FCC & IC REPORT

Applicant:	Punkt Tronics AG
Address of Applicant:	Via Losanna 4, CH6900 Lugano, Switzerland
Equipment Under Test (EUT)	
Product Name:	feature phone
Model No.:	MP 02
Trade mark:	Punkt.
FCC ID:	Z3PMP02
Canada ID:	20683-MP02
Applicable standards:	FCC CFR Title 47 Part 15 Subpart B ICES-003 Issue 6 Published: January 2016, Updated: April 2017
Date of sample receipt:	26 Jun., 2018
Date of Test:	26 Jun., to 11 Oct., 2018
Date of report issued:	12 Oct., 2018
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.

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2 Version

Version No.	Date	Description
00	*12 Oct., 2018*	*Original*

Tested by: Carey Chen ***Date:*** *12 Oct., 2018*

Test Engineer

Reviewed by: Wimer Zhang ***Date:*** *12 Oct., 2018*

Project Engineer

3 Contents

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4 Test Summary

Test Item	Section		Result
	FCC	IC	
Conducted Emission	Part 15.107	ICES-003 Section 6.1	Pass
Radiated Emission	Part 15.109	ICES-003 Section 6.2	Pass

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

5 General Information

5.1 Client Information

Applicant:	Punkt Tronics AG
Address:	Via Losanna 4, CH6900 Lugano, Switzerland
Manufacturer:	Punkt Tronics AG
Address:	Via Losanna 4, CH6900 Lugano, Switzerland
Factory:	Dongguan Yuanchang Electronic Co., Ltd.
Address:	No.15, Zhuangyuanbi Street, Matigang Village, Dalingshan Town, Dongguan City, Guangdong Province, China.

5.2 General Description of E.U.T.

Product Name:	feature phone
Model No.:	MP 02
Power supply:	Rechargeable Li-ion Battery DC3.8V-1280mAh
AC adapter:	Adapter 1: Model: YJC005Z-0501000U Input: AC100-240V, 50/60Hz, 200mA Output: DC 5.0V, 1000Ma Adapter 2: Model: APP524-050200U-1 Input: AC100-240V, 50/60Hz, 0.45A Output: DC 5.0V, 2A
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

5.3 Test Mode

Operating mode	Detail description
Charging + On mode	Keep the EUT in Charging + On 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

Parameters	Expanded Uncertainty
Conducted Emission (9kHz ~ 30MHz)	±2.22 dB (k=2)
Radiated Emission (9kHz ~ 30MHz)	±2.76 dB (k=2)
Radiated Emission (30MHz ~ 1000MHz)	±4.28 dB (k=2)
Radiated Emission (1GHz ~ 18GHz)	±5.72 dB (k=2)
Radiated Emission (18GHz ~ 40GHz)	±2.88 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
LENOVO	Laptop	SL510	2847A65	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

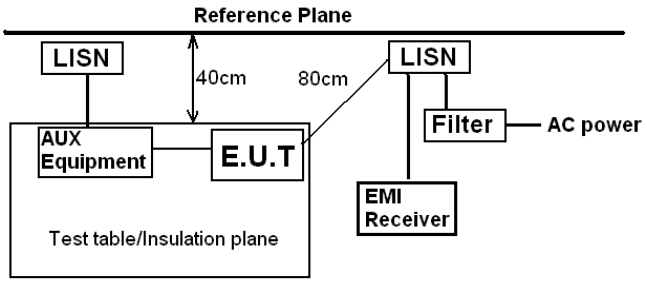
5.9 Test Instruments list

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	03-16-2018	03-15-2019
3	Horn Antenna	SCHWARZBECK	BBHA9120D	CCIS0006	03-16-2018	03-15-2019
4	Pre-amplifier (10kHz-1.3GHz)	HP	8447D	CCIS0003	03-07-2018	03-06-2019
5	Pre-amplifier (1GHz-18GHz)	Compliance Direction Systems Inc.	PAP-1G18	CCIS0011	03-07-2018	03-06-2019
6	Spectrum analyzer 9k-30GHz	Rohde & Schwarz	FSP30	CCIS0023	03-07-2018	03-06-2019
7	EMI Test Receiver	Rohde & Schwarz	ESRP7	CCIS0167	03-07-2018	03-06-2019
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial Cable	N/A	N/A	CCIS0018	03-07-2018	03-06-2019
10	Coaxial Cable	N/A	N/A	CCIS0020	03-07-2018	03-06-2019

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	03-07-2018	03-06-2019
3	LISN	CHASE	MN2050D	CCIS0074	03-19-2018	03-18-2019
4	LISN	Rohde & Schwarz	ESH3-Z5	8438621/010	07-21-2018	07-20-2019
5	Coaxial Cable	CCIS	N/A	CCIS0086	03-07-2018	03-06-2019
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A

6 Test results and Measurement Data

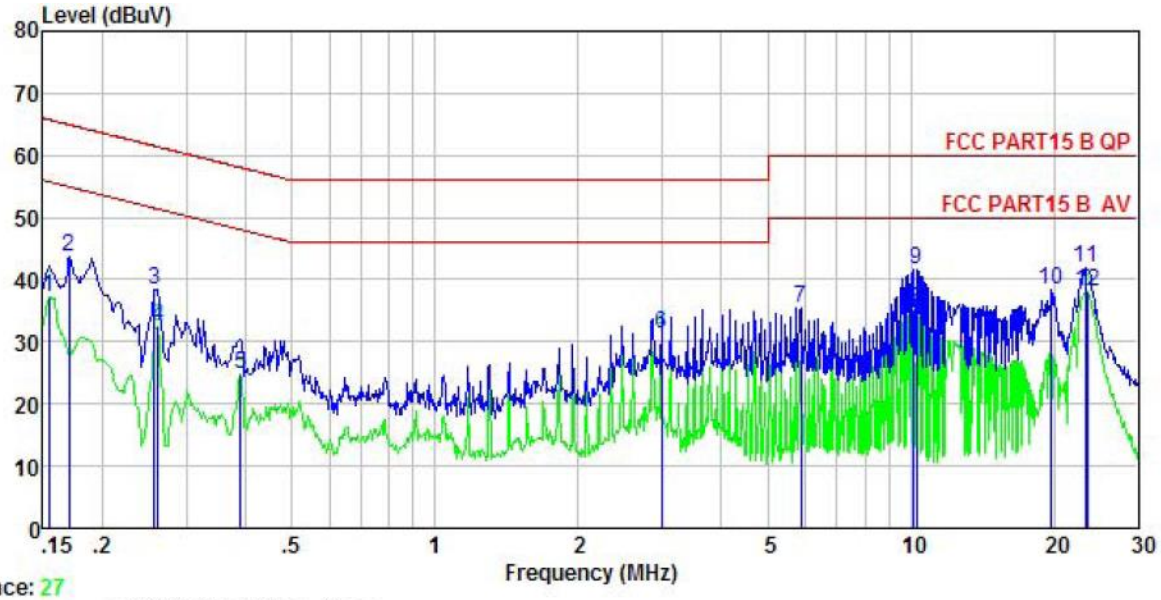
6.1 Conducted Emission

<table>
<tr><td>Test Requirement:</td><td colspan="5">FCC Part 15 B Section 15.107
ICES-003 Section 6.1</td></tr>
<tr><td>Test Method:</td><td colspan="5">ANSI C63.4:2014</td></tr>
<tr><td>Test Frequency Range:</td><td colspan="5">150kHz to 30MHz</td></tr>
<tr><td>Class / Severity:</td><td colspan="5">Class B</td></tr>
<tr><td>Receiver setup:</td><td colspan="5">RBW=9kHz, VBW=30kHz</td></tr>
<tr><td>Limit:</td><td colspan="5"><table><tr><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBµV)</td></tr><tr><td>Quasi-peak</td><td>Average</td></tr><tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr><tr><td>0.5-5</td><td>56</td><td>46</td></tr><tr><td>0.5-30</td><td>60</td><td>50</td></tr><tr><td colspan="3">* Decreases with the logarithm of the frequency.</td></tr></table></td></tr>
<tr><td>Test setup:</td><td colspan="5"> 

Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m</td></tr>
<tr><td>Test procedure</td><td colspan="5">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.</td></tr>
<tr><td>Test environment:</td><td>Temp.:</td><td>23 °C</td><td>Humid.:</td><td>56%</td><td>Press.:</td><td>101kPa</td></tr>
<tr><td>Test Instruments:</td><td colspan="5">Refer to section 5.9 for details</td></tr>
<tr><td>Test mode:</td><td colspan="5">Refer to section 5.3 for details</td></tr>
<tr><td>Test results:</td><td colspan="5">Pass</td></tr>
</table>

Measurement data:

Test Phase: Line



Trace: 27

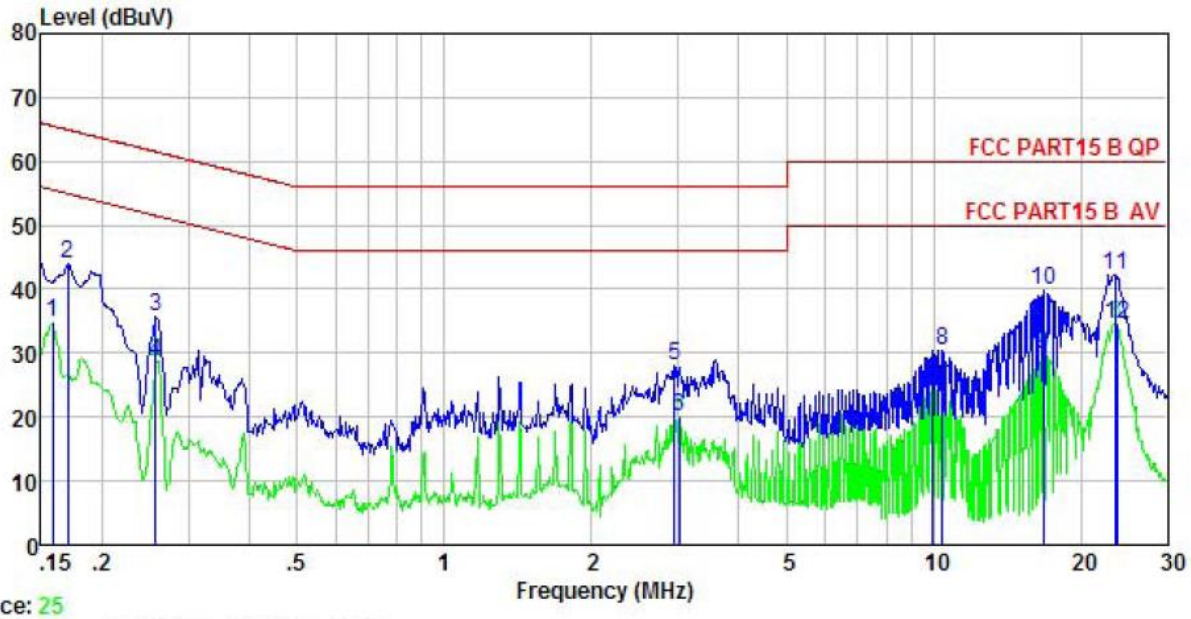
```
Site          : CCIS Shielding Room
Condition     : FCC PART15 B QP LISN LINE
EUT           : feature phone
Model         : MP02
Test Mode     : PC mode
Power Rating  : AC 120V/60Hz
Environment   : Temp: 23 'C Huni:56%  Atmos:101KPa
Test Engineer: Carey
Remark        :
```

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.154	26.31	0.18	10.78	37.27	55.78	-18.51	Average
2	0.170	32.70	0.17	10.77	43.64	64.94	-21.30	QP
3	0.258	27.61	0.14	10.75	38.50	61.51	-23.01	QP
4	0.262	21.63	0.14	10.75	32.52	51.38	-18.86	Average
5	0.389	13.90	0.12	10.72	24.74	48.08	-23.34	Average
6	2.993	20.29	0.16	10.92	31.37	46.00	-14.63	Average
7	5.867	24.42	0.23	10.82	35.47	60.00	-24.53	QP
8	10.125	23.89	0.32	10.94	35.15	50.00	-14.85	Average
9	10.288	30.48	0.32	10.94	41.74	60.00	-18.26	QP
10	19.740	27.10	0.27	10.93	38.30	60.00	-21.70	QP
11	23.387	30.82	0.32	10.89	42.03	60.00	-17.97	QP
12	23.511	26.91	0.32	10.89	38.12	50.00	-11.88	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.*

Test Phase: Neutral



Trace: 25

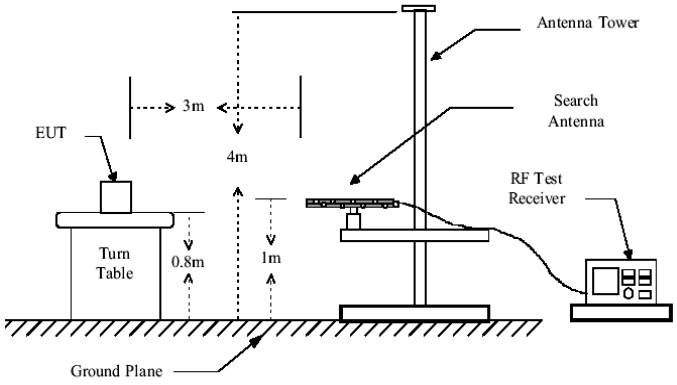
Site : CCIS Shielding Room
Condition : FCC PART15 B QP LISN NEUTRAL
EUT : feature phone
Model : MP02
Test Mode : PC mode
Power Rating : AC 120V/60Hz
Environment : Temp: 23 ℃ Huni:56% Atmos:101KPa
Test Engineer: Carey
Remark :

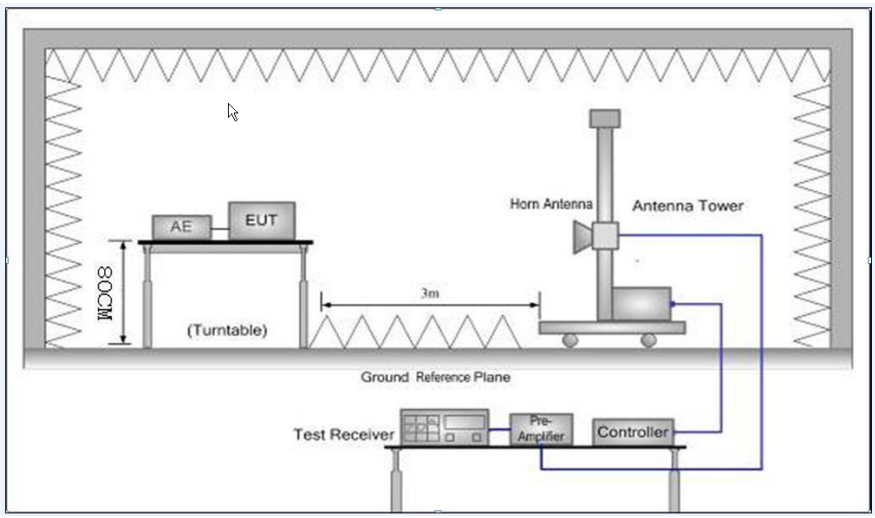
	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.158	23.08	0.98	10.77	34.83	55.56	-20.73	Average
2	0.170	32.40	0.96	10.77	44.13	64.94	-20.81	QP
3	0.258	23.97	0.95	10.75	35.67	61.51	-25.84	QP
4	0.258	16.89	0.95	10.75	28.59	51.51	-22.92	Average
5	2.946	16.16	0.99	10.92	28.07	56.00	-27.93	QP
6	3.025	8.30	0.99	10.92	20.21	46.00	-25.79	Average
7	9.966	12.60	1.02	10.94	24.56	50.00	-25.44	Average
8	10.397	18.49	1.01	10.94	30.44	60.00	-29.56	QP
9	16.750	18.07	0.82	10.91	29.80	50.00	-20.20	Average
10	16.839	28.06	0.82	10.91	39.79	60.00	-20.21	QP
11	23.511	30.63	0.68	10.89	42.20	60.00	-17.80	QP
12	23.636	23.01	0.68	10.89	34.58	50.00	-15.42	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

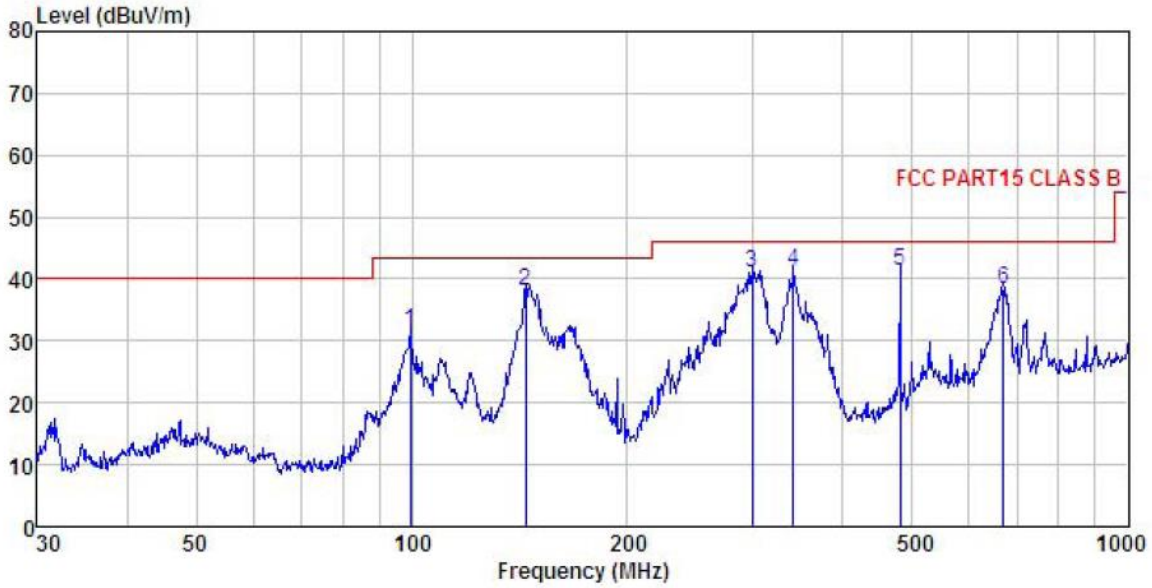
<table>
<tr><td>Test Requirement:</td><td colspan="5">FCC Part 15 B Section 15.109
ICES-003 Section 6.2</td></tr>
<tr><td>Test Method:</td><td colspan="5">ANSI C63.4:2014</td></tr>
<tr><td>Test Frequency Range:</td><td colspan="5">30MHz to 6000MHz</td></tr>
<tr><td>Test site:</td><td colspan="5">Measurement Distance: 3m (Semi-Anechoic Chamber)</td></tr>
<tr><td rowspan="4">Receiver setup:</td><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120kHz</td><td>300kHz</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>RMS</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr>
<tr><td rowspan="7">Limit:</td><td colspan="2">Frequency</td><td colspan="2">Limit (dBuV/m @3m)</td><td>Remark</td></tr>
<tr><td colspan="2">30MHz-88MHz</td><td colspan="2">40.0</td><td>Quasi-peak Value</td></tr>
<tr><td colspan="2">88MHz-216MHz</td><td colspan="2">43.5</td><td>Quasi-peak Value</td></tr>
<tr><td colspan="2">216MHz-960MHz</td><td colspan="2">46.0</td><td>Quasi-peak Value</td></tr>
<tr><td colspan="2">960MHz-1GHz</td><td colspan="2">54.0</td><td>Quasi-peak Value</td></tr>
<tr><td colspan="2" rowspan="2">Above 1GHz</td><td colspan="2">54.0</td><td>Average Value</td></tr>
<tr><td colspan="2">74.0</td><td>Peak Value</td></tr>
<tr><td>Test setup:</td><td colspan="5">Below 1GHz
 

Above 1GHz
 
</td></tr>
</table>

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:

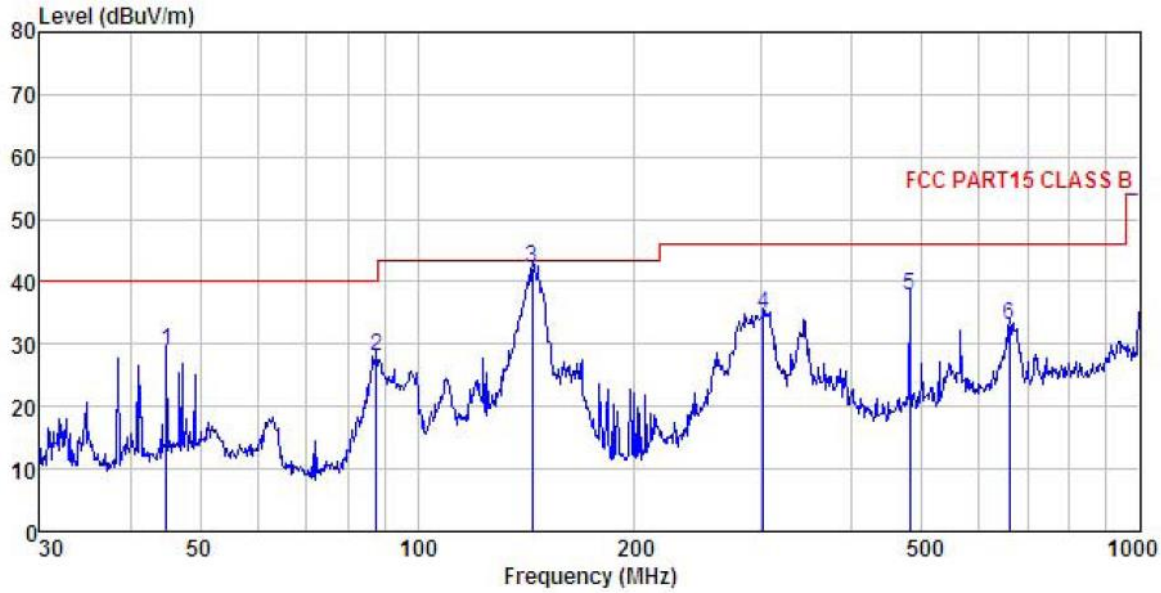
Below 1GHz
Test Polarization: Horizontal



Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163(30M2G) HORIZONTAL
EUT : feature phone
Model : MP02
Test mode : PC Mode
Power Rating : AC 120V/60Hz
Environment : Temp:25.5'C Huni:55%
Test Engineer: Carey
REMARK : phone-pc

	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	99.528	47.40	11.62	1.95	29.53	31.44	43.50	-12.06	QP
2	144.335	56.48	8.32	2.45	29.25	38.00	43.50	-5.50	QP
3	298.268	52.85	13.59	2.93	28.45	40.92	46.00	-5.08	QP
4	340.782	52.24	14.43	3.07	28.54	41.20	46.00	-4.80	QP
5	480.528	49.73	16.97	3.46	28.92	41.24	46.00	-4.76	QP
6	670.489	43.41	19.80	3.99	28.73	38.47	46.00	-7.53	QP

Test Polarization: Vertical

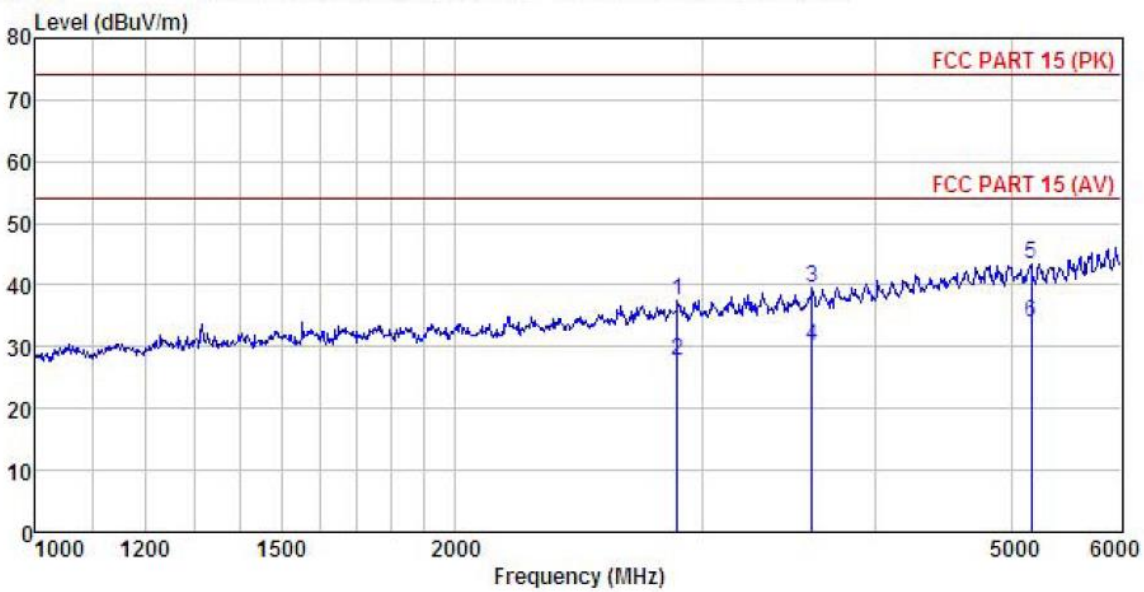


Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163(30M2G) VERTICAL
EUT : feature phone
Model : MP02
Test mode : PC Mode
Power Rating : AC 120V/60Hz
Environment : Temp:25.5℃ Huni:55%
Test Engineer: Carey
REMARK : phone-pc

	Freq	ReadAntenna 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	44.901	43.75	13.68	1.28	29.86	28.85	40.00	-11.15	QP
2	87.725	46.08	9.59	1.96	29.58	28.05	40.00	-11.95	QP
3	144.335	60.76	8.32	2.45	29.25	42.28	43.50	-1.22	QP
4	301.422	46.68	13.63	2.94	28.45	34.80	46.00	-11.20	QP
5	480.528	46.15	16.97	3.46	28.92	37.66	46.00	-8.34	QP
6	661.151	37.97	19.80	3.93	28.75	32.95	46.00	-13.05	QP

Above 1GHz

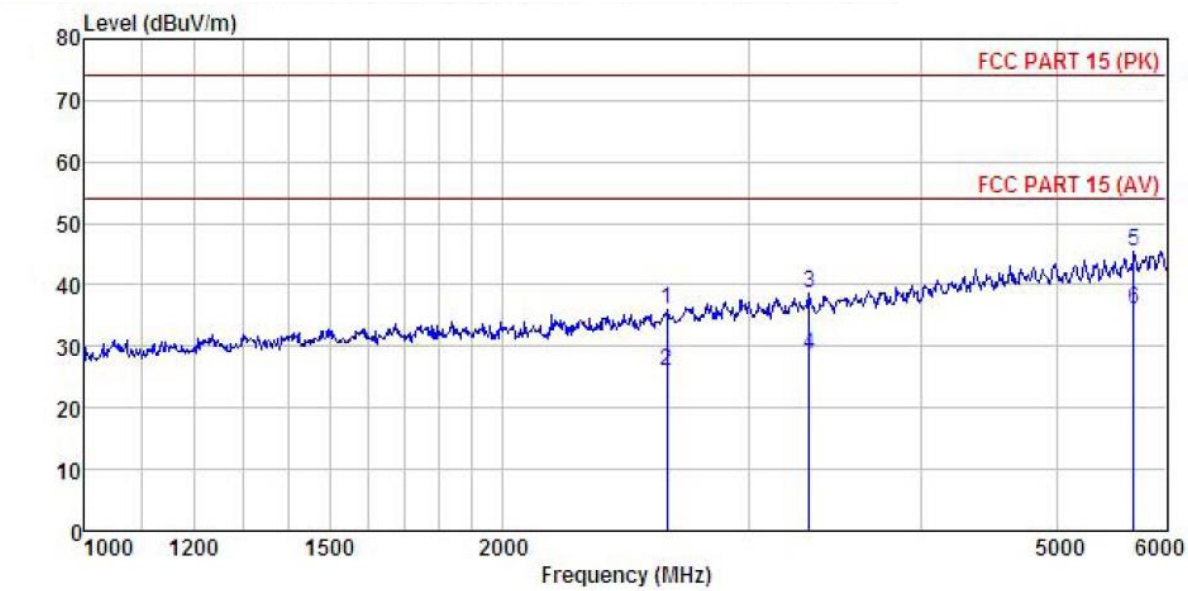
Test Polarization: Horizontal



Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18G) HORIZONTAL
EUT : feature phone
Model : MP02
Test mode : PC Mode
Power Rating : AC 120V/60Hz
Environment : Temp:25.5°C Huni:55%
Test Engineer: Carey
REMARK :

	Freq	ReadAntenna 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	2883.284	45.54	28.38	5.22	41.60	37.54	74.00	-36.46	Peak
2	2883.284	35.75	28.38	5.22	41.60	27.75	54.00	-26.25	Average
3	3600.627	46.16	29.18	5.89	41.54	39.69	74.00	-34.31	Peak
4	3600.627	36.52	29.18	5.89	41.54	30.05	54.00	-23.95	Average
5	5170.883	46.33	32.08	7.06	41.94	43.53	74.00	-30.47	Peak
6	5170.883	36.79	32.08	7.06	41.94	33.99	54.00	-20.01	Average

Test Polarization: Vertical



Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18G) VERTICAL
EUT : feature phone
Model : MP02
Test mode : PC Mode
Power Rating : AC 120V/60Hz
Environment : Temp:25.5'C Huni:55%
Test Engineer: Carey
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	2622.077	45.16	27.87	4.97	41.85	36.15	74.00	-37.85	Peak
2	2622.077	35.12	27.87	4.97	41.85	26.11	54.00	-27.89	Average
3	3321.707	45.80	28.80	5.54	41.37	38.77	74.00	-35.23	Peak
4	3321.707	35.78	28.80	5.54	41.37	28.75	54.00	-25.25	Average
5	5685.998	47.13	32.74	7.55	41.89	45.53	74.00	-28.47	Peak
6	5685.998	37.56	32.74	7.55	41.89	35.96	54.00	-18.04	Average