

# The 1999 ARRL International DX Contest CW Results

“This was one to remember”—NØUR

Sometimes it is hard to summarize an on-the-air-operating event briefly. But thanks to Jim Lageson, NØUR, it was easy to focus on what proved to be one of the more exciting ARRL International DX CW contests in recent years. Endangered scoring records, record participation, and great propagation all added up to lots of fun during one of Amateur Radio’s premier events.

More than 1161 DX and 1021 W/VE stations submitted logs for this annual battle. With 48 hours on the clock, the winners are generally the ones with good planning, lots of stamina and maybe a healthy dose of “lady luck” in the shack. With the implementation of more thorough electronic log checking, the winners are also the ones who seem to take special care in data entry to go along with their demonstrated ability to copy higher speed CW.

After finishing second in 1998 and operating from his developing “super-station” on Cape Cod, K1ZM led the way of High Power W/VE single ops, setting a new scoring record in the process. Jeff’s 4,566,039 points lead the way as four ops topped the old mark of 4,001,790 set in 1991. Congratulations to the quartet of K1ZM, K5ZD (W2SC, op), KQ2M, and N2NT—all of whom broke the old barrier.

Two ops also managed to break the old scoring record in the single-op-assisted category. Congratulations to new record holder K3WW with 4,763,799 points. He edged out KI1G 4,673,250 points, which was 68,676 more than the record which had existed since 1992. All W/VE single-band scoring records remained in tact, in spite of spirited challenges from many ops.

Stations and operators in each of the three W/VE multi-operator categories walked away having set new all-time marks. With a score of 4,514,112, the operators at the W3BGN multi-single stations now hold the record previously held by the K5ZD team of 1998. The K1AR multi-two team, operating this year at K1EA’s home, continues to be record setters. They became the first group to top the 9 million-point barrier in this category, finishing with an outstanding score of 9,247,365.

Rounding out the record setting performances by multi-op stations was the gang at W3LPL, who fought it out with ops at

KC1XX. Both broke the 1992 scoring mark of 10,756,002. But when the dust settled, W3LPL’s call goes into the record book with a score of 12,158,520. This category, which includes many of the best contest operators the US has to offer, will continue to receive great interest as the likes of K3LR, K1XM and K1KI continue to challenge. In fact, all 3 of the top finishers worked a DXCC on four bands, with W3LPL coming closest to a 5BDXCC, missing by only 16 entities on 80 meters.

Though no all-time scoring records were set on from the single op DX side of this contest, the competition remained heated on all fronts. The “battle of the Cayman Islands” became the battle for the champi-

onship in the low-power single-op category. ZF2NT with N6NT as the operator prevailed over ZF2MO, operated by KM9D. WP2Z with KE2VB at the key, finished strong and continues a string of outstanding contest finishes.

Three DX high-power single-op stations around the Caribbean and Central America, each with guest ops from the US, led the way in another exciting race. At the finish line, W2GD, operating P4ØW wins the slugfest on the strength of a score of 4,965,408, with WP3R (KE3Q, op) and 3E1CW (KD6WW, op) finishing second and third respectively. Not to be left out of the top honors, Europe can boast of GØTDX

## Top Ten

W/VE Single Operator, QRP, CW	
N7IR	516,132
N1TM	338,334
NØUR	306,180
N1CWR	284,208
AA1CA	281,934
WI9WI	269,730
W8QZA/G	227,586
N6WS	216,756
KØNI	177,912
K5TT	165,996

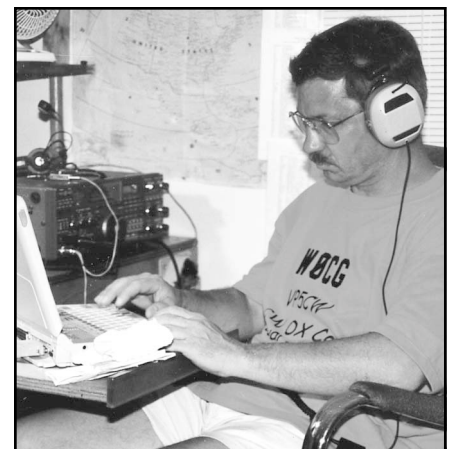
W/VE Single Operator Assisted, CW	
K3WW	4,763,799
KI1G	4,673,250
K2NG	4,181,814
N2MM	3,083,184
W2RE	2,837,604
AA3B	2,732,610
N2RM	2,319,678
K3PH	2,298,192
K1IR	2,093,184
K2NJ	2,063,376

DX Single Operator, QRP, CW	
GØTDX	406,116
HA2SX	402,705
HP1AC	248,784
LU1FNH	242,406
DL3KVR	215,556
9A3RE	199,296
DL4FN	198,696
LY2FE	178,227
LY2BTA	157,920
F5OIH	147,420

DX Single Operator Assisted, CW	
DK3GI	2,062,848
KH6RS	1,772,766
PA5KT	815,517
KH2/N2NL	811,200
OK1DG	555,540



Multi-Operator Single-Transmitter CW winner 8P9JA with operators Will, AA4NC and Jim, K4MA, hunkered down for the long haul.



Geoff, WØCG, one of the ops at Multi-Single second-place finisher VP5CW in the middle of a 201-contact run in the first hour of the contest.

## Single Band Top Ten

W/VE 160		W/VE 40		W/VE 15		DX 160		DX 40		DX 15	
WA8GHZ	15,006	K8DX	285,384	K2SS/1	605,790	S50U	16,128	C6AKQ	234,879	ZF1A	320,856
K4TEA	11,484	KM2P	230,265	N8II	531,036	YZ6A	14,280	(N4BP, op)		(W5ASP, op)	
K5RX	7,035	KV0Q	229,353	K2WI	518,976	S57M	8,787	OK1RF	220,719	9A5Y	241,623
K4RX	5,814	K4VX	216,132	W0UN	477,873	I3VHO	5,808	SN2B	191,868	(9A3LG, op)	
K1VW	5,670	(K9BGL, op)		(W0UA, op)		OK1TP	495	(SP2FAX, op)		KL7RA	240,012
NX5M	3,948	NA5B	172,800	K0XG	447,531	OH2U	175,914	OH2U	175,914	OT9A	221,502
KZ5MM	3,159	(W5AO, op)		(K0RX, op)		(OH2LUR, op)		S57DX	165,312	(ON5UM, op)	
K1KY	2,886	VE1ZJ	135,018	K2VV	423,384	OT9T	117,264	YU4WU	154,686	T17/N4MO	218,370
VE3DO	1,980	K7EM	106,470	(at K4VX)		(ON4UN, op)		OH1JD	147,726	OH0JJS	209,322
W2VO	1,872	N0AC	88,038	N0NR	389,844	TM6P	108,864	OM3A	135,261	(OH6LI, op)	
<b>W/VE 80</b>		WB4OSN	71,820	N5DX	388,500	(F5MZN, op)		OM3A	135,261	MD/DL8WAA	208,626
W1MK	156,735	W4JKC	68,400	N2MF	360,261	WP3C	68,649	(OM3CGN, op)		SP5GRM	199,080
K1LZ	100,344	<b>W/VE 20</b>		N0NI	335,517	EA4AAK	58,422	9A4D	127,395	F5NBX	195,966
K11K	40,788	K1TO	387,795	<b>W/VE 10</b>		G3WGN	49,536	OK1DIG	127,020	OH6AC	191,520
K3JGJ	33,672	W7VA	270,909	WC4E	328,941	OK1DX	46,305	<b>DX 20</b>		(OH6CS, op)	
W0SF	17,400	N4PN	243,726	K4WX	223,416	MD/DL5LYM	44,892	GM3POI	288,360	<b>DX 10</b>	
W8AEF	15,651	K2BA	138,600	K9QVB	190,080	DK8LV	44,415	DJ7AA	210,276	LT1F	279,180
K4ESE	14,688	W8UD	101,616	N7DR	165,804	DF0KW	37,485	IR2W	206,739	(LU5CW, op)	
WB2AMU	4,929	K9BG	76,077	VE3ZT	131,220	JH1OGC	36,750	(IK2QEI, op)		RZ3AX	260,652
N5XJ	3,690	N19C	75,852	W9AU	114,390			S50K	197,664	HC2SL	230,454
W6RKC	2,709	VE7AV	58,212	A12C	112,338			OH8LQ	190,980	F5IN	207,423
		W8UMR	43,290	KA6BIM	101,556			LA9GX	183,141	DL1IAO	179,916
		W3EHZ	40,788	W5ZO	88,578			OH6RX	176,436	LU9APM	175,938
				W9GIL	83,913			HG1R	162,516	ON4UN	164,082
								(HA1XU, op)		JL1ARF	146,550
								YU1ZZ	160,740	OH0MP	146,496
								RZ9UA	153,720	(OH4JLV, op)	
										G3WVG	144,837

## Top Ten

### Band breakdowns show QSO/Multipliers

Call Sign	Score	160	80	40	20	15	10	Call Sign	Score	160	80	40	20	15	10								
<b>W/VE Single Operator, Low Power, CW</b>																							
W2TZ	1,844,640	9/9	76/40	233/59	541/74	564/70	529/62	<b>W/VE Multioperator Single Transmitter, CW</b>															
N8AA	1,676,700	20/15	84/43	171/62	343/74	487/77	516/74	W3BGN	4,514,112	58/37	181/60	715/81	788/94	865/100	657/89								
VO1MP	1,427,688	0/0	132/52	288/53	480/71	330/75	276/65	W2AA (at N2TX)	3,560,121	31/26	149/62	444/79	717/94	492/95	810/93								
K1NO (K5FUV, op)	1,378,944	15/14	77/38	237/57	540/74	316/60	327/61	AA2FB	3,275,832	26/24	103/54	475/82	651/88	693/97	568/89								
K4RO	1,378,026	24/19	71/46	199/65	280/67	391/72	394/69	N4RV	2,748,285	38/30	161/53	468/80	508/74	614/80	566/72								
NA2U	1,136,220	2/2	13/13	226/62	264/63	454/74	347/76	W6XR	2,471,940	21/16	77/42	456/72	536/80	622/82	503/80								
K4OGG	1,110,798	19/12	52/28	150/55	216/61	424/71	452/55	<b>W/VE Multioperator Two Transmitter, CW</b>															
K1RO	1,108,554	0/0	32/19	106/43	288/65	444/72	464/78	K1AR (at K1EA)	9,247,365	35/30	316/731263/100	1357/112	1583/114	1251/102									
WO4O	1,101,420	0/0	43/25	215/55	311/73	340/66	357/71	K8AZ	6,497,778	38/28	169/66	850/90	889/104	1454/107	958/102								
WD5K	1,074,528	0/0	80/38	135/54	217/71	415/74	301/75	K8LX	5,762,556	26/22	109/54	862/90	924/102	1311/108	890/90								
<b>W/VE Single Operator, High Power, CW</b>																							
K12M	4,566,039	37/32	293/62	853/78	646/89	655/86	983/91	K9AA (at W9JA)	5,760,933	35/24	176/59	818/90	796/97	1308/111	876/98								
K5ZD (W2SC, op)	4,306,236	40/28	213/53	691/69	794/78	1014/90	801/86	KB1H	4,532,526	21/20	173/64	648/86	747/89	1036/103	681/95								
KQ2M	4,122,258	27/23	239/56	730/81	616/86	778/90	828/91	<b>W/VE Multioperator Unlimited Transmitter, CW</b>															
N2NT	4,096,134	40/29	160/51	898/80	670/84	826/80	769/82	W3LPL	12,158,520	123/57	468/841485/112	1562/123	1690/119	1382/109									
K1DG	3,995,850	21/21	182/56	666/83	757/85	795/91	713/89	KC1XX	11,028,732	68/42	389/791374/102	1637/120	1618/122	1341/107									
W4AN	3,968,250	34/27	192/55	743/76	615/82	795/87	871/80	K3LR	10,375,095	78/42	305/751343/107	1312/116	1721/119	1362/106									
K1ZZ	3,881,001	46/29	141/51	498/69	811/93	754/81	913/86	K1XM	10,078,368	94/48	518/84	1048/94	1549/116	1803/116	1052/96								
K3ZO	3,860,337	33/24	229/64	797/80	769/84	737/81	628/70	K1KI	9,989,472	78/42	422/79	1199/79	1673/115	1530/113	1219/98								
N2LT	3,751,200	33/22	145/46	630/82	686/83	797/88	835/79																
K0DQ (at W4RX)	3,683,988	35/28	140/54	631/74	786/81	837/84	672/75																

## Top Ten

Call Sign	Score	160	80	40	20	15	10	Call Sign	Score	160	80	40	20	15	10	
<b>DX Single Operator, Low Power, CW</b>																
ZF2NT (N6NT, op)	3,679,680	216/46	500/52	639/55	812/58	838/57	828/52	<b>DX Multioperator Single Transmitter, CW</b>								
WP2Z (KE2VB, op)	3,173,712	169/35	253/47	466/49	524/53	1074/57	1088/55	8P9JA	5,403,942	286/49	470/58	879/59	1088/59	1145/59	1399/58	
ZF2MO (KM9D, op)	3,013,590	217/45	446/51	559/54	571/55	638/56	799/50	VP5CW	5,040,846	364/50	535/55	975/57	908/59	1177/58	1027/58	
VP2V/K1DW	1,917,993	52/19	156/29	360/43	622/55	539/52	798/55	V31TP	4,862,721	316/49	581/54	737/57	846/56	1286/57	1242/58	
KH6/W6PH	1,714,581	0/0	86/30	592/55	531/55	590/57	478/54	KG4DZ	3,899,712	135/32	408/50	818/57	753/55	1042/56	1120/54	
LZ0A (LZ2UU, op)	1,483,176	0/0	12/10	441/54	640/56	508/55	530/57	TM1C	3,753,783	119/30	429/45	618/53	920/56	1021/56	1106/57	
NP2S (K3DI, op)	1,299,792	0/0	0/0	265/46	524/54	505/54	789/54	<b>DX Multioperator Two Transmitter, CW</b>								
EA7GTF	1,236,429	22/12	148/29	257/43	392/50	413/52	507/51	HC8N	8,440,950	436/54	868/58	1245/59	1564/59	1929/60	2010/60	
S57J	970,725	0/0	35/18	205/41	408/52	395/55	462/49	V26O	7,525,485	387/51	692/57	1359/58	1449/59	1701/60	1683/60	
8P9NX	943,299	0/0	92/28	367/46	359/46	490/53	141/44	6D2X	6,698,214	426/54	678/59	1568/60	1255/58	1567/59	959/56	
<b>DX Single Operator, High Power, CW</b>																
P40W (W2GD, op)	4,965,408	233/48	477/56	687/57	1058/58	1065/58	1406/59	XA5T	5,922,000	431/50	729/57	1170/57	1223/58	1387/58	935/56	
WP3R (KE3Q, op)	4,561,680	270/48	358/52	707/58	911/58	832/57	1502/59	G4BUO	4,238,208	63/32	304/48	985/59	974/59	1252/57	950/57	
3E1CW(KD6WW, op)	4,476,045	285/49	235/49	910/58	934/58	1105/57	1066/58	<b>DX Multioperator Unlimited Transmitter, CW</b>								
KH7R (KH6ND, op)	3,638,196	156/44	401/53	724/57	541/55	856/57	1065/58	9A1A	4,148,004	161/37	450/53	971/60	1018/59	1003/58	691/55	
KH6X (K5NA, op)	3,294,951	195/44	372/53	489/52	615/56	752/56	1020/58	RW2F	4,052,664	84/27	297/46	942/59	1109/59	1015/59	938/58	
NH7A (KH6TO, op)	2,958,789	200/45	232/45	643/57	549/52	735/57	792/57	C6AKW	3,727,794	368/49	641/56	652/58	961/57	999/56	238/46	
G0IVZ	2,784,474	81/30	321/49	516/52	695/54	810/55	734/54	SK3GW	2,797,920	0/0	180/36	820/58	874/59	946/57	660/56	
SP7GIQ	2,645,214	50/15	307/48	607/56	643/55	614/55	862/57	LY7A	1,781,532	2/2	121/29	437/56	761/56	768/58	325/45	
F6BEE	2,642,805	45/23	240/43	474/47	660/53	809/57	907/58									
DL5AXX	2,569,317	24/18	220/49	623/54	572/57	832/56	652/59									



F5NBX posted a Top 10 DX Single-Band 15-meter entry from this smart looking station.



JF2FIU proudly shares his love of the hobby with his son. Is this a new multi-op team in the beginning stages?

winning the tough DX single-op QRP category in a close finish with HA2SX—406,116 points to 402,705. Another European, DK3GI, takes home top honors in the

DX single-op assisted realm with a strong showing of 2,062,848 points.

Intense competition and some great strategies highlight the DX multi-operator category.

The multi-two operation at HC8N out QSO'd runner-up V26O on five bands to take home top honors with 8,440,950 points, and in the process upped the previous M2 record

### 1999 ARRL International DX Contest CW Plaque Winners

#### WVE CW Single Operator

All Band	K1ZM	Frankford Radio Club
1.8 MHz	WA8GHZ	Butch Greve, W9EWC Memorial
3.5 MHz	W1MK	Thomas Rylander, SM3DMP
7 MHz	K8DX	Northern AZ DX Assn
14 MHz	K1TO	QSLs By W4MPY
21 MHz	K2SS/1	Carl Luetzelschwab, K9LA
28 MHz	WC4E	Green River Valley IL ARS
Low Power	W2TZ	Dauberville DX Assn
QRP	N7IR	Tod Olson, K0TO

#### Multi-Operator

Single Transmitter	W3BGN	Northern Illinois DX Assn
Two Transmitter	K1AR	Order of the Boiled Owls, W2AO Memorial
Unlimited	W3LPL	Alpha/Power, Inc

#### DX CW Single Operator

World	P40W	North Jersey DX Assn
Africa	EA8CN	Byron P. Peebles, Jr., NZ30
Asia	C4A (5B4ADA, op)	Alamo DX Amigos
Europe	G0IVZ	Jerry Griffin, M.D., K6MD
North America	WP3R (KE3Q, op)	Potomac Valley Radio Club
Oceania	KH7R (KH6ND, op)	John Brosnahan, W0UN
1.8 MHz	S50U	Fred Race W8FR, DL1FF Memorial
7 MHz	C6AKQ (N4BP, op)	Thomas P. Gannon W3YX Memorial
14 MHz	GM3POI	Tom Frenaye, K1KI
28 MHz	LT1F (LU5CW, op)	Ft Wayne DX Assn
Low Power	ZF2NT (N6NT, op)	Jim Stevens, K4MA
QRP	G0TDZ	Jerry Griffin, M.D., K6MD
Assisted	DK3GI	Willamette Valley DX Club

#### DX CW—Multi operator Single Transmitter

World	8P9JA	John Brosnahan W0UN
Asia	JR1ZTT	Yankee Clipper Contest Club
Europe	TM1C	The Radio Place
North America	8P9JA	Caribbean Contesting Consortium

#### DX CW Multioperator Two Transmitters

World	HC8N	Frankford RC, Tom DeMeis K2TD Memorial
Europe	G4BUO	Jim George, N3BB
Oceania	no winner	Oklahoma Comm Center and AH9B
South America	HC8N	Northern Ohio DX Assn

#### DX CW Multioperator Unlimited

World	9A1A	H Stephen Miller, N0SM
Europe	9A1A	Texas DX Society
North America	C6AKW	Alpha/Power, Inc
Oceania	no winner	David Brandenburg, K5RQ
South America	no winner	David Brandenburg, K5RQ

#### Special Plaques

Atlantic Division CW	K3ZO	Salt Lake DX Assn, K2NY Memorial
Great Lakes Division CW	N9AG (at N8IR)	Livonia ARC
Japan All Band CW	JH4UYB	Akita DX Assn
Japan Low Power All Band CW	JH5FXP	Western WA DX Club
Seventh Call Area All Band CW	KC7V	Willamette Valley DX Club
Ninth Call Area All Band CW	W9RE	Northern Illinois DX Assn
Caribbean Multi-Single CW	8P9JA	The YASME Foundation

### WVE Region Leaders

Boxes list call sign, score, and power (A = QRP, B = Low Power, C = High Power).

#### CW

Northeast Region (New England, Hudson and Atlantic Divisions; Maritime and Quebec Sections)		Southeast Region (Delta, Roanoke and Southeastern Divisions)		Central Region (Central and Great Lakes Divisions; Ontario Section)		Midwest Region (Dakota, Midwest, Rocky Mountain and West Gulf Divisions; Manitoba and Saskatchewan Sections)		West Coast Region (Pacific, Northwestern and Southwestern Divisions; Alberta, British Columbia and NWT/Yukon Sections)	
N1TM	338,334 A	N1CWR	284,208 A	WI9WI	269,730 A	N0UR	306,180 A	N7IR	516,132 A
AA1CA	281,934 A	N4ROA	135,441 A	VA3SB	101,106 A	K0NI	177,912 A	W8QZA/6	227,586 A
W2ZT	141,120 A	K4GEL	99,186 A	K8UCL	32,184 A	K5TT	165,996 A	N6WS	216,756 A
K2JT	137,196 A	W4NI	21,624 A	K8CV	17,808 A	K0ZK	34,170 A	W6JVA	64,449 A
K3WWP	116,325 A	W4KYW	17,820 A	AF9J	15,552 A	WA0VBW	21,321 A	W6IO	55,890 A
W2TZ	1,844,640 B	K4RO	1,378,026 B	N8AA	1,676,700 B	WD5K	1,074,528 B	W6JTI	993,294 B
VO1MP	1,427,688 B	K4OGG	1,110,798 B	WB8YJF	1,042,494 B	W0UO	1,056,510 B	W7YAQ	891,462 B
K1NO (K5FUV, op)	1,378,944 B	W0AO	1,101,420 B	VA3RU	1,034,931 B	N5AW	990,522 B	K7ZA	710,424 B
NA2U	1,136,220 B	K5KLA	1,072,965 B	N9JF	943,944 B	N5DO	635,508 B	KN7Y	665,448 B
K1RO	1,108,554 B	WD4AHZ	1,006,155 B	K8EP	658,512 B	K5WO	550,464 B	N7AN	500,268 B
K1ZM	4,566,039 C	W4AN	3,968,250 C	W9RE	3,090,540 C	N2IC	3,425,760 C	W6AX	2,927,076 C
K5ZD (W2SC, op)	4,306,236 C	K0DQ (at W4RX)	3,683,988 C	N9AG (at N8NR)	2,097,900 C	K5YA	2,081,280 C	(N6IG, op at W6GO)	
KQ2M	4,122,258 C	N4AF	3,355,506 C	K9MA	1,783,848 C	N5CQ	1,375,470 C	K6LA	1,636,470 C
N2NT	4,096,134 C	K4AB	1,883,484 C	VE3KZ	1,285,920 C	N5PO	1,086,168 C	KC7V	1,554,060 C
K1DG	3,995,850 C	K0EJ	1,579,569 C	W9OP	1,113,525 C	K0CAT	1,034,838 C	K4XU/7	1,477,980 C
								W2VJN/7	1,477,008 C

of 8,011,644 set by the 6D2X entry in 1994. That's quite an accomplishment from an outstanding group of ops.

The stations at 8P9JA, VP5CW, and V31TP battled it out in the multi-single category. While each snared similar QSO and multiplier totals, on most bands, 8P9JA emerged as the winner, in part due to an excellent QSO total on 10 meters. Their 5,403,942 score missed the old mark set in 1990 by about 500K. Will this fall next year? Rounding out the DX multiop stations was the 9A1A win in the multi-multi category.

More detailed log checking was introduced to this year's contest. If you submitted an electronic log, you can receive a copy of your UBN by sending an email request to [k5fuv@arrl.org](mailto:k5fuv@arrl.org) and including as the subject line your call sign and the words "UBN request DXCW." A couple of changes will affect entries for next year's event. If you use a computer to log the contest, you will be required to submit a copy of the log file for log checking purposes in the required ARRL file format. Look for more information on this in the upcoming "General Rules for all ARRL Contests," as well as the specific rules for this event for the year 2000.

Speaking of next year, the dates for the 2000 ARRL International DX CW contest

are set for February 19-20. With the excellent propagation expected to continue, it's a good bet that activity will continue to increase. Whether you are a die-hard con-tester looking to hunker down for the duration, or a casual operator who is looking for a couple of new DXCC entities, this event is a place to bring out the best in your operating skills. The 1999 running of the DX CW contest was one to remember for many, that's for certain. But start looking ahead now as you plan to make the year 2000 ARRL International DX Contest CW weekend your "one to remember."

### Soapbox

After poor conditions at the start, I finally heard a loud European station in the passband. I worked him, QSYed up to the next clear spot, called CQ, and didn't move for about seven hours (N8II)... Conditions were good Saturday night, but my neighbor W4DR blew me away (W4HI)... Great Contest! Results far exceeded my previous efforts or my expectations for this year (K1FFX)... Great to have the solar flux back (K0BJ)... Best I ever did from home in this contest. Had a ball! Managed to stay in the seat for 41.5 hours, but couldn't sleep much during off time (W1WFF)... First DX contest at a new QTH—right on an old kitchen table and amplifier on an upside-down recycling bin (N2MF)... Murphy attacked with a vengeance this year. It started a week before the contest when a Nor'easter took out the rotor, the local packet node crashed three days beforehand, and during the contest the Henry 4K

amplifier tripping the HV overload. A thoroughly exhausting weekend for me but the ops here did a super job (W3PP)... Ten meters was so congested that at times I had to use my 250-Hz filter, just like 40 meters (W2YR)... The highlight of the weekend was working VR2BG on 80 meters at sunrise Saturday morning using only 100 W and a G5RV antenna (W9FX)... I'm amazed that I was able to break 1 million points with my little antennas (N5AW)... I was astonished at the number of requests for me to QSY to other bands. All requests were completed (VE9DX)... Outstanding openings on 10 and 15 all day to Europe and Russia on 20 meters (VE3KZ)... You could have worked Europe on a coat hanger on 10 meters Sunday morning. Thanks to all of the Caribbean stations who pulled out my weak signal on the Top Band. HC8N definitely had the best ears on 160 meters (K8EP)... The propagation at the start of the contest all of the way through Saturday was absolutely punk. Trying to run was hopeless (N0FW)... Excellent conditions. Was able to run on 10 and 15 and even for a bit on 20 meters (W1W)... I secretly wished for another radio and stacked beams, having been spoiled at AA4NU while being introduced to Single-Op Two-Radio (WO4O)... I was fascinated to read comments of those in the west who had good low-band conditions while in the northeast it was awful. I would have thought given the aurora and extent of the solar storm conditions would have been universally poor. Wonder what conditions will be next year? (KQ2M)... This was my first attempt at the DX contest. I was impressed with the abilities and responses of the operators—and their patience (W9QFV)... Enjoyed fine signals from the new QTH with temporary (wimpy) antennas. Had to go outside to swap antennas and change bands. High-lights? Busting HZ, 5H, TZ and EL pileups fairly quickly with the grounded-mounted vertical (N8SM).

### Scores

Scores are listed by DXCC Countries and ARRL/RAC Sections. Within each Country or Section, scores are listed in descending order, by power categories, followed by multi-operators. Line scores list call sign, score, QSOs, multipliers, hours of operation (default is 48), power (A = QRP, B = Low Power, C = High Power), and band.

#### CW WVE Single Operator 1

##### Connecticut

N1TM 338,334 527 214 48 A  
NM1K 62,730 170 123 48 A  
N1MT 44,550 165 90 48 A  
K1NO (K5FUV, op)

K1RO 1,378,944 1512 304 41 B  
K1GD 1,108,554 1334 277 20 B  
W0MHW 770,562 962 267 48 B  
W1EQ 678,132 966 234 48 B  
W3TB 295,596 476 207 48 B  
N1QDA 30,888 104 99 48 B  
WA1GDN 14,931 79 63 6 B  
KQ2M 4,122,258 3218 427 45 C  
K1ZZ 3,881,001 3163 409 48 C  
W1WFF 3,594,240 3072 390 48 C  
K1RM 3,010,410 2490 403 48 C  
AA1OL 22,578 106 71 6 C  
K1VW 5,670 54 35 48 C 160  
K2SS/I 605,790 1905 106 48 B 15  
K1DI 31,110 170 61 7 C 10

##### Eastern Massachusetts

W1TO 955,854 1142 279 48 B  
K1HT 654,696 966 252 15 B  
K1FFX 465,804 681 228 48 B  
W1VIV 328,452 542 202 22 B  
N3K/CJ 275,217 461 199 48 B  
W1ZZ 208,572 382 182 48 B  
KR1B 156,420 330 158 48 B  
N1EDM 148,824 312 159 48 B  
W2K1 81,216 144 188 48 B  
N1PGA 73,830 214 115 48 B  
K1ITW 24,090 110 73 48 B  
KQ1F 14,832 103 48 48 B  
K1VUT 4,770 53 30 2 B  
KC1WD 1,701 27 21 4 B  
K1ZM 4,566,039 3467 439 48 C  
AA1ON 1,065,222 1426 249 48 C  
W1AX 615,330 774 265 48 C  
W1ZT 460,719 721 213 11 C  
W1FM 448,158 661 226 48 C  
N1OHM 119,511 271 147 48 C  
K2LP 75,192 241 104 48 C  
W1EM 64,515 187 115 48 C  
WB1S 11,658 58 67 48 C  
W1MK 156,735 645 81 48 C 80  
K1LZ 100,344 452 74 48 C 80  
KM2P 230,265 903 85 48 C 80  
WR1P 12,126 94 43 48 C 80  
WG1Z 37,989 189 67 48 B 20  
W1GOU 18,963 129 49 48 B 10

##### Maine

N1AFC 39,600 165 80 48 A  
K1HS 542,574 701 258 48 B  
W1LIC 24,480 120 68 5 B  
KD1OG 7,800 65 40 12 B  
K1PQS 59,637 193 103 15 C  
New Hampshire  
AA1CA 281,934 454 207 35 A  
K1WD 82,026 217 126 24 A  
K1PTF 805,749 1037 259 48 B  
NM1W 205,842 338 203 48 B  
AA1QD 145,542 382 127 12 B  
K1NH 103,680 270 128 48 B  
WB1GEX 8,967 61 49 4 B  
K1DG 3,995,850 3134 425 48 C  
KC1F 2,610,432 2472 352 35 C  
WG1M 1,985,465 2171 305 30 C  
KR1G 1,237,041 1417 291 48 C  
K1BV 485,784 936 173 21 C

##### Rhode Island

K1V/SJ 816,864 1016 268 48 B  
K1ZE 284,427 507 187 10 B  
AB1BX 61,596 177 116 48 B  
K2MM 20,870 106 65 48 B  
KS1J 1,327,290 1465 302 48 C  
W1W/FZ 519,129 783 221 48 C  
W1RFQ 24,360 145 56 48 C 10

##### Vermont

W3SOH 277,200 462 200 48 B  
W1ZK 960,604 1023 315 48 C  
WA1LJR 639,330 1055 202 13 C  
AA1SU 244,944 432 189 48 C  
W1ZS 212,784 403 176 48 C  
K1IK 40,788 206 66 20 C 80  
Western Massachusetts  
W1KT 398,820 578 230 48 B  
AE1B 243,000 500 162 48 B  
K1TS 192,045 413 155 48 B  
W1TO 118,170 303 130 48 B  
K5ZD (W2SC, op)  
N1AUT 4,306,236 3553 404 48 C  
N1BQ 11,286 114 33 48 C 20  
N1BQ 4,092 44 31 8 B 10

#### 2

##### Eastern New York

W2QYA 7,998 62 43 48 A  
K2UF 763,434 1022 249 48 B  
K2SIG 709,386 863 274 48 B  
K2DW 298,368 448 222 48 B  
W2ENY 192,324 341 188 48 B  
N2EM 139,104 288 161 48 B  
W2YK 124,740 270 154 48 B  
K2RI 35,028 139 84 8 B

K2SX 1,560,000 1625 320 48 C  
W2ZUJ 400,452 604 221 48 C  
N1JP 23,229 89 87 48 C  
WX2N 28,899 169 57 48 B 15  
KC2CRO 1,008 21 16 2 B 15

##### NYC-Long Island

N2TO 100,992 263 128 17 A  
W2ZLI 520,923 703 247 48 B  
W3EH 116,946 267 146 48 B  
KG2BI 113,778 258 147 48 B  
W2KTF 26,676 117 76 48 B  
NY6DX 1,020,099 1009 337 48 C  
K2AW 403,650 650 207 48 C  
WB2TPS 175,200 365 160 48 C  
N2GC 51,900 173 100 48 C  
WB2AMU 4,929 53 31 48 B 80  
K2MPY 72,957 293 83 11 B 10  
KAZD 44,844 202 74 48 C 10

##### Northern New Jersey

K2JT 137,196 309 148 10 A  
W2JEK 13,050 75 58 8 A  
NA2U 1,136,220 1306 290 48 B  
N2LK 219,700 405 180 14 B  
N2ST 126,828 271 156 48 B  
KB2VW 107,682 262 137 48 B  
W2C/VW 66,105 195 113 7 B  
KG2MV 12,636 78 54 6 B  
N2NT 4,096,134 3363 406 48 C  
N2LT 3,751,200 3126 400 48 C  
K2DM 2,506,002 2501 334 48 C  
W2AYYA 1,271,487 1337 317 48 C  
W2EM 1,162,458 1254 309 48 C  
W2HCA 497,760 690 244 48 C  
N2UN 474,240 520 304 48 C  
W2RD 299,700 444 225 48 C  
W2UDT 136,820 280 163 48 C  
NC1A 117,810 255 154 48 C  
NW2B 29,925 95 105 48 C  
N2JM 25,032 149 56 48 C 40  
WA2ASQ 17,595 115 51 48 B 40  
AE2JL 37,200 200 62 48 B 15  
N2CG 14,868 118 42 12 B 10

##### Northern New York

W2ZT 141,120 320 147 23 A  
K3KYR 404,721 579 233 31 C  
N2TW 672 16 14 48 B 20  
N2JNZ 462 14 11 5 A 15

##### Southern New Jersey

KC2TA 342,654 598 191 48 B  
W5KI 269,514 414 217 15 B  
K1JT 233,130 409 190 26 B  
WA2VQ 99,825 275 121 48 B  
K2MK 22,230 114 65 48 B  
W2UL 14,268 82 58 48 B  
AB2E 1,397,889 1223 381 48 C  
KD2KS 43,956 148 99 48 C

W2BE 30,969 111 93 48 C  
AD2Y 2,430 30 237 48 B  
K3JGJ 33,672 184 61 48 C 80  
K2SWZ 7,866 69 38 48 B 15  
K2WI 518,976 1632 106 48 C 15  
W2CN 8,610 70 41 9 B 10

##### Western New York

W2TZ 1,844,640 1952 315 48 B  
WAZEVA 451,485 635 237 48 B  
K1PY 391,170 590 221 48 B  
W2TX 333,198 519 214 12 B  
WA2YSJ 299,280 464 215 48 B  
N2UM 277,344 432 214 48 B  
AA2VX 181,863 363 167 48 B  
W2GR 73,875 197 125 48 B  
K2GKM 64,200 200 107 48 B  
K3EFE 52,416 192 91 10 B  
W2FUJ 51,615 185 93 20 B  
K2FR 4,620 44 35 48 B  
K2UA 2,272,879 2651 343 42 C  
W2LC 1,847,385 2019 305 48 C  
N2CU 1,457,352 1557 312 48 C  
K2NV 1,396,236 1516 307 48 C  
W2FU 1,253,364 1388 301 48 C  
K2FU 1,111,560 1180 314 48 C  
K1VZJ 609,696 876 232 31 C  
K2WY 519,456 773 224 31 C  
W2FXA 490,752 639 256 48 C  
W2EZ 222,894 406 183 48 C  
K2MP 205,110 319 159 24 C  
WA2ABN 150,732 438 158 48 C  
W2OM 129,360 308 140 20 C  
K2HM 87,840 240 122 10 C  
W2FY 87,075 215 135 48 C  
W2YRH 74,241 219 113 17 C  
W2RW 27,378 117 78 6 C  
AA2TN 21,513 101 71 48 C  
W2FR 6,300 50 42 4 C  
W2VO 1,872 26 24 48 C 160  
N2MF 360,261 1213 99 27 C 15  
WB2YQH 174,300 700 83 48 C 15  
W2RZ 32,400 200 54 48 B 15  
K2CS 32,550 175 62 48 B 10

#### 3

##### Delaware

N8NA 422,970 613 230 15 B  
N9GG 23,004 108 71 48 B

##### Eastern Pennsylvania

N3RN 60,192 176 114 48 A  
KB3MM 531,216 651 272 48 B  
W3CF 260,820 378 230 48 B  
WB3EN 147,906 297 166 48 B  
N3NZ 123,066 258 159 48 B  
K3KM 112,539 233 161 24 B  
N3OUC 64,680 140 154 48 B

K3NL 26,400 110 80 48 B  
N3AS 26,220 115 76 5 B  
AA3TT 1,373,247 1629 281 48 C  
N3ZA 900,798 899 334 48 C  
N3KR 447,174 637 234 48 C  
N3MLV 256,470 415 206 48 C  
K3QIA 237,608 398 199 48 C  
W3BYX 221,094 426 173 48 C  
W3EWW 216,999 423 171 48 C  
N3RU 183,168 318 192 48 C  
W3IZ 191,770 365 166 48 C  
K3SV 174,492 393 148 48 C  
W3RJ 127,116 396 107 48 C  
K3CO 31,365 123 85 48 C  
W8J 12 2 2 48 B 40  
W3EHZ 40,788 206 66 48 B 20  
N3YA 2,655 15 59 48 C 20

##### Maryland-DC

W3VB 7,644 52 49 48 A  
N1WR 838,614 974 287 48 B  
W3DAD 552,033 739 249 29 B  
K1E1F 444,564 636 233 48 B  
K3E3V 259,368 428 202 48 B  
N3UMA 114,210 235 162 48 B  
N3II/A 43,659 231 63 48 B  
W3FQE 18,117 99 61 48 B  
N3WK 1,794 23 26 48 B  
K3ZO 3,860,337 3193 403 48 C  
W3GN 693,048 862 268 48 C  
W3EKT 350,811 549 213 48 C  
W3U3S (W9JU, op)  
148,320 309 160 48 C  
W3CP 54,846 277 66 48 B 15  
W3EE 20,727 141 49 48 B 10  
W3DF 18,792 116 54 11 B 10  
K3HH 17,157 133 43 48 B 10

##### Western Pennsylvania

K3WPP 116,325 275 141 20 A  
WA3HA 604,758 833 242 48 B  
N8AJ 141,168 272 173 17 B  
N3JK 98,982 282 117 48 B  
WA3EQJ 12,480 80 52 10 B  
AD8J 817,704 984 277 48 C  
WB3EPE 56,055 185 101 18 C  
W3H3D 35,742 161 74 3 C  
W3WS 167,943 629 89 48 B 15  
KB3AZK 13,407 109 41 48 B 15  
W03Z 81,366 382 71 16 B 10

#### 4

##### Alabama

K3IE 404,985 551 245 48 B  
K4U4J 22,440 88 85 14 B  
WB4HUX 546 14 13 3 B  
K4AB 1,883,484 1852 339 48 C

**Georgia**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like W4KYW, K4OQG, N8LM, etc.

**Kentucky**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K4IE, K4EJLA, K1AIO, etc.

**North Carolina**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like W9JB, NX0T, KS4XG, etc.

**Northern Florida**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like W4HMC, W4MIA, W4MIB, etc.

**South Carolina**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like VE7CPN/W4, K2FY, K4DLJ, etc.

**Southern Florida**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like WD4AHZ, N2PK, N6PLO, etc.

**Tennessee**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like N1CWR, W4NI, K4RO, etc.

**Virginia**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like N4ROA, K4GEL, N4UY, etc.

**Arkansas**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like KM5G, NS5X, K4OAO, etc.

**California**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like W4KYW, K4OQG, N8LM, etc.

**Colorado**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like W4KYW, K4OQG, N8LM, etc.

**Connecticut**

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**Delaware**

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**District of Columbia**

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**Florida**

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**Georgia**

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**Idaho**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like W4KYW, K4OQG, N8LM, etc.

**Illinois**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like W4KYW, K4OQG, N8LM, etc.

**Louisiana**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K5KLA, K5QK, N4IPI, etc.

**Mississippi**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like W5XX, W5OYU, K5CZA, etc.

**New Mexico**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K5OI, W6PU, W5JRP, etc.

**North Texas**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like W5DK, W0UJQ, N5AW, etc.

**Oklahoma**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K5TT, K5HP, N5AB, etc.

**South Texas**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like W5TD, K5LJ, N5TN, etc.

**West Texas**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like N5DO, N5ZM, W5ZO, etc.

**Arizona**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like N7IR, W5VBQ, KNTY, etc.

**Montana**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K7BG, K7UP, K7ABV, etc.

**Nevada**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like KUTY, N7IF, K7NV, etc.

**Oregon**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K4XUJ, W2VJN/J, W6GA, etc.

**Utah**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K7ZNS, N7OG, W7HS, etc.

**Western Washington**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like W7NWX, W7JRN, K7ZA, etc.

**Washington**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like W7JRN, K7ZA, N7AN, etc.

**Wyoming**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K8CV, W8BRCR, K8EP, etc.

**Alabama**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K16PG, K4BGM, W6HXX, etc.

**California**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K6SRZ, N6GG, K6KYJ, etc.

**Colorado**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K6BD, K1BT, W6NKR, etc.

**Connecticut**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K6B7, K7JWY, NNTA, etc.

**Delaware**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K7V, W7YS, A7A, etc.

**District of Columbia**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K7NS, K7L7S, W8AEX, etc.

**Florida**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like W7GB, K7LHO, W7LAR, etc.

**Georgia**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like W7XG, K7AT, A7UN, etc.

**Idaho**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K7BG, K7UP, K7ABV, etc.

**Illinois**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K7NV, K4XUJ, W2VJN/J, etc.

**Indiana**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K7ZNS, N7OG, W7HS, etc.

**Iowa**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K7NV, K4XUJ, W2VJN/J, etc.

**Kansas**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K7NV, K4XUJ, W2VJN/J, etc.

**Kentucky**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K7NV, K4XUJ, W2VJN/J, etc.

**Louisiana**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K7NV, K4XUJ, W2VJN/J, etc.

**Maine**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K7NV, K4XUJ, W2VJN/J, etc.

**Maryland**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K7NV, K4XUJ, W2VJN/J, etc.

**Massachusetts**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K7NV, K4XUJ, W2VJN/J, etc.

**Michigan**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K8BFX, W8BDM, W8P, etc.

**Minnesota**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K8E8M, W8P, K8CZS, etc.

**Mississippi**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K8E8M, W8P, K8CZS, etc.

**Montana**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K8E8M, W8P, K8CZS, etc.

**Nebraska**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K8E8M, W8P, K8CZS, etc.

**Nevada**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K8E8M, W8P, K8CZS, etc.

**New Hampshire**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K8E8M, W8P, K8CZS, etc.

**New Jersey**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K8E8M, W8P, K8CZS, etc.

**New Mexico**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K8E8M, W8P, K8CZS, etc.

**New York**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K8E8M, W8P, K8CZS, etc.

**North Carolina**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K8E8M, W8P, K8CZS, etc.

**North Dakota**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K8E8M, W8P, K8CZS, etc.

**Ohio**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K8E8M, W8P, K8CZS, etc.

**Oklahoma**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K8E8M, W8P, K8CZS, etc.

**Oregon**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K8E8M, W8P, K8CZS, etc.

**Pennsylvania**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K8E8M, W8P, K8CZS, etc.

**Rhode Island**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K8E8M, W8P, K8CZS, etc.

**Tennessee**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like K8E8M, W8P, K8CZS, etc.

**Texas**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like A80GO, W0UJQ, N0NR, etc.

**Virginia**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like A80GO, W0UJQ, N0NR, etc.

**Washington**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like A80GO, W0UJQ, N0NR, etc.

**West Virginia**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like A80GO, W0UJQ, N0NR, etc.

**Wisconsin**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like A80GO, W0UJQ, N0NR, etc.

**Wyoming**

Table with 4 columns: Call sign, Frequency, Power, and Notes. Includes call signs like A80GO, W0UJQ, N0NR, etc.

W1CSM	1,647,300	1445	380	48	C
K1OA	1,597,320	1566	340	48	B
K21M	1,563,450	1489	350	31	C
K4ICLX	1,327,758	1226	361	23	C
W1NG	1,307,011	1138	48	48	C
W1UK	1,157,184	1148	336	48	C
K1ST	1,150,080	1198	320	48	C
N6RFM	1,079,037	1061	339	48	C
W1RFZ	1,058,760	1038	340	48	C
K1NU	1,019,088	1008	337	48	C
K1VV	1,003,536	1104	303	48	C
W1QK	977,058	1054	309	48	C
W1RH	908,848	866	348	48	C
N1DG	890,460	873	340	48	C
AA1V	812,520	732	370	48	C
K1SM	661,842	886	249	48	C
K1RV	649,686	779	278	48	C
KS1L	629,928	673	312	48	C
N8RA	562,536	601	312	48	C
K1MY	518,247	647	267	48	C
KE1KD	483,552	552	292	48	C
K1TH	470,952	633	248	48	C
N1RR	402,960	584	230	24	C
K2AZ	385,560	540	238	48	C
W1HR (W1JC, op)	372,960	480	259	48	C
N1AO	366,600	470	260	48	B
W1JR	358,644	494	242	48	C
KA1GJ	352,764	478	246	48	C
N1DS	324,159	517	209	25	B
N1TB	300,576	486	202	48	C
K1EP	292,452	429	215	48	B
N1KWF	214,638	431	166	48	C
K1YR	202,293	399	169	6	C
W1OU	175,680	320	183	48	C
K1OZ	173,106	326	177	48	B
K1AE	163,251	291	187	48	C
K1KU	145,719	257	189	48	B
N1NQD	143,220	217	220	17	C
NQ1K	140,456	282	166	48	C
K1GW	94,329	223	141	48	C
K1ZO	83,952	116	129	48	B
NC1N	83,025	225	123	48	C
NY1L	28,416	128	74	48	C

<b>2</b>					
K2NG	4,181,814	2898	481	48	C
N2MM	3,083,184	2379	432	48	C
W2RE	2,837,604	2324	407	48	C
N2RM	2,319,678	1998	387	48	C
K2NJ	2,063,376	1632	356	48	C
W1GD	2,045,022	1679	406	48	C
K2WK	1,923,426	1674	383	48	C
K2ONP	1,528,440	1355	376	30	C
N2ED	1,317,798	1227	358	48	C
K2XF	749,892	874	286	48	C
N2TK	731,520	635	384	48	C
N2CQ	629,588	709	296	48	C
W2GDJ	572,373	731	261	48	C
N2JT	528,692	629	215	48	C
N2MR	490,590	711	230	48	C
KD2TT	490,050	550	297	17	B
N2MG	482,625	585	275	48	C
K2BM	432,900	555	260	48	C
W2YR	415,224	474	292	48	C
K2EP	415,044	567	244	48	C
KU2N	285,600	425	224	21	C
N2WK	284,256	423	224	24	C
KQZO	250,290	618	135	48	C
K2SB	235,780	333	238	48	C
N2VW	211,299	339	207	48	C
K5KG	111,360	232	160	4	C
K2TR	107,226	222	161	48	C
NA2X	89,880	214	140	12	C
K2BX	54,432	168	108	48	B
K2UT	49,530	130	127	48	B
K2WB	7,353	43	57	48	B
KF2O	1,020	20	17	48	C

<b>3</b>					
K3WW	4,763,799	3329	477	48	C
AA3B	2,732,610	2306	395	48	C
K3PH	2,298,192	2032	377	48	C
W3OV	1,540,413	1497	343	48	C
K3MD	1,377,600	1435	320	48	C
K3CT	1,344,420	1164	385	48	C
W3FV	1,326,051	1377	321	48	C
K3SA	1,241,250	1250	331	48	C
K3QO	1,181,065	1109	355	48	C
K3SN	1,174,508	1044	375	48	C
K3PP	1,125,000	1000	375	48	C
W8FJ	964,314	951	338	48	C
W3HVQ	953,046	999	318	48	C
N3AM	797,940	858	310	48	C
W3UJ	796,374	879	302	48	C
K3CP	760,275	775	327	48	C
N3NQ	709,650	830	285	48	C
W3FP	608,879	741	273	48	C
K3BTS	604,656	663	300	48	C
AA3JU	446,520	488	305	48	C
W3SB	434,808	549	264	48	C
K3AR	363,120	445	272	48	C
W3KV	360,864	537	224	48	C
W3GK	345,204	516	223	48	C
KE3VN	321,504	394	272	48	C
N3ED	282,606	703	134	48	C
K3QO	279,000	620	150	48	C
N3YM	245,846	295	207	47	B
KU3X	197,025	355	185	48	C
W3DP	100,902	251	134	48	C
W3FG	93,522	218	143	48	B
W3CC	90,816	176	172	48	C
K3TG	52,470	159	110	48	C
N3GPU	19,740	94	70	48	B

<b>4</b>					
N4DW	600,894	753	266	48	B
K4PB	542,934	651	278	48	C
K3KO	292,320	480	203	48	C
AD4TR	213,840	360	198	48	C
W4ZW	150,024	329	152	48	C
K4VV	140,112	278	168	48	C
W4ALA	130,032	301	144	48	C
N1CC	72,000	200	120	4	B

<b>5</b>					
NSJR	991,305	1049	315	48	C
N4AM	197,607	331	199	48	C
KSAM	181,152	295	201	48	C
K4NR	175,404	311	188	48	C
K5HDU	109,056	256	142	16	B
W5AJ	25,380	94	90	48	C

<b>6</b>					
AB6WM	541,944	772	234	48	C
N6JV	449,298	654	228	48	C
K6II	272,304	488	186	48	C
K6NR	180,594	381	158	13	C
W6OAT	177,805	195	133	48	C
NF6R	166,238	206	91	48	C
W6OUL	32,256	168	64	48	C
K6ASK	16,740	90	62	12	B
N6IV	4,560	76	20	11	B

<b>7</b>					
N0AX	190,836	372	171	48	C
N7MAL	115,056	272	141	48	B
W7NN	90,072	278	108	48	C

<b>8</b>					
N8BJQ	1,631,172	1502	362	48	C
N4ZR	571,392	768	248	48	C
W8FAX	164,010	355	154	48	C
K8DD	133,764	284	157	48	C
K8GDB	121,968	231	176	48	C

<b>9</b>					
N9CK	1,259,412	1316	319	48	C
N9UA	912,330	1090	279	48	C
N9AB	616,320	960	214	48	C
N9XX	375,144	539	232	48	C
W9OS	259,992	471	184	9.2	C
K9OSH	162,624	308	176	48	B
N9THC	52,479	147	119	48	C

<b>Ø</b>					
N0AT	1,235,079	1259	327	48	C
NS1N	833,313	929	299	48	C
K0PC	238,200	397	200	48	B
K0IL	94,764	212	149	15	C

<b>Canada</b>					
XJ1HA	111,552	332	112	48	C
VE3ZTH	27,456	104	88	48	C
VE5MX	25,935	133	65	48	C
VE6JO	107,508	289	124	48	B

<b>Multiplexer Single Transmitter</b>					
<b>1</b>					
K2TE (+K7CTW,K1H)					
W1AF (K01O,K3UOC, ops)	1,831,956	1582	386	48	C
N1AU (+WC1D)	1,393,545	1523	305	48	C
W1SRG (N1XYR, KE4GI, ops)	1,153,188	1244	309	48	C
W1A1R (K3AT1VMG,KB1LN, ops)	47,658	169	94	48	C
	19,044	92	69	48	C

<b>2</b>					
W2AA (at N2TX) (W2XX,N2TX, ops)	3,560,121	2643	449	48	C
AA2FB (+K2QW)	3,275,832	2516	434	44	C
W6XR (+N2AU)	2,471,940	2215	372	48	C
W2CG (+W2NO, K2WJ)	1,459,518	1394	349	48	C
K2OWE (+WKG2)	1,038,960	1040	333	48	C
N2LBR (+W4IKM)	797,790	917	290	48	C
KB5U (+W2X)	791,430	851	310	48	C
N2SA (+AB2C,N2MFZ, ops)	451,560	530	284	48	C
KE2HG (+K2BDDM)	97,083	201	161	48	C

<b>3</b>					
W3BGN (+K2TW)	4,514,112	3264	461	48	C
NE3F (+K3SF, K3ATO)	1,468,755	1285	381	48	C

<b>4</b>					
N4RV (+N4RQ, K3QXS,KT4W)	2,748,285	2355	389	48	C
AE4RO (+AE4SW)	1,743,768	1794	324	48	C
W4PRO (+W4HR, W4BDNL, AF4CD)	694,323	721	321	48	C
W4AUB (+N4AU)	215,424	374	192	48	C
W2ZN (+WB2DUW)	561	17	11	2	B

<b>5</b>					
N5TW (+W5TD, K5PLACSA, KM5FA, AF5Z, ops)	1,317,897	1197	367	48	C
K5MDX (W05L,W5UE, N5FG, ops)	1,218,000	1400	290	48	C

<b>6</b>					
AD6GY (+N7FF, AA6EG)	725,412	991	244	48	C
W1HU (at W0GQ, +K7GT)	779,379	1087	239	48	C
W6YRA (W6A7Y, KU6T, W47WYE, ops)	654,912	982	222	48	C
	34,974	201	58	48	C

<b>7</b>					
N7ML (+KE7X, K7LXC)	1,843,053	1823	337	48	C
KO7X (+NG7M, N7VM)	961,653	1267	253	48	C
NM7I (NU7I, K7ON, ops)	779,379	1087	239	48	C
W7LT (K7TJR, K7ZUM, AL7W, ops)	738,300	1150	214	48	C

<b>9</b>					
NO9Z (+KX9X, N4OGW)	2,286,081	1939	393	48	C
WN9O (+W9IU)	1,521,135	1317	385	48	C
K9KJ (+W9YYG)	835,551	1059	263	48	C

<b>Ø</b>					
W0GJ (+AA0BY,N0MLJ)	2,156,760	1997	360	48	C
W0TM (+ops)	1,908,348	1882	338	48	C
W0CP (+W1JR,UA6HZ, K2)	1,866,324	1798	346	48	C
N0YY (+W0W)	1,290,576	1336	322	48	C
K0OU (+K0BTR)	745,728	971	256	31	C
K0GG (+K0OU,KB0TRH)	642,447	867	247	48	C
N0FV (+K0EA)	522,792	822	212	48	C
K0JE (+K0JAJ)	119,700	210	190	48	C
AC0W (+KF0G)	396	12	11	48	C

<b>Canada</b>					
VE6JY (+VE6EX,VE6WQ,VE6BF, ops)	2,248,785	2065	363	48	C
VE6SV (+V01CV,VE6FA,VE6AKY,VE6NAP)	976,470	1345	242	48	C

<b>Multiplexer Two Transmitters</b>					
K1AR (+K1EA, K1MBO, K1VE, N2AA, W2RQ)	9,247,365	5805	531	48	C

RZ9UA	153,720	915	56	48	C	20	EA2BDS	237,726	562	141	48	B	GM3CFS	39,903	283	47	48	B	20	LZ2NB	85,560	310	92	48	B	OM3KHU	104,610	317	110	48	B					
UA0SAD	50,256	349	48	48	C	20	EA7AJR	231,420	551	140	48	B	GM3WJW	319,263	661	161	28	A	15	LZ21MC	22,701	161	47	48	B	OM3K7A	102,003	281	121	48	B					
UA9AOL	32,292	234	46	48	C	20	EA7ASZ	218,526	473	154	48	B	GM3WJW	319,263	661	161	28	A	15	LZ21AQ	14,319	111	43	48	B	OM3K7B	99,180	290	114	48	B					
RK9CZO (R39CAZ, op)	26,730	198	45	48	C	20	EA7BAE	193,575	445	145	48	B	GM3WJW	319,263	661	161	28	A	15	LZ25OZ	13,722	95	51	48	B	OM3COW	94,890	316	100	48	B					
UA9XEN	19,026	151	42	48	C	20	EA7GXX	151,818	423	122	48	B	GM3WJW	319,263	661	161	28	A	15	LZ26A	122,400	400	102	48	C	OM3BA	69,768	222	102	48	B					
UA9JMM	13,407	109	41	48	C	20	EA7AKJ	113,505	329	115	48	B	GM3WJW	319,263	661	161	28	A	15	LZ23HI	91,809	303	101	48	C	OM1AF	64,260	255	84	48	B					
UA9DFX	65,626	414	53	48	C	15	EA5DCL	183,187	237	117	48	B	GM3WJW	319,263	661	161	28	A	15	LZ21OZ	71,604	234	102	48	C	OM3OCR	51,294	206	83	48	B					
RX9FB	29,601	253	39	48	C	15	EA3GHZ	68,676	236	97	48	B	GM3WJW	319,263	661	161	28	A	15	LZ21BJ	60,000	250	80	48	C	OM3IAG	47,784	181	88	48	B					
RA0CY	13,320	120	37	48	C	15	EA5FFC	41,310	162	85	48	B	GM3WJW	319,263	661	161	28	A	15	LZ21DFP	21,000	200	35	48	C	80	OM1ADM	3,166	33	34	48	B				
UA9APA	2,862	53	18	48	C	15	EA5ABE	41,022	159	86	48	B	GM3WJW	319,263	661	161	28	A	15	LZ21PM	9,996	119	28	48	C	80	OM5R	1,053,171	1603	219	48	C				
RZ3AX	260,652	812	107	47	C	10	EA5GRC	29,082	131	74	48	B	GM3WJW	319,263	661	161	28	A	15	LZ21ZP	61,344	426	48	48	C	80	OM8RJ	12,927	139	31	48	C				
UA9WQK	5,292	84	21	48	C	10	EA3KAC	14,700	140	35	48	B	GM3WJW	319,263	661	161	28	A	15	LZ21RN	21,879	187	39	48	C	40	OM3A (OM3CGN, op)	135,261	791	57	48	C				
<b>Kazakhstan</b>																																				
UN7TS	7,488	78	32	48	B		EA4AMW	6,771	61	37	48	B	GM3WJW	319,263	661	161	28	A	15	LZ21GN	20,862	183	38	48	B	20	OM1AW	1,428	28	17	48	C				
UN6T	36,168	274	44	48	C		EA4ATX	2,346	34	23	48	B	GM3WJW	319,263	661	161	28	A	15	LZ21ZY	4,158	63	22	48	B	20	OM1AW	1,428	28	17	48	C				
UP4L	58,905	385	51	48	B	20	EA4IDG	2,016	32	21	48	B	GM3WJW	319,263	661	161	28	A	15	LZ22BP	15,960	140	38	48	C	15	OM8MM	9,492	113	28	48	B				
UN4PG	7,104	74	32	48	C	20	EA4ACE	1,632	34	16	48	B	GM3WJW	319,263	661	161	28	A	15	LZ22PS	20,400	170	40	48	B	10	OM5RM	150,138	878	57	33	C				
UN4PD	4,896	51	32	48	C	20	EA5FV	1,710,456	2299	248	48	C	GM3WJW	319,263	661	161	28	A	15	LZ22RS	15,435	147	35	48	A	10	OM2TW	134,736	802	56	48	C				
UN8PF	2,808	39	24	48	B	20	EA4AKA	1,584,819	2229	237	48	C	GM3WJW	319,263	661	161	28	A	15	LZ24BU	6,048	72	28	48	B	10	OM8AG	21,420	170	42	48	B				
<b>Hong Kong</b>																																				
VR2BG	548,100	1044	175	26	C		EA4ADV	1,373,436	1884	243	48	C	GM3WJW	319,263	661	161	28	A	15	OE1EUA	277,530	638	145	48	B	OM7TT	20,787	169	41	27	B					
<b>Europe</b>																																				
<b>Croatia</b>																																				
9A3RE	199,296	519	128	48	A		EA4AAX	58,422	214	91	48	C	GM3WJW	319,263	661	161	28	A	15	OE1EBA	29,295	155	63	48	B	OM8AMF	624	16	13	48	B					
9A2EY	40,584	178	76	48	A		EA3MR	40,506	157	86	48	C	GM3WJW	319,263	661	161	28	A	15	OE0EHO	910,962	1374	221	48	C	OM3RG	87,210	570	51	48	C					
9A5Z	21,504	128	56	12	B		EA3QVR	7,560	63	40	48	C	GM3WJW	319,263	661	161	28	A	15	OE8CJU	253,260	603	140	48	C	OM5KM	8,277	89	31	48	B					
9A4D	127,395	745	57	48	B	40	EA7MT	3,726	46	27	48	C	GM3WJW	319,263	661	161	28	A	15	OE2S (OE2VEL, op)	237,546	477	166	48	C	Belgium										
9A7P (9A6NH, op)	25,272	216	39	8	B	40	EA3IN	70,923	503	47	48	C	40	GM3WJW	319,263	661	161	28	A	15	OH0PA	24,948	126	66	48	B	ON4AVH	258,300	574	150	48	B				
9A5I	14,319	129	37	48	B	40	EA1GT	858	26	11	48	B	15	GM3WJW	319,263	661	161	28	A	15	OH0JJS (OH6LJ, op)	209,322	1203	58	48	C	15	ON4XG	237,120	520	152	48	B			
9A4UR	4,092	62	22	48	B	20	EA3AR	135,774	794	57	48	C	10	GM3WJW	319,263	661	161	28	A	15	OH0MPO (OH4JLV, op)	146,496	872	56	48	C	10	ON4CAU	65,610	243	90	48	B			
9A5Y (9A3LG, op)	241,623	1413	57	48	C	15	EA3BIM	11,286	99	38	48	B	10	GM3WJW	319,263	661	161	28	A	15	OH2YU (OH2LUR, op)	191,520	1120	57	48	C	15	ON4SS	39,363	173	73	48	B			
9A3MR	89,586	553	54	48	C	15	<b>Moldova</b>																													
9A3VM	53,406	387	46	48	C	10	ER5OK	107,892	333	108	48	B	10	GM3WJW	319,263	661	161	28	A	15	OH31R	83,700	306	71	48	A	OM9A (ONSUM, op)	221,502	1273	58	48	C				
9A3CY	16,461	177	31	48	C	10	ER1AAZ	1,305	29	15	48	B	10	GM3WJW	319,263	661	161	28	A	15	OH2LP	70,713	243	97	48	B	ON4UN	94,890	316	100	48	B				
<b>Portugal</b>																																				
CT1FOK	28,944	134	72	48	B		<b>Estonia</b>																													
CT1AOZ	33,528	254	44	48	C	80	ES6PZ	25,668	124	69	48	B	GM3WJW	319,263	661	161	28	A	15	OH2LB	31,200	160	65	48	B	ON6NR	39,837	271	49	48	B					
CT1BNW	9,630	107	30	48	C	20	ES1QX	23,040	120	64	48	B	40	GM3WJW	319,263	661	161	28	A	15	OH3VX	13,272	79	56	48	B	Denmark									
CT1ELP	114,210	705	54	48	B	10	ES1QD	3,000	50	20	48	B	40	GM3WJW	319,263	661	161	28	A	15	OH3OK	11,322	111	34	48	B	OZ5DK	7,011	57	41	48	B				
<b>Fed. Rep. of Germany</b>																																				
DL3KVR	215,556	506	142	48	A		<b>Belarus</b>																													
DL4FN	198,696	487	136	36	B		EW6CM	21,945	133	55	48	A	GM3WJW	319,263	661	161	28	A	15	OH2DE	1,228	32	18	48	B	OZ5UR	196,224	448	146	48	B					
DL2BHX	112,350	350	107	48	A		EUI5A	190,320	488	130	48	B	GM3WJW	319,263	661	161	28	A	15	OH1MM	1,215	27	15	48	B	OZ5FF	124,320	370	112	48	B					
DK7ZH	312,570	690	157	48	A		EW6AL	108,360	344	105	48	B	GM3WJW	319,263	661	161	28	A	15	OH2HP	61,500	250	82	48	C	OZ5XZ	97,456	365	89	48	B					
DF6LO	255,744	576	148	48	B		EW6AF	75,990	298	85	48	B	GM3WJW	319,263	661	161	28	A	15	OH2H1	58,740	220	89	48	C	OZ5WQ	188,340	430	146	48	C					
DJ7XA	186,921	483	129	48	B		EUI1X	693,714	1162	199	48	C	GM3WJW	319,263	661	161	28	A	15	OH2JU (OH2LUR, op)	175,914	1011	58	48	C	40	OZ4UN	68,640	440	52	48	C				
DL8UAT	183,000	488	125	48	B		EW8OS	74,160	309	80	48	C	GM3WJW	319,263	661	161	28	A	15	OH2JE	5,673	61	31	48	B	40	OZ1BMA	27,636	196	47	48	B				
DL5MC	168,777	423	133	48	B		EWINY	5,670	90	21	48	B	80	GM3WJW	319,263	661	161	28	A	15	OH2BCD	1,500	25	20	48	C	40	OZ1KWG	7,395	85	29	48	B			
DL2FJ	132,534	398	111	8	B		EWSLW	3,828	52	22	48	C	80	GM3WJW	319,263	661	161	28	A	15	OH2BL	147,726	849	58	48	C	40	OZ1BXM	14,336	104	46	48	B			
DL3DRN	127,800	355	120	48	B		EW3CW	7,800	20	13	48	C	80	GM3WJW	319,263	661	161	28	A	15	OH2BL	147,726	849	58	48	C	40	OZ1BXM	14,336	104	46	48	B			
DL1TH	125,874	378	111	48	B		EUI4A	86,184	532	54	48	C	40	GM3WJW	319,263	661	161	28	A	15	OH2BL	147,726	849	58	48	C	40	OZ1BXM	14,336	104	46	48	B			
DK7FP	124,254	354	117	48	B		EW8D8	59,058	386	51	48	C	20	GM3WJW	319,263	661	161	28	A	15	OH2BL	147,726	849	58	48	C	40	OZ1BXM	14,336	104	46	48	B			
DL4WA	116,844	364	107	48	B		EUI1M	8,640	96	30	48	B	20	GM3WJW	319,263	661	161	28	A	15	OH2BL	147,726	849	58	48	C	40	OZ1BXM	14,336	104	46	48	B			
DJ4KW	114,426	326	111	48	B		EW6BG	31,500	250	42	48	B	15	GM3WJW	319,263	661	161	28	A	15	OH2BL	147,726	849	58	48	C	40	OZ1BXM	14,336	104	46	48	B			
DL5NA	97,456	365	89	48	B		EW6BF	6,975	75	31	48	B	15	GM3WJW	319,263	661	161	28	A	15	OH2BL	147,726	849	58	48	C	40	OZ1BXM	14,336</							

