FCC Part 15B
Measurement and Test Report

For

Xwireless LLC

11565 Old Georgetown Road, Rockville, MD, USA

FCC ID: 2ADLJBEAT3

Test Rule(s):	FCC Part 15 Subpart B
Product Description:	mobile phone
Tested Model:	Beat 3.0
Report No.:	STR17018116I-5
Tested Date:	2017-01-12 to 2017-02-20
Issued Date:	2017-02-21
Tested By:	Lucy Wei / 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:	Xwireless LLC
Address of applicant:	11565 Old Georgetown Road, Rockville, MD, USA
Manufacturer:	Xwireless LLC
Address of manufacturer:	11565 Old Georgetown Road, Rockville, MD, USA

General Description of EUT	
Product Name:	mobile phone
Trade Name:	/
Model No.:	Beat 3.0
Adding Model(s):	/
Note: The test data is gathered from a production sample, provided by the manufacturer.	

Technical Characteristics of EUT	
Rated Voltage:	DC 3.7V by battery
Rated Current:	/
Rated Power:	/
Power Adapter Model:	Beat 3.0 Input: AC100-240V, 0.2A, 50/60Hz; Output: DC5V, 1000mA
Highest Internal Frequency:	1.2GHz

1.2 Test Standards

The following report is prepared on behalf of the Xwireless 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	With Earphone
TM2	Downloading	Connected to PC
TM3	Camera on	/

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-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

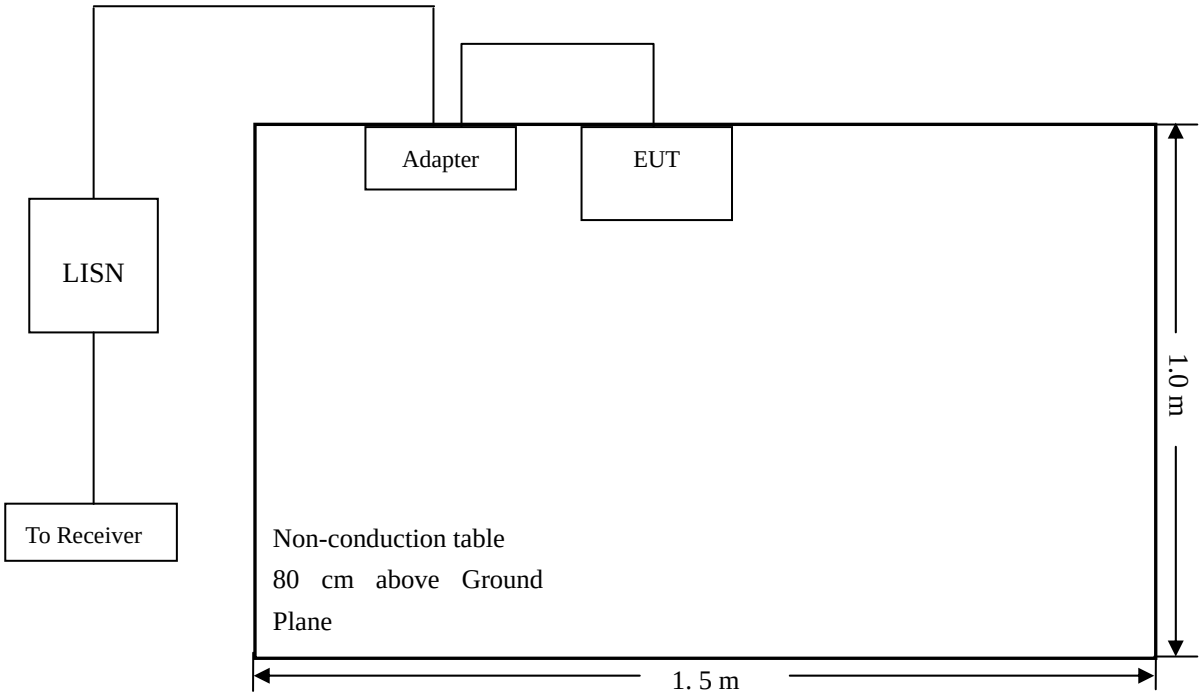
N/A: not applicable

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:

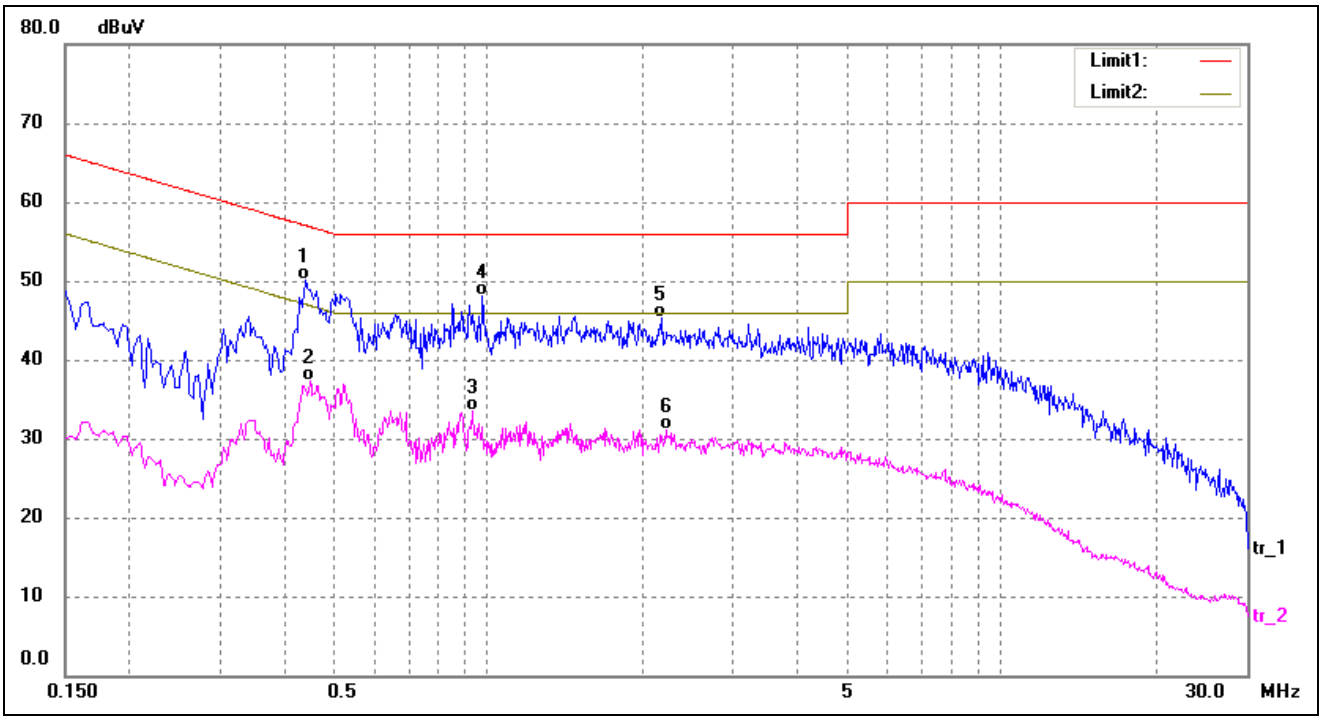
-5.88 dB at **0.6900 MHz** in the **Line**, **QP** detector, **TM2** mode, 0.15-30MHz

3.5 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

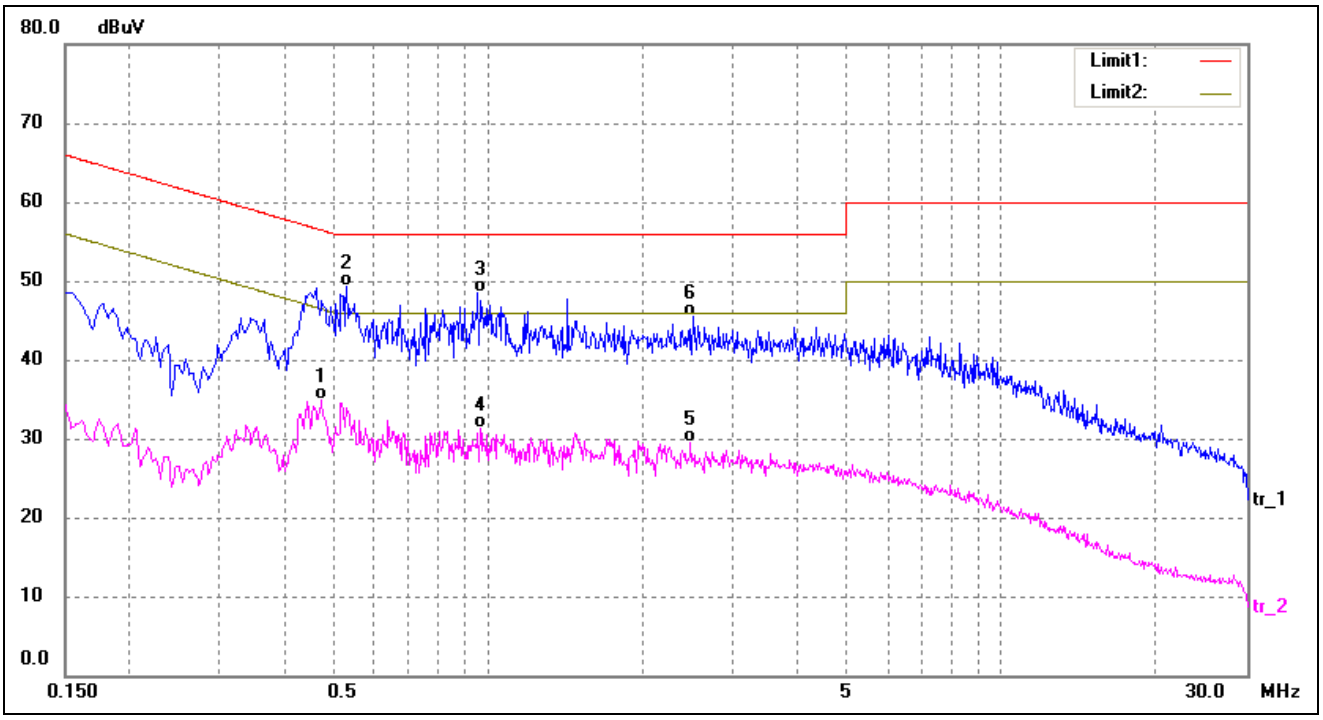
EUT: *mobile phone*
Tested Model: *Beat 3.0*
Operating Condition: *TM1*
Comment: *AC 120V/60Hz; Adapter DC 5V*

Test Specification: *Neutral*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.4420	40.40	9.80	50.20	57.02	-6.82	QP
2	0.4500	27.46	9.80	37.26	46.88	-9.62	AVG
3	0.9300	23.64	9.77	33.41	46.00	-12.59	AVG
4	0.9740	38.33	9.76	48.09	56.00	-7.91	QP
5	2.1860	35.57	9.73	45.30	56.00	-10.70	QP
6	2.2180	21.30	9.73	31.03	46.00	-14.97	AVG

Test Specification: *Line*

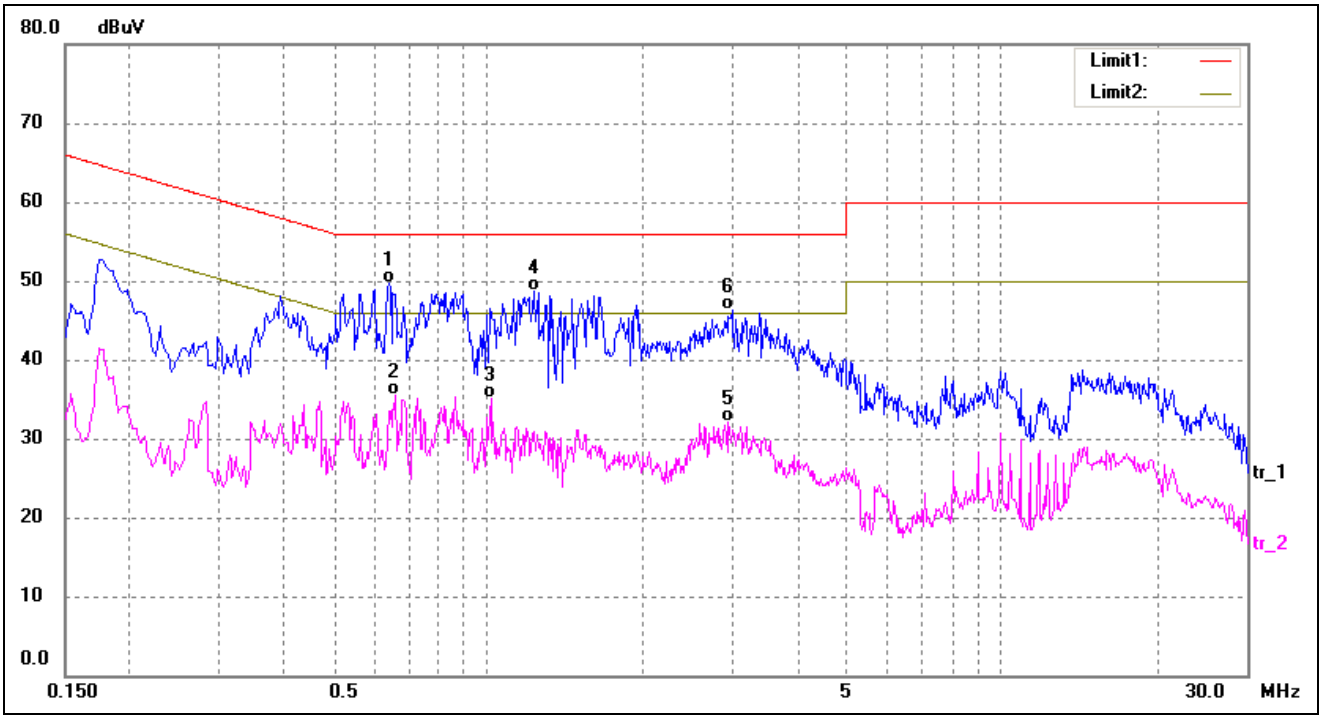


No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1	0.4740	25.10	9.80	34.90	46.44	-11.54	AVG
2*	0.5300	39.52	9.80	49.32	56.00	-6.68	QP
3	0.9580	38.83	9.76	48.59	56.00	-7.41	QP
4	0.9660	21.60	9.76	31.36	46.00	-14.64	AVG
5	2.4740	19.72	9.72	29.44	46.00	-16.56	AVG
6	2.5020	35.77	9.72	45.49	56.00	-10.51	QP

Plot of Conducted Emissions Test Data

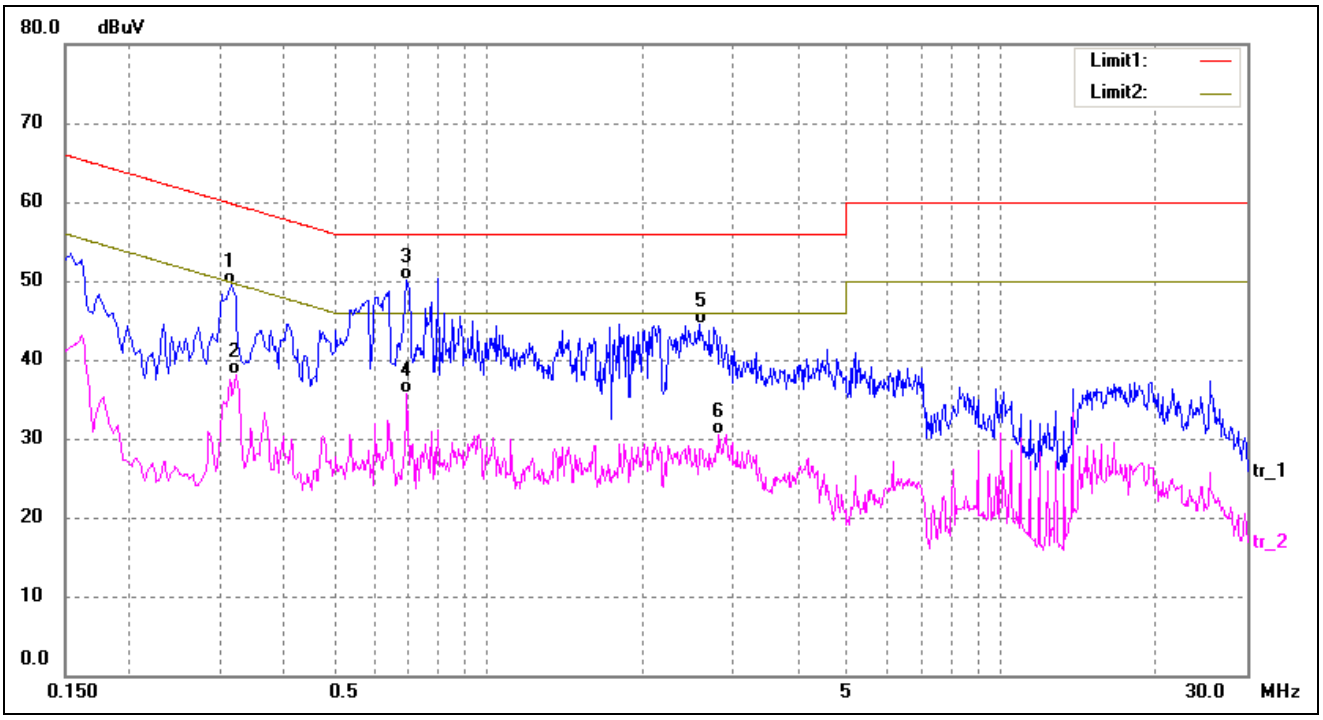
EUT: *mobile phone*
Tested Model: *Beat 3.0*
Operating Condition: *TM2*
Comment: *AC 120V/60Hz; USB 5V*

Test Specification: *Neutral*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.6420	39.88	9.79	49.67	56.00	-6.33	QP
2	0.6580	25.69	9.79	35.48	46.00	-10.52	AVG
3	1.0140	25.44	9.76	35.20	46.00	-10.80	AVG
4	1.2260	38.94	9.75	48.69	56.00	-7.31	QP
5	2.9460	22.40	9.71	32.11	46.00	-13.89	AVG
6	2.9780	36.65	9.71	46.36	56.00	-9.64	QP

Test Specification: *Line*

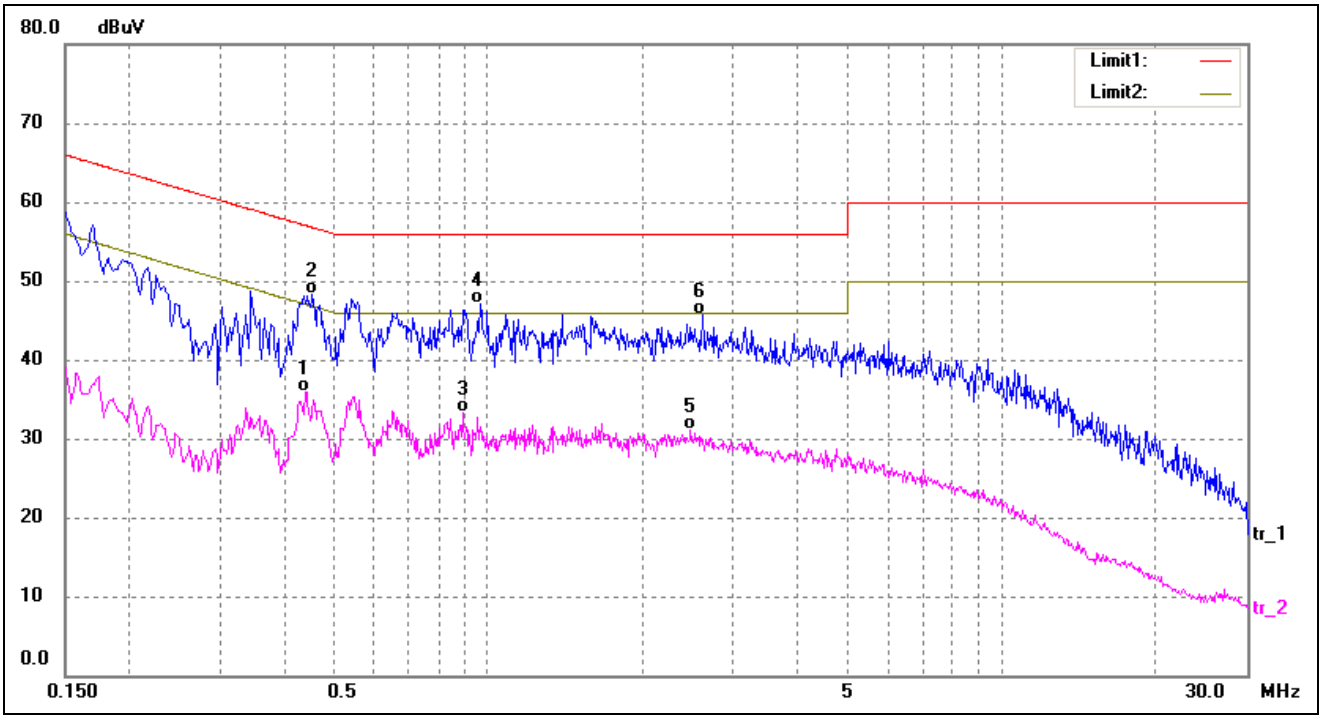


No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1	0.3180	39.69	9.80	49.49	59.76	-10.27	QP
2	0.3220	28.37	9.80	38.17	49.66	-11.49	AVG
3*	0.6900	40.34	9.78	50.12	56.00	-5.88	QP
4	0.6940	25.85	9.78	35.63	46.00	-10.37	AVG
5	2.5740	34.83	9.72	44.55	56.00	-11.45	QP
6	2.8100	20.85	9.71	30.56	46.00	-15.44	AVG

Plot of Conducted Emissions Test Data

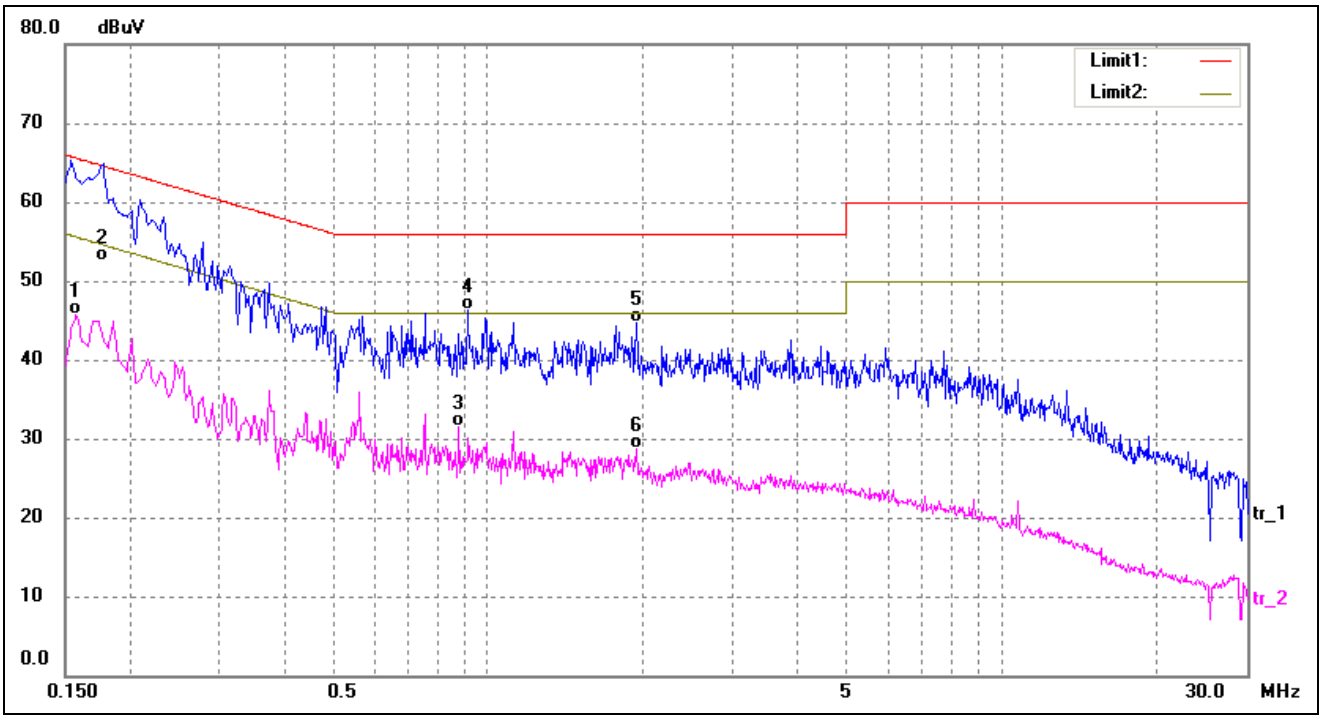
EUT: *mobile phone*
Tested Model: *Beat 3.0*
Operating Condition: *TM3*
Comment: *AC 120V/60Hz; Adapter DC 5V*

Test Specification: *Neutral*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1	0.4420	26.20	9.80	36.00	47.02	-11.02	AVG
2*	0.4540	38.46	9.80	48.26	56.80	-8.54	QP
3	0.8940	23.61	9.77	33.38	46.00	-12.62	AVG
4	0.9660	37.44	9.76	47.20	56.00	-8.80	QP
5	2.4740	21.33	9.72	31.05	46.00	-14.95	AVG
6	2.6220	36.08	9.72	45.80	56.00	-10.20	QP

Test Specification: *Line*

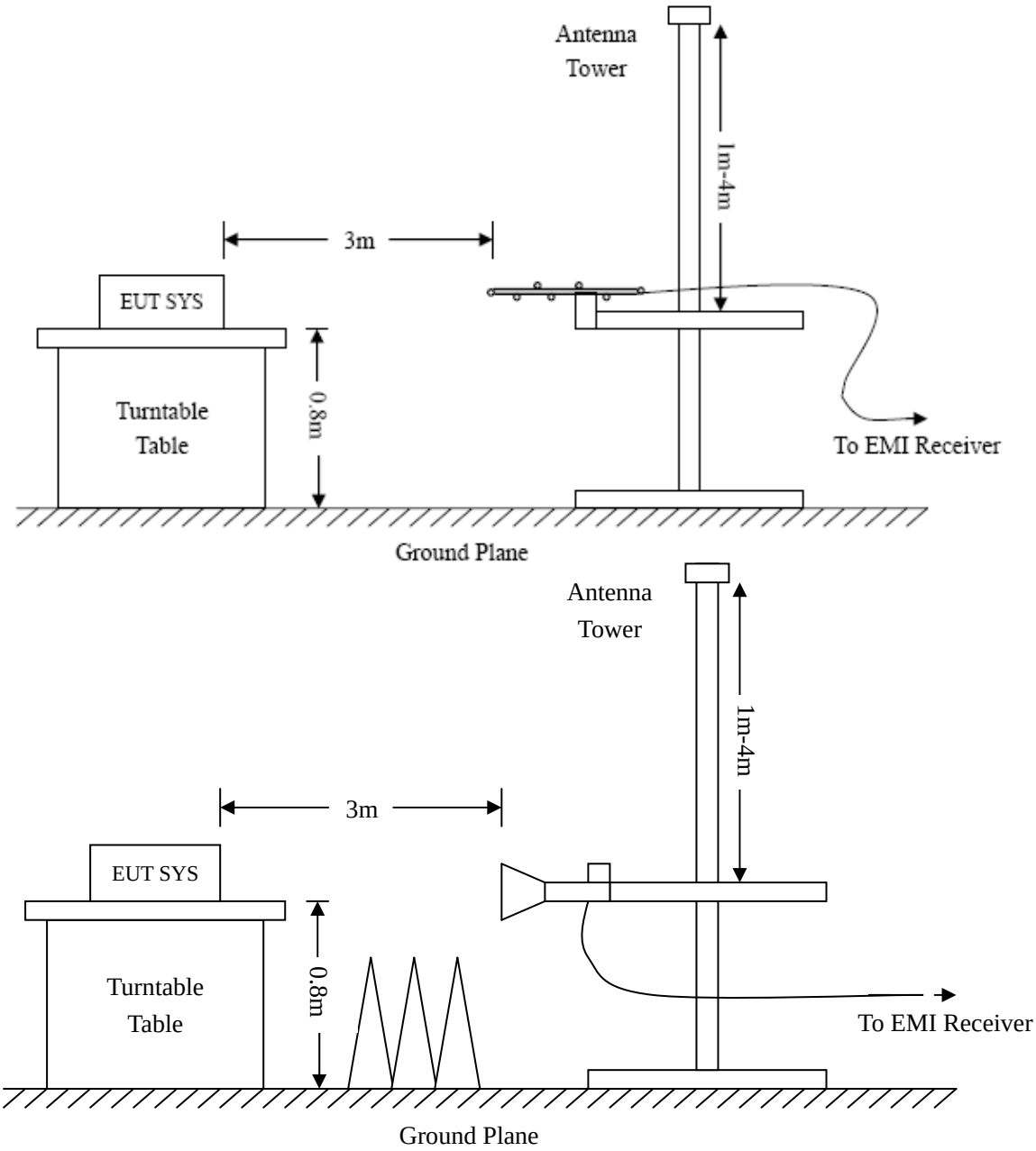


No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1	0.1580	35.86	9.84	45.70	55.57	-9.87	AVG
2	0.1780	42.69	9.82	52.51	64.58	-12.07	QP
3	0.8780	21.82	9.77	31.59	46.00	-14.41	AVG
4*	0.9100	36.50	9.77	46.27	56.00	-9.73	QP
5	1.9420	34.91	9.74	44.65	56.00	-11.35	QP
6	1.9420	19.03	9.74	28.77	46.00	-17.23	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 :30MHz-1GHz	Frequency :Above 1GHz
RBW=120KHz,	RBW=1MHz,
VBW=300KHz	VBW=3MHz(Peak), 10Hz(AV)
Sweep time= Auto	Sweep time= Auto
Trace = max hold	Trace = max hold
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

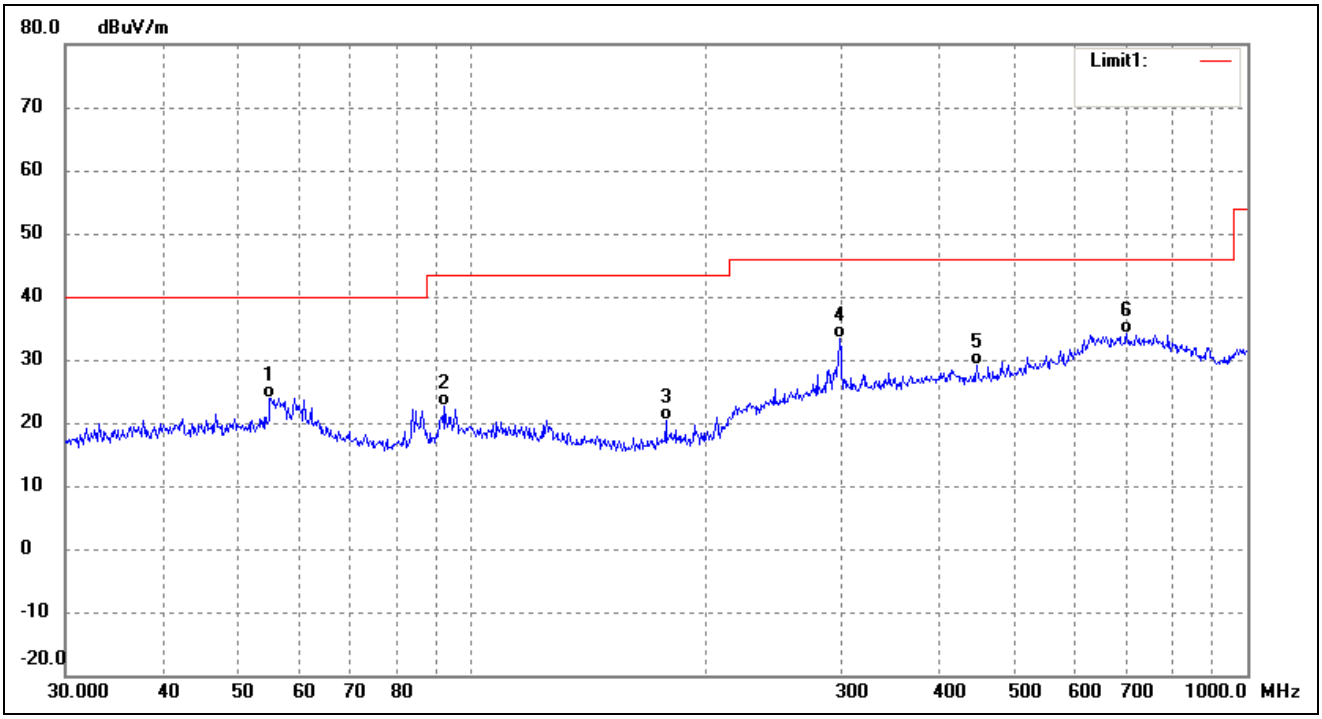
According to the data, the EUT complied with the FCC Part 15.109(a) rule, and had the worst margin of:

-4.88 dB at **294.1137 MHz** in the **Horizontal** polarization, **TM2** mode, **30MHz** to **1 GHz**, **3Meters**

Plot of Radiated Emissions Test Data

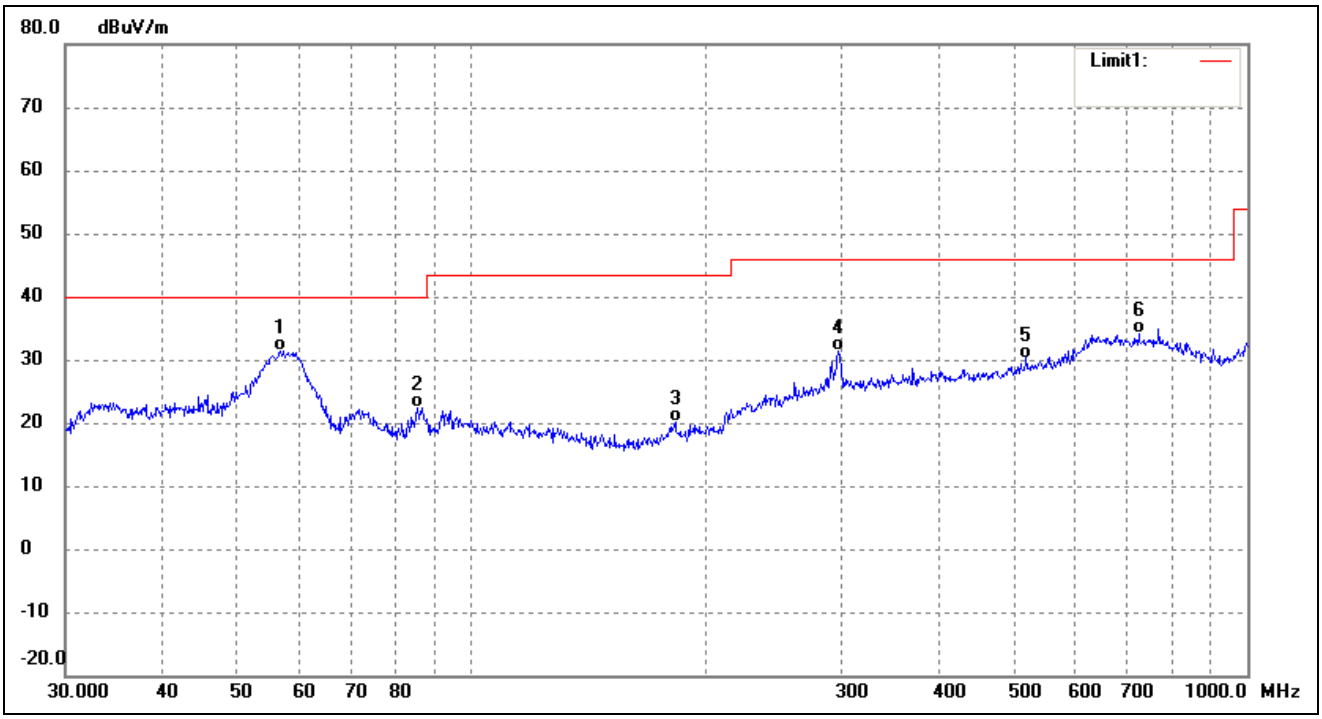
EUT: *mobile phone*
Tested Model: *Beat 3.0*
Operating Condition: *TM1*
Comment: *AC 120V/60Hz; Adapter DC 5V*

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	55.0274	18.96	5.03	23.99	40.00	-16.01	94	100	QP
2	92.4624	18.91	3.80	22.71	43.50	-20.79	128	100	QP
3	178.1327	17.87	2.46	20.33	43.50	-23.17	139	100	QP
4	298.2681	21.61	11.89	33.50	46.00	-12.50	122	100	QP
5	447.9822	16.33	12.71	29.04	46.00	-16.96	234	100	QP
6	699.3046	16.85	17.23	34.08	46.00	-11.92	246	100	QP

Test Specification: *Vertical*

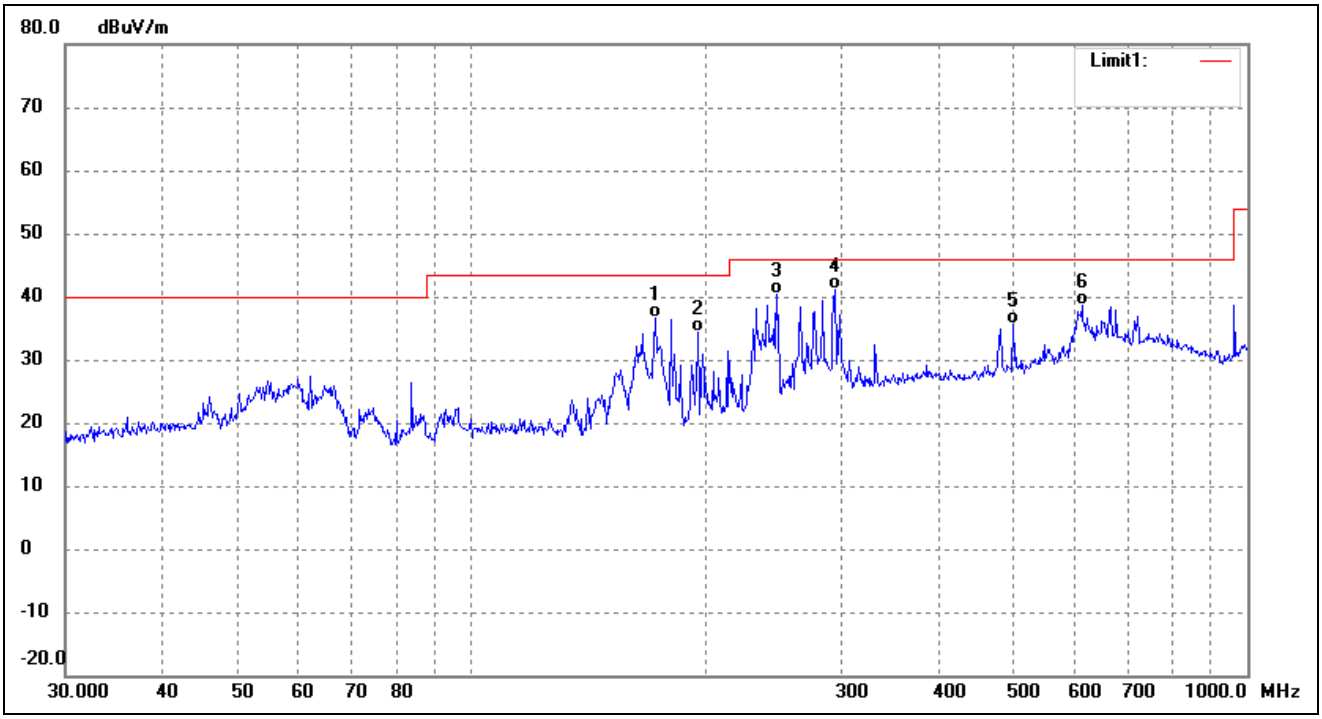


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	56.7917	26.36	5.00	31.36	40.00	-8.64	168	100	QP
2	85.2981	19.89	2.61	22.50	40.00	-17.50	143	100	QP
3	183.2005	17.47	2.58	20.05	43.50	-23.45	113	100	QP
4	297.2241	19.59	11.84	31.43	46.00	-14.57	115	100	QP
5	519.0649	16.39	13.86	30.25	46.00	-15.75	141	100	QP
6	724.2611	16.06	18.07	34.13	46.00	-11.87	286	100	QP

Plot of Radiated Emissions Test Data

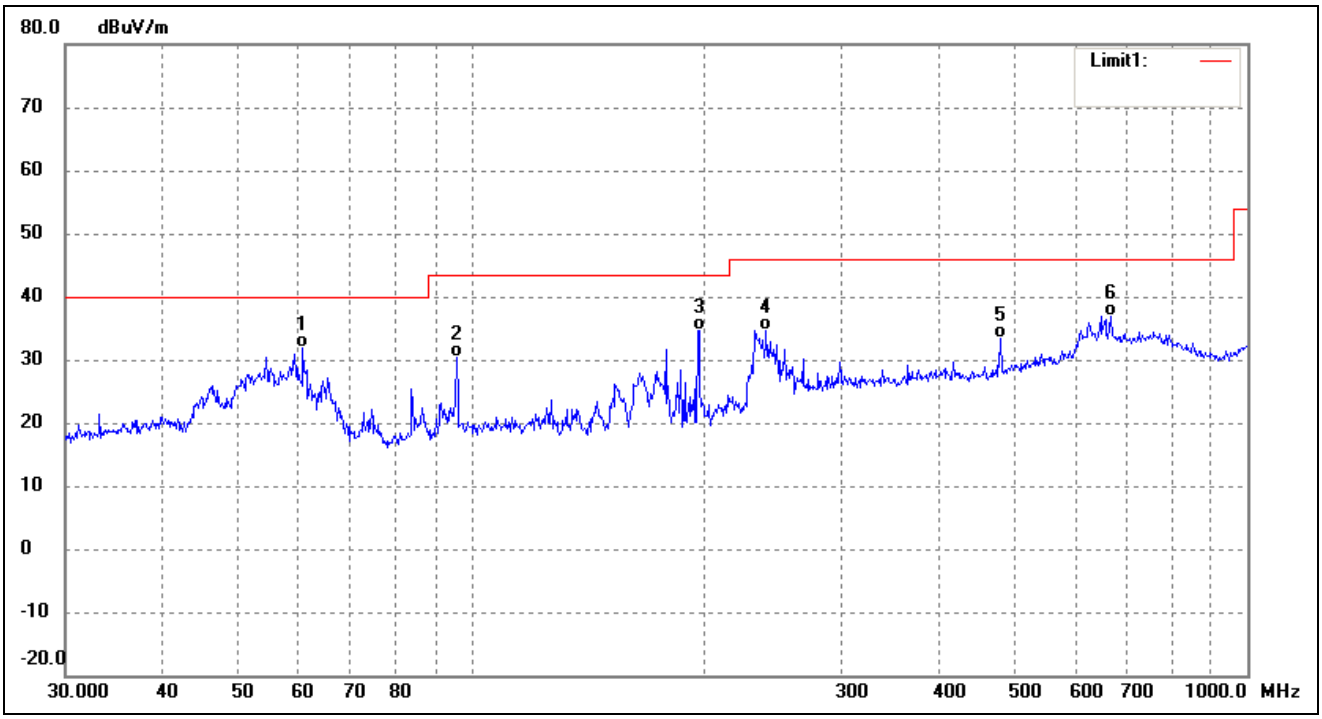
EUT: *mobile phone*
Tested Model: *Beat 3.0*
Operating Condition: *TM2*
Comment: *AC 120V/60Hz; USB 5V*

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	172.5988	34.09	2.46	36.55	43.50	-6.95	317	100	QP
2	195.8220	31.26	3.16	34.42	43.50	-9.08	97	100	QP
3	247.6819	31.19	9.22	40.41	46.00	-5.59	59	100	QP
4	294.1137	29.38	11.74	41.12	46.00	-4.88	327	100	QP
5	499.4247	22.44	13.31	35.75	46.00	-10.25	324	100	QP
6	612.0642	20.67	17.92	38.59	46.00	-7.41	200	100	QP

Test Specification: *Vertical*

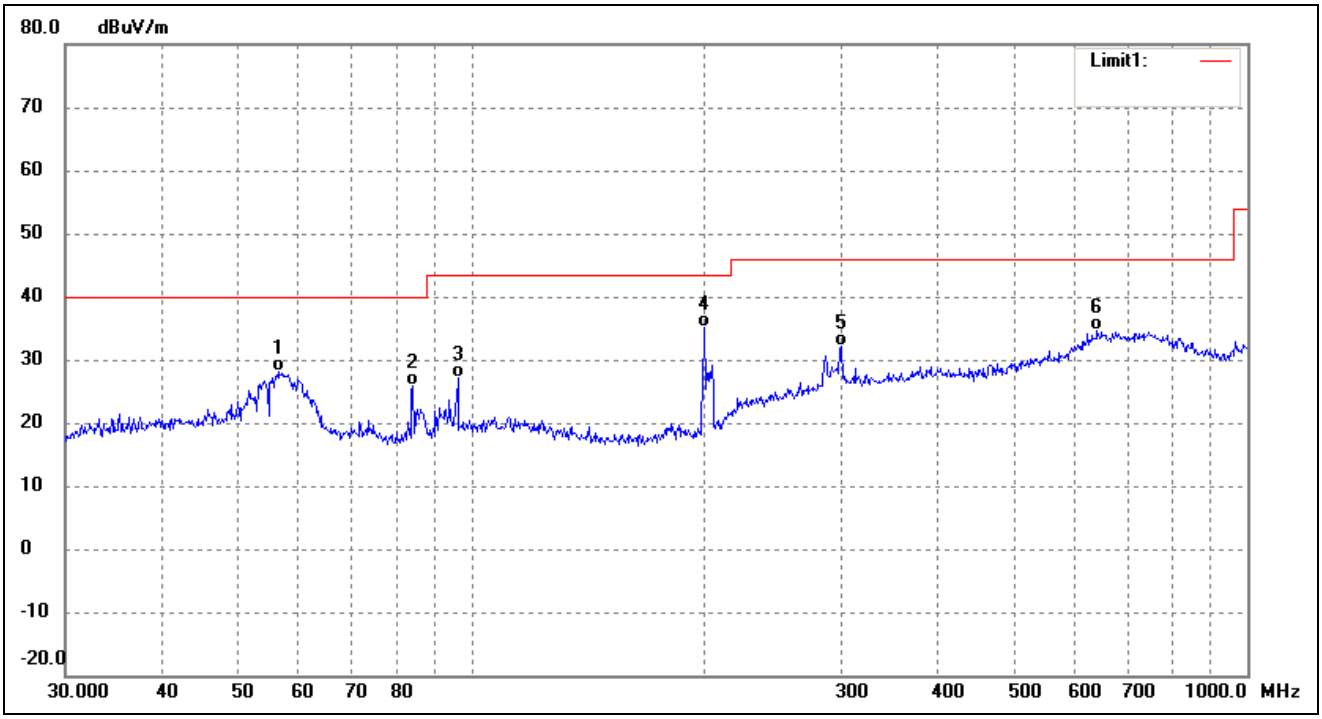


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	60.7044	26.86	4.90	31.76	40.00	-8.24	71	100	QP
2	95.7622	25.98	4.29	30.27	43.50	-13.23	172	100	QP
3	196.5098	31.45	3.20	34.65	43.50	-8.85	91	100	QP
4	239.9874	25.70	8.93	34.63	46.00	-11.37	235	100	QP
5	480.5276	20.82	12.58	33.40	46.00	-12.60	122	100	QP
6	665.8035	18.94	17.90	36.84	46.00	-9.16	259	100	QP

Plot of Radiated Emissions Test Data

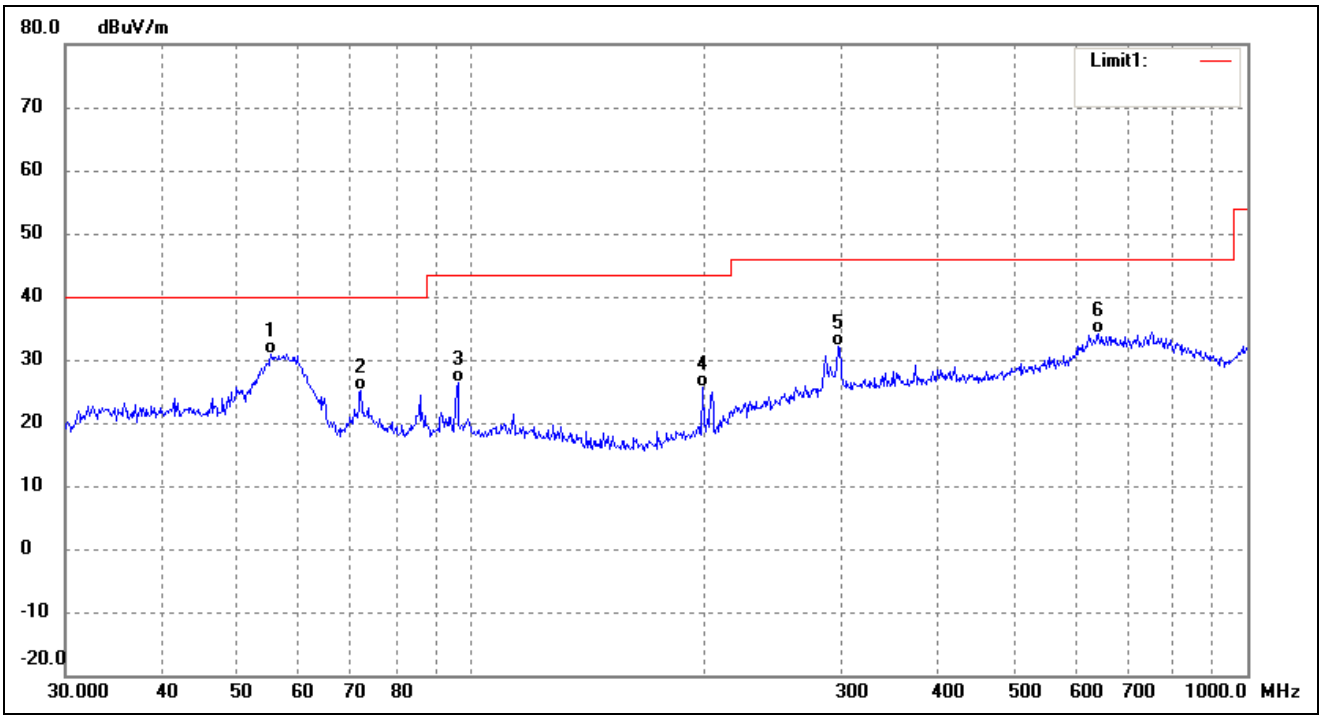
EUT: *mobile phone*
Tested Model: *Beat 3.0*
Operating Condition: *TM3*
Comment: *AC 120V/60Hz; Adapter DC 5V*

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	56.5929	23.10	5.01	28.11	40.00	-11.89	312	100	QP
2	84.1100	23.51	2.41	25.92	40.00	-14.08	92	100	QP
3	96.0986	22.79	4.34	27.13	43.50	-16.37	80	100	QP
4	199.9856	31.75	3.35	35.10	43.50	-8.40	111	100	QP
5	299.3158	20.30	11.92	32.22	46.00	-13.78	276	100	QP
6	640.6110	16.67	18.05	34.72	46.00	-11.28	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	55.2207	25.87	5.02	30.89	40.00	-9.11	208	100	QP
2	72.0843	22.61	2.62	25.23	40.00	-14.77	92	100	QP
3	96.0986	22.05	4.34	26.39	43.50	-17.11	299	100	QP
4	198.5880	22.22	3.29	25.51	43.50	-17.99	115	100	QP
5	297.2241	20.22	11.84	32.06	46.00	-13.94	118	100	QP
6	642.8613	16.02	18.00	34.02	46.00	-11.98	191	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 *******