FCC REPORT

Applicant:	Procesadores y Partes en Retail S de R.L. de C.V.
Address of Applicant:	Paseo de los Laureles # 458, Ed. A Int 401; Col. Bosques de las Lomas, Deleg: Cuajimalpa, Ciudad de México

Equipment Under Test (EUT)

Product Name:	Smart Phone
Model No.:	M5 Plus
Trade mark:	TECH PAD
FCC ID:	2AOC2-M5PLUS
Applicable standards:	FCC CFR Title 47 Part 15 Subpart B
Date of sample receipt:	11 Nov., 2017
Date of Test:	11 Nov., to 30 Nov., 2017
Date of report issued:	30 Nov., 2017
Test Result:	Pass *

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

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.

2 Version

Version No.	Date	Description
00	*30 Nov., 2017*	*Original*

Tested by: Zora Lee ***Date:*** *30 Nov., 2017*

Test Engineer

Reviewed by: RYan.Lee ***Date:*** *30 Nov., 2017*

Project Engineer

3 Contents

Page

1 COVER PAGE 1
2 VERSION 2
3 CONTENTS 3
4 TEST SUMMARY 4
5 GENERAL INFORMATION 5
5.1 CLIENT INFORMATION 5
5.2 GENERAL DESCRIPTION OF E.U.T. 5
5.3 TEST MODE 5
5.4 MEASUREMENT UNCERTAINTY 5
5.5 DESCRIPTION OF SUPPORT UNITS 6
5.6 RELATED SUBMITTAL(S) / GRANT (S) 6
5.7 LABORATORY FACILITY 6
5.8 LABORATORY LOCATION 6
5.9 TEST INSTRUMENTS LIST 7
6 TEST RESULTS AND MEASUREMENT DATA 8
6.1 CONDUCTED EMISSION 8
6.2 RADIATED EMISSION 11
7 TEST SETUP PHOTO 17
8 EUT CONSTRUCTIONAL DETAILS 18

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:	Procesadores y Partes en Retail S de R.L. de C.V.
Address of Applicant:	Paseo de los Laureles # 458, Ed. A Int 401; Col. Bosques de las Lomas, Deleg: Cuajimalpa, Ciudad de México
Manufacturer	Procesadores y Partes en Retail S de R.L. de C.V.
Address:	Paseo de los Laureles # 458, Ed. A Int 401; Col. Bosques de las Lomas, Deleg: Cuajimalpa, Ciudad de México

5.2 General Description of E.U.T.

Product Name:	Smart Phone
Model No.:	M5 Plus
Power supply:	Rechargeable Li-ion Battery DC3.8V-3000mAh
AC adapter with two plugs :	Input: AC100-240V 50/60Hz 0.2A Output: DC 5.0V, 1.0A

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)

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

5.6 Related Submittal(s) / Grant (s)

This is an original grant, no related submittals and grants.

5.7 Laboratory Facility

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

- **FCC - Registration No.: 727551**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been accredited as a testing laboratory by FCC (Federal Communications Commission). The Registration No. is 727551.

- **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.

- **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: https://portal.a2la.org/scopepdf/4346-01.pdf

5.8 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
Email: info@ccis-cb.com, Website: http://www.ccis-cb.com

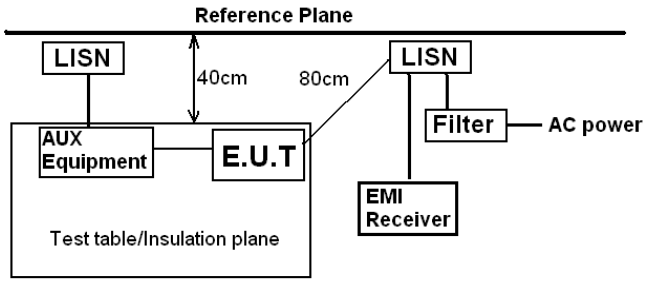
5.9 Test Instruments list

Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal. Date (mm-dd-yy)**	**Cal. Due date (mm-dd-yy)**
1	3m SAC	SAEMC	9(L)*6(W)* 6(H)	CCIS0001	07-22-2017	07-21-2020
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)	Compliance Direction Systems Inc.	PAP-1G18	CCIS0011	02-25-2017	02-24-2018
6	Spectrum analyzer 9k-30GHz	Rohde & Schwarz	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

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	07-22-2017	07-21-2020
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

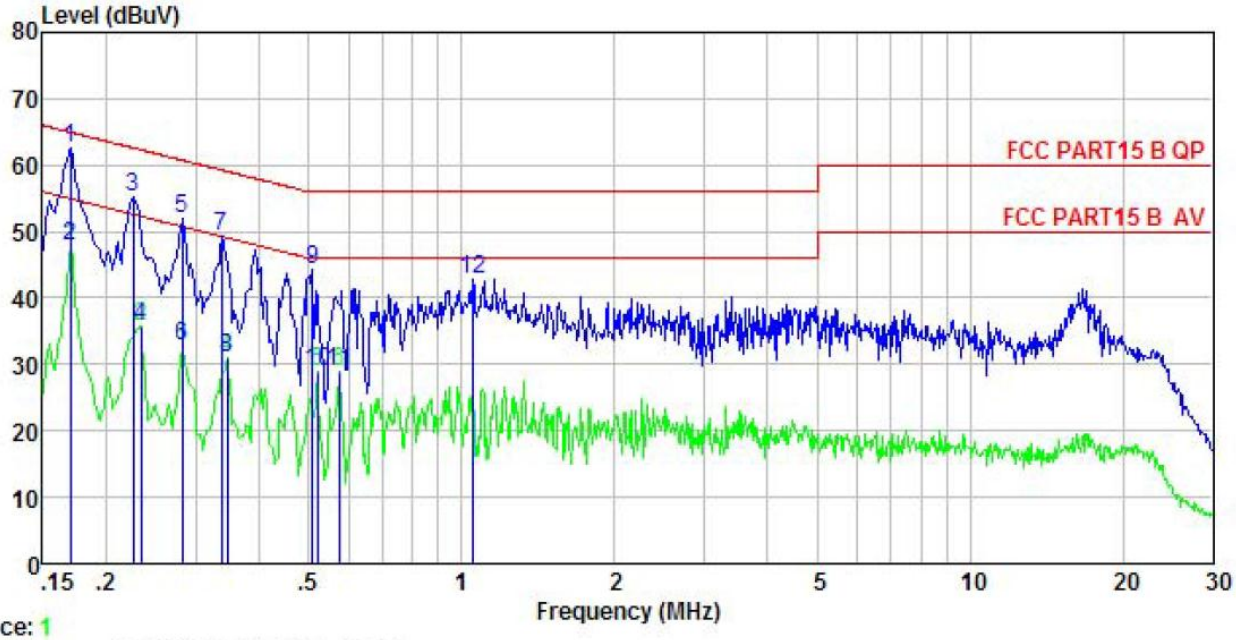
6 Test results and Measurement Data

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					
Receiver setup:	RBW=9kHz, VBW=30kHz					
Limit:	Frequency range (MHz)	Limit (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 logarithm of the frequency.					
Test setup:	 *Remark:* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*					
Test procedure	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network(L.I.S.N.). The provide a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement.					
Test environment:	Temp.:	23 °C	Humid.:	56%	Press.:	101kPa
Test Instruments:	Refer to section 5.9 for details					
Test mode:	Refer to section 5.3 for details					
Test results:	Pass					

Measurement data:

Test Polarization: Line



Trace: 1

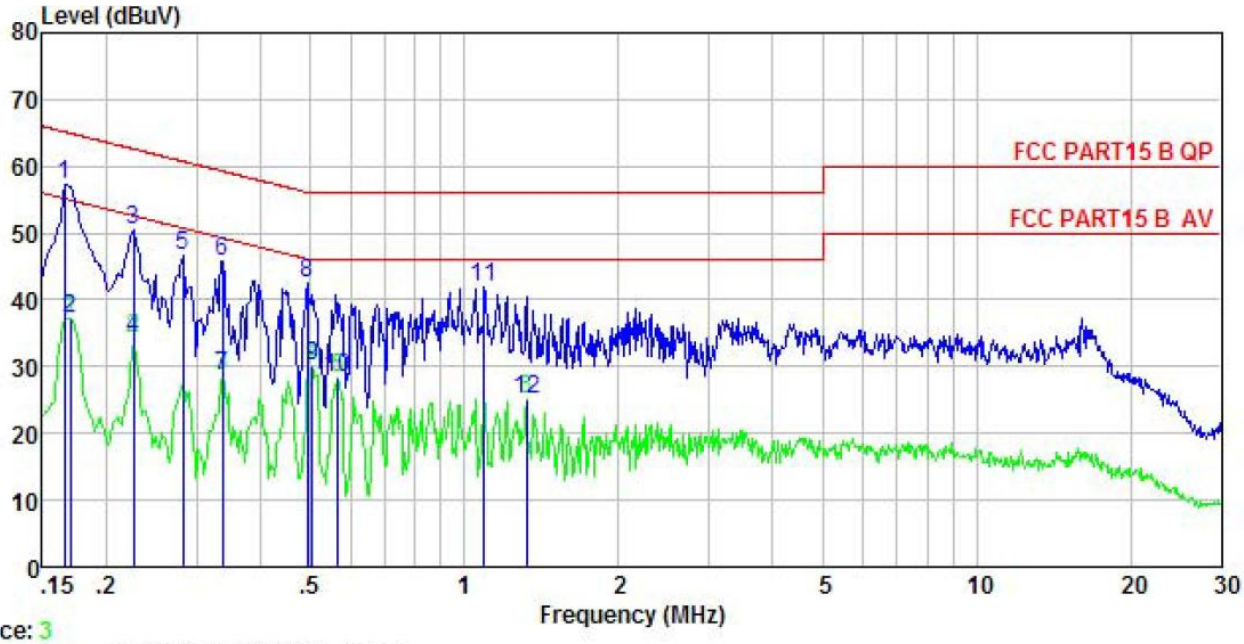
```
Site          : CCIS Shielding Room
Condition     : FCC PART15 B QP LISN LINE
EUT           : Smart Phone
Model         : M5Plus
Test Mode     : PC mode
Power Rating  : AC 120V/60Hz
Environment   : Temp: 23 ℃ Huni:56%  Atmos:101KPa
Test Engineer: Zora
Remark        :
```

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.170	52.28	-0.54	10.77	62.51	64.94	-2.43	QP
2	0.170	37.61	-0.54	10.77	47.84	54.94	-7.10	Average
3	0.226	45.08	-0.52	10.75	55.31	62.61	-7.30	QP
4	0.234	25.45	-0.52	10.75	35.68	52.30	-16.62	Average
5	0.282	41.70	-0.51	10.74	51.93	60.76	-8.83	QP
6	0.282	22.55	-0.51	10.74	32.78	50.76	-17.98	Average
7	0.337	38.97	-0.51	10.73	49.19	59.27	-10.08	QP
8	0.346	20.90	-0.50	10.73	31.13	49.05	-17.92	Average
9	0.510	34.01	-0.49	10.76	44.28	56.00	-11.72	QP
10	0.521	18.67	-0.49	10.76	28.94	46.00	-17.06	Average
11	0.573	18.57	-0.49	10.76	28.84	46.00	-17.16	Average
12	1.049	32.47	-0.49	10.88	42.86	56.00	-13.14	QP

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.*

Test Polarization: Neutral



Trace: 3

Site : CCIS Shielding Room
Condition : FCC PART15 B QP LISN NEUTRAL
EUT : Smart Phone
Model : M5Plus
Test Mode : PC mode
Power Rating : AC 120V/60Hz
Environment : Temp: 23 ℃ Huni:56% Atmos:101KPa
Test Engineer: Zora
Remark :

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.166	46.90	-0.37	10.77	57.30	65.16	-7.86	QP
2	0.170	26.84	-0.36	10.77	37.25	54.94	-17.69	Average
3	0.226	40.05	-0.33	10.75	50.47	62.61	-12.14	QP
4	0.226	23.79	-0.33	10.75	34.21	52.61	-18.40	Average
5	0.282	36.24	-0.32	10.74	46.66	60.76	-14.10	QP
6	0.337	35.35	-0.32	10.73	45.76	59.27	-13.51	QP
7	0.337	18.18	-0.32	10.73	28.59	49.27	-20.68	Average
8	0.494	32.16	-0.30	10.76	42.62	56.10	-13.48	QP
9	0.505	19.72	-0.30	10.76	30.18	46.00	-15.82	Average
10	0.567	17.80	-0.30	10.76	28.26	46.00	-17.74	Average
11	1.094	31.42	-0.29	10.88	42.01	56.00	-13.99	QP
12	1.324	14.49	-0.28	10.91	25.12	46.00	-20.88	Average

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

Test Requirement:	FCC Part 15 B Section 15.109
Test Method:	ANSI C63.4:2014
Test Frequency Range:	30MHz to 6000MHz
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)

Receiver setup:

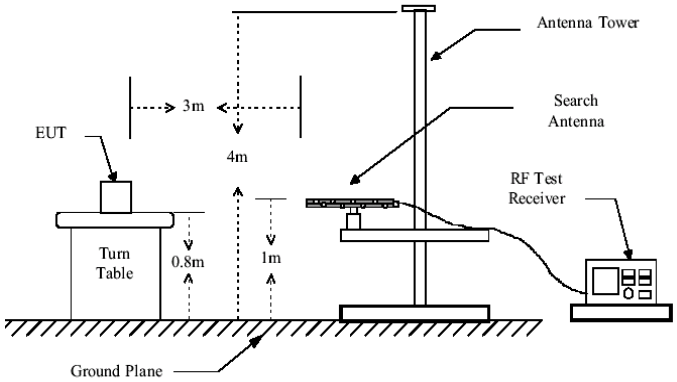
Frequency	Detector	RBW	VBW	Remark
30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak Value
Above 1GHz	Peak	1MHz	3MHz	Peak Value
	RMS	1MHz	3MHz	Average Value

Limit:

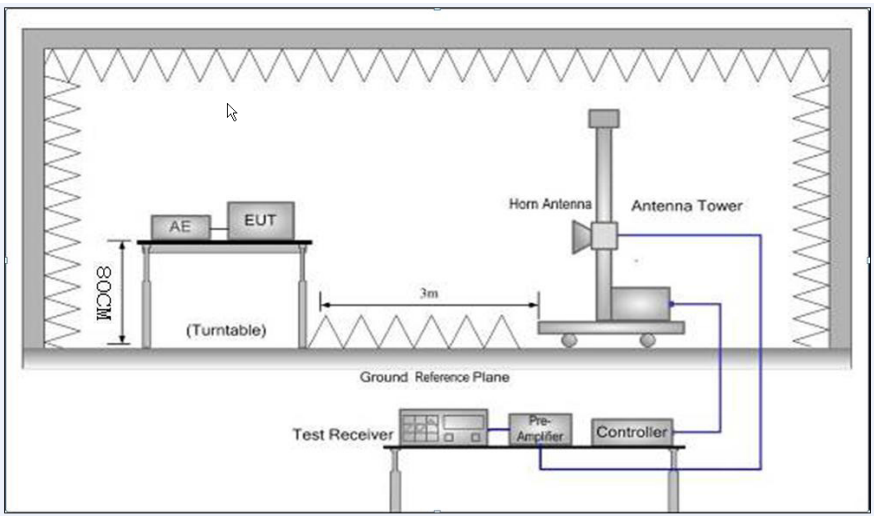
Frequency	Limit (dBuV/m @3m)	Remark
30MHz-88MHz	40.0	Quasi-peak Value
88MHz-216MHz	43.5	Quasi-peak Value
216MHz-960MHz	46.0	Quasi-peak Value
960MHz-1GHz	54.0	Quasi-peak Value
Above 1GHz	54.0	Average Value
	74.0	Peak Value

Test setup:

Below 1GHz



Above 1GHz

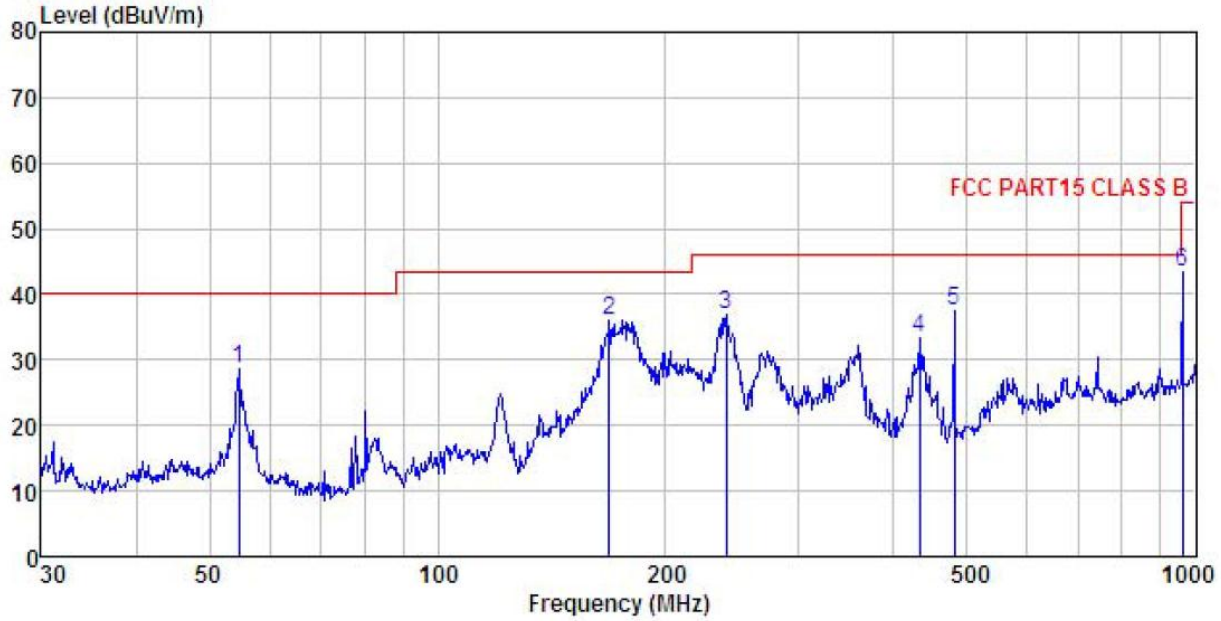


Test Procedure:	1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 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 section 5.9 for details					
Test mode:	Refer to section 5.3 for details					
Test results:	Passed					
Remark:	All of the observed value above 6GHz ware the niose floor , which were no recorded					

Measurement Data:

Below 1GHz

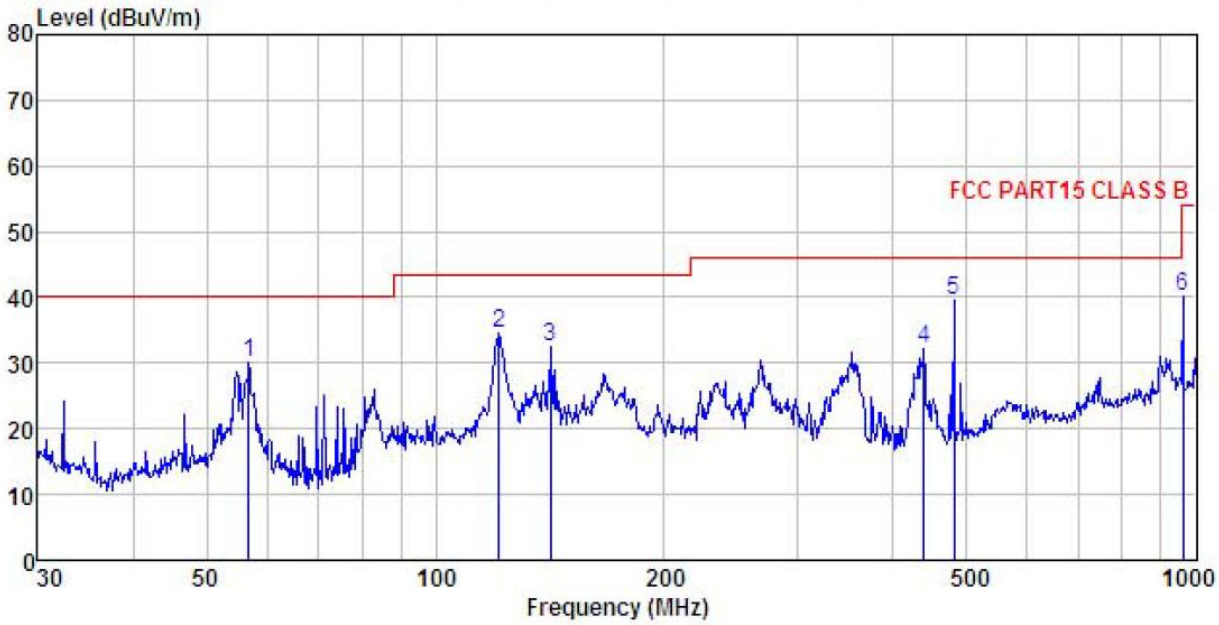
Test Polarization: Horizontal



Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163(30M2G) HORIZONTAL
EUT : Smart Phone
Model : M5Plus
Test mode : PC mode
Power Rating : AC 120V/60Hz
Environment : Temp:25.5℃ Huni:55%
Test Engineer: Zora
REMARK :

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	54.643	43.73	13.44	1.34	29.80	28.71	40.00	-11.29	QP
2	168.414	53.52	8.92	2.64	29.06	36.02	43.50	-7.48	QP
3	239.987	50.78	11.85	2.82	28.59	36.86	46.00	-9.14	QP
4	432.546	43.46	15.60	3.16	28.84	33.38	46.00	-12.62	QP
5	480.528	47.17	15.78	3.46	28.92	37.49	46.00	-8.51	QP
6	962.162	45.17	21.55	4.27	27.65	43.34	54.00	-10.66	QP

Test Polarization: Vertical

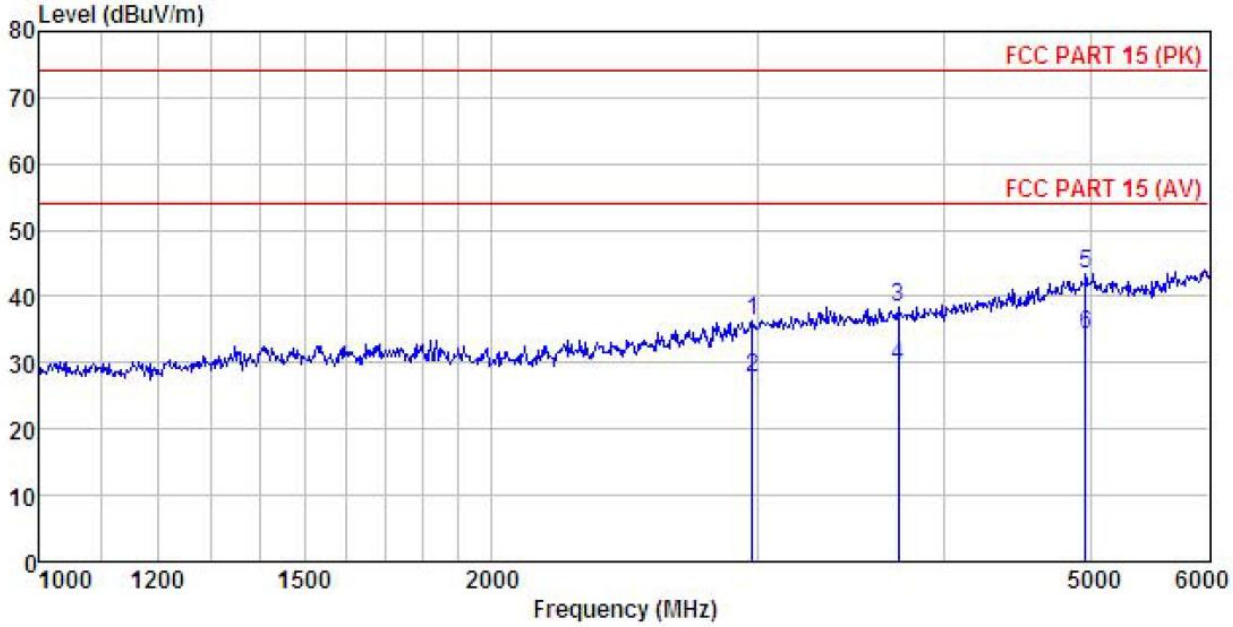


Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163(30M2G) VERTICAL
EUT : Smart Phone
Model : M5Plus
Test mode : PC mode
Power Rating : AC 120V/60Hz
Environment : Temp:25.5℃ Huni:55%
Test Engineer: Zora
REMARK :

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	56.792	45.46	13.12	1.37	29.79	30.16	40.00	-9.84	QP
2	121.123	51.44	10.30	2.18	29.38	34.54	43.50	-8.96	QP
3	141.826	50.94	8.34	2.42	29.26	32.44	43.50	-11.06	QP
4	438.655	42.14	15.60	3.17	28.85	32.06	46.00	-13.94	QP
5	480.528	49.17	15.78	3.46	28.92	39.49	46.00	-6.51	QP
6	962.162	41.84	21.55	4.27	27.65	40.01	54.00	-13.99	QP

Above 1GHz

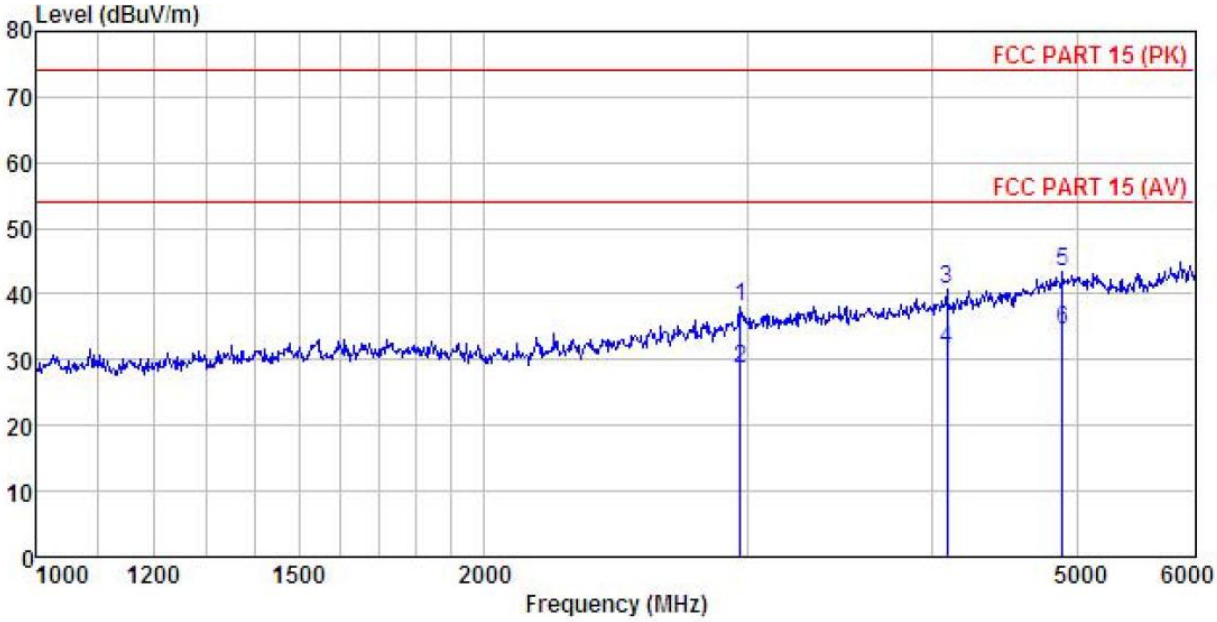
Test Polarization: Horizontal



Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18G) HORIZONTAL
EUT : Smart Phone
Model : M5Plus
Test mode : PC mode
Power Rating : AC 120V/60Hz
Environment : Temp:25.5℃ Huni:55%
Test Engineer: Zora
REMARK :

	Freq	ReadLevel	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2977.790	45.41	27.10	5.33	41.52	36.32	74.00	-37.68	Peak
2	2977.790	36.75	27.10	5.33	41.52	27.66	54.00	-26.34	Average
3	3725.315	46.29	27.90	6.01	41.70	38.50	74.00	-35.50	Peak
4	3725.315	37.43	27.90	6.01	41.70	29.64	54.00	-24.36	Average
5	4962.120	46.72	31.63	6.91	41.87	43.39	74.00	-30.61	Peak
6	4962.120	37.68	31.63	6.91	41.87	34.35	54.00	-19.65	Average

Test Polarization: Vertical



Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18G) VERTICAL
EUT : Smart Phone
Model : M5Plus
Test mode : PC mode
Power Rating : AC 120V/60Hz
Environment : Temp:25.5℃ Huni:55%
Test Engineer: Zora
REMARK :

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2972.460	47.06	27.10	5.32	41.53	37.95	74.00	-36.05	Peak
2	2972.460	37.85	27.10	5.32	41.53	28.74	54.00	-25.26	Average
3	4089.092	47.66	28.58	6.23	41.81	40.66	74.00	-33.34	Peak
4	4089.092	38.68	28.58	6.23	41.81	31.68	54.00	-22.32	Average
5	4891.500	47.16	31.28	6.86	41.84	43.46	74.00	-30.54	Peak
6	4891.500	38.22	31.28	6.86	41.84	34.52	54.00	-19.48	Average