

FCC Part 15B Measurement and Test Report

For

Guizhou Fortuneship Technology Co., Ltd.

No. 4 Plant, High-tech Industrial Park, Xinqu Economic Development Zone,

Zunyi City, P. R. China

FCC ID: 2ALQJB125C

Test Rule(s): FCC Part 15 Subpart B

Product Description: 4G Smart Phone

Tested Model: B125C

Report No.: STR17068072I-6

Tested Date: 2017-06-12 to 2017-06-30

Issued Date: 2017-07-01

Tested By: Iven Guo / Engineer

Iven Guo

Reviewed By: Silin Chen / EMC Manager

Silin Chen

Approved & Authorized By: Jandy So / PSQ Manager

Jandy So

Prepared By:

Shenzhen SEM.Test Technology Co., Ltd.

1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road,
Bao'an District, Shenzhen, P.R.C. (518101)

Tel.: +86-755-33663308 Fax.: +86-755-33663309 Website: www.semtest.com.cn

Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen SEM.Test Technology Co., Ltd.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Guizhou Fortuneship Technology Co., Ltd.
Address of applicant: No. 4 Plant, High-tech Industrial Park, Xipu Economic Development Zone, Zunyi City, P. R. China

Manufacturer: Guizhou Fortuneship Technology Co., Ltd.
Address of manufacturer: No. 4 Plant, High-tech Industrial Park, Xipu Economic Development Zone, Zunyi City, P. R. China

General Description of EUT	
Product Name:	4G Smart Phone
Trade Name:	/
Model No.:	B125C
Adding Model(s):	/
<i>The EUT Main board support GSM850/900/DCS1800/PCS1900, WCDMA Band 1/2/4/5, LTE Band 2/4/7/12/17 function. It is intended for speech, Multimedia Message Service (MMS) transmission. It is equipped with GPRS/EDGE class 12 for GSM850/900/DCS1800/PCS1900, GPS, FM, Bluetooth and Wi-Fi functions. For more information see the following datasheet</i>	
<i>Note: The test data is gathered from a production sample, provided by the manufacturer.</i>	

Technical Characteristics of EUT	
Rated Voltage:	DC 3.8V by Battery
Rated Current:	/
Rated Power:	/
Power Adapter Model:	/
Highest Internal Frequency:	1.5GHz
Classification of ITE:	Class B

1.2 Test Standards

The following report is prepared on behalf of the Guizhou Fortuneship Technology Co., Ltd. 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

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	$\pm 2.88\text{dB}$
Transmitter Spurious Emissions	Radiated	$\pm 5.1\text{dB}$

1.7 Test Equipment List and Details

No.	Description	Manufacturer	Model	Serial No.	Cal Date	Due Date
SEMT-1072	Spectrum Analyzer	Agilent	E4407B	MY41440400	2017-06-12	2018-06-11
SEMT-1031	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2017-06-12	2018-06-11
SEMT-1007	EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2017-06-12	2018-06-11
SEMT-1008	Amplifier	Agilent	8447F	3113A06717	2017-06-12	2018-06-11
SEMT-1043	Amplifier	C&D	PAP-1G18	2002	2017-06-12	2018-06-11
SEMT-1011	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2017-06-12	2018-06-11
SEMT-1042	Horn Antenna	ETS	3117	00086197	2017-06-12	2018-06-11
SEMT-1069	Loop Antenna	Schwarz beck	FMZB 1516	9773	2017-06-12	2018-06-11
SEMT-1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2017-06-12	2018-06-11
SEMT-1003	L.I.S.N	Schwarz beck	NSLK8126	8126-224	2017-06-12	2018-06-11
SEMT-1002	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2017-06-12	2018-06-11

2. SUMMARY OF TEST RESULTS

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

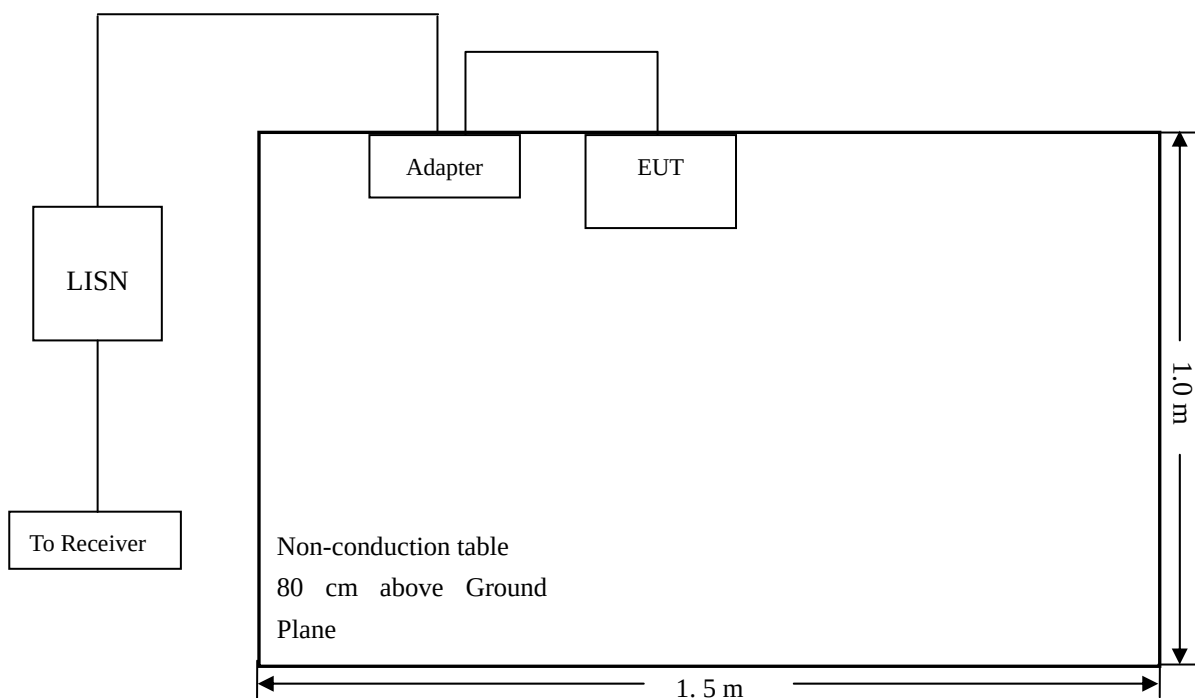
N/A: not applicable

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:

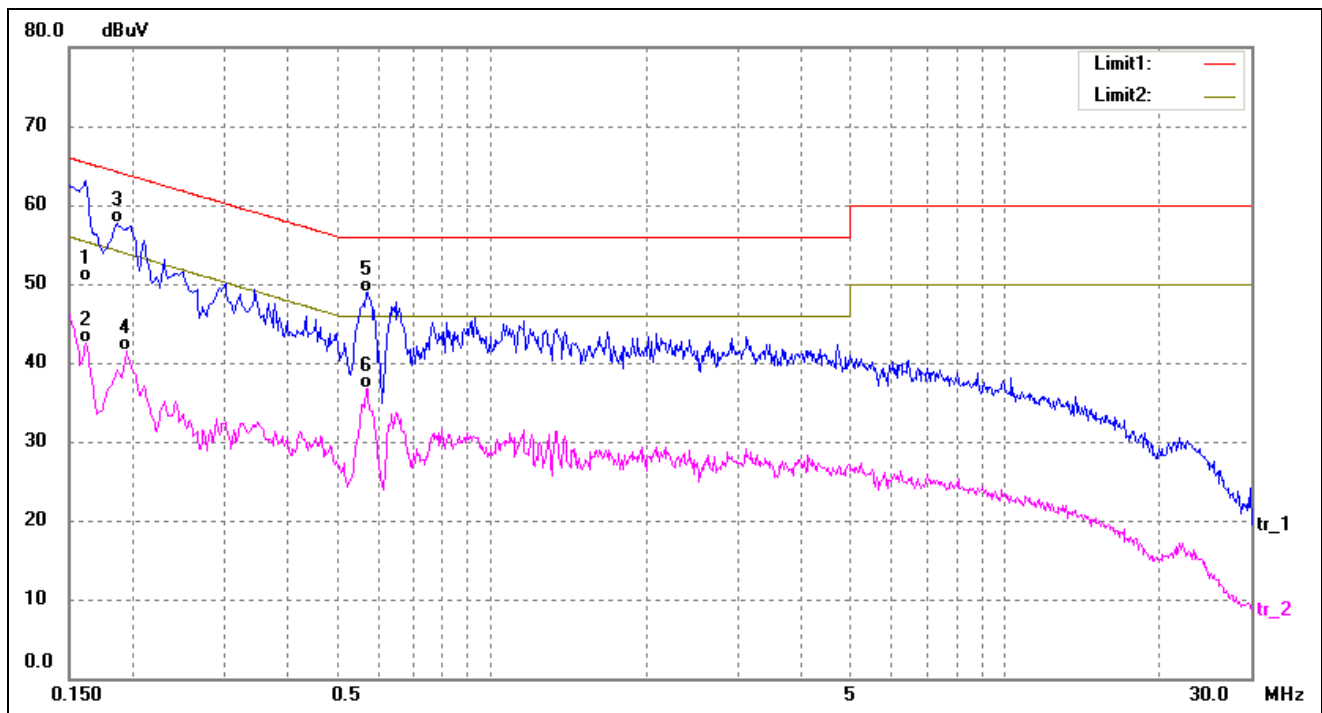
-5.54 dB at **0.2060 MHz** in the **Line, QP** detector, **TM2** Mode, 0.15-30MHz

3.5 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

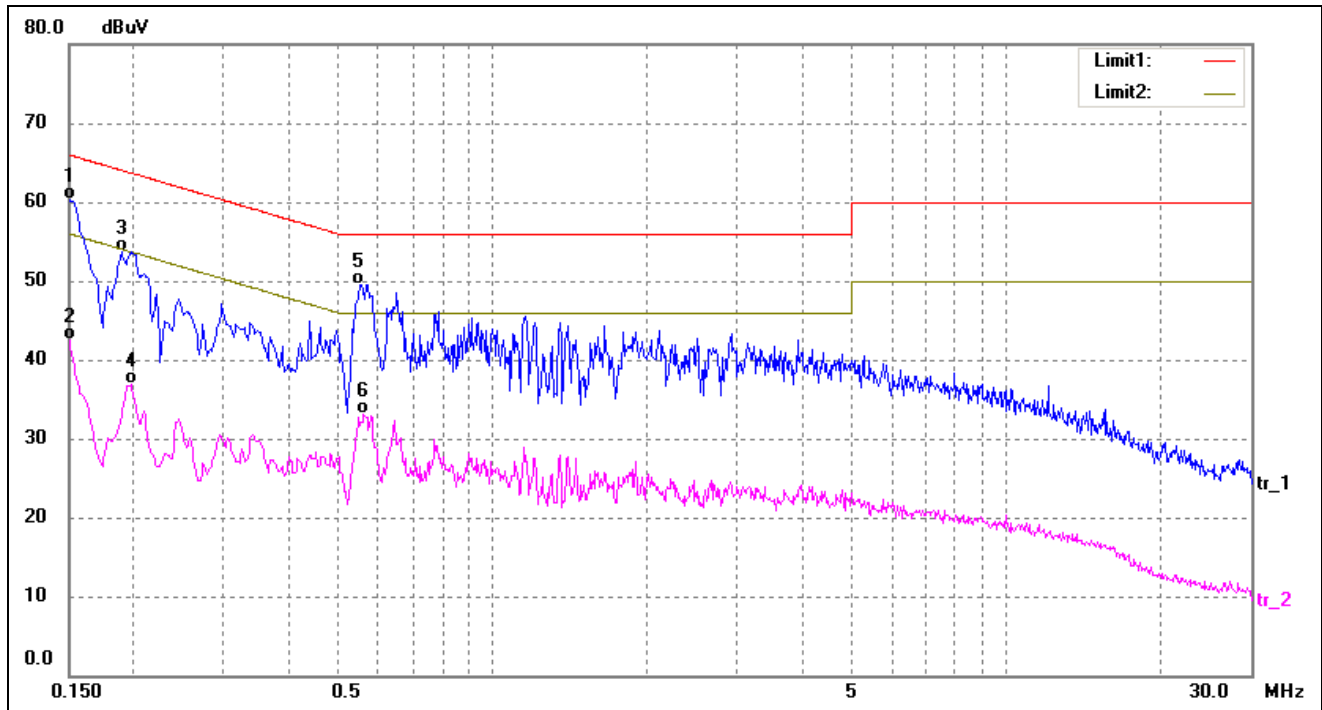
EUT: 4G Smart Phone
 Tested Model: B125C
 Operating Condition: TM1
 Comment: AC 120V/60Hz; Adapter DC 5V

Test Specification: Neutral



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1620	40.45	9.84	50.29	65.36	-15.07	QP
2	0.1620	32.67	9.84	42.51	55.36	-12.85	AVG
3*	0.1860	47.91	9.81	57.72	64.21	-6.49	QP
4	0.1940	31.63	9.81	41.44	53.86	-12.42	AVG
5	0.5700	39.09	9.79	48.88	56.00	-7.12	QP
6	0.5700	26.88	9.79	36.67	46.00	-9.33	AVG

Test Specification: Line

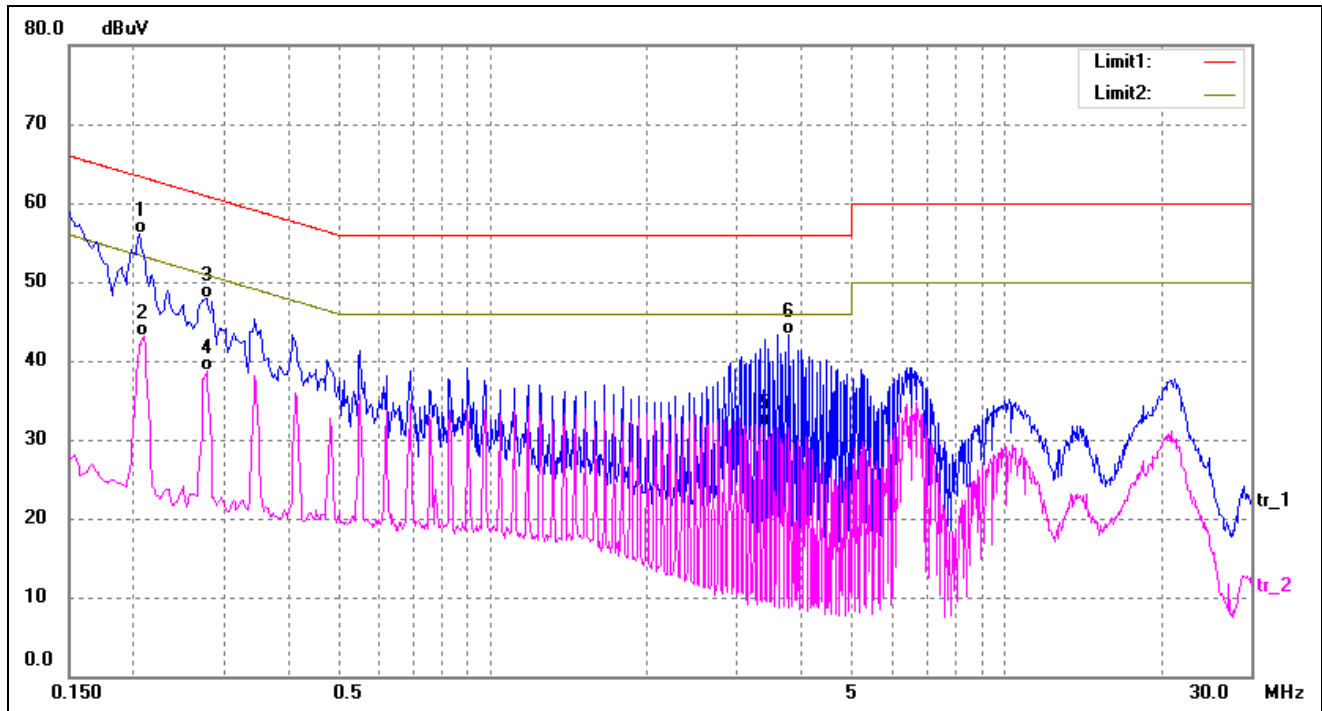


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.1500	50.40	9.85	60.25	66.00	-5.75	QP
2	0.1500	32.74	9.85	42.59	56.00	-13.41	AVG
3	0.1900	43.85	9.81	53.66	64.04	-10.38	QP
4	0.1980	27.03	9.80	36.83	53.69	-16.86	AVG
5	0.5540	39.79	9.80	49.59	56.00	-6.41	QP
6	0.5620	23.40	9.80	33.20	46.00	-12.80	AVG

Plot of Conducted Emissions Test Data

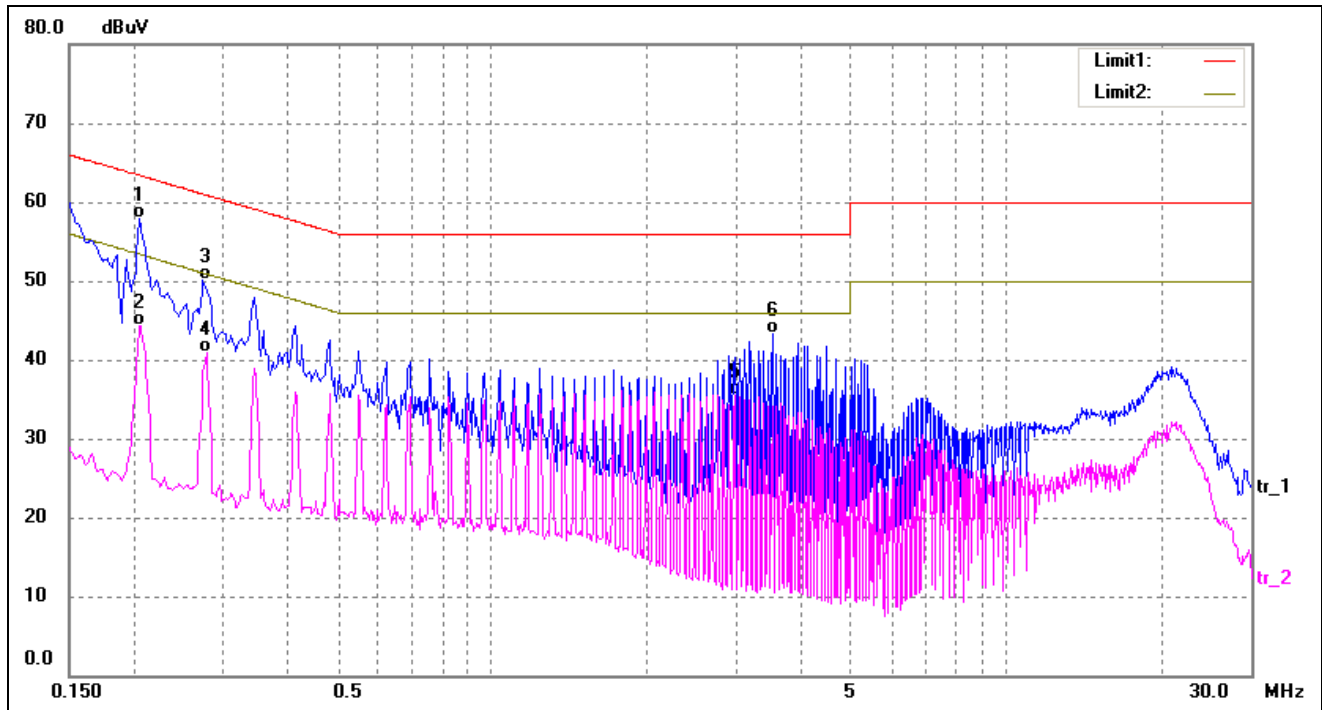
EUT: 4G Smart Phone
Tested Model: B125C
Operating Condition: TM2
Comment: AC 120V/60Hz; USB 5V

Test Specification: Neutral



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.2060	46.21	9.80	56.01	63.37	-7.36	QP
2	0.2100	33.29	9.80	43.09	53.21	-10.12	AVG
3	0.2780	38.05	9.80	47.85	60.88	-13.03	QP
4	0.2780	28.84	9.80	38.64	50.88	-12.24	AVG
5	3.3820	21.98	9.70	31.68	46.00	-14.32	AVG
6	3.7980	33.64	9.69	43.33	56.00	-12.67	QP

Test Specification: Line



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.2060	48.02	9.80	57.82	63.36	-5.54	QP
2	0.2060	34.48	9.80	44.28	53.36	-9.08	AVG
3	0.2740	40.26	9.80	50.06	60.99	-10.93	QP
4	0.2779	31.01	9.80	40.81	50.88	-10.07	AVG
5	2.9620	25.76	9.71	35.47	46.00	-10.53	AVG
6	3.5100	33.63	9.70	43.33	56.00	-12.67	QP

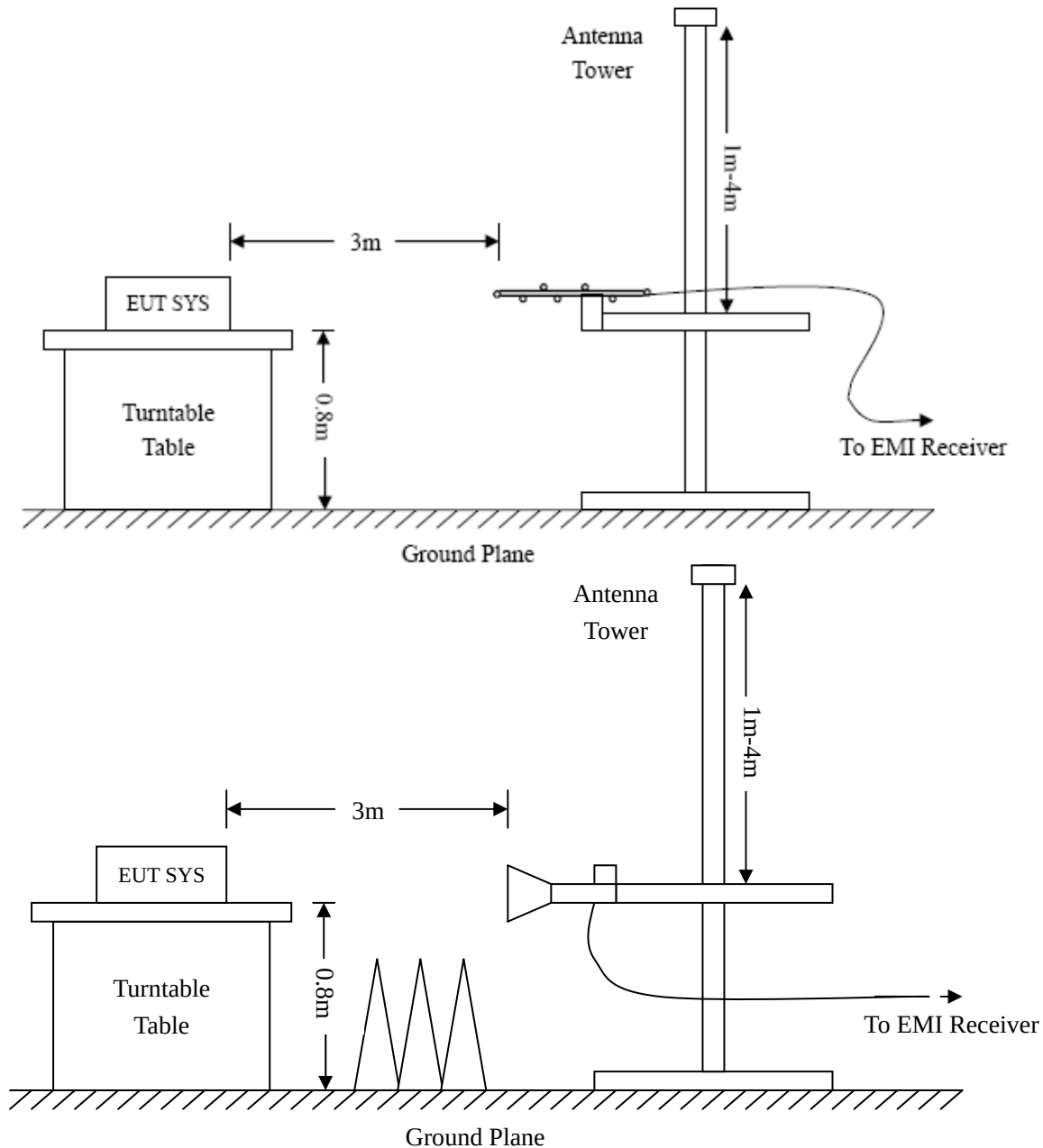
4. Radiated Emissions

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

RBW=10KHz,

VBW =30KHz

Sweep time= Auto

Trace = max hold

Detector function = peak

Frequency :30MHz-1GHz

RBW=120KHz,

VBW=300KHz

Sweep time= Auto

Trace = max hold

Detector function = peak, QP

Frequency :Above 1GHz

RBW=1MHz,

VBW=3MHz(Peak), 10Hz(AV)

Sweep time= Auto

Trace = max hold

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:

$$\text{Corr. Ampl.} = \text{Indicated Reading} - \text{Corr. Factor}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dB μ V means the emission is 6dB μ V below the maximum limit for a Class B device. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15.109(a) Limit}$$

4.4 Environmental Conditions

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

4.5 Summary of Test Results/Plots

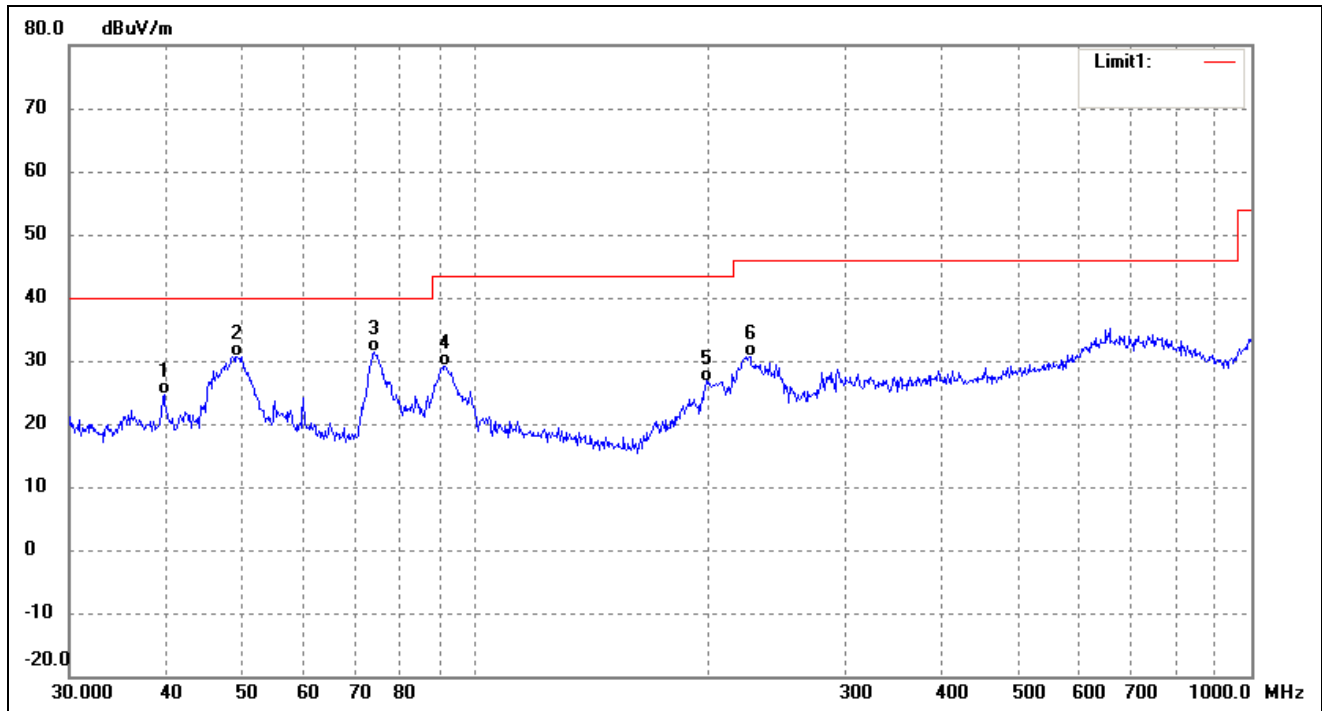
According to the data, the EUT complied with the FCC Part 15.109(a) rule, and had the worst margin of:

-5.61 dB at 73.6170 MHz in the Vertical polarization, TM2 Mode, 30MHz to 12.75 GHz, 3Meters

Plot of Radiated Emissions Test Data

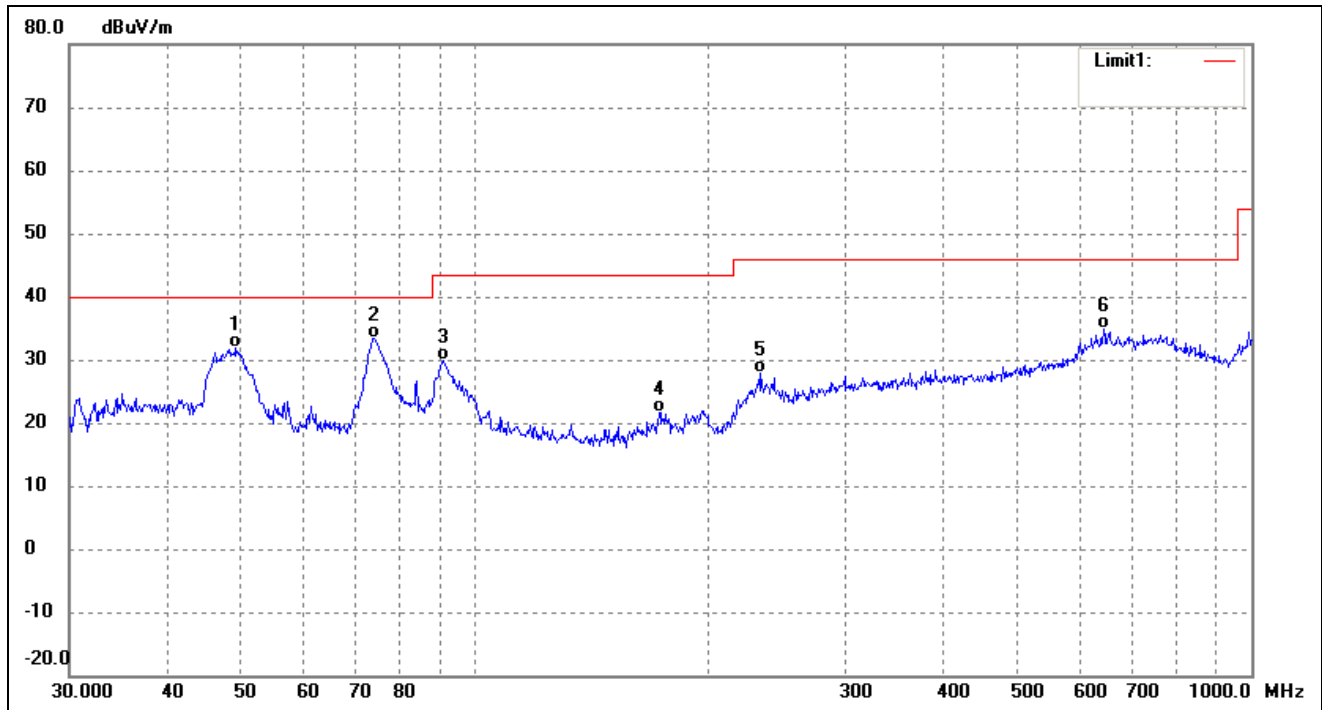
EUT: 4G Smart Phone
 Tested Model: B125C
 Operating Condition: TM1
 Comment: AC 120V/60Hz; Adapter DC 5V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	39.7147	19.86	4.89	24.75	40.00	-15.25	220	100	QP
2	49.3594	25.74	4.98	30.72	40.00	-9.28	90	100	QP
3	74.1351	29.09	2.39	31.48	40.00	-8.52	249	100	QP
4	91.4949	25.61	3.64	29.25	43.50	-14.25	118	100	QP
5	198.5880	23.46	3.29	26.75	43.50	-16.75	283	100	QP
6	226.0994	22.69	8.05	30.74	46.00	-15.26	158	100	QP

Test Specification: Vertical

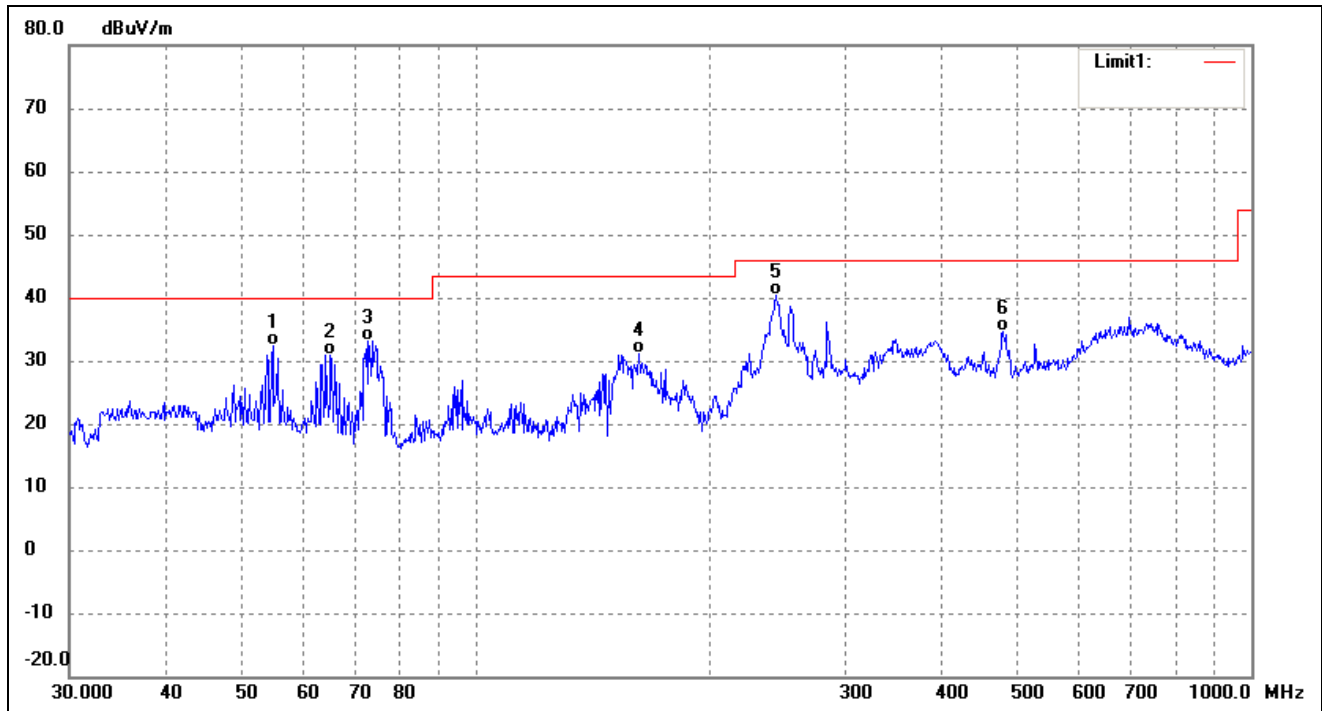


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	49.1866	26.79	4.97	31.76	40.00	-8.24	308	100	QP
2	74.1351	31.11	2.39	33.50	40.00	-6.50	99	100	QP
3	90.8554	26.23	3.54	29.77	43.50	-13.73	259	100	QP
4	172.5988	19.16	2.46	21.62	43.50	-21.88	95	100	QP
5	233.3487	19.31	8.51	27.82	46.00	-18.18	307	100	QP
6	645.1195	17.03	17.94	34.97	46.00	-11.03	345	100	QP

Plot of Radiated Emissions Test Data

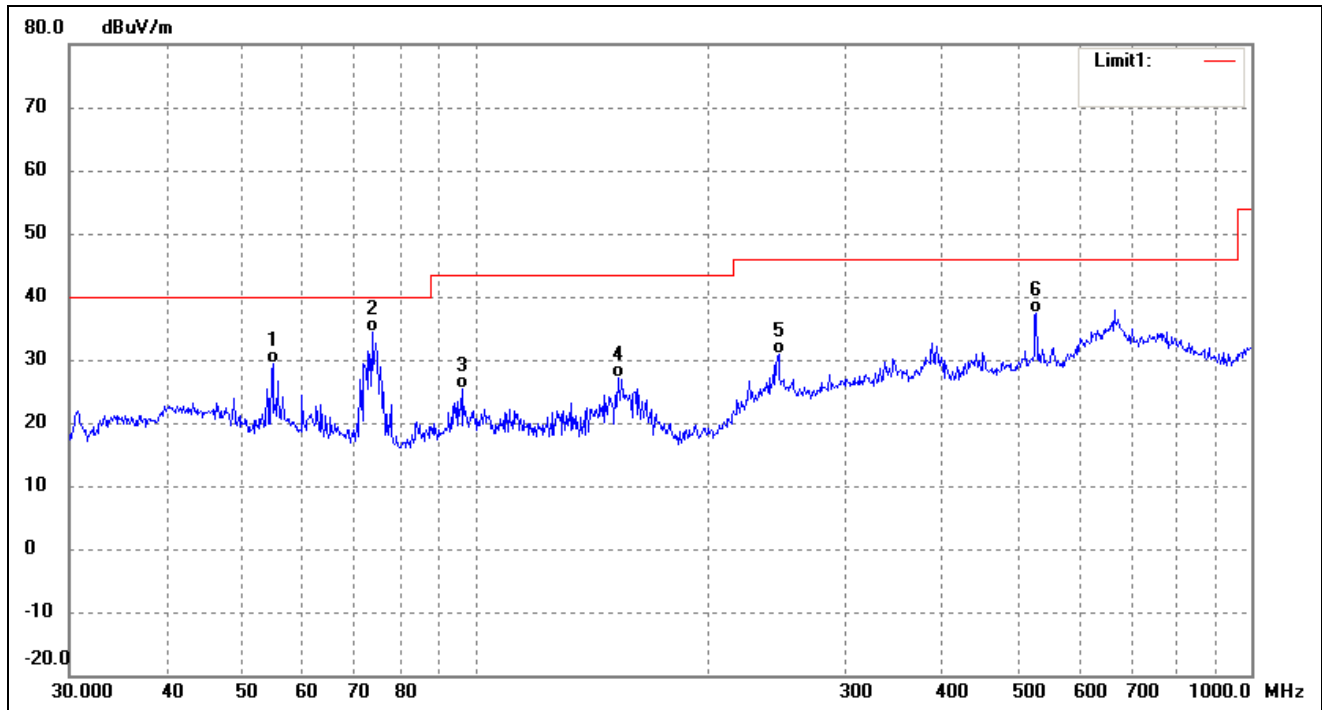
EUT: 4G Smart Phone
Tested Model: B125C
Operating Condition: TM2
Comment: AC 120V/60Hz; USB 5V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	54.8348	27.24	5.03	32.27	40.00	-7.73	293	100	QP
2	65.1145	26.92	3.96	30.88	40.00	-9.12	189	100	QP
3	72.8466	30.69	2.54	33.23	40.00	-6.77	89	100	QP
4	162.6106	28.73	2.42	31.15	43.50	-12.35	249	100	QP
5	244.2321	31.24	9.09	40.33	46.00	-5.67	174	100	QP
6	478.8456	22.00	12.59	34.59	46.00	-11.41	277	100	QP

Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	54.8348	24.37	5.03	29.40	40.00	-10.60	172	100	QP
2	73.6170	31.94	2.45	34.39	40.00	-5.61	158	100	QP
3	96.0986	20.95	4.34	25.29	43.50	-18.21	62	100	QP
4	152.6641	24.51	2.65	27.16	43.50	-16.34	232	100	QP
5	245.9509	21.63	9.16	30.79	46.00	-15.21	64	100	QP
6	528.2458	23.63	13.86	37.49	46.00	-8.51	317	100	QP

Plot of Radiated Emissions Test Data

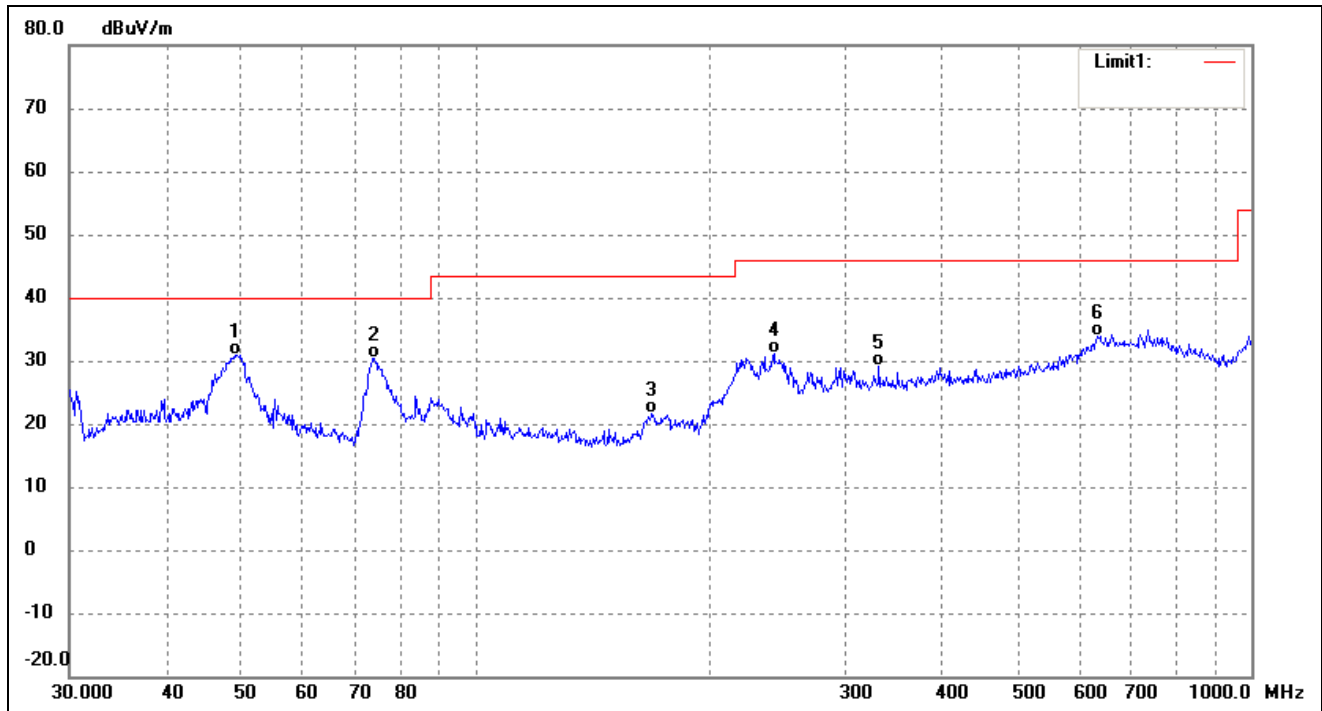
EUT: 4G Smart Phone

Tested Model: B125C

Operating Condition: TM3

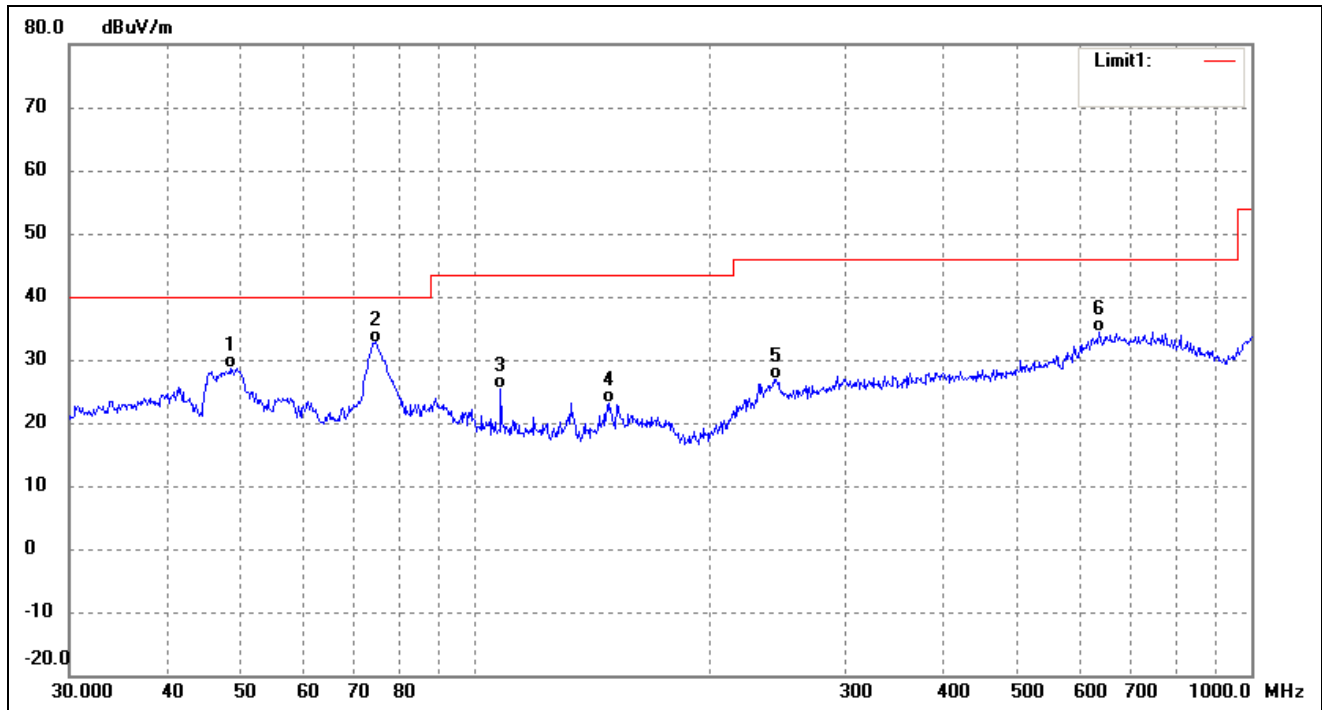
Comment: DC 3.8V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	49.0145	25.89	4.97	30.86	40.00	-9.14	117	100	QP
2	74.1351	27.95	2.39	30.34	40.00	-9.66	172	100	QP
3	169.0054	19.08	2.46	21.54	43.50	-21.96	125	100	QP
4	242.5253	22.03	9.03	31.06	46.00	-14.94	127	100	QP
5	331.3547	17.50	11.60	29.10	46.00	-16.90	130	100	QP
6	633.9073	15.96	17.86	33.82	46.00	-12.18	234	100	QP

Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	48.3318	23.58	4.96	28.54	40.00	-11.46	85	100	QP
2	74.3955	30.39	2.36	32.75	40.00	-7.25	158	100	QP
3	107.8877	20.51	4.88	25.39	43.50	-18.11	59	100	QP
4	148.4410	20.25	2.82	23.07	43.50	-20.43	124	100	QP
5	244.2321	17.88	9.09	26.97	46.00	-19.03	185	100	QP
6	636.1340	16.56	17.93	34.49	46.00	-11.51	167	100	QP

Plot of Radiated Emissions Test Data

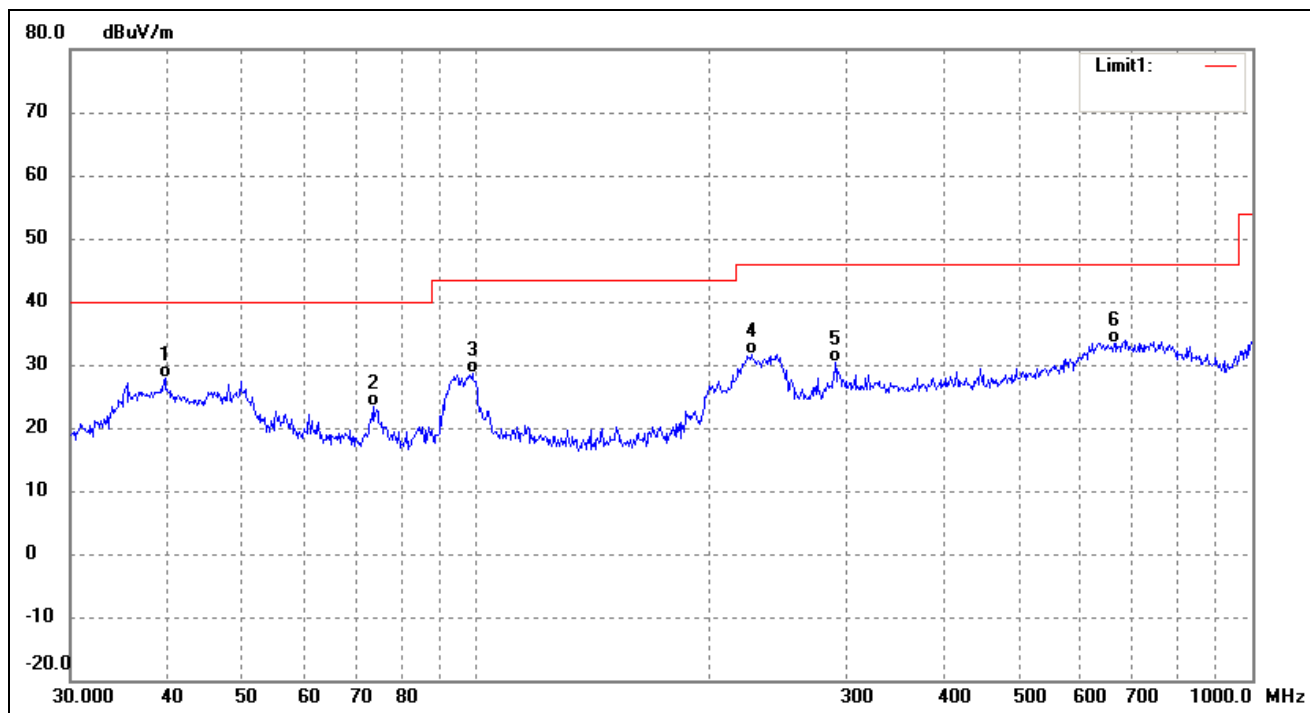
EUT: 4G Smart Phone

Tested Model: B125C

Operating Condition: TM4

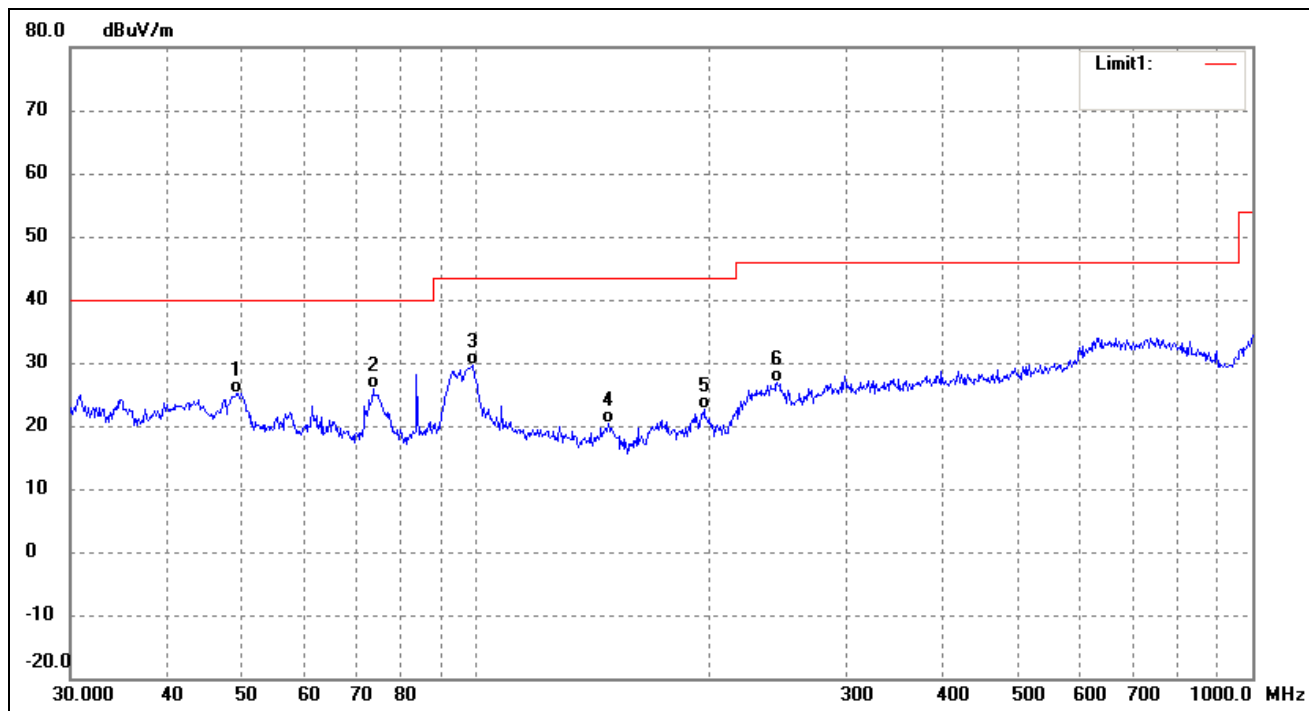
Comment: DC 3.8V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	39.7147	23.08	4.89	27.97	40.00	-12.03	84	100	QP
2	73.6170	20.83	2.45	23.28	40.00	-16.72	201	100	QP
3	98.8326	23.84	4.76	28.60	43.50	-14.90	52	100	QP
4	226.0994	23.58	8.05	31.63	46.00	-14.37	197	100	QP
5	290.0172	18.69	11.57	30.26	46.00	-15.74	102	100	QP
6	663.4729	15.69	17.76	33.45	46.00	-12.55	250	100	QP

Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	49.1866	20.24	4.97	25.21	40.00	-14.79	197	100	QP
2	73.6170	23.47	2.45	25.92	40.00	-14.08	102	100	QP
3	99.1797	24.71	4.81	29.52	43.50	-13.98	86	100	QP
4	147.9214	17.42	2.84	20.26	43.50	-23.24	297	100	QP
5	196.5098	19.34	3.20	22.54	43.50	-20.96	142	100	QP
6	244.2321	17.72	9.09	26.81	46.00	-19.19	190	100	QP

Note: Testing is carried out with frequency rang 30MHz 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.

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