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FCC Part 15B
Measurement and Test Report

For

JALA ASIA LTD.

SUITE 1004, 10TH FLOOR, BANK OF AMERICA TOWER, 12

HARCOURT ROAD, CENTRAL, HONGKONG

FCC ID: 2AFYR-ENTELE5

Test Rule(s):	FCC Part 15 Subpart B
Product Description:	Smart phone
Tested Model:	Entel E5
Report No.:	STR15098139I-6
Tested Date:	2015-09-19 to 2015-10-15
Issued Date:	2015-10-19
Tested By:	Seven Song/ Engineer
Reviewed By:	Silin Chen / EMC Manager
Approved & Authorized By:	Jandy So / PSQ Manager

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

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	JALA ASIA LTD.
Address of applicant:	SUITE 1004, 10TH FLOOR, BANK OF AMERICA TOWER, 12 HARCOURT ROAD, CENTRAL, HONGKONG
Manufacturer:	JALA ASIA LTD.
Address of manufacturer:	SUITE 1004, 10TH FLOOR, BANK OF AMERICA TOWER, 12 HARCOURT ROAD, CENRAL, HONGKONG

General Description of EUT	
Product Name:	Smart phone
Trade Name:	entel
Model No.:	Entel E5
Adapter Model:	Entel
	INPUT:100-240V,50/60Hz,0.5A; OUTPUT:5V,1A/2.1A
Hardware version:	N316B-13
Software version:	V158.100YP.1.10092015
The EUT Main board support GSM850/900/DCS1800/PCS1900, WCDMA Band 2/5, LTE Band 4 function. It is intended for speech, Multimedia Message Service (MMS) transmission and Entel E5. 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	
Note: The test data is gathered from a production sample provided by the manufacturer.	

Technical Characteristics of EUT	
Rated Voltage:	DC 3.7V
Battery Capacity:	2200mAh
Rated Power:	/
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 JALA ASIA 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	With Earphone
TM2	Downloading	Connected to PC
TM3	Camera on	Powered by battery
TM4	OTG	With USB Disk
TM5	/	/

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Cable	1.5	Shielded	Without Ferrite
OTG Cable	0.15	Unshielded	Without Ferrite
Earphone	1.1	Unshielded	Without Ferrite

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Notebook	Lenovo	E10	LR-63C8R
USB Disk	SSK	SFD216	/

Special Cable List and Details

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

1.6 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal Date	Due Date
Spectrum Analyzer	Agilent	E4407B	MY41440400	2015-06-17	2016-06-16
Spectrum Analyzer	Rohde & Schwarz	FSP	836079/035	2015-06-17	2016-06-16
EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2015-06-17	2016-06-16
Amplifier	Agilent	8447F	3113A06717	2015-06-17	2016-06-16
Amplifier	C&D	PAP-1G18	2002	2015-06-17	2016-06-16
Broadband Antenna	Schwarz beck	VULB9163	9163-333	2015-06-17	2016-06-16
Horn Antenna	ETS	3117	00086197	2015-06-17	2016-06-16
Loop Antenna	Schwarz beck	FMZB 1516	9773	2015-06-17	2016-06-16
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2015-06-17	2016-06-16
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2015-06-17	2016-06-16
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2015-06-17	2016-06-16

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

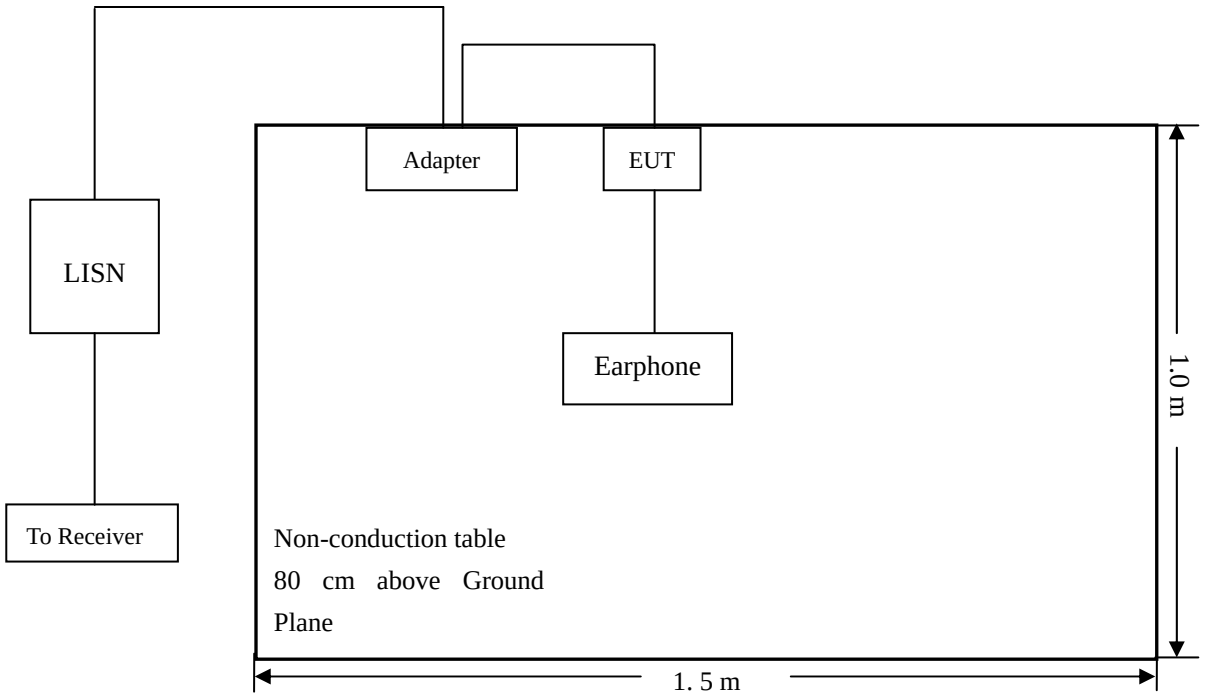
3.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ± 2.88 dB.

3.2 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.

3.3 Basic Test Setup Block Diagram



3.4 Environmental Conditions

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

3.5 Summary of Test Results/Plots

According to the data in section 3.6, the EUT complied with the FCC Part 15.107(a) Conducted margin for a Class B device, with the *worst* margin reading of:

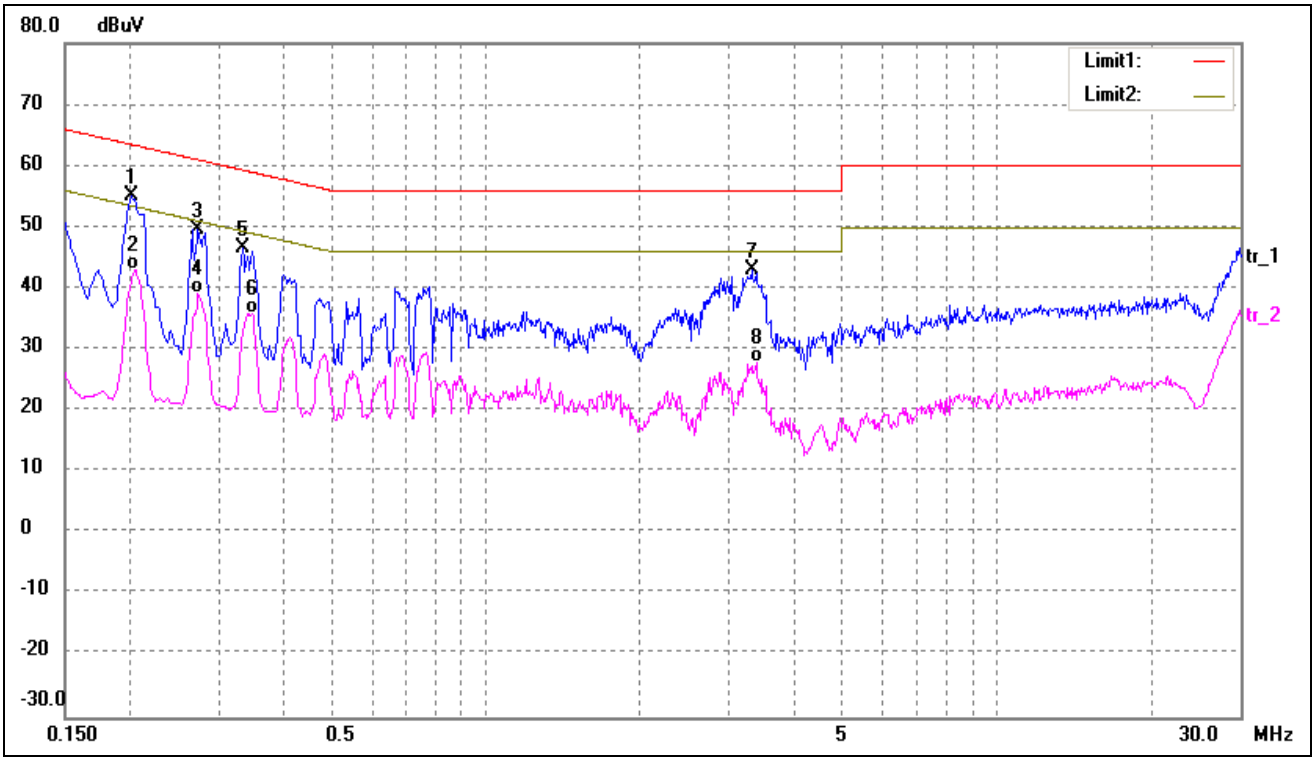
-8.34 dB at **0.2020 MHz** in the **Neutral, TM1, Peak** detector, TM1, 0.15-30MHz

3.6 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

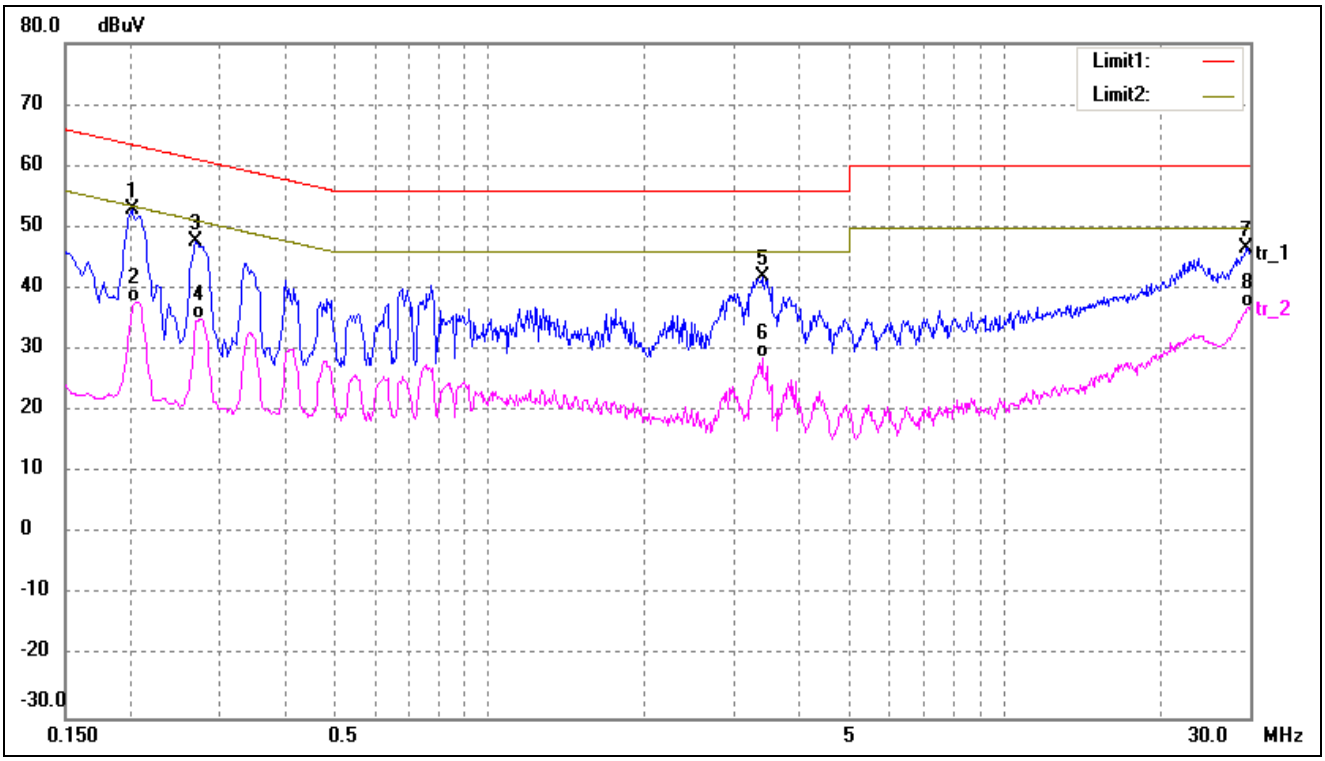
EUT: *Smart Phone*
Tested Model: *Entel E5*
Operating Condition: *TM1*
Comment: *AC 120V/60Hz; Adapter DC 5V*

Test Specification: *Neutral*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.2020	45.69	9.50	55.19	63.53	-8.34	peak
2	0.2060	33.62	9.50	43.12	53.37	-10.25	AVG
3	0.2740	40.18	9.50	49.68	61.00	-11.32	peak
4	0.2740	29.56	9.50	39.06	51.00	-11.94	AVG
5	0.3340	37.16	9.50	46.66	59.35	-12.69	peak
6	0.3500	26.34	9.50	35.84	48.96	-13.12	AVG
7	3.3260	32.90	10.00	42.90	56.00	-13.10	peak
8	3.3940	17.86	10.00	27.86	46.00	-18.14	AVG

Test Specification: *Line*

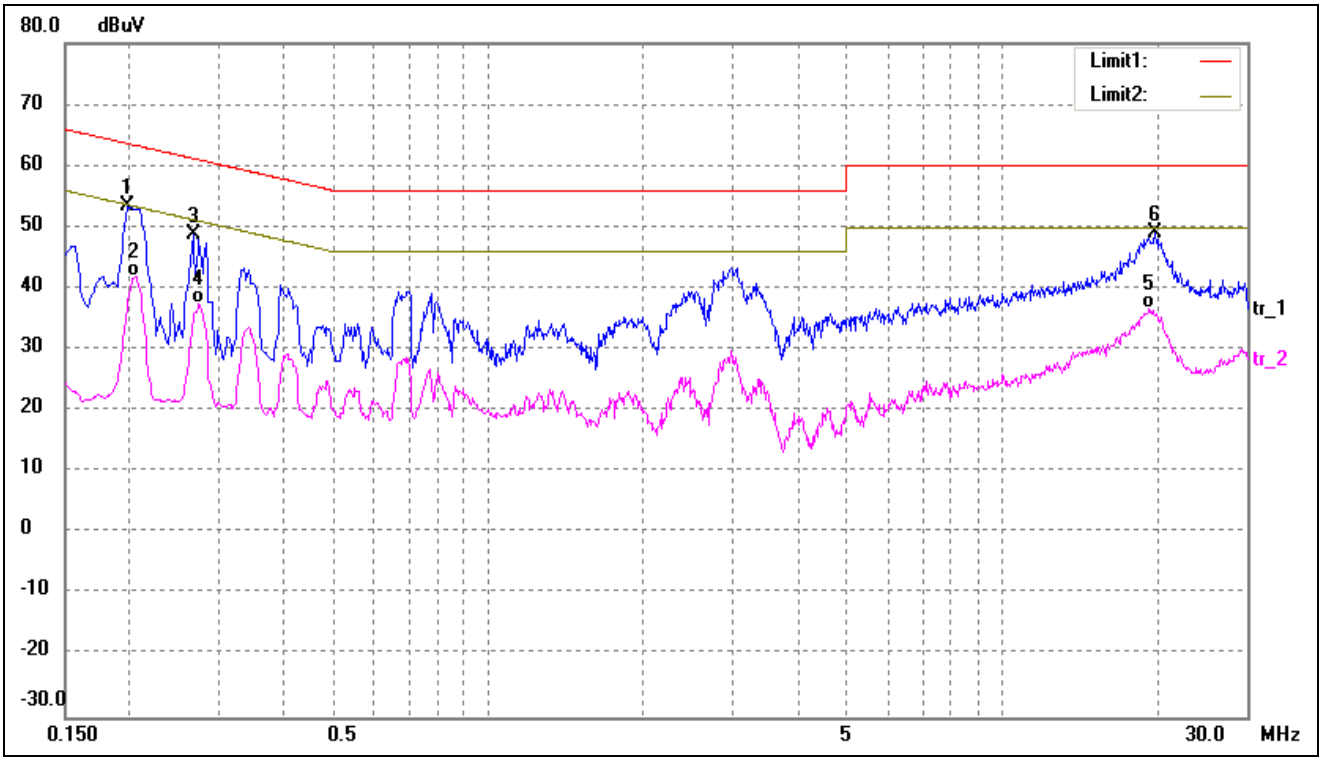


No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.2020	43.49	9.50	52.99	63.53	-10.54	peak
2	0.2060	28.40	9.50	37.90	53.37	-15.47	AVG
3	0.2700	38.16	9.50	47.66	61.12	-13.46	peak
4	0.2740	25.54	9.50	35.04	51.00	-15.96	AVG
5	3.3980	32.05	10.00	42.05	56.00	-13.95	peak
6	3.3980	18.77	10.00	28.77	46.00	-17.23	AVG
7	29.6260	33.71	13.00	46.71	60.00	-13.29	peak
8	29.8740	23.90	13.00	36.90	50.00	-13.10	AVG

Plot of Conducted Emissions Test Data

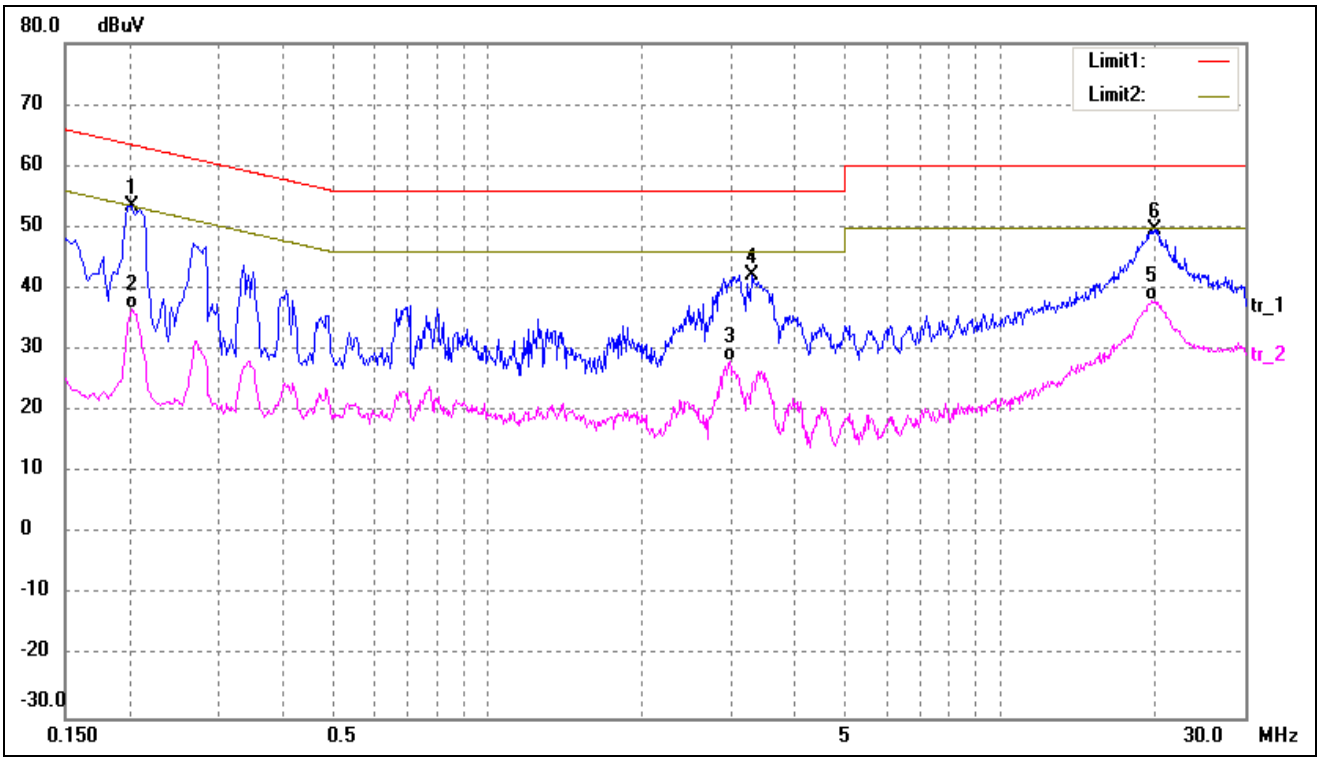
EUT: *Smart Phone*
Tested Model: *Entel E5*
Operating Condition: *TM2*
Comment: *AC 120V/60Hz; USB 5V*

Test Specification: *Neutral*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.1980	43.90	9.50	53.40	63.69	-10.29	peak
2	0.2060	32.48	9.50	41.98	53.37	-11.39	AVG
3	0.2660	39.17	9.50	48.67	61.24	-12.57	peak
4	0.2740	28.02	9.50	37.52	51.00	-13.48	AVG
5	19.4180	24.71	11.88	36.59	50.00	-13.41	AVG
6	19.8780	37.00	11.98	48.98	60.00	-11.02	peak

Test Specification: *Line*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.2020	44.06	9.50	53.56	63.53	-9.97	peak
2	0.2020	27.31	9.50	36.81	53.53	-16.72	AVG
3	2.9620	18.27	10.00	28.27	46.00	-17.73	AVG
4	3.2900	32.20	10.00	42.20	56.00	-13.80	peak
5	19.8300	26.08	11.97	38.05	50.00	-11.95	AVG
6	20.0140	37.63	12.00	49.63	60.00	-10.37	peak

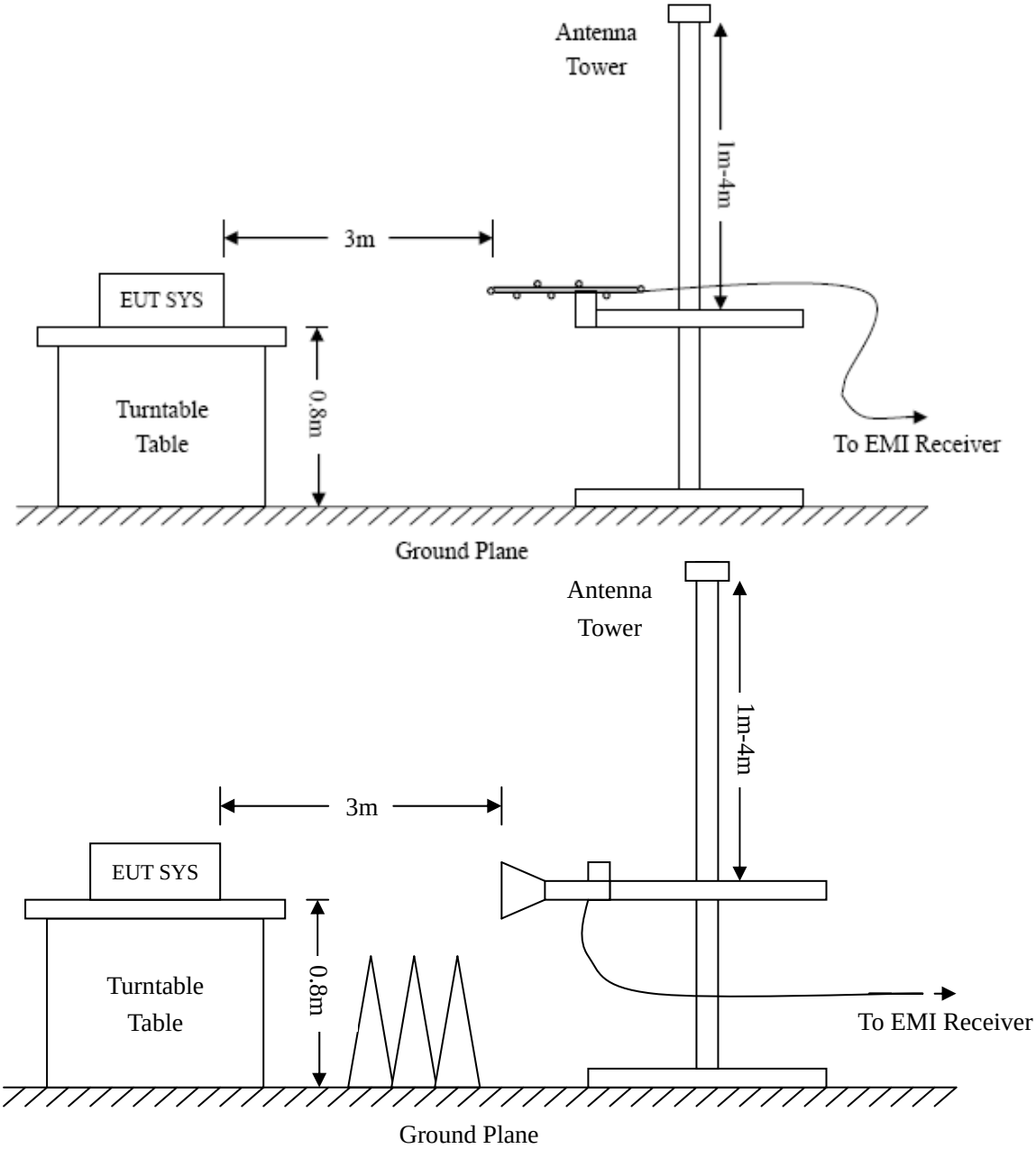
4. Radiated Emissions

4.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is ± 5.10 dB.

4.2 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.



4.3 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

4.4 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

4.5 Environmental Conditions

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

4.6 Summary of Test Results/Plots

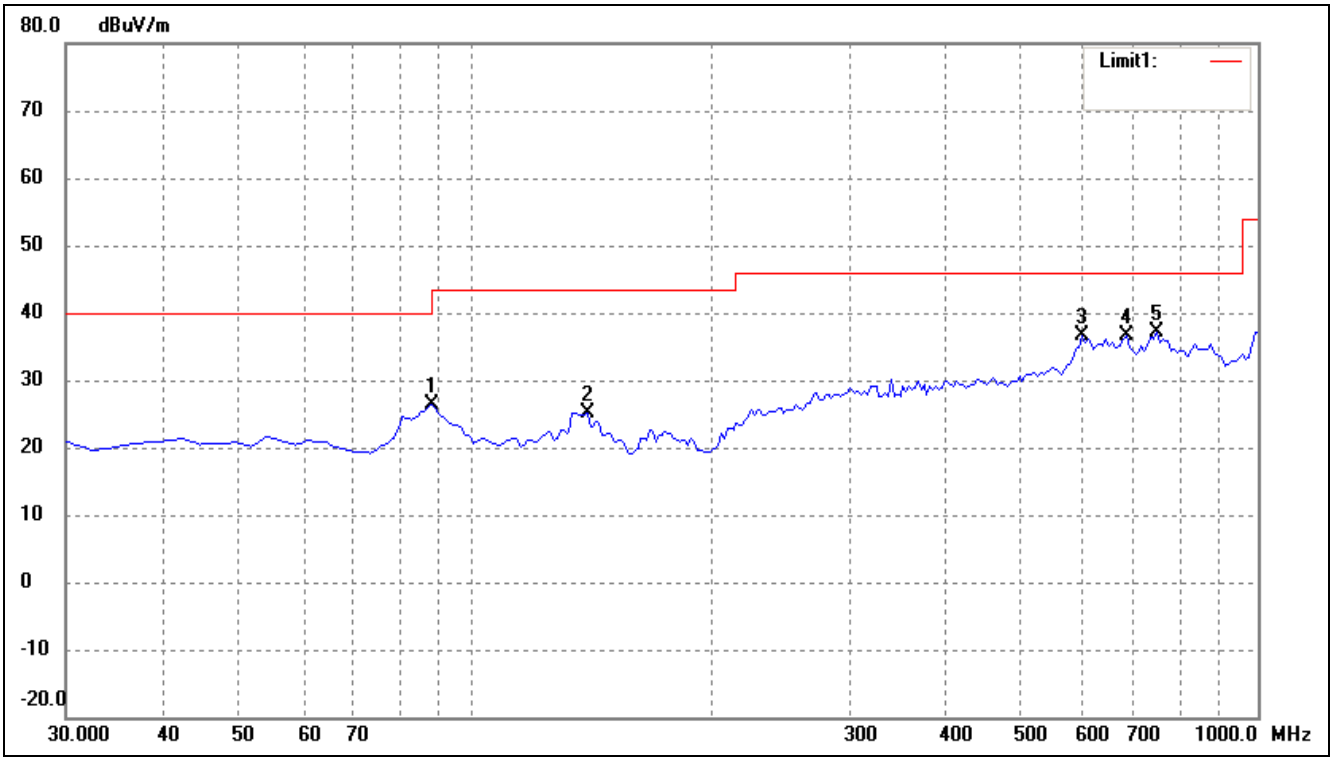
According to the data, the EUT complied with the FCC Part 15.109(a) rule, and had the worst margin of:

-4.95 dB at **52.7600 MHz** in the **Vertical** polarization, **TM2 Mode 9 kHz** to **7.5 GHz**, **3Meters**

Plot of Radiated Emissions Test Data

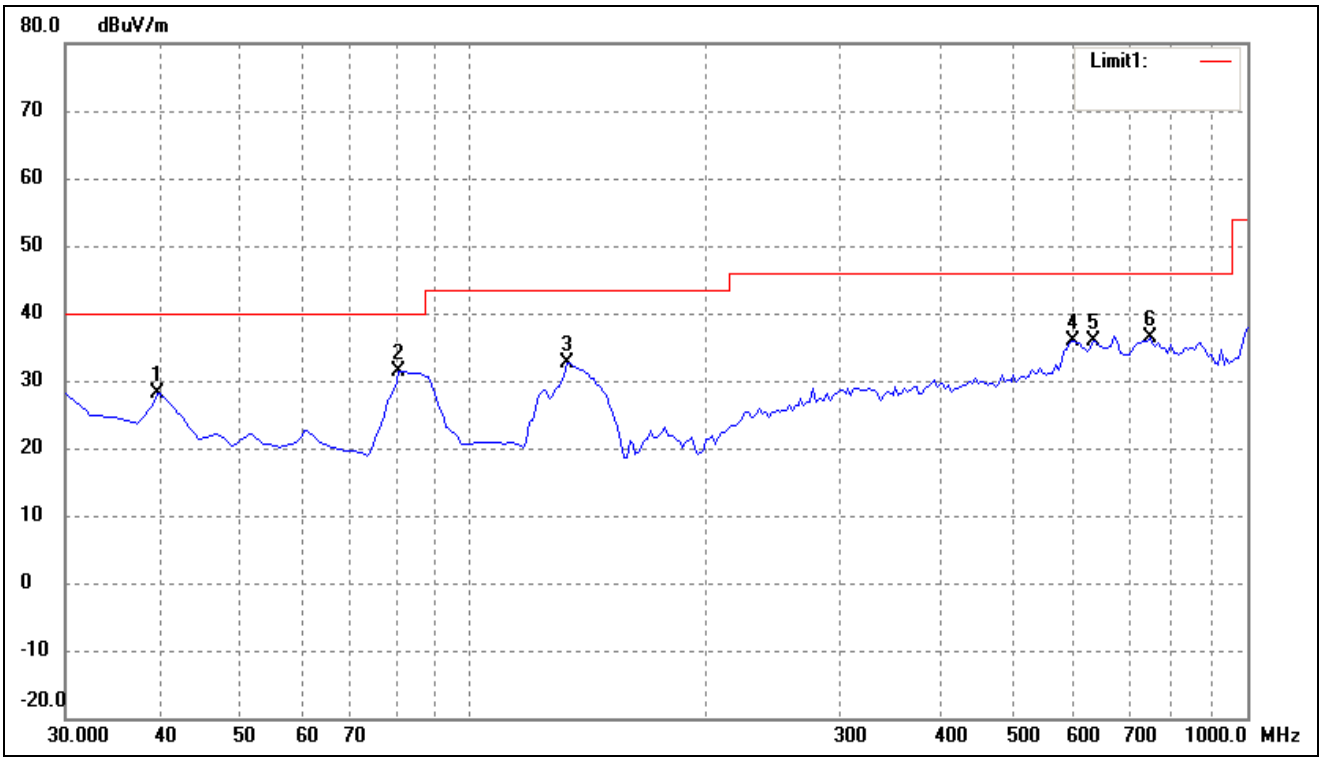
EUT: *Smart Phone*
Tested Model: *Entel E5*
Operating Condition: *TM1*
Comment: *AC 120V/60Hz; Adapter DC 5V*

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	88.2000	23.01	3.32	26.33	43.50	-17.17	225	100	QP
2	139.1250	21.60	3.48	25.08	43.50	-18.42	187	100	QP
3	599.8750	17.23	19.30	36.53	46.00	-9.47	298	100	QP
4	684.7500	17.70	18.91	36.61	46.00	-9.39	109	100	QP
5	745.3750	17.76	19.31	37.07	46.00	-8.93	119	100	QP

Test Specification: *Vertical*

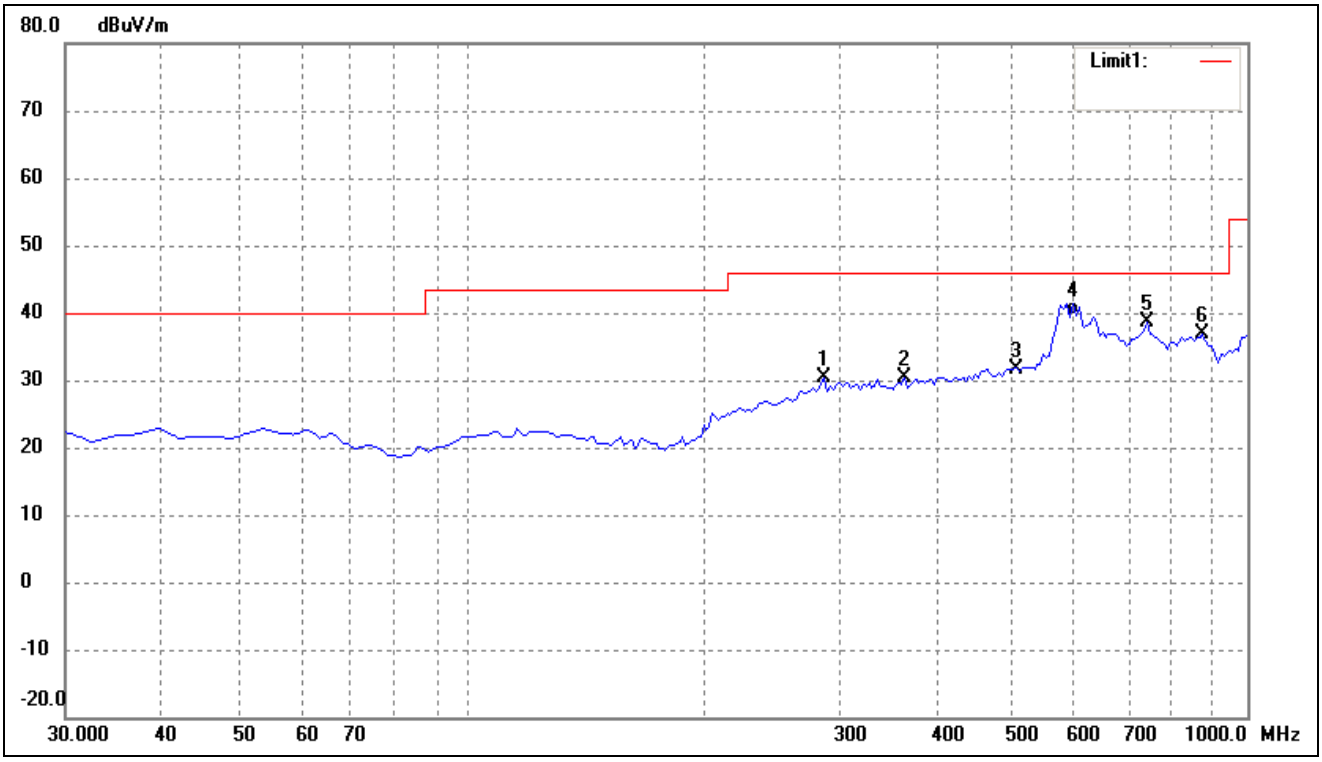


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	39.7000	22.94	5.20	28.14	40.00	-11.86	360	100	QP
2	80.9250	29.19	2.15	31.34	40.00	-8.66	117	100	QP
3	134.2750	28.71	3.87	32.58	43.50	-10.92	360	100	QP
4	597.4500	16.92	18.84	35.76	46.00	-10.24	227	100	QP
5	638.6750	17.22	18.57	35.79	46.00	-10.21	276	100	QP
6	750.2250	17.29	19.08	36.37	46.00	-9.63	180	100	QP

Plot of Radiated Emissions Test Data

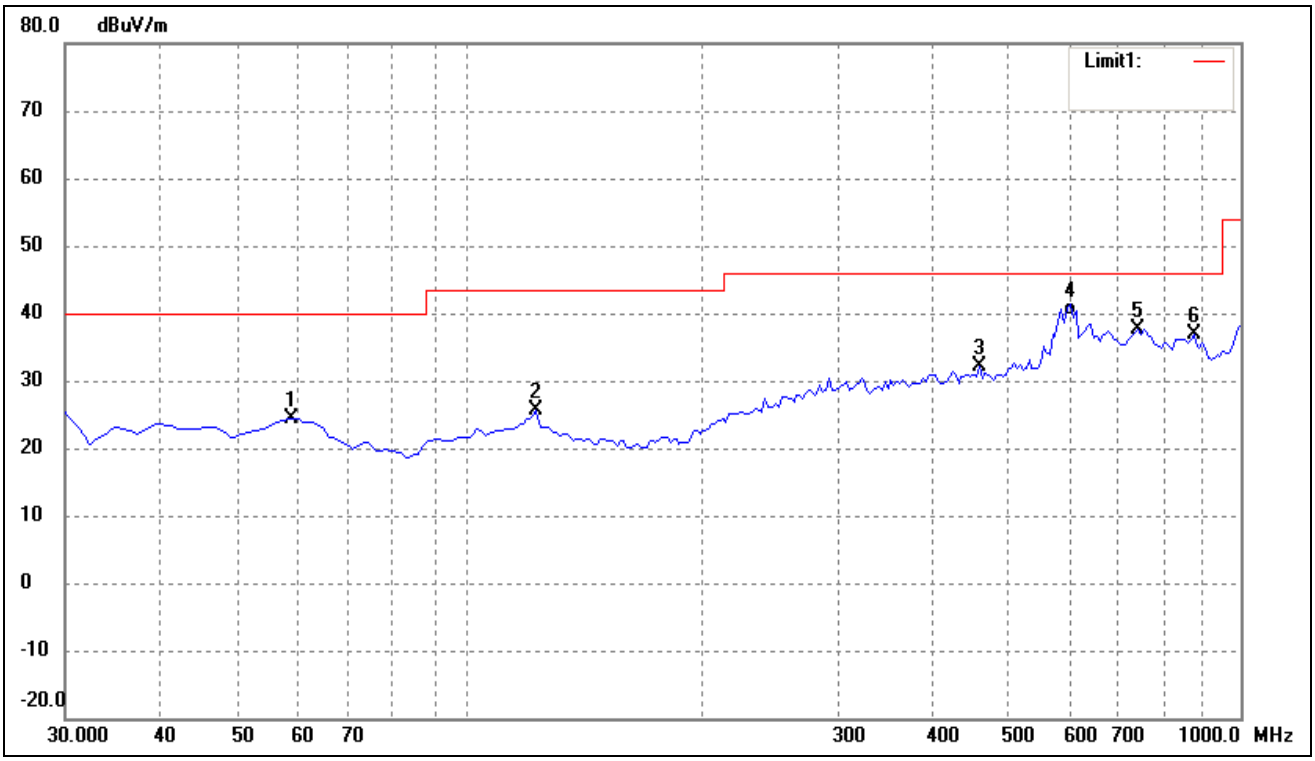
EUT: *Smart Phone*
Tested Model: *Entel E5*
Operating Condition: *TM2*
Comment: *USB: DC5V*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	287.0500	18.74	11.68	30.42	46.00	-15.58	234	100	QP
2	362.2250	18.04	12.24	30.28	46.00	-15.72	278	100	QP
3	505.3000	17.76	13.99	31.75	46.00	-14.25	290	100	QP
4	599.8750	20.30	19.30	39.60	46.00	-6.40	54	100	QP
5	745.3750	19.24	19.31	38.55	46.00	-7.45	360	100	QP
6	878.7500	19.11	17.79	36.90	46.00	-9.10	109	100	QP

Test Specification: *Vertical*

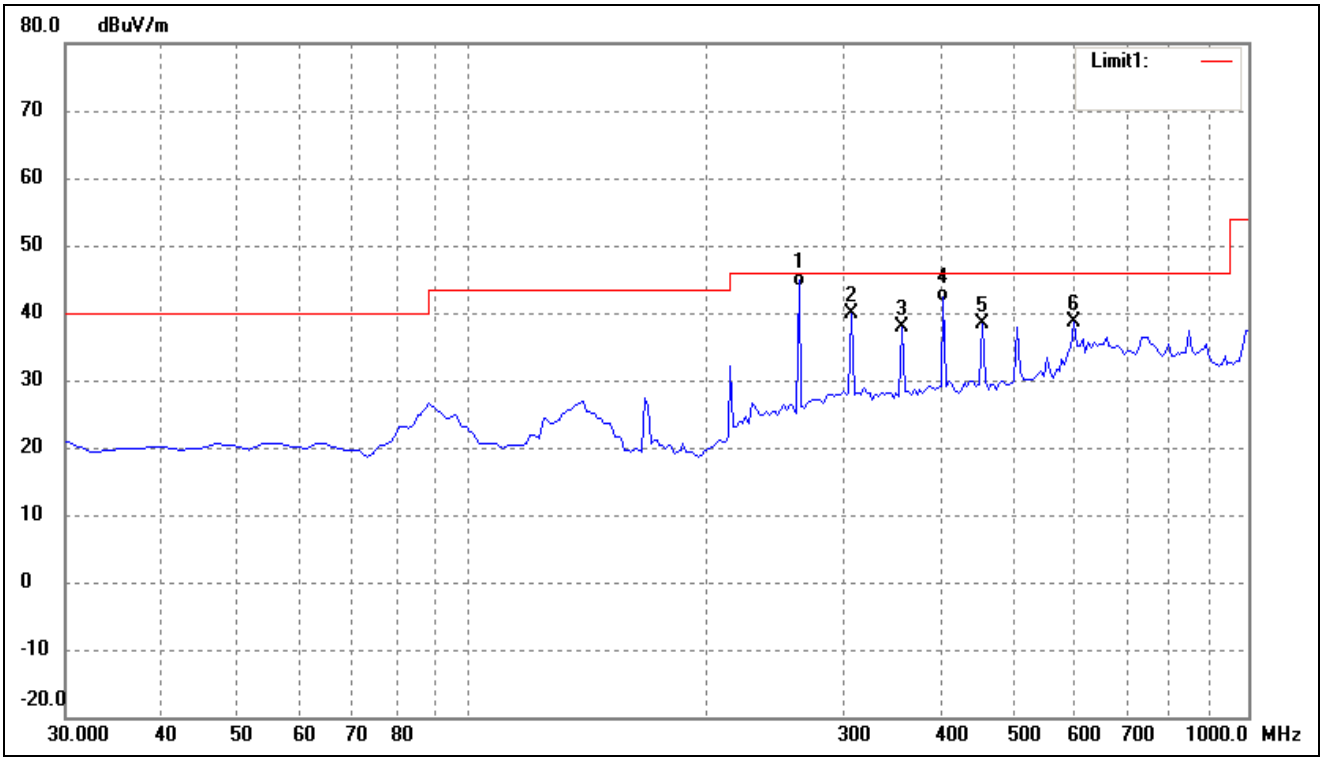


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	59.1000	19.11	5.37	24.48	40.00	-15.52	221	100	QP
2	122.1500	20.82	4.84	25.66	43.50	-17.84	67	100	QP
3	459.2250	18.47	13.54	32.01	46.00	-13.99	229	100	QP
4	602.3000	20.60	19.15	39.75	46.00	-6.25	189	100	QP
5	738.1000	18.17	19.44	37.61	46.00	-8.39	179	100	QP
6	876.3250	19.25	17.73	36.98	46.00	-9.02	332	100	QP

Plot of Radiated Emissions Test Data

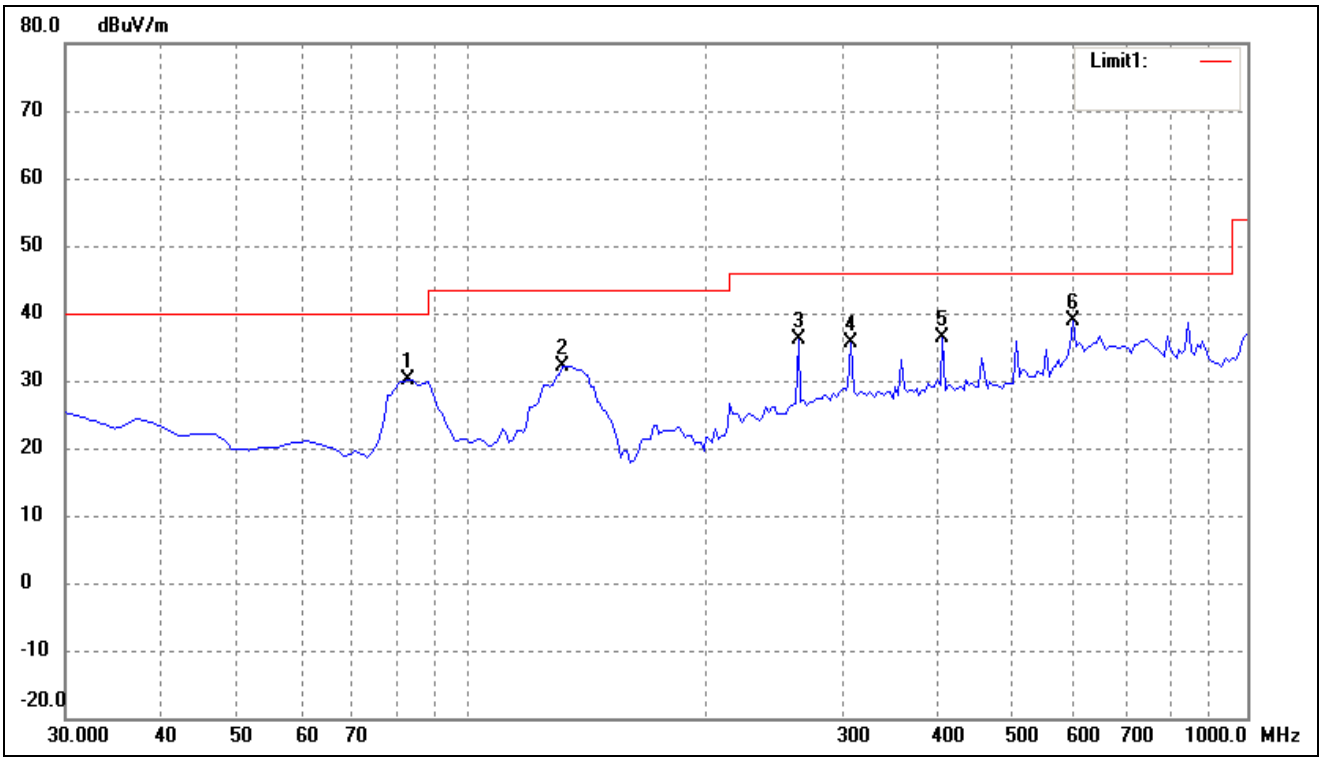
EUT: *Smart Phone*
Tested Model: *Entel E5*
Operating Condition: *TM3*
Comment: *DC 3.8V*

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	265.2250	33.60	10.39	43.99	46.00	-2.01	225	100	QP
2	311.3000	27.58	12.24	39.82	46.00	-6.18	180	100	QP
3	359.8000	25.58	12.24	37.82	46.00	-8.18	336	100	QP
4	408.3000	28.90	12.82	41.72	46.00	-4.28	360	100	QP
5	456.8000	24.81	13.48	38.29	46.00	-7.71	287	100	QP
6	599.8750	19.23	19.30	38.53	46.00	-7.47	118	100	QP

Test Specification: *Vertical*

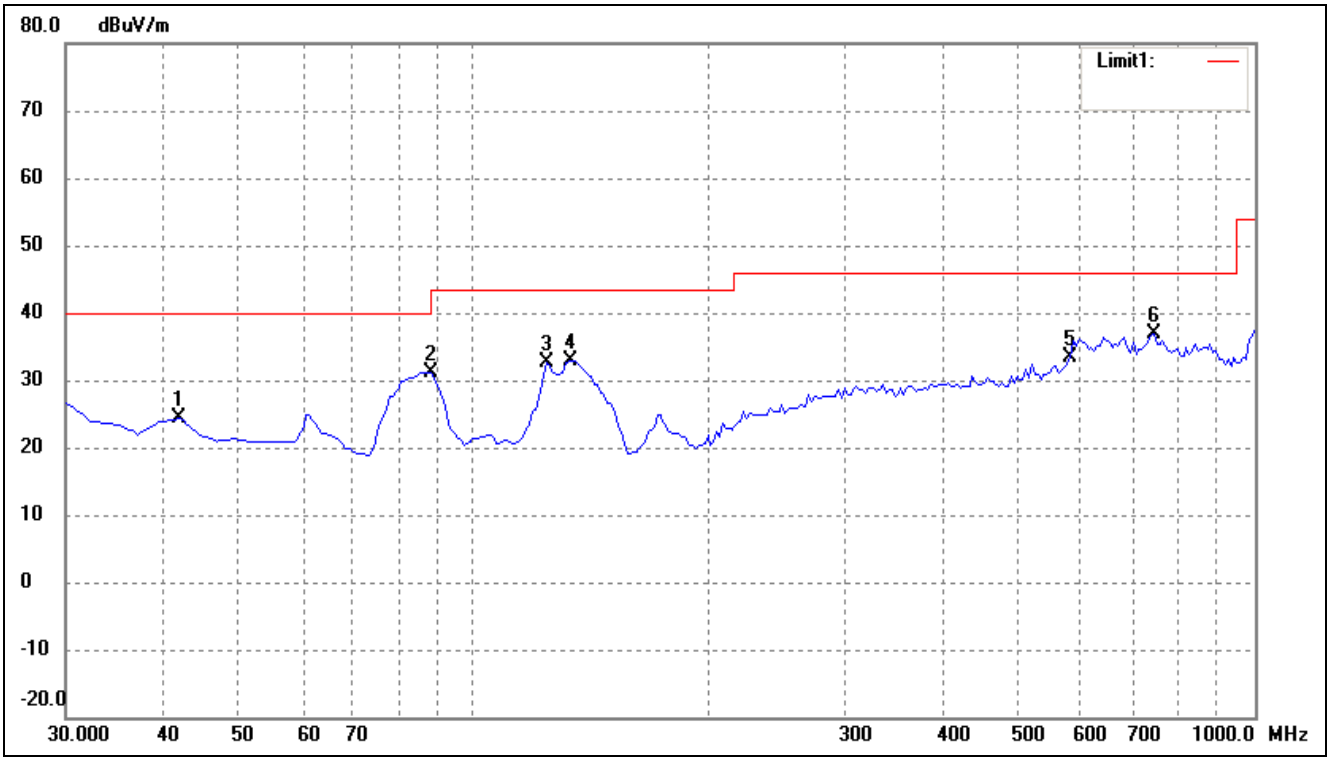


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	83.3500	27.63	2.55	30.18	40.00	-9.82	243	100	QP
2	131.8500	28.11	4.06	32.17	43.50	-11.33	98	100	QP
3	265.2250	25.67	10.39	36.06	46.00	-9.94	187	100	QP
4	311.3000	23.37	12.24	35.61	46.00	-10.39	229	100	QP
5	408.3000	23.64	12.82	36.46	46.00	-9.54	163	100	QP
6	599.8750	19.67	19.30	38.97	46.00	-7.03	360	100	QP

Plot of Radiated Emissions Test Data

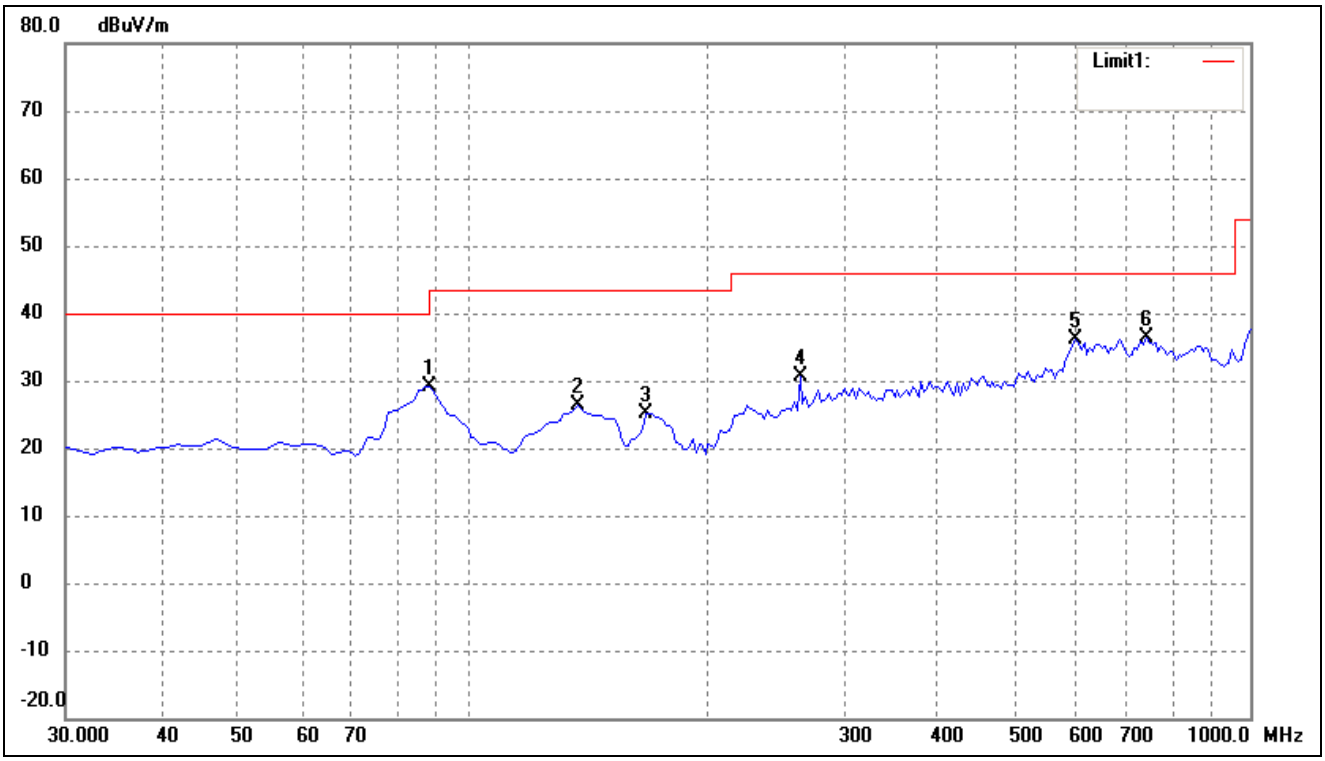
EUT: *Smart Phone*
Tested Model: *Entel E5*
Operating Condition: *TM4*
Comment: *DC 3.8V*

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	42.1250	19.09	5.25	24.34	40.00	-15.66	143	100	QP
2	88.2000	27.91	3.32	31.23	43.50	-12.27	78	100	QP
3	124.5750	27.89	4.65	32.54	43.50	-10.96	187	100	QP
4	134.2750	29.01	3.87	32.88	43.50	-10.62	229	100	QP
5	585.3250	16.68	16.58	33.26	46.00	-12.74	331	100	QP
6	742.9500	17.41	19.42	36.83	46.00	-9.17	298	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	88.2000	25.88	3.32	29.20	43.50	-14.30	165	100	QP
2	136.7000	22.74	3.67	26.41	43.50	-17.09	180	100	QP
3	168.2250	22.41	2.67	25.08	43.50	-18.42	229	100	QP
4	265.2250	20.29	10.39	30.68	46.00	-15.32	109	100	QP
5	599.8750	16.73	19.30	36.03	46.00	-9.97	220	100	QP
6	740.5250	16.85	19.53	36.38	46.00	-9.62	187	100	QP

Note: Testing is carried out with frequency rang 9kHz to the 7.5GHz, which above 1GHz is close to the noise base even antenna close up to 1meter distance according the measurement of ANSI C63.4.
The measurements greater than 20dB below the limit from 9kHz to 30MHz and test data are not provided.

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