Report No: CCISE170502405

FCC REPORT

Applicant: MOVEON TECHNOLOGY LIMITED

Address of Applicant: World Trade Plaza-A block#3201-3202 Fuhong Road, Futian

Equipment Under Test (EUT)

Product Name: Smart phone

Model No.: K4 EDGE

Trade mark: KRONO

FCC ID: 2AFD9-K4EDGE

Applicable standards: FCC CFR Title 47 Part 15 Subpart B

Date of sample receipt: 05 May, 2017

Date of Test: 05 May, to 19 May, 2017

Date of report issued: 19 May, 2017

Test Result: Pass *

Authorized Signature:



Bruce Zhang Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

^{*} In the configuration tested, the EUT complied with the standards specified above.





2 Version

Version No.	Date	Description
00	19 May, 2017	Original

Reviewed by: 19 May, 2017

Project Englineer

Bao'an District, Shenzhen, Guangdong, China Telephone: +86 (0) 755 2311 8282 Fax: +86 (0) 755 2311 6366





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4 Test Summary

Test Item	Section in CFR 47	Result	
Conducted Emission	Part 15.107	Pass	
Radiated Emission	Part 15.109	Pass	

Pass: The EUT complies with the essential requirements in the standard.



5 General Information

5.1 Client Information

Applicant:	MOVEON TECHNOLOGY LIMITED		
Address of Applicant:	World Trade Plaza-A block#3201-3202 Fuhong Road, Futian		
Manufacturer:	MOVEON TECHNOLOGY LIMITED		
Address of Manufacturer:	World Trade Plaza-A block#3201-3202 Fuhong Road, Futian		

5.2 General Description of E.U.T.

Product Name:	Smart phone
Model No.:	K4 EDGE
Power supply:	Rechargeable Li-ion Battery DC3.7V-2000mAh
AC adapter :	Input: AC100-240V 50/60Hz 0.13A Output: DC 5.0V, 750mA

5.3 Test Mode

Operating mode	Detail description	
PC mode	Keep the EUT in Downloading mode(Worst case)	
Charging+Recording mode	Keep the EUT in Charging+Recording mode	
Charging+Playing mode	Keep the EUT in Charging+Playing mode	
FM mode	Keep the EUT in FM receiver mode	
GPS mode	Keep the EUT in GPS receiver mode	

The sample was placed 0.8m above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

5.4 Measurement Uncertainty

Items	Expanded Uncertainty (Confidence of 95%)
Conducted Emission (9kHz ~ 30MHz)	2.14 dB (k=2)
Radiated Emission (9kHz ~ 30MHz)	4.24 dB (k=2)
Radiated Emission (30MHz ~ 1000MHz)	4.35 dB (k=2)
Radiated Emission (1GHz ~ 18GHz)	4.44 dB (k=2)
Radiated Emission (18GHz ~ 26.5GHz)	4.56 dB (k=2)

Report No: CCISE170502405

5.5 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC ID/DoC
DELL	PC	OPTIPLEX745	N/A	DoC
DELL	MONITOR	E178FPC	N/A	DoC
DELL	KEYBOARD	SK-8115	N/A	DoC
DELL	MOUSE	MOC5UO	N/A	DoC
HP	Printer	CB495A	05257893	DoC
MERCURY	Wireless router	MW150R	12922104015	FCC ID
NAKAMICHI	Bluetooth earphone	T8	N/A	FCC ID

5.6 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

• FCC - Registration No.: 817957

Shenzhen Zhongjian Nanfang Testing 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 out files. Registration 817957, February 27, 2012.

• IC - Registration No.: 10106A-1

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

• CNAS - Registration No.: CNAS L6048

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

5.7 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.

Address: No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,

Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755-23118282 Fax: +86-755-23116366





5.8 Test Instruments list

Radia	Radiated Emission:								
Item Test Equipment Manu		Manufacturer	Manufacturer Model No.		Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)			
1	3m SAC	SAEMC	9(L)*6(W)* 6(H)	CCIS0001	08-23-2014	08-22-2017			
2	BiConiLog Antenna	SCHWARZBECK	VULB9163	CCIS0005	02-25-2017	02-24-2018			
3	Horn Antenna	SCHWARZBECK	BBHA9120D	CCIS0006	02-25-2017	02-24-2018			
4	Pre-amplifier (10kHz-1.3GHz)	HP	8447D	CCIS0003	02-25-2017	02-24-2018			
5	Pre-amplifier (1GHz-18GHz)	, '		CCIS0011	02-25-2017	02-24-2018			
6	Spectrum analyzer		FSP30	CCIS0023	02-25-2017	02-24-2018			
7	EMI Test Receiver	Rohde & Schwarz	ESRP7	CCIS0167	02-25-2017	02-24-2018			
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A			
9	Coaxial Cable	N/A	N/A	CCIS0018	02-25-2017	02-24-2018			
10	Coaxial Cable	N/A	N/A	CCIS0020	02-25-2017	02-24-2018			

Cond	Conducted Emission:									
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)				
1	Shielding Room	ZhongShuo Electron	11.0(L)x4.0(W)x3.0(H)	CCIS0061	08-23-2014	08-22-2017				
2	EMI Test Receiver	Rohde & Schwarz	ESCI	CCIS0002	02-25-2017	02-24-2018				
3	LISN	CHASE	MN2050D	CCIS0074	02-25-2017	02-24-2018				
4	Coaxial Cable	CCIS	N/A	CCIS0086	02-25-2017	02-24-2018				
5	EMI Test Software	AUDIX	E3	N/A	N/A	N/A				



6 Test results and Measurement Data

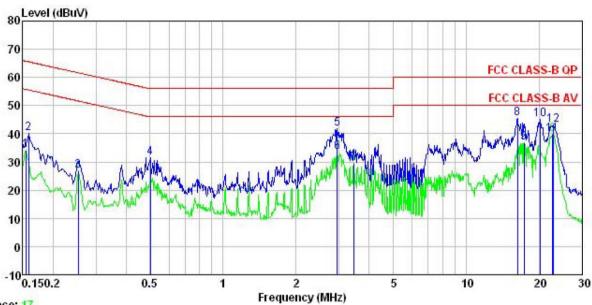
6.1 Conducted Emission

Test Requirement:	FCC Part 15 B Section 15.107						
Test Method:	ANSI C63.4:2014						
Test Frequency Range:	150kHz to 30MHz						
Class / Severity:	Class B	Class B					
Receiver setup:	RBW=9kHz, VBW=30kHz						
Limit:	Frequency range (MHz)	Lir	mit (dBµV)				
	, , , ,	Quasi-peak	Average				
	0.15-0.5	66 to 56*	56 to 46*				
	0.5-5	56	46				
	0.5-30	60	50				
_	* Decreases with the logarith	nm of the frequency	•				
Test setup:	Reference Plan	ne					
	Remark E.U.T Test table/Insulation plane Remark E.U.T EMI Receiver LISN: Liquipment Under Test LISN: Line Impedence Stabilization Network Test table height=0.8m						
Test procedure	 The E.U.T and simulators line impedance stabilization 500hm/50uH coupling impedance. The peripheral devices are a LISN that provides a 500 termination. (Please refers photographs). Both sides of A.C. line are interference. In order to fir positions of equipment an according to ANSI C63.4: 	on network(L.I.S.N.) bedance for the mea e also connected to ohm/50uH coupling s to the block diagra e checked for maxim nd the maximum en d all of the interface	asuring equipment. the main power through impedance with 500hm am of the test setup and mum conducted hission, the relative e cables must be changed				
Test environment:		nid.: 56%	Press.: 101kPa				
Test Instruments:	Refer to section 5.7 for details						
Test mode:	Refer to section 5.3 for details						
Test results:	Pass						
า ฮรเ าฮรนโเร.	rass						



Measurement data:

Line:



Trace: 17

: CCIS Shielding Room : FCC CLASS-B QP LISN LINE Site Condition

EUT : Smart Phone

Model : K4 EDGE

Test Mode : PC mode

Power Rating : AC 120V/60Hz

Environment : Temp: 23 °C Huni:56% Atmos:101KPa

Test Engineer: Mike

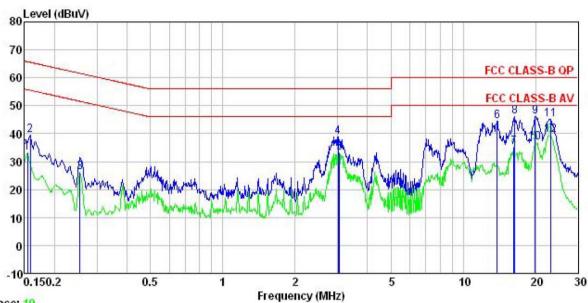
Freq			Cable Loss	Level	Limit Line	Over Limit	Remark
MHz	−−dBuV	<u>dB</u>	dB	—dBu₹	dBu₹	<u>d</u> B	
0.154	23.35	0.14	10.78	34.27	55.78	-21.51	Average
0.158	29.35	0.14	10.78	40.27	65.56	-25.29	QP
0.253	15.81	0.16	10.75	26.72	51.64	-24.92	Average
0.502	20.63	0.24	10.76	31.63	56.00	-24.37	QP
2.946	30.60	0.33	10.92	41.85	56.00	-14.15	QP
2.946	22.30	0.33	10.92	33.55	46.00	-12.45	Average
3.454	18.19	0.34	10.91	29.44	46.00	-16.56	Average
16.312	34.18	0.28	10.91	45.37	60.00	-14.63	QP
17.383	25.46	0.30	10.91	36.67	50.00	-13.33	Average
20.162	33.88	0.34	10.93	45.15	60.00	-14.85	QP
22.775	28.65	0.35	10.89	39.89	50.00	-10.11	Average
22.896	31.83	0.35	10.89	43.07	60.00	-16.93	QP
	MHz 0. 154 0. 158 0. 253 0. 502 2. 946 2. 946 3. 454 16. 312 17. 383 20. 162 22. 775	Freq Level MHz dBuV 0.154 23.35 0.158 29.35 0.253 15.81 0.502 20.63 2.946 30.60 2.946 22.30 3.454 18.19 16.312 34.18 17.383 25.46 20.162 33.88 22.775 28.65	Freq Level Factor MHz dBuV dB 0.154 23.35 0.14 0.158 29.35 0.14 0.253 15.81 0.16 0.502 20.63 0.24 2.946 30.60 0.33 2.946 22.30 0.33 3.454 18.19 0.34 16.312 34.18 0.28 17.383 25.46 0.30 20.162 33.88 0.34 22.775 28.65 0.35	Freq Level Factor Loss MHz dBuV dB dB	Freq Level Factor Loss Level MHz dBuV dB dB dBuV	Freq Level Factor Loss Level Line MHz dBuV dB dB dBuV dBuV	Freq Level Factor Loss Level Line Limit MHz dBuV dB dB dBuV dBuV dB

Notes:

- 1. An initial pre-scan was performed on the line and neutral lines with peak detector.
- 2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
- 3. Final Level =Receiver Read level + LISN Factor + Cable Loss.



Neutral:



Trace: 19

Site

Condition

: CCIS Shielding Room : FCC CLASS-B QP LISN NEUTRAL : Smart Phone : K4 EDGE EUT Model Test Mode : PC mode
Power Rating : AC 120V/60Hz
Environment : Temp: 23 °C Huni:56% Atmos:101KPa
Test Engineer: Mike

Remark

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark	
	MHz	dBu∀	dB	āĒ	dBu₹	dBu∇	dB		
1 2 3 4 5 6 7 8 9	0.154	22.24	0.12	10.78	33.14			Average	
2	0.158	28.44	0.13	10.78	39.35		-16.21		
J	0.255	15.27	0.17	10.75	26.19			Average	
4	3.025	27.59	0.31	10.92	38.82		-7.18		
5	3.058	21.95	0.31	10.92	33.18	46.00	-12.82	Average	
6	13.841	33.23	0.26	10.91	44.40	50.00	-5.60	QP	
7	16.226	23.98	0.27	10.91	35.16	50.00	-14.84	Average	
8	16.398	35.07	0.27	10.91	46.25	50.00	-3.75	QP	
9	19.950	34.88	0.28	10.93	46.09	50.00	-3.91	QP	
10	19.950	25.51	0.28	10.93	36.72	50.00		Average	
11	23.018	33.93	0.25	10.89	45.07		-4.93		
12	23.018	28.32	0.25	10.89	39.46			Äverage	

Notes:

- 1. An initial pre-scan was performed on the line and neutral lines with peak detector.
- 2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
- 3. Final Level = Receiver Read level + LISN Factor + Cable Loss.



6.2 Radiated Emission

0.2 Radiated Ellission									
Test Requirement:	FCC Part 15 B Section 15.109								
Test Method:	ANSI C63.4:201	14							
Test Frequency Range:	30MHz to 26000	OMHz							
Test site:	Measurement D	istance:	3m (Se	mi-Anechoi	c Char	nber)			
Receiver setup:	Frequency	Dete	ctor	RBW	VB\		/ Remark		
	30MHz-1GHz	Quasi-		120kHz	300kHz		Quasi-peak Value		
	Above 1GHz	Pea RM		1MHz	3MHz 3MHz		Peak Value		
Limit:	Frequenc			1MHz (dBuV/m @		7 <u>Z</u>	Average Value Remark		
Littiit.	30MHz-88M		LIIIII	40.0	<i>5</i> 3111 <i>)</i>	(Quasi-peak Value		
	88MHz-216N			43.5			Quasi-peak Value		
	216MHz-960			46.0			Quasi-peak Value		
	960MHz-1G			54.0			Quasi-peak Value		
				54.0			Average Value		
	Above 1GI	72		74.0			Peak Value		
Test setup:	Below 1GHz Antenna Tower								
	Search Antenna RF Test Receiver Turn Table 0.8m 1m Table 0.8m 1m								
	Above 1GHz								
	NAMAN A SOCIAL PROPERTY OF THE	ATE EUT Horn Anlenna Antenna Towe Ground Reference Plane Test Receiver Test Receiver Controller							





Test Procedure:	1 The FII	T was placed	l on the top o	f a rotating to	hla 0 8 ma	aters above the			
rest roccure.	1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.								
		2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna							
	3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.								
	4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.								
	5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.								
	6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.								
Test environment:	Temp.:	25 °C	Humid.:	55%	Press.:	1 01kPa			
Test Instruments:	Refer to se	ection 5.7 for	details						
Test mode:	Refer to section 5.3 for details								
Test results:	Passed								
Remark:	All of the o	All of the observed value above 6GHz ware the niose floor , which were no recorded							

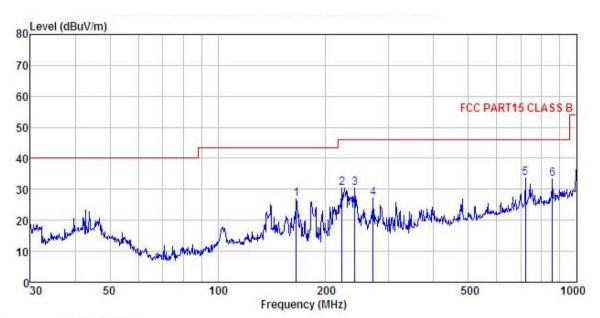




Measurement Data:

Below 1GHz

Horizontal:



Site

: 3m chamber : FCC PART15 CLASS B 3m VULB9163(30M3G) HORIZONTAL Condition

EUT : Smart phone

Model : K4 EDGE

Test mode : PC mode

Power Rating : AC 120V / 60Hz

Environment : Temp: 25.5°C Huni: 55%

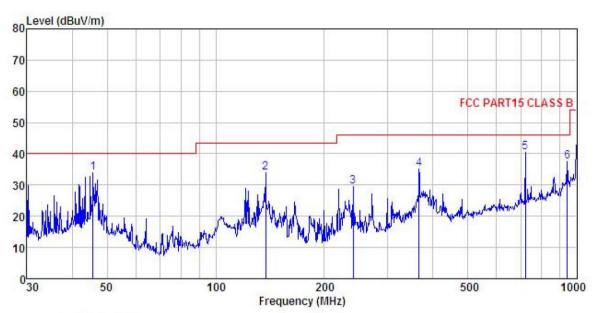
Test Engineer: Mike

REMARK

	220		Antenna					Over	520 29
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
_	MHz	dBu₹	dB/m	₫B	dB	$\overline{dBuV/m}$	dBuV/m	dB	
1	165.487	43.36	9.84	2.62	29.09	26.73	43.50	-16.77	QP
2	222.170	44.68	11.52	2.84	28.69	30.35	46.00	-15.65	QP
3	240.830	44.25	11.80	2.82	28.59	30.28	46.00	-15.72	QP
4	271.325	40.58	12.11	2.86	28.50	27.05	46.00	-18.95	QP
5	721.726	38.36	19.76	4.26	28.58	33.80	46.00	-12.20	QP
6	857.025	36.06	21.09	4.12	27.99	33.28	46.00	-12.72	QP



Vertical:



: 3m chamber : FCC PART15 CLASS B 3m VULB9163(30M3G) VERTICAL Condition

: Smart phone : K4 EDGE EUT Model

Test mode : PC mode Power Rating : AC 120V / 60Hz Environment : Temp:25.5°C Huni:55%

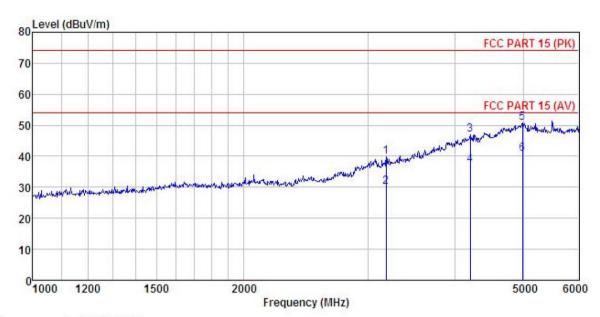
Test Engineer: Mike REMARK :

Freq							Over Limit	Remark
MHz	dBu∜			<u>d</u> B	$\overline{dBuV/m}$	$\overline{dBuV/m}$	<u>dB</u>	
45.695	45.33	17.28	1.29	29.85	34.05	40.00	-5.95	QP
137.420	48.92	11.88	2.37	29.29	33.88	43.50	-9.62	QP
239.987	43.61	11.80	2.82	28.59	29.64	46.00	-16.36	QP
365.539	45.89	14.72	3.09	28.63	35.07	46.00	-10.93	QP
721.726	44.99	19.76	4.26	28.58	40.43	46.00	-5.57	QP
942.131	39.26	21.93	4.13	27.75	37.57	46.00	-8.43	QP
	Freq MHz 45.695 137.420 239.987 365.539 721.726	Read. Freq Level MHz dBuV 45.695 45.33 137.420 48.92 239.987 43.61 365.539 45.89 721.726 44.99	ReadAntenna Level Factor MHz dBuV dB/m 45.695 45.33 17.28 137.420 48.92 11.88 239.987 43.61 11.80 365.539 45.89 14.72 721.726 44.99 19.76	ReadAntenna Cable Freq Level Factor Loss MHz dBuV dB/m dB 45.695 45.33 17.28 1.29 137.420 48.92 11.88 2.37 239.987 43.61 11.80 2.82 365.539 45.89 14.72 3.09 721.726 44.99 19.76 4.26	ReadAntenna Cable Preamp Level Factor Loss Factor	ReadAntenna Cable Preamp Level Factor Loss Factor Level	ReadAntenna Cable Preamp Limit Level Factor Loss Factor Level Line	ReadAntenna Cable Preamp Limit Over Level Factor Loss Factor Level Line Limit



Above 1GHz

Horizontal:



Site Condition

: 3m chamber : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL

Smart phone

Smart phone

Model : K4 EDGE

Test mode : PC mode

Power Rating : AC 120V / 60Hz

Environment : Temp:25.5°C Huni:55%

Test Engineer: Mike

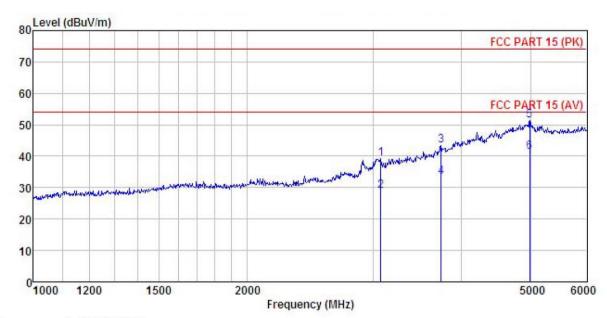
REMARK :

	Freq	Readá Level	ntenna Factor				Limit Line		Remark
	MHz	dBu₹	dB/π	<u>d</u> B	<u>dB</u>	$\overline{dBuV/m}$	$\overline{\mathtt{dBuV/m}}$	<u>db</u>	
1	3189.176	49.28	26.47	5.42	41.41	39.76	74.00	-34.24	Peak
2	3189.176	39.60	26.47	5.42	41.41	30.08	54.00	-23.92	Average
3	4204.190	49.14	33.24	6.41				-27.02	
4	4204.190	39.33	33.24	6.41	41.81	37.17	54.00	-16.83	Average
5	4989.431	48.77	36.84	6.93	41.88	50.66		-23.34	
6	4989.431	38.72	36.84	6.93	41.88	40.61	54.00	-13.39	Average





Vertical:



Site

: 3m chamber : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL Condition

EUT : Smart phone

Model : K4 EDGE

Test mode : PC mode

Power Rating : AC 120V / 60Hz

Environment : Temp: 25.5°C Huni: 55%

Test Engineer: Mike REMARK :

EMARI	:								
	Freq		Antenna Factor				Limit Line	Over Limit	Remark
- 1									
	MHz	dBu∀	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3079.404	49.45	25.97	5.38	41.47	39.33	74.00	-34.67	Peak
	3079.404	39.13	25.97	5.38	41.47	29.01	54.00	-24.99	Average
3	3740.903	48.95	30.00	6.02	41.71	43.26	74.00	-30.74	Peak
4	3740.903	39.02	30.00	6.02	41.71	33.33	54.00	-20.67	Average
	4989.431	49.40	36.84	6.93	41.88	51.29	74.00	-22.71	Peak
6	4989.431	39.46	36.84	6.93	41.88	41.35	54.00	-12.65	Average