FCC Part 15B
Measurement and Test Report

For

FACTORYTECH S.A.

Km 16 Via Daule, Guayaquil- Ecuador

FCC ID: 2AFWX-Z45

Test Rule(s):	FCC Part 15 Subpart B
Product Description:	Mobile phone
Tested Model:	Infineum Z45
Report No.:	STR15118297I-6
Tested Date:	2015-11-22 to 2015-12-19
Issued Date:	2015-12-21
Tested By:	Silin Chen / EMC Manager
Reviewed By:	Suan Su / Engineer
Approved & Authorized By:	Jandy So / PSQ Manager

Prepared By:

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	FACTORYTECH S.A.
Address of applicant:	Km 16 Via Daule, Guayaquil- Ecuador
Manufacturer:	FACTORYTECH S.A.
Address of manufacturer:	Km 16 Via Daule, Guayaquil- Ecuador

General Description of EUT:	
Product Name:	Mobile phone
Brand Name:	PIXELA
Model No.:	Infineum Z45
Device Category:	Portable Device
The EUT Main board support GSM850/PCS1900, WCDMA Band 2/5, LTE Band 2/4/7 function. It is intended for speech, Multimedia Message Service (MMS) transmission. It is equipped with GPRS/EDGE class 12 for GSM850//PCS1900, GPS, 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 3.8V Li-ion Battery
Battery Capacity:	1800mAh
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 FACTORYTECH S.A. 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	Charging & Camera	/

EUT Cable List and Details

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

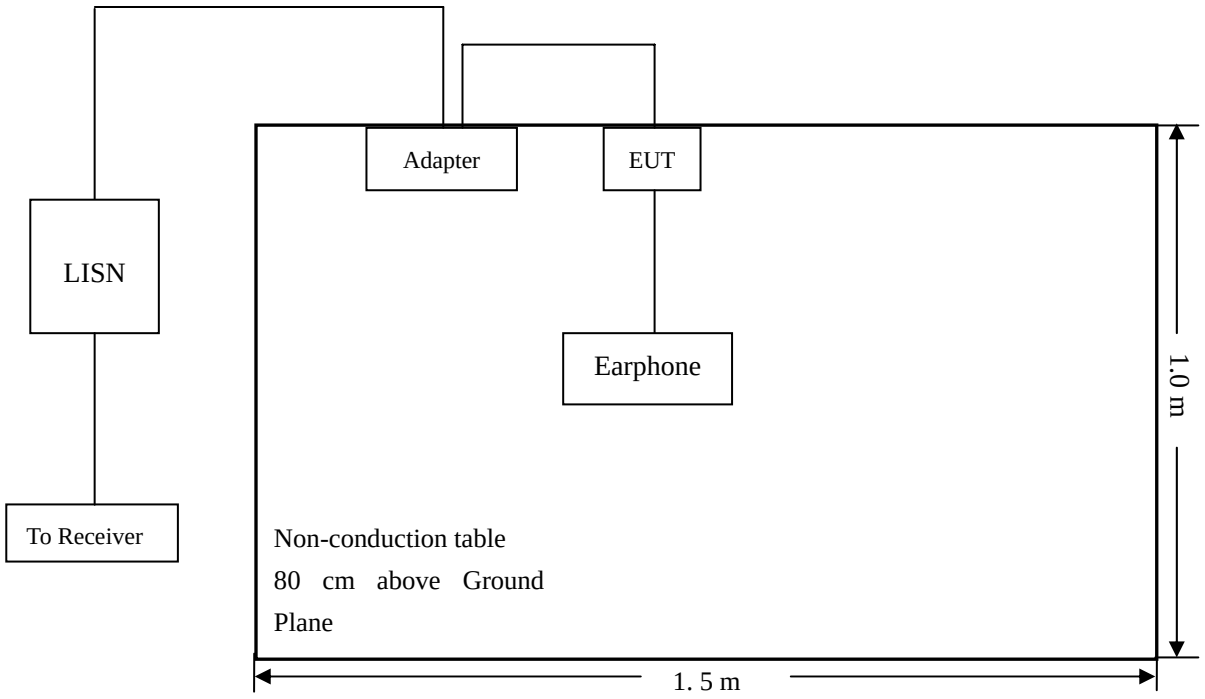
3.1 Measurement Uncertainty

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:

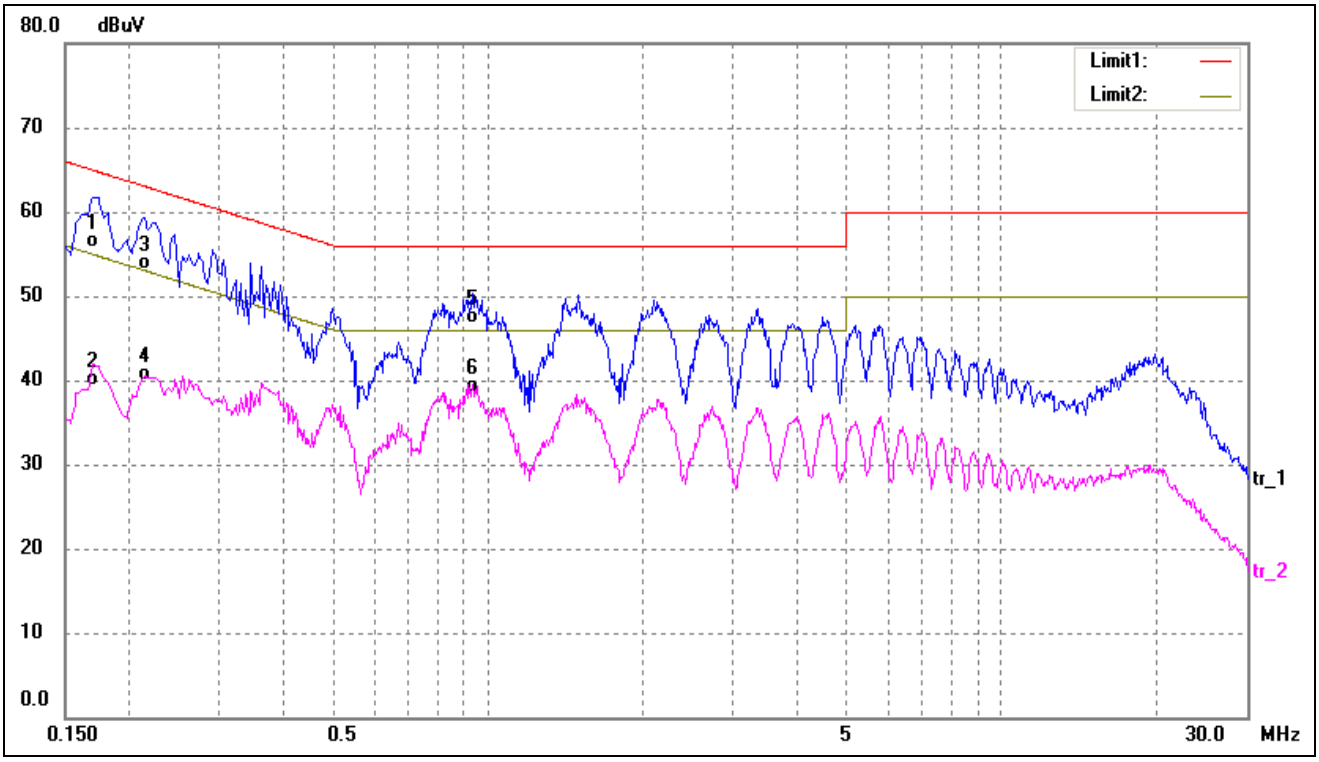
-7.49 dB at **0.9300 MHz** in the **Neutral, AVG** detector, 0.15-30MHz

3.6 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

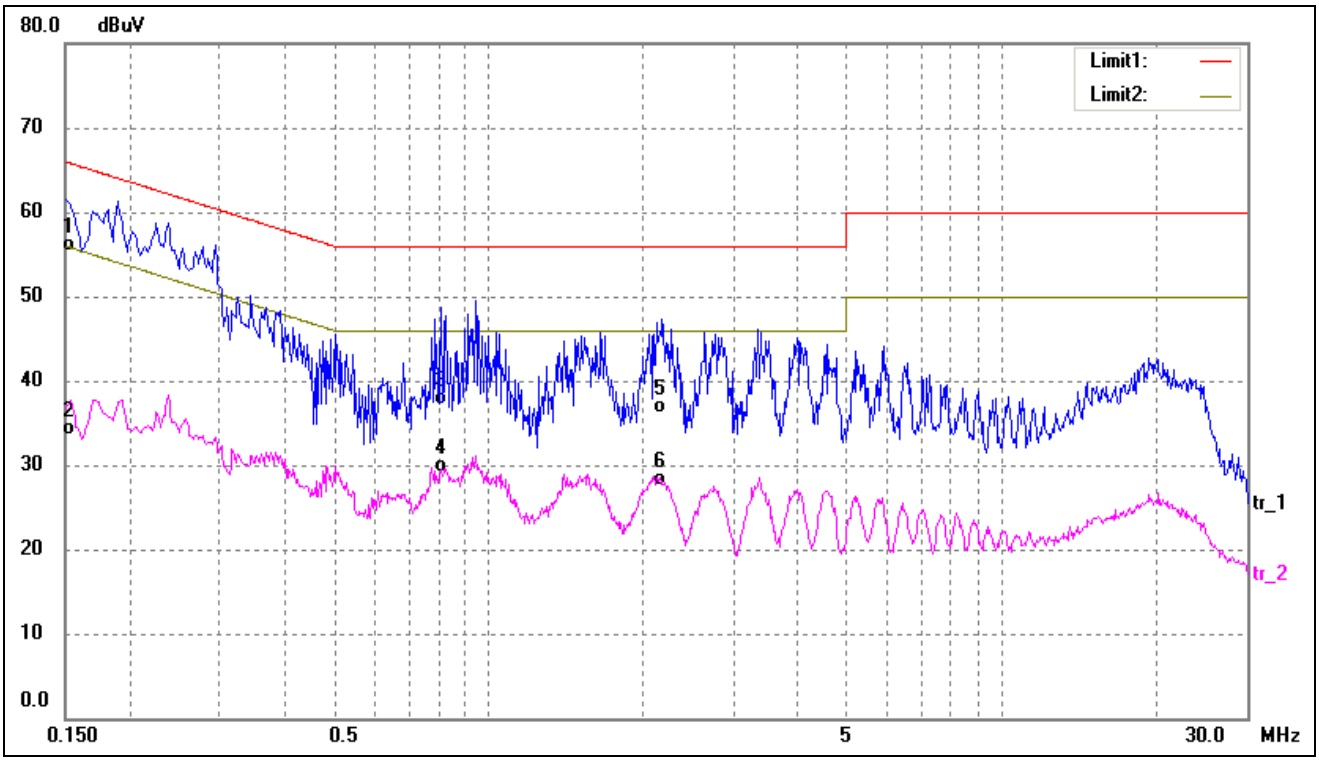
EUT: *Mobile phone*
Tested Model: *Infineum Z45*
Operating Condition: *TM1*
Comment: *AC 120V/60Hz; Adapter DC 5V*

Test Specification: *Neutral*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1	0.1700	43.18	12.50	55.68	64.96	-9.28	QP
2	0.1700	26.74	12.50	39.24	54.96	-15.72	AVG
3	0.2140	40.70	12.50	53.20	63.05	-9.85	QP
4	0.2140	27.32	12.50	39.82	53.05	-13.23	AVG
5	0.9300	33.82	12.93	46.75	56.00	-9.25	QP
6*	0.9300	25.58	12.93	38.51	46.00	-7.49	AVG

Test Specification: *Neutral*

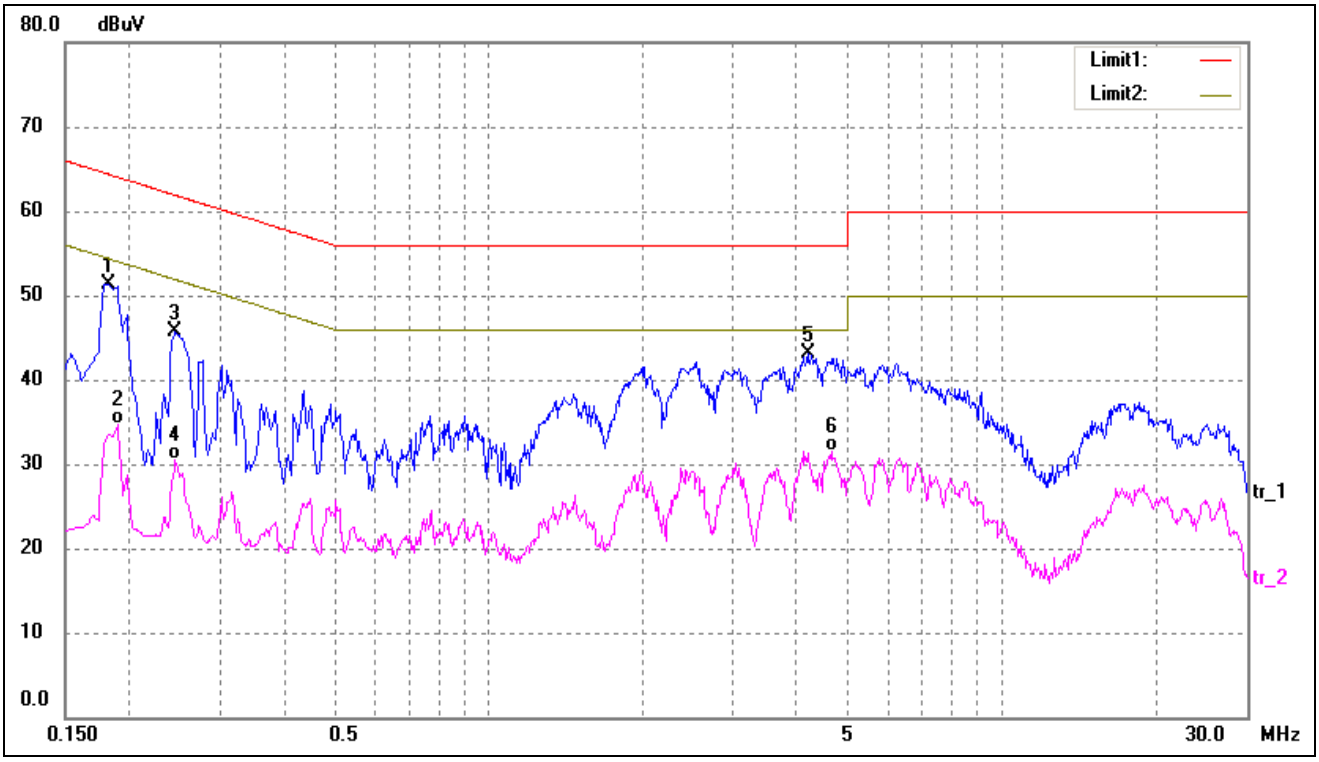


No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.1500	42.85	12.50	55.35	66.00	-10.65	QP
2	0.1500	21.05	12.50	33.55	56.00	-22.45	AVG
3	0.8100	24.26	12.81	37.07	56.00	-18.93	QP
4	0.8100	16.32	12.81	29.13	46.00	-16.87	AVG
5	2.1860	23.11	13.00	36.11	56.00	-19.89	QP
6	2.1860	14.45	13.00	27.45	46.00	-18.55	AVG

Plot of Conducted Emissions Test Data

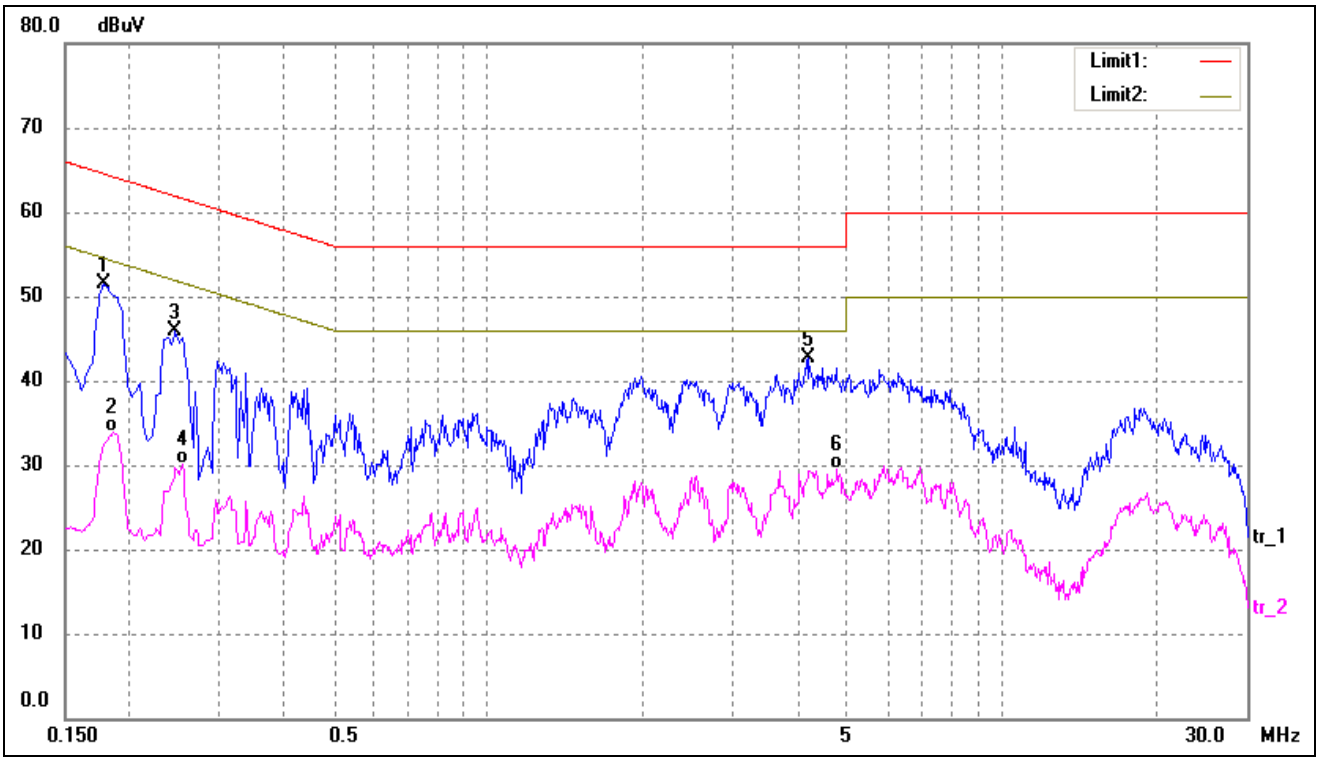
EUT: *Mobile phone*
Tested Model: *Infineum Z45*
Operating Condition: *TM2*
Comment: *AC 120V/60Hz; Adapter DC 5V*

Test Specification: *Neutral*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1	0.1820	41.90	9.50	51.40	64.39	-12.99	QP
2	0.1900	25.23	9.50	34.73	54.04	-19.31	AVG
3	0.2460	36.12	9.50	45.62	61.89	-16.27	QP
4	0.2460	20.96	9.50	30.46	51.89	-21.43	AVG
5*	4.1860	33.13	10.00	43.13	56.00	-12.87	QP
6	4.6660	21.46	10.00	31.46	46.00	-14.54	AVG

Test Specification: *Neutral*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.1780	42.01	9.50	51.51	64.58	-13.07	QP
2	0.1860	24.40	9.50	33.90	54.21	-20.31	AVG
3	0.2460	36.32	9.50	45.82	61.89	-16.07	QP
4	0.2540	20.68	9.50	30.18	51.63	-21.45	AVG
5	4.2180	32.66	10.00	42.66	56.00	-13.34	QP
6	4.7860	19.43	10.00	29.43	46.00	-16.57	AVG

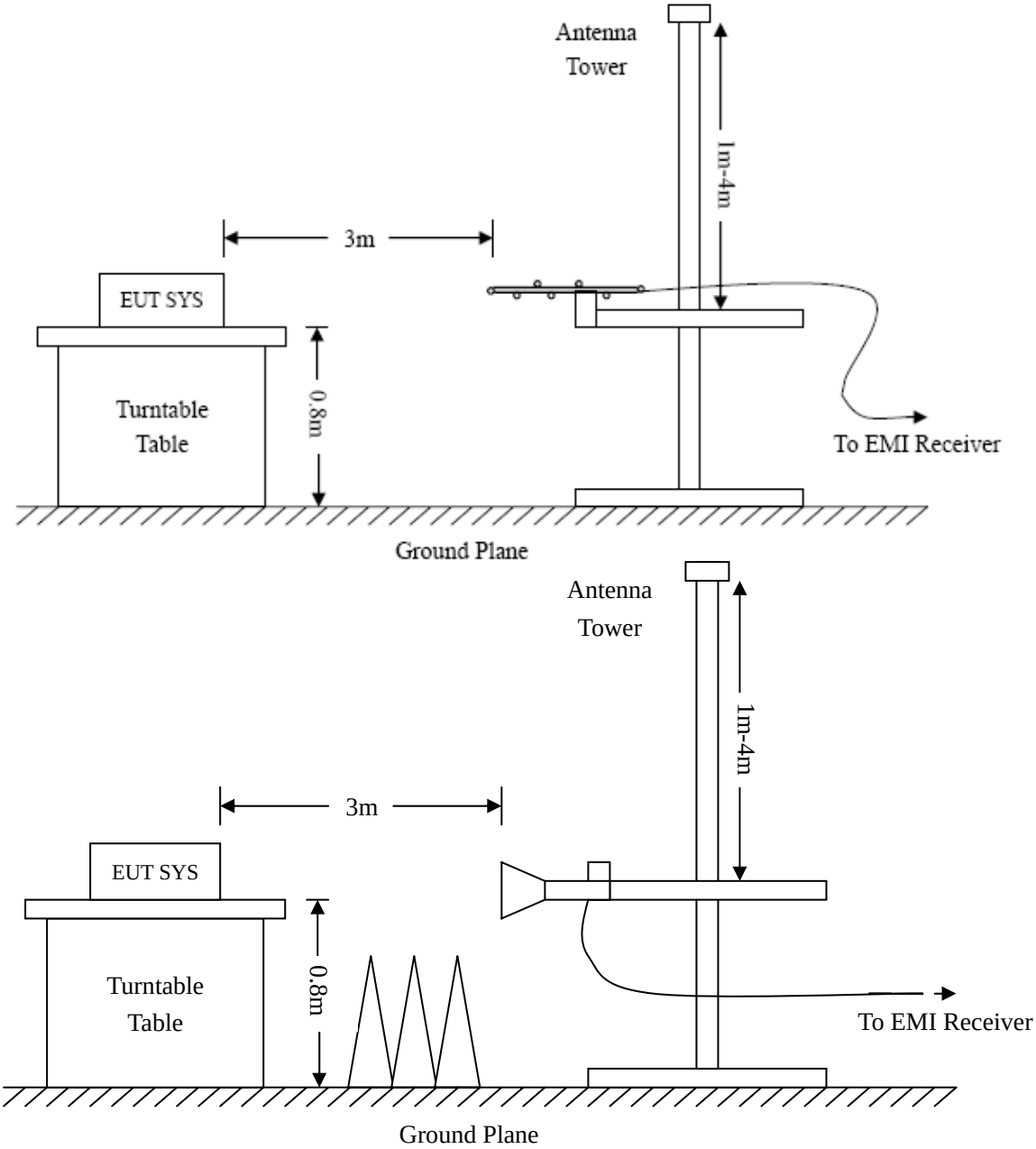
4. Radiated Emissions

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

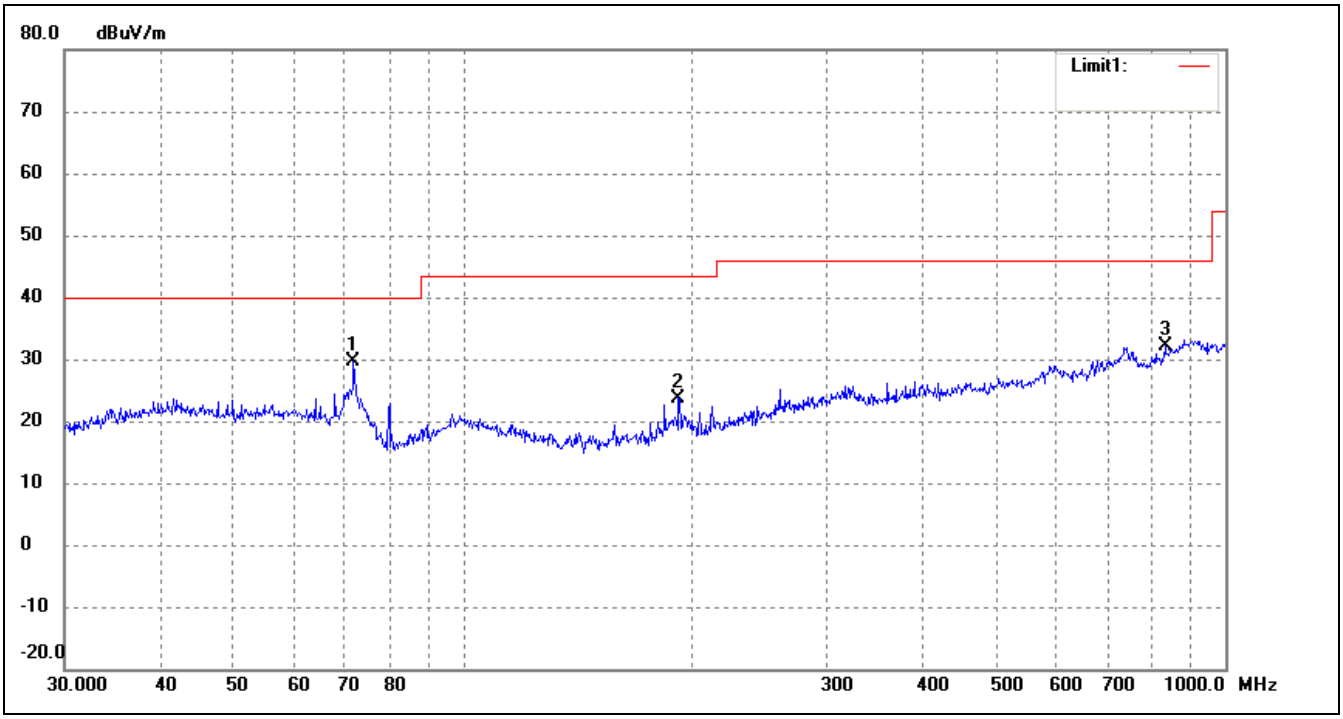
According to the data, the EUT complied with the FCC Part 15.109(a) rule, and had the worst margin of:

-3.93 dB at **79.2426 MHz** in the **Vertical** polarization, **TM3, 9 kHz** to **7.5 GHz**, **3Meters**

Plot of Radiated Emissions Test Data

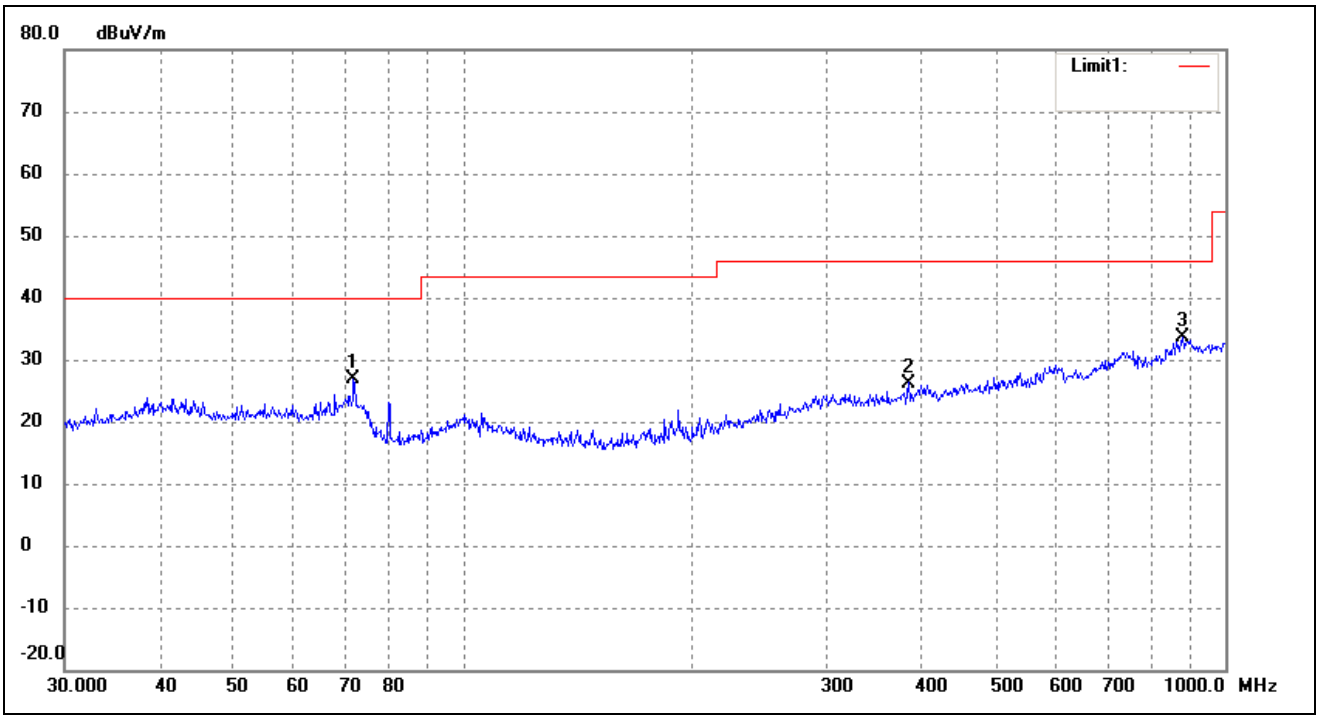
EUT: *Mobile phone*
Tested Model: *Infineum Z45*
Operating Condition: *TM1*
Comment: *AC 120V/60Hz; Adapter DC 5V*

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	71.8320	27.63	1.97	29.60	40.00	-10.40	42	100	QP
2	191.7450	20.46	3.29	23.75	43.50	-19.75	132	100	QP
3	833.3171	16.71	15.36	32.07	46.00	-13.93	168	100	QP

Test Specification: *Vertical*

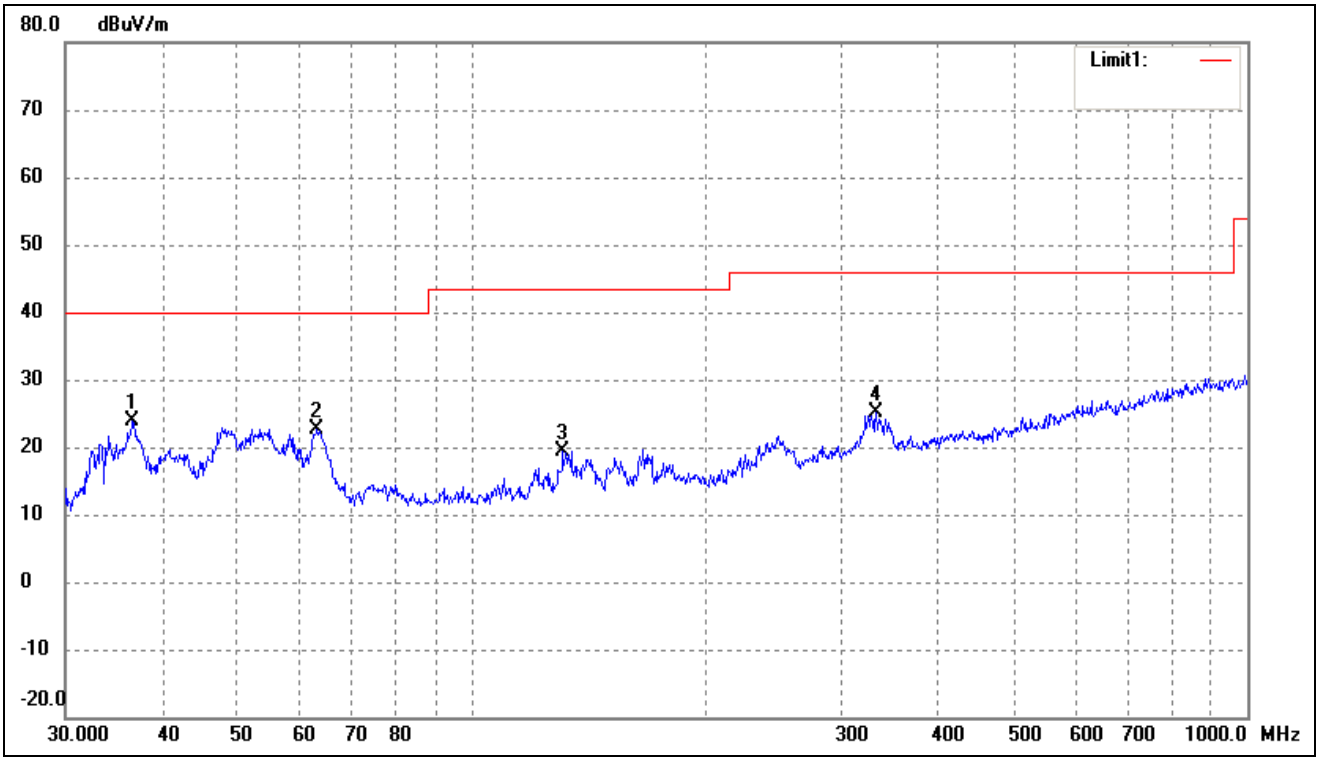


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	71.8320	24.91	1.97	26.88	40.00	-13.12	59	100	QP
2	383.9318	16.87	9.38	26.25	46.00	-19.75	147	100	QP
3	878.3214	16.74	16.78	33.52	46.00	-12.48	236	100	QP

Plot of Radiated Emissions Test Data

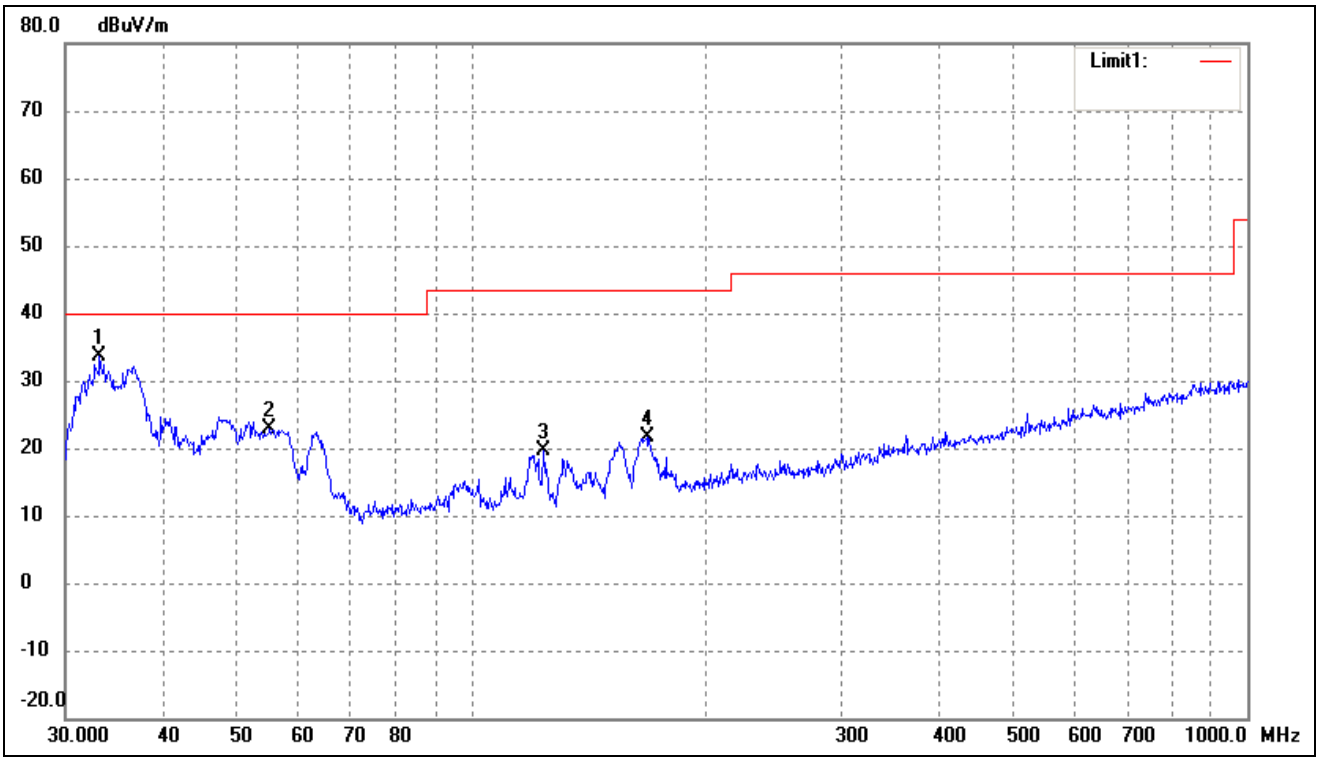
EUT: *Mobile phone*
Tested Model: *Infineum Z45*
Operating Condition: *TM2*
Comment: *USB: DC5V*

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	36.6375	34.17	-10.33	23.84	40.00	-16.16	33	100	QP
2	63.3132	33.71	-11.14	22.57	40.00	-17.43	33	100	QP
3	131.2965	30.10	-10.75	19.35	43.50	-24.15	33	100	QP
4	332.5187	29.02	-3.93	25.09	46.00	-20.91	33	100	QP

Test Specification: *Vertical*

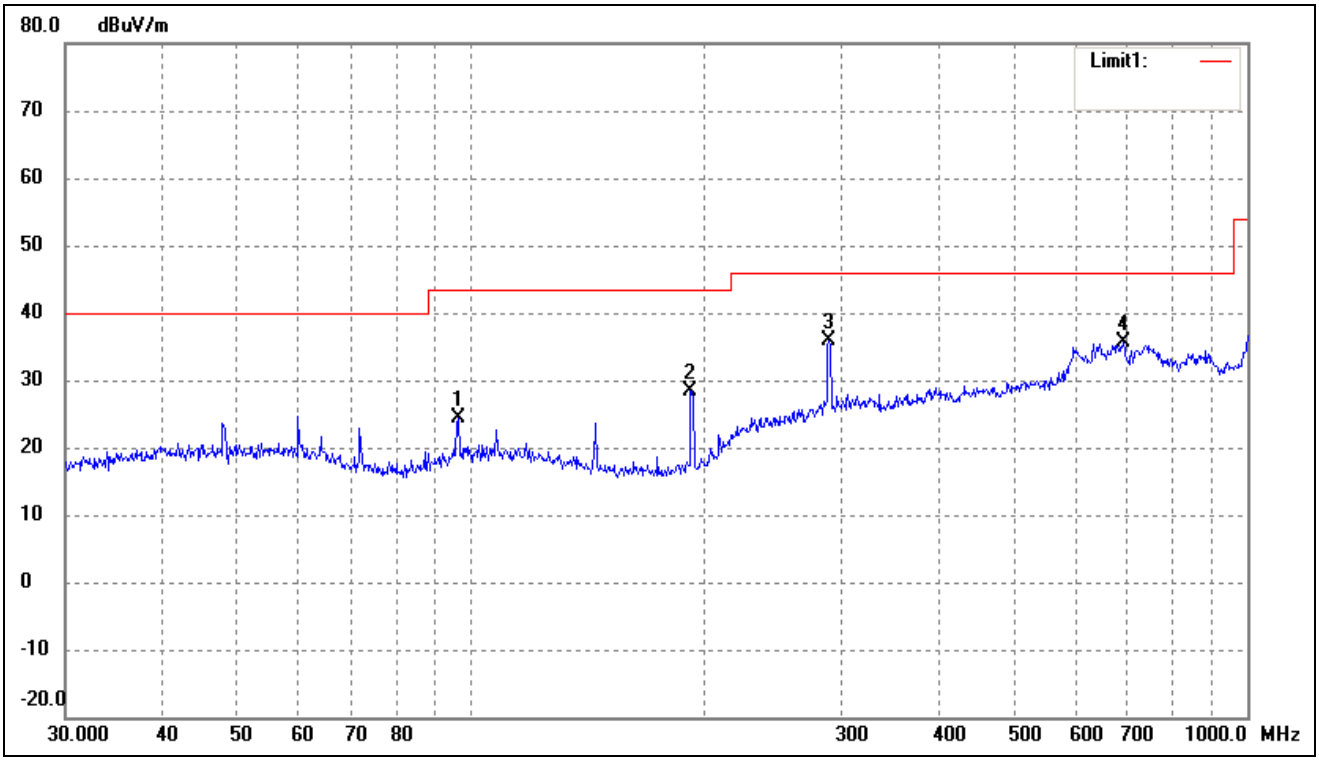


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	33.2111	44.52	-10.85	33.67	40.00	-6.33	43	100	QP
2	55.0274	32.17	-9.40	22.77	40.00	-17.23	43	100	QP
3	124.1329	30.33	-10.65	19.68	43.50	-23.82	43	100	QP
4	168.4138	31.83	-10.15	21.68	43.50	-21.82	43	100	QP

Plot of Radiated Emissions Test Data

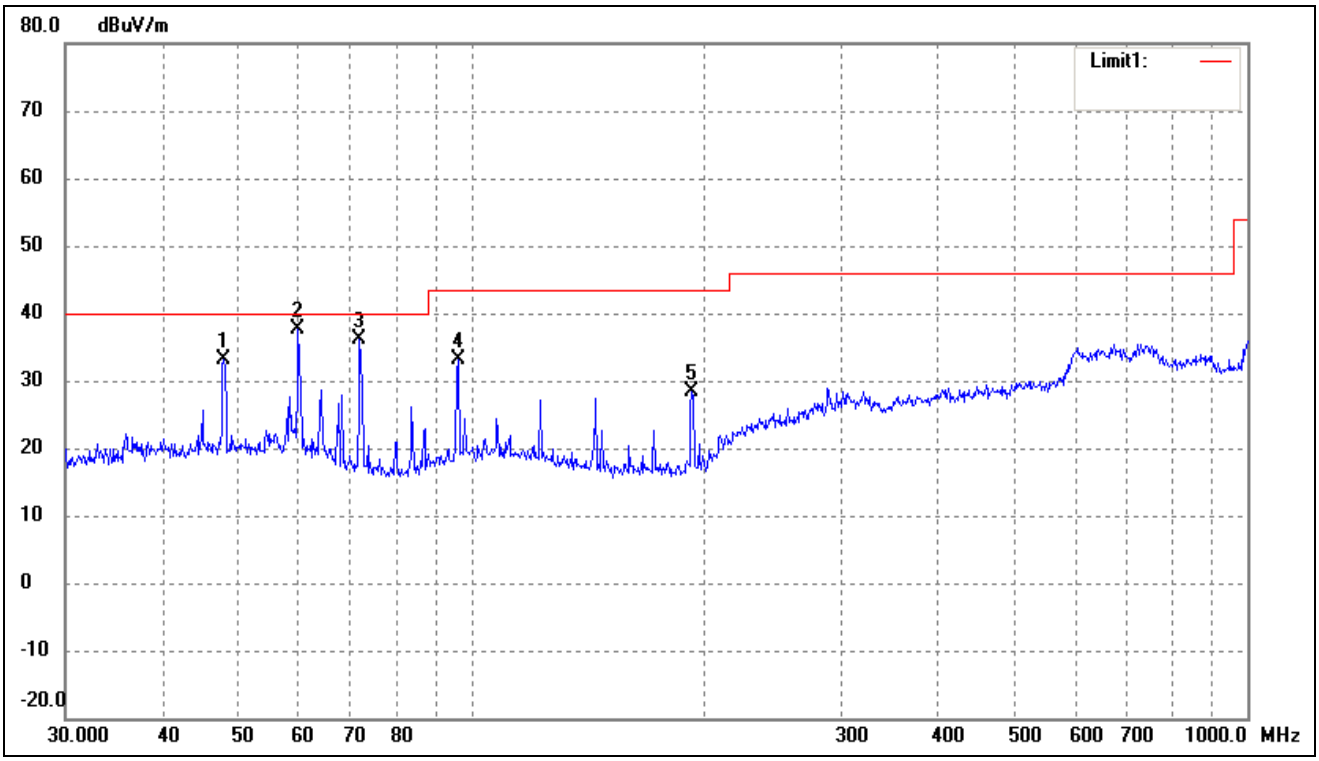
EUT: *Mobile phone*
Tested Model: *Infineum Z45*
Operating Condition: *TM3*
Comment: *AC 120V/60Hz; Adapter DC 5V*

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	96.4362	19.67	4.60	24.27	43.50	-19.23	20	100	QP
2	191.7450	25.09	3.29	28.38	43.50	-15.12	20	100	QP
3	289.0021	24.23	11.75	35.98	46.00	-10.02	20	100	QP
4	691.9867	17.29	18.37	35.66	46.00	-10.34	20	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	47.9940	27.78	5.26	33.04	40.00	-6.96	12	100	QP
2	59.8588	32.16	5.38	37.54	40.00	-2.46	12	100	QP
3	71.8320	33.07	2.97	36.04	40.00	-3.96	12	100	QP
4	96.0986	28.50	4.53	33.03	43.50	-10.47	12	100	QP
5	192.4186	24.96	3.33	28.29	43.50	-15.21	12	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 *******