FCC Part 15B
Measurement and Test Report

For

PCD, LLC.

1500 Tradeport Drive, Suite A. Orlando, FL.

FCC ID: 2ALJJ-PL4002

Test Rule(s):	FCC Part 15 Subpart B
Product Description:	4G Smart Phone
Tested Model:	PL4002
Report No.:	STR17038302I-6
Tested Date:	2017-03-28 to 2017-04-14
Issued Date:	2017-04-14
Tested By:	Iven Guo / Engineer
Reviewed By:	Silin Chen / EMC Manager
Approved & Authorized By:	Jandy So / PSQ Manager

Prepared By:

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TABLE OF CONTENTS

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	PCD, LLC.
Address of applicant:	1500 Tradeport Drive, Suite A. Orlando, FL.
Manufacturer:	Guizhou Fortuneship Technology Co., Ltd.
Address of manufacturer:	(No. 4 Plant, High-tech Industrial Park, Xinpu Economic Development Zone) Jingkai Road, Xinpu Jingkai District, Xinpu New District, Zunyi City, Guizhou Province, P. R. China

General Description of EUT	
Product Name:	4G Smart Phone
Trade Name:	PCD
Model No.:	PL4002
Adding Model(s):	/
Note: The test data is gathered from a production sample, provided by the manufacturer.	

Technical Characteristics of EUT	
Rated Voltage:	DC 3.8V Li-ion Battery
Rated Current:	/
Rated Power:	/
Power Adapter Model:	PL4002 Input:100V-240V, 50/60Hz,0.15A;Output:5V,1A
Lowest Internal Frequency:	32.768kHz
Highest Internal Frequency:	1.5GHz
Classification of ITE:	Class B

1.2 Test Standards

The following report is prepared on behalf of the PCD, LLC. 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 C63.4-2014, 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	Charging + Playing	/
TM2	Downloading	/
TM3	Charging + Camera	/
TM4	FM	/

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Cable	1.0	Shielded	Without Ferrite
Earphone	1.2	Unshielded	Without Ferrite

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Notebook	Lenovo	E10	LR-63C8R

Special Cable List and Details

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

1.6 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
Conducted Emissions	Conducted	±2.88dB
Transmitter Spurious Emissions	Radiated	±5.1dB

1.7 Test Equipment List and Details

No.	Description	Manufacturer	Model	Serial No.	Cal Date	Due Date
SEMT-1072	Spectrum Analyzer	Agilent	E4407B	MY41440400	2016-06-04	2017-06-03
SEMT-1031	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2016-06-04	2017-06-03
SEMT-1007	EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2016-06-04	2017-06-03
SEMT-1008	Amplifier	Agilent	8447F	3113A06717	2016-06-04	2017-06-03
SEMT-1043	Amplifier	C&D	PAP-1G18	2002	2016-06-04	2017-06-03
SEMT-1011	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2016-06-04	2017-06-03
SEMT-1042	Horn Antenna	ETS	3117	00086197	2016-06-04	2017-06-03
SEMT-1069	Loop Antenna	Schwarz beck	FMZB 1516	9773	2016-06-04	2017-06-03
SEMT-1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2016-06-04	2017-06-03
SEMT-1003	L.I.S.N	Schwarz beck	NSLK8126	8126-224	2016-06-04	2017-06-03
SEMT-1002	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2016-06-04	2017-06-03

2. SUMMARY OF TEST RESULTS

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

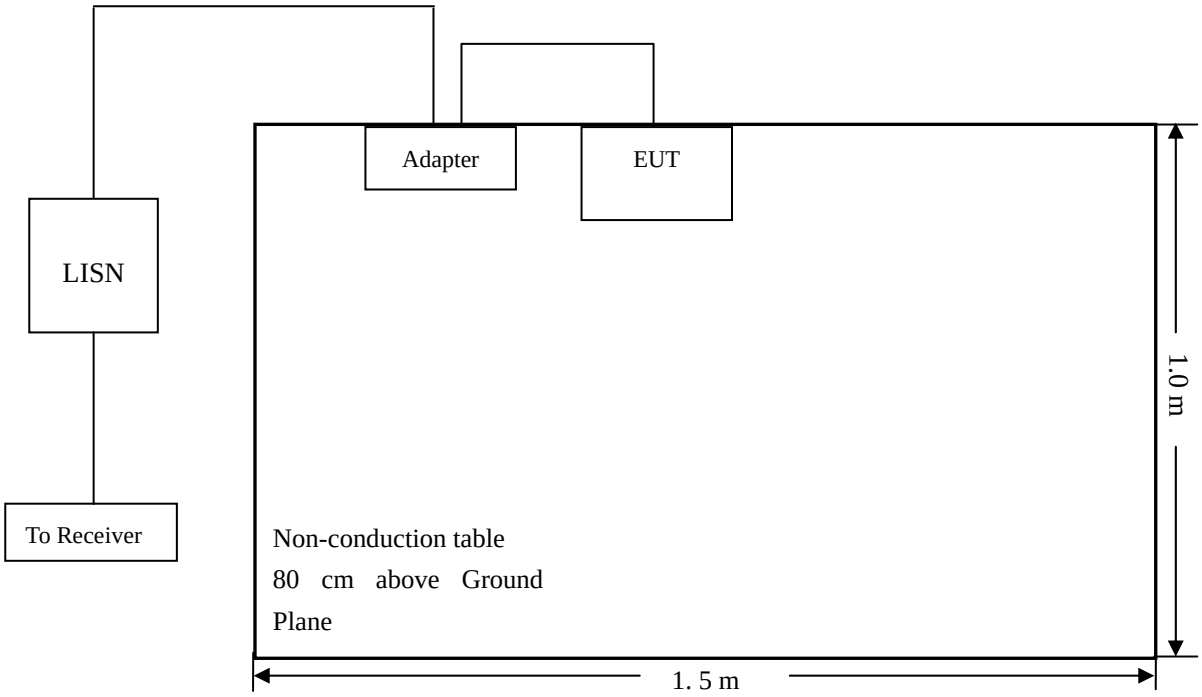
N/A: not applicable

3. Conducted Emissions

3.1 Test Procedure

Test is conducting under the description of ANSI C63.4-2014, 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.

3.2 Basic Test Setup Block Diagram



3.3 Environmental Conditions

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

3.4 Summary of Test Results/Plots

According to the data in section 3.5, the EUT complied with the FCC Part 15.107(a) Conducted margin for a Class B device, with the *worst* margin reading of:

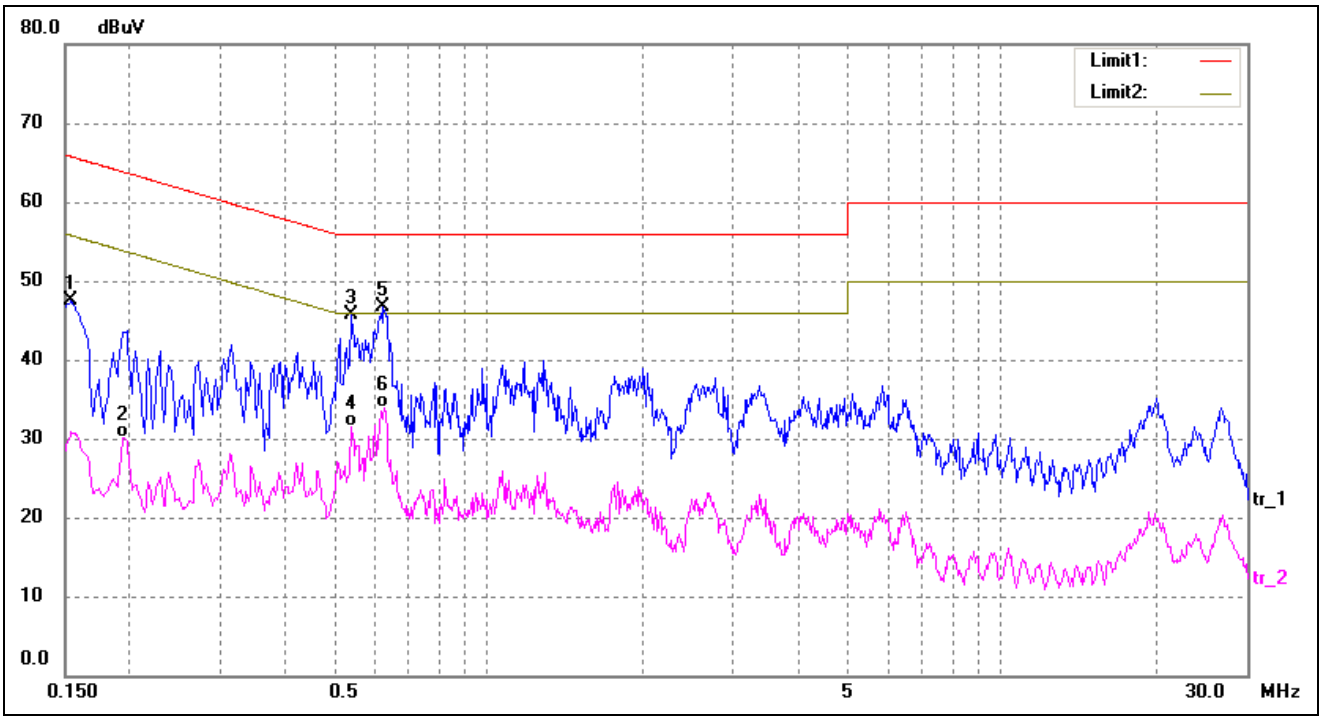
-2.08 dB at **0.5940 MHz** in the **Line**, **QP** detector, TM1, 0.15-30MHz

3.5 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

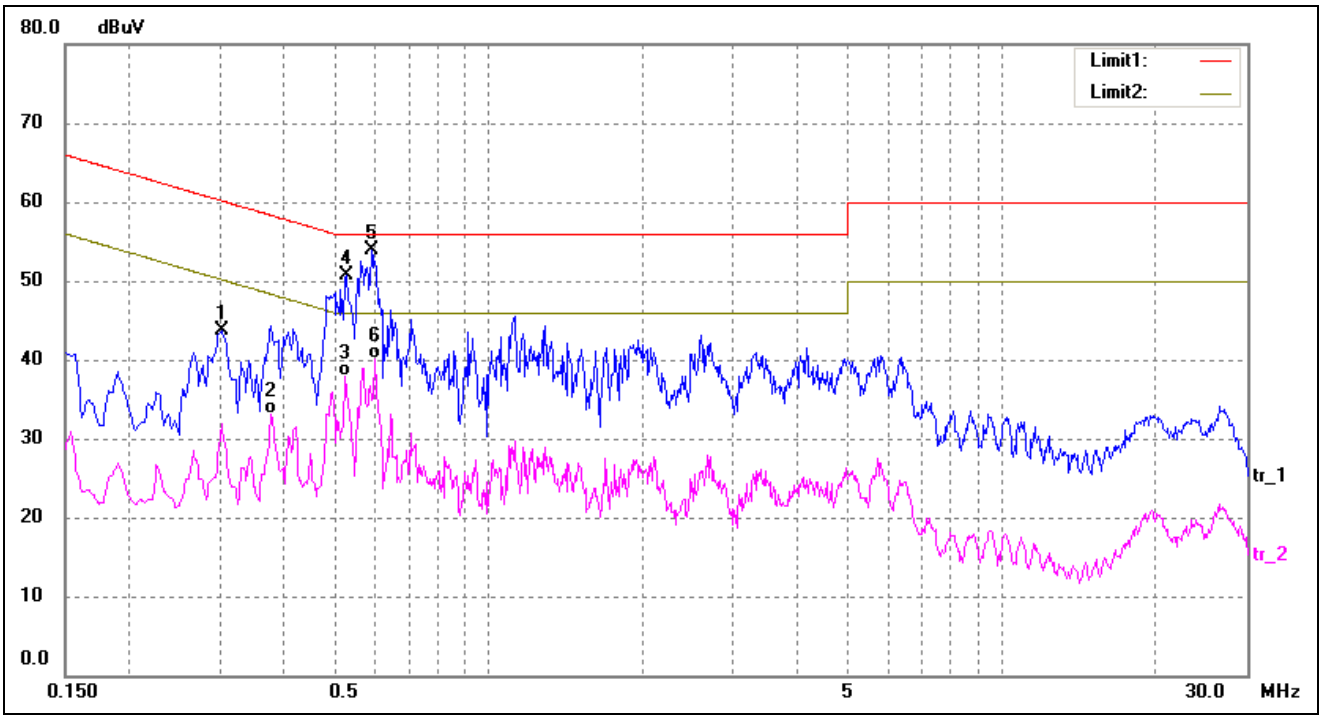
EUT: *4G Smart Phone*
Tested Model: *PL4002*
Operating Condition: *TM1*
Comment: *AC 120V/60Hz; Adapter DC 5V*

Test Specification: *Neutral*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1	0.1540	37.58	9.85	47.43	65.78	-18.35	QP
2	0.1940	20.34	9.81	30.15	53.86	-23.71	AVG
3	0.5420	35.99	9.80	45.79	56.00	-10.21	QP
4	0.5420	21.70	9.80	31.50	46.00	-14.50	AVG
5*	0.6260	36.91	9.79	46.70	56.00	-9.30	QP
6	0.6300	24.21	9.79	34.00	46.00	-12.00	AVG

Test Specification: *Line*

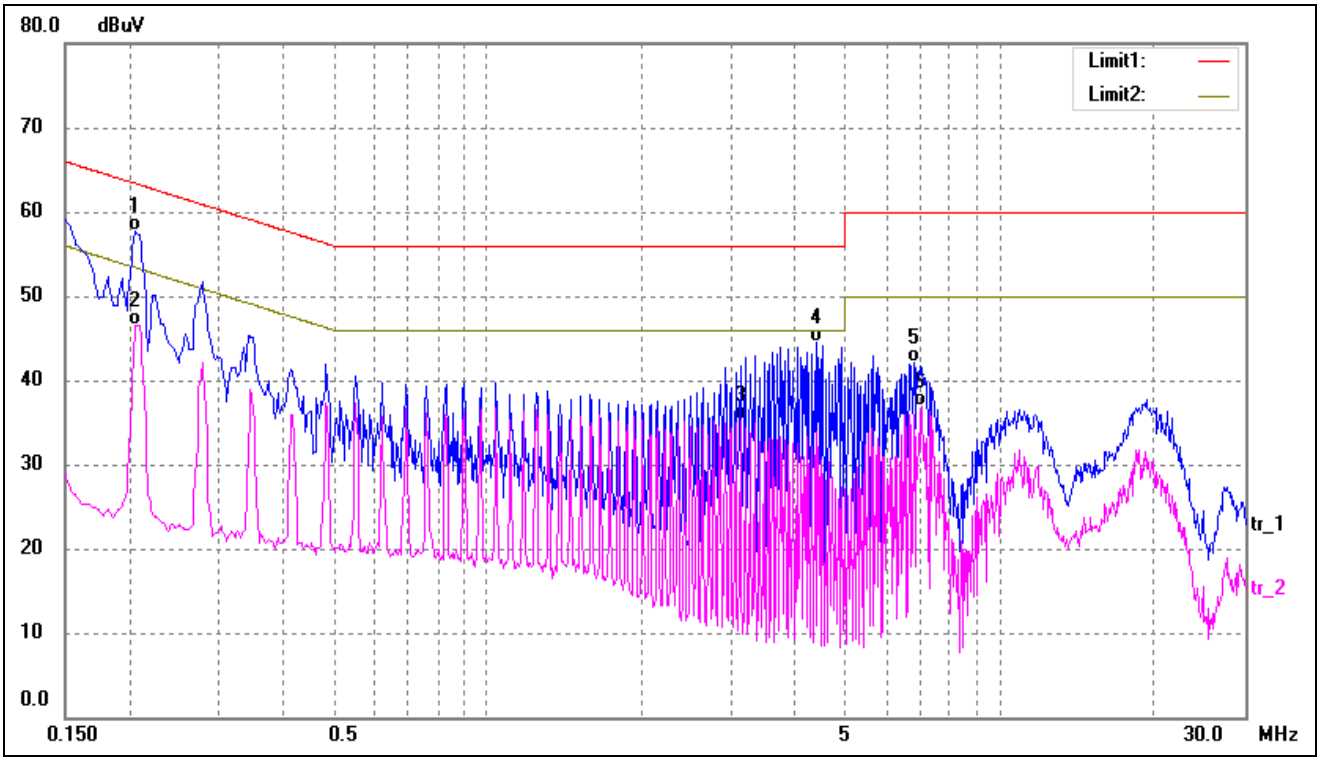


No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1	0.3020	33.98	9.80	43.78	60.19	-16.41	QP
2	0.3780	23.25	9.80	33.05	48.32	-15.27	AVG
3	0.5260	28.11	9.80	37.91	46.00	-8.09	AVG
4	0.5300	40.82	9.80	50.62	56.00	-5.38	QP
5*	0.5940	44.13	9.79	53.92	56.00	-2.08	QP
6	0.6020	30.39	9.79	40.18	46.00	-5.82	AVG

Plot of Conducted Emissions Test Data

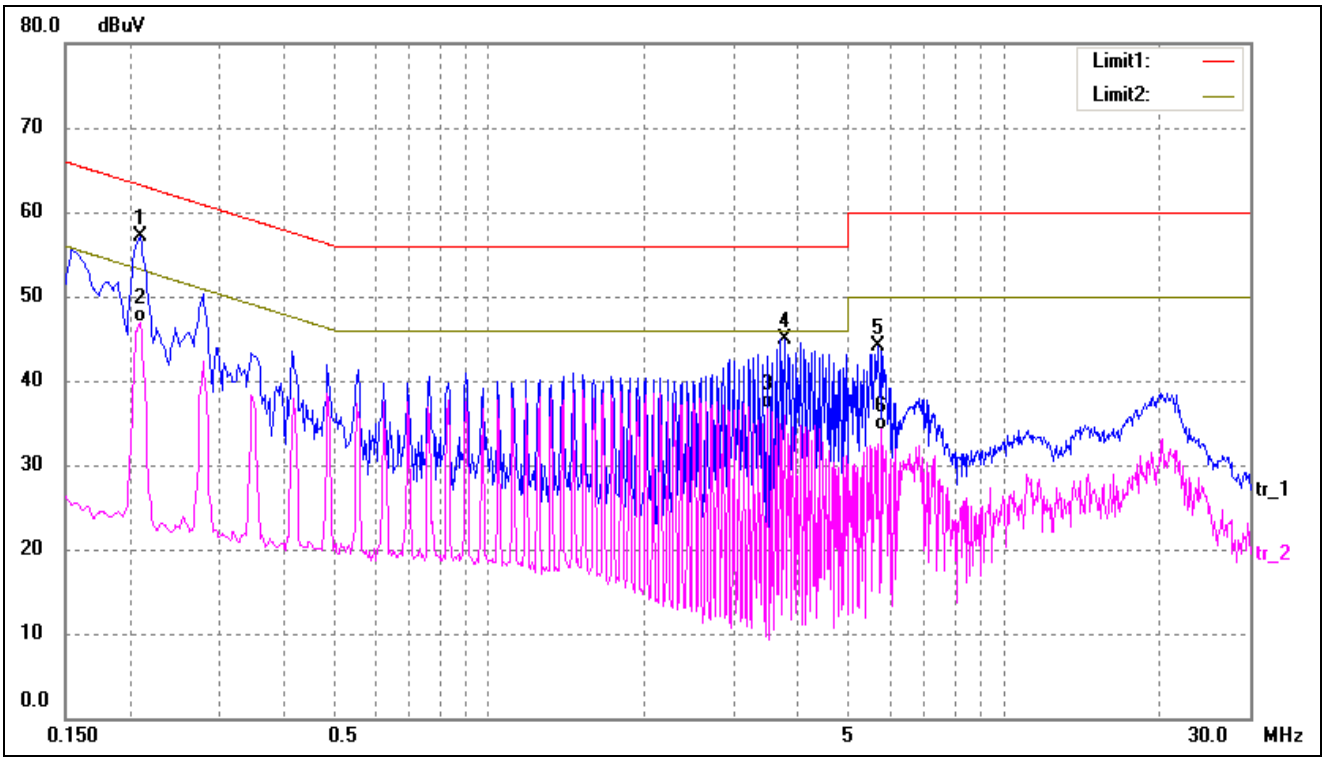
EUT: *4G Smart Phone*
Tested Model: *PL4002*
Operating Condition: *TM2*
Comment: *AC 120V/60Hz; USB 5V*

Test Specification: *Neutral*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.2060	57.62	0.00	57.62	63.37	-5.75	QP
2	0.2060	46.57	0.00	46.57	53.37	-6.80	AVG
3	3.1140	35.23	0.00	35.23	46.00	-10.77	AVG
4	4.3620	44.41	0.00	44.41	56.00	-11.59	QP
5	6.7820	42.16	0.00	42.16	60.00	-17.84	QP
6	7.0620	36.81	0.00	36.81	50.00	-13.19	AVG

Test Specification: *Line*

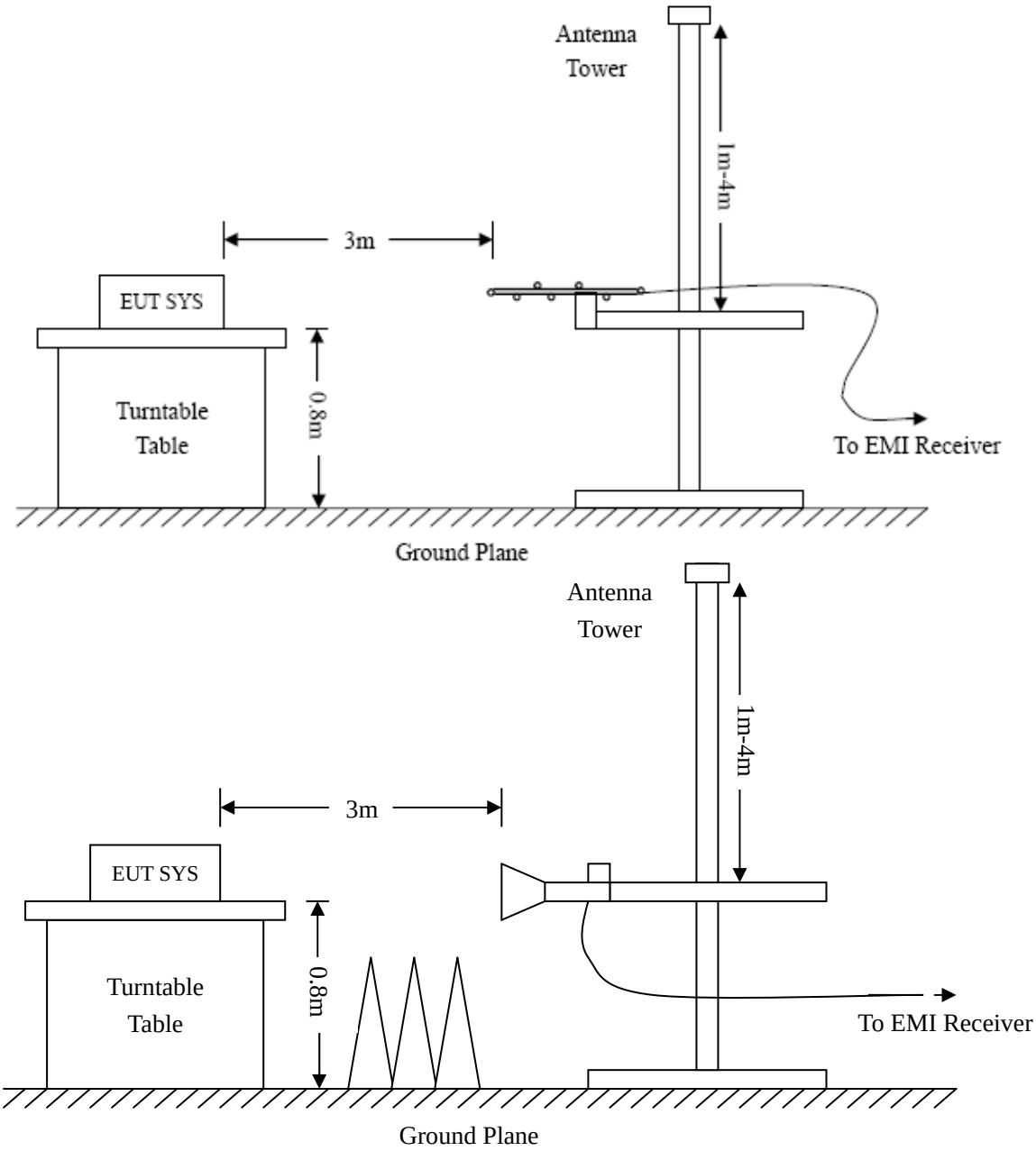


No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.2100	57.07	0.00	57.07	63.21	-6.14	peak
2	0.2100	46.81	0.00	46.81	53.21	-6.40	AVG
3	3.4700	36.72	0.00	36.72	46.00	-9.28	AVG
4	3.7460	44.90	0.00	44.90	56.00	-11.10	peak
5	5.6900	44.02	0.00	44.02	60.00	-15.98	peak
6	5.7580	34.20	0.00	34.20	50.00	-15.80	AVG

4. Radiated Emissions

4.1 Test Procedure

The setup of EUT is according with per ANSI C63.4-2014 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.



4.2 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

4.3 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

4.4 Environmental Conditions

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

4.5 Summary of Test Results/Plots

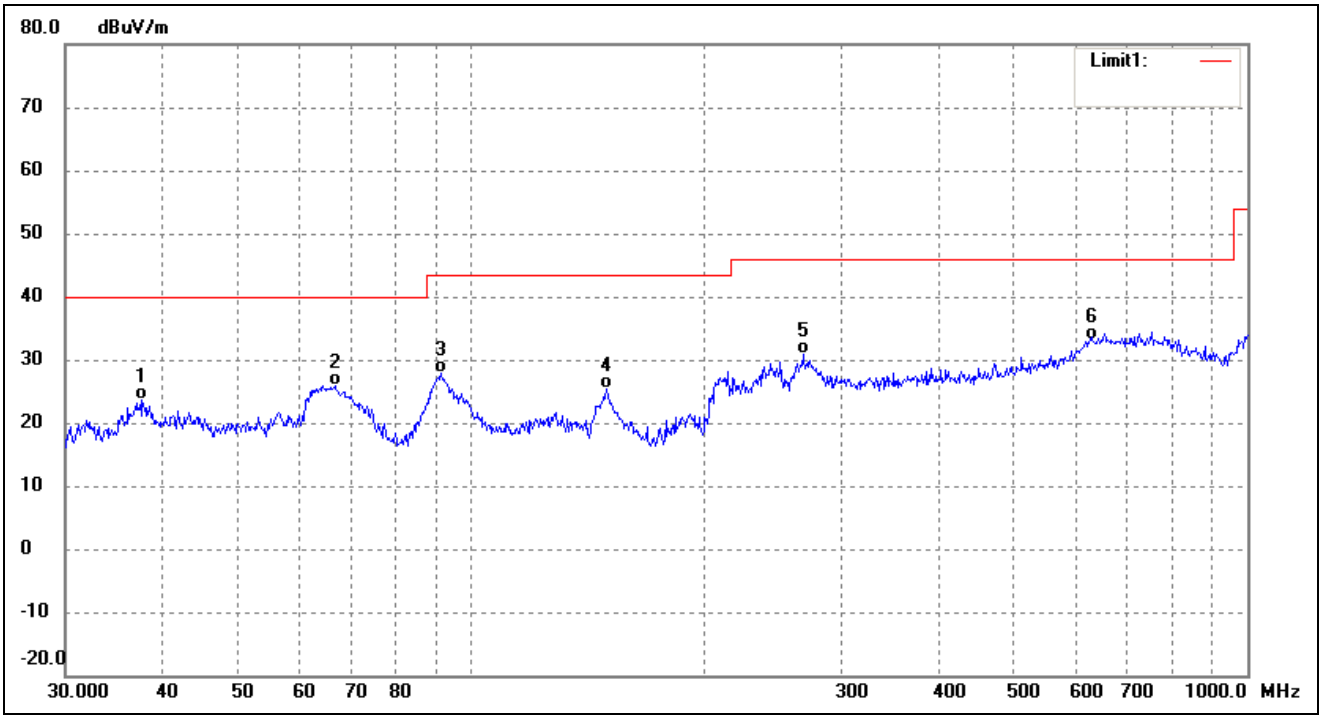
According to the data, the EUT complied with the FCC Part 15.109(a) rule, and had the worst margin of:

-4.03 dB at **36.3814 MHz** in the **Vertical** polarization, **TM3** Mode, **30MHz** to **12.75 GHz**, **3Meters**

Plot of Radiated Emissions Test Data

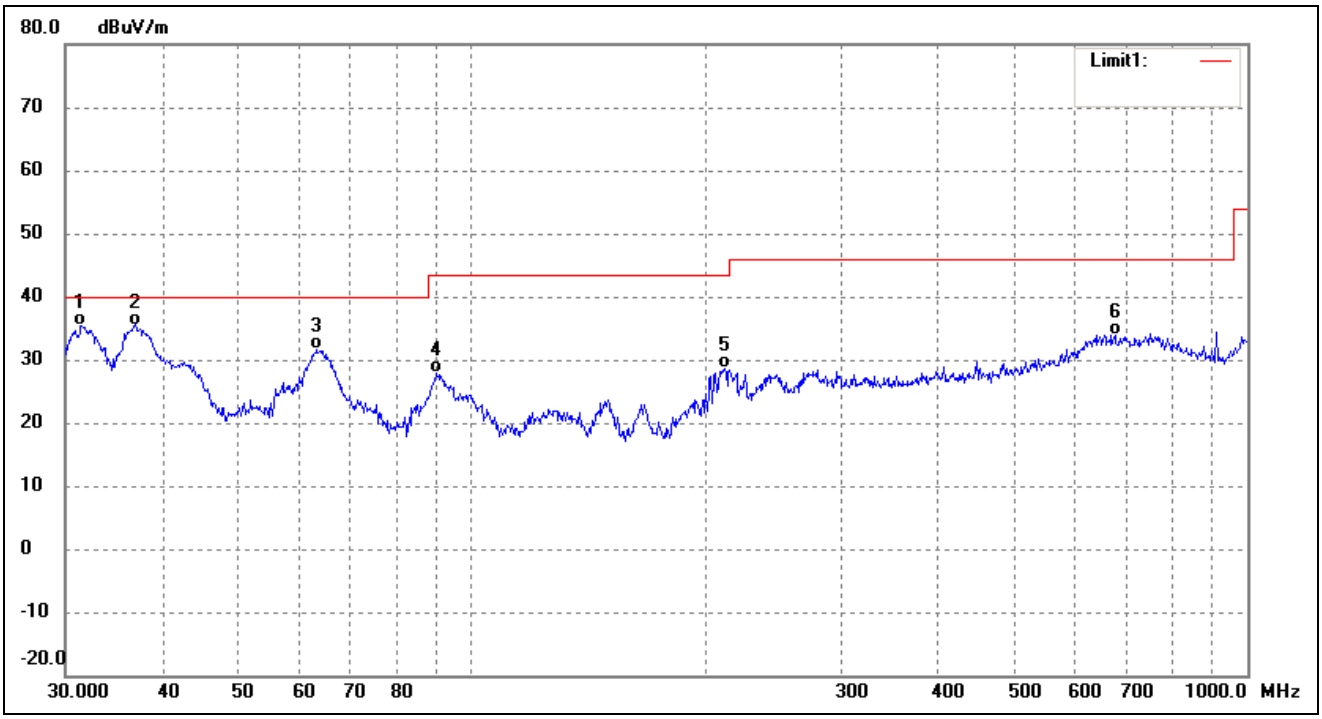
EUT: *4G Smart Phone*
Tested Model: *PL4002*
Operating Condition: *TM1*
Comment: *AC 120V/60Hz; Adapter DC 5V*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	37.6798	19.15	4.59	23.74	40.00	-16.26	257	100	QP
2	66.7325	22.34	3.61	25.95	40.00	-14.05	91	100	QP
3	91.4949	24.14	3.64	27.78	43.50	-15.72	185	100	QP
4	149.4857	22.49	2.77	25.26	43.50	-18.24	116	100	QP
5	267.5455	20.60	10.23	30.83	46.00	-15.17	56	100	QP
6	627.2738	15.53	17.61	33.14	46.00	-12.86	244	100	QP

Test Specification: *Vertical*

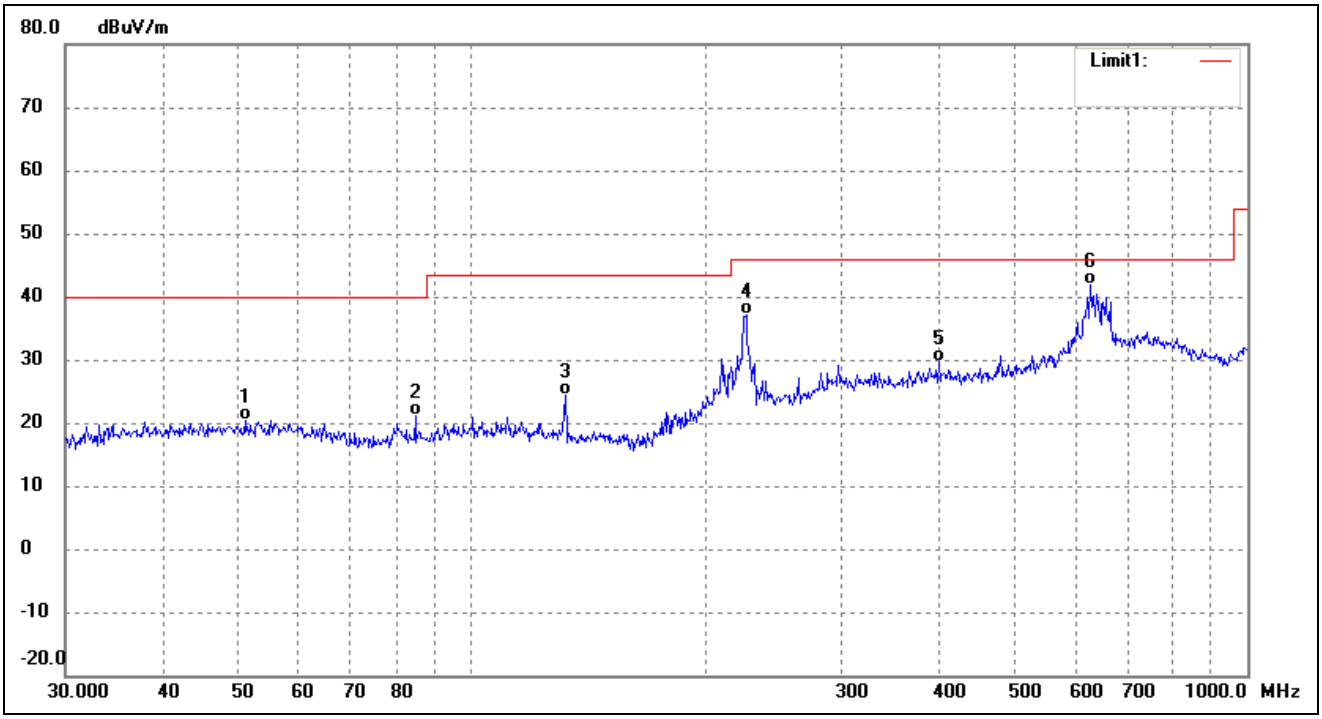


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	31.3992	31.70	3.58	35.28	40.00	-4.72	243	100	QP
2	36.8953	31.03	4.47	35.50	40.00	-4.50	100	100	QP
3	63.3132	27.20	4.35	31.55	40.00	-8.45	167	100	QP
4	90.2205	24.51	3.44	27.95	43.50	-15.55	113	100	QP
5	212.2695	22.69	6.02	28.71	43.50	-14.79	298	100	QP
6	675.2080	15.50	18.42	33.92	46.00	-12.08	264	100	QP

Plot of Radiated Emissions Test Data

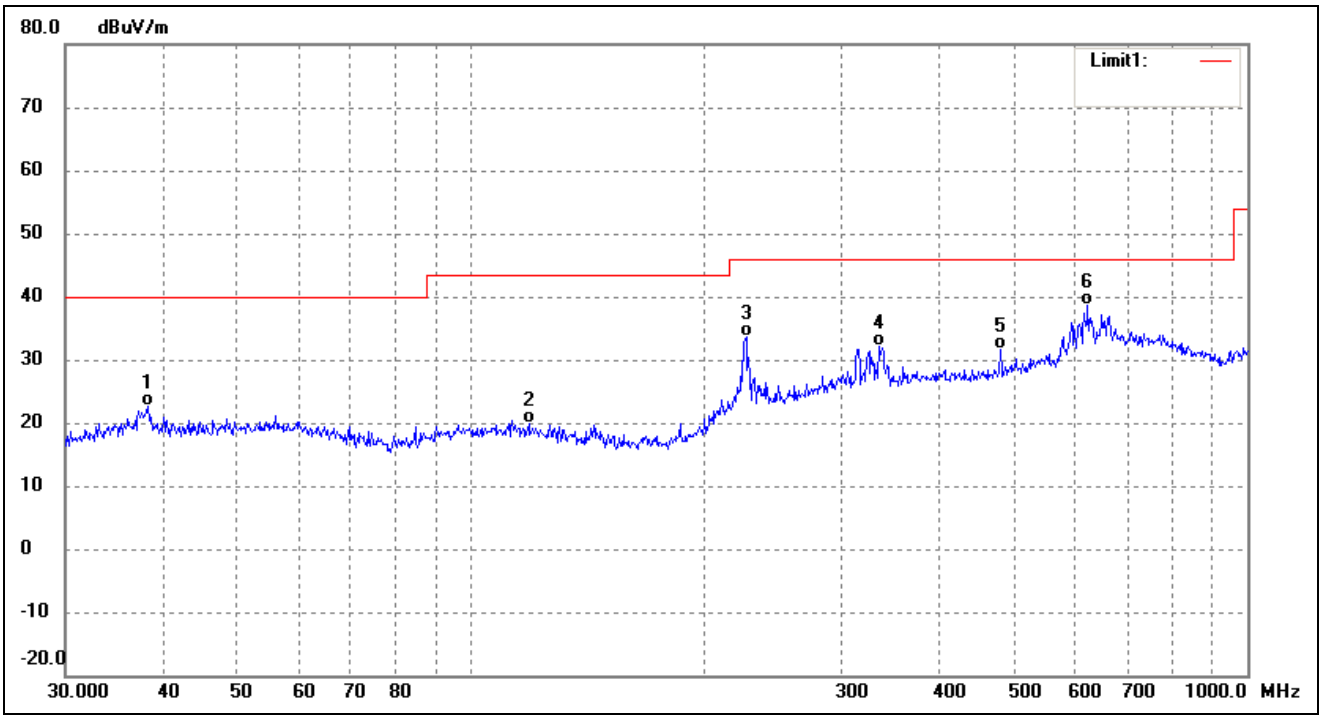
EUT: *4G Smart Phone*
Tested Model: *PL4002*
Operating Condition: *TM2*
Comment: *AC 120V/60Hz; USB 5V*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	51.1209	15.35	5.01	20.36	40.00	-19.64	216	100	QP
2	84.7019	18.68	2.50	21.18	40.00	-18.82	134	100	QP
3	132.2206	20.47	3.80	24.27	43.50	-19.23	85	100	QP
4	226.0994	28.99	8.05	37.04	46.00	-8.96	302	100	QP
5	400.4319	16.99	12.67	29.66	46.00	-16.34	159	100	QP
6	627.2738	24.22	17.61	41.83	46.00	-4.17	345	100	QP

Test Specification: *Vertical*

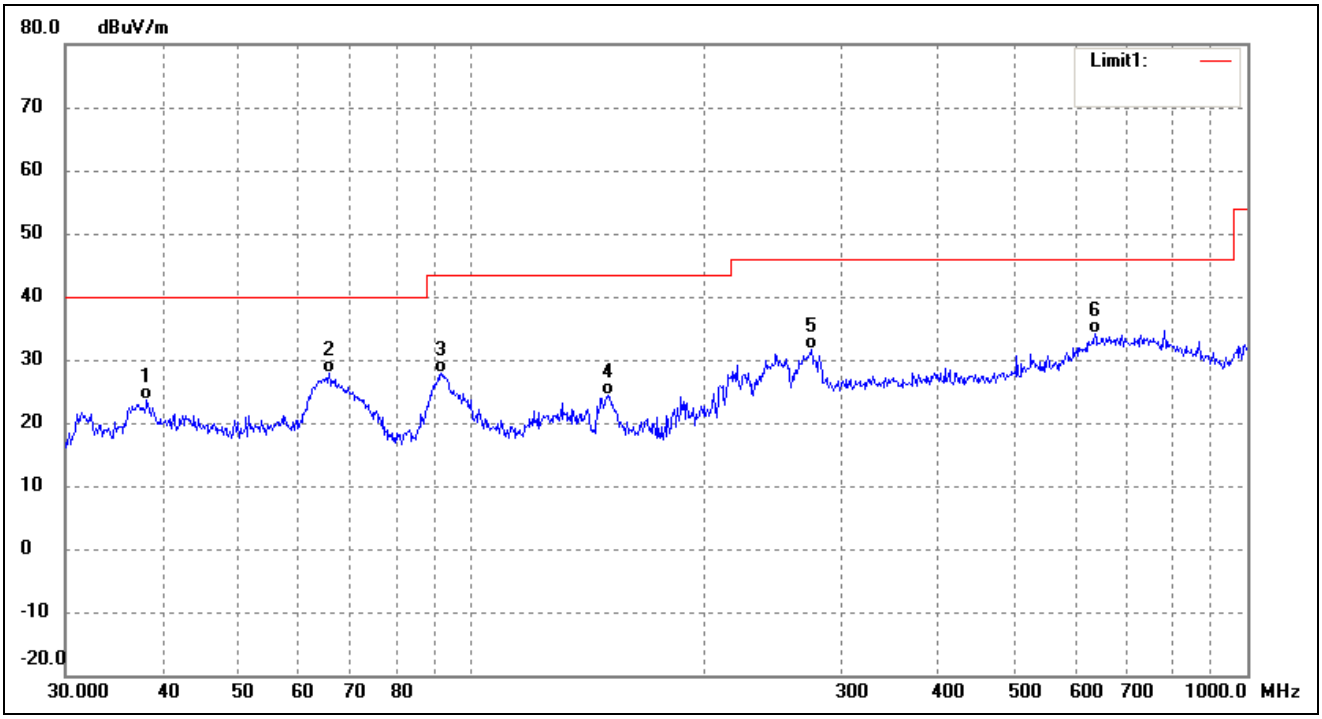


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	38.3462	17.99	4.68	22.67	40.00	-17.33	332	100	QP
2	118.6014	15.13	4.82	19.95	43.50	-23.55	344	100	QP
3	226.0994	25.62	8.05	33.67	46.00	-12.33	80	100	QP
4	334.8589	20.58	11.51	32.09	46.00	-13.91	268	100	QP
5	480.5276	19.16	12.58	31.74	46.00	-14.26	158	100	QP
6	622.8900	21.08	17.47	38.55	46.00	-7.45	151	100	QP

Plot of Radiated Emissions Test Data

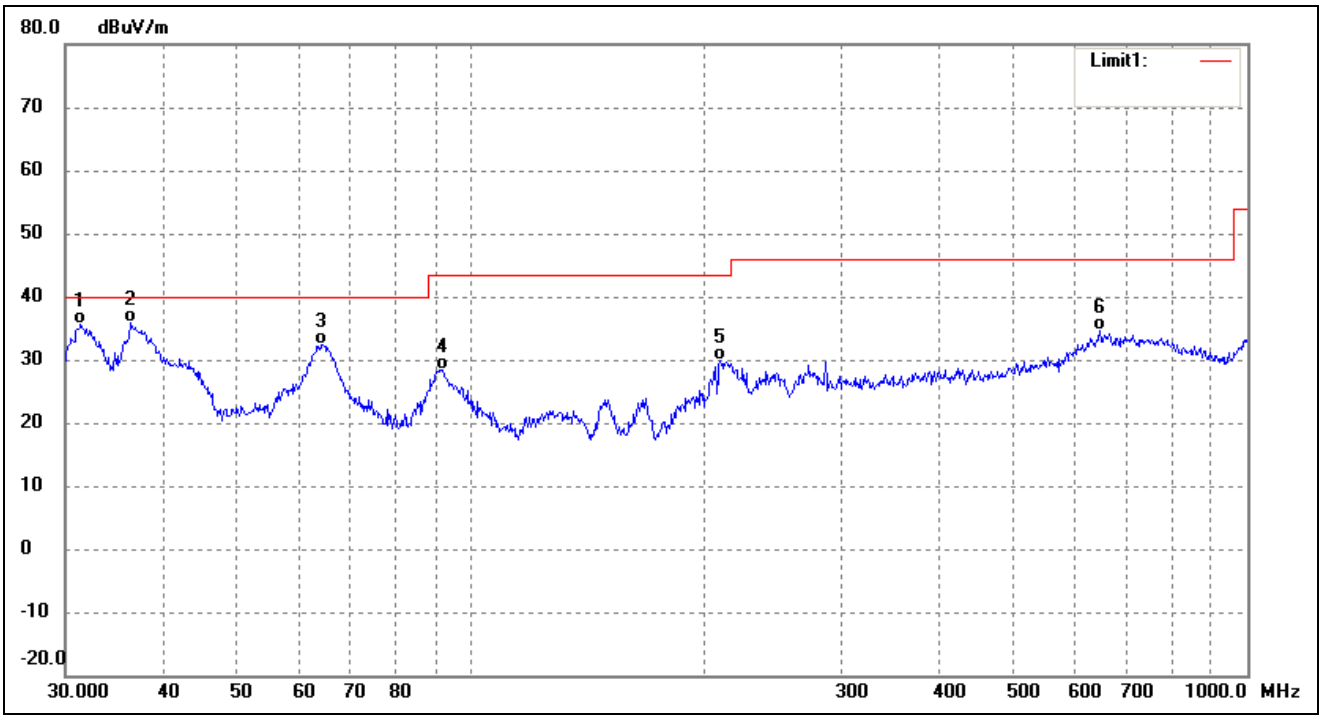
EUT: *4G Smart Phone*
Tested Model: *PL4002*
Operating Condition: *TM3*
Comment: *DC 3.8V*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	38.2120	18.93	4.66	23.59	40.00	-16.41	183	100	QP
2	65.5727	24.08	3.85	27.93	40.00	-12.07	158	100	QP
3	91.4949	24.16	3.64	27.80	43.50	-15.70	135	100	QP
4	150.0108	21.57	2.75	24.32	43.50	-19.18	133	100	QP
5	274.1939	20.98	10.72	31.70	46.00	-14.30	168	100	QP
6	636.1340	16.24	17.93	34.17	46.00	-11.83	191	100	QP

Test Specification: *Vertical*

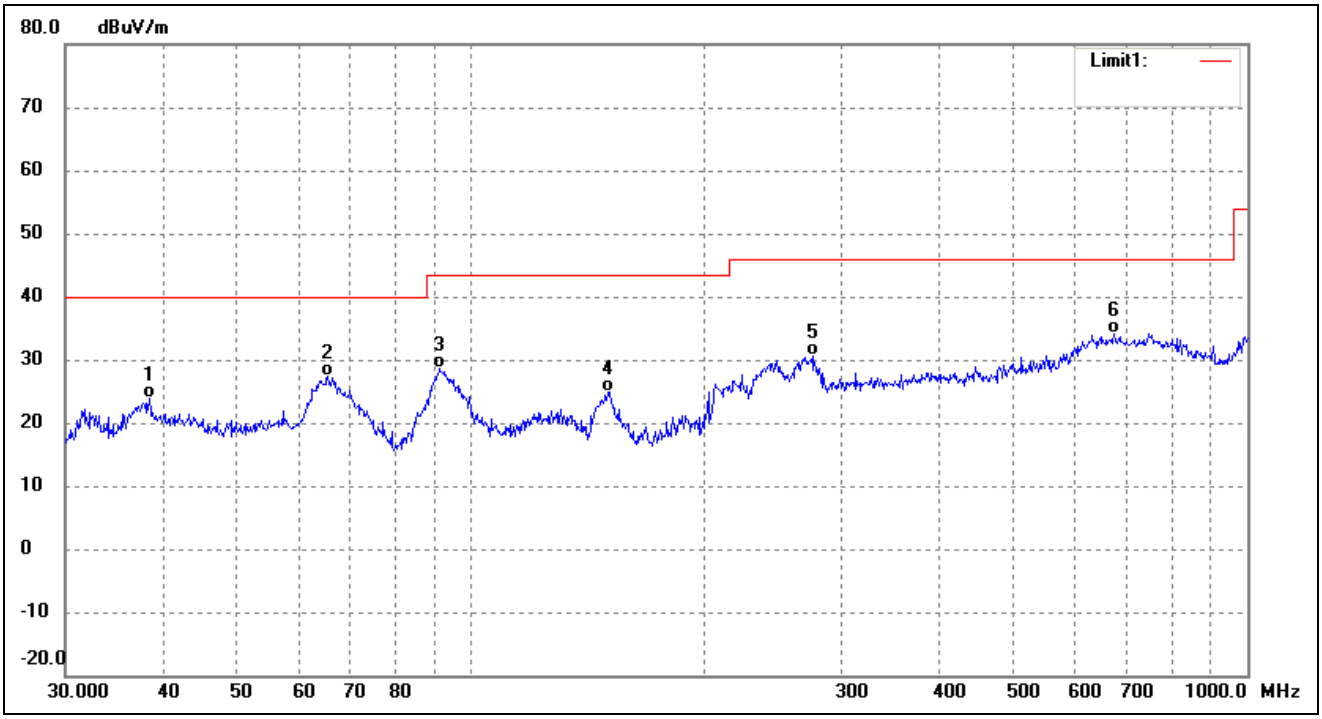


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	31.3992	31.93	3.58	35.51	40.00	-4.49	72	100	QP
2	36.3814	31.57	4.40	35.97	40.00	-4.03	100	100	QP
3	63.9828	28.15	4.21	32.36	40.00	-7.64	71	100	QP
4	91.8163	24.76	3.69	28.45	43.50	-15.05	97	100	QP
5	209.3129	24.43	5.38	29.81	43.50	-13.69	83	100	QP
6	645.1195	16.78	17.94	34.72	46.00	-11.28	134	100	QP

Plot of Radiated Emissions Test Data

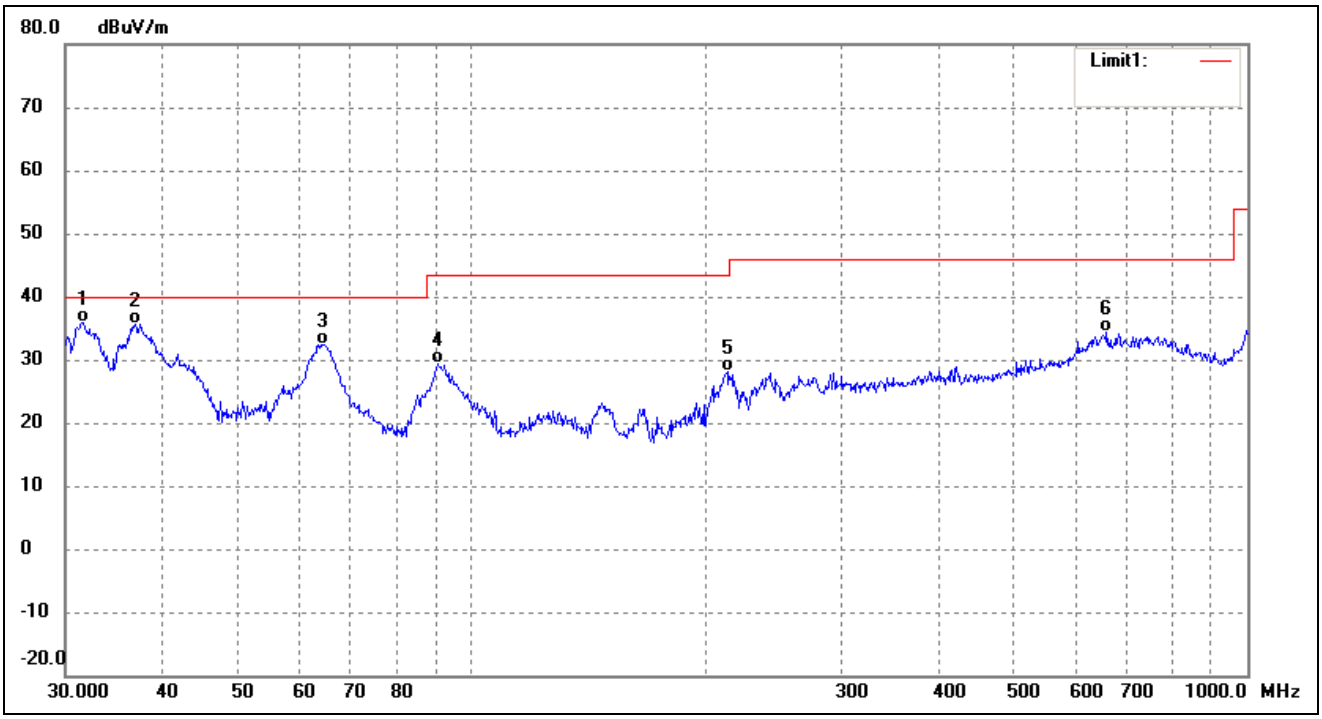
EUT: *4G Smart Phone*
Tested Model: *PL4002*
Operating Condition: *TM4*
Comment: *DC 3.8V*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	38.4809	19.16	4.70	23.86	40.00	-16.14	115	100	QP
2	65.3432	23.58	3.90	27.48	40.00	-12.52	339	100	QP
3	91.1746	25.05	3.60	28.65	43.50	-14.85	74	100	QP
4	150.0108	22.04	2.75	24.79	43.50	-18.71	174	100	QP
5	275.1570	19.89	10.79	30.68	46.00	-15.32	157	100	QP
6	672.8444	15.94	18.29	34.23	46.00	-11.77	221	100	QP

Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	31.6202	32.22	3.62	35.84	40.00	-4.16	131	100	QP
2	36.8953	31.10	4.47	35.57	40.00	-4.43	333	100	QP
3	64.4331	28.25	4.11	32.36	40.00	-7.64	58	100	QP
4	90.5374	25.92	3.49	29.41	43.50	-14.09	283	100	QP
5	213.7634	21.84	6.34	28.18	43.50	-15.32	265	100	QP
6	658.8362	16.89	17.61	34.50	46.00	-11.50	300	100	QP

Note: Testing is carried out with frequency rang 9kHz to the 12.75GHz, which above 1GHz are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
The measurements greater than 20dB below the limit from 9kHz to 30MHz.

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