# ARRL January VHF Contest 2019 Results

***By KK6MC James R. Duffey (jamesduffey@comcast.net)***

***Despite poor weather across the upper United States and flat propagation, FT8 activity made this the most active January VHF contest of the millennium.***

The weather forecast did not look good prior to the weekend of the 2019 January VHF contest (held January 19-21, 2019) and the contest bore that out. Many in the NE spent the first part of the contest removing ice from antennas and rotators. It did not look good for rovers, and more than a few, after getting their rovers started in the cold, followed sanding trucks around on their routes to get access to good operating spots. Many of the usual operating sites were closed and adjustments had to be made.

This sad sight of iced antennas at WA3EOQ's QTH was repeated many times over in the upper US during the 2019 ARRL January VHF Contest. High VSWRs and stuck rotors caused by ice plagued many stations across the Northeast. [Howard Reynolds, WA3EOQ, photo]

Conditions were flat to nonexistent, as is often the case for January VHF contests, and it seemed like this January contest would be even worse than usual. Despite conditions, a surprising 918 logs were submitted, by far the most in this century! What made the difference? The digital modes, mostly FT8 on 6 meters, accounted for almost all of the increase in submitted logs. While the total number of QSOs reported in 2019 did not differ significantly from 2018 (61,532 in 2019, as opposed to 59,587 in 2018), the number of submitted logs was up.

Apparently the FT8 operators are more inclined to submit logs than the casual operator on SSB and CW.

Of significance is that almost half (49%) of the reported QSOs in 2019 were on 6 meters, and 60% of those 6 meter QSOs were made on one or more of the digital modes. More on what this may mean later on, but a pattern is surfacing that the January contest is becoming dominated by 6 meters (much like the June contest when E-skip is in and the higher bands, including 144 MHz, see less activity). As an example, 144 MHz activity, the lifeblood of January VHF contesting up to now, dropped from appearing in 31% of the total logs in 2018 submitted to just 25% of logs submitted in 2019.

Similar or worse drops occurred on the higher bands. Many operators expressed frustration at the lack of SSB and CW QSO opportunities, even when the band was open, but there appeared to be a gradual acceptance of the digital modes. There were a significant number of logs that were digital only, including a rover.

While the January VHF contest is always a dance with Lady Luck, there was little to no enhanced propagation this year; no E-skip, and no enhanced tropo. Gas prices were modest, which is good for rover activity, the NFL playoffs did not seem to cause the usual lull in activity often seen on Sunday afternoon, and avid contesters who are active on both VHF and HF seem to have resolved the often conflicting contests issue. The presence of significant Summits on the Air (SOTA) activity in several regions, most notably southern Arizona, continued to bolster not only general VHF activity in the area, but also increased the often low January turnout in the Single Operator Portable category.

This running of the January VHF contest marked the fourth year that participants have been allowed to use assistance. The use of assistance has become the norm at this point. Most operators have developed routines that maximize the benefits of assistance while minimizing the time consumed by using assistance; a problem many of us faced during the first few contests where assistance was allowed. Regional and local chat rooms, such as those used by the New Mexico VHF Society, and real time activity/location spreadsheets such as used by the Northern Lights Radio Society, have been widely adopted and have proved very useful. Assistance is best

implemented at a local level before hunting for QSOs farther afield.

Above, Pete, N6ZE/R (joined by Woodie Woodward, WA6WDY at left), holds a 23cm "Easy Yagi" and Alinco FM handheld atop a ridge in the Santa Monica Mountains, grid DMØ4qb, on Saturday of the January VHF contest. Best DX was K6PFG at 130 miles. A temperature inversion, which produced the enhanced summer-like conditions, is clearly visible in the background. Below is Pete (behind the camera) with Woody and the N6ZE/R rovermobile. [Peter Heins, N6ZE, photo]

Log checking is a necessary, but often thankless job. The integrity and reputation of the contest is enhanced by thorough and fair log checking. You can use this log checking effort to enhance your own contest efforts, by reviewing your Log Checking Report (available at http://contests.arrl.org/logcheckreports.php) seeing where mistakes were made and identifying ways to correct them. The most common error is not including the /R when logging a rover. Not only is this necessary to eliminate a logging error, but most logging programs will not flag a /R call as a dupe if you work it in a different grid.

## The Winners

| CATEGORY | CALLSIGN | SCORE |
|---|---|---|
| Limited Multioperator (LM) | N2NT | 111,105 |
| Unlimited Multioperator (M) | N3NGE | 213,498 |
| Rover (R) | KF2MR/R | 148,785 |
| Limited Rover (RL) | WW7D/R | 43,065 |
| Rover Unlimited (RU) | K2DLT/R | 69,745 |
| Single Operator High Power (SOHP) | K1RZ | 118,300 |
| Single Operator Low Power (SOLP) | K2DRH | 81,137 |
| Single Operator, 3 Bands (SO3B) | KO9A | 19,488 |
| Single Operator FM (SOFM) | N2HJD | 3,708 |
| Single Operator, Portable (SOP) | WA7JTM | 6,608 |

### Single Operator FM (SOFM)

The Single Operator FM category, originally intended to attract new operators to VHF contesting, continues to gain traction and attract serious competitors. Many contesters who are not weak signal VHF/UHF operators often use FM to give out a few local QSOs and to enhance their local club score. N2HJD improved on his last year third-place finish to handily win this category besting K2SI who finished second (K2SI improving on his fifth place finish last year). KM4KMU, an experienced competitor in this category, finished third, despite struggling with subzero temperatures, high winds, ice, and snow, all while operating! To show what FM can do with a serious contest setup, KM4KMU completed a 301-mile QSO on 222 MHz with K1TEO. NR2C finished fourth in this category, and K7IMA took fifth place. K7IMA set Northwestern Division and Oregon Section SOFM records with his efforts.

Even though it is often hard to convince competitors with only a few QSOs to submit a log, it is still possible to win and set records with small efforts. K4NRT demonstrated that submitting a log is very worthwhile, setting Tennessee Section and Delta Division records with his modest entry.

The SOFM category is excellent training for passing emergency traffic quickly and efficiently, and

John, KM4KMU/R, finished his setup just before the ice storm got bad. This photo was taken on, of all places, Freezeland Road, near the grid corner of FMØ9/19/Ø8/18 at an altitude of 2,500 ft. [John Young, KM4KMU, photo]

The upper photo shows Barry, K7BWH, setting up his rover on Mt Octopus, CN77vr, at an altitude of 2,000'. In contrast to the Northeast, Barry had to contend with rain and mud, not snow and ice, at the start of the January VHF Contest. Below, the weather improved for set up at North Point Lookout, CN78xc. [Barry Hansen, K7BWH, photos]

several ARES and RACES organizations encourage their members to get on during VHF contests. One of the keys to a competitive SOFM operation is operating on 222 MHz. There are lots of QSOs to be had with the weak signal operators who have FM capability on 222 MHz. Even a handie- talkie with a good whip can round up enough QSOs and multipliers to significantly increase one's score.

## Single Operator Three Band (SO3B)

The Single Operator 3 Band category provides good competition for those numerous hams who own the common "DC-to-daylight" rigs with three VHF/UHF bands 50/144/432 MHz) included. It also allows newcomers to VHF/UHF operation and contesting an easy way to dip their toes in the water. It has become one of the more popular categories.

KO9A, improving on his 2017 fourth place finish, won this category by just a narrow margin over AD5A. KO9A overcame early problems with antenna icing, and late problems with S9 noise on 6 meters, to take first place. In his first VHF contest, AD5A did a great job to finish only 504 points behind KO9A, while setting new SO3B records for both the South Texas Section and the West Gulf Division. Both ops relied on FT8 and MSK144 to make QSOs on otherwise dead bands, but emphasized the importance of moving off FT8 when conditions are good enough for SSB and CW. They also advocate moving off 6-meter FT8 to QSY to other bands. This strategy, of course, applies to all categories, not just SO3B.

K9FA, operating at the K5NA station, more than tripled his 2018 results for a competitive score in SO3B and a solid third place finish. K9FA had a few weak openings, which he used to good advantage. He also availed himself to FT8 and MSK144 to increase his score, lamenting the fact that it was hard to get people off FT8 when conditions warranted it. While K3SFX finished fourth and N7IR finished fifth respectively, N7IR made up for the flat conditions in Arizona by leveraging the SOTA activity and multiple rovers. Gary is happy that the VHF/UHF activity in Arizona is at a high level, something unheard of only a few years ago.

In addition to the SO3B records set by AD5A, W1QK set new SO3B records for the Connecticut Section and New England Division. N7QQZ also set new records for the Western Washington Section and Northwest Division, and KK4MA set new South Carolina Section and Roanoke Division records.

## Single Operator Low Power (SOLP)

The Single Operator Low Power category is not just the bread and butter category of the VHF contests, it is also the most popular category in VHF contesting - and this contest was no exception. K2DRH returned from a second place finish last year to reclaim the top SOLP spot this year. Bob overcame late problems with his 6-meter and 2304 MHz antennas only to face flat conditions in the contest - and no 2304 MHz activity, despite going to great lengths to get 2304 MHz back up and running prior to the contest. Bob also used FT8 to his advantage in obtaining new multipliers (he noted that it is becoming somewhat easier, than it was last year, to move local stations off FT8 to other bands).

N3RG finished second while suffering a few setbacks in getting his new rig and transverters up and running. Perennial SOLP competitor AF1T finished in third place, and WA3NUF took fourth. VE3DS finished fifth in his 48th January VHF contest, fighting bitter cold, poor conditions and sporadic line noise. Dana put some 10 GHz gear on the air from his driveway to make a few contacts and earn a few more multipliers. Those microwave band QSO points really help!

## Single Operator High Power (SOHP)

Many people consider the Single Operator High Power category the king of the contesting categories. These are usually the stations that everyone can rely on for QSOs and relatively far away grids. K1RZ took the SOHP category for the second year in a row. In his comments, K1RZ complimented the rovers that were able to get out on usually abbreviated routes due to the ice and snow. He states he uses a combination of modes to operate, cycling through CW, FT8, MSK144, and SSB to avoid being stuck on one mode and missing opportunities on other bands (finding this procedure maximizes both QSO points and grid multipliers). Despite the poor weather, Northeast stations took the top three spots in SOHP. W3SZ finished second, despite being affected by the poor weather causing abbreviated rover routes. WA3DRC finished third and WØUC finished fourth. Finding average to poor conditions, and low rover turnout, Paul turned to the digital modes, FT8 and MSK144 to make up for it. VA3ELE finished fifth, finding city noise, poor conditions, and rig problems on 902 and 222 MHz building upon each other. He still had a blast though!

## Single Operator Portable (SOP)

The Single Operator Portable category, bolstered by widening Summits On The Air (SOTA) activity, continued to be a popular category with 34 logs submitted this year. It is good to see this increase in activity in January in this potentially brutal category in the winter, and it is especially good to see the synergy between SOTA activities and VHF/UHF Contesting.

Long time and experienced June VHF contester WA7JTM finished a very strong first place in this category. Peter's efforts in organizing the Arizona SOTA ops to get on the air during the contest paid off not only for him but for all of the Arizona VHF/UHF ops. Peter leverages rigs on all bands through 1296 MHz, even though they are QRP. He works hard to get the most out of what he has. Peter's SOTA expedition gave family member N7TXT a chance to use the home station and put yet another Arizona station on the air.

In Northern California, AA6XA finished second in this category from the Loma Alta Summit in CM88. K7TAB narrowly beat out KF7NP for third with a margin of only five points! This shows the competitiveness in this category, but that is to be expected from those who haul their entire station up a long trail to a mountaintop. Both stations used rigs on multiple bands to good effect aided by the altitude and clear horizon a mountain top gives one. WX3P rounded out the top five.

Most of the SOP stations, and especially those who are also SOTA activators, haul all station equipment and antennas up to the operating point on their backs. This makes them amongst the hardest working physical contestants in the contest.

Long time VHFer Peter, WA7JTM, is shown participating in a combined Single Op Portable (in the ARRL January VHF Contest) and Summits On The Air (SOTA) expedition. Most people are used to working Peter as a Single Operator or Multioperator station in the June contests, but he is a very much accomplished SOTA op and has encouraged and organized other SOTA ops to get active on the VHF contests. Yes, all that stuff goes up the mountain on his back. Below, Peter's portable station rivals the scores of some Single Operator Low Power home stations. [Peter Scola, WA7JTM, photo.]

## Limited Multioperator (LM)

In the Limited Multioperator category, N2NT (with N2NC and WW2Y as additional ops) repeated their 2018 first place finish. They used FT8 to fill in dead times on CW and SSB, and (like many stations) are working on ways to pass people from FT8 to other bands. K5QE moved up from fourth place last year to second place this year, despite what Marshall termed "terrible conditions". The K5QE station uses two independent 6-meter positions, one for FT8 and one for everything else. K5QE noted that for the first time (in a long time of January VHF Contesting) 6 meter QSOs and mults, despite no E-skip, exceeded his 2 meter bread and butter band. N9HF finished third, and W9RVG finished fourth in this category, while W5ROK finished fifth.

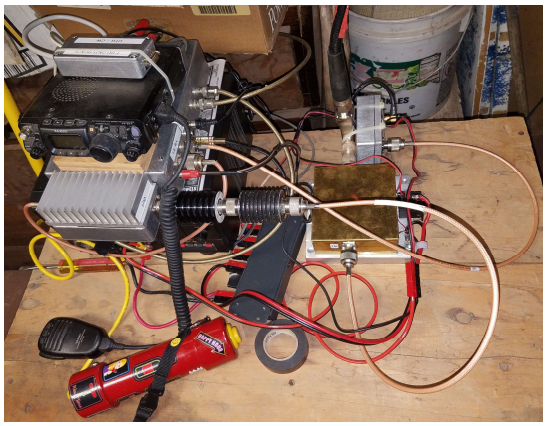
It doesn't get much simpler than the KB2BKD/R rover antenna stack. It's a 6-meter halo above a log periodic for 144 and 432 MHz. Bob parlayed this stack and a visit to a grid corner into an 1,100 point score. [Sebastian R Galietti, KB2BKD, photo]

## Unlimited Multioperator (UM)

The Unlimited Multioperator stations consistently provide signals on the bands, as well as QSOs in those often hard to find bands above 1296 MHz. This is very significant in the January contest. While it is a labor of love to setup and maintain a competitive Unlimited Multioperator station, their efforts benefit many of the other competitors, particularly those just starting out on the microwaves.

This year N3NGE repeated as Unlimited Multioperator champions by a large margin. They are truly a DC-to-daylight operation, with RF operations up to 47 GHz and Laser as well, and the epitome of the philosophy that "if there is no one on the band, be the one on the band." With W4NH finishing second, and WA3EHD finishing third, KE1LI took fourth while fighting the New England winter weather until he finally had to pull the plug when icing caused the SWR to make his antennas unusable. W1XM (the MIT Club) finished fifth,

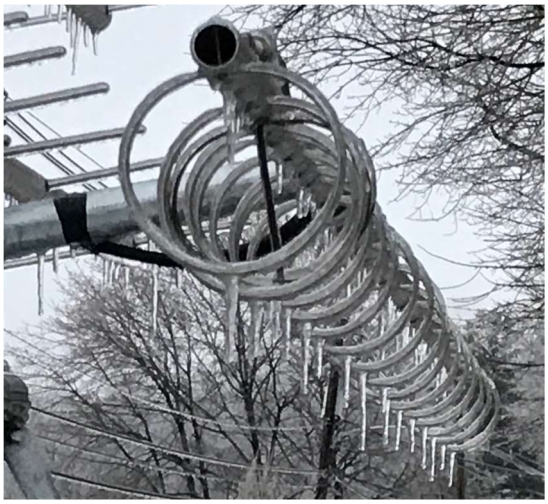
reporting the worst conditions they have ever seen. They noted that the digital modes saved the day, but again shared that it was hard to pass digital ops to other bands. This is a recurring theme.



The 1296 position at the KE1LI Unlimited Multiop station shows what one can do by using what one has. Paul gets 55 Watts out of this setup. Note the plunger key, which was pressed into service when all of the other keys were used in other operating positions. There is also a screwdriver and roll of electrical tape at the ready for in-contest repairs. Paul says it is OK to laugh at this photo. [Paul Rollinson, KE1LI, photo]

Above, Jim, K5ND/R, looks pretty happy after completing his rover antenna assembly prior to the start of his rove in Texas. Below, a K5ND/R Texas sunset. [James Wilson Jr, K5ND, photos]

Jarred, KF2MR/R, operated from FN02 as part of his multi-grid rove in the 2019 January VHF Contest. Being stuck in a snow bank was not atypical of what rovers in the Northeast faced in the contest. Fortunately, a local farmer showed up with a Bobcat to dig out a parking spot in the otherwise snow-covered pull-off on the main road. This photo conveys the tone of the contest for many of those across the upper US. [Jarred Jackson, KF2MR, photo]



Ice-coated antennas were the norm for the Northeast rovers. Here is the frozen loop Yagi of K2EZ/R. [Andrea Slack, K2EZ, photo]

## Classic Rover (R)

Rovers are the mother's milk of VHF/UHF contesting and often the biggest resource for local activity. This is especially true for the well-equipped Classic Rovers, where many contacts can often be made from a single grid stop.

A rover blitz Rochester VHF Group style. There is a lot of VHF/UHF/microwave expertise and experience compiled in that photo. Shown are (front to rear) N2MKT/R, K2TER/R + KV2X, K2LDU/R, W2EV/R and KF2MR/R. [Jeff Jensen, N2MKT, photo]

This year KF2MR/R won the Classic Rover category. The great plans for an extensive rove to support the Rochester VHF Group's 70th anniversary did not fully materialize due to weather. There was a big turnout in the Rochester area nonetheless, consisting of significant local activity that was recruited from other clubs for the 70th anniversary celebration. Other than the local activity, conditions were bad. K2TER/R, also of the Rochester VHF Group, finished second with strong local support. K2TER reported several FM pileups during the contest due to the large turnout of casual operators who don't normally contest. That is a nice problem to have.

N7GP/R finished third, a very high finish from the western states. Tom accomplished this feat by being agile and relocating to better positions within the same grid, actively pursuing QSOs with fixed stations, having a full complement of bands, getting members of the local contesting club enthused and on the air, as well as leveraging the SOTA activity in Arizona. N7GP noted that the level of activity in this contest rivaled that which he saw in the Midwest as WA8WZG.

W2EV/R took time out from organizing the Rochester VHF Group's 70th anniversary contest to finish fourth in the Classic Rover category. VE3OIL finished fifth while doing battle with poor roads, sub- zero temperatures and poor conditions. Again, a common theme among rovers in the northeast.

This shows the NC5AX/R operating position in Arkansas, remembering last year's contest when temperatures were in the 50s and 60s. [NC5AX, photo]

## Limited Rover (RL)

With only the four specified bands and limited to low power, antennas, strategy and tactics are of paramount importance to Limited Rovers. Among those who have honed those principles to a fine point is WW7D/R, who repeated his first place dominance of the Limited Rover category with a Western Washington Section and Northwestern Division record setting performance. Darryl visited 10 grids in his roving effort. K7BDB/R finished second as part of intense Pacific Northwest VHF Society activity. K5ND/R finished third by visiting 10 grids. This shows what can be done with a modest equipment and a dedicated effort. N6GP/R finished fourth by visiting 6 grids in and around the LA basin. Tim was one of the few contest stations, rover or otherwise, that had E-skip openings. Tim used FT8 in his rover to advantage, but his slow results on Sunday afternoon may have been due to competing with the Rams game. There apparently was a blip in activity during half time. N5BNO/R did a good job finishing fifth in his first rove with a balanced effort over all the bands.


Here K5ND/R, KA5D/R, and KD5IKG/R meet for a bite to eat and a few eyeball QSOs. [James Wilson Jr., K5ND, photo]

## Unlimited Rover (RU)

The Unlimited Rover category originally was envisioned as an "anything goes" category; a response in large part prompted by the practice of unlimited grid squaring. The category has seldom been used in recent years for that by entrants in the category though. That changed this year.

K2LDT/R won the category with a 10-band effort. The higher QSO points for the microwave bands brought great rewards to Greg as he finished ahead of the second and third place entrants, both of which had more QSOs and multipliers. Those higher bands pay off!

Those second and third place entrants, NØLD/R and KG9DUK/R focused around grids EMØ5/Ø6/15/16 on Saturday, and around grids EMØ4/Ø5/14/15 on Sunday, working each other on each unique band/grid combination. They also each worked a number of other stations in the contest.

K7ATN/R finished fourth by traveling 600 miles, and activating 9 grids. During his rove he had to overcome a dead battery and antenna-eating trees.

Steve, K7ATN/R, used a good combination of gain and omnidirectional antennas on his rover. [Steven Scott, K7ATN, photo]

ACØRA/R finished fifth, close behind K7ATN/R with an effort from four grids. Wyatt ran what was essentially his Limited Rover setup with a 6-meter amplifier. Wyatt found that beyond 300 miles MSK144 was more productive than FT8, and that knowing which mode to use and when was key to his success. Wyatt set new January Iowa Section and Midwest Division records with his effort. WB2SIH/R put in a 1,050 mile rove through 16 grids to finish sixth.

Buff, WB2SIH/R, during his 16-grid rove, made a quick stop at the beach in shirtsleeves, an unusual occurrence in this contest! [William "Buff" Fisher, WB2SIH, photo]

KCØP/r in EM34 lowering his rover antennas in preparation to move. (Photo from KCØP)

Tired of snow pictures? Here is the well-appointed K9YR shack with 6 bands. Jeff Berman, K9YR, photo]

## Club Competition

The club competition drives much of the activity in VHF contests, particularly when conditions are down.

The Mt. Airy VHF Radio Club (Packrats) took first place in the Unlimited Club category with an impressive 70 members submitting logs totaling 1,083,551 points. This high level of activity is the result of decades of work promoting VHF weak signal operations by dedicated and conscientious club members.

The largest club competition category is the Medium club competition, won this year by the Rochester VHF Group. This is the Rochester group's first gavel win since 2005. 2019 is the 70th anniversary of the Rochester VHF group and there is a big push to get as many members as possible out for contest efforts, and to increase activity. Although not targeting their club score, their goal was to get as many members of the local club out to participate in the contest as possible. W2EV is honchoing this effort, in addition to being an active contest participant.

In second place was the Pacific Northwest VHF Society, that traditionally has a big push to get members active in contests - and this year was no different with numerous rovers and fixed stations active. The rest of the top five clubs were: Northeast Weak Signal Group, Society of Midwest Contesters, and the Arizona Outlaws Contest Club. The rise of the Arizona Outlaws from 10th place last year in the club competition to fifth this year is significant and due to the rise in SOTA activity, increased number of rovers and recognition by many members that working the higher bands pays off.

The Local Club competition was again won by the Eastern Connecticut Amateur Radio Association, followed by the Ventura County Amateur Society, Bristol (TN) Amateur Radio Club, Bergen ARA and the Gloucester County ARC.

| Club | Score | Entries |
|---|---|---|
| | | |
| **Unlimited** | | |
| Mt. Airy VHF Radio Club | 1,083,551 | 70 |
| | | |
| **Medium** | | |
| Rochester VHF Group | 497,654 | 45 |
| Pacific Northwest VHF Society | 184,852 | 37 |
| North East Weak Signal Group | 151,799 | 15 |
| Society of Midwest Contesters | 123,536 | 22 |
| Arizona Outlaws Contest Club | 104,253 | 17 |
| Northern Lights Radio Society | 94,982 | 16 |
| Florida Weak Signal Society | 87,082 | 10 |
| Potomac Valley Radio Club | 70,408 | 34 |
| Yankee Clipper Contest Club | 51,370 | 13 |

| | | |
|---|---|---|
| Contest Club Ontario | 48,926 | 9 |
| Roadrunners Microwave Group | 37,491 | 4 |
| Florida Contest Group | 35,795 | 8 |
| Badger Contesters | 31,878 | 11 |
| Michigan VHF-UHF Society | 25,352 | 6 |
| New Mexico VHF Society | 17,009 | 10 |
| Frankford Radio Club | 15,951 | 11 |
| Southern California Contest Club | 13,310 | 11 |
| Grand Mesa Contesters of Colorado | 9,444 | 3 |
| Six Meter Club of Chicago | 7,556 | 9 |
| South Jersey Radio Assn | 4,167 | 5 |
| Carolina DX Association | 3,044 | 4 |
| Alabama Contest Group | 1,898 | 3 |
| Willamette Valley DX Club | 1,057 | 3 |
| Minnesota Wireless Assn | 369 | 3 |
| | | |
| **Local** | | |
| Eastern Connecticut ARA | 21,231 | 9 |
| Ventura County Amateur Radio Society | 5,812 | 3 |
| Bristol (TN) ARC | 2,797 | 5 |
| Bergen ARA | 1,633 | 3 |
| Gloucester Co ARC | 804 | 3 |

Clubs looking to increase participation in their area are encouraged to coordinate with other VHF (including FM), microwave, contest clubs, DX associations, emergency communications organizations, and SOTA participants in their area. Often we only look to our own circle when trying to increase contest activity, but there are significant dividends to be had by looking into other local groups to increase activity. This has been effective in Arizona, and the Rochester VHF Group has used this philosophy in their 70th Anniversary contest approach. All that is really required for this coordination is for individuals to step up, and to organize and promote the activity as advantageous for each group. Plan this coordination now for increased future contest activity rewards!

It is important to note that clubs must submit an eligible list of members prior to the start of the contest. Members on that list must be members in good standing, they must reside in the club territory, and they must operate from the club territory (Classic and Limited Rover entrants who reside in the territory may contribute that portion of QSOs made within the club territory to the club competition {see rule 3.7.1}). Several contestants credited scores to clubs that did not have an eligibility list on file at the beginning of the contest, while others who submitted logs for a club were not on the eligibility list or operated from outside the club territory. There is also a minimum of three submitted logs required for a club to be eligible for the club competition, which was not met in a couple of instances. The club competition is an important factor in contest activity. Please assign a responsible person from your club to submit an eligibility list to ARRL prior to the contest, and to supply timely updates when members are added, removed, or have callsign changes. Updates are only necessary when you have changes to report; annual updates are suggested to ensure no changes are missed. Also, take time to inform your club members about the rules for submitting a log to count towards a club score.


Here is well-known VHF contester, Larry, NØLL, at his Kansas station. Larry feels that the contests are now more interesting and challenging as the digital modes are a bit of an equalizer for the Midwest, as compared with the more populated areas of our country. This was Larry's 132nd VHF contest in a row dating back to 1975! [Larry Lambert, N0LL, photo]

## The use of the digital modes, including FT8, MSK144, and others to come?

This contest was the second January VHF Contest with FT8 available, and the newest software release

seemed to address some, but not all of the concerns we heard after last year's contest. It seemed like MSK144 activity was also up, so perhaps people who are operating FT8 are learning to also operate MSK144 as just another digital mode? Meteor scatter using MSK144 is no longer hard work, it just takes dedication and allocation of time.

But several larger issues remain. The relative ease with which score-enhancing FT8 QSOs can be made, and the fact that most of these QSOs are made on 6 meters, means that the January VHF Contest is becoming much like the June VHF Contest in that when there is E-skip 6 meters dominates – at the expense of the higher bands that suffer.

While there were only slightly more QSOs made during the 2019 contest (61,532 as opposed to the 2018 contest with 59,587), nearly half of the 2019 QSOs were made on 6 meters, despite nearly no enhanced propagation. Nearly 62% of the 6-meter QSOs were made on one of the digital modes. This is in contrast with the 2018 contest where only 33% of the QSOs were made on 6 meters, and only 28% of those were digital.

As the bulk of the new QSOs were on 6 meters and the total number of QSOs made remained roughly constant, it appears the increase in 6-meter QSOs comes at the expense of QSOs on the higher bands. The number of 2-meter QSOs made in 2019 decreased to 16,174 from 18,745 in 2018. That is a decrease of nearly 15% in what has traditionally been the bread and butter band in January VHF Contesting.

The decrease in activity on the higher bands is even more severe than on 2 meters, with 222 MHz QSOs down 29%, 432 MHz QSOs down 20%, 902 MHz QSOs down 26%, and 1296 MHz down 25%. The microwave bands are similarly affected, if not worse.

This effect was noted, at least notionally, in the soapbox comments of many ops, many lamenting the lack of activity on the higher bands.

What does this mean? As more operators adopt the digital modes, whether FT8, or its successor FT4, this trend may continue. As it continues, the higher bands will suffer from less and less activity. That should be alarming to those who think that activity on all bands and modes is essential to VHF+ contesting. Just as activity on the bands breeds activity, lack of activity on the bands breeds inactivity. We need to think of ways to mitigate this impact that FT8 is having on activity on the higher bands.

A second issue is that many FT8 operators, and nearly all the casual ones, stay glued to the mode on 6 meters, even when conditions are good enough for a CW or SSB QSO and when there are stations to work on other bands. The run rates are much higher on CW and SSB than on FT8, so competitive scores suffer; and if there is no easy way to QSY to other bands, multipliers and QSO points suffer. FT4 may go a bit along the road to answering the rate problem, but how do I run the bands with someone who is stuck on 6 meter FT8?

A third issue is that the band allocated to FT8 is too small when there are strong local stations on or with reasonable band openings. On CW or SSB you can QSY a bit to avoid the problem, but on FT8 you need to shift to the same sequence as other locals are on but this can limit opportunities.

How do we address this problem? Are FT8 and the traditional CW and SSB modes incompatible as some have suggested? Can a "please QSY to other bands" feature be incorporated into FT8?

After only two years, the use of FT8 is firmly entrenched in VHF/UHF contesting, and for good reason; it is an effective way of increasing one's DX capability with only a modest investment in time and little investment in equipment. The January contest is primarily a scatter mode contest and FT8 excels at making scatter mode contacts. 57% of the logs submitted contained some digital QSOs. 21% of the logs submitted consisted entirely of digital contacts!

Good operators recognize the importance of not relying on a single mode and rotate through FT8, CW, SSB, and FM. The increased use of panadapter spectrum displays makes spotting activity on other modes and bands straightforward and should prompt

a savvy op to change modes or bands to capture a new one. But this does not address the casual FT8 users, which make up the bulk of the new activity.

Some have suggested that FT8 is incompatible with CW and SSB and that separate contests should be held for the digital modes. This, I think, is a poor solution as it would negate the gains that the digital modes (FT8 in particular) have brought to VHF/UHF contesting, namely increased activity.

Another proposal would allow multiple contacts with the same station on different modes, much as is done for Field Day and the ARRL 10-Meter Contest. The multiple QSOs would have to be made on different mode frequencies (frequencies that are "normally" used for that mode). This would offer some incentive for stations to get off FT8 and onto CW or SSB, although again it is not clear that the casual operator would respond to the incentive, particularly if the operator does not know CW or proper SSB operating procedures.

I don't think either of these proposals would effectively address how to move the casual contester from the digital modes and onto the analog modes.

I am not sure what the developers of WSJT have in store for the future, but a simple way to QSY to other bands would go a long way to solving some of the current problems, as would an alert and easy method to go to the analog modes when signal-to-noise ratios are sufficient.

The trend of the past two years, since the introduction of FT8, indicates to me that if nothing is done we will end up with all of the VHF/UHF contests being predominately 6-meter digital contests. Coupled with the increased move to the Limited and 3-Band categories, this does not bode well for the microwave enthusiasts. When there is no E-skip or tropo, the dominant modes of propagation have always been the various scatter modes. With the digital modes, it is easier now than ever before to complete scatter contacts on 6 meters. We need to leverage that capability to increase activity on the higher bands, where scatter is even more important, and not let the digital modes consume the activity on the higher bands.

I think the digital modes offer great contesting opportunities for the entry-level operator and modestly equipped stations. We need to figure out how best to utilize them to derive the best benefit. Education is a good place to start, but given the rapid rise of digital mode contesting, the time may be short to save the higher band component of VHF+ contesting.

## Logging

One hundred percent log checking is an important part of the compiling and reporting the contest results. It enhances the integrity and reputation of the contest. It instills confidence in participants by those who run the contest. By checking every log, there is significantly greater confidence in the accuracy of the outcome, particularly in close categories.

There are common errors in logging, some of which the log checkers can fix and others that they cannot. The best way to address these errors is to not make them in the first place, by paying close attention to entering QSO information into your logging program or on to your piece of paper, especially QSO date and time). Watch how your exchanges are copied and logged. For example, there is a fair amount of confusion or miscopying of M's and N's in the second character of the exchange. Also "fifty" gets confused with "sixty" as well as "fifteen" and "sixteen". The extensive or exclusive use of phonetics is a straightforward way to solve these problems.

A surprising number of digits in the callsign are mis-copied/mis-logged, mix-ups between adjacent numbers on the keyboard, 2s and 3s for example, are common, as are the incorrect prefix letters (Ks, Ns, Ws). Typos can be minimized by looking closely at the screen as you type, and errors of all types can be avoided by paying careful attention to what was sent.

A good strategy is to review your log checking report from the last contest, and to formulate a strategy to avoid these mistakes.

While it is dismaying to see your score reduced by the log checking process, it can be used as a learning

process to improve your operating skills in the future. An error-free log, although difficult, is worth striving for and pays dividends. And keep in mind that everyone is held to the same standards during log checking – with maintaining a level playing field always being the end goal.

Submitting an electronic log, while helpful to the log checkers, is not mandatory and non-electronic logs are welcome. They constitute about 5% of the total logs submitted. These must be entered by hand into a Cabrillo format. A special thanks to the volunteers who do this.

## Logs Submitted

There were 918 logs submitted, 2 of which were check logs. This is an increase of 24% from the 742 logs submitted in 2018; and one needs to go back to the last century, 1999, to find a higher number of entrants in the January VHF Contest. While the January VHF Contest is healthy activity wise, due in large part to the digital modes, the complexion of the contest has changed and is changing.

### Logs Received by Category

| | |
|---|---|
| Limited Multioperator | 25 |
| Unlimited Multioperator | 11 |
| Rover | 33 |
| Limited Rover | 32 |
| Rover Unlimited | 12 |
| Single Operator, 3 Band | 180 |
| Single Operator, FM | 42 |
| Single Operator, High Power | 202 |
| Single Operator, Low Power | 345 |
| Single Operator, Portable | 34 |
| **Total Logs** | **916** |
| Check logs | 2 |

Thanks to all who submitted logs.

## Summary

Despite challenging weather in parts of the country, the 2019 running of the January VHF Contest was very successful. Participation, and log submissions, were high. Let's try to keep this momentum through the year to next year's contest.

To do so, start planning now for next year's January VHF Contest. Put the dates for next year's contest on your calendar now - January 20, 21 and 22, 2020.

As the digital modes have well established themselves in VHF contests, make provisions for them if you don't already have them. If you already have them, consider how to develop habits to use other modes and bands. If you only do FT8, it is not that much more trouble to go to MSK144 for meteor scatter, and the rewards are great in the additional grids you can pick up. Similarly, it you only do the digital modes on 6 meters, think about moving up and operating digital modes on higher bands, particularly 2 meters. Also, if you have just 6 meters, or just 6 and 2 meters, think about adding higher bands if you do not already have them. Low cost transverters are available to easily get on bands your main rig does not cover. If you need help, just ask your local VHF+ participants what they use or where to easily source transverters and antennas. Both can be inexpensive when getting started on higher VHF, UHF and even lower SHF bands.

More importantly, think about the changes that the digital modes have made in VHF contesting. Think about the positives and negatives, and try to come up with reasonable solutions to the issues raised. As always, if you feel adjustments should be made to any ARRL Contest rules to increase participation or your enjoyment, let your ARRL Division Director know about your concerns or interests, and explain what changes would increase your fun factor.

Listen for the weak ones!

# Top Ten Scores by Category

| Classic Rover | | Single Operator High Power | | Single Operator Portable | | Limited Multioperator | |
|---|---|---|---|---|---|---|---|
| **Station** | **Score** | **Station** | **Score** | **Station** | **Score** | **Station** | **Score** |
| KF2MR/R | 148,785 | K1RZ | 118,300 | WA7JTM | 6,608 | N2NT | 111,105 |
| K2TER/R | 71,544 | W3SZ | 76,500 | AA6XA | 2,268 | K5QE | 80,784 |
| N7GP/R | 41,407 | WA3DRC | 56,210 | K7TAB | 1,989 | N9HF | 15,708 |
| W2EV/R | 31,200 | WØUC | 51,221 | KF7NP | 1,984 | W9RVG | 8,806 |
| VE3OIL/R | 25,193 | VA3ELE | 44,448 | WX3P | 1,470 | W5ROK | 6,760 |
| KE7MSU/R | 23,556 | K1TEO | 42,238 | W7JET | 864 | K2BAR | 6,460 |
| K2ET/R | 22,800 | N4QWZ | 41,470 | KD7WPJ | 832 | N3DPB | 4,884 |
| K2EZ/R | 21,000 | N1RWY | 38,976 | KØNR | 792 | WS9V | 3,478 |
| KK6MC/R | 16,473 | WZ1V | 38,675 | WB7ENX | 660 | N2JQR | 3,427 |
| K4SME/R | 15,447 | VE3ZV | 36,127 | VE7JH | 630 | N9XKH | 3,096 |
| | | | | | | | |
| **Limited Rover** | | **Single Operator Low Power** | | **Single Operator FM Only** | | **Unlimited Multioperator** | |
| **Station** | **Score** | **Station** | **Score** | **Station** | **Score** | **Station** | **Score** |
| WW7D/R | 43,065 | K2DRH | 81,137 | N2HJD | 3,708 | N3NGE | 213,498 |
| K7BDB/R | 10,982 | N3RG | 73,801 | K2SI | 1,770 | W4NH | 28,634 |
| K5ND/R | 8,232 | AF1T | 59,363 | KM4KMU | 1,365 | WA3EHD | 18,585 |
| N6GP/R | 6,580 | WA3NUF | 46,735 | NR2C | 1,053 | KE1LI | 13,780 |
| K7BWH/R | 5,148 | VE3DS | 24,486 | K7IMA | 891 | W1XM | 13,350 |
| N5BNO/R | 5,040 | WA3GFZ | 22,325 | K6KQV | 448 | W5UHF | 12,561 |
| WB2SIH/R | 5,016 | K9MU | 18,480 | KG6IYN | 429 | W3RFC | 6,201 |
| K7JSG/R | 3,800 | N8RA | 16,683 | AD4TJ | 402 | NY2NY | 4,392 |
| NR2C/R | 3,600 | KA3FQS | 16,585 | WB9WOZ | 320 | KA1SU | 910 |
| KJ2G/R | 3,330 | W2UTH (N2WK, op) | 14,444 | W2BSN | 273 | XE2N | 54 |
| | | | | | | | |
| **Unlimited Rover** | | **Single Operator 3 Band** | | | | | |
| **Station** | **Score** | **Station** | **Score** | | | | |
| K2LDT/R | 69,745 | KO9A | 19,488 | | | | |
| NØLD/R | 58,575 | AD5A | 18,984 | | | | |
| KG9DUK/R | 53,874 | K9FA | 15,996 | | | | |
| K7ATN/R | 39,707 | K3SFX | 6,816 | | | | |
| ACØRA/R | 39,058 | N7IR | 6,603 | | | | |
| KD5IKG/R | 19,584 | KR1ST | 5,775 | | | | |
| KA5D/R | 17,542 | K2UA | 5,680 | | | | |
| N6JET/R | 10,481 | N4QV | 5,049 | | | | |
| KG6CIH/R | 3,249 | W8JH | 4,830 | | | | |
| WA1TE/R | 3,002 | W1PV | 4,779 | | | | |

# Regional Leaders

| West Coast Region (Pacific, Northwestern and Southwestern Divisions; Alberta, British Columbia and NT Sections) | | Midwest Region (Dakota, Midwest, Rocky Mountain and West Gulf Divisions; Manitoba and Saskatchewan Sections) | | Central Region (Central and Great Lakes Divisions; Ontario East, Ontario North, Ontario South, and Greater Toronto Area Sections) | | Southeast Region (Delta, Roanoke and Southeastern Divisions) | | Northeast Region (New England, Hudson and Atlantic Divisions; Maritime and Quebec Sections) | |
|---|---|---|---|---|---|---|---|---|---|
| **Classic Rover** | | | | | | | | | |
| N7GP/R | 41,407 | KCØP/R | 6,475 | VE3OIL/R | 25,193 | K4SME/R | 15,447 | KF2MR/R | 148,785 |
| KE7MSU/R | 23,556 | NØHZO/R | 6,475 | K9TMS/R | 1,980 | AG4V/R | 13,338 | K2TER/R | 71,544 |
| KK6MC/R | 16,473 | K5WO/R | 48 | AA9IL/R | 972 | N2CEI/R | 7,956 | W2EV/R | 31,200 |
| N6ZE/R | 5,790 | | | VA3TO/R | 184 | W5VY/R | 4,747 | K2ET/R | 22,800 |
| AC7FF/R | 2,304 | | | | | WA3RGQ/R | 2,688 | K2EZ/R | 21,000 |
| **Limited Rover** | | | | | | | | | |
| WW7D/R | 43,065 | K5ND/R | 8,232 | K9JK/R | 1,264 | NC5AX/R | 816 | N5BNO/R | 5,040 |
| K7BDB/R | 10,982 | ABØYM/R | 420 | N9GH/R | 782 | KM4OZH/R | 700 | WB2SIH/R | 5,016 |
| N6GP/R | 6,580 | AA5PR/R | 323 | | | | | NR2C/R | 3,600 |
| K7BWH/R | 5,148 | | | | | | | KJ2G/R | 3,330 |
| K7JSG/R | 3,800 | | | | | | | KD2BKD/R | 1,095 |
| **Unlimited Rover** | | | | | | | | | |
| K7ATN/R | 39,707 | NØLD/R | 58,575 | | | | | K2LDT/R | 69,745 |
| N6JET/R | 10,481 | KG9DUK/R | 53,874 | | | | | KG6CIH/R | 3,249 |
| VE7AFZ/R | 1,260 | ACØRA/R | 39,058 | | | | | WA1TE/R | 3,002 |
| | | KD5IKG/R | 19,584 | | | | | | |
| | | KA5D/R | 17,542 | | | | | | |
| **Single Operator High Power** | | | | | | | | | |
| N1RWY | 38,976 | K5LLL | 25,578 | WØUC | 51,221 | N4QWZ | 41,470 | K1RZ | 118,300 |
| KE7SW | 19,250 | N5RZ | 22,700 | VA3ELE | 44,448 | K1TO | 22,752 | W3SZ | 76,500 |
| N7EPD | 15,402 | KØTPP | 14,933 | VE3ZV | 36,127 | KC4PX | 19,964 | WA3DRC | 56,210 |
| KD7UO | 13,550 | KØSIX | 12,960 | W7JW | 17,205 | W3IP | 15,813 | K1TEO | 42,238 |
| WA7XX | 11,950 | K5VH | 12,654 | NØAKC | 10,720 | KE8FD | 13,167 | WZ1V | 38,675 |
| **Single Operator Low Power** | | | | | | | | | |
| WZ8T | 9,802 | KC5WX | 11,840 | K2DRH | 81,137 | W4RAA | 9,270 | N3RG | 73,801 |
| K2GMY | 5,270 | NØLL | 11,004 | VE3DS | 24,486 | W6BXQ | 3,784 | AF1T | 59,363 |
| K6MI | 4,914 | K5TRA | 10,669 | K9MU | 18,480 | KM4HI | 3,640 | WA3NUF | 46,735 |
| KC6ZWT | 4,448 | WBØNRV | 7,830 | W9GA | 11,655 | K4PPK | 2,160 | WA3GFZ | 22,325 |
| W7KKE | 3,536 | N5ITO | 6,222 | VE3SMA | 5,304 | K4FJW | 1,830 | N8RA | 16,683 |
| **Single Operator Portable** | | | | | | | | | |
| WA7JTM | 6,608 | KØNR | 792 | WK9U | 64 | | | WX3P | 1,470 |
| AA6XA | 2,268 | KØJJW | 42 | AK9Y | 12 | | | K9PW | 72 |
| K7TAB | 1,989 | KG5FHU | 36 | | | | | K3YDX | 52 |
| KF7NP | 1,984 | NØJK | 9 | | | | | K3DMA | 24 |
| W7JET | 864 | ABØCD | 2 | | | | | KB3SIG | 16 |

| West Coast Region (Pacific, Northwestern and Southwestern Divisions; Alberta, British Columbia and NT Sections) | | | Midwest Region (Dakota, Midwest, Rocky Mountain and West Gulf Divisions; Manitoba and Saskatchewan Sections) | | | Central Region (Central and Great Lakes Divisions; Ontario East, Ontario North, Ontario South, and Greater Toronto Area Sections) | | | Southeast Region (Delta, Roanoke and Southeastern Divisions) | | | Northeast Region (New England, Hudson and Atlantic Divisions; Maritime and Quebec Sections) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Single Operator 3 Band** | | | | | | | | | | | | | |
| N7IR | 6,603 | | AD5A | 18,984 | | KO9A | 19,488 | | N4QV | 5,049 | | K3SFX | 6,816 |
| W8JH | 4,830 | | K9FA | 15,996 | | KA9VDU | 3,636 | | KK4MA | 3,402 | | KR1ST | 5,775 |
| N7QOZ | 3,408 | | NN5T | 660 | | KA8CNI | 2,414 | | KA1AF | 3,276 | | K2UA | 5,680 |
| N7RK | 3,120 | | KØJQA | 280 | | K8SD | 1,334 | | AJ6T | 1,407 | | W1PV | 4,779 |
| WB7FJG | 2,040 | | NØAT | 234 | | VE3SST | 1,020 | | KG5MD | 1,333 | | W1QK | 4,356 |
| **Single Operator FM only** | | | | | | | | | | | | | |
| K7IMA | 891 | | NØHDR | 205 | | WB9WOZ | 320 | | KM4KMU | 1,365 | | N2HJD | 3,708 |
| K6KQV | 448 | | WAØKXO | 64 | | K9LAE | 24 | | AD4TJ | 402 | | K2SI | 1,770 |
| KG6IYN | 429 | | WD9IGX | 14 | | KG9R | 15 | | K3TW | 36 | | NR2C | 1,053 |
| N9VM (N1VM, p) | 252 | | AEØQ | 3 | | WD9GDB | 14 | | K4NRT | 24 | | W2BSN | 273 |
| KI7LTT | 207 | | ABØMV | 3 | | | | | | | | N2ZN | 252 |
| **Limited Multioperator** | | | | | | | | | | | | | |
| W6RDF | 1,488 | | K5QE | 80,784 | | W9RVG | 8,806 | | N9HF | 15,708 | | N2NT | 111,105 |
| VE6AO | 153 | | W5ROK | 6,760 | | WS9V | 3,478 | | K2JB | 1,040 | | K2BAR | 6,460 |
| W7TZ | 143 | | WØVB | 2,112 | | N9XKH | 3,096 | | W4GZX | 836 | | N3DPB | 4,884 |
| | | | WCØAAA | 20 | | | | | WB4WXE | 722 | | N2JQR | 3,427 |
| | | | | | | | | | | | | W2CCC | 2,170 |
| **Unlimited Multioperator** | | | | | | | | | | | | | |
| | | | W5UHF | 12,561 | | | | | W4NH | 28,634 | | N3NGE | 213,498 |
| | | | | | | | | | | | | WA3EHD | 18,585 |
| | | | | | | | | | | | | KE1LI | 13,780 |
| | | | | | | | | | | | | W1XM | 13,350 |
| | | | | | | | | | | | | W3RFC | 6,201 |

# Division Winners

| | Classic Rover | Limited Rover | Unlimited Rover | Single Op High Power | Single Op Low Power | Single Op Portable | Single Op 3 Band | Single Op FM Only | Limited Multiop | Unlimited Multiop |
|---|---|---|---|---|---|---|---|---|---|---|
| **Atlantic** | KF2MR/R | N5BNO/R | K2LDT/R | K1RZ | N3RG | WX3P | K3SFX | N2HJD | N3DPB | N3NGE |
| **Central** | K9TMS/R | K9JK/R | | WØUC | K2DRH | WK9U | KO9A | WB9WOZ | W9RVG | |
| **Dakota** | KCØP/R NØHZO/R (tie) | | | KØSIX | WØZQ | | NØAT | NØHDR | WØVB | |
| | | | | | | | | | | |
| **Delta** | AG4V/R | NC5AX/R | | N4QWZ | AA4DD | | KG5MD | K4NRT | W4GZX | |
| **Great Lakes** | | | | W7JW | KEØJMK | | KA8CNI | | | |
| **Hudson** | K2EZ/R | WB2SIH/R | | W2KV | WB2JAY | KQ2RP | W2DPT | | N2NT | NY2NY |
| **Midwest** | | | ACØRA/R | KØTPP | NØLL | NØJK | KØJQA | | | |
| **New England** | KJ1K/R | KJ2G/R | KG6CIH/R | K1TEO | AF1T | | W1QK | KB1YSK | NE1C | KE1LI |
| **Northwestern** | KE7MSU/R | WW7D/R | K7ATN/R | KE7SW | WZ8T | AE7EL | N7QOZ | K7IMA | W7TZ | |
| **Pacific** | | WB6HUM/R | N6JET/R | K6WIS | K2GMY | AA6XA | AE6GE | K6KQV | | |
| **Roanoke** | | KM4OZH/R | | W3IP | K4FJW | | KK4MA | KM4KMU | K2JB | |
| **Rocky Mountain** | K5WO/R | ABØYM/R | | W9RM | NJ7A | KØNR | N5SJ | WAØKXO | | W5UHF |
| **Southeastern** | K4SME/R | | | K1TO | W4RAA | | N4QV | K3TW | N9HF | W4NH |
| **Southwestern** | N7GP/R | N6GP/R | | N1RWY | | WA7JTM | | KG6IYN | W6RDF | |
| **West Gulf** | | K5ND/R | NØLD/R | K5LLL | KC5WX | | AD5A | | K5QE | |
| **Canada** | VE3OIL/R | | VE7AFZ/R | VA3ELE | VE3DS | VE7JH | VE3SST | VA2DG | VE6AO | |
| | | | | | | | | | | |

## QSO/Multiplier Band Leaders by Category

| **Classic Rover** | |
|---|---|
| **50 MHz QSOs** | |
| N7GP/R | 101 |
| K2EZ/R | 84 |
| KF2MR/R | 78 |
| K4SME/R | 64 |
| W3ICC/R | 58 |
| | |
| **50 MHz Mults** | |
| K4SME/R | 20 |
| KA2LIM/R | 13 |
| K2EZ/R | 11 |
| AG4V/R | 10 |
| KE7MSU/R | 9 |
| KF2MR/R | 9 |
| VE3OIL/R | 9 |
| W5VY/R | 9 |
| | |
| **144 MHz QSOs** | |
| N7GP/R | 110 |
| KF2MR/R | 93 |
| KE7MSU/R | 82 |
| W5DMB/R | 77 |
| W3ICC/R | 67 |
| | |
| **144 MHz Mults** | |
| W5VY/R | 14 |
| AG4V/R | 13 |
| KE7MSU/R | 13 |
| W5DMB/R | 13 |
| KA2LIM/R | 11 |
| KK6MC/R | 11 |
| | |
| **222 MHz QSOs** | |
| KF2MR/R | 73 |
| N7GP/R | 55 |
| W2EV/R | 52 |
| K2TER/R | 45 |
| K2ET/R | 43 |
| | |
| **222 MHz Mults** | |
| AG4V/R | 10 |
| KF2MR/R | 9 |
| VE3OIL/R | 8 |
| W5VY/R | 8 |
| K2EZ/R | 7 |
| KE7MSU/R | 7 |
| KK6MC/R | 7 |
| N7GP/R | 7 |
| | |
| **432 MHz QSOs** | |
| N7GP/R | 114 |
| KF2MR/R | 87 |
| W2EV/R | 58 |
| KK6MC/R | 48 |
| K2ET/R | 47 |
| | |
| **432 MHz Mults** | |
| AG4V/R | 10 |
| KF2MR/R | 10 |
| KK6MC/R | 10 |
| N7GP/R | 8 |
| W5VY/R | 8 |
| | |
| **902 MHz QSOs** | |
| KF2MR/R | 47 |
| N7GP/R | 34 |
| W2EV/R | 32 |
| K2TER/R | 30 |
| K2ET/R | 22 |
| | |
| **902 MHz Mults** | |
| KF2MR/R | 10 |
| K2TER/R | 6 |
| W2EV/R | 6 |
| N7GP/R | 5 |
| K2ET/R | 4 |
| K2EZ/R | 4 |
| KE7MSU/R | 4 |
| VE3OIL/R | 4 |
| | |
| **1.2 GHz QSOs** | |
| KF2MR/R | 51 |
| N7GP/R | 49 |
| K2TER/R | 30 |
| W2EV/R | 30 |
| K2ET/R | 22 |
| | |
| **1.2 GHz Mults** | |
| KF2MR/R | 9 |
| K2EZ/R | 6 |
| K2TER/R | 6 |
| N7GP/R | 6 |
| W2EV/R | 6 |
| | |
| **2.3 GHz QSOs** | |
| KF2MR/R | 32 |
| K2TER/R | 19 |
| N2MKT/R | 12 |
| WB2GFZ/R | 12 |
| VE3OIL/R | 10 |
| | |
| **2.3 GHz Mults** | |
| KF2MR/R | 9 |
| K2TER/R | 6 |
| KE7MSU/R | 4 |
| W2EV/R | 4 |
| K2ET/R | 3 |
| VE3OIL/R | 3 |
| | |
| **3.4 GHz QSOs** | |
| KF2MR/R | 24 |
| K2TER/R | 18 |
| N2MKT/R | 9 |
| KØBAK/R | 6 |
| K2ET/R | 5 |
| | |
| **3.4 GHz Mults** | |
| KF2MR/R | 7 |
| K2TER/R | 6 |
| K2ET/R | 3 |
| K4SME/R | 2 |
| KØBAK/R | 2 |
| N2CEI/R | 2 |
| N2MKT/R | 2 |
| VE3OIL/R | 2 |
| | |
| **5.7 GHz QSOs** | |
| K2TER/R | 18 |
| KF2MR/R | 18 |
| KØBAK/R | 3 |
| N2MKT/R | 3 |
| K2ET/R | 2 |
| K4SME/R | 2 |
| N2CEI/R | 2 |
| NN3Q/R | 2 |
| | |
| **5.7 GHz Mults** | |
| K2TER/R | 6 |
| KF2MR/R | 6 |
| KØBAK/R | 2 |
| K2ET/R | 1 |
| K4SME/R | 1 |
| N2CEI/R | 1 |
| N2MKT/R | 1 |
| NN3Q/R | 1 |
| VE3OIL/R | 1 |
| | |
| **10 GHz QSOs** | |
| KF2MR/R | 20 |
| K2TER/R | 17 |
| N2MKT/R | 8 |
| K2ET/R | 5 |
| N2CEI/R | 3 |
| | |
| **10 GHz Mults** | |
| K2TER/R | 6 |
| KF2MR/R | 6 |
| K2ET/R | 3 |
| N2CEI/R | 2 |

| | |
|---|---|
| N2MKT/R | 2 |
| | |
| **Light QSOs** | |
| KØBAK/R | 7 |
| VE3OIL/R | 1 |
| | |
| **Light Mults** | |
| KØBAK/R | 2 |
| VE3OIL/R | 1 |
| | |
| **Limited Rover** | |
| **50 MHz QSOs** | |
| WW7D/R | 151 |
| K7BWH/R | 77 |
| K7BDB/R | 76 |
| K5ND/R | 73 |
| N6GP/R | 54 |
| | |
| **50 MHz Mults** | |
| K5ND/R | 30 |
| N6GP/R | 26 |
| K7BWH/R | 18 |
| KJ2G/R | 15 |
| AA5PR/R | 14 |
| | |
| **144 MHz QSOs** | |
| WW7D/R | 224 |
| K7BDB/R | 85 |
| WB2SIH/R | 60 |
| N5BNO/R | 55 |
| K7BWH/R | 50 |
| | |
| **144 MHz Mults** | |
| WB2SIH/R | 18 |
| WW7D/R | 14 |
| K7BWH/R | 11 |
| K7BDB/R | 10 |
| K5ND/R | 8 |
| K7JSG/R | 8 |
| N6GP/R | 8 |
| W2LYN/R | 8 |
| | |

| | |
|---|---|
| **222 MHz QSOs** | |
| WW7D/R | 83 |
| N5BNO/R | 33 |
| NR2C/R | 28 |
| K7BDB/R | 27 |
| N6GP/R | 17 |
| | |
| **222 MHz Mults** | |
| WW7D/R | 10 |
| K6LMN/R | 4 |
| N5BNO/R | 4 |
| N6GP/R | 4 |
| NR2C/R | 4 |
| | |
| **432 MHz QSOs** | |
| WW7D/R | 121 |
| K7BDB/R | 54 |
| N5BNO/R | 40 |
| NR2C/R | 32 |
| K5ND/R | 22 |
| K7JSG/R | 22 |
| | |
| **432 MHz Mults** | |
| WW7D/R | 9 |
| K5ND/R | 8 |
| WB2SIH/R | 8 |
| K7BDB/R | 6 |
| N6VHF/R | 6 |
| | |
| **902 MHz QSOs** | |
| N6GP/R | 3 |
| | |
| **1.2 GHz QSOs** | |
| N6GP/R | 3 |
| | |
| **2.3 GHz QSOs** | |
| N6GP/R | 3 |
| | |
| **3.4 GHz QSOs** | |

| | |
|---|---|
| N6GP/R | 2 |
| | |
| **5.7 GHz QSOs** | |
| N6GP/R | 3 |
| | |
| **10 GHz QSOs** | |
| N6GP/R | 3 |
| | |
| **Unlimited Rover** | |
| **50 MHz QSOs** | |
| ACØRA/R | 152 |
| NØLD/R | 79 |
| KG9DUK/R | 74 |
| KA5D/R | 70 |
| K7ATN/R | 67 |
| | |
| **50 MHz Mults** | |
| ACØRA/R | 76 |
| KG9DUK/R | 17 |
| KA5D/R | 15 |
| NØLD/R | 13 |
| AF5CC/R | 11 |
| | |
| **144 MHz QSOs** | |
| K7ATN/R | 128 |
| NØLD/R | 94 |
| KA5D/R | 90 |
| KD5IKG/R | 83 |
| KG9DUK/R | 64 |
| | |
| **144 MHz Mults** | |
| ACØRA/R | 24 |
| K7ATN/R | 11 |
| NØLD/R | 11 |
| KA5D/R | 10 |
| KG9DUK/R | 10 |
| N6JET/R | 10 |
| | |
| **222 MHz QSOs** | |
| K7ATN/R | 60 |

| | |
|---|---|
| NØLD/R | 54 |
| KG9DUK/R | 49 |
| KA5D/R | 45 |
| K2LDT/R | 43 |
| KD5IKG/R | 43 |
| | |
| **222 MHz Mults** | |
| K7ATN/R | 10 |
| NØLD/R | 10 |
| KD5IKG/R | 9 |
| KG9DUK/R | 9 |
| KA5D/R | 8 |
| | |
| **432 MHz QSOs** | |
| K7ATN/R | 81 |
| NØLD/R | 76 |
| KG9DUK/R | 55 |
| KA5D/R | 54 |
| KD5IKG/R | 53 |
| | |
| **432 MHz Mults** | |
| KG9DUK/R | 10 |
| NØLD/R | 10 |
| K7ATN/R | 9 |
| KD5IKG/R | 9 |
| ACØRA/R | 8 |
| KA5D/R | 8 |
| | |
| **902 MHz QSOs** | |
| KG9DUK/R | 49 |
| NØLD/R | 49 |
| K2LDT/R | 31 |
| K7ATN/R | 16 |
| KD5IKG/R | 9 |
| | |
| **902 MHz Mults** | |
| KG9DUK/R | 9 |
| NØLD/R | 9 |
| K2LDT/R | 6 |

| | |
|---|---|
| K7ATN/R | 4 |
| N6JET/R | 3 |
| | |
| **1.2 GHz QSOs** | |
| KG9DUK/R | 49 |
| NØLD/R | 49 |
| K2LDT/R | 30 |
| K7ATN/R | 19 |
| KD5IKG/R | 12 |
| | |
| **1.2 GHz Mults** | |
| KG9DUK/R | 9 |
| NØLD/R | 9 |
| K2LDT/R | 5 |
| N6JET/R | 5 |
| K7ATN/R | 4 |
| | |
| **2.3 GHz QSOs** | |
| K2LDT/R | 23 |
| K7ATN/R | 7 |
| KG6CIH/R | 2 |
| N6JET/R | 1 |
| WA1TE/R | 1 |
| | |
| **2.3 GHz Mults** | |
| K2LDT/R | 6 |
| K7ATN/R | 3 |
| KG6CIH/R | 1 |
| N6JET/R | 1 |
| WA1TE/R | 1 |
| | |
| **3.4 GHz QSOs** | |
| K2LDT/R | 18 |
| WA1TE/R | 2 |
| N6JET/R | 1 |
| | |
| **3.4 GHz Mults** | |
| K2LDT/R | 6 |
| N6JET/R | 1 |
| WA1TE/R | 1 |
| | |

| | |
|---|---|
| **5.7 GHz QSOs** | |
| K2LDT/R | 15 |
| KG6CIH/R | 2 |
| | |
| **5.7 GHz Mults** | |
| K2LDT/R | 6 |
| KG6CIH/R | 1 |
| | |
| **10 GHz QSOs** | |
| K2LDT/R | 16 |
| KG6CIH/R | 3 |
| WA1TE/R | 3 |
| N6JET/R | 2 |
| | |
| **10 GHz Mults** | |
| K2LDT/R | 6 |
| N6JET/R | 2 |
| KG6CIH/R | 1 |
| WA1TE/R | 1 |
| | |
| **24 GHz QSOs** | |
| N6JET/R | 2 |
| | |
| **24 GHz Mults** | |
| N6JET/R | 2 |
| | |
| **Light QSOs** | |
| KG6CIH/R | 4 |
| WA1TE/R | 4 |
| | |
| **Light Mults** | |
| KG6CIH/R | 2 |
| WA1TE/R | 2 |
| | |

| **Single Operator, High Power** | |
|---|---|
| **50 MHz QSOs** | |
| K1JT | 238 |
| K1TO | 237 |
| W7JW | 185 |
| K1HTV | 172 |
| K7CW | 155 |
| | |

| | |
|---|---|
| **50 MHz Mults** | |
| K1TO | 96 |
| W7JW | 93 |
| KC4PX | 73 |
| N4QWZ | 73 |
| KØTPP | 66 |
| | |
| **144 MHz QSOs** | |
| W2KV | 166 |
| K2TXB | 142 |
| K1RZ | 131 |
| K1TEO | 109 |
| WZ1V | 94 |
| | |
| **144 MHz Mults** | |
| K2TXB | 50 |
| KØTPP | 43 |
| NØAKC | 41 |
| N1RWY | 38 |
| K1RZ | 35 |
| | |
| **222 MHz QSOs** | |
| K1RZ | 52 |
| W3SZ | 44 |
| WA3DRC | 42 |
| N7EPD | 33 |
| KE7SW | 32 |
| N1RWY | 32 |
| W3GAD | 32 |
| WZ1V | 32 |
| | |
| **222 MHz Mults** | |
| N5RZ | 20 |
| KE8FD | 16 |
| WØUC | 16 |
| N4QWZ | 15 |
| VE3ZV | 15 |
| | |
| **432 MHz QSOs** | |
| K1RZ | 73 |
| W2KV | 69 |
| WA3DRC | 53 |
| N1RWY | 51 |

| | |
|---|---|
| KE7SW | 47 |
| | |
| **432 MHz Mults** | |
| K1RZ | 21 |
| VE3ZV | 20 |
| N4QWZ | 19 |
| VA3ELE | 19 |
| K1TEO | 17 |
| WØUC | 17 |
| | |
| **902 MHz QSOs** | |
| K1RZ | 28 |
| W3SZ | 20 |
| W2SJ | 17 |
| WA3DRC | 17 |
| N1RWY | 15 |
| WA2OMY | 15 |
| WB2RVX | 15 |
| | |
| **902 MHz Mults** | |
| K1RZ | 8 |
| VE3ZV | 7 |
| N1RWY | 6 |
| WØGHZ | 6 |
| K1TEO | 5 |
| W3SZ | 5 |
| WA3DRC | 5 |
| WØUC | 5 |
| | |
| **1.2 GHz QSOs** | |
| K1RZ | 35 |
| W3SZ | 24 |
| WA3DRC | 24 |
| N1RWY | 20 |
| VA3ELE | 19 |
| | |
| **1.2 GHz Mults** | |
| K1RZ | 11 |
| VA3ELE | 11 |
| WA7XX | 8 |
| N1RWY | 7 |
| VA3HD | 6 |
| VE3ZV | 6 |

| | |
|---|---|
| W3SZ | 6 |
| WØUC | 6 |
| | |
| **2.3 GHz QSOs** | |
| WA3DRC | 16 |
| W3SZ | 11 |
| W2SJ | 10 |
| WA2OMY | 9 |
| K1RZ | 8 |
| | |
| **2.3 GHz Mults** | |
| K1RZ | 4 |
| N4JQQ | 4 |
| VE3ZV | 4 |
| W2SJ | 4 |
| W3SZ | 4 |
| | |
| **3.4 GHz QSOs** | |
| W3SZ | 8 |
| WA3DRC | 8 |
| WA2OMY | 6 |
| K3GNC | 5 |
| K1RZ | 3 |
| VA3ELE | 3 |
| VE3ZV | 3 |
| WB2BYP | 3 |
| | |
| **3.4 GHz Mults** | |
| W3SZ | 4 |
| K1RZ | 3 |
| VE3ZV | 3 |
| WB2BYP | 3 |
| K3GNC | 2 |
| VA3ELE | 2 |
| W2SJ | 2 |
| WA2OMY | 2 |
| WA3DRC | 2 |
| | |
| **5.7 GHz QSOs** | |
| W3SZ | 8 |
| WA2OMY | 5 |
| WA3DRC | 5 |
| WB2RVX | 5 |

| | |
|---|---|
| KØVXM | 4 |
| | |
| **5.7 GHz Mults** | |
| W3SZ | 3 |
| K1RZ | 2 |
| KØVXM | 2 |
| VA3ELE | 2 |
| WA2OMY | 2 |
| WA3DRC | 2 |
| WB2BYP | 2 |
| WB2RVX | 2 |
| | |
| **10 GHz QSOs** | |
| VA3ELE | 9 |
| W3SZ | 8 |
| K1RZ | 7 |
| KØVXM | 5 |
| K5LLL | 4 |
| WB2RVX | 4 |
| | |
| **10 GHz Mults** | |
| VA3ELE | 4 |
| W3SZ | 4 |
| K1RZ | 3 |
| K5LLL | 3 |
| KØVXM | 3 |
| WB2RVX | 3 |
| | |
| **24 GHz QSOs** | |
| W1FKF | 1 |
| | |
| **24 GHz Mults** | |
| W1FKF | 1 |
| | |
| **47 GHz QSOs** | |
| W1FKF | 1 |
| | |
| **47 GHz Mults** | |
| W1FKF | 1 |
| | |
| **Light QSOs** | |
| K3JJZ | 1 |
| W2SJ | 1 |

| | |
|---|---|
| W3GAD | 1 |
| WA3DRC | 1 |
| WB2RVX | 1 |
| | |
| **Light Mults** | |
| K3JJZ | 1 |
| W2SJ | 1 |
| W3GAD | 1 |
| WA3DRC | 1 |
| WB2RVX | 1 |
| | |
| **Single Operator, Low Power** | |
| **50 MHz QSOs** | |
| K2DRH | 137 |
| N8RA | 137 |
| WA3NUF | 129 |
| XE2YWH | 112 |
| KC5WX | 110 |
| | |
| **50 MHz Mults** | |
| K2DRH | 73 |
| XE2YWH | 62 |
| N5ITO | 61 |
| KC5WX | 57 |
| XE1MEX | 57 |
| | |
| **144 MHz QSOs** | |
| WA3NUF | 100 |
| WZ8T | 99 |
| K2DRH | 84 |
| N3RG | 84 |
| KA2ENE | 81 |
| | |
| **144 MHz Mults** | |
| K2DRH | 40 |
| N3BBI | 22 |
| N8RA | 20 |
| NF3R | 19 |
| K9MU | 18 |
| N3RG | 18 |
| WØJT | 18 |
| | |

| | |
|---|---|
| **222 MHz QSOs** | |
| AF1T | 40 |
| N3RG | 39 |
| WA3NUF | 39 |
| KA3FQS | 36 |
| KB3MTW | 32 |
| | |
| **222 MHz Mults** | |
| K2DRH | 20 |
| AF1T | 14 |
| VE3DS | 13 |
| K9MU | 11 |
| NØLL | 10 |
| | |
| **432 MHz QSOs** | |
| WZ8T | 58 |
| AF1T | 57 |
| N3RG | 55 |
| KA3FQS | 49 |
| K2DRH | 44 |
| WA3NUF | 44 |
| | |
| **432 MHz Mults** | |
| K2DRH | 21 |
| AF1T | 15 |
| N3RG | 13 |
| K9MU | 12 |
| VE3DS | 12 |
| | |
| **902 MHz QSOs** | |
| WA3NUF | 14 |
| AF1T | 12 |
| KA3FQS | 12 |
| N3RG | 12 |
| W4RAA | 12 |
| | |
| **902 MHz Mults** | |
| K2DRH | 8 |
| AF1T | 5 |
| VE3DS | 5 |
| K5TRA | 4 |
| W9GA | 4 |
| WA3GFZ | 4 |

| | |
|---|---|
| **1.2 GHz QSOs** | |
| N3RG | 25 |
| WA3NUF | 21 |
| AF1T | 19 |
| KA3FQS | 18 |
| K2DRH | 15 |
| | |
| **1.2 GHz Mults** | |
| K2DRH | 10 |
| N3RG | 6 |
| W2UTH (N2WK, op) | 5 |
| W9GA | 5 |
| WA3NUF | 5 |
| WB2JAY | 5 |
| | |
| **2.3 GHz QSOs** | |
| N3RG | 13 |
| WA3NUF | 11 |
| WA3GFZ | 10 |
| KA3FQS | 8 |
| AF1T | 5 |
| | |
| **2.3 GHz Mults** | |
| AF1T | 3 |
| N3RG | 3 |
| W3EKT | 3 |
| WA3NUF | 3 |
| K5TRA | 2 |
| KA3FQS | 2 |
| VE3DS | 2 |
| W6IT | 2 |
| WA3GFZ | 2 |
| | |
| **3.4 GHz QSOs** | |
| N3RG | 8 |
| WA3GFZ | 6 |
| WA3NUF | 6 |
| AF1T | 4 |
| KA3FQS | 4 |
| | |
| **3.4 GHz Mults** | |
| AF1T | 3 |
| N3RG | 3 |
| WA3NUF | 3 |
| W3EKT | 2 |
| W6IT | 2 |
| WA3GFZ | 2 |
| | |
| **5.7 GHz QSOs** | |
| N3RG | 8 |
| W6IT | 3 |
| WA3GFZ | 3 |
| WA3NUF | 3 |
| AF1T | 2 |
| W1MKY | 2 |
| W3EKT | 2 |
| | |
| **5.7 GHz Mults** | |
| N3RG | 3 |
| W3EKT | 2 |
| W6IT | 2 |
| WA3NUF | 2 |
| AF1T | 1 |
| VE3DS | 1 |
| W1MKY | 1 |
| WA3GFZ | 1 |
| | |
| **10 GHz QSOs** | |
| AF1T | 7 |
| N3RG | 7 |
| W1MKY | 6 |
| K5TRA | 3 |
| VE3DS | 3 |
| VE3SMA | 3 |
| W3EKT | 3 |
| WA3NUF | 3 |
| | |
| **10 GHz Mults** | |
| AF1T | 3 |
| N3RG | 3 |
| K5TRA | 2 |
| W1MKY | 2 |
| W3EKT | 2 |
| WA3NUF | 2 |
| WØJT | 2 |
| | |
| **24 GHz QSOs** | |
| AF1T | 1 |
| W1MKY | 1 |
| | |
| **24 GHz Mults** | |
| AF1T | 1 |
| W1MKY | 1 |
| | |
| **Light QSOs** | |
| AF1T | 4 |
| W1MKY | 4 |
| WB3IGR | 3 |
| K3EGE | 1 |
| KA3FQS | 1 |
| WA3GFZ | 1 |
| | |
| **Light Mults** | |
| AF1T | 1 |
| K3EGE | 1 |
| KA3FQS | 1 |
| W1MKY | 1 |
| WA3GFZ | 1 |
| WB3IGR | 1 |
| | |
| **Single Operator, Portable** | |
| **50 MHz QSOs** | |
| WX3P | 35 |
| WA7JTM | 32 |
| KD7WPJ | 26 |
| KF7NP | 20 |
| WX7MB | 19 |
| | |
| **50 MHz Mults** | |
| WX3P | 11 |
| WK9U | 8 |
| AA6XA | 6 |
| WA7JTM | 6 |
| KD7WPJ | 4 |
| | |
| **144 MHz QSOs** | |
| WA7JTM | 48 |
| AA6XA | 41 |
| KF7NP | 34 |
| K7TAB | 27 |
| KØNR | 27 |
| | |
| **144 MHz Mults** | |
| KF7NP | 8 |
| VE7JH | 8 |
| WA7JTM | 8 |
| AA6XA | 6 |
| AE7EL | 6 |
| | |
| **222 MHz QSOs** | |
| WA7JTM | 22 |
| K7TAB | 14 |
| KF7NP | 12 |
| AA6XA | 9 |
| W7JET | 7 |
| | |
| **222 MHz Mults** | |
| AA6XA | 5 |
| WA7JTM | 4 |
| K7TAB | 3 |
| W7JET | 3 |
| AA4Q | 2 |
| K7JFD | 2 |
| KF7NP | 2 |
| VE7JH | 2 |
| W7USA | 2 |
| WX3P | 2 |
| | |
| **432 MHz QSOs** | |
| WA7JTM | 34 |
| KF7NP | 23 |
| AA6XA | 18 |
| KØNR | 17 |
| WB7ENX | 15 |
| | |
| **432 MHz Mults** | |
| WA7JTM | 6 |
| AA6XA | 4 |
| K7TAB | 4 |

| | |
|---|---|
| KD7WPJ | 4 |
| VE7JH | 4 |
| WB7ENX | 4 |
| | |
| **902 MHz QSOs** | |
| KG5FHU | 1 |
| | |
| **902 MHz Mults** | |
| KG5FHU | 1 |
| | |
| **1.2 GHz QSOs** | |
| WA7JTM | 11 |
| K7TAB | 6 |
| K7TEJ | 2 |
| | |
| **1.2 GHz Mults** | |
| WA7JTM | 4 |
| K7TAB | 2 |
| K7TEJ | 2 |
| | |
| **24 GHz QSOs** | |
| K9PW | 1 |
| | |
| **24 GHz Mults** | |
| K9PW | 1 |
| | |
| **47 GHz QSOs** | |
| K9PW | 1 |
| | |
| **47 GHz Mults** | |
| K9PW | 1 |
| | |
| **Light QSOs** | |
| K3DMA | 3 |
| KB3SIG | 2 |
| K9PW | 1 |
| WA3WUL | 1 |
| | |
| **Light Mults** | |
| K3DMA | 1 |
| K9PW | 1 |
| KB3SIG | 1 |
| WA3WUL | 1 |

| | |
|---|---|
| | |
| **Single Operator, 3 Band** | |
| **50 MHz QSOs** | |
| AD5A | 148 |
| KO9A | 138 |
| K9FA | 124 |
| W1QK | 104 |
| KR1ST | 94 |
| | |
| **50 MHz Mults** | |
| K9FA | 70 |
| AD5A | 65 |
| KO9A | 53 |
| N4QV | 49 |
| KK4MA | 39 |
| | |
| **144 MHz QSOs** | |
| K3SFX | 63 |
| N7QOZ | 61 |
| N7IR | 54 |
| N2SCJ | 52 |
| AC2VE | 50 |
| K3VEQ | 50 |
| | |
| **144 MHz Mults** | |
| KO9A | 21 |
| K3SFX | 14 |
| KA9VDU | 13 |
| AD5A | 12 |
| K3TEF | 12 |
| KG5MD | 12 |
| | |
| **222 MHz QSOs** | |
| N7QOZ | 13 |
| AE6GE | 5 |
| VE2NCG | 5 |
| WB2RYH | 3 |
| | |
| **432 MHz QSOs** | |
| N7IR | 48 |
| K3SFX | 40 |
| N2SCJ | 33 |

| | |
|---|---|
| N7RK | 30 |
| KC2THQ | 27 |
| | |
| **432 MHz Mults** | |
| KO9A | 10 |
| N7IR | 10 |
| KA9VDU | 9 |
| K3SFX | 8 |
| KG5MD | 8 |
| N7RK | 8 |
| | |
| **902 MHz QSOs** | |
| VE2NCG | 1 |
| | |
| **1.2 GHz QSOs** | |
| KA9VDU | 2 |
| VE2NCG | 2 |
| AE6GE | 1 |
| | |
| **Light QSOs** | |
| AA3JH | 2 |
| KD2NNM | 2 |
| | |
| **Light Mults** | |
| AA3JH | 2 |
| KD2NNM | 2 |
| | |
| **Single Operator, FM Only** | |
| **50 MHz QSOs** | |
| N2HJD | 23 |
| NR2C | 21 |
| K2SI | 20 |
| KG6IYN | 12 |
| AD4TJ | 11 |
| | |
| **50 MHz Mults** | |
| K2SI | 5 |
| N2HJD | 4 |
| NR2C | 4 |
| KM4KMU | 3 |
| N9VM (N1VM, op) | 3 |
| | |

| | |
|---|---|
| **144 MHz QSOs** | |
| N2HJD | 71 |
| K2SI | 60 |
| KM4KMU | 43 |
| K7IMA | 37 |
| NR2C | 28 |
| | |
| **144 MHz Mults** | |
| K2SI | 5 |
| N2HJD | 5 |
| K6KQV | 4 |
| KG6IYN | 4 |
| KK6ZLE | 4 |
| KM4KMU | 4 |
| N7KN | 4 |
| NR2C | 4 |
| WB9WOZ | 4 |
| | |
| **222 MHz QSOs** | |
| N2HJD | 19 |
| K7IMA | 11 |
| KG6IYN | 7 |
| W2BSN | 7 |
| N2ZN | 6 |
| | |
| **222 MHz Mults** | |
| KM4KMU | 4 |
| N2HJD | 4 |
| W7AIT | 3 |
| K7IMA | 2 |
| KG6IYN | 2 |
| N2ZN | 2 |
| N9VM (N1VM, op) | 2 |
| W2BSN | 2 |
| WB9WOZ | 2 |
| | |
| **432 MHz QSOs** | |
| N2HJD | 37 |
| KI7LTT | 21 |
| KM4KMU | 21 |
| K2SI | 19 |
| K7IMA | 16 |

| | |
|---|---|
| **432 MHz Mults** | |
| K2SI | 5 |
| N2HJD | 5 |
| KM4KMU | 4 |
| NR2C | 4 |
| KG6IYN | 3 |
| N7KN | 3 |
| VA6PRC | 3 |
| | |
| **902 MHz QSOs** | |
| VA2DG | 2 |
| | |
| **Limited Multioperator** | |
| **50 MHz QSOs** | |
| N2NT | 290 |
| K5QE | 146 |
| N9HF | 113 |
| K2BAR | 96 |
| N3DPB | 78 |
| | |
| **50 MHz Mults** | |
| K5QE | 95 |
| N2NT | 56 |
| N9HF | 48 |
| WS9V | 47 |
| W5ROK | 33 |
| | |
| **144 MHz QSOs** | |
| N2NT | 237 |
| K5QE | 154 |
| N3DPB | 54 |
| N2JQR | 46 |
| W6RDF | 39 |
| | |
| **144 MHz Mults** | |
| K5QE | 96 |
| N2NT | 41 |
| N9HF | 26 |
| W9RVG | 23 |
| N3DPB | 21 |
| | |

| | |
|---|---|
| **222 MHz QSOs** | |
| N2NT | 67 |
| W9RVG | 14 |
| K2BAR | 13 |
| N2JQR | 11 |
| K5QE | 10 |
| N9HF | 10 |
| | |
| **222 MHz Mults** | |
| N2NT | 19 |
| W9RVG | 12 |
| K5QE | 9 |
| N9HF | 5 |
| K2BAR | 4 |
| | |
| **432 MHz QSOs** | |
| N2NT | 81 |
| K5QE | 27 |
| N2JQR | 20 |
| W6RDF | 18 |
| K2BAR | 15 |
| W9RVG | 15 |
| | |
| **432 MHz Mults** | |
| N2NT | 19 |
| K5QE | 16 |
| W9RVG | 13 |
| N9XKH | 6 |
| W5ROK | 6 |
| | |
| **1.2 GHz QSOs** | |
| W5ROK | 1 |
| | |
| **1.2 GHz Mults** | |
| W5ROK | 1 |
| | |
| **Unlimited Multioperator** | |
| **50 MHz QSOs** | |
| N3NGE | 254 |
| W4NH | 134 |
| W1XM | 100 |
| KE1LI | 93 |

| | |
|---|---|
| WA3EHD | 89 |
| | |
| **50 MHz Mults** | |
| N3NGE | 61 |
| W4NH | 57 |
| W5UHF | 53 |
| KE1LI | 19 |
| NY2NY | 19 |
| | |
| **144 MHz QSOs** | |
| N3NGE | 199 |
| W1XM | 81 |
| KE1LI | 80 |
| WA3EHD | 68 |
| W4NH | 46 |
| | |
| **144 MHz Mults** | |
| N3NGE | 41 |
| W4NH | 30 |
| KE1LI | 19 |
| W3RFC | 16 |
| W1XM | 15 |
| | |
| **222 MHz QSOs** | |
| N3NGE | 80 |
| WA3EHD | 34 |
| KE1LI | 21 |
| W1XM | 8 |
| W3RFC | 8 |
| W4NH | 8 |
| W5UHF | 8 |
| | |
| **222 MHz Mults** | |
| N3NGE | 19 |
| KE1LI | 7 |
| W1XM | 6 |
| W4NH | 5 |
| W5UHF | 5 |
| | |
| **432 MHz QSOs** | |
| N3NGE | 121 |
| WA3EHD | 41 |
| KE1LI | 21 |

| | |
|---|---|
| W4NH | 15 |
| W1XM | 13 |
| | |
| **432 MHz Mults** | |
| N3NGE | 25 |
| W4NH | 8 |
| KE1LI | 5 |
| W1XM | 5 |
| WA3EHD | 4 |
| | |
| **902 MHz QSOs** | |
| N3NGE | 27 |
| WA3EHD | 17 |
| W3RFC | 4 |
| W5UHF | 1 |
| | |
| **902 MHz Mults** | |
| N3NGE | 9 |
| WA3EHD | 3 |
| W3RFC | 2 |
| W5UHF | 1 |
| | |
| **1.2 GHz QSOs** | |
| N3NGE | 28 |
| WA3EHD | 15 |
| VA7MM | 11 |
| W1XM | 11 |
| NY2NY | 4 |
| | |
| **1.2 GHz Mults** | |
| VA7MM | 10 |
| N3NGE | 9 |
| W1XM | 6 |
| WA3EHD | 3 |
| KA1SU | 2 |
| KE1LI | 2 |
| NY2NY | 2 |
| | |
| **2.3 GHz QSOs** | |
| WA3EHD | 8 |
| N3NGE | 7 |
| W4NH | 4 |
| | |

| **2.3 GHz Mults** | |
|---|---|
| N3NGE | 3 |
| WA3EHD | 3 |
| W4NH | 1 |
| | |
| **3.4 GHz QSOs** | |
| WA3EHD | 1 |
| | |
| **3.4 GHz Mults** | |
| WA3EHD | 1 |
| | |
| **5.7 GHz QSOs** | |
| N3NGE | 4 |
| W4NH | 2 |
| | |
| **5.7 GHz Mults** | |
| N3NGE | 2 |
| W4NH | 1 |
| | |
| **10 GHz QSOs** | |
| N3NGE | 2 |
| W5UHF | 2 |
| | |
| **10 GHz Mults** | |
| N3NGE | 2 |
| W5UHF | 2 |
| | |
| **24 GHz QSOs** | |
| N3NGE | 1 |
| | |
| **24 GHz Mults** | |
| N3NGE | 1 |
| | |
| **47 GHz QSOs** | |
| N3NGE | 1 |
| | |
| **47 GHz Mults** | |
| N3NGE | 1 |
| | |
| **Light QSOs** | |
| N3NGE | 4 |
| WA3EHD | 3 |
| | |

| **Light Mults** | |
|---|---|
| N3NGE | 1 |
| WA3EHD | 1 |
| | |
| **Checklog** | |
| **50 MHz QSOs** | |
| WB2GFZ | 4 |
| KM4IAJ | 2 |
| | |
| **50 MHz Mults** | |
| WB2GFZ | 4 |
| KM4IAJ | 2 |