

The 2007 ARRL 10 GHz and Up Contest Results

Twenty-one years young and still setting records!

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The ARRL's 10 GHz and Up contest, held August 18-19 and September 15-16, 2007, is like no other contest for so many reasons. First off, like the pre-WWII UHF Relay days, scoring is based solely on distance and there are no "multipliers." In order to maximize your distance-based score, it requires that you sharpen your operating skills, improve your equipment, be aware of what propagation modes may be available and push the known limits about what can be done on all fronts.

So what kind of distance can be worked on these "Ultra Highs"? Line-of-sight? Maybe 1 or 2 kilometers or more? How about 1460 km! During this year's contest a new North America 10 GHz DX record of 1460 km was set between Gary Lauterbach, AD6FP, operating from CM96wa and Frank Kelly, 4C2WH, operating from DL34wt. But they were not the only stations working some long DX. For the contest as a whole, 16 different 10 GHz stations worked at least 1000 km! The *average* "Best DX" from all 113 competitors was 481 km and two thirds of all operators report making at least one contact out to 300 km or better. On 24 GHz, the best DX was 246 km, on 47 GHz it was 218 km and using visible Light, Clint Turner, KA7OEI, reported a 172 km QSO. Now that's DX!

Another aspect that makes this contest unique is that the majority of contestants operate portable, all in search of long clear vistas free from RF absorbing foliage. There is no staying at home in the comfortable operating chair for most of these operators. Microwave contesters are not only skilled operators; they have to be tough to endure

what Mother Nature hands out. Operating portable means combating rain, bugs, gas prices and perhaps our number one enemy, the wind. With a beamwidth of just a few degrees, keeping a 19 inch or larger dish antenna aimed properly in the face of wind and rain is no easy task. Be sure to visit the 10 GHz results at www.arrl.org/contests for a great sidebar story from Bruce Richardson, W9FZ, to see how a small group of 10 GHz contesters battled the elements while trying out new microwave paths in the upper Midwest.

10 GHz Only Results

The big news here is the new North America continental tropospheric propagation (tropo) record of 1460 km between AD6FP and 4C2WH. Gary and Frank took full advantage of the major tropo duct that appears along the California and Mexican coastline. How good was the Baja duct this year? The old DX record was broken multiple times. W6CWX worked a 1247 km path into Mexico using just



Bernardo Gonzalez, 6I2HWB, working into California from Mexico on 10 GHz.

DAN BUBKE, K6NKC

200 mW and a 16 dBi horn antenna, and KC6QHP reported working the /XE guys at 741 km from inside his apartment building while looking the opposite direction! Also taking advantage of that same tropo duct was our 10 GHz Only winner Mike Ramirez, 4B2WB, with a total score of 173,020 points. Mike was able to make 299 QSOs with 55 different stations. Reviewing the 10 GHz Only category shows that the top 11 spots all belonged to either XE or 6-land stations. Dale Clement, AF1T, was the highest placing non-California, non-XE station with a 12th place finish of 27,629 points. Dale also had one of

the longest contacts outside of this same region at 635 km along with W3HMS and WA3PTV. The title for the greatest number of QSOs goes to 4B2WB with 299, while the title for the greatest number of different calls goes to AD6FP with 62. Looking at the participation by region, it's not surprising that 6-landers led the way with 34 entries, up four from last year. There are very definite "hot pockets" of microwave activity around the country as 6, Ø and 1-land together accounted for 71 of the 115 entries, or nearly 62% of logs received. This year 7-land showed a nice increase in activity going from just two entries last year to five this year.

10 GHz and Up Results

Starting in 1996, the 10 GHz Contest rules were modified to include a second contest category for those stations operating on the bands above 10 GHz. This year there were 38 stations competing in this competitive group, essentially no change from the 39 entries last year. Of these 38 stations, 35

operators report operating on 24 GHz and 16 on 47 GHz. Just 13 stations report having made contacts on 10, 24 and 47 GHz. Congratulations to those few! There were no reported contacts on the bands between 47 GHz and Light and just one reported QSO on Light.

The winner of the 11th running in the 10 GHz and Up category is Wayne Yoshida, KH6WZ, with a score of 76,984 points. Wayne's 197 contacts also captured the greatest number of QSOs in this category. In all, eight of the Top Ten slots were captured by those operating from 6-land with only Ø-landers NØIO and WBØLJC cracking into this top group.

Dropping in at 6th place was Mark Lewis, NØIO, with 24,140 points. Mark was the highest placing non-6-lander in this operating class. It's no coincidence that Mark also had the best DX on both 24 GHz at 246 km and 47 GHz at 218 km sharing those honors with Phil Lee, W6HCC/Ø. Mark's key advantage was not a coastal duct, but the lofty vista provided by Pikes Peak, Colorado at over 14,000 feet. Those of us who live in the low flatland can only dream! On 24 GHz Mark used a homebrew transverter based on a DB6NT board with a 10 MHz locked LO, a homebrew preamp with a 1.8 dB noise figure and 28 dB of gain, a surplus 500 mW amplifier and a 21 dBi horn antenna. Mark reports that this contact took place between Pikes Peak (DM78lu) and a spot in Wyoming (DN71nb) that has a great view to the south. On 47 GHz, Mark used a homebrew harmonic mixer with a 10 MHz locked LO, a DB6NT amplifier providing a 4.8 dB noise figure and 35 mW of RF output to a surplus 12 inch PCom dish antenna fed with homebrew WR22 waveguide. On 47 GHz W6HCC/Ø was listening with a bare mixer connected to a 12 inch dish antenna. Mark reports that W6HCC/Ø 50 mW was 10 dB out of the noise on this 218 km path. Following this contact Mark reported a 47 GHz 175 km QSO with KØRZ. KØRZ's SSB signal was 30 dB above the noise.

Looking at the distances worked on the bands above 10 GHz, on 24 GHz both the average and the mean "Best DX" for the 38 reporting stations was 101 km. On 47 GHz, the average "Best DX" for the 16 reporting stations was 56 km while the mean was 30 km.

On the 300+ GHz frontier, Clint Turner, KA7OEI, reported a 172 km Light QSO with Ron Jones, K7RJ. Clint operated from Inspiration Point, north of Ogden, Utah (DN41aj) with a station consisting of two 250 mm by 318 mm Fresnel lenses. Ron, K7RJ, was located near Mt Nebo, Utah (DM49du) and used a station that con-

sisted of two 404 mm × 430 mm Fresnel lenses. Both stations used one lens for transmit while the other lens was used for receive. Both stations were located at about 9383 feet in elevation. Common to both stations was a KA7OEI designed JFET-based optical detector using a BPW34 PIN photodiode while the emitters were AM modulated Luxeon III devices operating at 627 nanometers (about 478 THz). It should be noted that the emitters that were used for these contacts, while not lasers, are narrow band transmitters with a half power

bandwidth of 20 nm. Clint reported that signals varied between Q2 and Q3 with the exchange being completed using voice. Due to a tremendous amount of haze in the air neither site was visible from the other.

Looking Ahead — the 22nd Running

As Ron Simpson, N6GKJ, said in his contest soapbox, "I want to thank each and every one of the stations that I contacted. I learned something very valuable and important from all of them...never give up...keep going, the thrill is the farthest contact, the chase is worth it!" Well said. Congratulations to all 113 microwave enthusiasts who participated in the 2007 contest. You can see that this contest is like no other, in many ways. Now is a good time to start to think about this year's contest, so mark down August 16-17 and September 20-21, 2008 in your calendar.



Table 1
Top 10 Scores

10 GHz Only	Score	10 GHz and Up	Score
4B2WB	173,020	KH6WZ	76,984
6I2HWB	172,123	N6TEB	38,258
XE2/K6NKC	169,895	AD6FP	27,125
4C2WH	157,487	N9JIM	26,509
KE6HPZ	124,061	K6GZA	25,104
WB6JDH	91,857	NØIO	24,140
N6DN	55,594	WBØLJC	23,775
N9RIN	39,214	W6OYJ	21,145
K6WC1	37,460	K6JEY	20,968
N6RMJ	34,296	WA6QYR	20,423

Table 2
Participation by Call Area

Call Area	Entries	Call Area	Entries
6	34	4	5
0	23	7	6
1	14	3	3
5	8	2	3
VE	7	DX	3
8	7	9	1

Table 3
Top 10 Total QSOs Completed

10 GHz Only	Score	10 GHz and Up	Score
4B2WB	299	KH6WZ	197
KE6HPZ	280	NØYE	173
6I2HWB	275	NØIO	163
XE2/K6NKC	265	KØRZ	143
WB6JDH	240	WBØLJC	136
4C2WH	222	W6HCC/Ø	130
N6DN	170	KA1OJ	115
N9RIN	169	N9JIM	114
N6RMJ	133	AD6FP	108
W1AUV	115	N6TEB	107



Carol, NØHZO, enjoys a sunny Minnesota day in EN34qg while working the contest.

Feedback

◊ The photo caption of President Joel Harrison, W5ZN, with Senator Mark Pryor [Jan 2008, p 13] identified the senator as a Republican. He is in fact a Democrat.

◊ In "2007 ARRL International DX Phone Contest Results" [Oct 2007, pp 95-100], KA5PVB was incorrectly listed in the Single Operator, Low Power category. He should have been listed in the Single Operator QRP category. This change puts him in fourth place overall in his correct category. The ARRL regrets the error.

◊ In "Building the Tinker Box" [Jan 2008, pp 35-38], the schematic in Figure 1 is authentic based on the original; however, it introduces a safety risk not acceptable in peacetime. There is no bleeder resistor in the power supply to discharge the filter capacitor after turning the set off. We suggest that those building copies insert a bleeder of around 40 kΩ at 10 W in parallel with C11. As with any safety device, always assume it has failed and ground the positive side of C11 with a shorting stick to be sure.

◊ In "Product Review—ICOM IC-R9500 Communications Receiver" [Jan 2008, pp 69-73], Table 1 on p 71 has two errors. The correct value of the measured IMD DR for 14 MHz at 5 and 2 kHz spacings is 92 and 81 dB, respectively.

◊ In "Feedback" [Feb 2008, p 44], pins 4 and 5 of the opto-isolator are reversed.

◊ In "Hints & Kinks" [Feb 2008, pp 80-81], the item "Two Speed Soldering Iron" actually reduces power by 50%, not 75% while the diode is inserted in the circuit. This is a result of the duty cycle being reduced by 50%.

◊ In "Old Radio" [Feb 2008, pp 96-97], the modified electronic keyer schematic did not show the pin connections for the change to the 6C4 triode. The pins are as follows: filament, 3 and 4 (not center tapped); grid, 6; plate, 5 (or 10) and cathode, pin 7.