only difference (which the US based) ATN has done to that standard is use 2 MHz B/W to fit within the 433-435 space between the weak signal and satellite sub bands.

- Gary 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.

When Roland Hoffman is substituting for Gary Heston, 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).

February Meeting Tech Talk:

Dr. Doug Millar, K6JEY, talked about "Sidewalk EME" all over the world and his own latest project.

The biggest problem mechanically is pointing at and tracking the moon electrically. He used a Meade LX series 12" telescope mount because it had the load carrying ability and excellent tracking.

John N6JW Riverside - Commented from online that it was nice to see astronomy and ham radio combined like this.

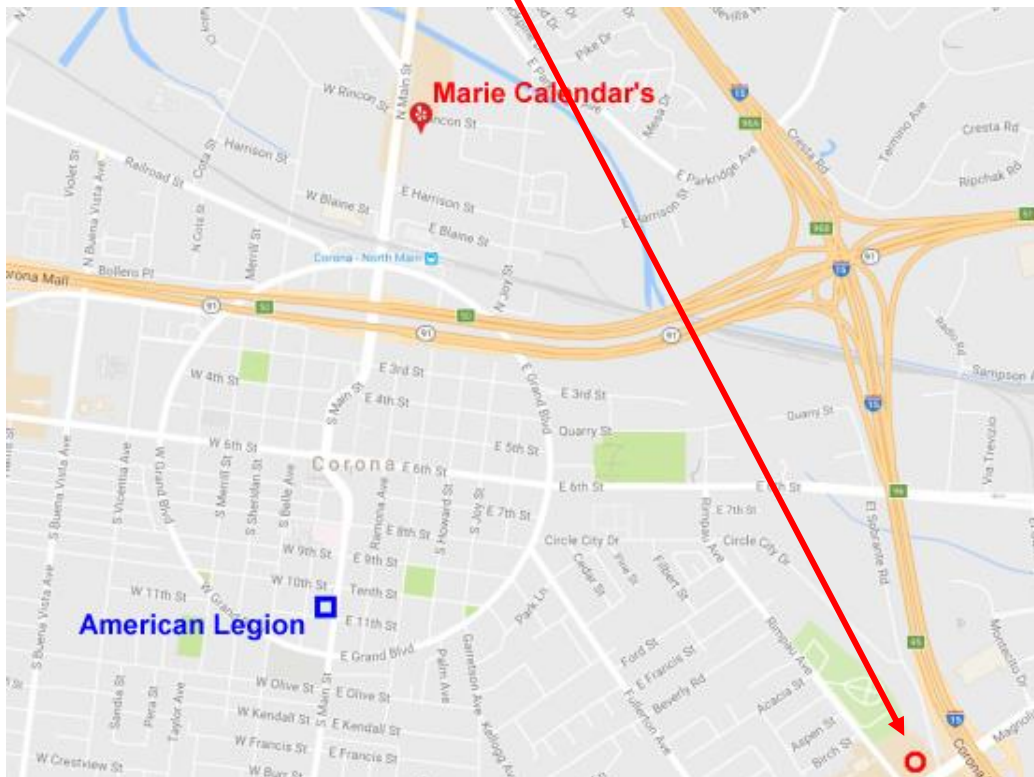
Kerry Banke N6IZW La Mesa - Showed a few slides describing his work on the power supply for the ARISS (Amateur Radio on the International Space Station). This device converts space station supply voltages (120 VDC and 28 VDC) to voltages needed by ARISS amateur radio equipment and for charging digital pads for the astronauts. He will produce about ten units, one of which will be installed on the ISS later this year.



Dinner before the upcoming meeting **Sizzler:**

“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. Magnolia exit then two right turns. (I’m Sooo tired of that place. ed)

For some reason, guys don’t like beautiful waitresses and fine dining. Marie Calendar’s is out.

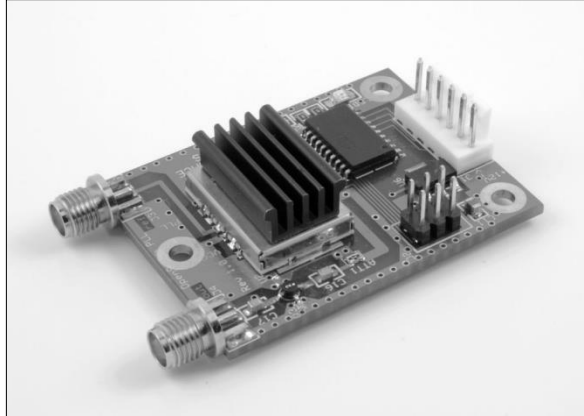


Needs, Wants and For Sale

Introducing the **OpenSynth** line of frequency synthesizer kits. Available in standard frequencies of 2556, 2952, 2160, 1152, 3312, 3006 MHz, also available from 400 MHz to 3500 MHz.

- ⤴ Low phase noise, Buffered output
- ⤴ Ultra low noise voltage regulators
- ⤴ Open Source code and design, made to be modified
- ⤴ 2" x 1.5", 12V @ 140 mA typical

Available at <http://reactancelabs.com>



If you are a member you can have a picture ad here yourself.
For the time being this service is free.
eMail the editor at: WalterClark at roadrunner.com

About SBMS

The San Bernardino Microwave Society is a technical amateur radio club affiliated with the ARRL having a membership of over 90 amateurs. The focus of the club is microwave activities in the Southern California. ***Our sister club is San Diego Microwave Group (SDMG).***

Official Address

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

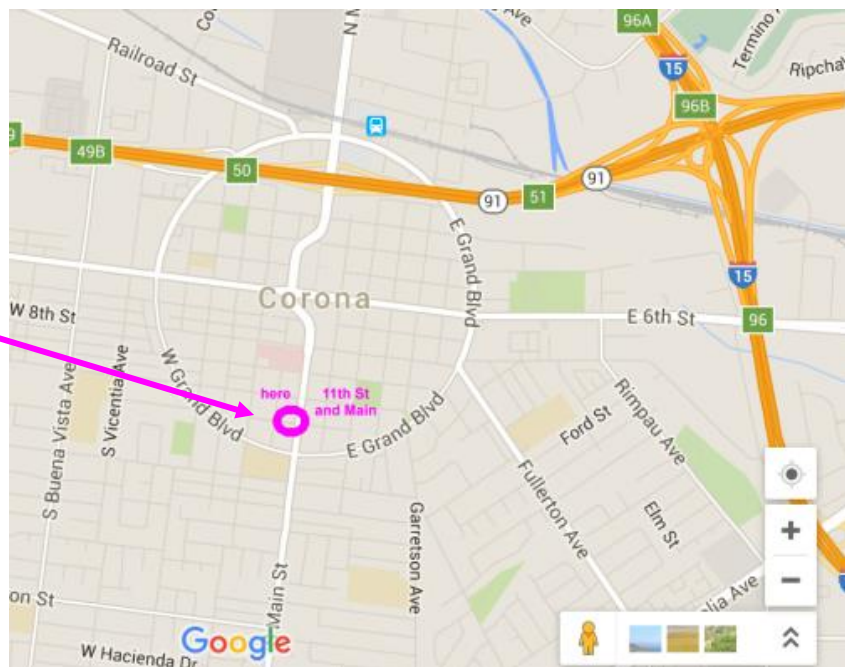
SBMS dues are \$15 per year, which includes a badge and that's about it. The dues are more in the way of a donation to pay for outreach things such as video portals, a bank account, and rent for the building. When to pay is not a matter of remembering. The Corresponding Secretary will contact you by email and will then hound you like your own personal PBS telethon. Dues can be handed to the treasurer at the meeting, or mailed to the address of the treasurer listed in the banner below.

**Meetings are first
Thursday of the
month, 7:00 PM**

**Google Map:
Keywords: American
Legion Hall, Corona**

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

If you can't make it:
watch online through Gary Heston's mobile video facility W6KVC by way of
the internet out of England: <http://atn-tv.org/live>



Services Sponsored by SBMS

The Reflector (Group Email)

The most active method of information exchange is our group email called the SBMS Reflector. You don't need to be an SBMS member to participate. To subscribe fill out the form at the website: <http://lists.altadena.net/mailman/listinfo/sbms> After that, Send your email message to: sbms at-symbol ham-radio.com. (If you are getting email on the SBMS Reflector now, and you want to write your own message, pull up a recently received message, click on "Reply to List." Don't forget to change the subject line and delete all previous text as appropriate.)

Responsible person for this: Dave Glawson WA6CGR wa6cgr at-symbol ham-radio.com

Website: Rein Smit W6SZ: rein0zn at-symbol ix.netcom.com

The URL is: <http://www.ham-radio.com/sbms/> But you don't have to memorize that or write it down, just enter SBMS into any internet search engine.

Newsletter: Walter Clark: walterClark@symbol.roadrunner.com

The newsletter is distributed by way of the SBMS Website: www.ham-radio.com/sbms. The purpose of the SBMS Newsletter is to keep hams everywhere in the world informed on current activities of the "active" members of the San Bernardino Microwave Society. Active Members include those who:

- come to the meetings and share their progress
- use ATV to report in and describe their projects
- send by email words and pictures of progress to the above

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
- 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>

Contact San Bernardino Microwave Society (SBMS)

President: Jason Sogolow WB6IEE

w6iee.73(at-symbol)gmail(dot)com

Past President Rein Smit W6SZ

8333 Pumalo Alta Loma, CA 91701

email: rein0zn at-symbol ix.netcom.com

Vice President: Brian Thorson AF6NA

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

email: brianaf6na at-symbol gmail.com

Recording Secretary Courtney Duncan N5BF

4402 Rockmere Way

La Canada, CA 91011 phone: 818.957.8455

email: courtney.duncan.n5bf at-symbol gmail.com

Corresponding Sec Jeff Fort, KN6VR

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

email: jnfort at-symbol Verizon.net

Treasurer Dick Bremer, WB6DNX

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

email: rabremer at-symbol sbcglobal.net

Newsletter Editor Walter Clark

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

email: walterclark at-symbol roadrunner.com

ARRL Interface Frank Kelly, WB6CWN

PO Box 1246, Thousand Oaks, CA 91358 phone: 805 558-6199

mailto:wb6cwn at-symbol gmail

W6IFE License Trustee is Dave Laag W6DL (call sign for club beacons)

David E. Laag, P.E, W6DL 11614 Indian Street, Moreno Valley, CA 92557

email: Dave Laag <dlaag at-symbol clubnet.net>

Lab manager Dave Glawson, WA6CGR

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

email: wa6cgr at-symbol ham-radio.com

SBMS Website Editor and Past President; Rein Smit W6SZ

8333 Pumalo Alta Loma, CA 91701

email: rein0zn at-symbol ix.netcom.com

Webmaster Dave Glawson, WA6CGR

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

email: wa6cgr at-symbol ham-radio.com