

FCC Part 15B Measurement and Test Report

For

VeryKool USA Inc

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

FCC ID: WA6R623

Test Standards:	<u>FCC Part 15 Subpart B</u>	
Product Description:	<u>GSM/GPRS Dual-band Mobile Phone</u>	
Tested Model:	<u>R623</u>	
Report No.:	<u>STR12098307I-4</u>	
Tested Date:	<u>2012-10-09 to 2012-10-29</u>	
Issued Date:	<u>2012-10-29</u>	
Tested By:	<u>Seven Song / Engineer</u>	<i>Seven Song</i>
Reviewed By:	<u>Lahm Peng / EMC Manager</u>	<i>Lahm peng</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: Verykool Wireless Technology Ltd.
 Address of manufacturer: Room 1701, Reward Building C, No.203, 2nd Section of WangJing, Li Ze Zhong Yuan, ChaoYang District, Beijing, P.R. of China 100102

General Description of EUT	
Product Name:	GSM/GPRS Dual-band Mobile Phone
Trade Name:	verykool
Model No.:	R623
Rated Voltage:	DC 3.7V Li-ion Battery
Power Adapter Model:	CYSK05-050050 (Input: AC 100-240V, Output: DC 5V)
<i>Note: The test data is gathered from a production sample, provided by the manufacturer.</i>	

Technical Characteristics of EUT	
Highest Internal Frequency:	26MHz
Classification of ITE:	Class B
Support Interface:	USB Port

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 and Playing	Color Bar with 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 Ferrite

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Notebook	SAMSUNG	R20	N/A

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.

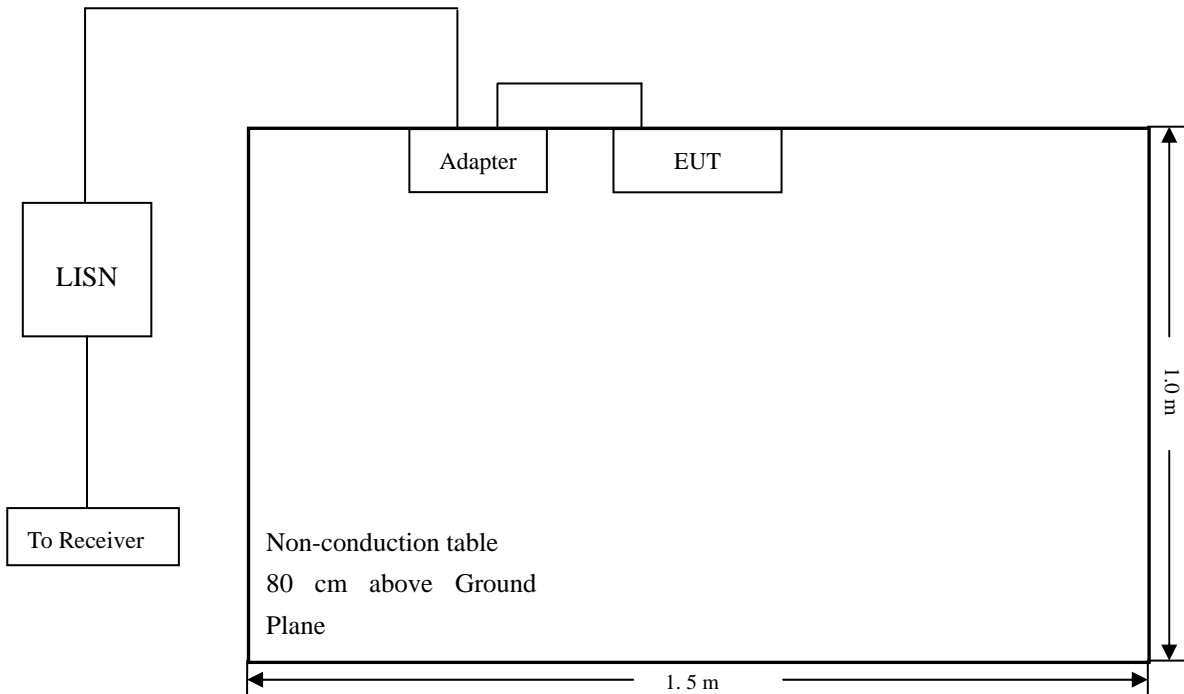
3.2 Test Equipment List and Details

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:

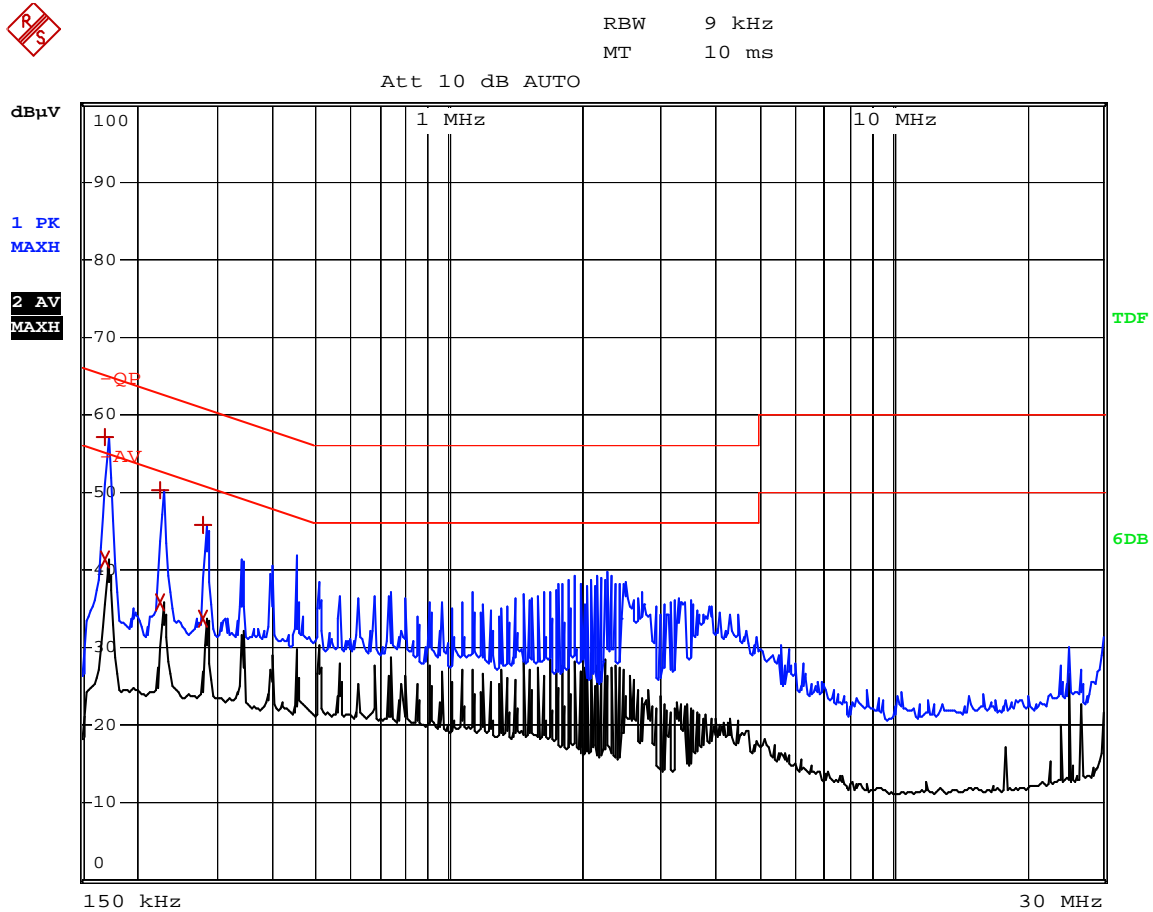
-7.97 dB μ V at 0.170 MHz in the Neutral, Peak detector, 0.15-30MHz

3.7 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

EUT: GSM/GPRS Dual-band Mobile Phone
 Tested Model: R623
 Operating Condiation: Charging &Playing
 Comment: AC 120V/60Hz

Test Specification: Neutral



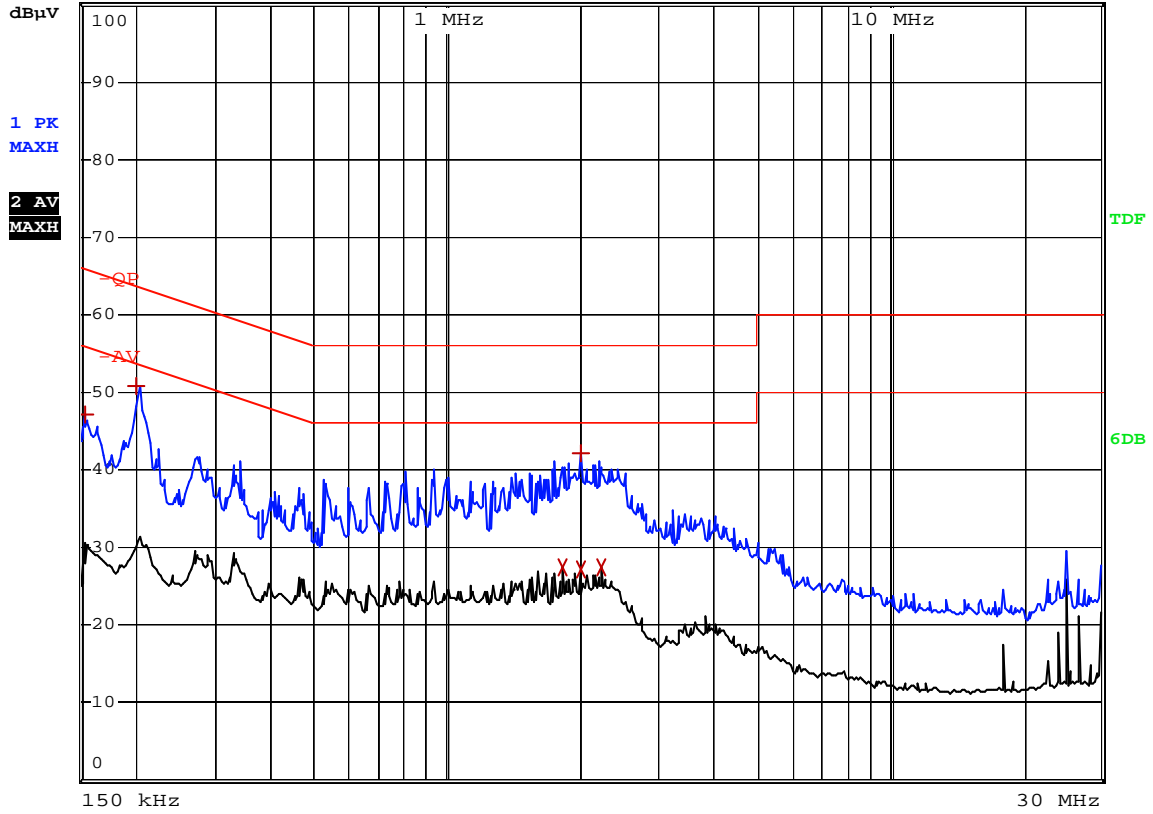
EDIT PEAK LIST (Prescan Results)			
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Max Peak	170 kHz	56.98	-7.97
2 Average	170 kHz	41.39	-13.56
1 Max Peak	226 kHz	50.29	-12.30
2 Average	226 kHz	35.76	-16.83
1 Max Peak	282 kHz	45.73	-15.02
2 Average	282 kHz	33.80	-16.95

Test Specification: Line



RBW 9 kHz
MT 10 ms

Att 10 dB AUTO



EDIT PEAK LIST (Prescan Results)			
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Max Peak	154 kHz	47.21	-18.57
1 Max Peak	202 kHz	50.85	-12.67
2 Average	1.826 MHz	27.36	-18.64
1 Max Peak	2.018 MHz	42.07	-13.93
2 Average	2.018 MHz	27.08	-18.91
2 Average	2.222 MHz	27.36	-18.63

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.

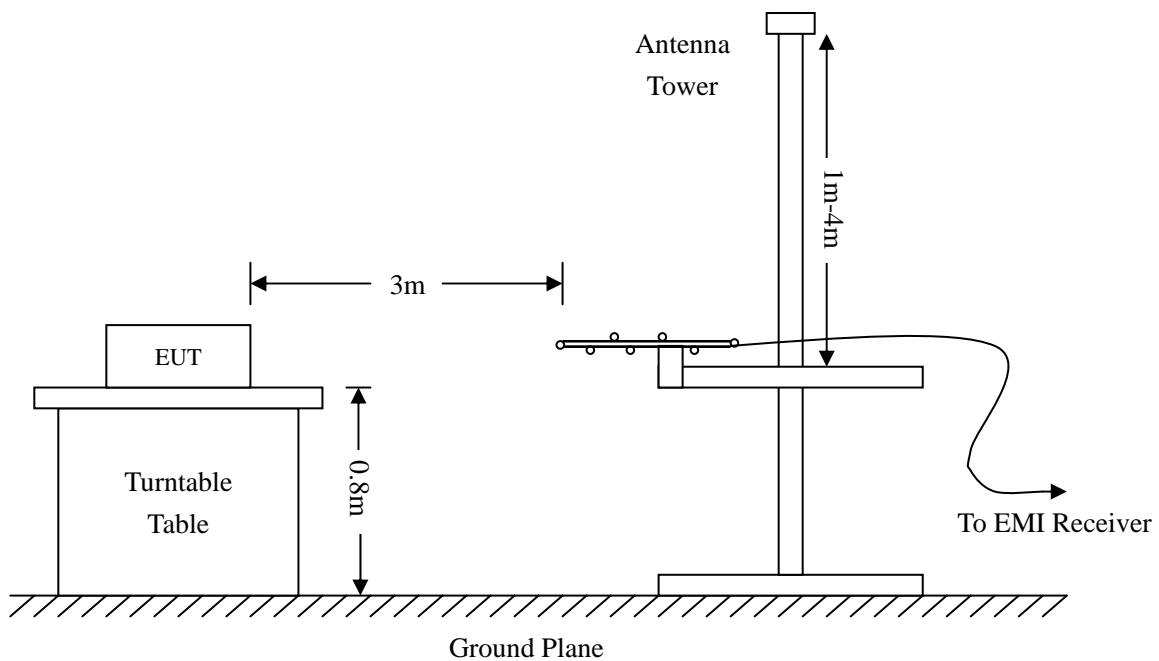
4.2 Test Equipment List and Details

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:

-2.70 dB μ V at 192.4184 MHz in the Horizontal polarization, Downloading mode, 9 kHz to 1 GHz, 3Meters

Plot of Radiated Emissions Test Data (9kHz to 30MHz)

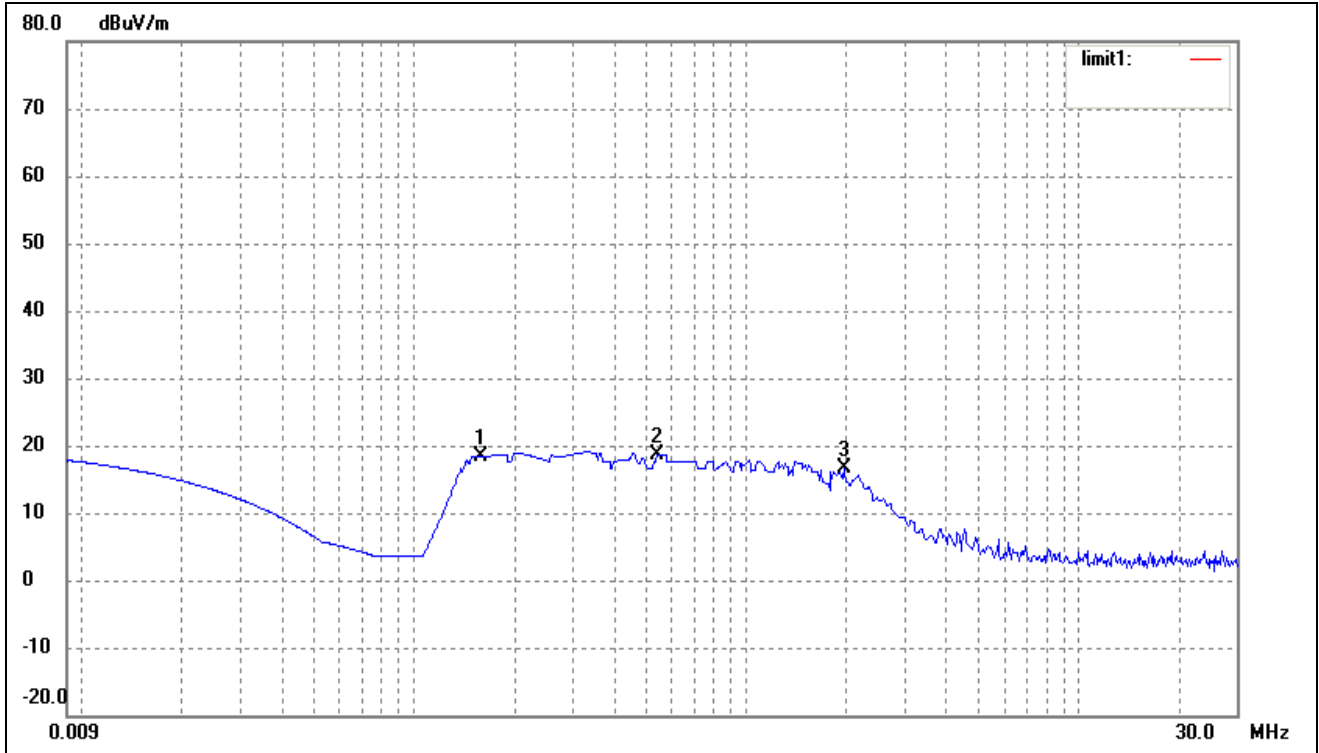
EUT: GSM/GPRS Dual-band Mobile Phone

Tested Model: R623

Operating Condition: Charging &Playing

Comment: AC 120V/60Hz adapter

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	0.1590	18.19	0.21	18.40	39.56	-21.16	0	100	peak
2	0.5368	17.57	1.03	18.60	37.49	-18.89	0	100	peak
3	1.9653	15.34	1.34	16.68	35.56	-18.88	0	100	peak

Plot of Radiated Emissions Test Data(9kHz to 30MHz)

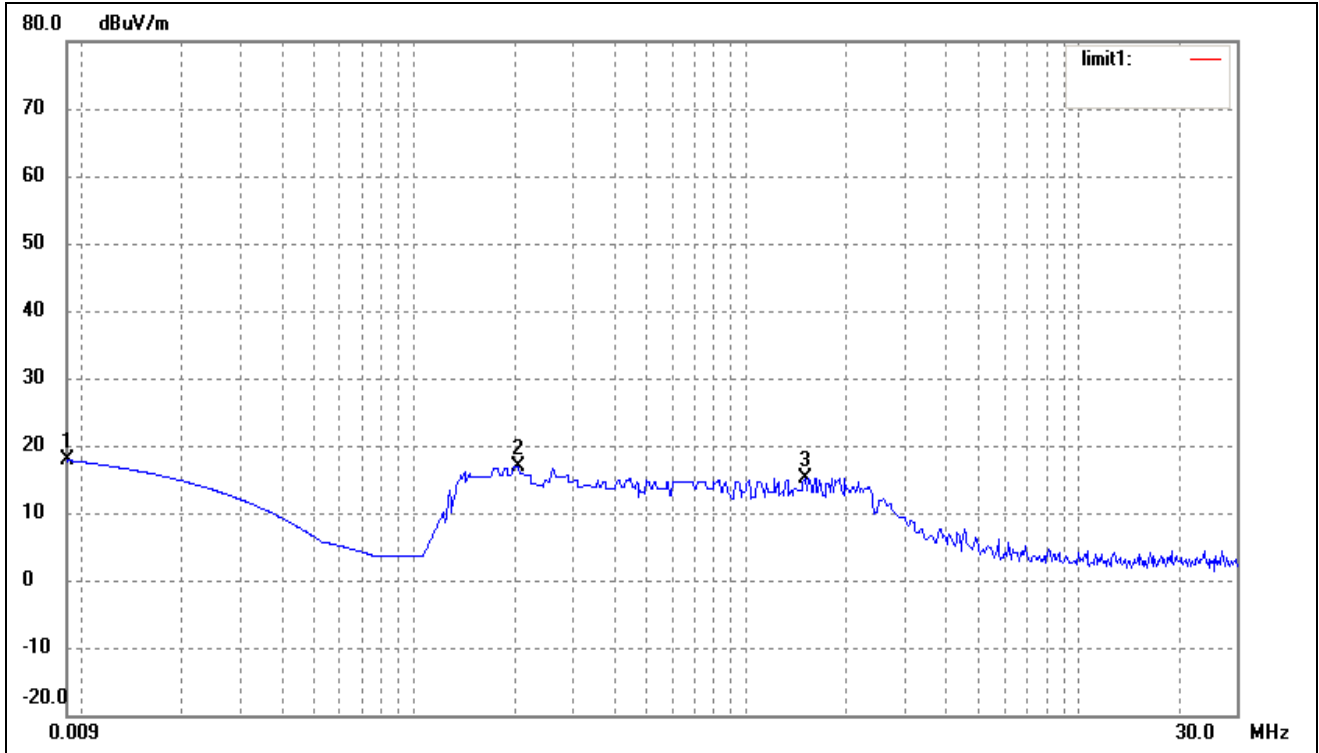
EUT: GSM/GPRS Dual-band Mobile Phone

Tested Model: R623

Operating Condition: Downloading

Comment: Connect 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	0.0091	17.57	0.25	17.82	50.72	-32.90	254	100	peak
2	0.2061	16.28	0.57	16.85	39.24	-22.39	116	100	peak
3	1.5088	13.99	1.24	15.23	33.24	-18.01	360	200	peak

Plot of Radiated Emissions Test Data (30MHz to 1GHz)

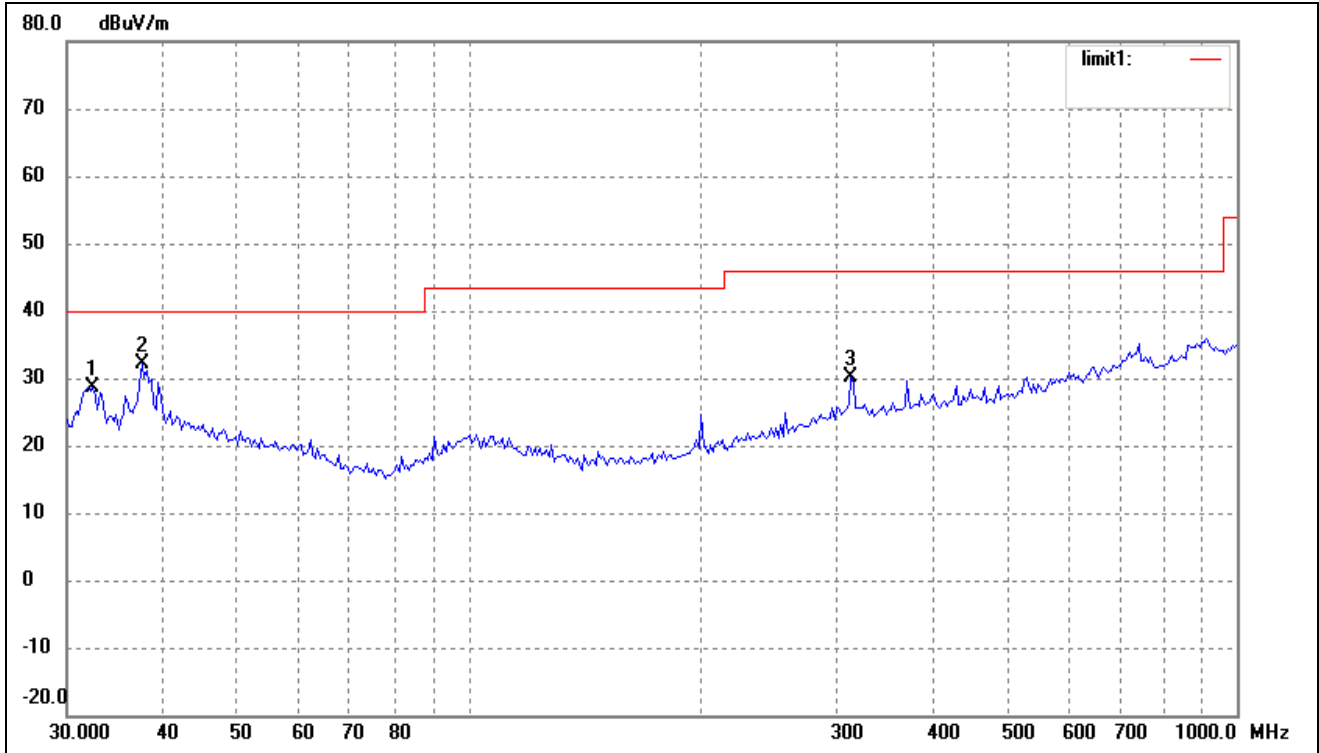
EUT: GSM/GPRS Dual-band Mobile Phone

Tested Model: R623

Operating Condition: Charging &Playing

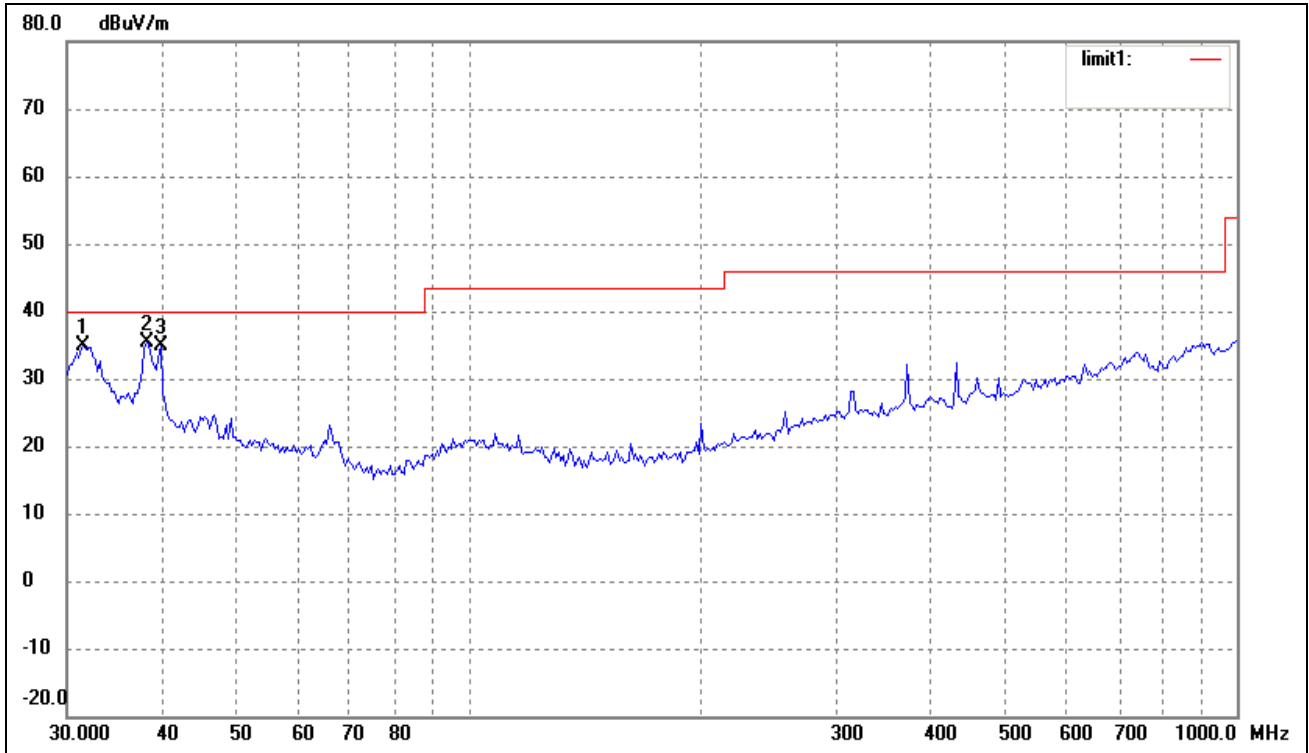
Comment: AC 120V/60Hz adapter

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	32.4059	20.31	8.44	28.75	40.00	-11.25	264	100	peak
2	37.5479	22.85	9.29	32.14	40.00	-7.86	113	200	peak
3	314.3765	19.77	10.40	30.17	46.00	-15.83	287	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	31.5095	26.56	8.30	34.86	40.00	-5.14	254	100	QP
2	38.0783	26.09	9.37	35.46	40.00	-4.54	78	100	QP
3	39.7147	25.21	9.64	34.85	40.00	-5.15	360	100	QP

Plot of Radiated Emissions Test Data(30MHz to 1GHz)

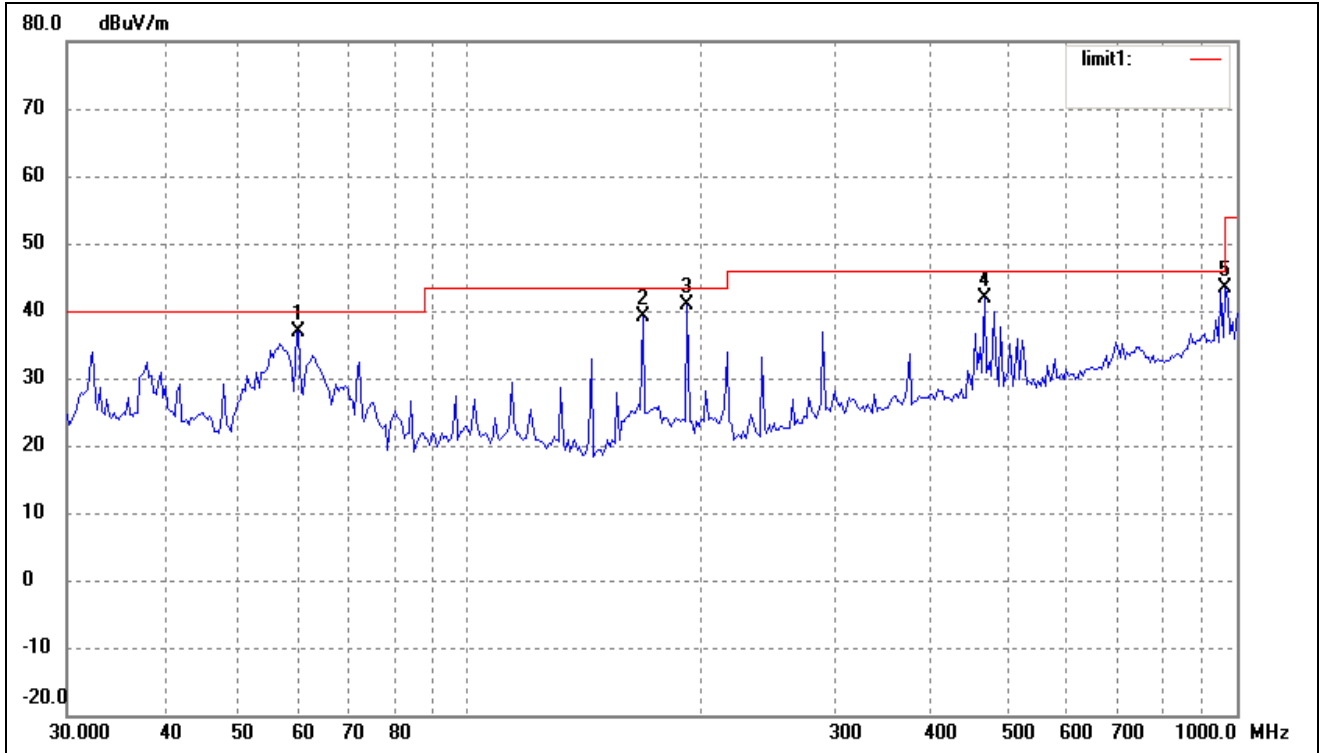
EUT: GSM/GPRS Dual-band Mobile Phone

Tested Model: R623

Operating Condition: Downloading

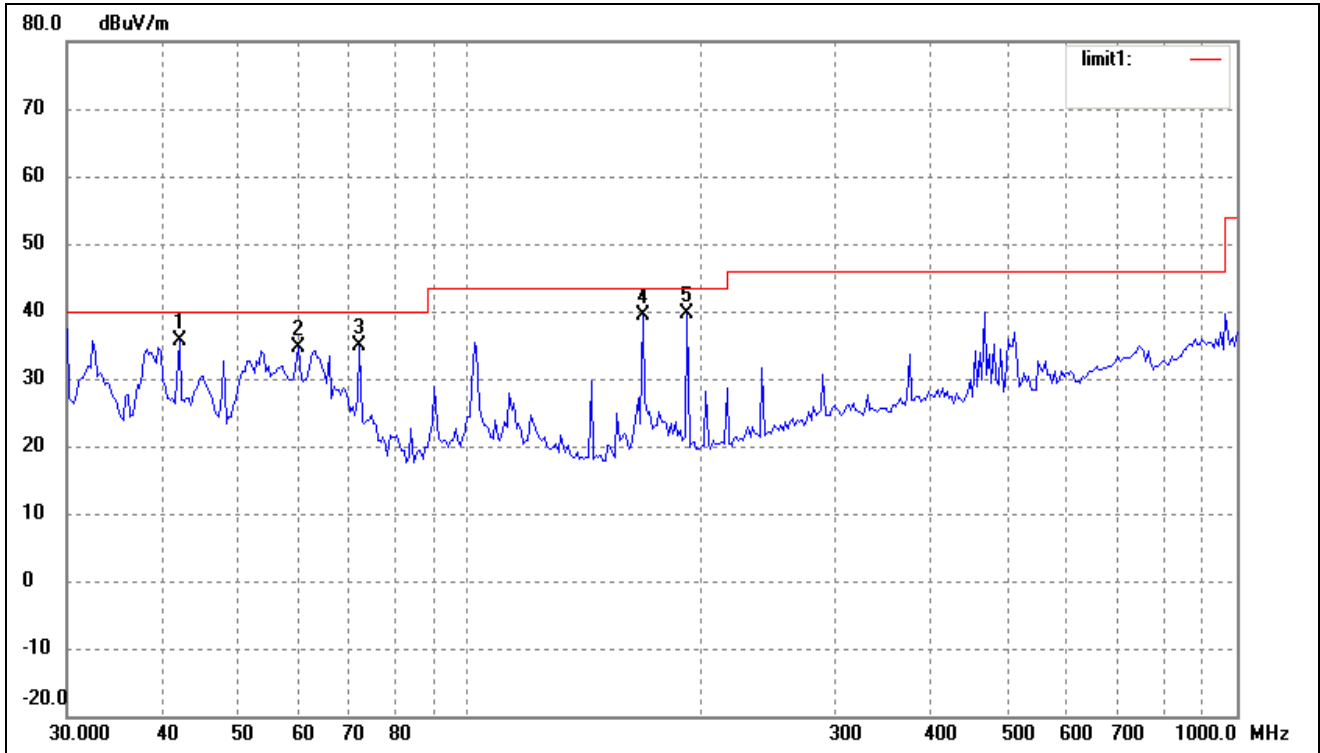
Comment: Connect to PC

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	60.0690	31.16	5.67	36.83	40.00	-3.17	254	100	QP
2	168.4138	35.47	3.69	39.16	43.50	-4.34	116	200	QP
3	192.4184	36.49	4.31	40.80	43.50	-2.70	360	200	QP
4	468.8761	30.34	11.62	41.96	46.00	-4.04	90	100	QP
5	965.5421	25.02	18.37	43.39	54.00	-10.61	270	200	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	42.0065	26.45	9.07	35.52	40.00	-4.48	254	100	QP
2	60.0690	28.91	5.67	34.58	40.00	-5.42	113	100	QP
3	72.0842	32.48	2.28	34.76	40.00	-5.24	270	100	QP
4	168.4138	35.63	3.69	39.32	43.50	-4.18	26	100	QP
5	192.4185	35.33	4.31	39.64	43.50	-3.86	330	100	QP