FCC Test Report

FCC ID: 2ADWUPSPCL30A0

Product:	Mobile Phone
Trade Mark:	Polaroid
Model Number:	PSPCL30A0
Serial Model:	N/A
Report No.:	SER180709606007E

Prepared for

ONE DIAMOND ELECTRONICS INC.
1450 Frazee Road, Suite 303,San Diego, California, United States

Prepared by

Shenzhen NTEK Testing Technology Co., Ltd.
1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street Bao'an District, Shenzhen P.R. China
Tel.: +86-755-6115 6588
Fax.: +86-755-6115 6599
Website:http://www.ntek.org.cn

TEST RESULT CERTIFICATION

Applicant's name ..... :	ONE DIAMOND ELECTRONICS INC.
Address ..... :	1450 Frazee Road, Suite 303,San Diego, California, United States
Manufacturer's Name..... :	Shenzhen Mobot Technology Co., Ltd
Address ..... :	3/F, Building 14A,Taihua Wutong Island Industrial Zone, Shunchang Road,Gushu, Xixiang Street, Bao'an District, Shenzhen, China

Product description

Product name..... :	Mobile Phone
Model and/or type reference :	PSPCL30A0
Standards ..... :	FCC Part15B ANSI C63.4:2014

This device described above has been tested by NTEK, and the test results show that the equipment under test (EUT) is in compliance with Part 15 of FCC Rules. And it is applicable only to the tested sample identified in the report.

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Date of Test ..... :	
Date (s) of performance of tests..... :	09 Jul. 2018 ~ 01 Aug. 2018
Date of Issue..... :	01 Aug. 2018
Test Result..... :	**Pass**

Testing Engineer : Eileen Liu.

(Eileen Liu)

Technical Manager : Jason chen

(Jason Chen)

Authorized Signatory : Sam . chen

(Sam Chen)

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1. TEST SUMMARY

Test procedures according to the technical standards:

EMC Emission				
Standard	Test Item	Limit	Judgment	Remark
FCC Part15B ANSI C63.4: 2014	Conducted Emission	Class B	PASS	
	Radiated Emission	Class B	PASS	

NOTE:

(1) 'N/A' denotes test is not applicable in this Test Report

(2) For client's request and manual description, the test will not be executed.

1.1 TEST FACILITY

Shenzhen NTEK Testing Technology Co., Ltd
Add. : 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P.R. China.
FCC Registration Number:463705; IC Registration Number:9270A-1
CNAS Registration Number:L5516

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y** ± **U**, where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**, providing a level of confidence of approximately **95** %.

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U, (dB)	NOTE
NTEKC01	ANSI	150 KHz ~ 30MHz	3.2	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	U, (dB)	NOTE
NTEKA01	ANSI	30MHz ~ 1000MHz	4.7	
		1GHz ~12.4GHz	5.0	

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Mobile Phone
Trade Mark	Polaroid
Model Name	PSPCL30A0
Serial Model	N/A
Model Difference	N/A
Product Description	The EUT is a Mobile Phone. Connecting I/O port: USB, Earphone Operation Frequency: N/A Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.
Power Source	DC 3.8V from Battery or DC 5V from USB Port.
Adapter	Input: 100-240V~50/60Hz 0.2A Output: 5V ⎓ 1A
Battery	DC 3.8V, 2500mAh
HW Version	PCL3018
SW Version	PSPCL30A0_MX_V1.0

2.1.1 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	Connect to PC
Mode 2	TF card Play
Mode 3	REC
Mode 4	FM RX

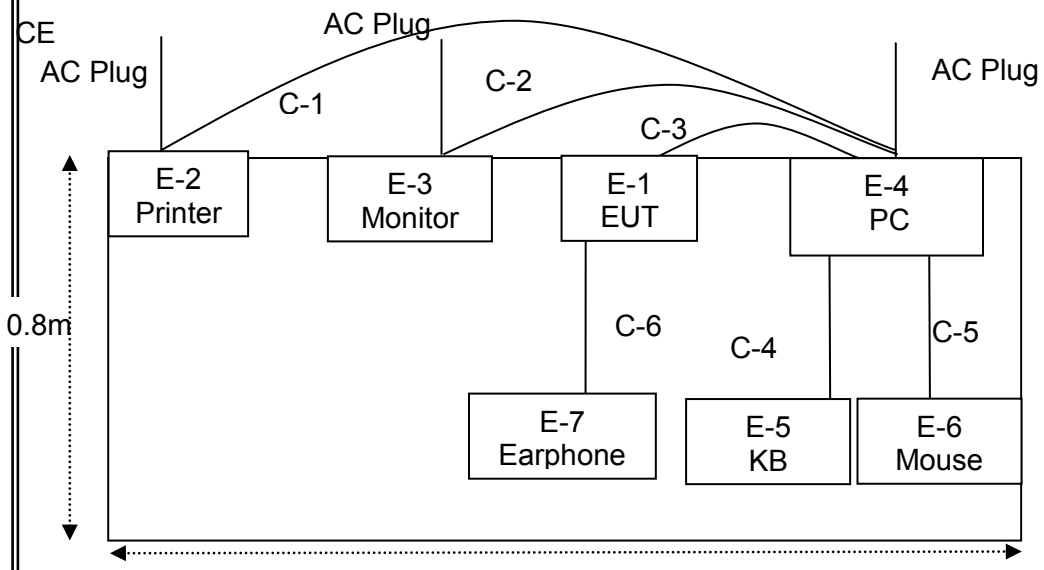
For Conducted Test	
Final Test Mode	Description
Mode 1	Connect to PC
Mode 2	TF card Play
Mode 3	REC
Mode 4	FM RX

For Radiated Test	
Final Test Mode	Description
Mode 1	Connect to PC
Mode 2	TF card Play
Mode 3	REC
Mode 4	FM RX

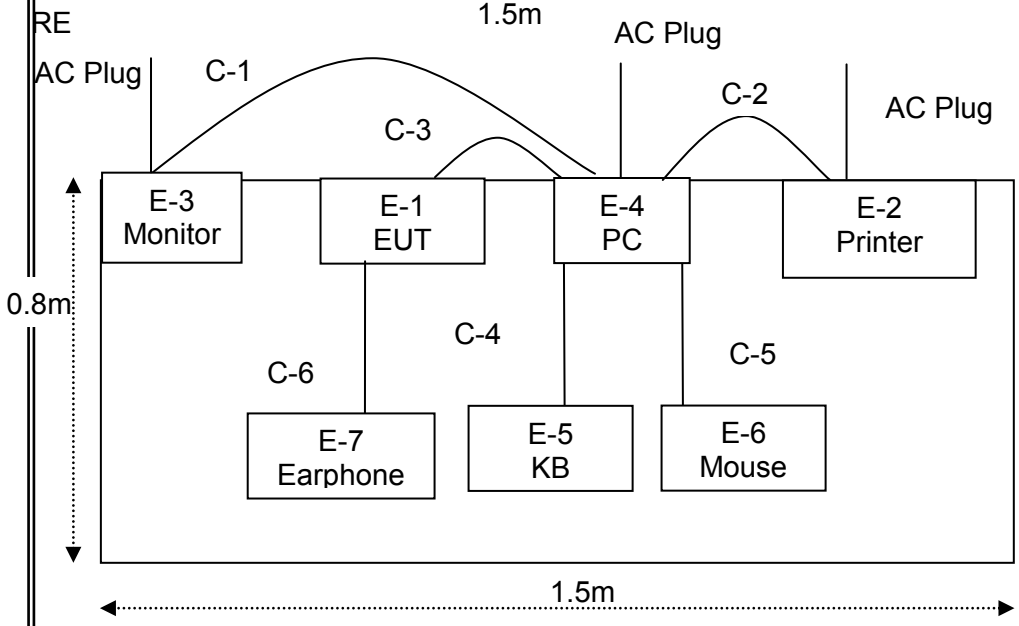
Note: Final Test Mode: Through Pre-scan, find the mode 1 is the worst case.
Only the worst case mode is recorded in the report.

2.2 DESCRIPTION OF TEST SETUP

CE



RE



2.3 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Brand	Model/Type No.	Series No.	Note
E-1	Mobile Phone	Polaroid	PSPCL30A0	N/A	EUT
E-2	Printer	Canon	L11121E	N/A	Peripherals
E-3	Monitor	SHARP	LCD-32MS46A	N/A	Peripherals
E-4	Personal computer	DELL	FT4Y23X	N/A	Peripherals
E-5	KB	DELL	SK-8185	N/A	Peripherals
E-6	Mouse	DELL	MS111-P	N/A	Peripherals
E-7	Earphone	N/A	N/A	N/A	Peripherals

Item	Cable Type	Shielded Type	Ferrite Core	Length	Note
C-1	USB Cable	NO	NO	1.2m	
C-2	HDMI Cable	NO	NO	1.0m	
C-3	USB Cable	NO	NO	1.0m	
C-4	KB Cable	NO	NO	1.2m	
C-5	Mouse Cable	NO	NO	1.2m	
C-6	Earphone Cable	NO	NO	1.0m	

Note:

(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
(3) “YES” means “shielded” “with core”; “NO” means “unshielded” “without core”.

2.4 MEASUREMENT INSTRUMENTS LIST

Radiation Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Agilent	E4407B	MY45108040	2018.05.19	2019.05.18	1 year
2	Test Receiver	R&S	ESPI	101318	2018.05.19	2019.05.18	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2018.04.09	2019.04.08	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2018.05.19	2019.05.18	1 year
5	Spectrum Analyzer	ADVANTEST	R3132	150900201	2018.05.19	2019.05.18	1 year
6	Horn Antenna	EM	EM-AH-10180	2011071402	2018.04.09	2019.04.08	1 year
7	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2018.05.19	2019.05.18	1 year
8	Amplifier	EMC	EMC051835SE	980246	2017.08.09	2018.08.08	1 year
9	Loop Antenna	ARA	PLA-1030/B	1029	2018.05.19	2019.05.18	1 year
10	Power Meter	DARE	RPR3006W	15I00041SNO84	2017.08.09	2018.08.08	1 year
11	Power Sensor	R&S	URV5-Z4	0395.1619.05	2018.05.19	2019.05.18	1 year
12	Test Cable (30MHz-1GHz)	N/A	R-02	N/A	2017.04.21	2020.04.20	3 year
13	High Test Cable(1G-40GHz)	N/A	R-03	N/A	2017.04.21	2020.04.20	3 year
14	High Test Cable(1G-40GHz)	N/A	R-04	N/A	2017.04.21	2020.04.20	3 year

AC Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Test Receiver	R&S	ESCI	101160	2018.05.19	2019.05.18	1 year
2	LISN	R&S	ENV216	101313	2018.04.19	2019.04.18	1 year
3	LISN	SCHWARZBECK	NNLK 8129	8129245	2018.05.19	2019.05.18	1 year
4	50Ω Coaxial Switch	ANRITSU CORP	MP59B	6200983704	2018.05.19	2019.05.18	1 year
5	Test Cable (9KHz-30MHz)	N/A	C01	N/A	2017.04.21	2020.04.20	3 year
6	Test Cable (9KHz-30MHz)	N/A	C02	N/A	2017.04.21	2020.04.20	3 year
7	Test Cable (9KHz-30MHz)	N/A	C03	N/A	2017.04.21	2020.04.20	3 year

Note: Each piece of equipment is scheduled for calibration once a year except the Test Cable which is scheduled for calibration every 3 years.

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

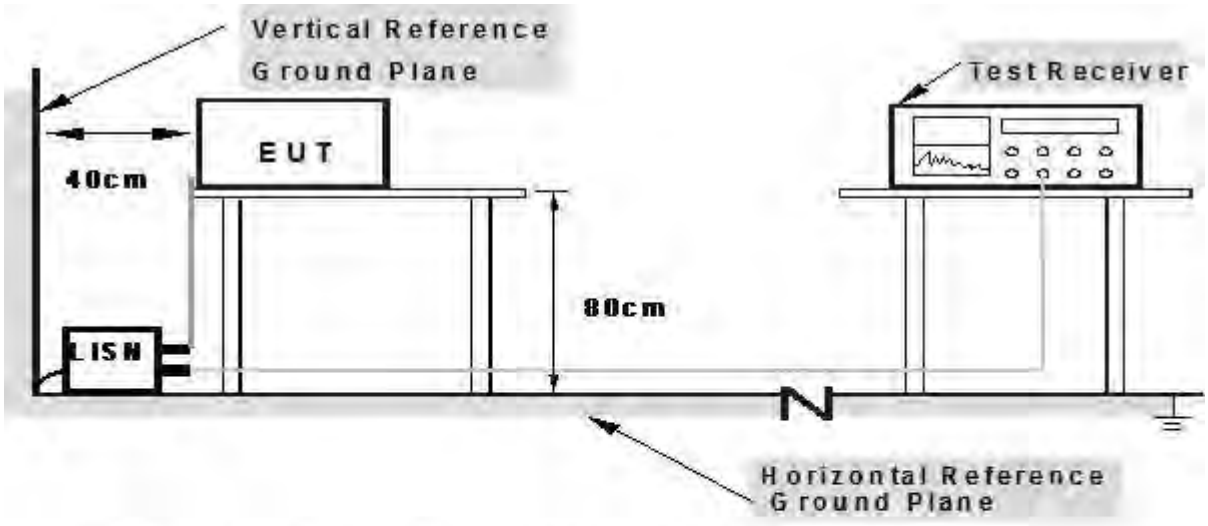
The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.1.2 TEST PROCEDURE

a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.1.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **2.3** Unless otherwise a special operating condition is specified in the follows during the testing.

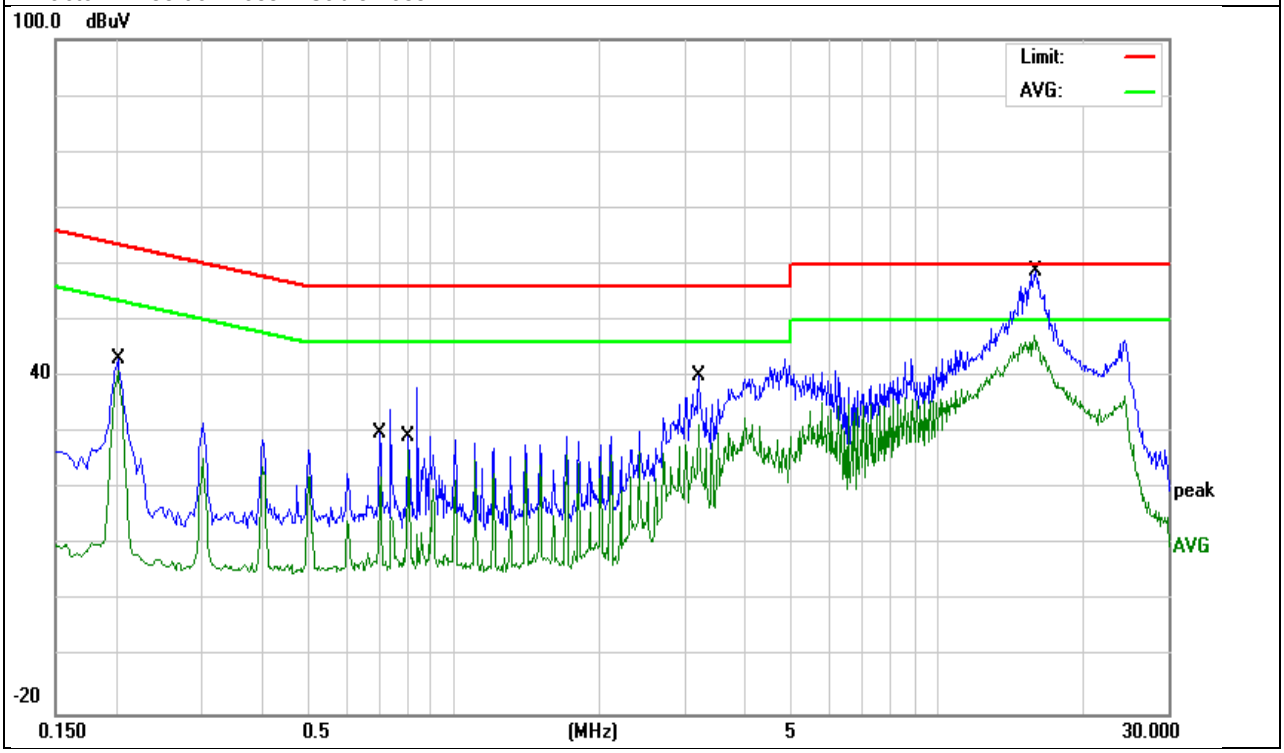
3.1.5 TEST RESULTS

EUT:	Mobile Phone	Model Name. :	PSPCL30A0
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	1010hPa	Test Date:	2018-7-31
Test Mode:	Mode 1	Phase :	L
Test Voltage:	DC 5V from PC AC120V/60Hz		

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.2020	33.39	9.76	43.15	63.52	-20.37	QP
0.2020	31.17	9.76	40.93	53.52	-12.59	AVG
0.7059	24.52	9.74	34.26	56.00	-21.74	QP
0.7059	12.33	9.74	22.07	46.00	-23.93	AVG
0.8059	28.32	9.74	38.06	56.00	-17.94	QP
0.8059	17.11	9.74	26.85	46.00	-19.15	AVG
3.2219	30.25	9.83	40.08	56.00	-15.92	QP
3.2219	21.62	9.83	31.45	46.00	-14.55	AVG
15.8020	36.08	10.12	46.20	50.00	-3.80	AVG
15.9980	41.28	10.12	51.40	60.00	-8.60	QP

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

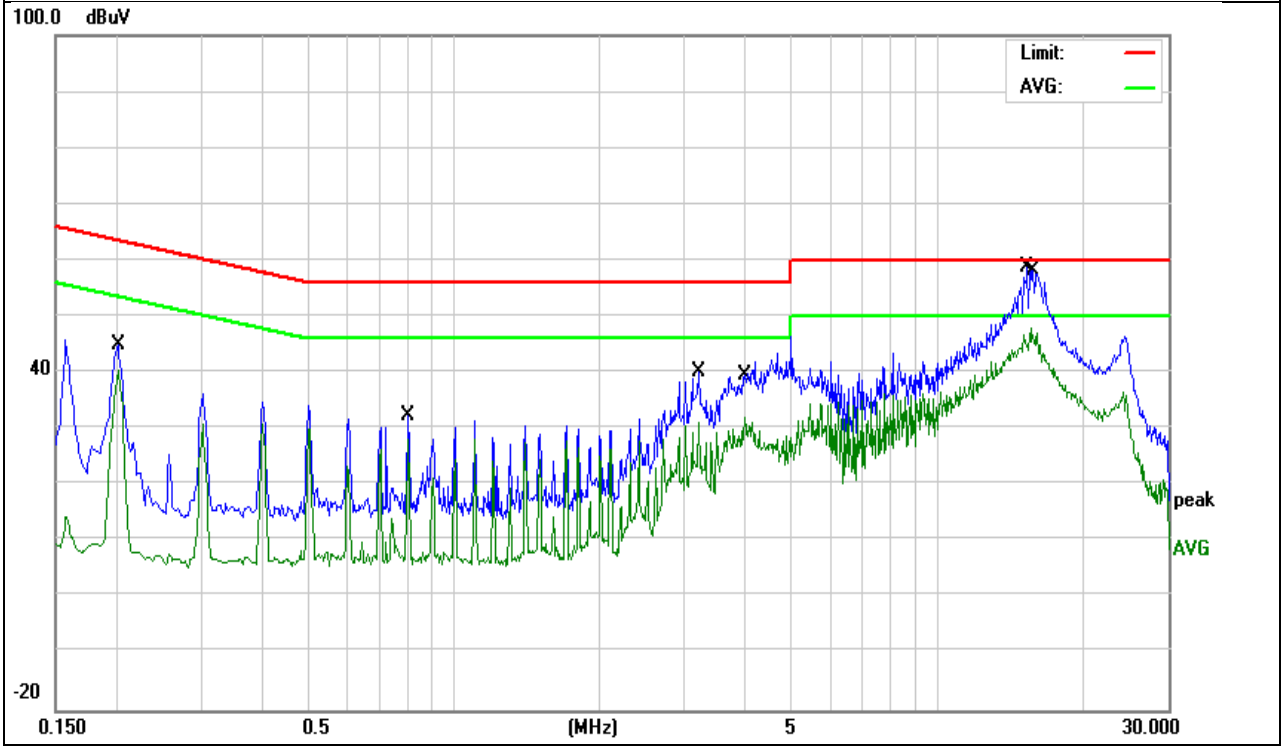


EUT:	Mobile Phone	Model Name. :	PSPCL30A0
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	1010hPa	Test Date:	2018-7-31
Test Mode:	Mode 1	Phase :	N
Test Voltage:	DC 5V from PC AC120V/60Hz		

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.2020	35.36	9.73	45.09	53.52	-8.43	AVG
0.2020	30.87	9.73	40.60	53.52	-12.92	AVG
0.8059	22.72	9.75	32.47	56.00	-23.53	QP
0.8059	18.52	9.75	28.27	46.00	-17.73	AVG
3.2139	30.24	9.88	40.12	56.00	-15.88	QP
3.2139	21.39	9.88	31.27	46.00	-14.73	AVG
4.0060	31.94	9.92	41.86	56.00	-14.14	QP
4.0060	22.13	9.92	32.05	46.00	-13.95	AVG
15.3700	44.10	10.10	54.20	60.00	-5.80	QP
15.5860	33.40	10.10	43.50	50.00	-6.50	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

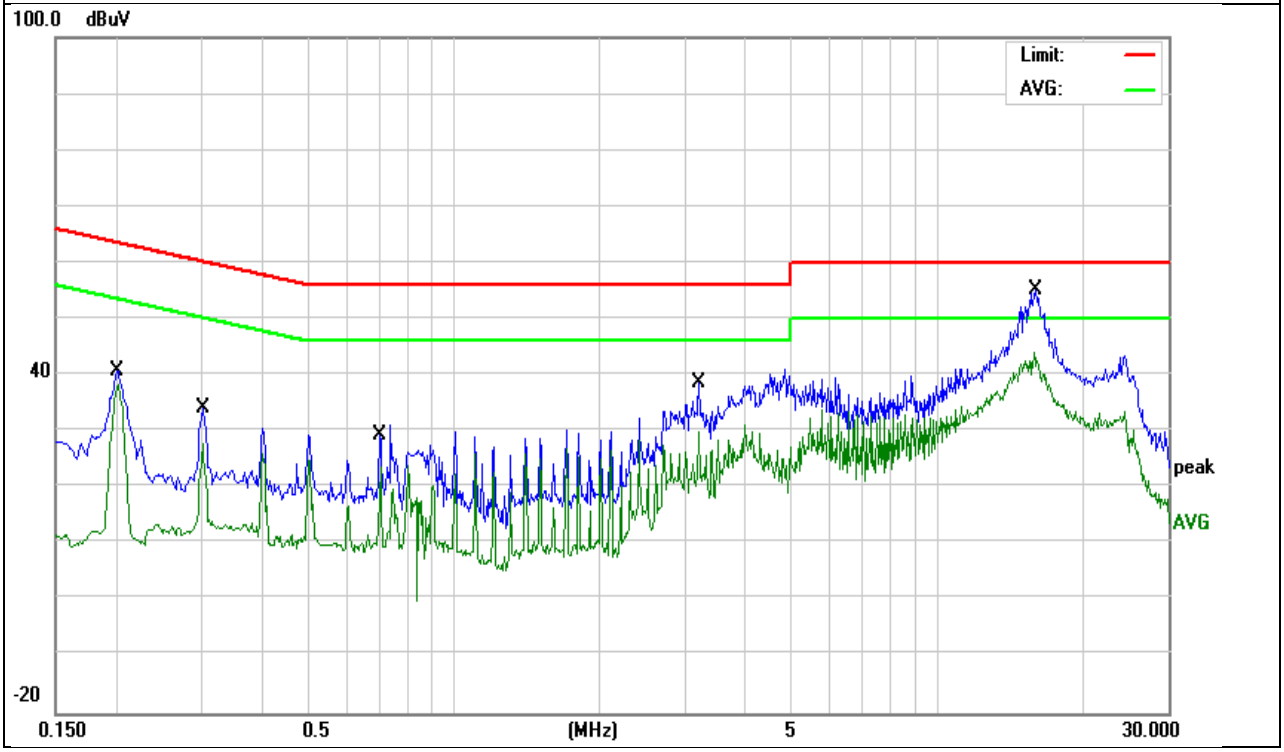


EUT:	Mobile Phone	Model Name. :	PSPCL30A0
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	1010hPa	Test Date:	2018-7-31
Test Mode:	Mode 1	Phase :	L
Test Voltage:	DC 5V from PC AC240V/60Hz		

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.2006	31.05	9.76	40.81	63.58	-22.77	QP
0.2006	28.67	9.76	38.43	53.58	-15.15	AVG
0.3019	24.51	9.74	34.25	60.19	-25.94	QP
0.3019	18.25	9.74	27.99	50.19	-22.20	AVG
0.7016	19.66	9.74	29.40	56.00	-26.60	QP
0.7056	13.83	9.74	23.57	46.00	-22.43	AVG
3.2219	28.75	9.83	38.58	56.00	-17.42	QP
3.2219	20.12	9.83	29.95	46.00	-16.05	AVG
15.9977	45.11	10.12	55.23	60.00	-4.77	QP
15.9977	33.85	10.12	43.97	50.00	-6.03	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

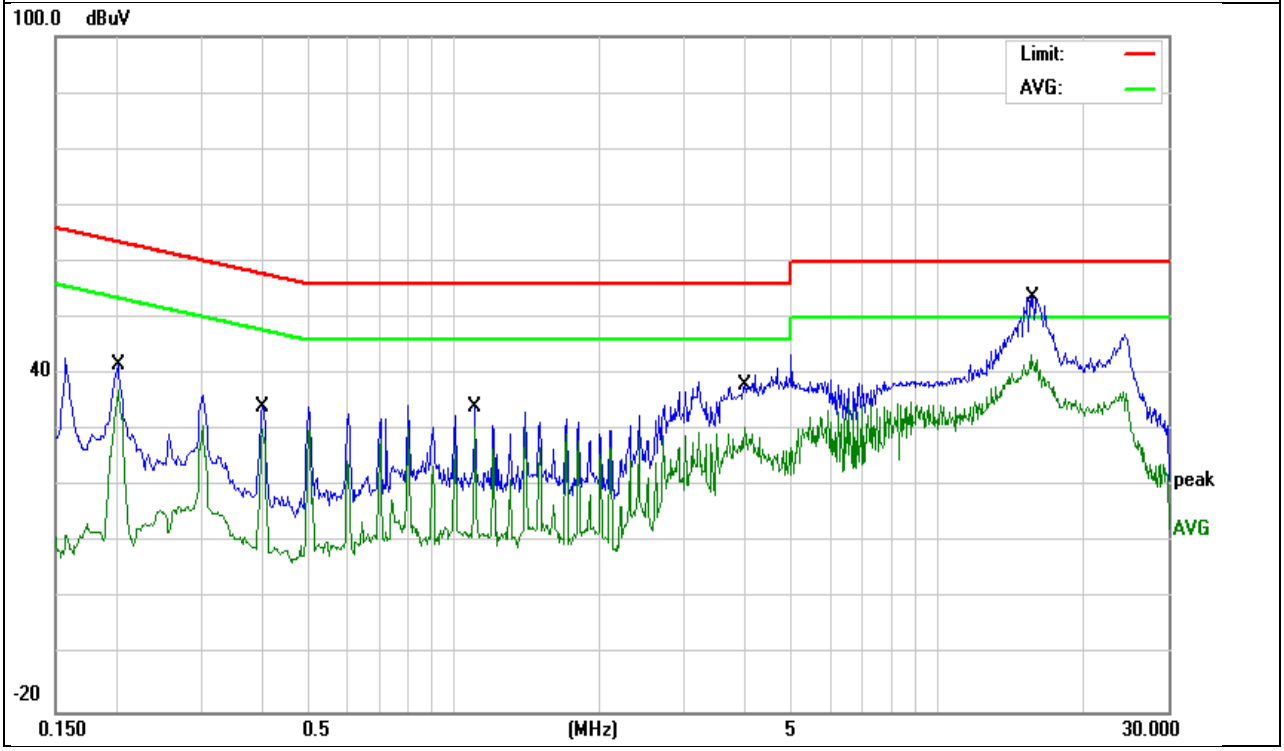


EUT:	Mobile Phone	Model Name. :	PSPCL30A0
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	1010hPa	Test Date:	2018-7-31
Test Mode:	Mode 1	Phase :	N
Test Voltage:	DC 5V from PC AC240V/60Hz		

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.2020	31.86	9.73	41.59	63.52	-21.93	QP
0.2020	27.37	9.73	37.10	53.52	-16.42	AVG
0.4020	24.49	9.75	34.24	57.81	-23.57	QP
0.4020	20.52	9.75	30.27	47.81	-17.54	AVG
1.1060	24.27	9.75	34.02	56.00	-21.98	QP
1.1060	20.86	9.75	30.61	46.00	-15.39	AVG
4.0060	29.94	9.92	39.86	56.00	-16.14	QP
4.0060	20.63	9.92	30.55	46.00	-15.45	AVG
15.7779	43.64	10.11	53.75	60.00	-6.25	QP
15.7779	33.35	10.11	43.46	50.00	-6.54	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

FREQUENCY (MHz)	Class A (at 10m)	Class B (at 3m)
	dBuV/m	dBuV/m
30 ~ 88	39.0	40.0
88 ~ 216	43.5	43.5
216 ~ 960	46.5	46.0
Above 960	49.5	54.0

Notes:

(1) The limit for radiated test was performed according to as following: FCC PART 15B /ICES-003.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

3.2.2 TEST PROCEDURE

Test Arrangement for Radiated Emissions up to 1 GHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited test facility. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna is a broadband antenna, and its 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.

d. 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.

Note: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for quasi-peak detection (QP) at frequency below 1GHz.

Test Arrangement for Radiated Emissions above 1 GHz.

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna can be varied from one meter to four meters, the height of adjustment depends on the EUT height and the antenna 3dB beamwidth both, to detect the maximum value of the field strength.Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

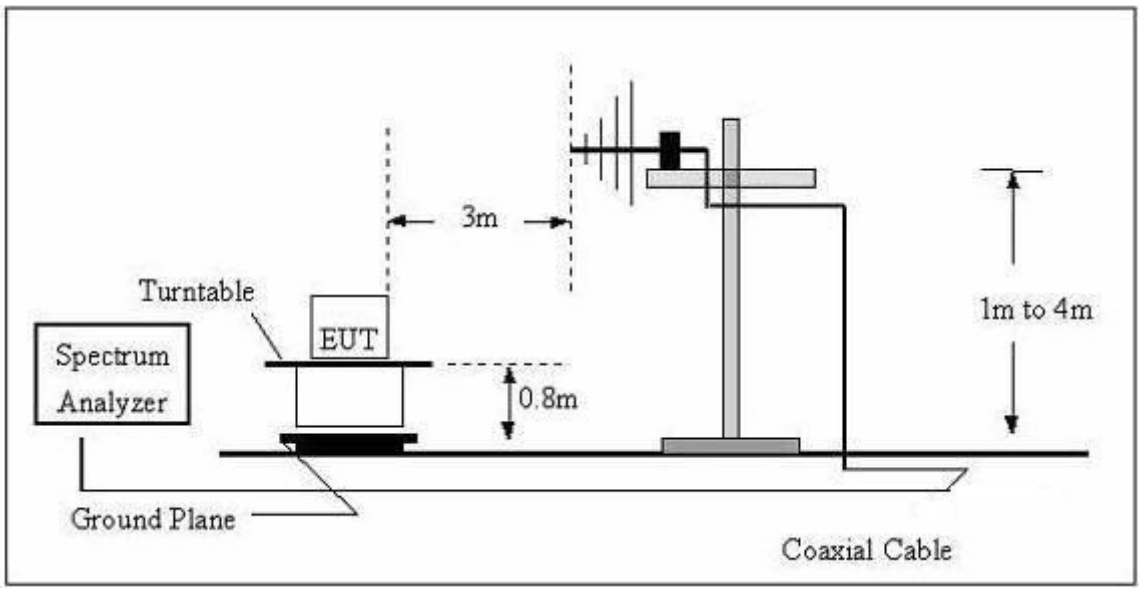
Note：For the hand-held device, the EUT should be measured for all 3 axes and only the worst case is recorded in the report

During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

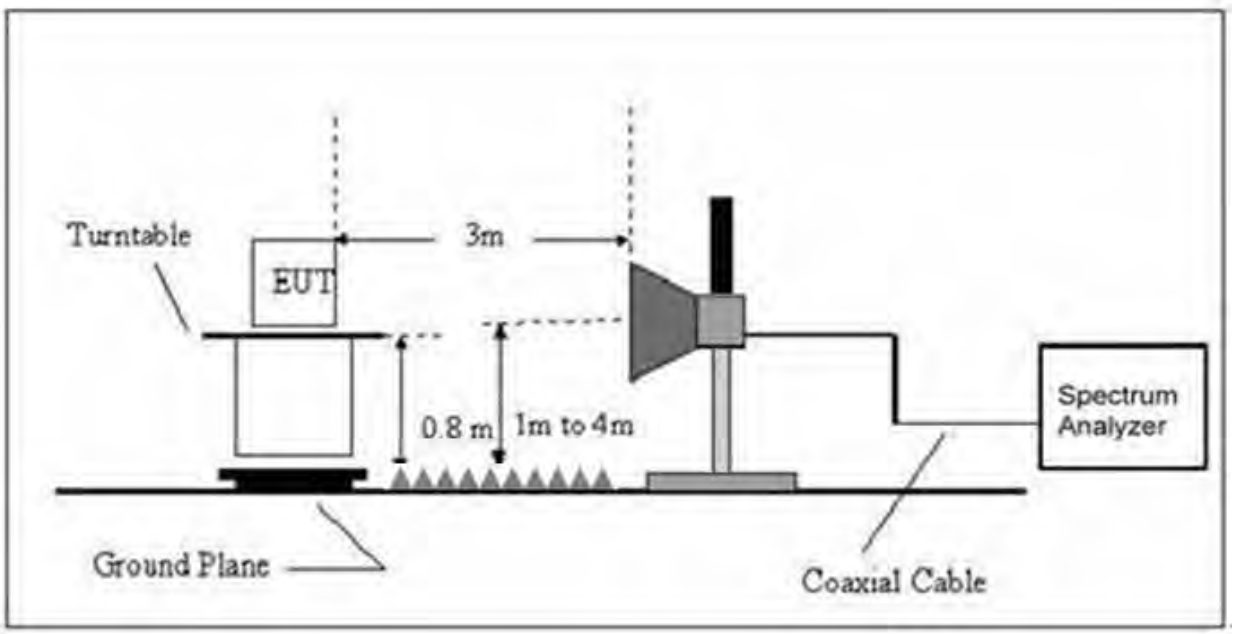
Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	QP	120 kHz	300 kHz
Above 1000	Peak	1 MHz	1 MHz
	Avg	1 MHz	10 Hz

3.2.3 TEST SETUP

For Radiated Emission 30~1000MHz



(B) Radiated Emission Test Set-Up Frequency Above 1GHz



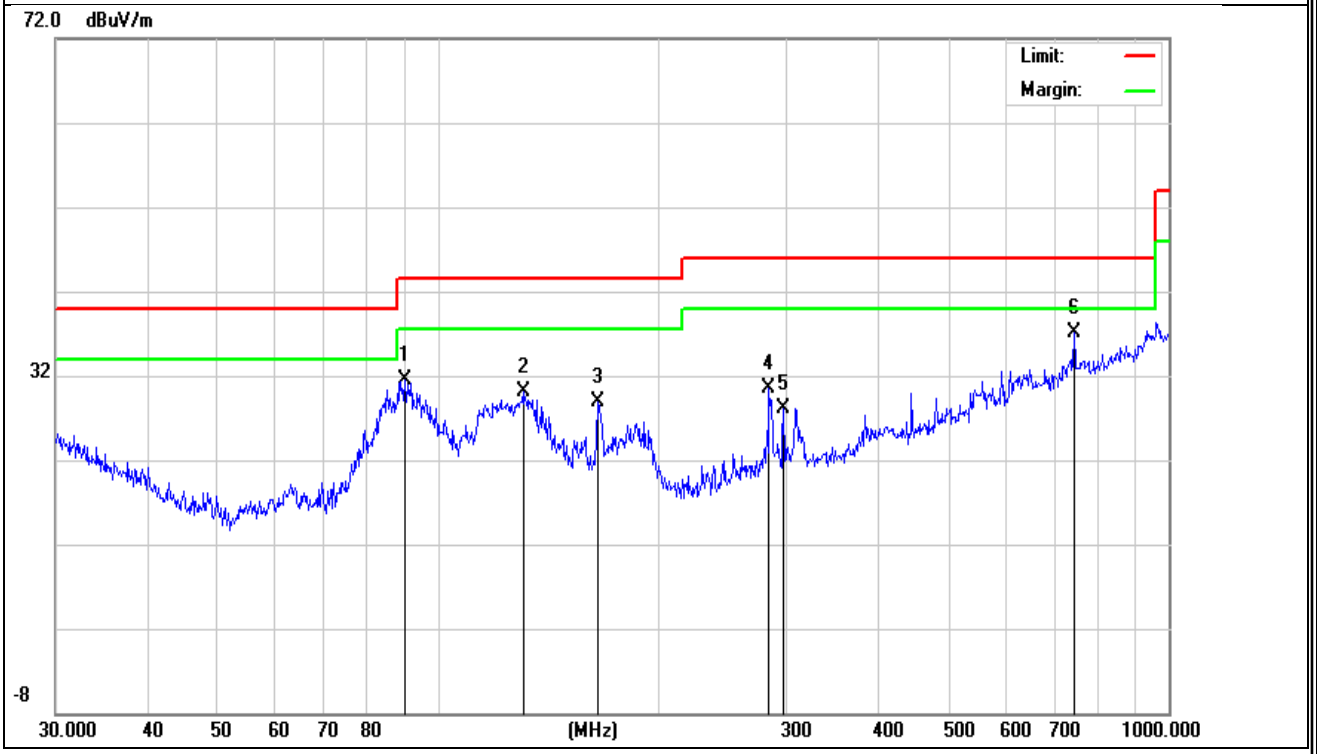
3.2.4 TEST RESULTS

TEST RESULTS (30~1000 MHz)

EUT:	Mobile Phone	Model Name:	PSPCL30A0
Temperature:	24 ℃	Relative Humidity:	54%
Pressure:	1010 hPa	Test Date :	2018-7-31
Test Mode :	Mode 1	Polarization :	Horizontal
Test Power :	DC 5V from PC AC120V/60Hz		

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
H	90.2205	21.06	10.40	31.46	43.50	-12.04	QP
H	130.8369	16.76	13.44	30.20	43.50	-13.30	QP
H	165.4866	17.51	11.41	28.92	43.50	-14.58	QP
H	283.9791	14.67	15.89	30.56	46.00	-15.44	QP
H	297.2241	12.41	15.79	28.20	46.00	-17.80	QP
H	742.2587	9.50	27.58	37.08	46.00	-8.92	QP

Remark:
Factor = Antenna Factor + Cable Loss - Amplifier.

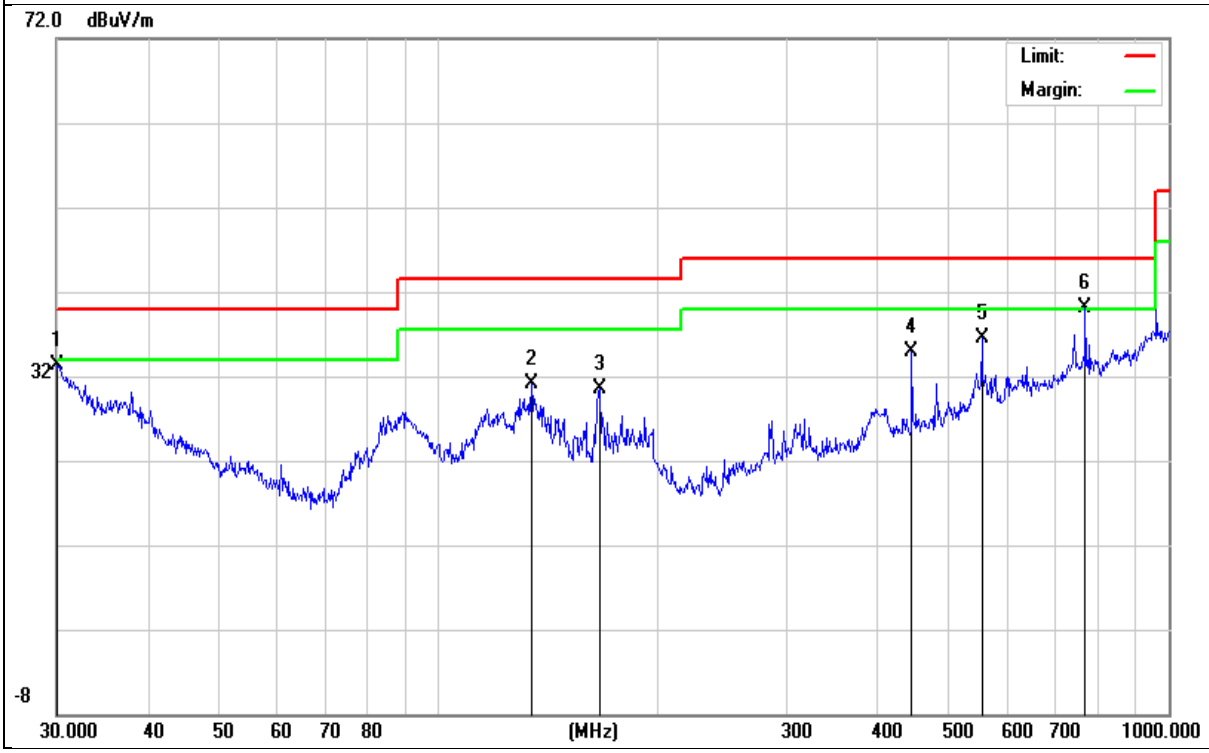


EUT:	Mobile Phone	Model Name :	PSPCL30A0
Temperature:	24 ℃	Relative Humidity:	54%
Pressure:	1010 hPa	Test Date :	2018-7-31
Test Mode :	Mode 1	Polarization :	Vertical
Test Power :	DC 5V from PC AC120V/60Hz		

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
V	30.0000	14.39	18.88	33.27	40.00	-6.73	QP
V	134.0882	17.61	13.40	31.01	43.50	-12.49	QP
V	166.6514	19.03	11.40	30.43	43.50	-13.07	QP
V	444.8514	14.68	20.32	35.00	46.00	-11.00	QP
V	554.8254	11.93	24.48	36.41	46.00	-9.59	QP
V	768.7481	12.64	27.46	40.10	46.00	-5.90	QP

Remark:

Factor = Antenna Factor + Cable Loss - Amplifier.



3.2.5 TEST RESULTS (1000~18000MHz)

EUT:	Mobile Phone	Model Name :	PSPCL30A0
Temperature:	24 ℃	Relative Humidity:	54%
Pressure:	1010 hPa	Test Date :	2018-7-31
Test Mode :	Mode 1		
Test Power :	DC 5V from PC AC120V/60Hz		

All the modulation modes have been tested, and the worst result was report as below:

Polar (H/V)	Frequency	Reading	Correct	Result	Limit	Over Limit	Remark
	(MHz)	(dBuV/m	dB/m	(dBuV/m	(dBuV/m	(dB)	
V	2105.00	41.33	2.34	43.67	74.00	-30.33	peak
V	2105.00	29.10	2.34	31.44	54.00	-22.56	AVG
V	2955.00	41.79	1.13	42.92	74.00	-31.08	peak
V	2955.00	29.70	1.13	30.83	54.00	-23.17	AVG
V	4825.00	36.03	12.61	48.64	74.00	-25.36	peak
V	4825.00	25.50	12.61	38.11	54.00	-15.89	AVG
V	8140.00	-0.03	53.07	53.04	74.00	-20.96	peak
V	8140.00	-14.80	53.07	38.27	54.00	-15.73	AVG
H	2105.00	40.60	2.34	42.94	74.00	-31.06	peak
H	2105.00	28.70	2.34	31.04	54.00	-22.96	AVG
H	4825.00	36.21	12.61	48.82	74.00	-25.18	peak
H	4825.00	25.30	12.61	37.91	54.00	-16.09	AVG
H	7927.50	0.04	52.43	52.47	74.00	-21.53	peak
H	7927.50	-15.40	52.43	37.03	54.00	-16.97	AVG
H	8820.00	-0.08	53.37	53.29	74.00	-20.71	peak
H	8820.00	-16.90	53.37	36.47	54.00	-17.53	AVG

Remark:
Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit
Note: Only the worst results data points are reported in the report.