

# Results of the 2022 CQ World Wide VHF Contest

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**W**ow ... hard to believe that this is already my fourth year as director for this contest. Just as I think I’m starting to get the hang of my duties as director: Monitoring log submissions and responding to questions from participants, doing the log checking, compiling the results, writing this article, some things happen and best laid plans encounter difficulties — more on that later in the article.

This year’s third full weekend of July was another active year for the CQWW VHF Contest, though the impact of world events was definitely felt in the number of log submissions received from Europe. The total count of logs received in 2022 dropped from last year, with 850 received (plus another 14 classified as checklogs), but that is still the fifth-highest log count in the recent history of the contest.

A total of 49,996 QSOs were reported in this year’s 864 logs, yielding an average of just over 50 contacts for each log. For 6 meters, 40,261 QSOs were reported in the 755 logs that included QSOs on that band versus 9,735 QSOs in the 430 logs that reported QSOs on 2 meters. The percentage of QSOs by band in 2022 is consistent with recent years — 80.5% of QSOs reported were on 6 meters and 19.5% were on 2 meters, as compared to an 82% / 18% split in 2021 and a 79% / 21% split in 2020.

Digital mode usage grew (again) in 2022. According to the two letter MOde reported on the Cabrillo QSO: Lines in the submitted logs, 38,738 of all QSOs were completed using “DG” or “RY”, 77.4% overall. By band, it was 33,256 of 40,281 6-meter QSOs (82.6%) and 5,482 of 9,735 (56.3%) of 2-meter QSOs that were completed using digital modes this year. This is the first year in which more than half of the 144-MHz QSOs reported using “DG” or “RY”.

## USA

The log count from the contiguous 48 U.S. states increased this year to 515

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*If you made a 50-MHz contact with EN95, it was likely with XM3A, operated by Igor Slakva, VE3ZF, operating from the top of Mt. McLean on Manitoulin Island. (Credit: Igor Slakva, VE3ZF)*

(plus four checklogs), an approximately 5% increase over the count from 2021. The Single-Operator, Single-Band category using 6-meters (SOSB6) continues as the most popular category overall in this contest. Nearly half of the logs from the U.S., 242, were SOSB6. Single Operator All-Band continued as the second most popular category with 202, a shade under 40%. The count of Rover logs grew by five from last year to 27. Single-Operator All-Band QRP matched the count from 2021 with 16. The Single-Operator, Single-Band, 2-meters (SOSB2) category was a little more competitive in 2022 with 13 entries. There were 10 Multi-Operator and five Hilltopper entries rounding out the U.S. total. The 4<sup>th</sup> call area continued its reign as the log submission leader with 118. The 5<sup>th</sup> call area was second busiest with 62, taking that spot away from 7<sup>th</sup> call

area which finished in third place for 2022 with 54 logs.

After claiming the top score in the SOSB6 category in 2021 (and top Rover category scores in prior years), Wyatt, ACØRA stayed in the one spot again for 2022 but added 2 meters to his equipment array to achieve the top score in the Single Operator, All Band category. Wyatt’s final QSO / Multiplier counts were: 353/164 on 6 meters and 139/72 on 2 meters for a final score of 144,904.

There was some competition in the U.S Multi-Operator efforts with the team at K5QE leading the scores in the category. Within 20% of Team Marshall’s final score were the scores from teams at N4SVC and W8ZN. Final Scores, QSO, and Multipliers counts by band for these three competitors are summarized in the table below.

Team	Final Score	6m Qs	6m Mults	2m Qs	2m Mults
K5QE	113,096	343	151	100	60
N4SVC	99,182	379	171	59	31
W8ZN	92,070	278	114	146	51

The U.S. winner of the SOSB6 category was Dan, K1TO. Dan kept himself very busy on the 50-MHz band with 420 QSOs and 168 Multipliers for a final score of 70,362. Dan did have some competition in the category from a fellow Floridian: Larry, N6AR. Larry almost matched Dan's multiplier count with 166 but had 35 fewer QSOs (385) for a final score of 62,748.

The SOSB2 category also found some notable efforts in the U.S. this

year. Paul, AA4ZZ, who had hosted the W4VHF Multi-Operator effort in 2021, focused his North Carolina station on the 144-MHz frequencies for 133 QSOs and 53 Multipliers, yielding a final score of 14,098. Stan, KA1ZE, piloted his W3XTT remote station in FN01 to find a few more multipliers than Paul did (57) but fell shy of Paul's QSO total with 110 for a final score of 12,426.

Jim, KO9A, continued his streak of being the top U.S. scorer in the Single-Operator, All-Band QRP category, now for a fourth straight year. Jim's 2022 score was a bit lower than last year's, with final QSO/Multiplier counts of 171/76 on 6 meters, and 58/29 on 2 meters for a final score of 29,820.

An excellent roving adventure was reported by Christopher, NV4B, resulting in a score of 52,752 to achieve the top score among this year's 27 U.S. Rover category entrants with a trek through six grids in Alabama, Mississippi, and Tennessee. Christopher logged 222 QSOs on 6 meters and 47 on 2 meters with multiplier

counts of 131 and 47 on the two bands, respectively.

In the U.S. Hilltopper category, Pete, K9PW, has rePETEd as the top scorer for the third year in a row. Pete's efforts resulted in a final score of 7,638 more than doubling his score from 2021. He logged 111 QSOs (88 on 50 MHz and 23 on 144 MHz) and contacted 47 different grid locators on 50 MHz and 10 on 144 MHz.

Among 32 U.S. clubs from which three or more logs were received in 2022, congratulations to the Potomac Valley Radio Club for the top club score of 357,237 from 38 submitted logs. Two very strong Multi-Operator efforts by teams at W8ZN and W3SO really boosted the club's total and Don, N3MK, was the top Single-Operator contributor.

## DX

The 335 logs received from outside the U.S. for this year's contest was only half of last year's DX log count. The breakdown by continent is shown in the table below:

Continent	Logs	# of different DXCC Countries
Africa	1	1
Asia	95	12
Europe	100	29
Oceania	23	1
South America	45	4
North America (other than U.S.)	71	6 (other than U.S.)
<b>Total</b>	<b>335</b>	<b>53</b>

## TOP SCORES WORLD

<b>All Band</b>	JJ1WWL .....3,520	YC3AHD .....48
EA8DBM .....94,612	PY2TDB.....16	
I1JTQ .....13,176		
IC8TEM .....9,040		
SF6F .....7,497		
E74SL.....7,260		
	<b>QRP</b>	
	VA2VT .....6,405	
	XE2YWB.....4,160	
<b>6 Meters</b>	SV3AUW .....4,104	
ISØBSR .....28,495	M5W .....2,420	
XE2JS.....27,816	SP9SDF.....1,980	
SX2I.....24,592		
6D5C .....18,768		
SV1NZX.....12,282		
	<b>Rover</b>	
	JG3DHN/R....3,036	
	BG5BAA/R....1,512	
<b>2 Meters</b>	VA3OGG/R.....924	
S56P .....22,620	VA7OTC/R.....735	
YO5LD .....7,000	VE3WVA/R .....440	
YO2LSP .....4,758		
IZ7UMS .....4,672		
YO2LLZ .....4,536		
	<b>Multi-Op</b>	
	IR9K.....82,256	
	4O6BLM .....75,543	
<b>Hilltopper</b>	HG6Z .....58,548	
E7ØAA.....4,068	OK1RDO .....31,230	
XM3A.....3,710	4X2M .....22,230	

## USA

<b>All Band</b>	K3GD.....551	AA6XA .....108
ACØRA .....144,904	K7ATN .....39	
K2DRH .....101,920		
W5PR .....50,370		
N3MK.....49,368		
K9KLD .....47,995		
	<b>QRP</b>	
	KO9A .....29,820	
	WAØMN .....3,735	
<b>6 Meters</b>	W5UHQ .....1,215	
K1TO .....70,392	K4CF .....1,060	
N6AR .....62,748	K3TW.....396	
W5LO .....34,846		
K5PI.....31,354		
N5RZ .....30,888		
	<b>Rover</b>	
	NV4B/R.....52,752	
	KG9OV/R...39,064	
<b>2 Meters</b>	AA5PR/R ...21,090	
AA4ZZ .....14,098	N6GP/R .....16,470	
W3XTT .....12,426	N2SLN/R ...10,428	
KD8ZEI .....3,196		
WA3EOQ.....1,452		
WE7L.....988		
	<b>Multi-Op</b>	
	K5QE .....113,096	
	N4SVC.....99,182	
<b>Hilltopper</b>	W8ZN .....92,070	
K9PW .....7,638	W3SO .....62,181	
KEØMHJ.....551	W3RFC.....16,936	



A "QTH selfie" by Ricardo, PY2QB, who operated from Lavrinhas Ranch in GG77, approximately 150 kilometers northeast of Sao Paulo, Brazil. (Credit: Ricardo Benedito, PY2QB)



View toward the horizon from PY2QB's operating location. (Credit: Ricardo Benedito, PY2QB)

### CLUB COMPETITION

(Minimum of 3 entries required for listing)

#### UNITED STATES

Club Name	# Entries	Score
Potomac Valley Radio Club	38	357,237
Society Of Midwest Contesters	20	267,226
Florida Contest Group	12	183,841
Dfw Contest Group	6	142,584
Mt Airy VHF Radio Club	9	131,929
Yankee Clipper Contest Club	17	115,360
Florida Weak Signal Society	4	97,950
Arizona Outlaws Contest Club	16	94,139
Texas DX Society	6	90,413
Central Texas DX and Contest Club	4	82,462
Southern California Contest Club	16	54,642
North East Weak Signal Group	6	52,876
Pacific Northwest VHF Society	20	45,868
Rochester VHF Group	5	43,808
Northern California Contest Club	8	34,822
Carolina DX Association	4	28,234
New Mexico VHF Society	4	26,672
Arizona VHF Society	3	22,475
South East Contest Club	4	19,073
Frankford Radio Club	5	17,180
Northern Lights Radio Society	9	16,292
South Jersey DX Association	4	11,258
Grand Mesa Contesters of Colorado	6	5,904

Willamette Valley DX Club	3	4,816
Metro DX Club	3	4,805
North Coast Contesters	3	4,368
Central Ohio Operators Klub	3	3,585
Portage County Amateur Radio Service	6	2,024
Kentucky Contest Group	4	1,368
Minnesota Wireless Assn	6	1,240
Hudson Valley Contesters and DXers	4	745
Tennessee Contest Group	3	144

#### DX

Club Name	# Entries	Score
Italian Contest Club	3	45,889
Club De Radio Experimentadores De Occidente	3	20,852
QSO Banat Timisoara	4	19,744
Contest Club Ontario	10	19,556
Manitoulin Amateur Radio Club	12	7,830
Rhein Ruhr DX Association	3	7,202
Contest Group du Quebec	4	6,810
Cabreuva DX	9	697
Radiofarol DX Group	12	665
Orari Lokal Kediri	10	408
Lu Contest Group	4	91
Rio DX Group	3	36

The drop in “DX” log submissions in 2022 was fairly consistent for all continents, except for non-U.S. parts of North America. Operators from Canada submitted 53 logs this year, claiming the top spot for logs submitted from countries outside the U.S. The log count from Brazil was second overall by country, leading the South American contingent. Significant log counts from Japan (31) and China (25) brought the total count from Asia to 95, only five behind the total count of logs from Europe. The country leaders for Europe’s 100 logs were Italy (15), Romania (13), and Germany (11). The ongoing conflict in eastern Europe appears to have had a significant impact on European participation. Indonesia was the only country in Oceania from which logs were received in 2022, with 23 logs, and the single log from Africa was from the Canary Islands.

Among the World/DX participants, the ranking of the top two categories matched that of U.S. log submitters with Single Operator, Single Band, 6 meters (SOSB6) winning the category popularity contest with 106 logs, followed by Single Operator, All Band with 85. The Single Operator, Single Band, 2 meters (SOSB2) was next in World popularity with 59 entries received. Fourth in world popularity was Single Operator, All Band, QRP, with 47 logs. There were 26 Multi-Operator, 8 Rover, and 6 Hilltopper submissions, which rounded out the category choices among DX stations.

The top score of any entry from outside the U.S. was from EA8DBM in the Canary Islands (IL18) in the Single Operator,

All Band category. The 6-meter conditions appear to have been very favorable for Aleksandr to record 358 QSOs and 195 Multipliers on the band, plus another 41 QSOs and 23 Multipliers on 144 MHz for a final score of 94,612.

Grid JM67 in Italy was the place to be to win the Multi-Operator category. A crew of nine operators at IR9K amassed a final score of 82,256 with QSO / Multiplier totals of 311/158 on 6 meters and 58/25 on 2 meters. A final score of 75,543 from the Multi-Operator team at 4O6BLM in Montenegro (JN92) is also notable, less than 10% behind IR9K’s score.

Once again, Bostjan, S56P, was the DX leader in the SOSB2 category from his station in Slovenia (JN76) with a final score of 22,620 from 195 contacts among 58 different Grid Locators.

Propagation was likely quite different in Sardinia (JN40) and Mexico (DL68), but just 679 points (less than 3%) separates the final scores of Marco, ISØBSR, and Julian, XE2JS, among DX entrants in the SOSB6 category. Julian’s QSO total was 235 (26 more than Marco) but Marco’s 139 multipliers (17 more than Julian) gave Marco the top score of 28,495.

Canadian operator Nicolas, VA2VT, achieved the world group’s top score in the Single-Operator, All-Band, QRP category, with 98 total QSOs and 61 Multipliers for a final score of 6,405. Nicolas operated from grid locator FN45 in the province of Quebec, the same spot where he had operated as VE2NCG (his prior callsign) and claimed the top score in the Hilltopper category in 2021.

### ROVERS & GRIDS OPERATED

AA5PR/R	.....DM74 DM75 DM76 DM86
ABØYM/R	.....DM78 DM79 DM89 DN70
AC1JR/R	.....FN31 FN32 FN41 FN42
AG6RS/R	.....DM03 DM04 DM05
BG5BAA/R	.....OL99 OM90 PL09 PM00
JG3DHN/R	.....PM95 PM96 PM97 QM06 QM07
KØBAK/R	.....FN10 FN20
KØDAS/R	.....EN30 EN31 EN32 EN40 EN41 EN42
K6LMN/R	.....DM03 DM04
K9JK/R	.....EN50 EN51 EN52 EN60 EN61 EN62
KA7RRA/R	.....CN87 CN88 CN97 CN98
KD6EFQ/R	.....DM12 DM13
KD6HOF/R	.....CM88 CM98 CM99
KD8RTT/R	.....EM28 EM29 EM38 EM39
KE4WMF/R	.....FM07 FM16 FM17 FM18 FM26
KF2MR/R	.....FN03 FN13
KG9OV/R	.....EM59 EM68 EM69 EN50 EN51 EN60 EN61
KI5FIQ/R	.....EM11 EM21 EM22
N2SLN/R	.....FN12 FN21 FN22 FN23
N6GP/R	.....DM03 DM04 DM13 DM14
N6LB/R	.....CN88 CN98
N6UTC/R	.....DM03 DM04 DM05
N9GH/R	.....EN51 EN52 EN53 EN61
NV4B/R	.....EM43 EM44 EM54 EM55 EM64 EM65
VA3OGG/R	.....EN86 EN96
VA7OTC/R	.....CN88 CN89
VE2GT/R	.....FN35 FN36
VE3LDE/R	.....EN86 EN95 EN96
VE3WVA/R	.....EN85 EN95 EN96
WØETT/R	.....DN62 DN70 DN71 DN72
W3DHJ/R	.....DM77 DM78 DM87 DM88
W9YOY/R	.....EN51 EN61
WB2SIH/R	.....FN32 FN33
WD9EXD/R	.....EN54 EN55 EN56 EN57 EN66
YD3AXD	.....OI51

### QSO & GRID LEADERS

6-Meter QSOs	2-Meter QSOs
K1TO.....420	S56P.....195
N6AR.....385	HG6Z.....189
N4SVC.....379	HS1AN.....181
EA8DBM.....358	E24ZPX.....181
ACØRA.....353	HSØEDP.....164
K5QE.....343	OK1RDO.....152
IR9K.....311	W8ZN.....146
W5PR.....301	ACØRA.....139
K2DRH.....300	AA4ZZ.....133
WA2FGK.....287	HS1AB.....124
W8ZN.....278	W3SO.....121
W5LO.....264	E27IHO.....121
K5PI.....261	JF1RYU.....120
WA4GPM.....253	E24QND.....120
XE2JS.....235	K2DRH.....115
N5RZ.....235	

  

6-Meter Grids	2-Meter Grids
EA8DBM.....195	ACØRA.....72
N4SVC.....171	K2DRH.....65
IR9K.....169	KG9OV/R.....63
K1TO.....168	HG6Z.....62
N6AR.....166	K5QE.....60
ACØRA.....164	OK1RDO.....59
K5QE.....151	S56P.....58
ISØBSR.....139	AA4ZZ.....57
W5PR.....136	AA4ZZ.....53
W5LO.....133	W3SO.....52
N5RZ.....132	W8ZN.....51
K2DRH.....131	4O6BLM.....50
NV4B/R.....131	N2NT.....44
WA4GPM.....123	YO2LSP.....39
KC4PX.....123	N2JMH.....38



*PY2QB's antenna farm — a 7-element LFA Yagi and an omni vertical. (Credit: Ricardo Benedito, PY2QB)*

In the world Hilltopper category. Zoran, E7ØAA was the top scorer from grid JN93 in Bosnia-Herzegovina. He had 69 total QSOs (25 on 6 meters and 44 on 2 meters) and 36 multipliers (18 each on 6 and 2 meters) earning Zoran a category-leading score of 4,068.

The top non-U.S. score in the Rover category was achieved by Masaki, JG3DHN, who travelled through five grids in Japan. Masaki logged 28 QSOs and 16 grid locators on 50 MHz and 32 QSOs and 17 grid locators on 144 MHz for a final score of 3,036.

The lower count of logs from DX participants is reflected in the lower number of clubs represented. Twelve clubs met the minimum requirement of three log submissions with the Italian Contest Club claiming the top aggregate total of 45,889 points from three logs. Marco, ISØBSR, was the top individual contributor to the club's total score.

### **Digital Modes**

Digital modes, largely FT-8 (but there are others), continue to be a factor in this and other radiosport events, both VHF and High Frequency (HF). When propagation conditions are marginal, the ability of a computer to detect and decode exchange information from a signal in the receiver passband that is below the "noise" and not decodable by the human operator is quite an advantage and most of the higher scoring participants avail themselves of that capability in their operating strategy.

For 2023, the rules will not see any substantial changes but there may be an option to specify whether contacts were all completed using "Digital" (FT-8 and other modes in the digital "family" where a computer decodes the call and exchange sent by the other station), all "Analog" (SSB / CW / FM, where the human operator decodes the call and exchange sent by the other station) or "Mixed" (where both "Digital" and "Analog" are used). The present seven category structure will remain and there will NOT be any sub-categories by these sub-modes.

I also received a report of a station that appeared to be operating as a robot using digital modes as some of the software packages for digital modes are capable of doing. The callsign of this station appears in a number of logs but the no log was submitted for the callsign. For 2022, no contacts were removed from any other logs but since I feel such activity is not in the spirit of the CQWW VHF contest, I may also address this in the rules for 2023 and take action in the log checking.

### **Apology From the Director**

As I alluded in the opening paragraph of this article, despite having been director for this contest for four years, I still have a lot to learn and room to improve in fulfilling my duties as contest director. One significant area in need of my attention and improvement is the award plaques program, which have not been ordered / processed since past CQWW VHF



Table with columns for call sign, frequency, power, and other details. Includes entries for N6VHF, N6VOH, AU6HT, W6DMW, N4DLA, W6SX, N6AN, AA6XA, W0XR, N7IR, N7EPD, AA7A, W7FI, W7M, W7EM, W7EW, KD7UO, KX7L, W7OJT, K7IU, N7OOZ, N7NEV, N7XU, K7LS, K7COY, K7COY, WATYAZ, W07V, N7RK, N6ZE7, N7DB, AF7GL, W0RIC, K7V, N7GP, N7RT, K7PT, K7CW, AL1VE, KA6BIM, K9DR, K7YM, N7NW, W7RAY, K7HP, WA8ZNC, N07R, W7TZ, K7II, K7BHM, W7OXB, WA8XD, K7JQ, K9PY, W7GES, KE6GF, KB9LHT, W6XI, K7OP, N9NA, K7ND, N7NMC, KE7JL, K7ATN, KB8U, W6MCD, AA8MA, KE8QEP, N8OE, K8BF, WB8WUA, K9NW, W3HKW, AA8SW, AA4R, K7DR, WA8LRW, N8WL, N8PW, KE8RJU, W8KNO, KB8ZR, N5JED, K8DP, KD8VMM, K78X, N4RA, NS8O, KD8ZE, W5UHQ, K8ZT, K2DRH, K9KLD, N4SV, W9XT, N0AKC, KA0WAS, K78O, N2BJ, K0PG, K9MU, W9DZ, K0DJT, W9FF, W9DP, WB9HF, N9JR, K9OJ, W9UC, N9RB, WB9LVO, W9VTD, N9IV, N9DJ, K9OM, K9CW, K9EEH

Table with columns for call sign, frequency, power, and other details. Includes entries for WU9D, WA9LEY, W9TA, W09B, K04HMB, K9SUL, W9EWZ, K06A, WB9AYW, K9PW, AC0RA, W0QF, W0JW, K0VG, K0AWU, W0ZQ, W0ZA, AA0AW, KA0PQW, KE0IZE, W0RT, W8LYJ, K06SC, K00TW, KE0KKD, KB0KQI, W6GMT, WA0LIF, W0ZF, W0BGBZ, N0POH, K8MMI, W0DTM, K0COVDY, KF0M, W0GN, KA0OUV, KB0NES, K0BJ, KNOV, KS0AA, K0KEX, W0OREW, N0JK, A0DH, WE7L, AA0MZ, N0HJZ, K0QEI, N0AT, W80IXI, W0AMN, W0KI, N0SUW, KE0MHJ, NV4BR, K9OV, AA5PR, N6GP, N2SLN, W8YQV, K9JK, K0DASR, AC1JR, KDBRT, KF2MR, N6UTC, K0BAK, AG6RS, W9EXD, KA7RRA, N9GH, K6LMN, KE4WM, WB2SH, W3DHU, KD6HOF, AB0YM, KD6EFO, KI5FI, W0ETT, N6LBR, V3STIC, VE3NRT, VA2BN, VA3KE, VE3RX, VE7DAY, VA3WB, VE3KI, VE3SST, VA3UAP, VE3ELL, VE3PJ, VE7AFZ, VA3RQX, VE3LFS, V68AN, VE3AJB, VE2OTA, VE2NR, VE2BAP, VA7DXC, VE6BMX, VE5MX, VA3PAF, VE3AB, VE2HAY, VE3ETE, VE3CYX, VE3JFN

Table with columns for call sign, frequency, power, and other details. Includes entries for VE3LDY, VA3TSS, VE3IOZ, VE3AC, VE3HZQ, VE7AB, VA7ST, VA3WEB, V01HP, VE3KP, VE3TM, VE3KG, VA6MA, VA2VT, VA7USD, VE7AJK, VE3JO, VE3EG, XM3A, VA3OGG, VA7OT, VE3WVA, VE3GT, VE3LDR, TI2ALF, CO3VR, CO2QU, H18RD, H18LAM, TG9AJR, XE2JS, 6D5C, 6F6F, XE2OK, XE2TT, XE2YWH, XE1GPW, 6E2U, XE1AY, XE2YWB, 4A2MAX, XE2NL, EA8DBM, TA3AWB, TA4RC, TA3MTM, TA3UMO, TA3E, BG7XWF, BG4HYK, B8HKYC, BD6JN, BD4SBN, BG2KAJ, B84FSD, BG8DV, B8SJC, BA4DL, BG4FQD, BD7LMB, BG8PM, BG2KZP, B7BHALUM, B8HKOK, B84BFS, BG2KYH, BA7LAC, BG7IKK, BG5UZV, B8SJM, BG5GDP, BD7JIR, BG5BAAR, 4X2M, JH9DRL, JQ1JNT, JL3MCM, JH4UTP, JE2BOM, 7L4IOU, JE2UFF, 7K4VPV, JO7KMB, JFN2NL, JP1LRT, JA6GCE

Table with columns for call sign, frequency, power, and other details. Includes entries for JK3HFN, JR3UIC, JO4JKL, JA6WFM, J11KC, JF1RYU, JE2HXL, JH4PUS, JA1KPF, J130XR, 8N2TY, JA8CEA, JH7UJU, JF1TEU, JR1NKN, JK1VUZ, JO6NZN, J11WWL, JG3DHN, KAZAKHSTAN, UP4L, UN9G, UN7JX, UN9L, UN9B, UN2E, KYRGYSTAN, EX8MJ, KOREA, HL3AMO, HL2AHL, DS3EXT, HL2ZN, HL2ASZ, DS1TWO, SAUDI ARABIA, 7Z1SJ, SRI LANKA, 4S7JL, 4S6CPT, TAIWAN, BU2EO, THAILAND, E27HO, H5SNMF, E25JNR, E25CHP, E24QND, E24QND, E24QNC, E24QNPX, E24ZFP, E25GNL, E25LOB, E25MAP, E25LRA, E25HLF, E25LBD, E25PFE, E25GGG, H58NNG, HS0EDP, HS1AN, ASIATIC TURKEY, TA3AWB, TA4RC, TA3MTM, TA3UMO, TA3E, CHINA, BG7XWF, BG4HYK, B8HKYC, BD6JN, BD4SBN, BG2KAJ, B84FSD, BG8DV, B8SJC, BA4DL, BG4FQD, BD7LMB, BG8PM, BG2KZP, B7BHALUM, B8HKOK, B84BFS, BG2KYH, BA7LAC, BG7IKK, BG5UZV, B8SJM, BG5GDP, BD7JIR, BG5BAAR, ISRAEL, 4X2M, JAPAN, JH9DRL, JQ1JNT, JL3MCM, JH4UTP, JE2BOM, 7L4IOU, JE2UFF, 7K4VPV, JO7KMB, JFN2NL, JP1LRT, JA6GCE, EUROPE, AUSTRIA, OE3MDB, OE3KAR, BELGIUM, ON5JT, BOSNIA AND HERZEGOVINA, E74SL, E72AA, E74BYZ, WEST MALAYSIA, 9W2W, 9W2VGR, 9W2EYR, 9M2CDX, 9M4CRX, WEST MALAYSIA, 9W2XIO, 9W2LDB, 9W2EXL, 9W2NNA, 9W2JLR, 9W2FXC, EUROPE, AUSTRIA, OE3MDB, OE3KAR, BELGIUM, ON5JT, BOSNIA AND HERZEGOVINA, E74SL, E72AA, E74BYZ, WEST MALAYSIA, 9W2W, 9W2VGR, 9W2EYR, 9M2CDX, 9M4CRX, WEST MALAYSIA, 9W2XIO, 9W2LDB, 9W2EXL, 9W2NNA, 9W2JLR, 9W2FXC, BULGARIA, LZ2CH, LZ3DP, CROATIA, 9A2VX, 9A1AF, 9A1I, CZECH REPUBLIC, OK4DJ, OK5SE, OK1RDO, DENMARK, OZ8OM, ENGLAND, G4OED

