FCC TEST REPORT

for

Elexa Consumer Products Inc.

Juice relay speaker

Model Number: MG8-Control

FCC ID: VII-MG8SYBKG

Prepared for : Elexa Consumer Products Inc. Address : 2275 Half Day Road, Suite 333,

Bannockburn, IL 60015 U.S.A

Prepared by : Keyway Testing Technology Co., Ltd.

Address : Baishun Industrial Zone, Zhangmutou Town,

Dongguan, Guangdong, China

Tel: 86-769-8718 2258 Fax: 86-769-8718 1058

Report No. : 14KWE06159602F Date of Test : Jun. 20~25, 2014 Date of Report : Jun. 26, 2014

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Keyway Testing Technology Co., Ltd.

Applicant: Elexa Consumer Products Inc.

Address: 2275 Half Day Road, Suite 333, Bannockburn, IL 60015 U.S.A

Manufacturer: INNOVATIVE AUDIO International CO.,LTD

Address: Fifth Rd Fourth District, Center of business culture, Zhong Kai

Hi-tech Zone, LiLin Town , Huizhou City Guangdong, China

E.U.T: Juice relay speaker

Model Number: MG8-Control

Trade Name: Serial No.: -----

Date of Receipt: Jun. 10, 2014 **Date of Test:** Jun. 20~25, 2014

Test Specification: FCC Part 15, Subpart C Section 15.249: Oct. 1, 2013

ANSI C63.4:2009

Test Result: The equipment under test was found to be compliance with the

requirements of the standards applied.

Issue Date: Jun. 26, 2014

Tested by:

Reviewed by:

Approved by:

Andy Gao / Engineer

Jade Yang/ Supervisor

Chris Du / Manager

Other Aspects:

None.

Abbreviations: OK/P=passed

fail/F=failed

n.a/N=not applicable

E.U.T=equipment under tested

This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Keyway Testing Technology Co., Ltd.

1. TEST SUMMARY

Test Items	Test Requirement	Result
Conducted Emissions	15.207	PASS
Radiated Emissions	15.209 15.249(a)(d)	PASS
20dB Bandwidth	15.249	PASS
Emissions from out of band	15.249(d)	PASS
Antenna Requirement	15.203	PASS

2.GENERAL PRODUCT INFORMATION

2.1. Product Function

Refer to Technical Construction Form and User Manual.

2.2. Description of Device (EUT)

Product Name:	Juice relay speaker			
Model No.:	MG8-Control			
Operation Fragues and	2402~2480MHz			
Operation Frequency:	2403~2478MHz			
Oh an and an under an	79 Channels			
Channel numbers:	26 Channels			
Channel concretions	1M			
Channel separation:	3M			
Madulation technology	BT:GFSK, Pi/4DQPSK, 8-DQPSK			
Modulation technology:	2.4G:FSK			
Antenna Type:	Integral Antenna			
Antenna gain:	0dBi			
Power supply:	DC 5V from adapter			
	Manufacturer: Golden Profit Electronics Ltd.			
Adater:	M/N: GPE053B-050100-1			
Audiei.	Input :AC 120~240V 50-60Hz;			
	Output: DC 5V 1A			

2.3. Difference between Model Numbers

None.

2.4. Independent Operation Modes

The basic operation modes are:

2.4.1. EUT work continues TX mode and frequency as below:

Modulation	Channel	Frequency
	Low	2403MHz
GFSK	Middle	2439MHz
	High	2478MHz

2.5. Test Supporting System

iPod:

Provide: Apple

M/N: 2010DJ5070 FCC Approve: FCC DOC

3. TEST SITES

3.1. Test Facilities

Lab Qualifications: 944 Shielded Room built by ETS-Lindgren, USA

Date of completion: March 28, 2011

966 Chamber built by ETS-Lindgren, USA

Date of completion: March 28, 2011

Certificated by TUV Rheinland, Germany.

Registration No.: UA 50207153 Date of registration: July 13, 2011

Certificated by UL, USA

Registration No.: 100567-237

Date of registration: September 1, 2011

Certificated by Intertek

Registration No.: 2011-RTL-L1-31 Date of registration: October 11, 2011

Certificated by Industry Canada

Registration No.: 9868A

Date of registration: December 8, 2011

Certificated by FCC, USA Registration No.: 370994

Date of registration: February 21, 2012

Certificated by CNAS China Registration No.: CNAS L5783 Date of registration: August 8, 2012

Name of Firm : Keyway Testing Technology Co., Ltd.

Site Location : Baishun Industrial Zone, Zhangmutou Town,

Dongguan, Guangdong, China

3.2. List of Test and Measurement Instruments

3.2.1. For conducted emission at the mains terminals test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESCI	101156	Apr. 27,14	Apr. 27,15
Artificial Mains Network	Rohde&Schwarz	ENV216	101315	Apr. 27,14	Apr. 27,15
Artificial Mains Network (AUX)	Rohde&Schwarz	ENV216	101314	Apr. 27,14	Apr. 27,15
RF Cable	FUJIKURA	3D-2W	944 Cable	Apr. 27,14	Apr. 27,15

3.2.2. For radiated emission test

EMI Test Receiver Rohde&Schwarz ESCI 101156 Apr. 27,14 Apr. 27,15 System Simulator Agilent E5515C GB43130245 Apr. 30,14 Apr. 30,15 Power Splitter Weinschel 1506A NW425 Apr. 30,14 Apr. 30,15 Bilog Antenna ETS-LINDGREEN 3142D 135452 Apr. 27,14 Apr. 27,15 Spectrum Analyzer Agilent E4411B MY4511304 Apr. 27,14 Apr. 27,15 Signal Amplifier SONOMA 310 187016 Apr. 27,14 Apr. 27,15 Signal Amplifier Agilent 8449B 3008A00251 Apr. 27,14 Apr. 27,15 RF Cable IMRO IMRO-400 966 Cable 1# N/A N/A MULTI-DEVICE Controller ETS-LINDGREEN 2090 126913 N/A N/A Horn Antenna DAZE ZN30701 11003 Apr. 27,14 Apr. 27,15 Spectrum Analyzer Agilent 8593E 3911A04271 Apr. 27,14 Apr. 27,15 Signal Amplifier <t< th=""><th></th><th></th><th></th><th></th><th></th><th></th></t<>						
System Simulator Agilent E5515C GB43130245 Apr. 30,14 Apr. 30,15 Power Splitter Weinschel 1506A NW425 Apr. 30,14 Apr. 30,15 Bilog Antenna ETS-LINDGREEN 3142D 135452 Apr. 27,14 Apr. 27,15 Spectrum Analyzer Agilent E4411B MY4511304 Apr. 27,14 Apr. 27,15 3m Semi-anechoic Chamber ETS-LINDGREEN 966 KW01 Apr. 27,14 Apr. 27,15 Signal Amplifier SONOMA 310 187016 Apr. 27,14 Apr. 27,15 Signal Amplifier Agilent 8449B 3008A00251 Apr. 27,14 Apr. 27,15 RF Cable IMRO IMRO-400 966 Cable 1# N/A N/A MULTI-DEVICE Controller ETS-LINDGREEN 2090 126913 N/A N/A Horn Antenna DAZE ZN30701 11003 Apr. 27,14 Apr. 27,15 Spectrum Analyzer Agilent 8593E 3911A04271 Apr. 27,14 Apr. 27,15 Signal Amplifier	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
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Bilog Antenna ETS-LINDGREEN 3142D 135452 Apr. 27,14 Apr. 27,15 Spectrum Analyzer Agilent E4411B MY4511304 Apr. 27,14 Apr. 27,15 3m Semi-anechoic Chamber ETS-LINDGREEN 966 KW01 Apr. 27,14 Apr. 27,15 Signal Amplifier SONOMA 310 187016 Apr. 27,14 Apr. 27,15 Signal Amplifier Agilent 8449B 3008A00251 Apr. 27,14 Apr. 27,15 RF Cable IMRO IMRO-400 966 Cable 1# N/A N/A MULTI-DEVICE Controller ETS-LINDGREEN 2090 126913 N/A N/A Horn Antenna DAZE ZN30701 11003 Apr. 27,14 Apr. 27,15 Horn Antenna SCHWARZBECK BBHA9170 9170-068 Apr. 27,14 Apr. 27,15 Spectrum Analyzer Agilent 8593E 3911A04271 Apr. 27,14 Apr. 27,15 Signal Amplifier DAZE ZN3380C 11001 Apr. 30,14 Apr. 30,15 Signal Amplifier	System Simulator	Agilent	E5515C	GB43130245	Apr. 30,14	Apr. 30,15
Spectrum Analyzer Agilent E4411B MY4511304 Apr. 27,14 Apr. 27,15 3m Semi-anechoic Chamber ETS-LINDGREEN 966 KW01 Apr. 27,14 Apr. 27,15 Signal Amplifier SONOMA 310 187016 Apr. 27,14 Apr. 27,15 Signal Amplifier Agilent 8449B 3008A00251 Apr. 27,14 Apr. 27,15 RF Cable IMRO IMRO-400 966 Cable 1# N/A N/A MULTI-DEVICE Controller ETS-LINDGREEN 2090 126913 N/A N/A Horn Antenna DAZE ZN30701 11003 Apr. 27,14 Apr. 27,15 Spectrum Analyzer Agilent 8593E 3911A04271 Apr. 27,14 Apr. 27,15 Spectrum Analyzer Agilent E4408B MY44211125 Apr. 30,14 Apr. 30,15 Signal Amplifier DAZE ZN3380C 11001 Apr. 27,14 Apr. 27,15 High Pass filter Micro HPM50111 324216 Apr. 30,14 Apr. 30,15 Filter COM-MW	Power Splitter	Weinschel	1506A	NW425	Apr. 30,14	Apr. 30,15
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Chamber ETS-LINDGREEN 966 KW01 Apr. 27,14 Apr. 27,15 Signal Amplifier SONOMA 310 187016 Apr. 27,14 Apr. 27,15 Signal Amplifier Agilent 8449B 3008A00251 Apr. 27,14 Apr. 27,15 RF Cable IMRO IMRO-400 966 Cable 1# N/A N/A MULTI-DEVICE Controller ETS-LINDGREEN 2090 126913 N/A N/A Horn Antenna DAZE ZN30701 11003 Apr. 27,14 Apr. 27,15 Horn Antenna SCHWARZBECK BBHA9170 9170-068 Apr. 27,14 Apr. 27,15 Spectrum Analyzer Agilent 8593E 3911A04271 Apr. 27,14 Apr. 27,15 Signal Amplifier DAZE ZN3380C 11001 Apr. 30,14 Apr. 30,15 Signal Amplifier DAZE ZN3380C 11001 Apr. 30,14 Apr. 30,15 High Pass filter Micro HPM50111 324216 Apr. 30,14 Apr. 30,15 Filter COM-MW ZBSF-C1	Spectrum Analyzer	Agilent	E4411B	MY4511304	Apr. 27,14	Apr. 27,15
Signal Amplifier Agilent 8449B 3008A00251 Apr. 27,14 Apr. 27,15 RF Cable IMRO IMRO-400 966 Cable 1# N/A N/A MULTI-DEVICE Controller ETS-LINDGREEN 2090 126913 N/A N/A Horn Antenna DAZE ZN30701 11003 Apr. 27,14 Apr. 27,15 Horn Antenna SCHWARZBECK BBHA9170 9170-068 Apr. 27,14 Apr. 27,15 Spectrum Analyzer Agilent 8593E 3911A04271 Apr. 27,14 Apr. 27,15 Signal Amplifier DAZE ZN3380C 11001 Apr. 30,14 Apr. 30,15 Filter COM-MW ZBSF-C836.5-25-X KW032 Apr. 30,14 Apr. 30,15 Filter COM-MW ZBSF-C1747.5-75-X2 KW035 Apr. 30,14 Apr. 30,15 Filter COM-MW ZBSF-C1880-60-X2 KW037 Apr. 30,14 Apr. 30,15		ETS-LINDGREEN	966	KW01	Apr. 27,14	Apr. 27,15
RF Cable IMRO IMRO-400 966 Cable 1# N/A N/A MULTI-DEVICE Controller ETS-LINDGREEN 2090 126913 N/A N/A Horn Antenna DAZE ZN30701 11003 Apr. 27,14 Apr. 27,15 Horn Antenna SCHWARZBECK BBHA9170 9170-068 Apr. 27,14 Apr. 27,15 Spectrum Analyzer Agilent 8593E 3911A04271 Apr. 27,14 Apr. 27,15 Signal Amplifier DAZE ZN3380C 11001 Apr. 30,14 Apr. 30,15 High Pass filter Micro HPM50111 324216 Apr. 30,14 Apr. 30,15 Filter COM-MW ZBSF-C836.5-25-X KW032 Apr. 30,14 Apr. 30,15 Filter COM-MW ZBSF-C1747.5-75-X2 KW037 Apr. 30,14 Apr. 30,15 Filter COM-MW ZBSF-C1880-60-X2 KW037 Apr. 30,14 Apr. 30,15	Signal Amplifier	SONOMA	310	187016	Apr. 27,14	Apr. 27,15
MULTI-DEVICE Controller ETS-LINDGREEN 2090 126913 N/A N/A Horn Antenna DAZE ZN30701 11003 Apr. 27,14 Apr. 27,15 Horn Antenna SCHWARZBECK BBHA9170 9170-068 Apr. 27,14 Apr. 27,15 Spectrum Analyzer Agilent 8593E 3911A04271 Apr. 27,14 Apr. 27,15 Spectrum Analyzer Agilent E4408B MY44211125 Apr. 30,14 Apr. 30,15 Signal Amplifier DAZE ZN3380C 11001 Apr. 27,14 Apr. 27,15 High Pass filter Micro HPM50111 324216 Apr. 30,14 Apr. 30,15 Filter COM-MW ZBSF-C836.5-25-X KW032 Apr. 30,14 Apr. 30,15 Filter COM-MW ZBSF-C1747.5-75-X2 KW035 Apr. 30,14 Apr. 30,15 Filter COM-MW ZBSF-C1880-60-X2 KW037 Apr. 30,14 Apr. 30,15	Signal Amplifier	Agilent	8449B	3008A00251	Apr. 27,14	Apr. 27,15
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Horn Antenna SCHWARZBECK BBHA9170 9170-068 Apr. 27,14 Apr. 27,15 Spectrum Analyzer Agilent 8593E 3911A04271 Apr. 27,14 Apr. 27,15 Spectrum Analyzer Agilent E4408B MY44211125 Apr. 30,14 Apr. 30,15 Signal Amplifier DAZE ZN3380C 11001 Apr. 27,14 Apr. 27,15 High Pass filter Micro HPM50111 324216 Apr. 30,14 Apr. 30,15 Filter COM-MW ZBSF-C836.5-25-X KW032 Apr. 30,14 Apr. 30,15 Filter COM-MW ZBSF-C1747.5-75-X2 KW035 Apr. 30,14 Apr. 30,15 Filter COM-MW ZBSF-C1880-60-X2 KW037 Apr. 30,14 Apr. 30,15		ETS-LINDGREEN	2090	126913	N/A	N/A
Spectrum Analyzer Agilent 8593E 3911A04271 Apr. 27,14 Apr. 27,15 Spectrum Analyzer Agilent E4408B MY44211125 Apr. 30,14 Apr. 30,15 Signal Amplifier DAZE ZN3380C 11001 Apr. 27,14 Apr. 27,15 High Pass filter Micro HPM50111 324216 Apr. 30,14 Apr. 30,15 Filter COM-MW ZBSF-C836.5-25-X KW032 Apr. 30,14 Apr. 30,15 Filter COM-MW ZBSF-C1747.5-75-X2 KW035 Apr. 30,14 Apr. 30,15 Filter COM-MW ZBSF-C1880-60-X2 KW037 Apr. 30,14 Apr. 30,15	Horn Antenna	DAZE	ZN30701	11003	Apr. 27,14	Apr. 27,15
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Filter COM-MW ZBSF-C1747.5-75-X2 KW035 Apr. 30,14 Apr. 30,15 Filter COM-MW ZBSF-C1880-60-X2 KW037 Apr. 30,14 Apr. 30,15	High Pass filter	Micro	HPM50111	324216	Apr. 30,14	Apr. 30,15
Filter COM-MW ZBSF-C1880-60-X2 KW037 Apr. 30,14 Apr. 30,15	Filter	COM-MW	ZBSF-C836.5-25-X	KW032	Apr. 30,14	Apr. 30,15
	Filter	COM-MW	ZBSF-C1747.5-75-X2	KW035	Apr. 30,14	Apr. 30,15
	Filter	COM-MW	ZBSF-C1880-60-X2	KW037	Apr. 30,14	Apr. 30,15
DC Power Supply LongWei PS-305D 010964729 Apr. 27,14 Apr. 27,15	DC Power Supply	LongWei	PS-305D	010964729	Apr. 27,14	Apr. 27,15
Constant temperature and humidity box GF GTH-800-40-1P MAA9906-005 Apr. 27,14 Apr. 27,15	•	GF	GTH-800-40-1P	MAA9906-005	Apr. 27,14	Apr. 27,15
Universal radio communication tester Rohde&Schwarz CMU200 3215420 Apr. 27,14 Apr. 27,15		Rohde&Schwarz	CMU200	3215420	Apr. 27,14	Apr. 27,15
Splitter Agilent 11636B 0025164 Apr. 27,14 Apr. 27,15	Splitter	Agilent	11636B	0025164	Apr. 27,14	Apr. 27,15

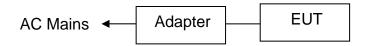
4. TEST SET-UP AND OPERATION MODES

4.1. Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

4.2. Block Diagram of Test Set-up

System Diagram of Connections between EUT and Simulators



(EUT: MG8-Control)

- 4.3. Test Operation Mode and Test Software None.
- 4.4. Special Accessories and Auxiliary Equipment None.
- 4.5. Countermeasures to Achieve EMC Compliance None.

4.6. Test Environment:

Ambient conditions in the test laboratory:

Items	Actual
Temperature (°C)	21~23
Humidity (%RH)	50~65

5. EMISSION TEST RESULTS

5.1. Conducted Emission at the Mains Terminals Test

5.1.1. Limit 15.207 limits

FREQUENCY OF EMISSION (MHz) CONDUCTE		D LIMIT (dBμV)
	Quasi-peak	Average
0.15-0.5 0.5-5 5-30	66 to 56 56 60	56 to 46 46 50

5.1.2. Test Setup

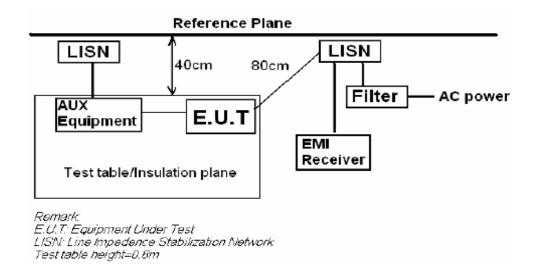
The EUT was put on a wooden table which was 0.8 m high above the ground and connected to the AC mains through the Artificial Mains Network (AMN). Where the mains cable supplied by the manufacture was longer than 0.8 m, the excess was folded back and forth parallel to the cable at the centre so as to form a bundle no longer than 0.4 m.

The EUT was kept 0.4 m from any other earthed conducting surface. Both sides of AC line were checked to find out the maximum conducted emission levels according to the test procedure during the conducted emission test.

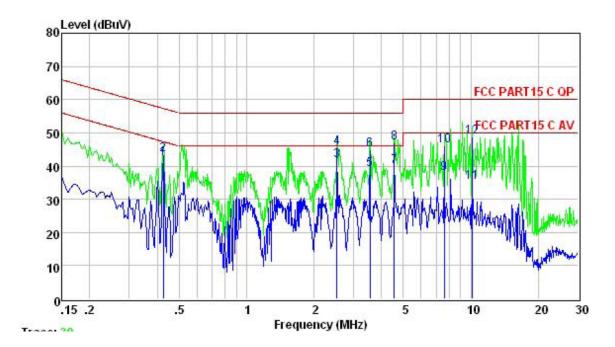
The frequency range from 150 kHz to 30 MHz was investigated.

The bandwidth of the test receiver was set at 9 kHz.

Pretest for all mode, The test data of the worst case condition(s) was reported on the following page.

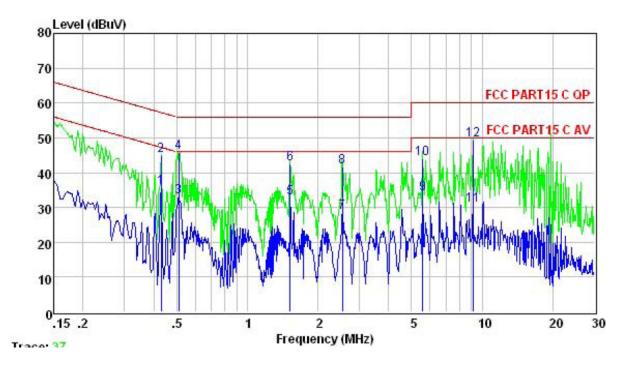


Line



	Freq	Level	Limit Line	0.000	Remark
	MHz	dBuV	dBuV	——dB	-
1	0.426	42.18	47.33	-5.15	Average
2	0.426	43.50	57.33	-13.83	QP
3	2.527	41.62	46.00	-4.38	Average
4	2.527	45.60	56.00	-10.40	QP
5	3.547	38.85	46.00	-7.15	Average
6	3.547	44.80	56.00	-11.20	QP
7	4.549	39.81	46.00	-6.19	Average
8	4.549	46.90	56.00	-9.10	QP
9	7.606	37.71	50.00	-12.29	Average
10	7.606	46.20	60.00	-13.80	QP
11	10.125	35.16	50.00	-14.84	Average
12	10.125	48.64	60.00	-11.36	OP

Neutral



	Freq	Level	Limit Line	Over Limit	Remark
-	MHz	dBuV	dBuV	dB	-
1	0.431	35.54	47.24	-11.70	Average
2	0.431	44.80	57.24	-12.44	QP
3	0.510	33.15	46.00	-12.85	Average
4	0.510	45.70	56.00	-10.30	QP
5	1.519	32.61	46.00	-13.39	Average
6	1.519	42.60	56.00	-13.40	QP
7	2.540	28.56	46.00	-17.44	Average
8	2.540	41.70	56.00	-14.30	QP
9	5.564	33.76	50.00	-16.24	Average
10	5.564	43.90	60.00	-16.10	QP
11	9.107	30.78	50.00	-19.22	Average
12	9.107	49.30	60.00	-10.70	QP

5.2. Radiated Emission Test

5.2.1. Limit 15.209 limits

FREQUENCY	DISTANCE	FIELD STREN	NGTHS LIMIT
MHz	Meters	$\mu V/m$	dB(μV)/m
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 dB(μV)/m (Peak)	
		54.0 dB(μV	V)/m (Average)

5.2.2. Restricted bands of operation

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(2)

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

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5.2.3. Test setup

The EUT was placed on a turn table which was 0.8 m above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was set 3 m away from the receiving antenna which was mounted on an antenna tower. The measuring antenna moved up and down to find out the maximum emission level. It moved from 1 m to 4 m for both horizontal and vertical polarizations.

The EUT was tested in the Chamber Site. It was pre-scanned with a Peak detector from the spectrum, and all the final readings from the test receiver were measured with the Quasi-Peak detector.

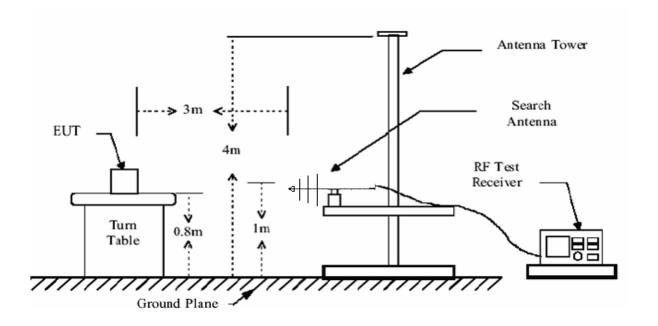
The bandwidth of the EMI test receiver is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The bandwidth of the Spectrum's VBW is set at 3MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure above 1GHz.

The frequency range from 30MHz to 10th harmonic (25GHz) are checked. and no any emissions were found from 18GHz to 25 GHz, So the radiated emissions from 18GHz to 25GHz were not record.

Notes: 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading-Preamp Factor.

- 2. Measurement Uncertainty: ±3.2 dB at a level of confidence of 95%.
- 3. For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.
- 4. For emissions below 1GHz, pretest for all mode, The test data of the worst case condition(s) was reported on the following pages.
- 6:Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.



Below 1GHz
TX Mode Horizontal polarizations

		Preamp	Read	Cable	Antenna		Limit	Over	
	Freq	Factor	Level	Loss	Factor	Level	Line	Limit	Remark
-	MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	S TS -
1	136.70	31.20	56.90	1.12	8.37	35.19	43.50	-8.31	Peak
2	213.33	31.05	50.07	1.53	11.64	32.19	43.50	-11.31	Peak
3	228.85	30.92	52.62	1.61	12.31	35.62	46.00	-10.38	Peak
4	277.35	30.94	46.66	1.78	13.08	30.58	46.00	-15.42	Peak
5	321.00	30.84	47.55	2.02	14.39	33.12	46.00	-12.88	Peak
6	546.04	30.85	38.99	3.03	19.45	30.62	46.00	-15.38	Peak

TX Mode Vertical polarizations

	Preamp		Read	Cable	Antenna		Limit	Limit Over		
		Freq	Factor	Level	Loss	Factor	Level	Line	Limit	Remark
	73	MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	()
1	!	46.49	31.39	54.77	0.56	10.24	34.18	40.00	-5.82	QP
2		124.09	31.22	52.75	1.12	8.42	31.07	43.50	-12.43	QP
3		135.73	31.20	54.98	1.12	8.36	33.26	43.50	-10.24	QP
4		228.85	30.92	56.32	1.61	12.31	39.32	46.00	-6.68	QP
5		282.20	30.94	45.01	1.87	13.23	29.17	46.00	-16.83	QP
6		546.04	30.85	39.44	3.03	19.45	31.07	46.00	-14.93	OP

Above 1GHz GFSK 2403MHz Horizontal polarizations

		Preamp	Read	Cablei	Antenna		Limit	Over	
	Freq	Factor	Level	Loss	Factor	Level	Line	Limit	Remark
	MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	-
1	2403.00	26.32	79.81	7.39	28.73	89.61	94.00	-4.39	Average
2	2403.00	26.32	93.14	7.39	28.73	102.94	114.00	-11.06	Peak
3	4806.00	27.49	32.26	11.96	32.94	49.67	74.00	-24.33	Peak
4	7103.00	27.92	18.06	16.60	37.24	43.98	74.00	-30.02	Peak
5	10061.00	28.81	14.11	16.98	38.51	40.79	74.00	-33.21	Peak
6	13342.00	29.27	9.27	18.61	42.29	40.90	74.00	-33.10	Peak

GFSK 2403MHz Vertical polarizations

		Preamp	Read	Cable	Antenna		Limit	Over	
	Freq	Factor	Level	Loss	Factor	Level	Line	Limit	Remark
	MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	(1
1	2403.00	26.32	79.96	7.39	28.73	89.76	94.00	-4.24	Average
2	2403.00	26.32	92.86	7.39	28.73	102.66	114.00	-11.34	Peak
3	4806.00	27.49	32.46	11.96	32.94	49.87	74.00	-24.13	Peak
4	7290.00	27.96	14.39	16.61	37.32	40.36	74.00	-33.64	Peak
5	10605.00	28.86	15.69	17.09	39.26	43.18	74.00	-30.82	Peak
6	13223.00	29.24	11.94	18.46	41.73	42.89	74.00	-31.11	Peak

GFSK 2439MHz Horizontal polarizations

	Freq				Antenna Factor		Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	()
1	2439.00	26.33	79.96	7.48	28.76	89.87	94.00	-4.13	Average
2	2439.00	26.33	92.71	7.48	28.76	102.62	114.00	-11.38	Peak
3	4878.00	27.53	32.23	12.14	33.11	49.95	74.00	-24.05	Peak
4	7103.00	27.92	16.67	16.60	37.24	42.59	74.00	-31.41	Peak
5	8939.00	28.38	18.30	16.87	37.32	44.11	74.00	-29.89	Peak
6	13087.00	29.22	13.25	18.32	41.10	43.45	74.00	-30.55	Peak

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GFSK 2439MHz Vertical polarizations

		Preamp	Read	Cable	Antenna		Limit	Over	
	Freq	Factor	Level	Loss	Factor	Level	Line	Limit	Remark
	MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	· ·
1	2439.00	26.33	79.76	7.48	28.76	89.67	94.00	-4.33	Average
2	2439.00	26.33	92.71	7.48	28.76	102.62	114.00	-11.38	Peak
3	4878.00	27.53	31.91	12.14	33.11	49.63	74.00	-24.37	Peak
4	7817.00	28.06	16.95	16.65	36.77	42.31	74.00	-31.69	Peak
5	10248.00	28.83	18.90	17.02	38.80	45.89	74.00	-28.11	Peak
6	13019.00	29.20	16.05	18.24	40.78	45.87	74.00	-28.13	Peak

GFSK 2478MHz Horizontal polarizations

		Preamp	Read	Cable	Antenna		Limit	Over	
	Freq	Factor	Level	Loss	Factor	Level	Line	Limit	Remark
	MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	S T.
1	2478.00	26.34	79.64	7.57	28.79	89.66	94.00	-4.34	Average
2	2478.00	26.34	92.09	7.57	28.79	102.11	114.00	-11.89	Peak
3	4956.00	27.58	31.87	12.36	33.32	49.97	74.00	-24.03	Peak
4	6967.00	27.89	16.11	16.60	37.11	41.93	74.00	-32.07	Peak
5	9704.00	28.68	10.03	16.94	38.17	36.46	74.00	-37.54	Peak
6	12798.00	29.16	8.80	18.05	40.22	37.91	74.00	-36.09	Peak

GFSK 2478MHz Vertical polarizations

		Preamp	Read	Cable	Antenna		Limit	Over	
	Freq	Factor	Level	Loss	Factor	Level	Line	Limit	Remark
	MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	· · · · · · · ·
1	2480.00	26.34	79.73	7.57	28.79	89.75	94.00	-4.25	Average
2	2480.00	26.34	91.77	7.57	28.79	101.79	114.00	-12.21	Peak
3	4956.00	27.58	31.86	12.36	33.32	49.96	74.00	-24.04	Peak
4	7239.00	27.95	17.15	16.61	37.30	43.11	74.00	-30.89	Peak
5	10639.00	28.86	14.85	17.09	39.28	42.36	74.00	-31.64	Peak
6	14175.00	29.43	10.59	19.47	42.50	43.13	74.00	-30.87	Peak

6. 20DB OCCUPY BANDWIDTH

6.1. Limits

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

6.2. Test setup

- 1. Set the RBW =100kHz.
- 2. Set the VBW = 300kHz
- 3. Span=2MHz
- 4. Detector = peak.
- 5. Sweep time = auto couple.
- 6. Allow trace to fully stabilize, and view the plot.
- 7. Measure and record the result in the test report.

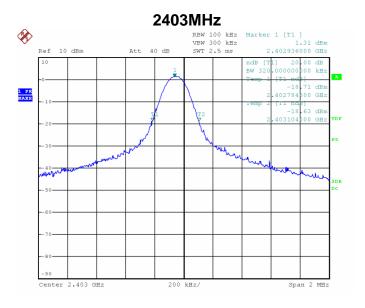
Test data:

	Channel Frequency	20dB Bandwidth	Result
	(MHz)	(MHz)	
	2403	0.320	Pass
GFSK	2439	0.328	Pass
	2478	0.312	Pass

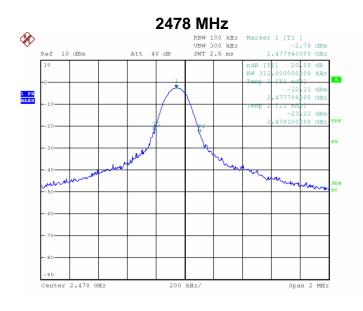
Test plot as follows:

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GFSK







7. BAND EDGE COMPLIANCE TEST

7.1. Limits

All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

7.2. Test setup

The EUT was placed on a turn table which was 0.8 m above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was set 3 m away from the receiving antenna which was mounted on an antenna tower. The measuring antenna moved up and down to find out the maximum emission level. It moved from 1 m to 4 m for both horizontal and vertical polarizations.

The bandwidth of the Spectrum's VBW is set at 3MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure.

Test plot as follows:

Frequency (MHz)	Antenna polarization	Emission (dBuV/m)	Band edge Limit (dBuV/m)		Result
,	(H/V)	PK	PK	AV	Pass
<2400	Н	50.23	74.00	54.00	Pass
<2400	V	50.01	74.00	54.00	Pass
>2483.5	Н	49.97	74.00	54.00	Pass
>2483.5	V	50.14	74.00	54.00	Pass

If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.

FCC ID: VII-MG8SYBKG

8. ANTENNA REQUIREMENTS

8.1. Limits

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

8.2. Result

The antennas used for this product are integral Antenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is only 0dBi.

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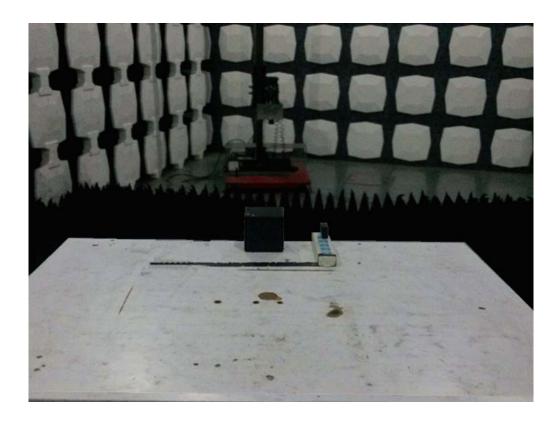
9. PHOTOGRAPHS OF TEST SET-UP

Conducted Emission



Radiated Emission





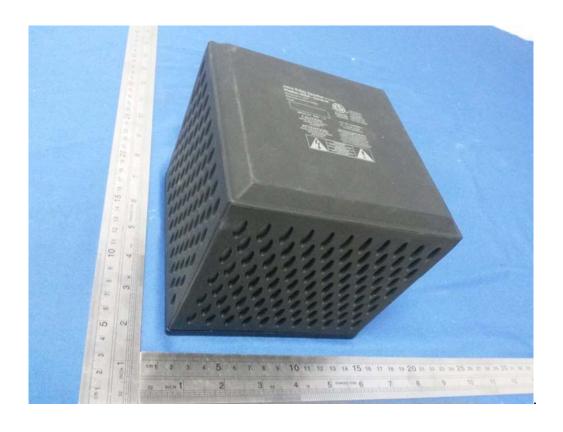
10. PHOTOGRAPHS OF THE EUT





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