The 2004 ARRL 10 GHz and Up Contest Results

Ready, Aim, Inspire!

Rick Rosen, K1DS

The 10 GHz and Up cumulative weekend contests take careful preparation, require good directional tools, and have been the source of inspiration and challenge. Many hams are finding that this can be one of the most exciting and rewarding activities of the year. Although the majority of participants are portable and change locations several times over the four available contest days, they are well complemented by a substantial number of fixed stations trying to find the right communication paths for mutual success, whether on a direct line or refracting and reflecting off of natural and manmade objects, or moving storm cells.

With greater use of unusual looking antennas at these frequencies, often DSS satellite dishes cocked to seemingly awkward angles, passersby are more than curious. Hams are always amazed at the distances covered by the relatively low power signals and modest-sized reflectors at millimeter wavelengths.

All geographic areas are well represented, from coastal sea-level operators to groups spanning the Great Lakes, or, like N1SZ, NØIO and others who made it to the tops of the accessible 14,000 foot high peaks in the West. As increasingly more gear and parts become available for 24 and 47 GHz, the activity on those bands grows. The photos and adventures submitted to the ARRL Contest Soapbox are fascinating to see and read. With the Atlantic hurricane season in full swing, there were also unique and unpredictable propagation modes on the East Coast. The full contest reports can be viewed on the Web at **www.arrl.org/contests/soapbox**.

It doesn't take long for the 10 GHz op to learn that preparation is an essential for taking this type of gear out to a remote location. Stories of faulty connectors, broken power cables, windblown dishes, tents and tripods abound. Chip, N6CA, used three storage cells to anchor his tripod on a Nevada peak, while others made use of bricks, water jugs and other stabilizers for their dishes. Jim, N1SZ, was glad to have some electrical tape to repair a broken 12 V power lead, many miles from help in the Rockies. I was glad to have the spare parts box available from Paul, WA3GFZ, to replace a failed switch in the rotator control while on Camelback Mountain in the Poconos. Having an ac inverter and a small soldering iron made for quick field repairs, as the mileage and often unpaved roads can take a toll on the gear and its connectors.

Top 10 Scores

10 GHz Only

Call Sign	Score	Call Area
XE2/W6YLZ	100,358	DX
XE2/K6DYD	86,635	DX
KE6HPZ	68,008	6
W9FZ	61,616	8
NØKP	54,707	Ø
WØZQ	54,068	Ø
AA6IW	52,890	6
KCØIYT	52,763	Ø
WBØLJC	48,874	Ø
AD6IW	46,593	6

10 GHz and Up

W6QI	58,366	6
AD6FP	54,601	6
WØAUS	47,287	Ø
K6GZA	46,177	6
K6NKC	26,753	6
W6BY	26,744	6
WA8VPD	26,569	8
KB8VAO	23,968	6
W6OYJ	23,891	6
W1FKF	20,534	1

Top 10—Total Number of QSOs

Call	QSOs
10 GHz Only	
W9FZ	292
KE6HPZ	288
KCØIYT	256
AA6IW	243
NØKP	239
WØZQ	229
WBØLJC	223
AD6IW	214
KCØP	204
N9JIM	200
10 GHz and Up	
W6QI	247
AD6FP	229
WØAUS	226
NØUGY	162
K6GZA	144
KØRZ	140
NØIO	138
W6BY	136
K6NKC	123
WØGHZ	120

Are We There Yet?

Aiming is a specialty that must be developed by microwave ops. Making use of GPS devices, calculators and computers to plot and measure bearings is of great assistance to the mapping, protractor and compass rose methods. Whether you use a manual or mechanical method, precision to the 0.5° mark for both azimuth and elevation is more critical once you use 24 or 47 GHz. Spotting scopes have become part of the attachments to dishes, and bubble levels are routinely in use. The availability of dual and triple-band feeds may make aiming a bit easier in the future, and some of the designs and manufactured feeds have recently been made available.[1,2] Aiming also incorporates frequency accuracy, and several 10 GHz ops have adapted frequency reference-locked oscillators for better dial coordination. There has been a proliferation of 10 GHz beacons that facilitate az/el verification and provide convenient meeting frequencies (ie, 5 kHz below), if the beacon is mutually heard by communicators. Many QSOs are missed for lack of adequate frequency coordination.

Preparation, coupled with a bit of

[1]Notes appear on page 101.

"Elmering" of the 10 GHz newcomer, perhaps as a second op or with a loaner station, having "tune-up" sessions, and planning operating locations, routes, times and calling sequences all facilitate higher QSO numbers, and more fun for the participants. These activities, along with a weekly10 GHz net, have been the basis for the dramatic activity growth centering around Lake Superior, led by some of the seasoned and technically expert members of the Northern Lights Radio Society (**www.nlrs.org**). Without the aid of a repeater or translator, they hold their weekly net, with at least a dozen check-ins, aiming their dishes toward the high buildings in downtown Minneapolis. This type of group activity is popular on the West Coast with the San Bernardino Microwave Society (**www.ham-radio.com/sbms**), in Texas through the North Texas Microwave Society (**www.ntms.org**), and in New England the North East Weak Signal Group (**www.newsvhf.com**) holds a 10 GHz and Up minimal discernible signal test as part of their summer club picnic activities.

Top 10—Number of Different Stations Worked

10 GHz Only

Call	*Different Stations*
KE6HPZ	54
N6RMJ	54
XE2/W6YLZ	54
AD6IW	53
AF1T	52
N9JIM	52
N9RIN	51
N6CA	48
KC6UQH	47
XE2/K6DYD	47

10 GHz and Up

AD6FP	58
W6QI	56
K6NKC	55
W6BY	50
KB8VAO	49
W6OYJ	47
W1GHZ	45
W1FKF	44
KC6QHP	43
N1JEZ	43
WA6NIA	43

Operator Highlights

This year's 136 entries were on par with the numbers of past few years, and there continues to be an increase in the percentage of entries that include bands above 10 GHz. Ninety-four of the entries were 10 GHz only, and 42 or 31% were in the "and up" category. Mike, operating as XE2/W6YLZ, was this year's high scorer with over 100k, also capturing the honors for the longest distance 10 GHz contact of the contest at 1135 km. Although the score totals did not match the extraordinary numbers from last year's activities, a new contest record was set by Frank, W6QI, and Gary, AD6FP, who covered a 290 km path with their 47 GHz signals. They also had the best distance for a 24 GHz QSO at 295 km. Gerry, XE2/K6DYD, was second highest scorer with a total of 86.6k points, also taking advantage of the unique Baja and California geographies and coastal paths. Gerry had the second longest distance with a 914 km 10 GHz QSO. Glenn, KE6HPZ, was third overall, with a score of 68k, and was second in the QSO category with 288 QSOs from 54 different stations.

West Coast entries from 6-land led the call district numbers with 43 entries, not including the two ops who traveled to set up their stations in Mexico. The next largest number of entries from a call district was 26 from the Ø-landers, centered on Minnesota and Colorado. The Minnesota, Michigan and VE ops took advantage of the water paths on Lake Superior, while the Colorado folks made great use of the 14,000 foot peaks of the Rockies. The number of submitted logs probably understates the actual participation by 50%, as I checked my own log against the list of submissions, I found at least half of the stations worked did not submit their entries to the ARRL, despite some very substantial QSO numbers and distances in the event. Several ops also sent in scores with decimals, using programs that calculated distances to the tenth or even hundredth of a kilometer. These fractional distinctions did not change the standings, and perhaps we should encourage rounding to the nearest whole kilometer in contests for ease of logging and reporting.

September saw Paul, N6LL; Gary, AD6FP; Alex, WT6K, and Goran, AD6IW, all congregate on Mt Frazier in California.

Bruce, W9FZ, who claims to be "off the deep end with VHF/UHF/SHF weak signal activity," topped the QSO count list for the contest with 292 contacts from 34 unique stations. Glen, KCØIYT, was third in QSO count with 256 contacts from 25 unique stations. His "QSO ratio" (total number of contacts divided by unique calls worked) was 10.2, the mark of a well-organized group effort. Two other stations also showed great team activity: Jim, N1SZ, with a QSO ratio of 12.2 and Geary, NØGY, with a ratio of 10.8. Of all the entries, the average QSO ratio was 3.2.

Distance-wise, the West Coasters dominated the top distance spots with 26 6-landers making QSOs greater than 700 km. Larry, K1LPS, with a 750 km QSO on 10 GHz, and Dex, W4DEX, with a 710 km haul were the only easterners to have a QSO during the contest over 700 km. Dex has been working on 10 GHz rain scatter for a number of years working all over the East Coast on this band with readily available schedules. Chip, N6CA, has bragging rights for the greatest distance covered for the two weekends, claiming 1920 miles through the California, Nevada and Utah mountains and deserts, providing lots of points with those long haul QSOs from treeless peaks.

With lots of effort being put into the higher bands, this activity is showing growth in participants and achievement. Higher output power is being generated. Greater stability and improved frequency calibration techniques are available, and dish and feed design is being enhanced. Three logs included 10 GHz QSOs of over 1000 km, 9 logs showed QSOs of greater than 200 km on 24 GHz. On 47 GHz, there were 3 stations with QSOs greater than 200 km, and another 3 reporting QSOs of over 100 km. If you're not already involved, watch the various VHF Internet message boards[3] to see who is planning to be active for the events. Come, catch the excitement of this unique contest, next scheduled for the weekends of August 21-22 and September 17-18. For those already active and growing capabilities on these bands, take along a "newbie" and inspire them!

Notes

[1]P. Wade, W1GHZ, "Improved Dualband Feedhorn for 10 & 24 GHz," **www.w1ghz.cx**.

[2]G. Lauterbach, AD6FP, and L. Karlsson, AA6IW, "Dual-Band 10/24 GHz Feedhorns for Shallow Dishes," *Proceedings of Microwave Update 200*1, ARRL, 2001, pp 181-190.

[3]**lists.contesting.com/mailman/listinfo/vhfcontesting**.

Scores

Scores are listed by call areas. Within each call area, scores are listed in descending order. Score lines indictae call sign, score, QSOs, number of different call signs worked, and best DX in kilometers.

10 GHz Only

1

AF1T	26,866	100	52	452-I
W1MKY	22,185	89	44	387-I
K1TEO	21,341	77	45	516-I
NS1O	19,377	79	44	463-I
W1AUV	15,107	65	36	341-I
KB1VC	14,219	63	42	331-I
AA1YN	12,754	62	33	463-I
K1LPS	12,008	39	32	570-I
K1AE	8,707	36	27	331-I
N1RWM	8,276	35	26	331-I
KA1ZD (+K1ZZ)	8,136	38	26	463-I
W1VT	7,373	27	20	350-I
N1FOJ	4,350	22	17	246-I
K1MAP	929	5	5	152-I

2

W2KV	10,946	29	22	438-I
WA2IID	4,441	13	13	312-I
W2EV	929	10	5	119-I

3

WA3PTV	4,627	18	9	330-I
K2KIB	2,628	6	6	426-I

4

W4DEX	2,359	8	5	710-I

5

K5WO	2,715	27	9	453-I
NM5M	2,545	21	8	496-I
WA5TKU	1,889	17	8	118-I
W5UWB	1,880	6	4	341-I
WA5YWC	1,709	13	7	138-I
K9MK	310	2	2	63-I

6

KE6HPZ	68,008	288	54	913-I
AA6IW	52,890	243	45	882-I
AD6IW	46,593	214	53	673-I
N6RMJ	45,775	194	54	1028-I
N9JIM	41,933	200	52	609-I
N6CA	41,382	173	48	1049-I
WT6K	34,324	158	45	724-I
WA6QYR	32,188	125	46	871-I
KK6MK	28,307	123	31	374-I
W6DTA	27,803	65	35	807-I
N6LL	26,512	122	43	609-I
KG6EG	25,612	98	30	849-I
KD6W	24,443	111	21	392-I
N9RIN	24,069	130	51	752-I
N6DN	20,127	105	42	851-I
WB6JDH	19,781	98	45	744-I
KC6UQH	19,555	90	47	598-I
N6JV	17,241	90	36	465-I
K6RRA	16,954	82	40	808-I
N5XSA	16,665	82	25	434-I
AA6HA	15,824	71	44	551-I
KJ6HZ	13,867	63	33	808-I
W6QIW	13,862	46	30	874-I
W7CS	11,084	46	36	337-I
KH6WZ	10,289	72	36	478-I
WB6DNX	7,503	41	30	740-I
KN6VR	7,066	26	20	611-I
K6MGM	5,982	42	17	289-I
N6KJ	4,842	34	17	290-I
W6ASL	4,467	37	19	281-I
K6QG	3,988	26	15	270-I
WB6BKR	3,098	10	9	308-I
KB6CJZ	2,914	16	16	155-I

7

N7EPD	402	6	2	111-I

8

W9FZ	61,616	292	34	333-I
KCØP	43,675	204	31	336-I
NØHZO	39,895	188	31	336-I
WA2VOI	37,458	157	25	314-I
WBØVHF	30,838	135	20	313-I
AA9IL	23,410	94	24	319-I
KCØIJB	9,209	33	16	291-I
N8PUM	4,564	19	11	262-I

9

N8KWX	44,992	194	33	313-I

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NØKP	54,707	239	30	336-I
WØZQ	54,068	229	28	337-I
KCØIYT	52,763	256	25	333-I
WBØLJC	48,874	223	29	337-I
KØGCJ	41,397	166	23	333-I
NØUK	38,672	163	27	336-I
NØNAS	34,686	171	26	320-I
WØJT	32,001	196	22	332-I
KDØJI	29,268	113	21	324-I
KBØOZN	28,212	129	19	313-I
N1SZ	23,998	146	12	261-I
KØKFC	12,970	44	26	285-I
KØAWU (+VE3/K0AWU)	9,836	55	22	284-I
WBØWNV	9,824	87	10	244-I
KØSHF	5,495	36	19	303-I
WØPHD	4,939	36	8	287-I
KBØMRK	704	6	6	45-I
KAØCRO	704	6	6	45-I

VE

VE2JWH	4,443	18	14	382-I
VE3KRP	3,084	12	12	157-I
VE2PIJ	2,501	13	9	159-I
VE3FN (+VE3XK, VE3CVG)	1,113	4	4	343-I
VE3RKS	494	6	4	65-I

DX

XE2/W6YLZ	100,358	198	54	1135-I
XE2/K6DYD	86,635	118	47	914-I

10 GHz and Up

1

W1FKF	20,534	86	44	570-I	205-J
KA1OJ	20,436	101	36	380-I	223-J
N1JEZ	19,215	72	43	570-I	223-J
W1GHZ	18,812	86	45	393-I	153-J

2

W2DYY	4,801	49	21	379-I	175-J
K2DH	4,329	30	20	420-I	175-J
N2EZS	3,895	34	20	204-I	129-J
WO2P	3,648	27	18	343-I	149-J

3

WA3GFZ	8,151	32	26	490-I	1-J 1-P
K1DS	7,416	36	26	490-I	1-J 1-P
W3SZ	3,991	19	12	452-I	101-J

4

W4SW	5,649	38	12	442-I	86-J
W3HMS	5,520	25	11	418-I	77-J

5

W5LUA	8,325	40	17	515-I	24-J

6

W6QI	58,366	247	56	883-I	295-J
AD6FP	54,601	229	58	871-I	295-J
K6GZA	46,177	144	42	815-I	189-J
K6NKC	26,753	123	55	608-I	20-J
W6BY	26,744	136	50	882-I	231-J
KB8VAO	23,968	106	49	439-I	290-J
W6OYJ	23,891	88	47	623-I	40-J
WA6NIA	14,874	93	43	741-I	18-J
KC6QHP	13,374	67	43	741-I	18-J
W6IFE (K6JEY,op)	9,874	49	36	753-I	18-J

8

WA8VPD	26,569	113	28	314-I	46-J
WB8TGY	16,804	85	32	301-I	1-J
K2YAZ	6,225	40	23	306-I	6-J
WB9SPT	5,899	36	22	299-I	138-J
K3SIW	5,129	39	22	176-I	105-J
NN9X	3,755	20	18	175-I	1-J
NE8I	3,600	45	15	217-I	105-J

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WØAUS	47,287	226	31	336-I	39-J
NØUGY	20,033	162	15	259-I	194-J
NØIO	18,238	138	17	246-I	124-J
KØRZ	12,223	140	20	138-I	126-J
WØGHZ	10,586	120	27	242-I	39-J
KØFQA	9,910	88	27	263-I	39-J
W6HCC/Ø	7,723	51	15	244-I	244-J
KCØLEF	2,244	12	4	246-J	

VE

VE3NPB	3,954	29	16	179-I	46-J
VE3SMA	3,819	32	16	173-I	46-J