



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 June 2nd Meeting

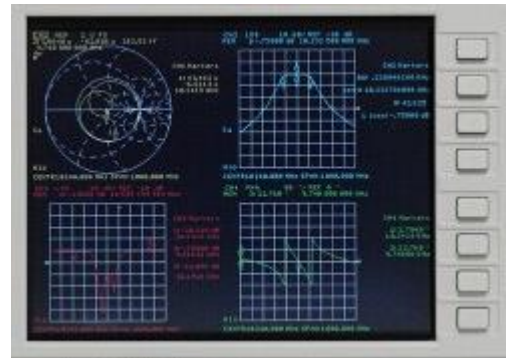
Our June meeting is Pizza Night . . .

Don't forget to RSVP to Brian Thorson brianaf6na@gmail.com

We will also have a Vector Network Analyzer (VNA) available to test microwave parts and assemblies up to 13.5 GHz.

- Mel, WA6JBD, has offered to will bring his HP 8719C to the meeting and perform tests on parts and assemblies our members bring to the meeting. This unit will give you accurate readings of frequency, power and will do swept measurements such as frequency response bandwidth.

- If you have an amplifier, transverter oscillator, or anything that needs DC power, bring its power supply.
- Examples of testable items include WR-90 and WR-75 waveguide sections, adapters, filters, circulators, attenuators, loads, cables and so on.
- Bring you USB thumb drive if you want the data. Mel can put it on a file and transfer it to your USB storage.



- This night is also “Swap Feast.”
 - Bring a microwave assembly, part or accessory to trade to sell (\$25.00 or less kind of thing).
 - Purpose here is a trade / swap event designed to help our members get on the air with 10 GHz or upgrade their current systems in the best traditions of Ham radio.
- If there’s time, Mel has a couple of VNA demonstrations for the Club.

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

If you can’t make it: watch online through Gary Heston’s mobile video facility W6KVC by way of the internet out of England:

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

Last Month’s 2.3 GHz and Up . . .



Greg Campbell during the contest operating the 24 GHz station at Panorama Heights location, DM13cs

7	Call used	W6IT	
8			
9	Scoring summary:		
10			
11	2200	+	7493
12	QSO Points From All Bands		Distance Points (km) From All Bands
13			
14			
15		Bext DX in km	Total Score by Band
16	2.3 GHz	222	2029
17	3.4 GHz	157	1807
18	5.7 GHz	157	1660
19	10 GHz	328	3696
20	24 GHz	56	501
21	47 GHz		
22	75 GHz	9693	
23	119 GHz	Final Score (sum)	
24	143 GHz		

For the complete spreadsheet see “2.3 GHz and Up” at the SBMS Website.

At the time this picture was taken, Greg was working N6NB who was operating rover from Manhattan Beach. Wayne and Greg connected 3 times on 24 GHz SSB as Wayne roved around Southern California. Our best DX on 24 GHz was 56km.

Greg Campbell's Report on May's 2.3 GHz and Up Contest

The turnout in this year's SBMS contest was lower compared to last year. However, thanks to both the roving stations and mountain top portable operations, activity was brisk. Rovers including N6NB, N6RMJ, K6ML provided numerous contacts as they moved, at least 10 miles, from location to location. Propagation did not seem as good as last year. Similar paths had weaker signals this year.

Three fixed contest stations were activated in DM13cs. Two at N6NB's Panorama Heights site and one at his QTH in Tustin. N1BKB operated the Tustin station and N6HC and W6IT worked from the two Panorama Heights stations.

Best DX from our group was 328km W6IT to K6ML (DM06cf) on 10 GHz. Overall an enjoyable weekend of microwave contesting.

73, Greg, W6IT

Thomas Ashcraft of SARA was the subject of a PBS Colores program featuring his interest in combining radio and photographic recording of natural radio sources.



<https://www.youtube.com/watch?v=iWk6eLcq1BY>

Here's his fascinating website: <http://www.heliotown.com/>

Activities at the May SBMS Meeting

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

Presiding: WA6IFE Trustee Dave LAAG W6DL

(12 in attendance... 19 last month)

- **Guests Or Members Not Seen In a Long Time**
 - none

Internet Check-ins

Seven people reported watching online including KF6PGT.

The meeting is on internet this evening via MESH (per KC6JPG and W6KVC). ATV is not being transmitted from this location tonight.

New Business

- Dave W6DL (presiding president) wants to streamline the meeting by dispensing with the oral reports and passing the printed versions around, as was being done tonight. He is trying that out with this meeting while acting as presiding president. Also wants to streamline the Activity Reports to people who have something to report. Mel WA6JBD supported running the meetings this way in order to save time and reduce attrition in the online audience. Mel moved that henceforth the business part of the meeting - secretary and treasure's report - would be passed around on paper, not read. The motion was seconded and approved.
- Because participants don't like driving so far in heavy traffic monthly, Dave W6DL suggested establishing quarterly "super meetings." Dick WB6DNX suggested starting earlier, perhaps 6:00 p.m. with pizza at the meeting site rather than going to a restaurant. (Dick now has an official key to the building and could help accommodate this.) Mel WA6JBD suggested bringing test equipment for multiple breakout sessions at these meetings as the SBMS Lab is also a long way for people to drive. It was suggested the super meetings would need to be planned and announced some months in advance. Normal monthly meetings would continue as well. This was discussion only, no action was taken.
- Brian Thorson AF6NA said that we had been asked to record the meetings. Roland KC6JPG said he was recording now. A 2 hour MP4 video will probably be 10-12 MB.

- Several people recommended putting a short (previously recorded 5 minute) Tech Talk at some time early in the meeting seen only by the internet audience.
- During the Tech Talk, Mel Swanberg WA6JBD moved that SBMS fund the recommended DB6NT 12024 Local Oscillator - William N6WL seconded. The motion passed.

Old Business

- Mel WA6JBD reported on the 2 GHz beacon project. Doug K6JEY mailed him the DB6NT transverter, ID-matic controller and other equipment. He had spoken last month about modifying a high band commercial radio to use as an exciter and doing phase noise measurements. This month Mel took out transverter transmit-receive relay and the input attenuator. The attenuator was not needed with the IF drive levels used and a PIN diode will be suitable for T/R switching as it will not mechanically wear out. Dave W6DL will find a 2 GHz antenna to go with the package.
- Dave W6DL reported that he had been delinquent in working on SBMS badges.
- Dave W6DL reported that the W6IFE Trustee change filing had bounced with FCC because the license hadn't been renewed first. They worked through the American Radio Relay League to successfully resolve the issue. Wayne N6NB checked online and found a renewal date of 4/23/16 and expiration date of 5/6/26 for W6IFE.
- Dick WB6DNX passed around SBMS Business Cards so everyone who wanted could have a couple.

Dinner Before the Upcoming Meeting . . .

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

But remember, tonight is Pizza Night. So don't eat much.

Upcoming Events

- June 2 SBMS Meeting
- June 11 – 12 ARRL June VHF Contest (includes all microwave bands; coordination now permitted)
- June 25 – 26 ARRL Field Day
- July 30: SBMS Microwave Tune-Up at Fairview Park, Costa Mesa
- August 4: SBMS Meeting
- August 20-21: ARRL 10 GHz & Up Contest 1st Weekend
- September 17-18: ditto 2nd Weekend

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:

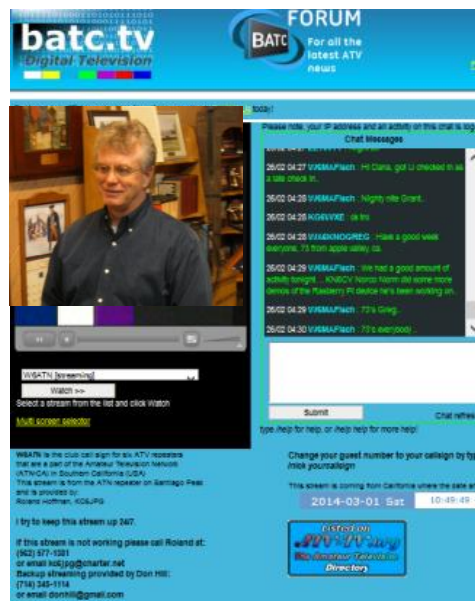
<http://atn-tv.org/live>

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).

What Our Members Are Working On

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

- **Larry K6HLH (Lake Los Angeles)** showed a 4' WR-28 wave-guide for 24 GHz. (See picture.)

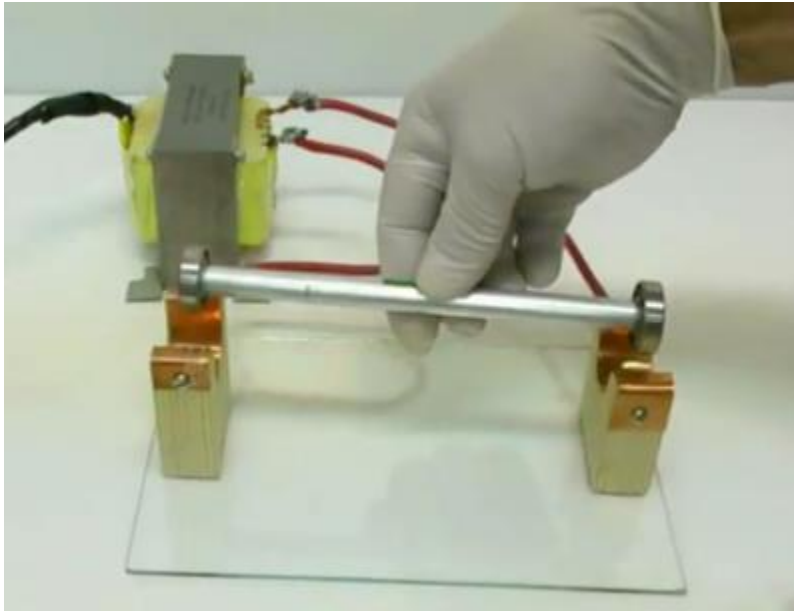


- **Dave Laag W6DL (Marino Valley)** after comparing standard LNBs (discussed last month) is now working on a 4' Terricom beat up dish. Somebody tried to dent tune it and crushed it to 30-40% degraded performance. Still had 7 dB sun noise.
- A fairly new 1.2 m. spun aluminum satellite dish had 8 dB sun noise. With this 4' dish he could clearly see the first side lobe (but not full depth of null) but could hardly see the lobe at all on the Terricom. This is a test that anyone with 10 GHz antenna and IF system can run and can be used to test for feed position and focus. The IF receiver can have no AGC action at all. Can use nearly anything as a detector (at audio output from the IF receiver). First aim at cold sky keeping away from the constellation of satellites. Get a cold sky reference level on detector. (There is not enough resolution for this measurement on an S-Meter.) Has used a HP 410-B. A modern DSP program hooked to the IF rig is another way to go. Turn the dish to the sun, measure that and compare. Even better approach: Use a step attenuator and adjust until you get the same level as the cold measurement then read the sun noise as the attenuation value.
- **Mel Swanberg WA6JBD (Upland)** has been playing around with his repaired network analyzer and is able to upload calibration kit profiles into it.
- **Wayne N6NB (Tustin)** reported that he and Larry K6HLH had attended the VHF Super Conference in Washington D.C., a merger of three conferences: Northeast Weak Signal Society, Mount Airy Packrats, and Southeast VHF Society sponsoring with 233 registered attendees. The Banquet Speaker was Dave Sumner K1ZZ, recently retired from his long tenure as Chief Executive Officer of the American Radio Relay League. The Best Talk was given by Dr. Joe Taylor K1JT about new developments in WJST. The SBMS 2 GHz and up Contest was last weekend. The only known SBMS members participating were Pat N6RMJ, Dave Glawson WA6CGR, and Wayne N6NB. There were several on the air from the Southwest Contest Club. They May have won the club competition.

Courtney Duncan (N5BF), Recording Secretary

Electronical Mystery Gizmo of the Month

<https://www.youtube.com/watch?v=BwABP9oARXU>



What makes it spin?

Hint:

It is terribly inefficient as a motor which is why you don't see them in use.

Here are some more examples:

<https://www.youtube.com/watch?v=tb2GUiV8Bf0>

<https://www.youtube.com/watch?v=f1xnQ9gWy1o>

If you can identify why, or would like to discuss this, use the SBMS Reflector by sending an e-mail letter to . . . SBMS at-symbol lists.altadena.net

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

Last Month's Tech Talk

"New and Old Recipes for 24 GHz An SBMS Club Project"

Brian Thorson - AF6NA.

This was a description of the test set up used to provide measurements at the annual pre-contest SBMS Tune Up.

As part of the presentation Brian suggested that SBMS buy the DB6NT local oscillator that would support the 24.192 GHz portion of his tuneup package design. This was put before the members in the form of a motion and voted to approve.

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

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@symbolmediacombb.net

His address is: 247 Rebel Road Ridgecrest CA 93555

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

Member Ads

Sixty North Electronics (as if May 2)

Ed Cole has begun a new line of 2m 80w Linear Amplifiers which can be seen on my website:

<http://www/kl7uw.com/kits.htm>

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

Ed can now do PayPal Sales of the popular "WA2ODO" preamps built by Pete Manfre. This covers 50-MHz thru 2.3 GHz. If not wanting to use PayPal contact "Pete Manfre" [pmanfre at-symbol gmail.com](mailto:pmanfre@symbolgmail.com), directly.

http://www.kl7uw.com/WA2ODO_PayPal_Sales.htm

He will also make many of the kits offered by Jim Klitzing - W6PQL:
[http://www.w6pql.com/parts i can provide.htm](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>

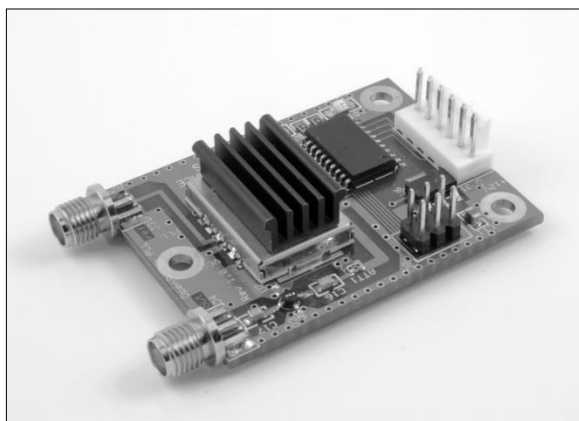
REACTANCE LABS



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

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

Available at <http://reactancelabs.com>



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

About SBMS

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

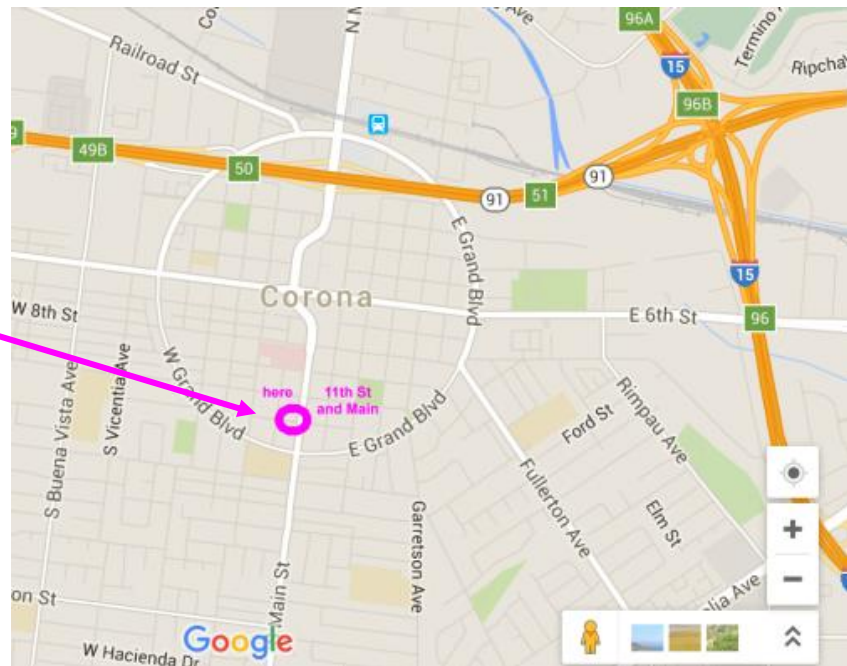
Official Address

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

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

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

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



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

Services Sponsored by SBMS

The Reflector (Group Email)

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

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

Website: Rein Smit W6SZ: [rein0zn at-symbol ix.netcom.com](mailto:rein0zn@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](mailto: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: walterclark at-symbol roadrunner.com

Contact San Bernardino Microwave Society (SBMS)

President Chris Shoaff, N9RIN

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

email: [cshoaff at-symbol yahoo.com](mailto:cshoaff@symbol.yahoo.com)

Vice President: Brian Thorson AF6NA

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

email: [brianaf6na at-symbol gmail.com](mailto:brianaf6na@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](mailto:courtney.duncan.n5bf@symbol.gmail.com)

Corresponding Sec Jeff Fort, KN6VR

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

email: [jnfort at-symbol Verizon.net](mailto:jnfort@symbol.verizon.net)

Treasurer Dick Bremer, WB6DNX

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

email: [rabremer at-symbol sbcglobal.net](mailto:rabremer@symbol.sbcglobal.net)

Newsletter Editor Walter Clark

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

email: [walterclark at-symbol roadrunner.com](mailto:walterclark@symbol.roadrunner.com)

ARRL Interface Frank Kelly, WB6CWN

PO Box 1246, Thousand Oaks, CA 91358 phone: 805 558-6199 [mailto:wb6cwn at-symbol gmail](mailto:wb6cwn@symbol.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 at-symbol earthlink.net](mailto:remunn@symbol.earthlink.net).

Lab manager Dave Glawson, WA6CGR

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

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

SBMS Website Editor Rein Smit W6SZ

8333 Pumalo Alta Loma, CA 91701

email: [rein0zn at-symbol ix.netcom.com](mailto:rein0zn@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](mailto:wa6cgr@symbol.ham-radio.com)

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