



ARRL EME Contest

2013 Results

By Rick Rosen, K1DS

Equipment and Endurance

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 116 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 24 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 7 Q's on the 5.7 GHz band for top honors in the All-Mode category.

Multioperators

Only five 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!

Category Top Scores

Call Sign	Bands	QSOs	Mults	Score
<i>Single-Operator, All-Mode, All-Band</i>				
UA3PTW	BDE	311	133	4,136,300
RN3A	BE	149	73	1,087,700
DF3RU	DE	131	63	825,300
<i>Single-Operator, CW-Only, All-Band</i>				
SV1BTR	BDEFH	183	111	2,031,300
G3LTF	DEFGH	118	83	979,400
OK1CA	EFGHI	121	67	810,700
<i>Multioperator, All-Mode, All-Band</i>				
PI9CM (PA2CHR, PE1LWT, PA3FPQ,ops)	BDE	214	98	2,097,200
UR7D (UT5DL, UZ5DX, UZ5DZ,ops)	ABI	210	83	1,743,000
W6YX (K2YY, KG4UHM, KJ6SDF, AD6FP, W6TCP, K6KLY, KG6NUB, AA6XV, ops)	BDE	149	85	1,266,500
<i>Multioperator, CW-Only, All-Band</i>				
SP7DCS (+SP7MC)	BDE	119	70	833,000
SP6JLW (+SP6OPN, SQ6OPG)	FG	121	66	798,600
WD5AGO (+KF5SYP, LOGGERS)	EF	86	58	498,800

Top Single-Band Scores

Single Operator	Station	QSOs	Mults	SCORE
CW Only 144 MHz	LZ2US	31	19	58,900
	OZ1HNE	30	19	57,000
	DL8UCC	14	12	16,800
All Mode 144 MHz	3Z4EME	242	75	1,815,000
	KB8RQ	205	83	1,701,500
	OK1DIX	191	74	1,413,400
CW Only 432 MHz	I2FHW	25	18	45,000
	F6HLC	14	12	16,800
	JH4JLV	4	4	1,600
All Mode 432 MHz	UA3PTW	66	35	231,000
	DF3RU	53	29	153,700
	JA6AHB	20	17	34,000
CW Only 1.2 GHz	G4CCH	97	43	417,100
	F5SE/P	88	38	334,400
	N2UO	83	40	332,000
All Mode 1.2 GHz	I1NDP	99	43	425,700
	UA4HTS	90	40	360,000
	IK3COJ	77	37	284,900
All Mode 2.3 GHz	LZ1DX	10	8	8,000
Multioperator	Station	QSOs	Mults	SCORE
All Mode 144 MHz	I2FAK (+IK2LZT)	230	78	1,794,000
	RU1AA (+RU1AF)	159	71	1,128,900
	SK6EI (SM6LPG, SM6THE, SA6BPD, SM6LPF,ops)	121	52	629,200
All Mode 432 MHz	OH2PO	76	33	250,800
CW Only 1.2 GHz	JH1KRC (+JE1OYE)	40	26	104,000

All Mode 1.2 GHz	RA3AUB (+UA3PF)	83	35	290,500
	IK5VLS (+IK5AMB)	69	27	186,300
	VA7MM (VE7CMK, VE7CNF,ops)	53	32	169,600
All Mode 5.7 GHz	F2CT (+F3ME, F1GVU)	16	12	19,200
	SQ6OPG (+SP6JLW, SP6OPN)	7	6	4,200
All Mode 10 GHz	OK1KIR (OK1DAI, OK1DAK,ops)	20	15	30,000
	DLØEF (DK2UO, DL1KVN, DK5KE,ops)	14	12	16,800

Top Three-Band Scores

Category	Station	QSOs	Mults	Score
<i>Single-Operator</i>				
All Mode 144 MHz	3Z4EME	242	75	1,815,000
	KB8RQ	205	83	1,701,500
	OK1DIX	191	74	1,413,400
CW Only 144 MHz	LZ2US	31	19	58,900
	OZ1HNE	30	19	57,000
	SV1BTR	24	17	40,800
All Mode 432 MHz	UA3PTW	66	35	231,000
	DF3RU	53	29	153,700
	JA6AHB	20	17	34,000
CW Only 432 MHz	SV1BTR	35	22	77,000
	SM2CEW (tie)	25	18	45,000
	I2FHW (tie)	25	18	45,000
All Mode 1.2 GHz	I1NDP	99	43	425,700
	UA4HTS	90	40	360,000
	IK3COJ	77	37	284,900
CW Only 1.2 GHz	G4CCH	97	43	417,100
	F5SE/P	88	38	334,400
	N2UO	83	40	332,000
All Mode 2.3 GHz	SV1BTR	40	28	112,000
	G3LTF	38	28	106,400
	OK1CA	35	24	84,000
All Mode 3.4 GHz	W5LUA	10	10	10,000
	G3LTF (tie)	9	9	8,100
	OK1CA (tie)	9	9	8,100
All Mode 5.7 GHz	SV1BTR	9	8	7,200
	G3LTF	8	6	4,800
	W5LUA	5	5	2,500
All Mode 10 GHz	W5LUA	8	8	6,400
	F5JWF	7	5	3,500
	OK1CA	1	1	100
<i>Multioperator</i>				
All Mode 144 MHz	I2FAK (+IK2LZT)	230	78	1,794,000
	PI9CM	180	72	1,296,000
	UR7D	190	66	1,254,000
CW Only 144 MHz	SP7DCS (+SP7MC)	21	17	35,700
All Mode 432 MHz	OH2PO	76	33	250,800
	K4EME	32	22	70,400
	LU1C	11	10	11,000
CW Only 432 MHz	SP6JLW	25	20	50,000
	SP7DCS (+SP7MC)	17	15	25,500
All Mode 1.2 GHz	RA3AUB (+UA3PF)	83	35	290,500
	W6YX	63	34	214,200
	IK5VLS (+IK5AMB)	69	27	186,300

CW Only 1.2 GHz	SP6JLW	89	41	364,900
	SP7DCS (+SP7MC)	81	38	307,800
	WD5AGO	60	33	198,000
All Mode 2.3 GHz	UA5Y	39	22	85,800
	SP6OPN (+SP6JLW)	30	26	78,000
	WD5AGO	26	25	65,000
All Mode 3.4 GHz	SP6OPN (+SP6JLW)	9	9	8,100
All Mode 5.7 GHz	F2CT	16	12	19,200
	SQ6OPG	7	6	4,200
All Mode 10 GHz	OK1KIR	20	15	30,000
	DLØEF	14	12	16,800
	UR7D	14	11	15,400