

FCC Part 15B

Measurement and Test Report

For

VeryKool USA Inc

3636 Nobel Drive, Suite 325, San Diego, CA 92122 USA

FCC ID: WA6I121

Test Standards:	<u>FCC Part 15 Subpart B</u>
Product Description:	<u>Mobile Phone</u>
Tested Model:	<u>I121C</u>
Report No.:	<u>STR12098241I-3</u>
Tested Date:	<u>2012-09-27 to 2012-10-18</u>
Issued Date:	<u>2012-10-22</u>
Tested By:	<u>Susan Su / Engineer</u> <i>Susan Su</i>
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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 SEM.Test Compliance Service Co., Ltd

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Verykool USA Inc
 Address of applicant: 3636 Nobel Drive, Suite 325, San Diego, CA 92122 USA
 Manufacturer: Wingtech Group
 Address of manufacturer: 1-3f Yinfeng Mansion, No.5097, Luosha Road, Luohu District, Shenzhen, China

General Description of EUT	
Product Name:	Mobile Phone
Trade Name:	Verykool
Model No.:	I121C
Adding Model(s):	I121
<p><i>Note: The test data is gathered from a production sample, provided by the manufacturer. Adding model: I121 basis of the tested model I121C, This model is identical circuit and PCB Layout to the original model except I121C has two SIM socket and I121 has no camera and only one SIM socket.</i></p>	

Technical Characteristics of EUT	
Rated Voltage:	DC 3.7V battery
Rated Current:	/
Rated Power:	/
Power Adapter Model:	i121
Highest Internal Frequency:	26 MHz
Classification of ITE:	Class B
Support Interface:	USB 2.0

1.2 Test Standards

The following report is prepared on behalf of the VeryKool USA Inc 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 C63.4-2003, 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.: 994117**

SEM.Test Compliance Services 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 994117.

- **Industry Canada (IC) Registration No.: 7673A**

The 3m Semi-anechoic chamber of SEM.Test Compliance Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 7673A.

- **CNAS Registration No.: L4062**

Shenzhen SEM.Test Electronics Service 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 3/F, Jinbao Commerce Building, Xin'an Fanshen 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	1kHz Audio
TM2	Downloading	Test Software: CT3

EUT Cable List and Details

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

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
/	/	/	/

Special Cable List and Details

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

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.

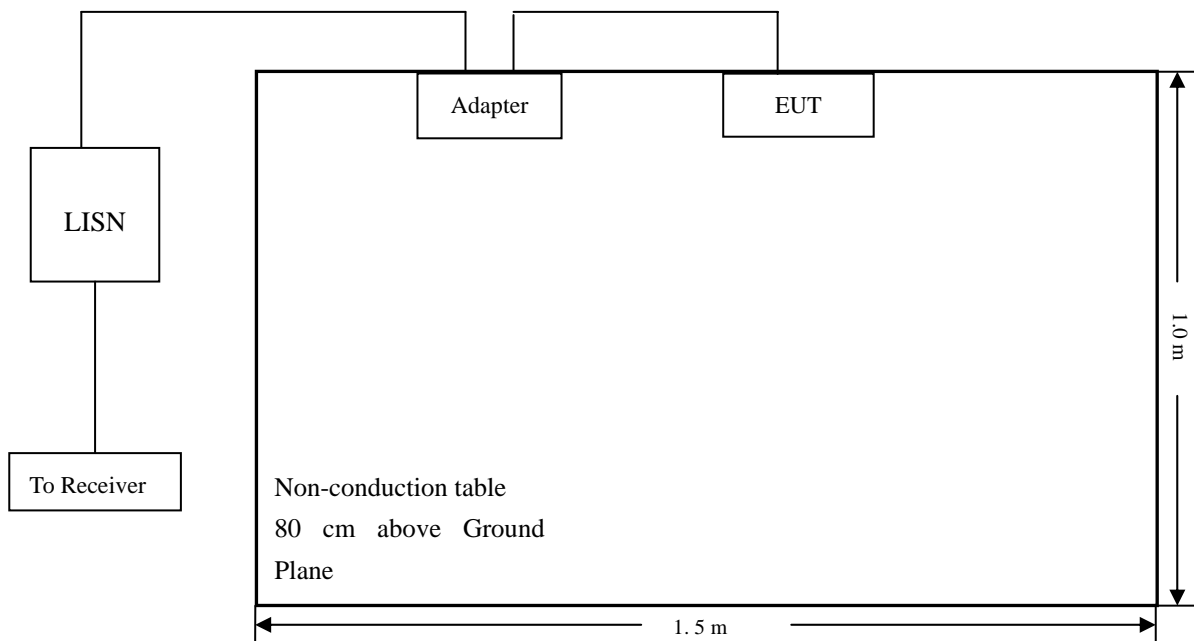
3.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2012-03-28	2013-03-27
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2012-03-28	2013-03-27
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2012-03-28	2013-03-27

3.3 Test Procedure

Test is conducting under the description of ANSI C63.4-2003, 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.

3.4 Basic Test Setup Block Diagram



3.5 Environmental Conditions

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

3.6 Summary of Test Results/Plots

According to the data in section 3.7, the EUT complied with the FCC Part 15.107(a) Conducted margin for a Class B device, with the *worst* margin reading of:

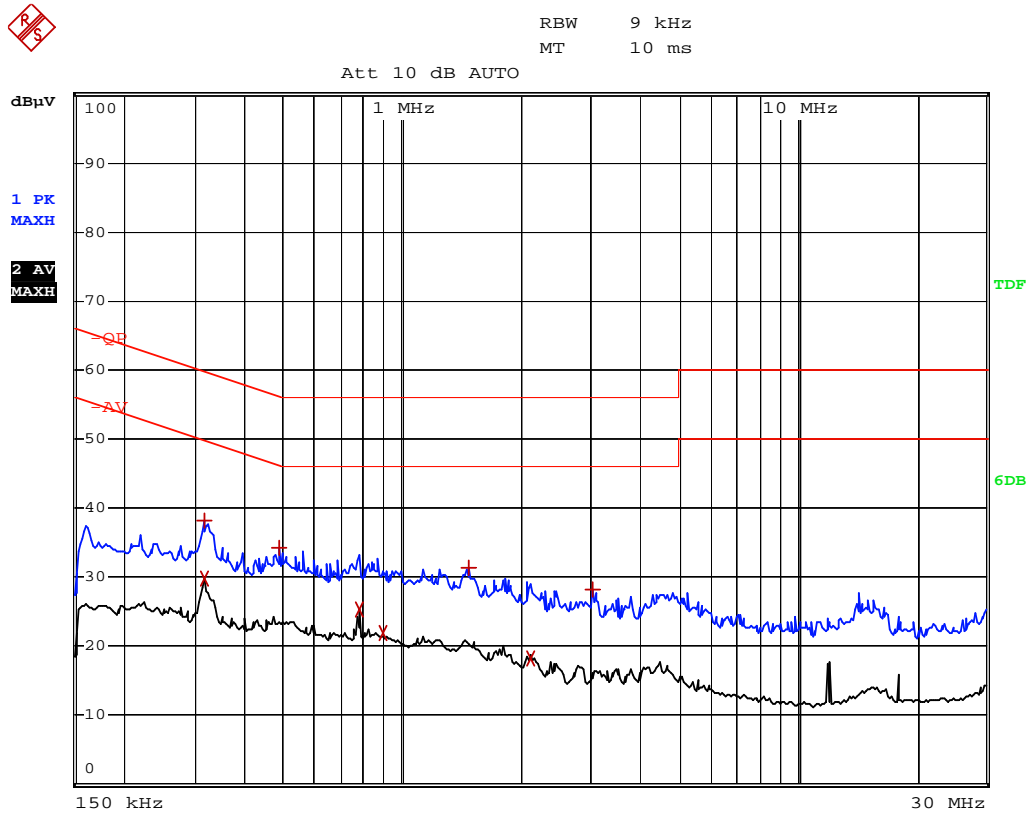
-19.97 dB μ V at 0.314 MHz in the **Neutral, Average** detector, 0.15-30MHz

3.7 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

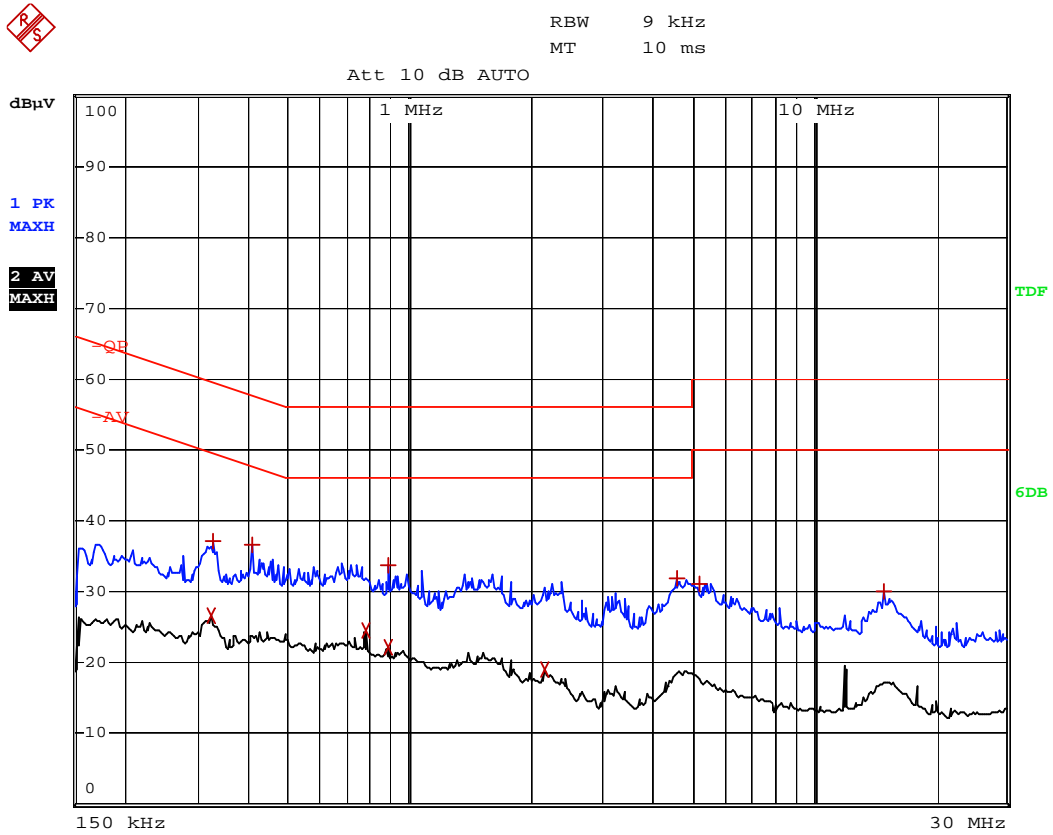
EUT: *Mobile Phone*
 Tested Model: *I121C*
 Operating Condition: *Charging & Playing*
 Comment: *AC 120V/60Hz; adapter DC 5V*

Test Specification: *Neutral*



EDIT PEAK LIST (Prescan Results)			
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
1 Max Peak	314 kHz	38.23	-21.63
2 Average	314 kHz	29.88	-19.97
1 Max Peak	490 kHz	34.18	-21.98
2 Average	778 kHz	25.24	-20.76
2 Average	894 kHz	21.88	-24.11
1 Max Peak	1.482 MHz	31.26	-24.74
2 Average	2.122 MHz	18.21	-27.78
1 Max Peak	3.026 MHz	28.25	-27.74

Test Specification: Line



EDIT PEAK LIST (Prescan Results)			
TRACE	FREQUENCY	LEVEL dBuV	DELTA LIMIT dB
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
2 Average	322 kHz	26.67	-22.98
1 Max Peak	326 kHz	37.09	-22.45
1 Max Peak	406 kHz	36.62	-21.10
2 Average	778 kHz	24.60	-21.39
1 Max Peak	890 kHz	33.79	-22.20
2 Average	890 kHz	22.16	-23.83
2 Average	2.174 MHz	18.99	-27.00
1 Max Peak	4.594 MHz	31.82	-24.18
1 Max Peak	5.202 MHz	31.20	-28.79
1 Max Peak	14.91 MHz	30.14	-29.85

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.

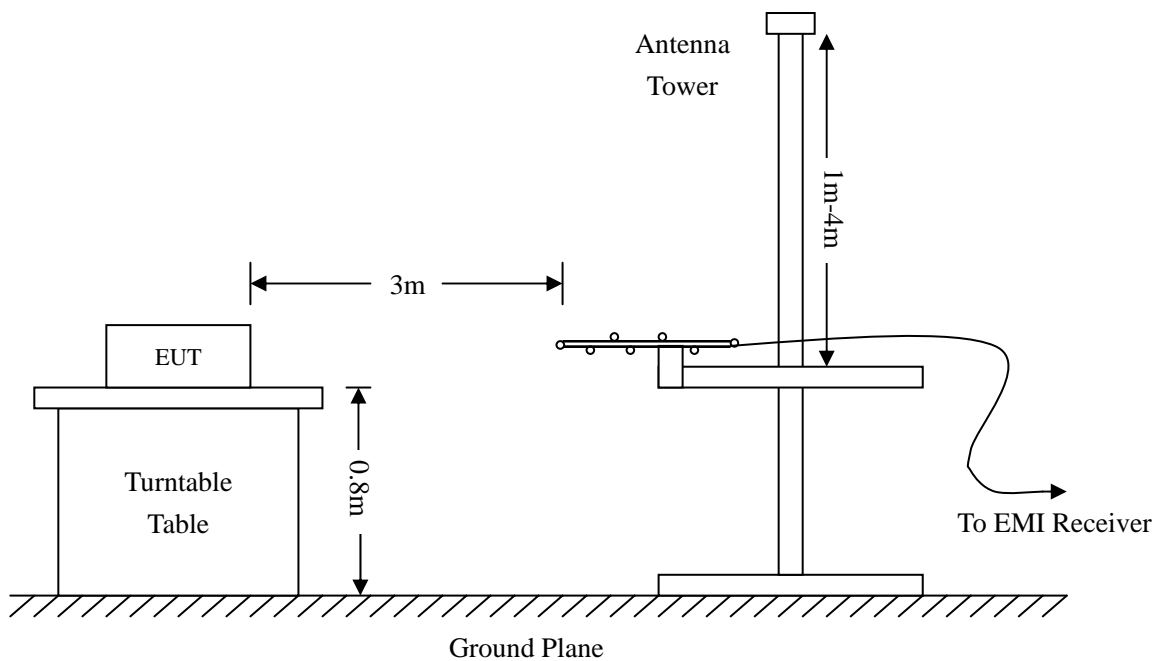
4.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2012-03-28	2013-03-27
EMI Test Receiver	R&S	ESVB	825471/005	2012-03-28	2013-03-27
Pre-amplifier	Agilent	8447F	3113A06717	2012-03-28	2013-03-27
Pre-amplifier	Compliance Direction	PAP-0118	24002	2012-03-28	2013-03-27
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2012-02-25	2013-02-24
Horn Antenna	ETS	3117	00086197	2012-02-25	2013-02-24

4.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 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.



4.4 Test Receiver Setup

During the radiated emission test for above 1GHz, the test receiver was set with the following configurations:

For peak detector:

RBW = 1000kHz, VBW = 3000kHz, Sweep Time = Auto

For average detector:

RBW = 1000kHz, VBW = 10Hz, Sweep Time = Auto

4.5 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:

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

4.6 Environmental Conditions

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

4.7 Summary of Test Results/Plots

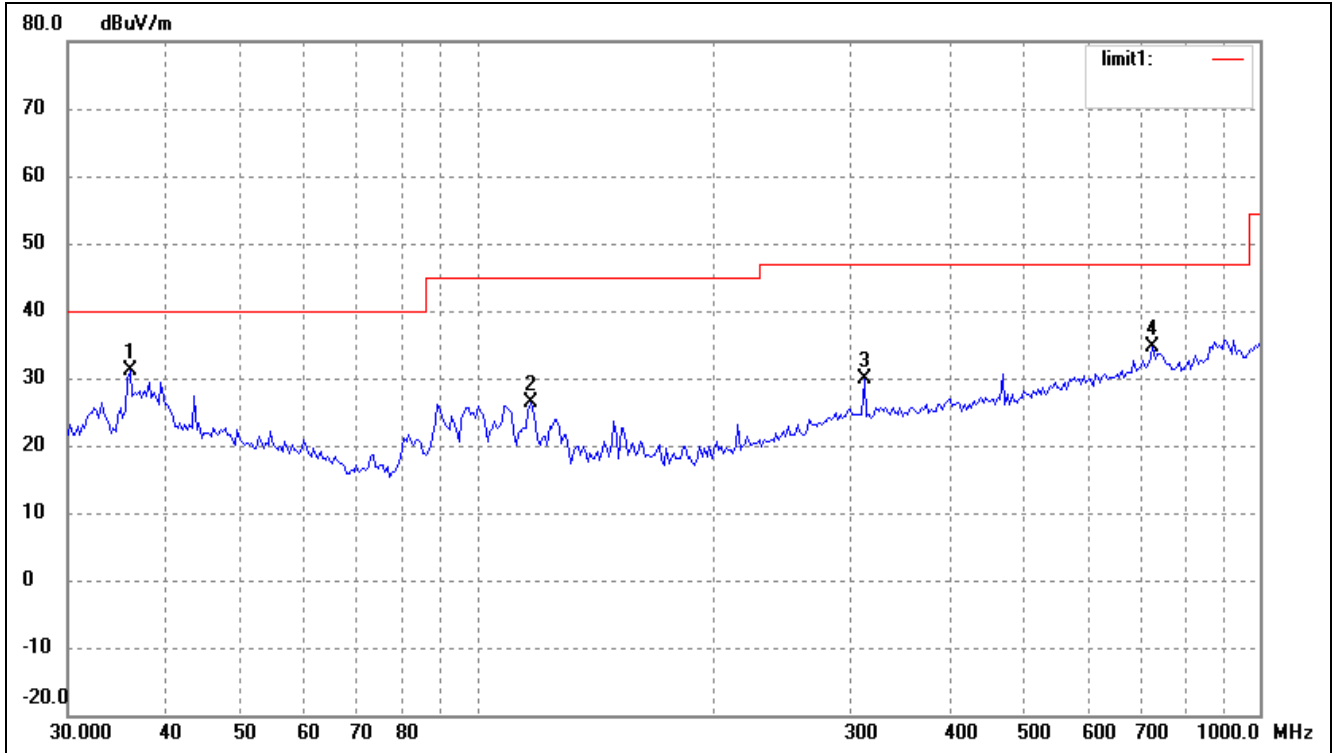
According to the data, the EUT complied with the FCC Part 15.109(a) rule, and had the worst margin of:

-2.51 dB μ V at 37.5479 MHz in the Vertical polarization, Charging & Playing mode, 30 MHz to 1 GHz, 3Meters

Plot of Radiated Emissions Test Data

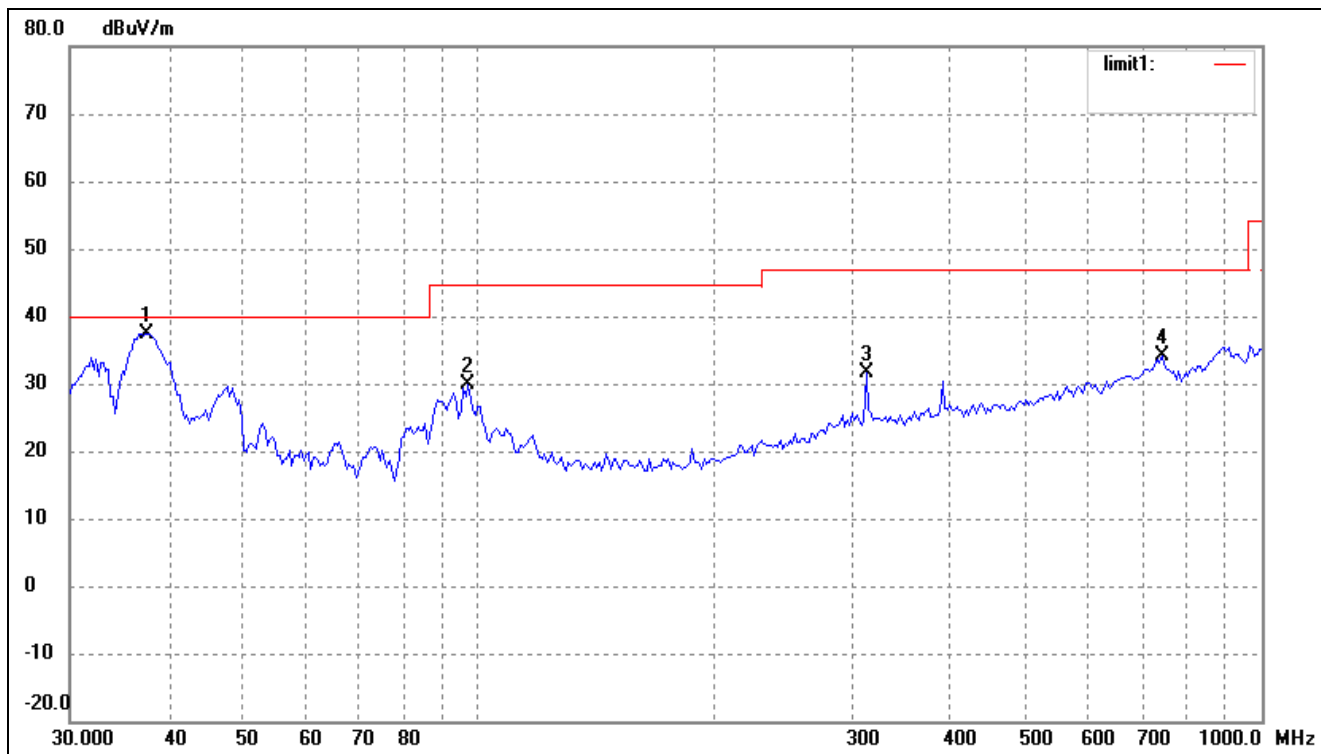
EUT: *Mobile Phone*
 Tested Model: *I121C*
 Operating Condition: *Charring & Playing*
 Comment: *AC 120V/60Hz; Adapter DC 5V*

 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	36.0007	22.14	9.04	31.18	40.00	-8.82	233	100	peak
2	116.9495	21.11	5.17	26.28	43.50	-17.22	57	100	peak
3	312.1794	19.57	10.36	29.93	46.00	-16.07	44	100	peak
4	729.3583	17.20	17.31	34.51	46.00	-11.49	66	100	peak

Test Specification: Vertical

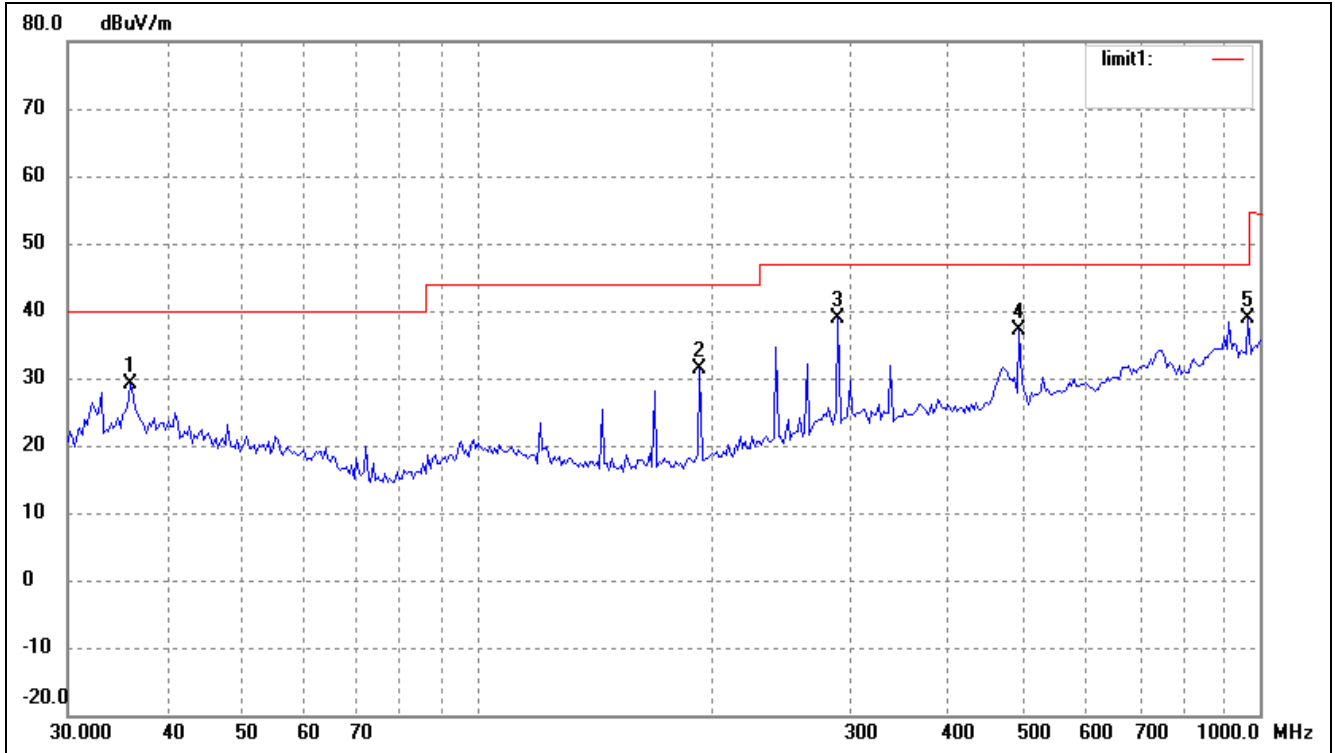


No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	37.5479	28.20	9.29	37.49	40.00	-2.51	235	100	peak
2	96.7749	23.74	6.04	29.78	43.50	-13.72	44	100	peak
3	312.1794	21.20	10.36	31.56	46.00	-14.44	79	100	peak
4	744.8661	16.16	17.95	34.11	46.00	-11.89	292	100	peak

Plot of Radiated Emissions Test Data

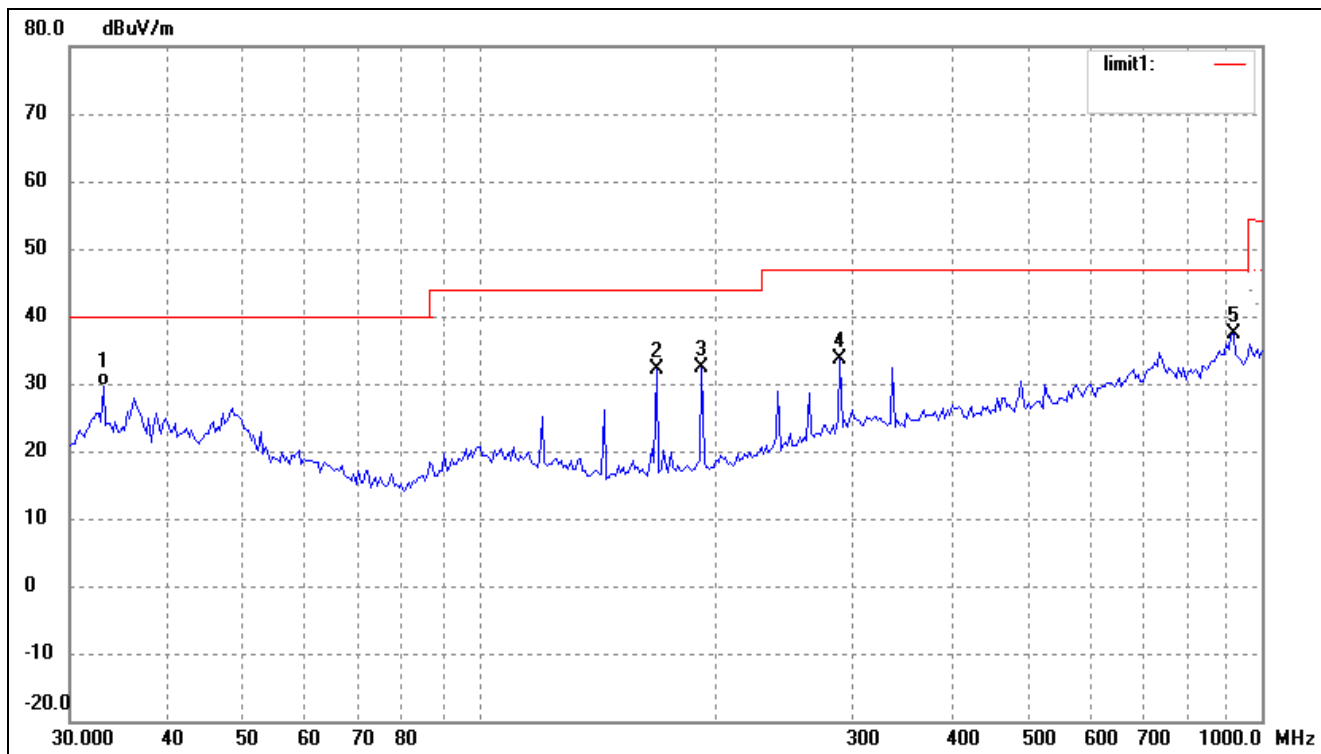
EUT: *Mobile Phone*
 Tested Model: *I121C*
 Operating Condition: *Downloading*
 Comment: *AC 120V/60Hz; Connected to PC*

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	36.0007	20.19	9.04	29.23	40.00	-10.77	306	100	peak
2	192.4186	27.03	4.31	31.34	43.50	-12.16	54	100	peak
3	289.0021	29.24	9.67	38.91	46.00	-7.09	57	100	peak
4	492.4685	25.27	11.89	37.16	46.00	-8.84	51	100	peak
5	965.5421	20.55	18.37	38.92	54.00	-15.08	58	100	peak

Test Specification: Vertical

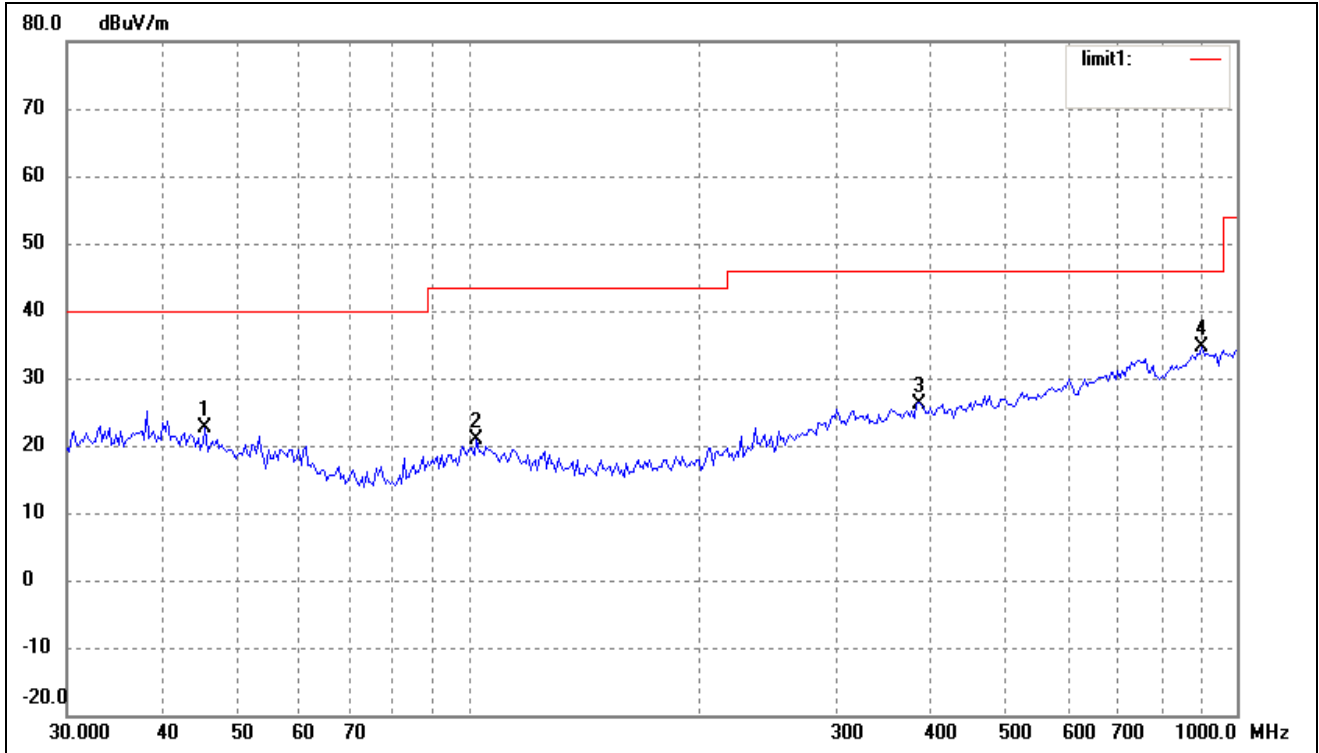


No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	33.0950	21.08	8.56	29.64	40.00	-10.36	245	100	QP
2	168.4138	28.48	3.69	32.17	43.50	-11.33	15	100	peak
3	192.4186	27.98	4.31	32.29	43.50	-11.21	32	100	peak
4	289.0021	23.89	9.67	33.56	46.00	-12.44	54	100	peak
5	919.2866	18.80	18.70	37.50	46.00	-8.50	288	100	peak

Plot of Radiated Emissions Test Data

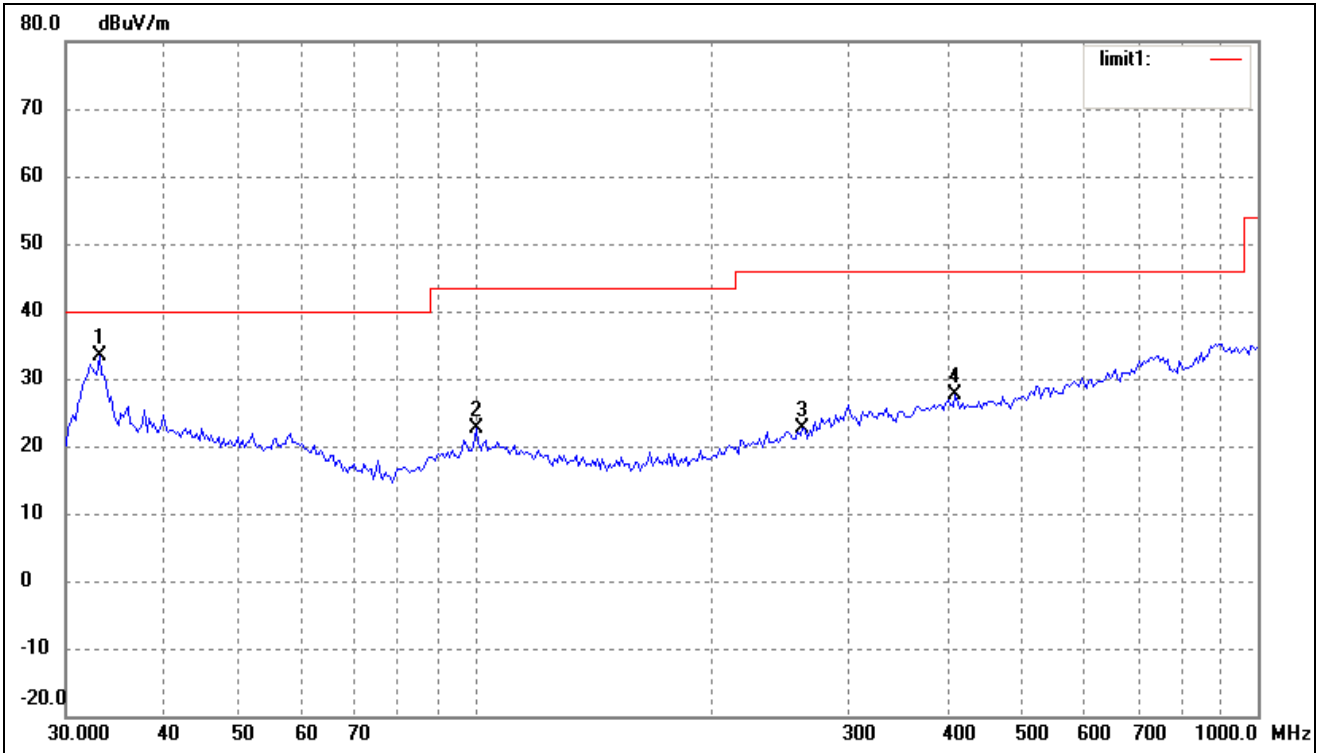
EUT: *Mobile Phone*
 Tested Model: *I121*
 Operating Condition: *Charring & Playing*
 Comment: *AC 120V/60Hz; Adapter DC 5V*

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	45.3755	14.63	8.05	22.68	40.00	-17.32	0	100	peak
2	102.3597	14.35	6.61	20.96	43.50	-22.54	15	100	peak
3	385.2805	15.38	10.87	26.25	46.00	-19.75	114	100	peak
4	900.1474	15.17	19.38	34.55	46.00	-11.45	111	100	peak

Test Specification: Vertical

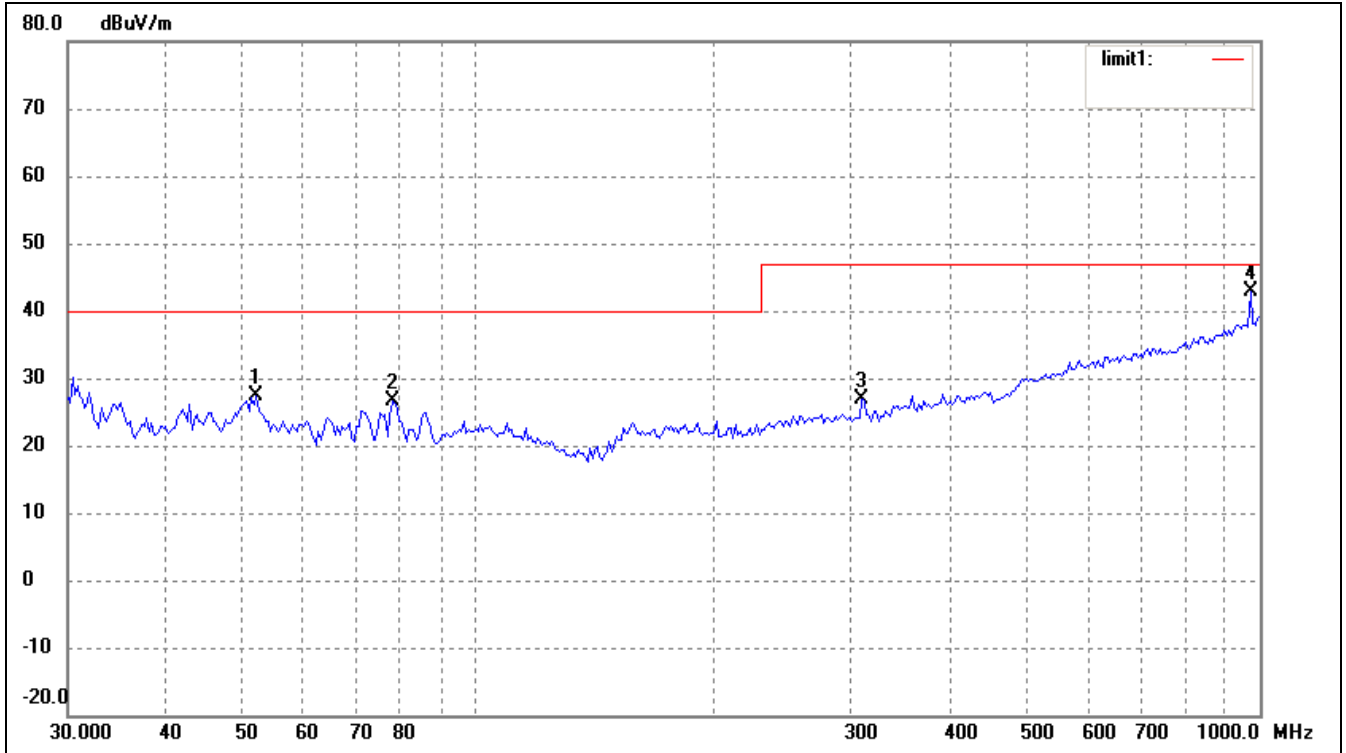


No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	33.0950	24.83	8.56	33.39	40.00	-6.61	155	100	peak
2	100.2286	15.82	6.81	22.63	43.50	-20.87	21	100	peak
3	261.9753	14.69	7.86	22.55	46.00	-23.45	136	100	peak
4	410.3825	16.50	11.11	27.61	46.00	-18.39	18	100	peak

Plot of Radiated Emissions Test Data

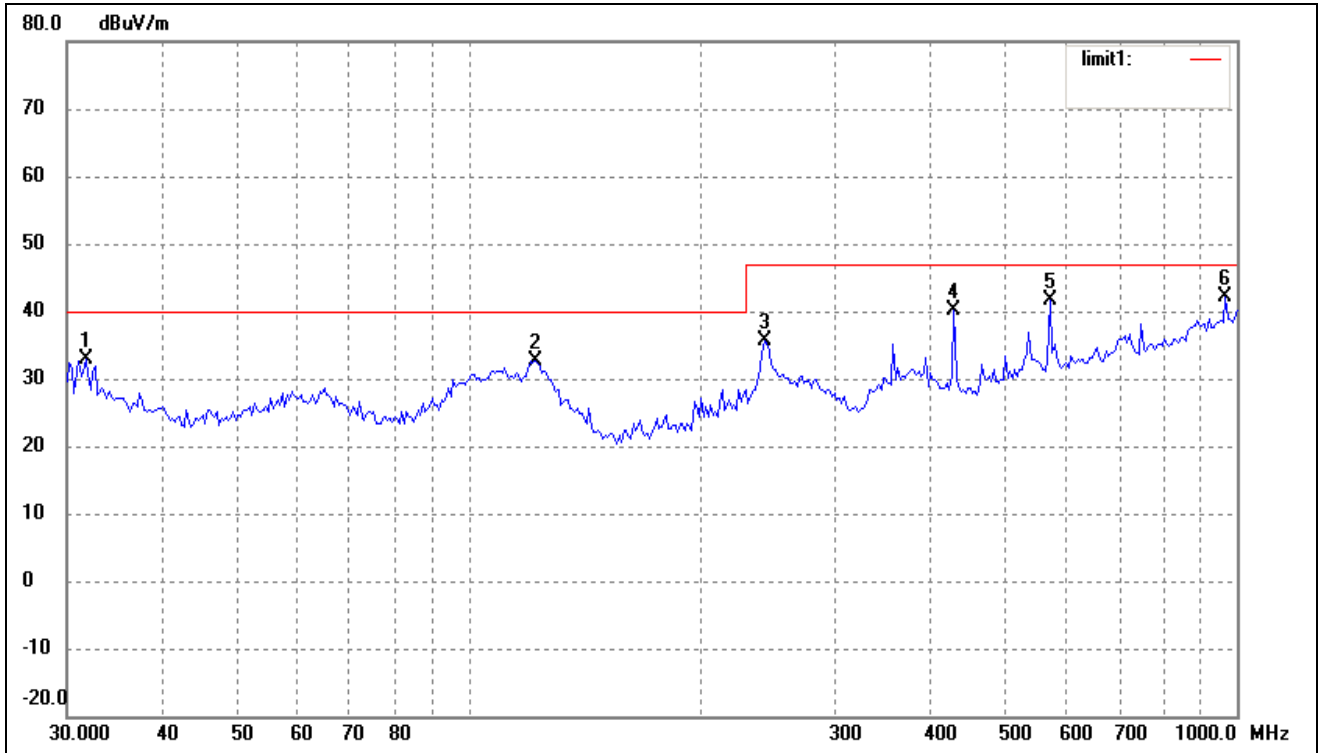
EUT: *Mobile Phone*
 Tested Model: *I121*
 Operating Condition: *Downloading*
 Comment: *AC 120V/60Hz; Connected to PC*

 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	52.2079	19.45	7.88	27.33	40.00	-12.67	51	100	peak
2	77.8654	23.38	3.29	26.67	40.00	-13.33	54	100	peak
3	309.9977	17.01	9.88	26.89	47.00	-20.11	0	100	peak
4	972.3374	20.75	22.23	42.98	47.00	-4.02	69	100	peak

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	31.7313	26.01	6.77	32.78	40.00	-7.22	10	100	peak
2	121.9755	26.93	5.68	32.61	40.00	-7.39	20	100	peak
3	242.5253	27.16	8.50	35.66	47.00	-11.34	0	100	peak
4	428.0193	28.35	11.69	40.04	47.00	-6.96	54	100	peak
5	570.6100	25.51	16.01	41.52	47.00	-5.48	111	100	peak
6	965.5421	20.10	22.10	42.20	47.00	-4.80	111	100	peak