

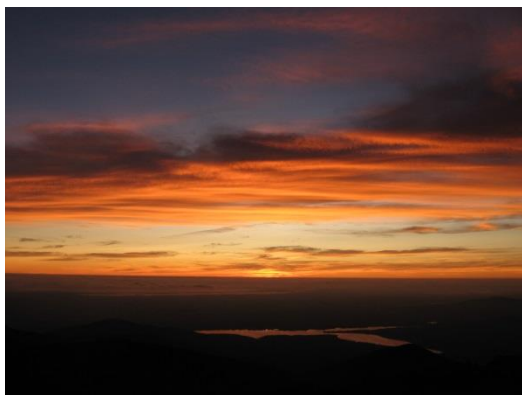
THE SAN BERNARDINO MICROWAVE SOCIETY (SBMS)

“Communicating at 1 GHz and Above – Since 1955”

September 2019 Updates, Activity and News



Gordon WB6NOA Maritime 10 GHz



August Sunset from Otay Mountain



Marty N6VI 10 GHz Mobile

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Well, the “Big Event” for SBMS is half over already. SBMS members were out for the August leg of the 10 GHz Contest on 17 and 18 August. Gordon West, WB6NOA, sometimes goes “maritime mobile” with his 10 GHz rig. If you hear him on Cactus saying he is maritime mobile, try to swing around and contact him for a QSO in a very rare grid square. Many of Gordon’s grids can only be reached by boat. Marty, N6VI is a reliable contact in the 10 GHz Contest, and he stays reliable by making field repairs to his radio. The 10 GHz contest takes us to many different remote locations and sometimes we see some pretty sights like the Otay Sunset.

Planning for the September CONTEST Weekend

The final weekend of this year’s 10 GHz and Up Contest is on Saturday and Sunday, September 21 and 22. As we are planning for the 2nd leg of the contest, a few thoughts come to mind. First, a very important consideration is to operate from well-established locations that experienced SBMS members have been operating from for several years. I know it’s fun to scout out new locations, but many bright microwave radio operators have gone before us for decades and found most of the excellent QTH sites.

Second, try to think about how you can provide the most points for the hardest-working Amateur Microwave operators; the Rovers. A close third is to plan for the most points you can score. Remember the SBMS 10 GHz Rule:

“Don’t say there’s not a path until you’ve tried it.”

The reason we all enjoy the 10 GHz band is because it keeps surprising us. Each year we go longer distances and complete contacts we thought were improbable or impossible. So try to go farther this year and rack up more distance points.

The SDBRG is waiting – for You!

Some 10 GHz operators think they cannot reach San Diego, but there are some Amateur Microwavers down there who make it very easy. In the photo, Jerry, K6DYD is waiting and looking out over the horizon to where his next 10 GHz contact will come from.



Jerry K6DYD and the “SDBRG” on Otay DM12no



Mt. San Miguel DM12mq in the Distance

And Jerry is one of the easiest contacts you will make. A charter member of the San Diego Big Radio Group, Jerry has 4 feet and 25 Watts ready to talk with you on Upper Sideband; no weak signal software required here. You can see Dan, K6NKC seated on the left and Dave, WB6TFC reclining on the right side. These three are the SDBRG. All of these guys are equipped with big 4-foot antennas, excellent radios, and they know how to use them. It seems clear from the photo we have to keep these guys busier than they are. They are operating from Otay (“Oh-tie”) Mountain less than 3 miles from the Mexican border. These may be three of your longest contacts in the contest. Plan to work San Diego in September!

Team Roving vs. Solo Roving in a Microwave Contest

By Marty Woll N6VI



The ARRL 10 GHz & Up Contest brings out several kinds of participation. There are fixed operations, both the capable home stations and those who camp out on a mountaintop all weekend. These fixed stations provide attractive targets for other operators and the ability to test propagation over the course of the weekend, finding that peak that, however fleetingly, supports a contact over a tough path. These operators exhibit patience, consistency and, for some, the willingness to forego creature comforts for several days.

Then there are the portable stations, which may be set up in one or two locations during the weekend and stay at each for as long as a day. They give us a chance to work various hilltops, overlooks, parks and beaches. Finally there are the rovers, who add significantly to the volume of contacts made because of the contest rules that permit working a station again for credit when one of the stations has moved ten miles or more from where a previous contact was made.

Roving is a bit analogous to speed dating. You get to a stop, set up, announce your availability, work as many stations as you can in a relatively short time (typically an hour or so), pack up and head for the next stop. Rovers must deal not just with changing propagation but with other variables, such as traffic, access issues, inconveniently placed signal-attenuating foliage and frequent recalculation of antenna headings. Set-up must often be done in heat or cold, darkness, gusting winds and even sandstorms.

One question to consider when planning a rove is whether to team up with one or more other rovers or to go it alone. Having done both, I would like to share a few observations as to the advantages and disadvantages of each choice.

Roving alone can be very efficient. You don't have to wait for someone else to finish a contact; you don't need consensus as to when or where to eat or spend the night, and your set-up time is limited only by the design of your station. However, if you're going solo, you had better do your homework in terms of planning your operating locations and your stops for food, fuel and lodging. No one will have taken care of that for you. Unless you've covered the planned route before, you may even need to do some advance scouting. The solo rover must also be able to juggle listening for and peaking on a signal, coordinating on the liaison channel, lining up the next contact, calculating new headings and dealing with the occasional curious passer-by, security guard or law enforcement officer.

Team roving trades the above-mentioned efficiencies for several other advantages. Planning activities can be shared, as can the individual knowledge of specific locations or resources. Once set up in a location, two or more operators noting unexpected frequency excursions or odd signal paths can more quickly resolve the uncertainties involved in finding the desired signal. If you forget to log the time of a contact, you can retrieve the information from another operator. The first station to complete a contact can turn his or her attention to lining up the next contact with heading and frequency information.

Chatting with your team members on simplex while driving between stops, if you can do so safely, can help pass the miles more pleasantly, help keep you awake as the hour gets late and alert you to traffic issues spotted ahead. You can even help create a traffic break for your teammate when there is a need to pass a slow-moving vehicle.

When something goes wrong with your vehicle, your station or yourself, having someone to help will be a big relief. During the first weekend of this year's contest, my coax was vandalized in the hotel parking lot overnight, taking me off the air. My roving partner, N6TEB, helped me diagnose the problem and carried a spare cable that enabled me to make a field repair and continue operating. Finally, there is at least some safety in numbers, a serious consideration when parked on remote hilltops or in the middle of nowhere.

I enjoy all types of operating, and the challenges of roving remain a big attraction. If I can't find a fellow operator or two to come with me, I will rove solo, perhaps with a less ambitious itinerary. If I can join up with some other like-minded souls, however, and spend time with good people who understand why we do what we do, I'll take that option.

Robert, KM6RXN got his radio up and running for the 10 GHz Contest this year.



KM6RXN 10 GHz Radio



Robert KM6RXN Aims High

He has worked out many design issues and finally got it ready. He was an easy contact from my home QTH in Grid DM13fw. Every radio is unique because each operator has a different design approach. Robert's transverter is an "open core" design, meaning it has no top cover. This can be very convenient when making field adjustments. The only risk is low; damage from bird overflys.

Dave, N6TEB and Marty, N6VI teamed up to form a roving microwave caravan in the California Central Valley.



N6TEB and N6VI Mobile X-Band Units



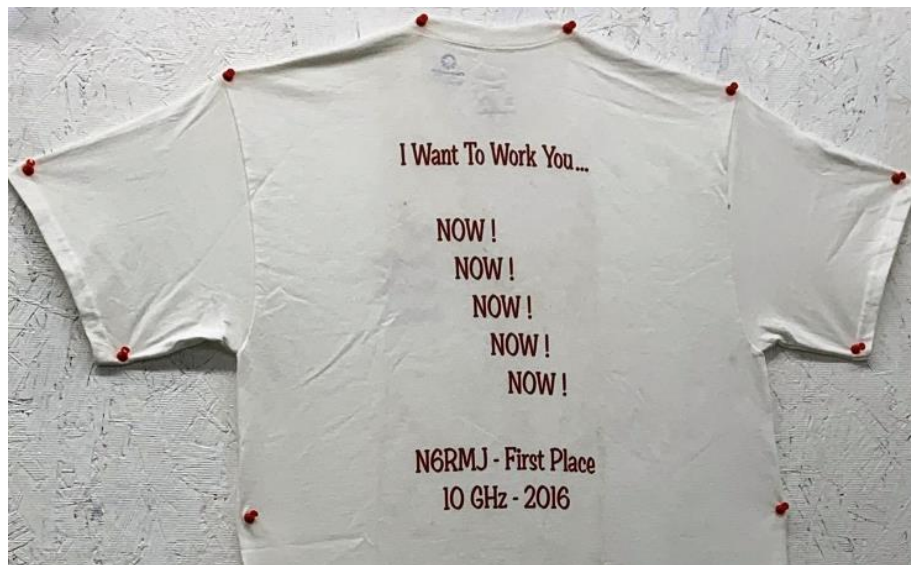
N6TEB Microwave Truck Bed

Seen in the photo is N6TEB's 10G offset and in the bed of the truck is his "Mailbox 24 GHz" System. Does it beacon "You've got mail" or does he just send straight carrier with it? On Sunday, they were joined by K6ML and KK6GXU from the 50 MHz and Up Group forming a 4-station roving group. Mike Lavelle, K6ML has been one of my favorite contacts in the past few years as he will take the time to "work" a long distance contact with me and we usually complete if we just wait out the microwave path fading (QSB) for a while. We have completed several high kilometer QSOs this way.

SBMS President, Jason, W6IEE operated in the High Desert at Grid DM14gi with his truck bed 10 GHz setup. While Jason has had a full plate with work and a new house over the past year or so, he still comes out and provides points for Amateur microwave testers. Thanks Jason!



I had a goal to work Pat, N6RMJ at his new home QTH in Bullhead City, Arizona during the August contest weekend. Unfortunately, I was not able to do so. I had early equipment issues this time out, and I had to drop back to my contingency equipment to finish the weekend. But we may get it in September. Remember; never wait to work Pat, because he wants to do it “Now, now, now, now, now!!”



Good Luck and happy contesting in September. Contest Log forms, rules and details can be downloaded at the following link. <http://www.arrl.org/10-ghz-up/>

August 2019 Technical Presentation

Contest Planning with Path Prediction Software

At the August 1st SBMS meeting, Mel Swanberg, WA6JBD, presented a number of RF and microwave propagation prediction maps from various microwave operating locations. These were established QTH spots our members have operated from in years past. The software tool produced several color maps that indicate RF signal strength. The maps made it easy to see the best locations to operate from.

Upcoming September 5th 2019 SBMS Meeting Technical Presentation

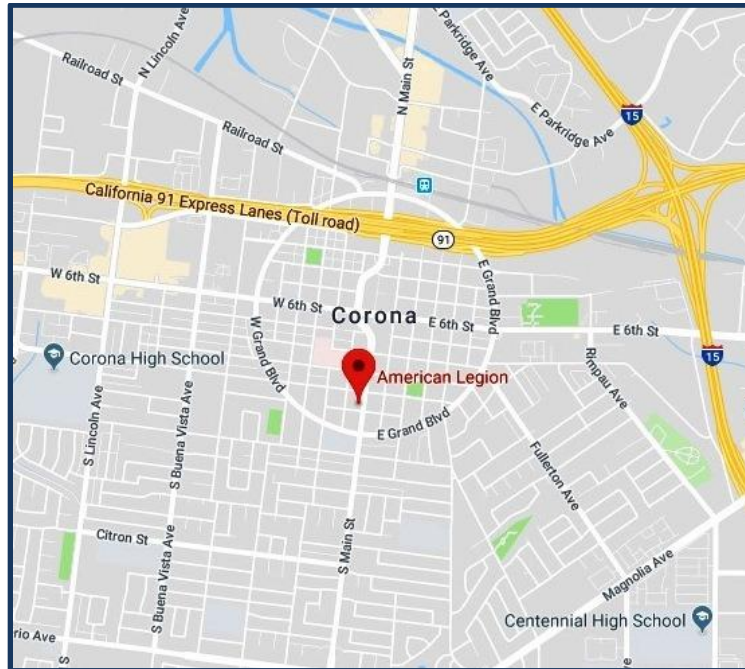
An Optical Frequency Single Sideband Modulator



At our next meeting, SBMS will host Dr. Clark C. Guest Ph.D., Professor Emeritus of University of California San Diego (UCSD). He was on the faculty of the Electrical and Computer Engineering Department at the University of California San Diego for 30 years. While Vice President for Research and Engineering at All Optical Networks, he led the development of an optical frequency single sideband modulator system. Dr. Guest has consulted for many prominent companies including TRW, Scientific Atlanta, Litel, Advanced Optical Controls, NKF, and Battelle. From 2005 through 2007, Dr. Guest participated on the Axion Racing DARPA Grand Challenge Team. He has provided conference tutorial sessions for the IEEE and the SPIE. Dr. Guest received his B.S. and M.E.E degrees in Electrical Engineering from Rice University in 1975 and 1976, respectively. His doctorate, also in Electrical Engineering, was awarded by the Georgia Institute of Technology in 1983. Bring your thinking caps, Dr. Guest will bring some new and stimulating material.

SBMS Monthly Meetings: First Thursday of the month – 7:00 PM

**American Legion Hall
1024 South Main St.
Corona, CA 92882**



Contact SBMS:

Feel free to get in touch with SBMS with questions about Amateur microwave systems, operation, design, club activities or meetings.

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Dave Glawson	WA6CGR	wa6cgr-at-ham-radio.com	
Rein Smit:	W6SZ	rein0zn-at-ix.netcom.com	

The SBMS E-Mail Reflector

For hardware requests, technical help, microwave theory questions, reach all SBMS members on the email reflector list at the following address:

sbms -at- ham-radio.com

Amateur Microwave Beacons in California:

Radio Beacons are dependable signals always, on the air that builders and makers can tune in to and receive. They give the users an indication that their receiver is working, whether it is on frequency, and a rough idea of receiver sensitivity. The following beacons may be useful in microwave contests and system development.

Northern California:

Name	Freq. MHz	Call	Altitude	Output	Grid Square	W Long.	N Lat.
Bear Mtn	24191.990	W6BY/B			DM06ir (IDs as DM07ic) CM88wj		
Mt Vaca	10368.325	W6ASL					
Mt. Leeson	10367.990	KF6KVG					
	24191.975						
	47087.990						
	79920.000						
Mt Allison	10369.000	K6MG					
	24192.010	N6NU					
	47088.000	KF6KVG					

Los Angeles Area:

Name	Freq. MHz	Call	Altitude	Output	Grid Square	W Long.	N Lat.
Mt Frazier	10368.310	N6CA/B			DM04ms		
Heaps Peak	2304.325	W6IFE/B	6435 ft.	27 dBm (0.5W)	DM14kf	- 117.797	34.152
Santiago Peak	10368.330	AF6HP	5681 ft	33 dBm (2W)	DM13fr	- 117.534	33.711
Palos Verdes	10368.300	N6CA/B			DM03ts		

San Diego Area:

Name	Freq. MHz	Call	Altitude	Output	Grid Square	W Long.	N Lat.
San Miguel	1296.297	K6QPV/B	2500 ft	40.8 dBm	DM12mq	- 116.935	32.569
San Miguel	3456.360	K6QPV/B	"	40 dBm	"	"	"
San Miguel	5760.000	K6QPV/B	"	33 dBm	"	"	"
San Miguel	10368.360	K6QPV/B	"	27 dBm	"	"	"

Phoenix / Arizona:

Name	Freq. MHz	Call	Altitude	Output	Grid Square	W Long.	N Lat.
White Tanks	1296.270	W7ATN/B	3992 ft.	40 dBm (10W)	DM33rn	-112.560	33.560
White Tanks	10368.375 370	W7ATN/B	"	33 dBm	"	"	"

Events of Interest to the Amateur Microwave Community in 2019:

(Thanks to Marty Woll, N6VI for content) If you have other events or INFORMATION, email it to brianaf6na-at-gmail.com or text it to 951-768-0960.

September 5	SBMS Meeting
September 14 – 16	ARRL September VHF Contest
September 21 – 22	ARRL 10 GHz & Up Contest – Part 2
September 29 – 30	ARRL EME Contest, 2.3 GHz & Up
October 3	SBMS Meeting
October 3 – 5	Microwave Update, Dallas, TX
October 5 – 6	Maker Faire, San Diego, CA
October 27 – 28	ARRL EME Contest, 50 to 1296 MHz. Part 1
November 7	SBMS Meeting
November 24 – 25	ARRL EME Contest, 50 to 1296 MHz. Part 2
December 5	SBMS Meeting