FCC Part 15B
Measurement and Test Report

For

SHENZHEN KINGZONE COMMUNICATION TECHNOLOGY CO., LTD.

RM2308, Block A, Electronics Science & Technology Building, NO.2070

Shennan Zhonglu, Shenzhen, China

FCC ID: 2AC57-K1

Test Rule(s):	FCC Part 15 Subpart B
Product Description:	KINGZONE K1
Tested Model:	K1
Report No.:	STR14088276I-6
Tested Date:	2014-08-26 to 2014-09-11
Issued Date:	2014-09-13
Tested By:	Silin Chen / Engineer
Reviewed By:	Lahm Peng / EMC Manager
Approved & Authorized By:	Jandy So / PSQ Manager

Prepared By:

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	SHENZHEN KINGZONE COMMUNICATION TECHNOLOGY CO., LTD
Address of applicant:	RM2308, Block A, Electronics Science & Technology Building, NO.2070 Shennan Zhonglu, Shenzhen, China
Manufacturer:	SHENZHEN KINGZONE COMMUNICATION TECHNOLOGY CO., LTD LONGHUA BRANCH
Address of manufacturer:	RM2308, Block A, Electronics Science & Technology Building, NO.2070 Shennan Zhonglu, Shenzhen, China

General Description of EUT	
Product Name:	KINGZONE K1
Brand Name:	KINGZONE, LEO
Model No.:	K1
Adding Model:	LFON3
Hardware Version:	E19_MAIN_PCBV1.0
Software Version:	0502L010_20140516
IMEI:	863811020013575/863811020013575
Rated Voltage:	DC 3.7V Battery
Battery:	K1 / 2500mAh
Adapter Model:	TC-G100
Device Category:	Portable Device
The EUT is GSM850/PCS1900, WCDMA Band II/ Band V smartphone. the smartphone is intended for speech and Multimedia Message Service (MMS) transmission. It is equipped with GPRS/EDGE class 12 for GSM850 and PCS1900 and Bluetooth, Wi-Fi, and camera functions. For more information see the following datasheet	
Note: The test data is gathered from a production sample, provided by the manufacturer. The other model listed in the report has different appearance only of K1 without circuit and electronic construction changed, declared by the manufacturer.	

Technical Characteristics of EUT	
Rated Voltage:	DC 3.7V Battery
Rated Current:	/
Rated Power:	/
Power Adapter Model:	FY0502000/SAPA05010US
Lowest Internal Frequency:	26MHz
Highest Internal Frequency:	1.0GHz
Classification of ITE:	Class B

1.2 Test Standards

The following report is prepared on behalf of the SHENZHEN KINGZONE COMMUNICATION TECHNOLOGY CO., LTD in accordance with Part 2, Subpart J, and Part 15, Subparts A and B of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15, Subpart B, and section 15.205, 15.107, and 15.109 rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

1.4 Test Facility

- **FCC – Registration No.: 934118**
  Shenzhen SEM.Test Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files and the Registration is 934118.

- **Industry Canada (IC) Registration No.: 11464A**
  The 3m Semi-anechoic chamber of Shenzhen SEM.Test Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

- **CNAS Registration No.: L4062**
  Shenzhen SEM.Test Technology Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, P.R.C (518101)

1.5 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Mode List:

Test Mode	Description	Remark
TM1	Downloading	Connect to PC

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
/	/	/	/

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Notebook Computer	Lenovo	20007	EB12648265

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Cable	0.8	Unshielded	Without Core

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§ 15.107 (a)	Conducted Emissions	Compliant
§ 15.109 (a)	Radiated Emissions	Compliant

N/A: not applicable

3. Conducted Emissions

3.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ± 2.88 dB.

3.2 Test Equipment List and Details

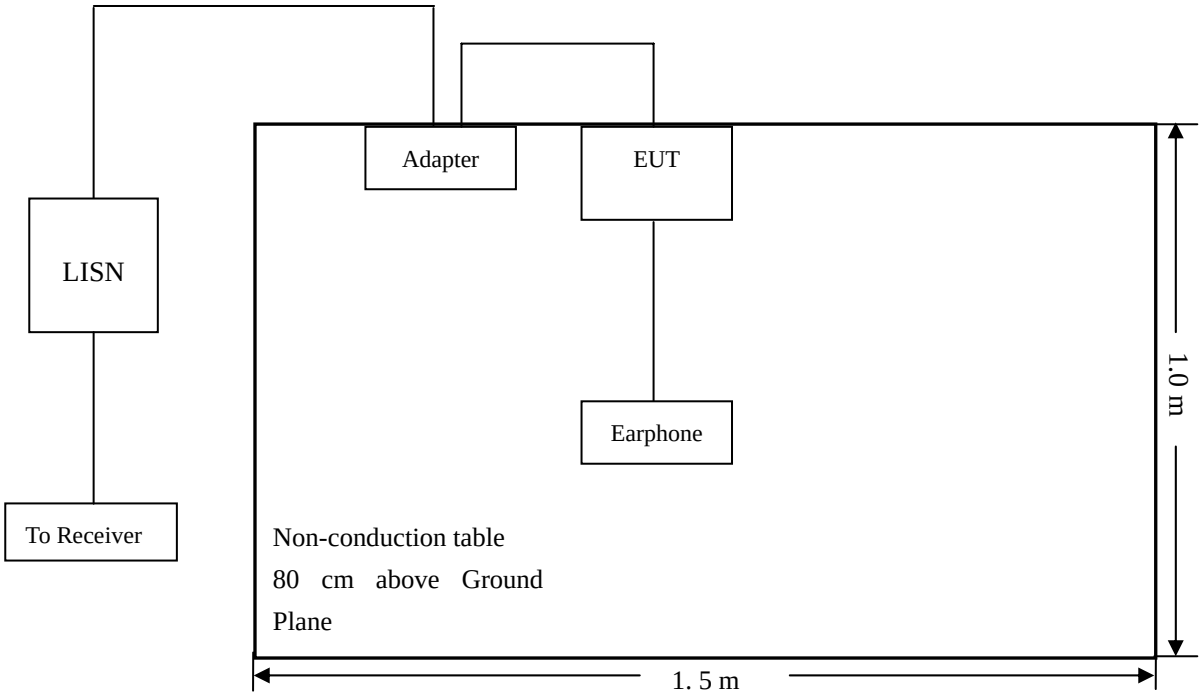
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2014-05-28	2015-05-27
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2014-05-28	2015-05-27
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2014-05-28	2015-05-27

3.3 Test Procedure

Test is conducting under the description of ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

Note: Base on the calibrated result, for the impedance characteristic and insertion loss, the effect shall be ignored from the placed multiple outlet power strip between the device and LISN.

3.4 Basic Test Setup Block Diagram



3.5 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	52%
ATM Pressure:	1011 mbar

3.6 Summary of Test Results/Plots

According to the data in section 3.7, the EUT complied with the FCC Part 15.107(a) Conducted margin for a Class B device, with the *worst* margin reading of:

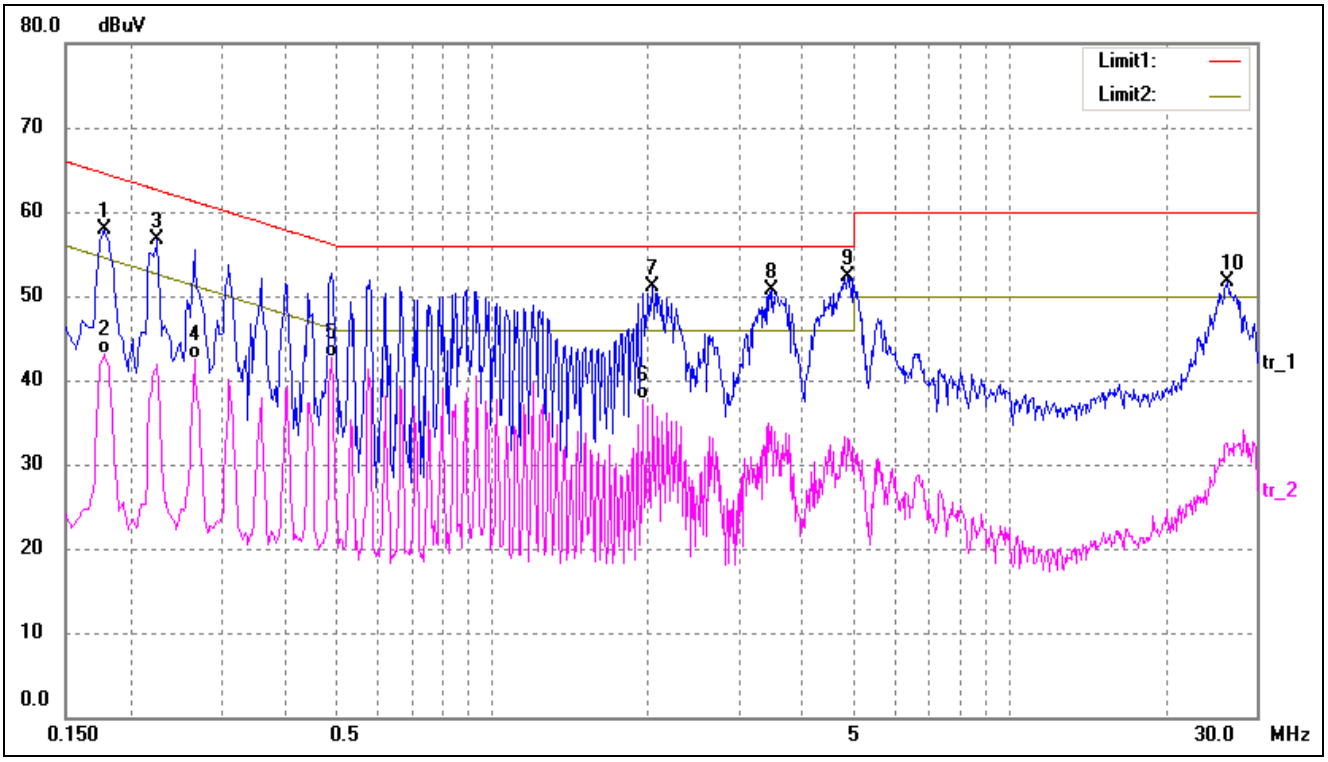
-4.98 dB at **2.0500 MHz** in the **Neutral**, **TM1** Mode**, Peak** detector, 0.15-30MHz

3.7 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

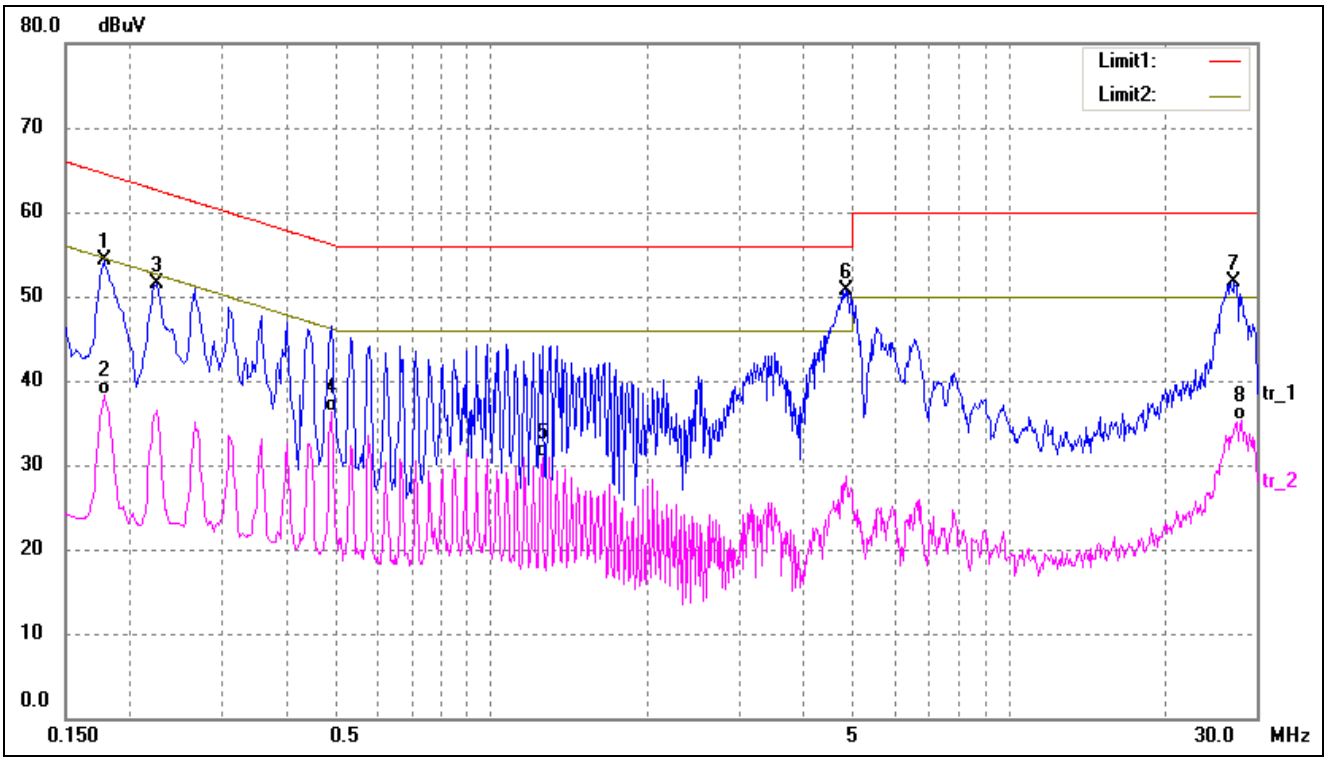
EUT: *KINGZONE K1*
Tested Model: *K1*
Operating Condition: *AC 120V/60Hz; Adapter DC 5V/2A*
Comment: *TM1*

Test Specification: *Neutral*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1	0.1780	48.38	9.50	57.88	64.58	-6.70	peak
2	0.1780	33.58	9.50	43.08	54.58	-11.50	AVG
3	0.2260	47.26	9.50	56.76	62.60	-5.84	peak
4	0.2660	32.95	9.50	42.45	51.24	-8.79	AVG
5*	0.4900	33.19	9.50	42.69	46.17	-3.48	AVG
6	1.9580	27.72	10.00	37.72	46.00	-8.28	AVG
7	2.0500	41.02	10.00	51.02	56.00	-4.98	peak
8	3.4780	40.74	10.00	50.74	56.00	-5.26	peak
9	4.8620	42.38	10.00	52.38	56.00	-3.62	peak
10	26.2980	38.63	13.00	51.63	60.00	-8.37	peak

Test Specification: *Line*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1	0.1780	44.90	9.50	54.40	64.58	-10.18	peak
2	0.1780	28.74	9.50	38.24	54.58	-16.34	AVG
3	0.2260	41.95	9.50	51.45	62.60	-11.15	peak
4	0.4900	26.88	9.50	36.38	46.17	-9.79	AVG
5	1.2500	20.94	10.00	30.94	46.00	-15.06	AVG
6*	4.8260	40.73	10.00	50.73	56.00	-5.27	peak
7	27.1980	38.76	13.00	51.76	60.00	-8.24	peak
8	28.0460	22.25	13.00	35.25	50.00	-14.75	AVG

4. Radiated Emissions

4.1 Measurement Uncertainty

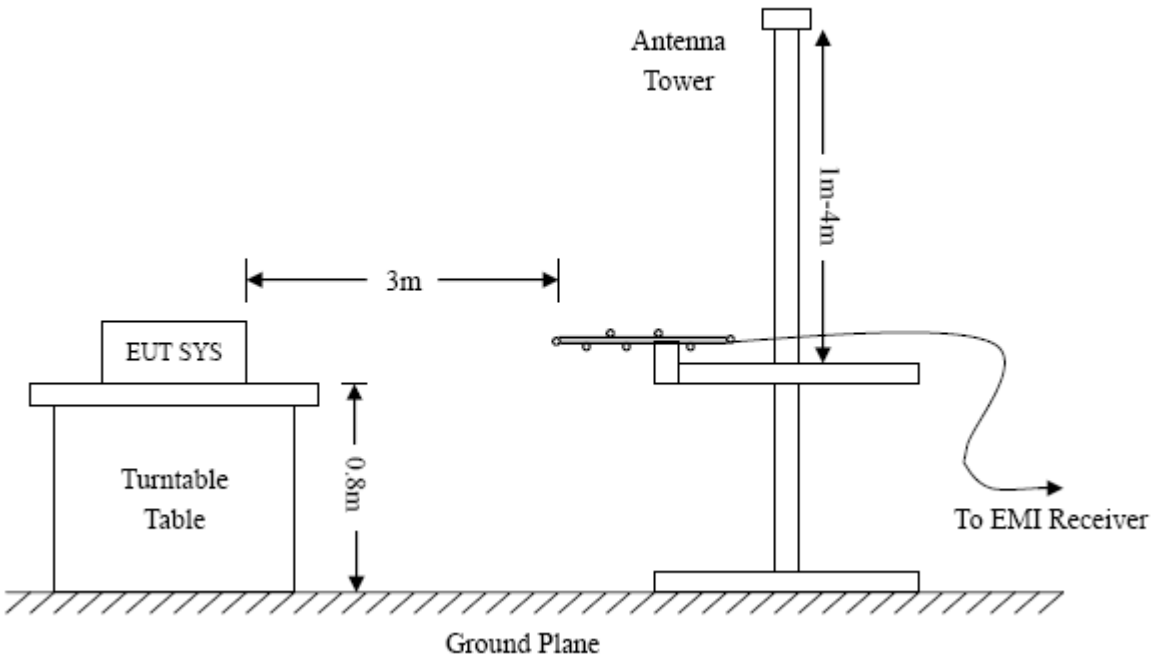
Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is ± 5.10 dB.

4.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2014-05-28	2015-05-27
EMI Test Receiver	R&S	ESVB	825471/005	2014-05-28	2015-05-27
Pre-amplifier	Agilent	8447F	3113A06717	2014-05-28	2015-05-27
Pre-amplifier	Compliance Direction	PAP-0118	24002	2014-05-28	2015-05-27
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2014-05-24	2015-05-23
Horn Antenna	ETS	3117	00086197	2014-05-24	2015-05-23
Loop Antenna	SCHWARZECK	HFRA 5165	9365	2014-05-28	2015-05-27

4.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.109 Limit.
The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.
The spacing between the peripherals was 10 cm.



4.4 Test Receiver Setup

Frequency :9kHz-30MHz	Frequency :30MHz-1GHz	Frequency :Above 1GHz
RBW=10KHz,	RBW=120KHz,	RBW=1MHz,
VBW =30KHz	VBW=300KHz	VBW=3MHz(Peak), 10Hz(AV)
Sweep time= Auto	Sweep time= Auto	Sweep time= Auto
Trace = max hold	Trace = max hold	Trace = max hold
Detector function = peak	Detector function = peak, QP	Detector function = peak, AV

4.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading – Corr. Factor

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit for a Class B device. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – FCC Part 15.109(a) Limit

4.6 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	55 %
ATM Pressure:	1011 mbar

4.7 Summary of Test Results/Plots

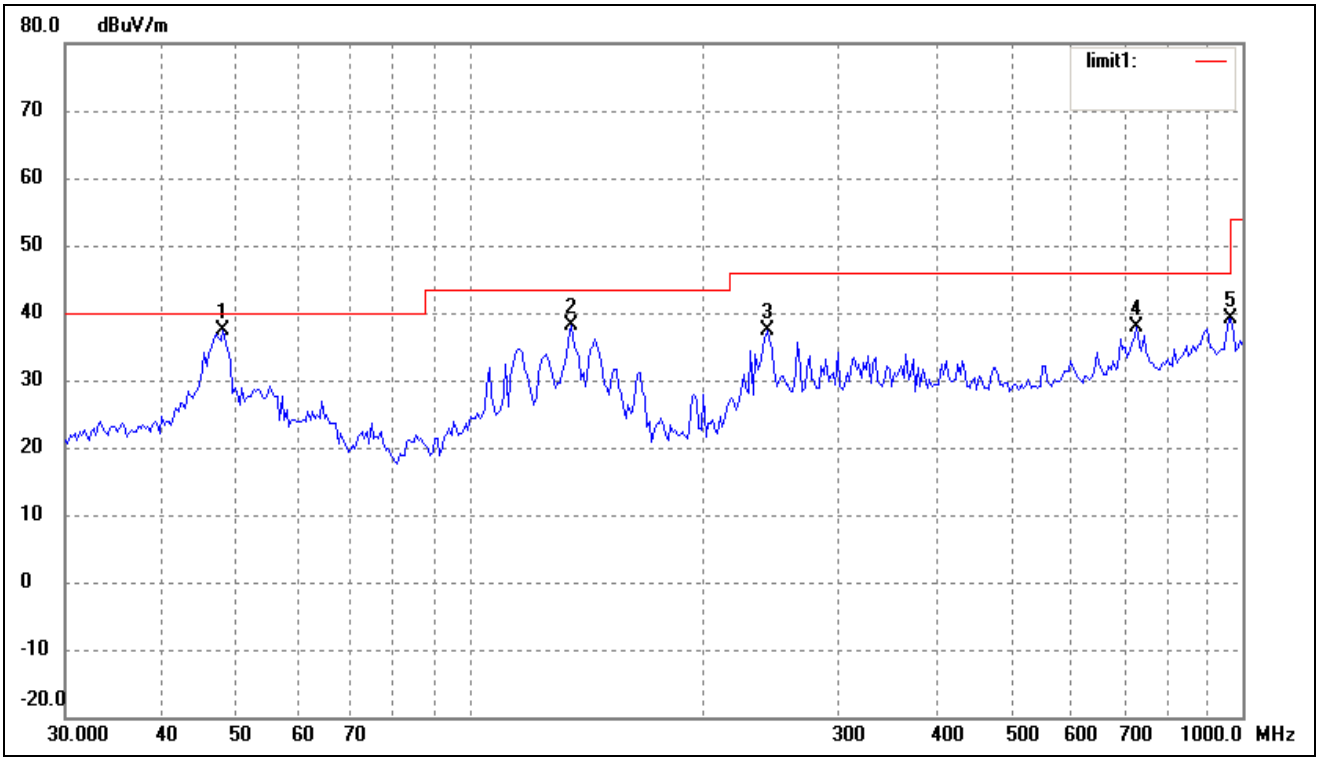
According to the data, the EUT complied with the FCC Part 15.109(a) rule, and had the worst margin of:

-2.66 dB at 47.9940 MHz in the **Horizontal** polarization, **TM1** mode, **9 kHz** to **6 GHz**, **3Meters**

Plot of Radiated Emissions Test Data

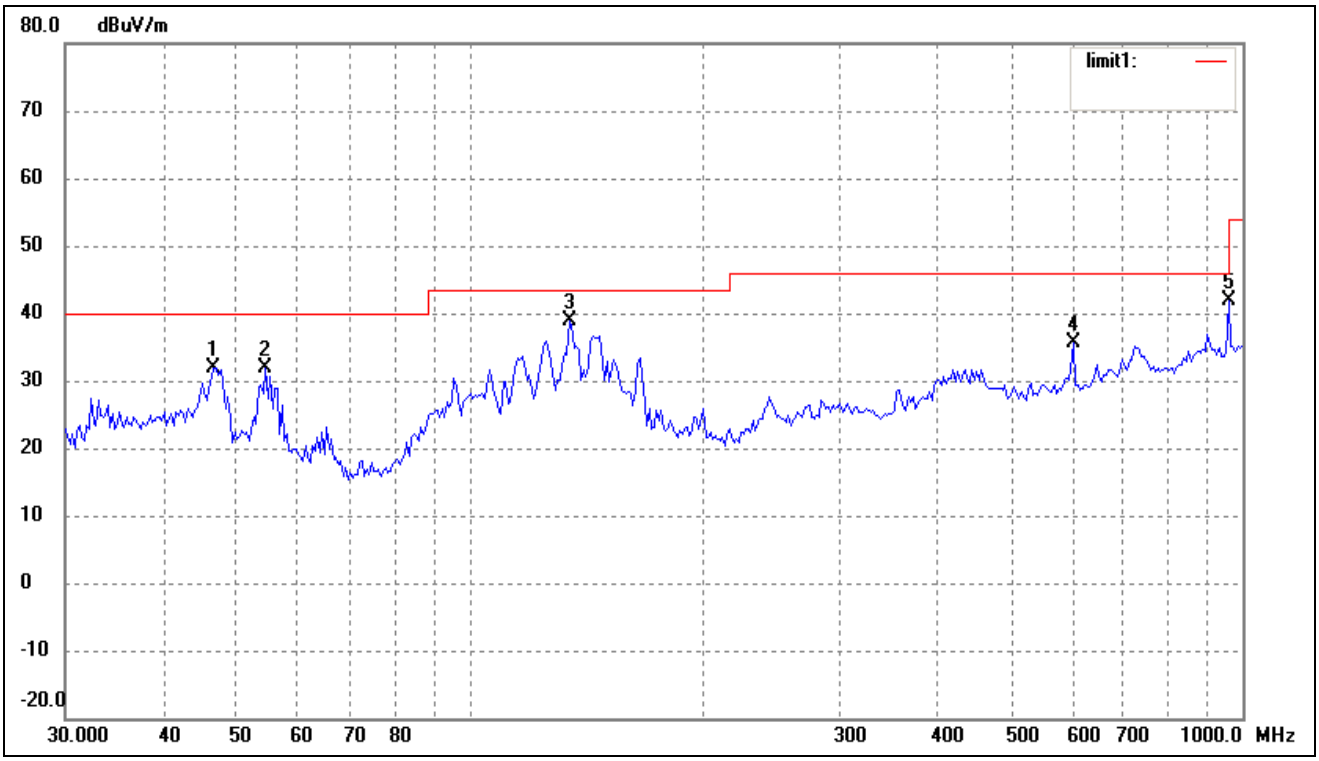
EUT: *KINGZONE K1*
Tested Model: *K1*
Operating Condition: *AC 120V/60Hz; Adapter DC 5V/2A*
Comment: *TM1*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	47.9940	30.11	7.23	37.34	40.00	-2.66	360	100	peak
2	135.5062	34.34	3.72	38.06	43.50	-5.44	360	100	peak
3	242.5253	30.37	7.08	37.45	46.00	-8.55	360	100	peak
4	729.3583	20.66	17.31	37.97	46.00	-8.03	360	100	peak
5	965.5421	20.74	18.37	39.11	54.00	-14.89	360	100	peak

Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	46.6664	24.19	7.64	31.83	40.00	-8.17	360	100	peak
2	54.4516	25.74	6.21	31.95	40.00	-8.05	360	100	peak
3	134.5592	35.05	3.78	38.83	43.50	-4.67	360	100	peak
4	603.5392	20.92	14.62	35.54	46.00	-10.46	360	100	peak
5	958.7943	23.60	18.16	41.76	46.00	-4.24	360	100	peak

Remark:

Testing is carried out with frequency rang 9kHz to the 6GHz, The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this part.

******* END OF REPORT *******