



ARRL September VHF Contest 2021 Full Results

By Ralph "Gator" Bowen, N5RZ (wb5aar@gmail.com)

Another September Contest in the Books!

The number of entrants in 2021 was down a bit from the COVID-19 fueled 2020 event. As is usually the case, conditions were so-so, save for a bit of 6-meter Es here and there and some good 2-meter tropo enhancement Saturday evening and Sunday Morning from the Midwest to the Southeast.

Activity Levels

The 740 logs submitted (plus 5 check logs) was down from the record 833 submissions from 2020. Most of the decreases were attributable to less entrants in the Single Operator High Power, Low Power, and 3-Band categories. Multioperator and Rover entries were also down slightly. Still, this is the second most logs ever for the September running. Thanks to all for your participation!

Total Logs Submitted by Year	
Year	Number of Logs
2021	745
2020	833
2019	691
2018	569
2017	473
2016	504
2015	516

Logs Submitted by Category		
Category	2020	2021
Single Operator, Low Power	300	272
Single Operator, High Power	197	186
Single Operator, 3-Band	174	143
Single Operator, FM Only	26	25
Single Operator, Portable	22	21
Limited Multioperator	21	16
Unlimited Multioperator	12	12
Classic Rover	34	23
Limited Rover	35	32
Unlimited Rover	10	10
Checklog	2	5
Total	833	745

Total QSOs generated this year were 55,975 this year compared to 69,075 in 2020. See chart below.

Total QSO's by Band 2017-2021					
Band	2021	2020	2019	2018	2017
50	22,557	31,587	20,426	13,649	10,305
144	17,338	22,230	15,914	13,893	11,455
222	4,681	4,245	4,404	4,582	3,738
432	6,752	7,483	6,255	6,653	5,447
902	1,333	971	1,234	805	962
1296	1,653	1,665	1,581	1,047	1,229
2304+	1,661	894	1,597	871	1,551
Total	55,975	69,075	51,411	41,500	34,687

The top scores, with only a few exceptions, were way down this year.

Band	Legacy %	Digital %	CW	FM	Phone	Digi	Total
	(CW,FM,PH)	(All Types)					
50	41.17%	58.83%	432	207	8647	13271	22557
144	73.01%	26.99%	525	835	11298	4680	17338
222	97.39%	2.61%	260	357	3942	122	4681
432	94.93%	5.07%	367	404	5639	342	6752
902	99.85%	0.15%	164	107	1060	2	1333
1.2G	98.43%	1.57%	190	61	1376	26	1653
2.3G	100.00%	0.00%	93	4	468	0	565
3.4G	100.00%	0.00%	40	3	294	0	337
5.7G	100.00%	0.00%	44	0	258	0	302
10G	100.00%	0.00%	26	0	284	0	310
24G	100.00%	0.00%			116		116
47G	100.00%	0.00%			1		1
123G	100.00%	0.00%			17		17
Light	46.15%	53.85%	3		3	7	13
Total	67.04%	32.96%	2144	1978	33403	18450	55975

It's interesting to see that most of the decrease in QSOs was due to a 41% decrease in digital QSOs, and a 31% decrease in FM QSOs. One caveat on the digital numbers, though...there are a number of logs where the obvious digital QSOs are marked as PH. For statistical purposes, please make sure your logging software marks the QSOs with the correct mode.

Some interesting statistics: 535 logs reported at least one QSO via digital modes. Of all logs submitted, 244 entrants reported 100% use of digital modes, including three of the rovers.

Random Observations

Yours truly was unable to participate this year due to antenna damage and other conflicts, so most of the commentary and analysis is based on data graciously provided by our able log checker, John Kalenowsky, K9JK. Thanks John!

Always great to have some DX on the VHF bands. Thanks to P41E (6M), CM2ESP (2M), HI8DL (2M), XE2YWH (6M), XE2YWB (6M) and 9Y59IND (9Y4D, op – 2M) for participating and sending in logs.

The VHF contests have definitely changed with the influx of digital activity. Things are still evolving and there are folks looking at possible changes to the contest. Should there be changes? Who knows?

Category Abbreviations

Single-Op HP/LP – SOHP/SOLP

Single-Op Portable – SOP

Single-Op 3 Bands Only – SO3B

Single-Op FM Only – SOFM

Multiop Limited/Unlimited – LM/UM

Rovers Classic/Limited/Unlimited – R/RL/RU

Band Nomenclature

In order to keep VHF+ contest tables and listings brief, the ARRL uses the following table of abbreviations and single-character designators to indicate band.

Band Name	Abbr	Des.	Band Name	Abbr	Des.
50 MHz	6M	A	10 GHz	10G	I
144 MHz	2M	B	24 GHz	24G	J
222 MHz	222	C	47 GHz	47G	K
432 MHz	432	D	75 GHz	75G	L
902 MHz	902	9	119 GHz	119G	M
1.2 GHz	1.2G	E	142 GHz	142G	N
2.3 GHz	2.3G	F	241 GHz	241G	O
3.4 GHz	3.4G	G	Light	Light	P
5.7 GHz	5.7G	H			

Single Operator Category Results

The Single Op Low Power category continues as the most popular category with 272 entries. Single Op High Power entries were slightly down to 186, up from 152, and Single Op 3 Band entries were down to 143.

Top Ten, Single Operator, Low Power

Call	Score	QSOs	Mults	Bands
AF1T	72,576	325	112	ABCD9EFGHIJMP
WB1GQR (W1SJ)	70,380	448	115	ABCD9EFG
WA3NUF	36,666	255	97	ABCD9EFG
ABØRX	29,770	213	130	ABCD
N3RG	26,602	190	94	ABCD9EFGHI
VE3DS	23,051	156	89	ABCD9FG
N2WK	18,970	152	70	ABCD9EFGHIJ
WA2VNV	18,936	209	72	ABCD9E
KAØPQW	18,070	200	65	ABCD
W4MAA	16,974	197	82	ABCD

Dale, AF1T, used his microwave advantage to take top spot in a close battle with Mitch, W1SJ, at WB1GQR. Of note is that Dale had no digital QSO's. Third and fourth places went to WA3NUF in FN20 and ABØRX in Missouri. 186 entrants in the SOLP category made 50 QSO's or less.

Top Ten, Single Operator, High Power

Call	Score	QSO's	Mults	Bands
K1TEO	317,082	786	258	ABCD9EFGH
K1RZ	150,150	498	175	ABCD9EFGHI
WØUC	91,200	375	160	ABCD9EFGHI
N2JMH	73,980	339	137	ABCD9EFGI
K1KG	64,232	315	124	ABCD9EFGHI
N4SVC (N2CEI)	63,917	296	161	ABCD9E
N4QWZ	48,320	246	160	ABCD9E
W3IP	43,792	279	119	ABCD9EFI
KE8FD	43,555	244	155	ABCDE
N2GHR	38,800	277	97	ABCD9EF

Jeff, K1TEO, again took the top spot this year in the Single Op High Power category. K1RZ repeated in second place. WØUC placed third from Wisconsin. N2JMH and K1KG placed 4th and 5th.

Top Ten, Single Operator, 3 Band

Call	Score	QSO's	Mults	Bands
K09A	35,650	288	115	ABD
N3AAA	35,014	280	122	ABD
WN3A	27,004	302	86	ABD
K04ECD	18,662	284	62	ABD
W5TRL	15,698	164	94	ABD
KY4G	11,607	156	73	ABD
W3FAY	8,448	177	48	ABD
N3DGE	7,392	154	44	ABD
K3TEF	6,292	146	44	ABD
VA3IKE	5,632	97	64	AB

Another close race in SO3B this year with KO9A placing first, only 636 points ahead of N3AAA, last year's winner, both setting new Division records.

In fact, the SO3B category has the most new Division record holders in 2021. #4 KO4ECD, #5 W5TRL, #6 KY4G, #10 VA3IKE along with KC7QY all own new Division records in SO3B. Congratulations to all!

Top Ten, Single Operator Portable

Call	Score	QSO's	Mults	Bands
W7JET	6,834	109	34	ABCD9E
W4R XR	4,352	87	34	ABCD9
WB2AMU	1,083	43	19	ABCD
N8XA	1,023	38	31	AB
AF7GL	896	52	14	ABD
K7IW	840	53	12	ABCD
AA6XA	689	39	13	ABCD
NØJK	504	24	21	AB
WK9U	462	25	21	A
KK4BZ	444	35	12	ABD

There were 21 entries in the Single Operator Portable category this year. Brian, W7JET, operated from DM43hv in Arizona to place first. He was able to get 64 QSO's from the active Arizona rovers to help his score. Second place went to W4R XR from EM65nj in Tennessee. Last year's winner WB2AMU placed 3rd.



Here is the WB2AMU 222 3-element beam on a stick pointed towards FN42 in Massachusetts from FN30, Central Long Island, NY. Not much feedline loss and good for 8 QSO's and 3 grids, including K1KG in FN42. [Ken Neubeck, WB2AMU, photo]

Top Ten, Single Operator, FM Only

Call	Score	QSO's	Mults	Bands
KW6RON	1,232	63	14	BCD
VE3RWJ	970	70	10	BCD
KK6OTK	621	47	47	BD
AF6GM	550	41	10	ABD
N7DB	512	51	8	BCD
KD7RBX	294	31	6	BCD
AC7GL	252	29	7	ABCD
KG5UNK	222	28	6	ABCD
K6KQV	204	24	6	ABD
KM6WCC	132	15	6	BCD

Ron, KW6RON, led a field of 25 entries in the SOFM category using 144, 222 and 440. VE3RWJ placed second, setting a new Canadian Division record. #8 KG5UNK set a new West Gulf Division record, as did KØPHP for the Midwest Division.

Multioperator Categories

Limited Multioperator category entries were down to 16 from 21 last year, and Unlimited category entries stayed the same at twelve.

Top Ten, Limited Multioperator

Call	Score	QSO's	Mults	Bands
AA4ZZ	331,582	886	317	ABCD
K8GP	132,489	596	189	ABCD
K5QE	118,110	410	254	ABCD
N2NT	99,078	567	147	ABCD
N8GA	93,492	385	212	ABCD
W2LV	63,882	454	126	ABCD
NV9L	51,840	307	160	ABCD
W3SO	39,960	366	111	AB
W9VW	38,056	251	142	ABCD
WA3EKL	10,320	221	48	AB

AA4ZZ put together a full effort this year to place first in the Limited Multi Op category, making the largest score in the contest. They took advantage of a great 2 meter opening Saturday evening and Sunday morning to boost the score. K8GP didn't go roving this year and placed second. K5QE placed third, moving up a spot and setting a new West Gulf Division record. Fourth place N2NT missed out on the enhancement experienced down south and were followed closely by the N8GA crew in Ohio.

Top Ten, Unlimited Multioperator

Call	Score	QSOs	Mults	Bands
W2SZ	240,462	709	219	ABCD9EFGH
W4IY	118,755	549	195	ABCD9E
W4NH	52,896	307	152	ABCD
W2EA	51,574	394	107	ABCD9EFGHP
KD2LGX	46,683	296	117	ABCD9E
KE1LI	17,526	225	69	ABCD9
W3RFC	14,820	222	65	ABCD9
N6RO	2,788	72	34	ABD
W2RME	1,484	39	28	ABCD9
N4DXY	1,456	51	28	ABCD

W2SZ placed #1 in the Unlimited Multi Operator category. The W4IY team moved up to second place this year, and W4NH placed 3rd utilizing only 4 bands. N6RO placed #8 from California. The propagation gods were not kind to the Left Coast this year.

The Rovers

The Classic Rover category dropped from 34 entries in 2020 to 23 in 2021. The Limited Rover category went from 35 to 32, and Unlimited Rover category stayed at 10.

Top Ten, Classic Rover

Call	Score	QSO's	Mults	Grids
K9PW/R	74,694	279	118	8
VE3OIL/R	70,920	295	120	8
KF2MR/R	64,680	300	98	4
N7GP/R	57,572	358	74	4
N7DSX/R	34,320	328	52	5
W9FZ/R	29,425	324	55	7
KA9VVQ/R	28,674	323	54	7
AG4V/R	20,436	194	78	7
AB4CR/R	16,124	132	58	4
KN6PRZ/R	15,120	75	72	6

In the Classic Rover category, Pete, K9PW/R, activated 8 grids to take first place, narrowly outscoring VE3OIL/R who moved up from third place last year.

KF2MR/R placed third and N7GP/R placed fourth from Arizona.

Top Ten, Limited Rover

Call	Score	QSO's	Mults	Grids
NV4B/R	47,864	317	124	4
NF2RS/R	37,128	317	91	8
KG9OV/R	16,808	164	88	8
N6GP/R	15,390	250	45	4
KX6A/R	11,235	246	35	5
AE5P/R	9,990	222	30	6
KC7OY/R	6,533	117	47	8
KBØYHT/R	4,805	105	31	6
KA5D/R	4,384	108	32	4
KA2YRA/R	3,264	98	32	4



The Woodbridge Wireless ARC trailer and antennas. Second Place, Unlimited Multi Op station W4IY at Flagpole Knob, VA. (Photo courtesy the W4IY Crew)



#1 Limited Rover NV4B/R operating at his stop on Colbert Heights Mountain in EM64dq, near Tuscumbia, AL (Photo courtesy Christopher Arthur, NV4B)

Chris, NV4B, operating from four grids in MS/TN/AL took the top position in the Limited Rover category, setting a new Delta Division record. Last year's winner, NF2RS/R took second place..

Various other rovers from all parts of the county rounded out the top 10. #3 KG9OV/R (Central), #4 N6GP/R (Southwestern), and #8 KBØYHT/R (Midwest), are also new Division Record holders.

Top Ten, Unlimited Rover

<i>Call</i>	<i>Score</i>	<i>QSO's</i>	<i>Mults</i>	<i>Grids</i>
K9JK/R	41,097	173	103	8
NØLD/R	33,654	290	79	9
KG6CIH/R	31,200	231	65	6
K6MI/R	30,749	163	97	6
KCØP/R	10,185	167	35	4
NØHZO/R	7,106	120	34	4
VE3SMA/R	5,772	101	37	4
KØBBC/R	1,940	59	20	4
KC7NOC/R	171	13	9	2
K1DS/R	24	7	4	1



Unlimited Rover NØLD/R in EM17 facing east working AA4ZZ in EM96 on 2M. (Photo courtesy Harvey Jones, WØHGJ)

In the Unlimited Rover category, John, K9JK, activated 8 grids and set a new Central Division record to place first. Randy, NØLD/R (with Harvey, WØHGJ), activated 9 grids this year to again place second, setting a new West Gulf Division record.

Affiliated Club Competition

Thirty-three clubs entered the Affiliated Club Competition. As has been the case in recent years, no club had the requisite number of entries for the Unlimited category.

Thirty clubs had team efforts in the Medium category. The Mt. Airy VHF Radio Club ("Pack Rats") took the top position. The Carolina DX Association placed second and the Potomac Valley Radio Club placed third.

There were three clubs competing in the Local category. With three entries, the Chippewa Valley VHF Contesters from Wisconsin placed first.

Affiliated Club Competition

<i>Club</i>	<i>Score</i>	<i>Entries</i>
Unlimited		
No Entries		
Medium		
Mt Airy VHF Radio Club	833,481	28
Carolina DX Association	333,233	5
Potomac Valley Radio Club	295,707	36
Northern Lights Radio Society	264,597	21
Rochester (NY) VHF Group	258,384	15

Society of Midwest Contesters	216,426	17
DFW Contest Group	128,911	5
North East Weak Signal Group	118,761	9
Arizona VHF Society	104,694	8
Fourlanders Contest Team	93,739	8
Pacific Northwest VHF Society	75,709	25
Arizona Outlaws Contest Club	65,618	13
South Jersey Radio Assn	56,096	3
Southern California Contest Club	50,317	12
Niagara Frontier Radiosport	40,124	5
Yankee Clipper Contest Club	37,692	7
Northern California Contest Club	34,339	12
The Ontario VHF Association	33,742	4
Frankford Radio Club	30,826	6
Florida Weak Signal Society	17,808	3
Mad River Radio Club	11,535	4
Badger Contesters	10,851	4
New Mexico VHF Society	6,291	6
Texas DX Society	5,003	5
Swamp Fox Contest Group	4,982	3
Florida Contest Group	3,394	5
Tennessee Contest Group	3,052	5
Wayne County Amateur Radio Club	2,980	5
Willamette Valley DX Club	1,710	3
Southeast Contest Club	1,053	4
Local		
Chippewa Valley VHF Contesters	11,188	3
CTRI Contest Group	4,944	3
Silver Comet Amateur Radio Society	1,276	3

Soapbox!

Don't miss the compilation of comments - see
<https://contests.arrl.org/sepvhf/soaps/2021/>
for some great stories and photos.

Summary

Thanks to all who participated in this running of the September VHF Contest. We are always very appreciative of every log received no matter what the size.

Onto the stories now -- the best part!

Hope to see everyone in the 2022 running!

73, Gator, N5RZ

NV4B/R (#1 USA Limited Rover)

by Christopher Arthur, NV4B

My best VHF contest effort to date didn't begin that way. I began putting the rover together about an hour before the contest and got on the road about 20 minutes after the start, not getting set up at my first stop, Colbert Heights Mountain in EM64dq, until 1930Z. However, I was rewarded with near-constant activity until I tore down around 2325Z. One notable QSO from this stop was K4RCA in FM06 on 2 meters -- a real treat in the absence of significant enhancement.

I then went in motion for the remainder of Saturday night. A hilltop stop in EM55 netted several QSOs with Texas (EM10, EM13, EL09, EL29) on my mobile antennas as the bands opened in that direction. I then returned home to EM64 via EM65, adding a handful of additional QSOs.

Sunday morning from Woodall Mountain (EM54vs) brought a great tropo opening running northeast to southwest, putting grids as far away as EM00, EM17, EN82, FN00, and FN01 in the log on 2 meters. Notable about this opening was the amount of tropo present on 6 meters. Grids such as EN80, EM98, and EM99 were easily workable on 6 meters from EM54 Sunday morning. The opening began to wane quite a bit by 1600Z, and I left Woodall Mountain around 1730Z for my first 4-band full stop 'n' shoot operation from EM65.

I set up in EM65dd off the Natchez Trace Parkway in Collinwood, TN around 1915Z. Despite being a fairly high spot (as partially evidenced by the presence of a nearby fire tower), foliage presented a challenge on the higher bands. Worsening band conditions didn't help matters, but I still managed 55 QSOs across 4 bands from my stop in EM65. I then operated in motion back to EM64 and set up with three bands in the final hour in EM64, tacking on four final Qs and an additional mult.

Thanks to all for the Qs, especially the superb operations of N4SVC (N2CEI), AA4ZZ, W4NH (W4ZST et al.), and AG4V/R. The activity level in this contest was phenomenal. Shoutouts also to my other fellow rovers worked in the contest: K4NO/R, KG9OV/R, and NØLD/R. Please keep going out of your way to call rovers when you see or hear them!

Station:

6m: ICOM IC-7100 (100W), 1/4-wave whip (in motion), MFJ 1762 3-element Yagi (stopped)

2m: ICOM IC-9700 (100W), Efactor dual-band loop (in motion), Diamond A144S10 10-element Yagi (stopped)

222: Yaesu FT-736R (25W), M² HO loop (in motion), Directive Systems K1FO 10-element "rover Yagi"

432: ICOM IC-9700 (75W), Efactor dual-band loop (in motion), Directive Systems K1FO 15-element "rover Yagi"

QSOs by Grid:

	6m	2m	222	432
EM54	47	58	11	14
EM55	8	20	4	4
EM64	35	33	10	13
EM65	23	23	9	7

	113	134	34	38

KØPHP – Single Op FM from EM38 in MO – New Midwest Division Record *by Chris Swisher, KØPHP*

I wasn't able to operate Saturday due to Patriot Day activities. Maybe I could find some activity on FM, but only 2 meters was cooperating, with the longest at 221 miles. I kept calling on 6 and 440, but I couldn't raise anyone at all. Thanks for the contest and those who answered me, I appreciate the Q's. Cushcraft A147-22 at 70 feet with 1 5/8" Heliac and a Kenwood TM-281A. 6 element UHF Yagi at 65 feet with same 1 5/8" Heliac fed with IC-880. TS-480HX with folded monopole at 20 feet for 6 meters. N1MM+ logging.



KØPHP Antennas [Chris Swisher, KØPHP, photo, on his QRZ.com page]

N2NT #4 Limited Multi Operator from NJ

by John Golomb, N2NC, reprinted with permission from October 2021 Pack Rats Cheese Bits Newsletter

We spent way too much time in the run up to the contest "improving" a 6-meter beam fixed to the NE. The 6-meter beams are plagued with solar panel noise when pointed NE. The fixed antenna is an old M2 6M7 suspended between trees, far from the shack. When we replaced the 350' coax run with 7/8 hardline, high SWR above 50.300 was causing the amp to trip out on FT8. Rain made the SWR issue worse. I won't go through the unsuccessful iterations to lower SWR. In the end, I dusted off my old copy of K6STI's *Yagi Optimizer* (YO) and came up with a better design that simply shortened most of the element lengths. SWR is now very low up to 50.700 and YO says pattern and gain is better.

We usually use *Win-Test* for VHF contests. It has some features that would be missed if we changed logging software. *Win-Test's* lack of integration with WSJT-X requires a manual process to check for FT8/MSK dupes and log WSJT-X contacts. To help with that, I wrote a Perl script that uses the WSJT-X UDP interface to change colors of messages directly inside WSJT-X. It was great to have dupes grayed out and new grids highlighted. By late Sunday, most of the decodes were grayed out. New QSOs and new grids were easy to spot. An AutoHotkey script was used to automatically log WSJT-X contacts to Win-Test.

All equipment worked without issues. A pleasant change from June. I took some time out Saturday night for a quick drive home to operate (2 of 4 hours) in the NCJ CW Sprint. I think I'll try and do this every September. We were hoping the nice weather would bring some enhancement, but conditions were flat for the most part. Fun to read about the big tropo in other parts of the country. Thank you for the QSOs.

W3SO – #8 Limited Multi Operator from FNØØ in PA *by W3IDT, 3830scores.com post*

Folks, let's face reality: VHF contesting is NOT what it has been for the past couple of decades. The trend - increasing use of FT8, decreasing use of SSB and CW - during the past couple of years is now complete. Unless there is a very large 6m E skip opening, as may occur in June, VHF contests are now FT8 contests. Good or bad? That is a subjective judgment.

For the first time that I can remember in my 65 or so years of being mostly a contester, I quit a major contest from boredom and maybe an element of protest: After a 40

minute stretch Sunday afternoon with NO contacts on either 6 or 2 meters, I quit. The W3SO trustee, Kevin, W3XOX, - a somewhat newer contester - was willing to go some more, but an offer of an early Thai dinner persuaded him, too.

He did have a very nice (Tropo?) opening to the TX/LA area on 2-meter FT8 early that morning from our mountaintop in WPA - while 6 meters was getting repeated "watchdog runaway timeouts" on FT8. The first hour on Saturday produced about half of our combined total of 100 SSB contacts. From then on we adhered to our "(~10 minutes) SSB at the top of the even UTC hour, (~5 minutes) CW the top of the odd UTC hour" protocol. That netted 1 lonely CW contact, and two or three SSB contacts at best each hour (and, of course, "wasted" many minutes of FT8 time).

PARTICIPATION - the number of stations on the air - may be up by some measure, but ACTIVITY - the number of contacts possible - is down considerably. By Sunday afternoon, there were a dozen or two (already worked) stations calling CQ on each FT8 cycle, and no responses to our own CQs. Perhaps activity would improve some during the evening, but my patience was gone.

About 18 months ago I circulated a discussion / proposal document which argued for multiple contacts per band - one each on SSB, on CW, and on any form of Digital on 6 and 2 meters (and one SSB/CW and one Digital above 2 meters) was my preferred structure. Among the various "pro" and "con" emails, either direct or on various reflectors, the "let's wait and see what happens" attitude seemed persuasive. Well, we've waited and seen: VHF contests are now effectively FT8 contests.

It is now no longer "good or bad?" It is now a reality. Unless changes are made - and made very quickly - to encourage SSB and CW contacts, VHF Contesting will be exclusively FT8 contests from now on. (End personal rant)

Robert F. Teitel, W3IDT Score submitted for the Wopsononock Mountaintop Operators, W3SO.

WO4O Single Operator High Power EL98, NFL

By Ric Morton, WO4O, 3830scores.com post

Given 2 CW QSOs and no SSB QSOs, FT8 was the main mode for QSOs in this 6 meter effort.

For FT8 QSOs, having neglected to set up MM Logger Plus to work with WSJT-X and my TS-590SG, I initially operated without *NIMM Logger Plus*. My lack of experience with WSJT-X required me to scan the Contest

Log prior to making an FT8 QSO in an effort to avoid dupes. When that became too much of a hassle and my fun diminished, I stopped operating altogether and tapped available online resources to learn how to configure the two software applications with my hardware. My thanks to those of you who post tutorials online! Finally when all were working together, avoiding dupes was a breeze and the operating experience was improved. TNX fer the average 10 Qs per hour! hihi 73 de Ric WO4O

KF2MR/R #3 Classic Rover, from Atlantic Division FN12 FN13 FN02 FN03

By Jarred Jackson, KF2MR, 3830scores.com post

I enjoyed the contest. It was a somewhat relaxed effort and a nice change of pace. It was great to have so many fixed stations in our region I could rely on for Q's in each grid. Off the top of my head I remember N2JMH, N2WK, K2TER, N2MKT, VE3DS, VE3ZV, and KD2LGX as contacted on at least 5+ bands from multiple grids. In contrast, I only had two notable rovers in the log. NF2RS/R provided some nice FN23 grids I didn't get anywhere else and VE3OIL/R provided a HUGE boost for me with over 30 Q's and 22 unique multipliers.

I have reflected on the FT-x debate over the past couple of years. I avoided the mode this time and have in many other contests because I somehow believed what I was reading that this was causing problems for contesting. Somehow it is blamed for all the problems we have in this hobby, even those problems that existed before FT-x was in use! I tried it in the past and thought it worked well.

However most of my contacts came from some form of outside assistance with many of them only possible through text messaging. These "private" messages led to hundreds of contacts that boosted my score substantially. This has been the case for several years. After reflection, I now believe that the FT-x argument I have been reading is garbage. I called CQ nearly a hundred times on SSB and perhaps a dozen times on CW.

None of my calls on 6 meters were answered, and perhaps only 6 calls were answered on 2 meters. I estimate that only 22% of my contacts came from calling CQ or responding to a CQ and this includes the related contacts as we worked up the bands. This is not a new phenomenon, pretty much the way it is for many rovers.

While I resorted to making contacts with phone calls and text messages, others were using FT-x to call CQ "publicly" on a known frequency and receiving real and

unscheduled responses. It is impossible for me to say that my text assisted CW contacts are any better or more legitimate than a random FT-x contact initiated by calling CQ.

It's also impossible for me to say that making contacts in a parking lot with another rover on 10 bands is somehow better or more legitimate than responding to a CQ on FT-x. My new opinion is that FT-x solves more problems than it creates and it will likely be a more common mode in my rover in the future.

KG6BXW/R Limited Rover from California

By Kyle Hamilton, KG6BXW

Not a lot of folks out there for this contest which was a shame, I had just set up beams for 6 meters, 2 meters, and 440 and was excited to really try them out. Hopefully next time there will be more people! Made a contact with a SOTA operator and an operator on Mt. Diablo on 2 meters FM which was exciting.



KG6BXW/R, Limited Rover setting up in CM96 with a 6-meter Moxon and Elk LPDA [Kyle Hamilton, KG6BXW, photo]

K5ND, SOLP – Rover Stays at Home

By Jim Wilson, K5ND

For the September VHF Contest I decided to stay-at-home. Nothing to do with a pandemic or anything like that. I just needed a rest from roving. Plus, I wanted to regain my perspective on why I started roving in the first place.

I was fairly pleased with my overall results. Managed to get 119 QSOs in the log. Only 4 were SSB QSOs on 144.200 with a few locals. Everything else was FT8 with a single MSK144 QSO.

I was pleased with 64 multipliers. Six meters saw 66 QSOs and 32 grids. Two meters came in at 49 QSOs and 29 grids (five new grids from home). 432 saw only 4 QSOs and 3 grids. I didn't work anyone on 222.

I pretty much spent most of the contest in the ham shack. Slept about 6 hours from midnight to 6 AM. Getting up early I was rewarded with an excellent Tropo opening. Mostly I worked them on 2 meters.

As I noted above, I managed to find five new grids on 2 meters. That's one of the downsides from roving — the grids don't typically count for your home station award chasing.

I watched *Contest Scores Online* from time to time. There aren't many VHF testers using this pretty neat service. With N3FJP's VHF Contest Log, it automatically sends your score to an online distribution service and it gets posted for everyone to follow on the web.

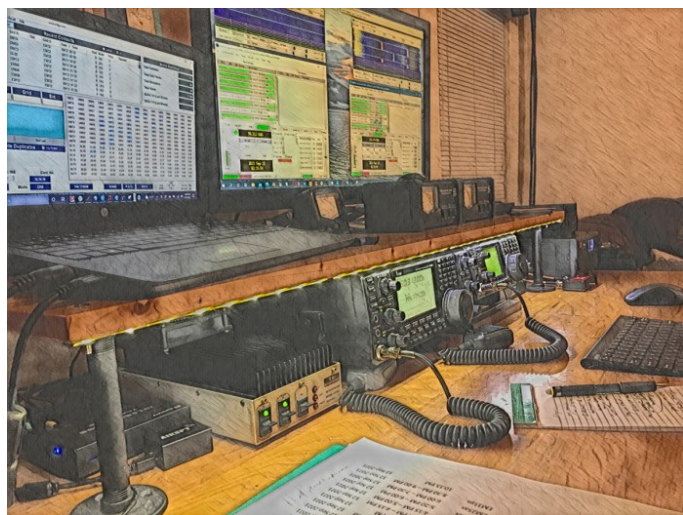
It shows your category and ranks the other competitors. I was running in second most of the time for Single Op Low Power. But later I noticed on 3830 Scores that the guy ahead of me was actually in Single Op 3-Band. This isn't one of the options for *Contest Scores Online* — Rover isn't one of the options either. Plus, there were only about 100 showing up on the scoreboard. It wasn't a realistic comparison, but does show what could be done for clubs or just buddies competing against one another.



K5ND backyard push-up mast with 6- and 2-meter Yagis, [Jim Wilson, K5ND, photo]

My home station isn't much different than my rover. I use a pushup mast with a 5-element 6-meter Yagi and a 6-element 2-meter Yagi. That requires a run of just over 100 feet of coax. For 222 I use an Omniangle and for 432 an eggbeater, both positioned in the alcove above the second-floor ham shack. The rover Yagis I use on the rover for 222 and 432 are clearly a better way to go.

Rotation of the shack Yagis is done by running down the stairs, out the backdoor, and twisting the mast to the right direction. Often the FT8 QSO is done by the time I get back to the shack.



K5ND's Operating Position [Jim Wilson, K5ND, photo]

I run two rigs: IC-9100 for 6 and 222; IC-910H for 144 and 432. The IC-9100 drives a TE Systems 175 watt amp on 6 (my 375 watt amp is at TE Systems awaiting repair)

and the 222 transverter and 100 watt amp. The IC-910H drives a 2 meter 170 watt amp and runs barefoot on 432. The great benefit of the two rigs is watching FT8 on 6 and 2 at the same time.

I enjoyed working the contest from home. I had thought that contacts might be a bit challenged, and of course they were to a certain extent, but there was plenty to keep me busy. Plus, I could address a few projects in between openings. Plus, it was fairly easy to fix a few things along the way or tweak the software.

I also was able to work quite a few rovers. I almost never work a rover when I'm on the road. We're either not pointing in the right direction or the signals are just too weak. So that helped make it fun.

I started my rover adventure in the September 2018 VHF Contest. Then it was all SSB and a tiny bit of CW when the signals were too weak. Now it's almost all FT8 with some MSK144. So it's quite a different experience both as a rover and from home.

Rover or Ham Shack? We'll see how I feel when the January VHF contest comes around.

--Editor's note: K5ND's blog was edited to fit the page format. The full story and other good stuff is available on Jim's excellent web page: <https://www.k5nd.net/>

Regional Leaders

West Coast Region

(Pacific, Northwestern and Southwestern Divisions;
Alberta, British Columbia and NT Sections)

N7GP/R	57,572	R
N7DSX/R	34,320	R
KN6PRZ/R	15,120	R
N6UTC/R	9,669	R
WA6OEM/R	980	R
N6GP/R	15,390	RL
KX6A/R	11,235	RL
KC7OQY/R	6,533	RL
KE7MSU/R	3,082	RL
WB6HUM/R	2,600	RL
K6MI/R	30,749	RU
KC7NOC/R	171	RU
W7MRF (KW7MM,op)	33,124	SOHP
KE7SW	11,045	SOHP
K6KLY	9,126	SOHP
KD7UO	8,304	SOHP
W7OJT	5,640	SOHP
KW2E	16,383	SOLP
N7EPD	15,045	SOLP
N7IR	14,630	SOLP
NA6MG	9,198	SOLP
N6VI	9,072	SOLP
W7JET	6,834	SOP
AF7GL	896	SOP
K7IW	840	SOP
AA6XA	689	SOP
KK4BZ	444	SOP
NU6S	4,002	SO3B
W6KAP	3,952	SO3B
AA2IL	3,384	SO3B
N7QOZ	3,300	SO3B
AC7SG	3,293	SO3B
KW6RON	1,232	SOFM
KK6OTK	621	SOFM
AF6GM	550	SOFM
N7DB	512	SOFM
KD7RBX	294	SOFM
WO1S	2,250	LM
N6RO	2,788	UM

Midwest Region

(Dakota, Midwest, Rocky Mountain and West Gulf
Divisions; Manitoba and Saskatchewan Sections)

W9FZ/R	29,425	R
KA9VVQ/R	28,674	R
WAØCNS/R	2,002	R
AF4JF/R	1,512	R
KI5PYQ/R	1,032	R
KBØYHT/R	4,805	RL
KA5D/R	4,384	RL
AA5PR/R	2,795	RL
AEØEE/R	1,530	RL
KK6MC/R	1,150	RL
NØLD/R	33,654	RU
KCØP/R	10,185	RU
NØHZO/R	7,106	RU
KØBBC/R	1,940	RU
WØGHZ	30,178	SOHP
WØZQ	24,276	SOHP
KØAWU	23,068	SOHP
WQØP	21,922	SOHP
NØHJZ	14,274	SOHP
ABØRX	29,770	SOLP
KAØPQW	18,070	SOLP
K5ND	7,680	SOLP
NØLL	4,070	SOLP
KM5RG	2,220	SOLP
NØJK	504	SOP
NØSUW	84	SOP
WFØT	66	SOP
KG7PBX	42	SOP
KB9WLB	36	SOP
W5TRL	15,698	SO3B
NØUR	3,705	SO3B
KC7QY	2,145	SO3B
KG5EIU	819	SO3B
AD4OS	518	SO3B
KG5UNK	222	SOFM
KØPHP	16	SOFM
KEØOR	3	SOFM
K5QE	118,110	LM
WY7DT	1,369	LM
KC5MVZ	216	UM
NØMA	190	UM

Central Region

(Central and Great Lakes Divisions; Ontario East, Ontario North, Ontario South, and Greater Toronto Area Sections)

K9PW/R	74,694	R
VE3OIL/R	70,920	R
K9TMS/R	5,376	R
WD9EXD/R	3,608	R
KG9OV/R	16,808	RL
K9JX/R	425	RL
K9JK/R	41,097	RU
VE3SMA/R	5,772	RU
WØUC	91,200	SOHP
KE8FD	43,555	SOHP
AC9S	15,496	SOHP
VE3WY	9,720	SOHP
W9FF	7,839	SOHP
VE3DS	23,051	SOLP
KA8CNI	4,284	SOLP
NA9RB	3,864	SOLP
N8HMG	3,483	SOLP
W9GA	3,082	SOLP
N8XA	1,023	SOP
WK9U	462	SOP
KO9A	35,650	SO3B
VA3IKE	5,632	SO3B
VE3PJ	4,400	SO3B
AB8M	4,346	SO3B
W9ZB	1,938	SO3B
VE3RWJ	970	SOFM
N8GA	93,492	LM
NV9L	51,840	LM
W9VW	38,056	LM

Southeast Region

(Delta, Roanoke and Southeastern Divisions)

AG4V/R	20,436	R
W8BRY/R	56	R
NV4B/R	47,864	RL
AE5P/R	9,990	RL
WD5HJF/R	1,802	RL
K3XY/R	238	RL
KM4OZH/R	36	RL
K1DS/R	24	RU
N4SVC (N2CEI, op)	63,917	SOHP
N4QWZ	48,320	SOHP
W3IP	43,792	SOHP
WA4GPM	13,692	SOHP
W8TN	11,448	SOHP
W4MAA	16,974	SOLP
W4GX	15,105	SOLP
K5OMC	7,910	SOLP
W4RAA	6,954	SOLP
W4TM	5,880	SOLP
W4RXR	4,352	SOP
KC8KSK	10	SOP
NE4W	4	SOP
KO4ECD	18,662	SO3B
KY4G	11,607	SO3B
K5VIP	5,253	SO3B
KD4ADC	5,202	SO3B
KV4ZY	3,977	SO3B
KG5FHU	6	SOFM
WB2FKO	6	SOFM
AA4ZZ	331,582	LM
K8GP	132,489	LM
NE5BO	9,480	LM
WB4WXE	5,885	LM
W4IY	118,755	UM
W4NH	52,896	UM
N4DXY	1,456	UM

Northeast Region

(New England, Hudson and Atlantic Divisions;
Maritime and Quebec Sections)

KF2MR/R	64,680	R
AB4CR/R	16,124	R
W3ICC/R	14,532	R
N5BNO/R	6,300	R
KV2X/R	5,432	R
NF2RS/R	37,128	RL
KA2YRA/R	3,264	RL
VE2GT/R	9	RL
KG6CIH/R	31,200	RU
K1TEO	317,082	SOHP
K1RZ	150,150	SOHP
N2JMH	73,980	SOHP
K1KG	64,232	SOHP
N2GHR	38,800	SOHP
AF1T	72,576	SOLP
WB1GQR (W1SJ, op)	70,380	SOLP
WA3NUF	36,666	SOLP
N3RG	26,602	SOLP
N2WK	18,970	SOLP
WB2AMU	1,083	SOP
NU2H	20	SOP
N1AIA	1	SOP
N3AAA	35,014	SO3B
WN3A	27,004	SO3B
W3FAY	8,448	SO3B
N3DGE	7,392	SO3B
K3TEF	6,292	SO3B
VA2DG	68	SOFM
KD2VGM	51	SOFM
K3EO	12	SOFM
W8DPK	2	SOFM
N2NT	99,078	LM
W2LV	63,882	LM
W3SO	39,960	LM
WA3EKL	10,320	LM
N1SOH	2,262	LM
W2SZ	240,462	UM
W2EA	51,574	UM
KD2LGX	46,683	UM
KE1LI	17,526	UM
W3RFC	14,820	UM

Division Winners

Classic Rover

Atlantic	KF2MR/R	64,680
Central	K9PW/R	74,694
Dakota	W9FZ/R	29,425
Delta	AG4V/R	20,436
Midwest	WAØCNS/R	2,002
Northwestern	WA6OEM/R	980
Pacific	KN6PRZ/R	15,120
Roanoke	W8BRY/R	56
Southwestern	N7GP/R	57,572
West Gulf	KI5PYQ/R	1,032
Canada	VE3OIL/R	70,920

Limited Rover

Atlantic	NF2RS/R	37,128
Central	KG9OV/R	16,808
Dakota	AEØEE/R	1,530
Delta	NV4B/R	47,864
Hudson	KA2YRA/R	3,264
Midwest	KBØYHT	4,805
Northwestern	KC7OOY/R	6,533
Pacific	WB6HUM/R	2,600
Roanoke	K3XY/R	238
Rocky Mountain	AA5PR/R	2,795
Southwestern	N6GP/R	15,390
West Gulf	KA5D/R	4,384
Canada	VE3GT/R	9

Unlimited Rover

Central	K9JK/R	41,097
Dakota	KCØP/R	10,185
New England	KG6CIH/R	31,200
Northwestern	KC7NOC/R	171
Pacific	K6MI/R	30,749
Southeastern	K1DS/R	24
West Gulf	NØLD/R	33,654
Canada	VE3SMA/R	5,772

Single Operator, High Power

Atlantic	K1RZ	150,150
Central	WØUC	91,200
Dakota	WØGHZ	30,178
Delta	N4QWZ	48,320
Great Lakes	KE8FD	43,555
Hudson	N2GHR	38,800
Midwest	WQØP	21,922
New England	K1TEO	317,082
Northwestern	KE7SW	11,045
Pacific	K6KLY	9,126
Roanoke	W3IP	43,792
Rocky Mountain	W8LYJ	322
Southeastern	N4SVC (N2CEI, op)	63,917
Southwestern	W7MRF (KW7MM, op)	33,124
West Gulf	K5LLL	12,090
Canada	VE3WY	9,720

Single Operator, Low Power

Atlantic	WA3NUF	36,666
Central	NA9RB	3,864
Dakota	KAØPQW	18,070
Delta	K5OMC	7,910
Great Lakes	KA8CNI	4,284
Hudson	WA2VNV	18,936
Midwest	ABØRX	29,770
New England	AF1T	72,576
Northwestern	KW2E	16,383
Pacific	KE6GLA	1,159
Roanoke	W4GX	15,105
Rocky Mountain	NØPOH	703
Southeastern	W4MAA	16,974
Southwestern	N7IR	14,630
West Gulf	K5ND	7,680
Canada	VE3DS	23,051

Single Operator, Portable

Atlantic	NU2H	20
Central	WK9U	462
Dakota	NØSUW	84
Delta	W4RXR	4,352
Great Lakes	N8XA	1,023
Hudson	WB2AMU	1,083
Midwest	NØJK	504
New England	N1AIA	1
Northwestern	AF7GL	896
Pacific	AA6XA	689
Roanoke	KC8KSK	10
Rocky Mountain	KG9PBX	42
Southwestern	W7JET	6,834

Single Operator, 3 Band

Atlantic	N3AAA	35,014
Central	KO9A	35,650
Dakota	NØUR	3,705
Delta	KJ5RC	825
Great Lakes	AB8M	4,346
Hudson	NA2NY	2,088
Midwest	AD4OS	518
New England	N1GDD	507
Northwestern	N7QOZ	3,300
Pacific	NU6S	4,002
Roanoke	KO4ECD	18,662
Rocky Mountain	KC7QY	2,145
Southeastern	KY4G	11,607
Southwestern	AA2IL	3,384
West Gulf	W5TRL	15,698
Canada	VA3IKE	5,632

Single Operator, FM Only

Atlantic	KD2VGM	51
Dakota	KEØOR	3
Midwest	KØPHP	16
New England	W8DPK	2

Northwestern	N7DB	512
Pacific	K6KQV	204
Southeastern	KG5FHU	6
Southeastern	WB2FKO	6
Southwestern	KW6RON	1,232
West Gulf	KG5UNK	222
Canada	VE3RWJ	970

Limited Multioperator

Atlantic	W3SO	39,960
Central	NV9L	51,840
Delta	NE5BO	9,480
Great Lakes	N8GA	93,492
Hudson	N2NT	99,078
New England	N1SOH	2,262
Roanoke	AA4ZZ	331,582
Rocky Mountain	WY7DT	1,369
Southeastern	WB4WXE	5,885
Southwestern	WO1S	2,250
West Gulf	K5QE	118,110

Unlimited Multioperator

Atlantic	W2EA	51,574
Midwest	NØMA	190
New England	W2SZ	240,462
Pacific	N6RO	2,788
Roanoke	W4IY	118,755
Southeastern	W4NH	52,896
West Gulf	KC5MVZ	216

QSO/Mult Leaders

Classic Rover	
50 MHz QSOs	
N7GP/R	78
N7DSX/R	73
KA9VVQ/R	68
W9FZ/R	68
KJ7JC/R	59
50 MHz Mults	
N7GP/R	25
AG4V/R	16
VE3OIL/R	16
WD9EXD/R	13
N7DSX/R	12
144 MHz QSOs	
KA9VVQ/R	92
W9FZ/R	92
AG4V/R	86
VE3OIL/R	78
K9PW/R	70
144 MHz Mults	
AG4V/R	34
VE3OIL/R	19
K9PW/R	17
KF2MR/R	16
WD9EXD/R	16
222 MHz QSOs	
KA9VVQ/R	53
W9FZ/R	53
KF2MR/R	52
N7GP/R	45
KJ7JC/R	43
222 MHz Mults	
KF2MR/R	15
K9PW/R	12
VE3OIL/R	11
AG4V/R	9
AB4CR/R	8

432 MHz QSOs	
W9FZ/R	69
KA9VVQ/R	68
K9PW/R	53
N7DSX/R	52
KJ7JC/R	50
432 MHz Mults	
K9PW/R	14
KF2MR/R	14
VE3OIL/R	12
W9FZ/R	10
AB4CR/R	9
KA9VVQ/R	9
902 MHz QSOs	
N7GP/R	39
KJ7JC/R	37
KF2MR/R	35
N7DSX/R	35
KA9VVQ/R	34
W9FZ/R	34
902 MHz Mults	
K9PW/R	11
KF2MR/R	11
VE3OIL/R	9
KN6PRZ/R	6
N7GP/R	6
1.2 GHz QSOs	
N7GP/R	49
N7DSX/R	46
KJ7JC/R	45
KF2MR/R	31
VE3OIL/R	22
1.2 GHz Mults	
KF2MR/R	10
K9PW/R	9
VE3OIL/R	9
N7GP/R	7
KJ7JC/R	6
KN6PRZ/R	6

N7DSX/R	6
2.3 GHz QSOs	
N7GP/R	35
N7DSX/R	30
KJ7JC/R	28
KF2MR/R	19
W3ICC/R	18
2.3 GHz Mults	
KF2MR/R	8
VE3OIL/R	8
KN6PRZ/R	6
N7GP/R	6
KJ7JC/R	5
N7DSX/R	5
3.4 GHz QSOs	
K9PW/R	20
N7GP/R	16
KJ7JC/R	15
KF2MR/R	10
AB4CR/R	7
3.4 GHz Mults	
K9PW/R	10
KN6PRZ/R	6
KJ7JC/R	5
N7GP/R	5
KF2MR/R	4
VE3OIL/R	4
5.7 GHz QSOs	
VE3OIL/R	7
KN6PRZ/R	6
KF2MR/R	4
AF4JF/R	3
WAØCNS/R	3
5.7 GHz Mults	
KN6PRZ/R	6
VE3OIL/R	6
AF4JF/R	2
KF2MR/R	2

WAØCNS/R	2
10 GHz QSOs	
KF2MR/R	14
K9PW/R	11
KA9VVQ/R	8
W9FZ/R	8
AB4CR/R	7
10 GHz Mults	
K9PW/R	9
KN6PRZ/R	6
KF2MR/R	5
VE3OIL/R	4
AB4CR/R	3
24 GHz QSOs	
K9PW/R	10
KN6PRZ/R	6
AB4CR/R	4
VE3OIL/R	2
24 GHz Mults	
K9PW/R	8
KN6PRZ/R	6
AB4CR/R	3
VE3OIL/R	2
47 GHz QSOs	
K9PW/R	10
47 GHz Mults	
K9PW/R	10
123 GHz QSOs	
VE3OIL/R	6
AF4JF/R	3
WAØCNS/R	3
123 GHz Mults	
VE3OIL/R	6
AF4JF/R	2
WAØCNS/R	2

Light QSOs	
VE3OIL/R	6
Light Mults	
VE3OIL/R	6
Limited Rover	
50 MHz QSOs	
NV4B/R	112
NF2RS/R	93
N6GP/R	74
KX6A/R	65
AL1VE/R	50
50 MHz Mults	
NV4B/R	39
AA5PR/R	30
N6GP/R	21
NF2RS/R	21
KG9OV/R	20
144 MHz QSOs	
NV4B/R	133
NF2RS/R	124
KX6A/R	98
KG9OV/R	90
N6GP/R	77
144 MHz Mults	
NV4B/R	49
KG9OV/R	44
NF2RS/R	31
WD5HJF/R	14
KA2YRA/R	13
KC7OXY/R	13
222 MHz QSOs	
AE5P/R	50
NF2RS/R	50
N6GP/R	38
NV4B/R	34
KX6A/R	31

222 MHz Mults	
NV4B/R	17
NF2RS/R	16
KG9OV/R	9
AE5P/R	6
KBØYHT/R	6
N6GP/R	6
432 MHz QSOs	
AE5P/R	61
N6GP/R	61
KX6A/R	52
NF2RS/R	50
NV4B/R	38
432 MHz Mults	
NF2RS/R	15
NV4B/R	15
KC7OXY/R	8
KG9OV/R	7
AE5P/R	6
KBØYHT/R	6
N6GP/R	6
Unlimited Rover	
50 MHz QSOs	
NØLD/R	55
KG6CIH/R	51
K6MI/R	46
KCØP/R	31
NØHZO/R	24
50 MHz Mults	
K6MI/R	22
KG6CIH/R	12
NØLD/R	12
K9JK/R	10
VE3SMA/R	7
144 MHz QSOs	
NØLD/R	113
KG6CIH/R	49
VE3SMA/R	45
KCØP/R	43

K9JK/R	33
144 MHz Mults	
NØLD/R	27
K9JK/R	13
VE3SMA/R	13
KG6CIH/R	12
K6MI/R	10
222 MHz QSOs	
KG6CIH/R	33
NØLD/R	31
K9JK/R	25
KCØP/R	22
K6MI/R	19
222 MHz Mults	
K9JK/R	11
K6MI/R	9
NØLD/R	9
KG6CIH/R	8
KCØP/R	5
432 MHz QSOs	
NØLD/R	63
KCØP/R	40
K9JK/R	27
NØHZO/R	27
K6MI/R	21
KG6CIH/R	21
VE3SMA/R	21
432 MHz Mults	
NØLD/R	13
K9JK/R	10
K6MI/R	8
VE3SMA/R	7
KCØP/R	6
NØHZO/R	6
902 MHz QSOs	
KG6CIH/R	19
KCØP/R	18

NØHZO/R	13
K9JK/R	11
K6MI/R	7
902 MHz Mults	
K9JK/R	8
K6MI/R	6
KG6CIH/R	5
KCØP/R	4
NØHZO/R	4
1.2 GHz QSOs	
NØLD/R	26
KG6CIH/R	17
KCØP/R	13
K6MI/R	12
K9JK/R	12
1.2 GHz Mults	
K9JK/R	8
NØLD/R	7
K6MI/R	6
KCØP/R	4
KG6CIH/R	4
NØHZO/R	4
2.3 GHz QSOs	
KG6CIH/R	14
K6MI/R	6
NØLD/R	1
2.3 GHz Mults	
K6MI/R	6
KG6CIH/R	4
NØLD/R	1
3.4 GHz QSOs	
K9JK/R	13
KG6CIH/R	12
K6MI/R	6
3.4 GHz Mults	
K9JK/R	10
K6MI/R	6

KG6CIH/R	4
5.7 GHz QSOs	
K6MI/R	6
KG6CIH/R	2
NØLD/R	1
5.7 GHz Mults	
K6MI/R	6
KG6CIH/R	1
NØLD/R	1
10 GHz QSOs	
VE3SMA/R	12
K9JK/R	11
KG6CIH/R	7
K6MI/R	6
10 GHz Mults	
K9JK/R	9
K6MI/R	6
VE3SMA/R	5
KG6CIH/R	1
24 GHz QSOs	
K9JK/R	10
K6MI/R	6
KG6CIH/R	2
24 GHz Mults	
K9JK/R	8
K6MI/R	6
KG6CIH/R	1
47 GHz QSOs	
K9JK/R	10
47 GHz Mults	
K9JK/R	8
123 GHz QSOs	
KG6CIH/R	2

123 GHz Mults	
KG6CIH/R	1
Light QSOs	
KG6CIH/R	2
Light Mults	
KG6CIH/R	1
Single Op High Power	
50 MHz QSOs	
K1TEO	254
W8TN	159
K1JT	149
W3TI	131
NF3R	130
50 MHz Mults	
W8TN	72
K1TEO	64
KK8X	60
K9NW	59
N4SVC (N2CEI, op)	59
144 MHz QSOs	
K1TEO	227
K1RZ	158
W3XTT (KA1ZE, op)	158
W3IP	122
KE8FD	119
W9FF	119
144 MHz Mults	
KE8FD	70
W3XTT (KA1ZE, op)	67
W9FF	67
N4QWZ	59
AC9S	51
222 MHz QSOs	
K1TEO	82
K1RZ	50
N2JMH	43

WØUC	43
K1WHS	42
222 MHz Mults	
K1TEO	34
K1WHS	25
N4QWZ	25
N4SVC (N2CEI, op)	22
K1RZ	21
432 MHz QSOs	
K1TEO	108
K1RZ	93
NØHJZ	53
WØUC	53
W2KV	47
432 MHz Mults	
K1TEO	37
K1RZ	35
W2KV	24
WØUC	24
N4SVC (N2CEI, op)	23
902 MHz QSOs	
K1TEO	32
K1RZ	31
WØUC	31
WØZQ	26
KØAWU	23
WØGHZ	23
902 MHz Mults	
K1TEO	22
K1RZ	17
WØUC	12
WØGHZ	10
K1KG	9
N2JMH	9
1.2 GHz QSOs	
K1TEO	43
K1RZ	32
W7MRF (KW7MM, op)	20

K1KG	17
WØUC	17
1.2 GHz Mults	
K1TEO	21
K1RZ	13
W3IP	11
N4SVC (N2CEI, op)	9
WØUC	9
2.3 GHz QSOs	
K1TEO	24
K1RZ	20
K1KG	10
N2JMH	8
W2SJ	8
W7MRF (KW7MM, op)	8
2.3 GHz Mults	
K1TEO	16
K1RZ	11
K1KG	8
N2GHR	6
N2JMH	6
3.4 GHz QSOs	
K1TEO	13
K1KG	7
K1RZ	7
W7MRF (KW7MM, op)	5
N2JMH	4
3.4 GHz Mults	
K1TEO	11
K1KG	6
K1RZ	5
N2JMH	4
W7MRF (KW7MM, op)	3
5.7 GHz QSOs	
K1KG	5
K1TEO	3
K1RZ	2
WØGHZ	1

WØUC	1
WØZQ	1
5.7 GHz Mults	
K1KG	5
K1TEO	3
K1RZ	2
WØGHZ	1
WØUC	1
WØZQ	1
10 GHz QSOs	
WØGHZ	13
N2JMH	10
K2TER	9
K1RZ	6
KØAWU	5
10 GHz Mults	
WØGHZ	7
K2TER	4
N2JMH	4
K1KG	3
K1RZ	3
24 GHz QSOs	
K2TER	1
24 GHz Mults	
K2TER	1
Light QSOs	
W2SJ	1
Light Mults	
W2SJ	1
Single Op Low Power	
50 MHz QSOs	
WB1GQR (W1SJ, op)	165
N2SCJ	105
N7EPD	97
KC3NDU	92
W2YR	89

50 MHz Mults	
ABØRX	51
W4GX	51
NA9RB	46
NØLL	39
W4MAA	34
WB2SNN	34
144 MHz QSOs	
WB1GQR (W1SJ, op)	155
ABØRX	115
N2SCJ	98
W4MAA	96
WA2VNV	94
144 MHz Mults	
ABØRX	63
W4GX	44
K5OMC	42
W4MAA	42
KX9X	40
222 MHz QSOs	
AF1T	48
KW2E	42
WB1GQR (W1SJ, op)	41
KAØPQW	33
N6VI	31
222 MHz Mults	
AJ6T	18
VE3DS	18
AF1T	16
WB1GQR (W1SJ, op)	16
WA3EOQ	14
432 MHz QSOs	
KW2E	62
AF1T	57
N6VI	56
WB1GQR (W1SJ, op)	51
KAØPQW	46

432 MHz Mults	
WB1GQR (W1SJ, op)	19
AF1T	18
KAØPQW	15
VE3DS	15
N3RG	13
902 MHz QSOs	
AF1T	21
KW2E	14
VE3DS	14
N2WK	12
W4RAA	9
WA3NUF	9
902 MHz Mults	
AF1T	10
VE3DS	9
N3RG	6
WA3NUF	6
WB1GQR (W1SJ, op)	6
1.2 GHz QSOs	
AF1T	24
N7IR	24
N7RK	18
WB1GQR (W1SJ, op)	18
W4RAA	13
1.2 GHz Mults	
AF1T	9
WB1GQR (W1SJ, op)	8
N7IR	7
AC1J	6
N7RK	6
W4RAA	6
2.3 GHz QSOs	
AF1T	14
WA3NUF	9
WB1GQR (W1SJ, op)	6
N3RG	5
VE3DS	5

2.3 GHz Mults	
AF1T	7
WA3NUF	5
WB1GQR (W1SJ, op)	5
N3RG	4
VE3DS	4
3.4 GHz QSOs	
AF1T	10
VE3DS	4
WB1GQR (W1SJ, op)	4
N3RG	3
N2WK	2
WA3NUF	2
3.4 GHz Mults	
AF1T	5
N3RG	3
VE3DS	3
WB1GQR (W1SJ, op)	3
N2WK	2
WA3NUF	2
5.7 GHz QSOs	
AF1T	6
N2WK	3
N3RG	1
5.7 GHz Mults	
AF1T	5
N2WK	3
N3RG	1
10 GHz QSOs	
AF1T	8
N2WK	8
N3RG	1
10 GHz Mults	
AF1T	3
N2WK	3
N3RG	1

24 GHz QSOs	
AF1T	2
N2WK	2
24 GHz Mults	
AF1T	1
N2WK	1
123 GHz QSOs	
AF1T	2
123 GHz Mults	
AF1T	1
Light QSOs	
AF1T	1
Light Mults	
AF1T	1
Single Operator Portable	
50 MHz QSOs	
W4R XR	30
WK9U	25
KK4BZ	20
W7JET	19
K7IW	16
50 MHz Mults	
WK9U	21
W4R XR	13
N8XA	11
NØJK	8
KC6NKK	7
144 MHz QSOs	
AF7GL	33
N8XA	24
W7JET	22
K7IW	20
W4R XR	20

144 MHz Mults	
N8XA	20
NØJK	13
AF7GL	9
W4R XR	7
WB2AMU	7
222 MHz QSOs	
W4R XR	16
W7JET	15
WB2AMU	8
AA6XA	4
K7IW	2
222 MHz Mults	
W4R XR	5
W7JET	5
WB2AMU	3
AA6XA	2
K7IW	1
432 MHz QSOs	
W7JET	22
W4R XR	17
K7IW	15
AF7GL	13
AA6XA	10
432 MHz Mults	
W4R XR	7
W7JET	6
AF7GL	4
AA6XA	3
KK4BZ	3
KN6OHW	3
WB2AMU	3
902 MHz QSOs	
W7JET	15
W4R XR	4
902 MHz Mults	
W7JET	5
W4R XR	2

1.2 GHz QSOs	
W7JET	16
1.2 GHz Mults	
W7JET	6
Single Operator 3 Band	
50 MHz QSOs	
KO9A	154
N3AAA	145
KO4ECD	136
WN3A	130
W3FAY	104
50 MHz Mults	
KO9A	64
N3AAA	53
W5TRL	51
WN3A	39
VE3PJ	37
144 MHz QSOs	
WN3A	156
KO4ECD	123
N3AAA	123
W6KAP	122
KO9A	109
144 MHz Mults	
N3AAA	58
VA3IKE	45
KO9A	42
KY4G	41
W5TRL	39
432 MHz QSOs	
N7QOZ	31
NU6S	26
W6KAP	26
KK6REB	25
KO4ECD	25
432 MHz Mults	
N3AAA	11

KO9A	9
WN3A	9
N3DGE	8
N7QOZ	7
Single Operator FM Only	
50 MHz QSOs	
KG5UNK	5
AF6GM	4
AC7GL	2
KD2VGM	2
K6KQV	1
KF7KTC	1
VA2DG	1
50 MHz Mults	
AC7GL	2
AF6GM	2
K6KQV	1
KD2VGM	1
KF7KTC	1
KG5UNK	1
VA2DG	1
144 MHz QSOs	
VE3RWJ	43
N7DB	38
KW6RON	34
KK6OTK	24
AF6GM	22
144 MHz Mults	
KW6RON	5
AF6GM	4
KK6OTK	4
KØPHP	4
N7DB	4
VE3RWJ	4
222 MHz QSOs	
KW6RON	11
KD7RBX	10
N7DB	6

VE3RWJ	6
AC7GL	5
222 MHz Mults	
KW6RON	4
VE3RWJ	3
KD7RBX	2
KM6WCC	2
N7DB	2
432 MHz QSOs	
KK6OTK	23
VE3RWJ	21
KW6RON	18
AF6GM	15
K6KQV	12
432 MHz Mults	
KK6OTK	5
KW6RON	5
AF6GM	4
VE3RWJ	3
AC7GL	2
AJ6JE	2
K6KQV	2
KD7RBX	2
KG5UNK	2
KM6WCC	2
N7DB	2
Limited Multioperator	
50 MHz QSOs	
AA4ZZ	339
K8GP	255
N2NT	223
W2LV	215
N8GA	186
50 MHz Mults	
AA4ZZ	107
K5QE	93
N8GA	84
NV9L	69
K8GP	63

144 MHz QSOs	
AA4ZZ	374
N2NT	223
K8GP	222
W3SO	195
K5QE	193
144 MHz Mults	
K5QE	117
AA4ZZ	103
N8GA	77
W3SO	67
NV9L	66
222 MHz QSOs	
AA4ZZ	62
N2NT	59
K8GP	54
K5QE	29
N8GA	27
222 MHz Mults	
AA4ZZ	45
K8GP	33
N2NT	25
N8GA	24
K5QE	23
432 MHz QSOs	
AA4ZZ	111
K8GP	65
N2NT	62
W2LV	37
K5QE	35
432 MHz Mults	
AA4ZZ	62
K8GP	33
N8GA	27
N2NT	24
K5QE	21
1.2 GHz QSOs	
WO1S	7

1.2 GHz Mults	
WO1S	3
Unlimited Multioperator	
50 MHz QSOs	
W4IY	242
W2SZ	232
W2EA	212
W4NH	155
KD2LGX	117
50 MHz Mults	
W4IY	74
W4NH	72
W2EA	42
W2SZ	42
KD2LGX	36
144 MHz QSOs	
W4IY	246
W2SZ	207
W2EA	119
KE1LI	113
W3RFC	107
144 MHz Mults	
W4IY	80
W4NH	49
W2SZ	40
KD2LGX	36
W2EA	35
222 MHz QSOs	
W2SZ	77
KD2LGX	28
W4IY	23
W2EA	22
W4NH	20
222 MHz Mults	
W2SZ	29
W4IY	17
KD2LGX	14

W4NH	14
W2EA	12
432 MHz QSOs	
W2SZ	109
KD2LGX	32
W4IY	28
W4NH	26
KE1LI	19
432 MHz Mults	
W2SZ	36
KD2LGX	17
W4NH	17
W4IY	16
KE1LI	10
902 MHz QSOs	
W2SZ	19
KD2LGX	12
W4IY	4
W3RFC	3
W2EA	2
W2RME	2
902 MHz Mults	
W2SZ	16
KD2LGX	6
W4IY	3
W2EA	2
W2RME	2
W3RFC	2
1.2 GHz QSOs	
W2SZ	24
KD2LGX	14
W2EA	6
W4IY	6

1.2 GHz Mults	
W2SZ	16
KD2LGX	8
W4IY	5
W2EA	4
2.3 GHz QSOs	
W2SZ	16
W2EA	4
2.3 GHz Mults	
W2SZ	16
W2EA	1
3.4 GHz QSOs	
W2SZ	15
W2EA	4
3.4 GHz Mults	
W2SZ	14
W2EA	1
5.7 GHz QSOs	
W2SZ	10
W2EA	4
5.7 GHz Mults	
W2SZ	10
W2EA	1
Light QSOs	
W2EA	3
Light Mults	
W2EA	1