



ARRL EME Contest

2013 Results

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Equipment and Endurance

Version 1.1 includes an updated score table that replaces the table in earlier versions.

Big Guns and Little Pistols were blazing at the Moon for three weekends in September, October, and November 2013. The September weekend, reserved for bands at 2.3 GHz and Up, had 16 entries with over 570 QSOs completed through 10 GHz. The second and third weekends saw activity on bands at 1296 MHz and below, with more than 7750 QSOs reported. Being on the right band and mode at the right time was a key to higher contact rates. Ingolf, SM6FHZ, and others found their Software Defined Radio (SDR) very useful to monitor band activity. And to add a little DX spice, the Michael & Monica team operated as GJ/DL1YMK from Jersey Island to provide many with a new DXCC entity on 2.3 and 3.4 GHz.

We received 117 logs for the contest including a single check log, up 9% from last year. Of the logs received, there were 92 single-op stations and 25 multi-op groups. Thirty-five were CW-Only and the rest were All-Mode. Thirty-three of the entrants were for Single-Band, 144 MHz, All-Mode.

There were many other EME stations that were active but did not submit logs. For example, Single-Band, All-Mode top-scorer 3Z4EME, who did submit a log, worked 242 such stations on 144 MHz! Two meters was clearly the busiest band, followed by 1.2 GHz.



Jimmy, SV1BTR, used this pair of 6.1-meter dishes on 23 cm (1296 MHz, left) and on 70 cm (432 MHz) / 13 cm (2.3 GHz). He also has a dish for higher-frequency microwave bands and an array of phased Yagis for 2 meters. (Photo by SV1BTR)

The entry from UR7D was the only one showing activity on 50 MHz with 6 contacts. With libration fading and Faraday rotation affecting signals, movement to higher bands at and above 1296 MHz with a circularly polarized signal is useful. The 2.3 GHz band proved to be very active with almost 400 contacts reported. As we go to press with this report, I am working on assembling capabilities for that band myself!

Several stations have capability on seven bands, so knowing on which to operate and when is a challenge. Stations with multiple feeds, dishes and other directional antennas and a system for rapid band-switching are at an advantage. Peter, G3LTF, reported the round trip from his shack to the dish is 100 meters and he walked that distance at least 20 times changing feeds!

There is no current agreement between EME aficionados on activity windows for each band, in addition to the Moon window continually in motion during the contest weekends. To facilitate activity, prior to the contest several operators posted their band plans and times, especially as there are varying frequency allocations for amateurs in the 2.3 GHz and 10 GHz bands for different countries.

Keeping the equipment functional with big dishes and high winds proved a challenge for those on the West Coast. KL6M lost his dish off the mount and many in northern Europe experienced fierce gusts and rain on the first and second weekends. The W6YX station suffered major mechanical failure with the Cassegrain reflector breaking off, falling down, and causing much damage. I was excited to have my own small station functional on 1296 MHz and 432 MHz after a 10-year quest to participate as a Single-Operator, CW-Only entry. It was a thrill to point my antennas to the Moon and tune in stations all around the globe — and to have some of my own CQs answered!

Despite some excellent scoring, there is always room for improvement, and participants were vocal in their feedback on the moonbounce reflectors. Several bemoaned the paucity of CW activity on 144 MHz and 432 MHz. Others participated without submitting logs, in protest of some of the rules for this contest, including the lack of an assisted category and the use of mixed-mode (digital and CW) scoring, despite the maintenance of a CW-Only category. Activity on 432 MHz was lacking, and the numbers showed that less than 8% of the submitted contest contacts were made on that band.

Single Operators

Jimmy, SV1BTR, reminded us of the needed Doppler corrections when changing bands. He had an exasperating experience of not hearing his own echoes on 2.3 GHz and

checking his station, until he noticed his Doppler setting being 6 kHz off! Despite that moment of shock, searching for his echoes, he managed to continue his string of being number one in the Single-Op, Multiband, CW-Only category with a score of 2.031 million points. He also captured the top CW-Only scores for a Single-Op entry on 432 MHz, 2.3, and 3.4 GHz, as he did last year.

Marko, LZ2US, had the best CW-Only score of 58,900 points on 144 MHz. Jorgen, OZ1HNE, was right behind with 1 less QSO, scoring 57,000. Howard, G4CCH, captured the honors in the Single-Op, 1.2 GHz, CW-Only category with a score of 417,100 on the basis of 97 QSOs. Both Peter, G3LTF, and Franta, OK1CA, had 9 QSOs on 3.4 GHz in the Single-Op, CW Only group.

Dmitry, UA3PTW, turned in an All-Band, All-Mode score of 4.136 million points with activity on 144, 432, and 1296 MHz to capture first place in this category. He was also the Single-Band top scorer in his category on 432 MHz.

The Single-Op, Single-Band, 144 MHz, All-Mode winner is Chris at 3Z4EME with a score of 1.815 million points. Nando, I1NDP, was the 1.2 GHz band leader of the Single-Op, All-Mode scorers with 425K. ON5TA led the 2.3 GHz band in the All-Mode entries with 31 Q's and 25 multipliers. Al, W5LUA, led the 3.4 GHz All-Mode entries with 10 contacts on that band. He also had the most contacts and points of the All-Mode activity on 10 GHz. Gianfranco, IK2RTI, managed 9 Q's on the 5.7 GHz band for top honors in the All-Mode category.

Multioperators

Only four of the entries were Multiop, CW-Only. The team of Chris, SP7DCS, with his son Marius, SP7MC, captured top honors with their three-band (144, 432, 1296 MHz) score total of 833K. SP6JLW (+SP6OPN, SQ6OPG) placed 2nd in this category with 798K, also using three bands (432 and 1296 MHz, 10 GHz). Tommy, WD5AGO (+KF5SYP and loggers), was third with 499K.

There were 19 logs submitted for the All-Mode categories, 13 were Single-Band entries and the other 6 were All-Band. The PI9CM Contest Group had top honors in the All-mode, All-band category with a score of 2.097 million points. The three ops at UR7D were second with a 1.743 million point score and the W6YX trio of EME'ers were third with a score of 1.266 million.

The K1JT team submitted their 6 million point all-mode activity as a check-log (346 QSOs and 175 multipliers on bands 144 MHz through 10 GHz). They used the Internet to arrange one QSO with a new DXCC entity for the K2UYH station. Although this QSO did not count for their contest score, the operators did not submit their log for the competition.



SV1BTR used this array of Yagis on 2 meters to make 24 CW QSOs off the Moon. (Photo by SV1BTR)

Future EME

This August, the international community of moonbounce enthusiasts will be meeting in Lannion, France (details at www.eme2014.fr). These biannual conferences share the unique experiences of EME activities and some of the newest technologies and ideas that enhance both communication and experimentation. Conferences have been held in many countries, including the US and attract both experienced and newcomer hams and their families to these venues.

If you have never experienced the thrill of moonbounce communication, and want to see what it's about, search the list of stations who entered logs in this year's contest, and contact one of the nearby operators. Inquire if they can give you a demonstration or some assistance in getting your own signals bouncing off the Moon. That was the way I was drawn into this operating mode. There is so much EME information available through the web and moonbounce reflectors that you'll always have an Elmer.

The 2014 ARRL EME Contest weekends are October 11-12 for 2.3 GHz and Up, followed by November 8-9 and December 6-7 for 50 MHz through 1296 MHz. I'm betting that there will continue to be growth in this fascinating activity!

Complete Scores by Category

Bands A=50 MHz B=144 MHz D=432 MHz E=1.2 GHz F=2.3 GHz G=3.4 GHz H=5.7 GHz I=10 GHz

Call	Bands Used	QSOs	Mults	Score	MO calls
Single Operator All Mode					
UA3PTW	BDE	311	133	4,136,300	
3Z4EME	B	242	75	1,815,000	
KB8RQ	B	205	83	1,701,500	
OK1DIX	B	191	74	1,413,400	
LZ1DP	B	177	69	1,221,300	
RN3A	BE	149	73	1,087,700	
7K3LGC	B	158	58	916,400	
DF3RU	DE	131	63	825,300	
YT1AR	B	135	60	810,000	
W2DBL	B	127	55	698,500	
LZ2FO	B	110	58	638,000	
UXØFF	BD	102	55	561,000	
SM4GGC	B	102	53	540,600	
IW4ARD	B	100	54	540,000	
ON5TA	EF	91	59	536,900	
K3RWR	B	112	47	526,400	
W3SZ	B	99	50	495,000	
I1NDP	E	99	43	425,700	
JA6AHB	DE	78	48	374,400	
OH1LRY	EF	94	39	366,600	
UA4HTS	E	90	40	360,000	
IZØFWE	B	80	44	352,000	
YL2AJ	B	79	41	323,900	
IK3COJ	E	77	37	284,900	
RA9J	B	79	36	284,400	
PA3FXB	E	69	37	255,300	
YO2BCT	E	62	38	235,600	
F5JWF	EFI	55	38	209,000	
KB5WIA	B	45	29	130,500	
SP1JNY	BDE	41	30	123,000	
AA7A	B	40	29	116,000	
RZ6DD	B	43	25	107,500	
YL2GD	BDE	33	30	99,000	
I5YDI	E	42	23	96,600	
W5LUA	FGHI	31	31	96,100	
CX2SC	B	37	23	85,100	
RA3WDK	B	30	19	57,000	
WB2RVX	B	24	20	48,000	
DL2FCN	B	25	18	45,000	
UY9VY	B	23	18	41,400	
W3HMS	E	26	15	39,000	
UA6BAC	B	20	13	26,000	
EA1RJ	E	18	13	23,400	
KAØRYT	B	19	12	22,800	
KL7UW	B	17	13	22,100	
OK1TEH	D	15	12	18,000	
OK2POI	D	14	12	16,800	

W4YTB	B	13	12	15,600
KNØWS	D	13	11	14,300
LZ1OA	BD	13	10	13,000
LZ1VPV	B	40	28	11,200
WA3GFZ	E	11	10	11,000
LZ1DX	F	10	8	8,000
XE2O	B	8	8	6,400
IK2RTI	H	9	7	6,300
SV1CAL	E	10	6	6,000
RA6C	B	9	6	5,400
HG5BMU	B	5	5	2,500
UAØLW	B	6	4	2,400
EA3MS	D	4	4	1,600
UT3LL	D	3	3	900
XE2MVS	B	1	1	100

Single Operator CW Only

SV1BTR	BDEFH	183	111	2,031,300
G3LTF	DEFGH	118	83	979,400
OK1CA	EFGHI	121	67	810,700
SV3AAF	DEFH	84	58	487,200
CT1DMK	EF	86	51	438,600
G4CCH	E	97	43	417,100
SD3F	EF	82	43	352,600
F5SE/P	E	88	38	334,400
N2UO	E	83	40	332,000
OK1CS	E	87	37	321,900
VK3UM	DE	74	37	273,800
DJ8FR	E	63	31	195,300
RD3BA	E	54	28	151,200
SP6ITF	E	50	28	140,000
NA4N	EF	38	27	102,600
SM2CEW	BD	29	22	63,800
N4GJV	BD	26	23	59,800
LZ2US	B	31	19	58,900
OZ1HNE	B	30	19	57,000
OK2ULQ	E	36	14	50,400
I2FHW	D	25	18	45,000
K1DS	DE	20	15	30,000
VE4SA	E	18	16	28,800
DL8UCC	B	14	12	16,800
F6HLC	D	14	12	16,800
EA3UM	E	15	11	16,500
IW2FZR	E	38	4	15,200
JA9BOH	D	11	11	12,100
TI2AEB	E	11	10	11,000
JH4JLV	D	4	4	1,600

Multi Operator All Mode

K1JT (check log only)	BDEFGHI	346	175	6,055,000	(+K2BMI, K2TXB, K2UYH, NE2U, W9IP)
PI9CM	BDE	214	98	2,097,200	(PA2CHR, PE1LWT, PA3FPQ)
I2FAK (+IK2LZT)	B	230	78	1,794,000	

UR7D	ABI	210	83	1,743,000	(UT5DL, UZ5DX, UZ5DZ) (K2YY, KG4UHM, KJ6SDF, AD6FP, W6TCP, K6KLY, KG6NUB, AA6XV)
W6YX	BDE	149	85	1,266,500	
RU1AA (+RU1AF)	B	159	71	1,128,900	
K4EME	BD	118	70	826,000	(+KR4V, AD4TJ) (LU1CGB, LU1AGR, LU9DO, LU1AEE)
LU1C	BDE	105	67	703,500	(SM6LPG, SM6THE, SA6BPD, SM6LPF)
SK6EI	B	121	52	629,200	
DKØKK	B	107	51	545,700	(DF7KF, DM1CG, DM1AC)
RA3AUB (+UA3PF)	E	83	35	290,500	
OH2PO	D	76	33	250,800	(+OH2BGR, OH2HTY, OH6DD)
IK5VLS (+IK5AMB)	E	69	27	186,300	
YL3CT	B	59	31	182,900	(+YL2OW, YL2NX)
VA7MM	E	53	32	169,600	(VE7CMK, VE7CNF)
UA5Y	F	39	22	124,800	(R3YA, RA3Y, RA3EME)
OK1KIR	I	20	15	30,000	(OK1DAI, OK1DAK)
F2CT	H	16	12	19,200	(+F3ME, F1GVU)
DLØEF	I	14	12	16,800	(DK2UO, DL1KVN, DK5KE)
SQ6OPG	H	7	6	4,200	(+SP6JLW, SP6OPN)
Multi Operator CW Only					
SP7DCS (+SP7MC)	BDE	119	70	833,000	
SP6JLW	DEI	121	66	798,600	(+SP6OPN, SQ6OPG)
WD5AGO	EF	86	58	498,800	(+KF5SYP, LOGGERS)
SP6OPN (+SP6JLW)	FG	39	35	136,500	
JH1KRC (+JE1OYE)	E	40	26	104,000	
Single Operator CW Only All Band					
SV1BTR	BDEFH	183	111	2,031,300	
G3LTF	DEFHG	118	83	979,400	
OK1CA	EFGHI	121	67	810,700	
SV3AAF	DEFH	84	58	487,200	
CT1DMK	EF	86	51	438,600	
SD3F	EF	82	43	352,600	
VK3UM	DE	74	37	273,800	
NA4N	EF	38	27	102,600	
SM2CEW	BD	29	22	63,800	
N4GJV	BD	26	23	59,800	
K1DS	DE	20	15	30,000	
Single Operator All Mode All Band					
UA3PTW	BDE	311	133	4,136,300	
RN3A	BE	149	73	1,087,700	
DF3RU	DE	131	63	825,300	
UXØFF	BD	102	55	561,000	
ON5TA	EF	91	59	536,900	
JA6AHB	DE	78	48	374,400	
OH1LRY	EF	94	39	366,600	
YO2BCT	E	62	38	235,600	
F5JWF	EFI	55	38	209,000	
SP1JNY	BDE	41	30	123,000	
YL2GD	BDE	33	30	99,000	

W5LUA	FGHI	31	31	96,100
LZ1OA	BD	13	10	13,000
Single Operator CW Only 144 MHz				
LZ2US	B	31	19	58,900
OZ1HNE	B	30	19	57,000
DL8UCC	B	14	12	16,800
JA9BOH	B	11	11	12,100
Single Operator All Mode 144 MHz				
3Z4EME	B	242	75	1,815,000
KB8RQ	B	205	83	1,701,500
OK1DIX	B	191	74	1,413,400
LZ1DP	B	177	69	1,221,300
7K3LGC	B	158	58	916,400
YT1AR	B	135	60	810,000
W2DBL	B	127	55	698,500
LZ2FO	B	110	58	638,000
SM4GGC	B	102	53	540,600
IW4ARD	B	100	54	540,000
K3RWR	B	112	47	526,400
W3SZ	B	99	50	495,000
IZØFWE	B	80	44	352,000
YL2AJ	B	79	41	323,900
RA9J	B	79	36	284,400
KB5WIA	B	45	29	130,500
AA7A	B	40	29	116,000
RZ6DD	B	43	25	107,500
CX2SC	B	37	23	85,100
RA3WDK	B	30	19	57,000
WB2RVX	B	24	20	48,000
DL2FCN	B	25	18	45,000
UY9VY	B	23	18	41,400
UA6BAC	B	20	13	26,000
KAØRYT	B	19	12	22,800
KL7UW	B	17	13	22,100
W4YTB	B	13	12	15,600
LZ1VPV	B	40	28	11,200
XE2O	B	8	8	6,400
RA6C	B	9	6	5,400
HG5BMU	B	5	5	2,500
UAØLW	B	6	4	2,400
XE2MVS	B	1	1	100
Single Operator CW Only 432 MHz				
I2FHW	D	25	18	45,000
F6HLC	D	14	12	16,800
JH4JLV	D	4	4	1,600
Single Operator All Mode 432 MHz				
OK1TEH	D	15	12	18,000
OK2POI	D	14	12	16,800
KNØWS	D	13	11	14,300
EA3MS	D	4	4	1,600
UT3LL	D	3	3	900

Single Operator CW Only 1.2 GHz

G4CCH	E	97	43	417,100
F5SE/P	E	88	38	334,400
N2UO	E	83	40	332,000
OK1CS	E	87	37	321,900
DJ8FR	E	63	31	195,300
RD3BA	E	54	28	151,200
SP6ITF	E	50	28	140,000
OK2ULQ	E	36	14	50,400
VE4SA	E	18	16	28,800
EA3UM	E	15	11	16,500
IW2FZR	E	38	4	15,200
TI2AEB	E	11	10	11,000

Single Operator All Mode 1.2 GHz

I1NDP	E	99	43	425,700
UA4HTS	E	90	40	360,000
IK3COJ	E	77	37	284,900
PA3FXB	E	69	37	255,300
I5YDI	E	42	23	96,600
W3HMS	E	26	15	39,000
EA1RJ	E	18	13	23,400
WA3GFZ	E	11	10	11,000
SV1CAL	E	10	6	6,000

Single Operator All Mode 2.4 GHz

LZ1DX	F	10	8	8,000
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Single Operator All Mode 5.7 GHz

IK2RTI	H	9	7	6,300
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Multi Operator CW Only All Band

SP7DCS	BDE	119	70	833,000	(+SP7MC)
SP6JLW	DEI	121	66	798,600	(+SP6OPN, SQ6OPG)
WD5AGO	EF	86	58	498,800	(+KF5SYP, LOGGERS)
SP6OPN	FG	39	35	136,500	(+SP6JLW)

Multi Operator All Mode All Band

K1JT (check log only)	BDEFGHI	346	175	6,055,000	(+K2BMI, K2TXB, K2UYH, NE2U, W9IP)
PI9CM	BDE	214	98	2,097,200	(PA2CHR, PE1LWT, PA3FPQ)
UR7D	ABI	210	83	1,743,000	(UT5DL, UZ5DX, UZ5DZ)
W6YX	BDE	149	85	1,266,500	(K2YY, KG4UHM, KJ6SDF, AD6FP, W6TCP, K6KLY, KG6NUB, AA6XV)
K4EME	BD	118	70	826,000	(+KR4V, AD4TJ)
LU1C	BDE	105	67	703,500	(LU1CGB, LU1AGR, LU9DO, LU1AEE)
UA5Y	F	39	22	124,800	(R3YA, RA3Y, RA3EME)

Multi Operator All Mode 144 MHz

I2FAK (+IK2LZT)	B	230	78	1,794,000	
RU1AA (+RU1AF)	B	159	71	1,128,900	
SK6EI	B	121	52	629,200	(SM6LPG, SM6THE, SA6BPD, SM6LPF)
DKØKK	B	107	51	545,700	(DF7KF, DM1CG, DM1AC)
YL3CT	B	59	31	182,900	(+YL2OW, YL2NX)

Multi Operator All Mode 432 MHz					
OH2PO	D	76	33	250,800	(+OH2BGR, OH2HTY, OH6DD)
Multi Operator CW Only 1.2 GHz					
JH1KRC (+JE1OYE)	E	40	26	104,000	
Multi Operator All Mode 1.2 GHz					
RA3AUB (+UA3PF)	E	83	35	290,500	
IK5VLS (+IK5AMB)	E	69	27	186,300	
VA7MM	E	53	32	169,600	(VE7CMK, VE7CNF)
Multi Operator All Mode 5.7 GHz					
F2CT	H	16	12	19,200	(+F3ME, F1GVU)
SQ6OPG	H	7	6	4,200	(+SP6JLW, SP6OPN)
Multi Operator All Mode 10 GHz					
OK1KIR	I	20	15	30,000	(OK1DAI, OK1DAK)
DLØEF	I	14	12	16,800	(DK2UO, DL1KVN, DK5KE)