



**FCC PART 15B**  
**MEASUREMENT AND TEST REPORT**  
**FOR**

**Verykool USA Inc**  
**4350 Executive Dr. #100, San Diego**

**FCC ID: WA6R23**

<b>Report Concerns:</b> Original Report	<b>Equipment Type:</b> GSM/GPRS Dual-band Mobile Phone
<b>Model:</b>	<u>R23</u>
<b>Report No.:</b>	<u>STR11098019I-3</u>
<b>Test Date:</b>	<u>2011-09-02 to 2011-09-08</u>
<b>Issue Date:</b>	<u>2011-09-22</u>
<b>Tested By:</b>	<u>Jason Chen / Engineer</u> 
<b>Reviewed By:</b>	<u>Lahm Peng / EMC Manager</u> 
<b>Approved &amp; Authorized By:</b>	<u>Jandy so / PSQ Manager</u> 
<b>Prepared By:</b>	<b>SEM.Test Compliance Service Co., Ltd</b> 3/F, Jinbao Commerce Building, Xin'an Fanshen Road, Bao'an District, Shenzhen, P.R.C. (518101) Tel.: +86-755-33663308 Fax.: +86-755-33663309 Website: www.semtest.com.cn

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: 4350 Executive Dr. #100, San Diego

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 E.U.T

Items	Description
EUT Description:	GSM/GPRS Dual-band Mobile Phone
Trade Name:	verykool
Model No.:	R23
Rated Voltage:	Battery DC 3.7V with Power adaptor
Rated Current:	2A
Battery:	M/N: 553450AR; DC 3.7V/1050mAh
Power Adapter:	M/N: ASUCI-050050; Input: 100-240V ~ 50/60Hz, 0.3A
For more information refer to the circuit diagram form and the user's manual.	

*The test data is gathered from a production sample, provided by the manufacturer.*

### 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 15.107, and 15.109 rules.

**Maintenance of compliance** is the responsibility of the manufacturer. Any modification of the product, which results in lowering the emission/immunity, 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.

The equipment under test (EUT) was configured to measure its highest possible susceptibility against the tested

phenomena. The test modes were adapted accordingly in reference to the Operating Instructions.

## 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 Exercise Software

The EUT exercise program used during radiated and conducted testing was designed to exercise the system components. The test software, provided by the customer, is started while the EUT is on to simulate the normal work.

## 1.6 Accessories Equipment List and Details

Description	Manufacturer	Model	Serial Number
Notebook	ASUS	X50R	/
Notebook	IBM	T22	/

## 1.7 EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Cable	1.2	Shielded	Without Core
Earphone Cable	1.5	Unshielded	Without Core

2. SUMMARY OF TEST RESULTS

Description of Test	Result
§15.107 (a) Conducted Emission	Compliant
§15.109(a) Radiated Emission	Compliant

### 3. §15.107 (a)- CONDUCTED EMISSION

#### 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  $\pm 2.88$  dB.

#### 3.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2010-12-20	2011-12-19
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2010-12-20	2011-12-19
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2010-12-20	2011-12-19

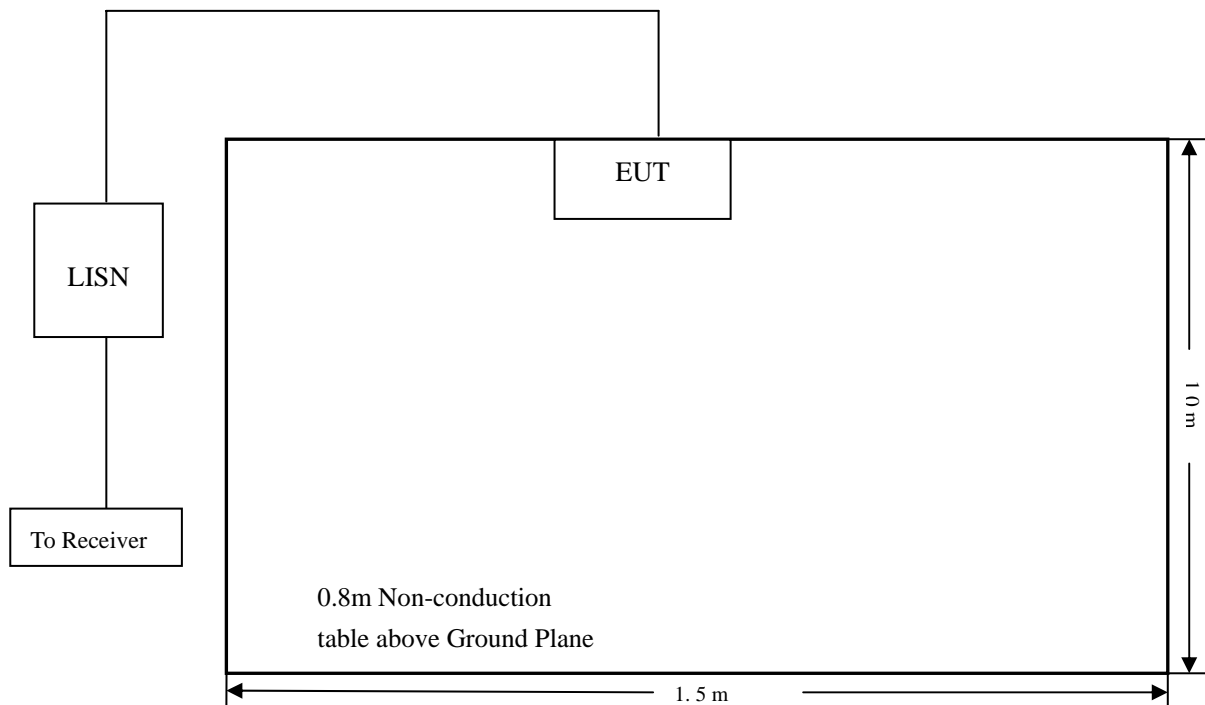
#### 3.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.107 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.

#### 3.4 Basic Test Setup Block Diagram



### 3.5 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

### 3.6 Test Receiver Setup

During the conducted emission test, the test receiver was set with the following configurations:

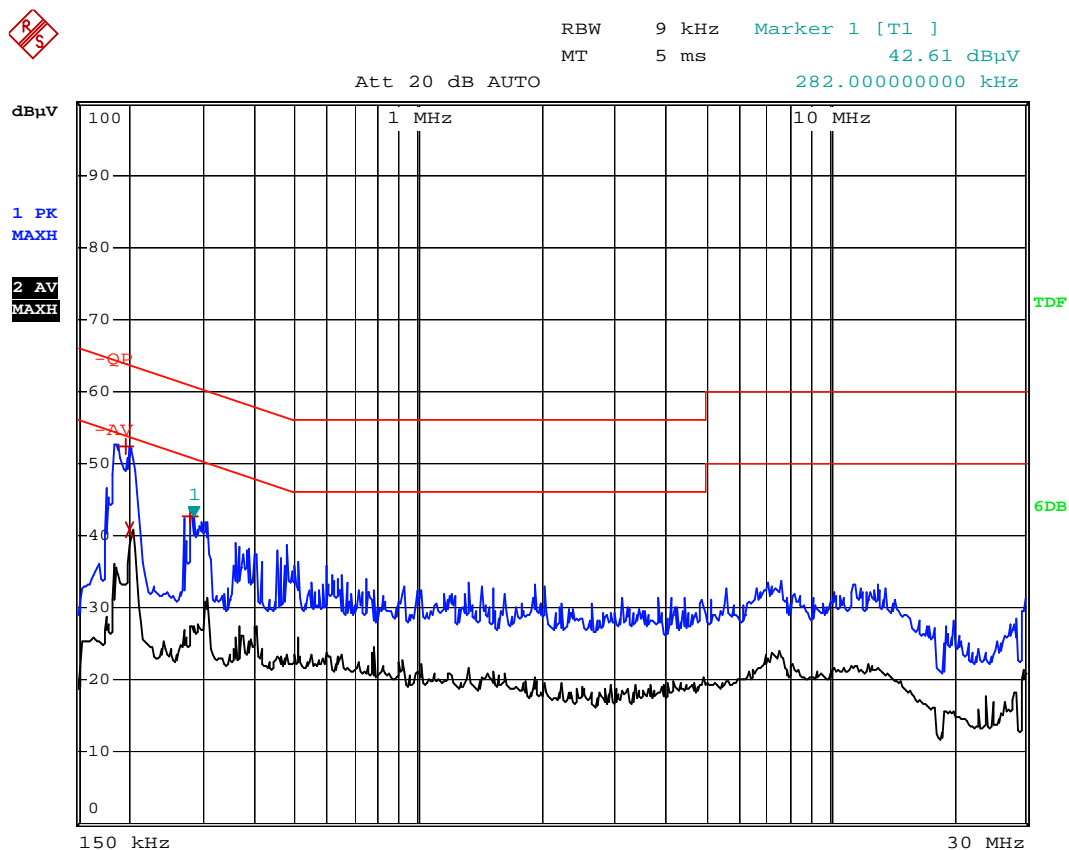
Start Frequency ..... 150 kHz  
Stop Frequency..... 30 MHz  
Sweep Speed ..... Auto  
IF Bandwidth..... 10 kHz  
Quasi-Peak Adapter Bandwidth ..... 9 kHz  
Quasi-Peak Adapter Mode ..... Normal

### 3.7 Summary of Test Results/Plots

According to the data in section 3.8, the EUT complied with the FCC Part 15B Conducted margin for a Class B device, with the *worst* margin reading of:

**-9.64 dB $\mu$ V at 0.190 MHz in the Line, Peak detector, 0.15-30MHz**

### 3.8 Conducted Emissions Test Data

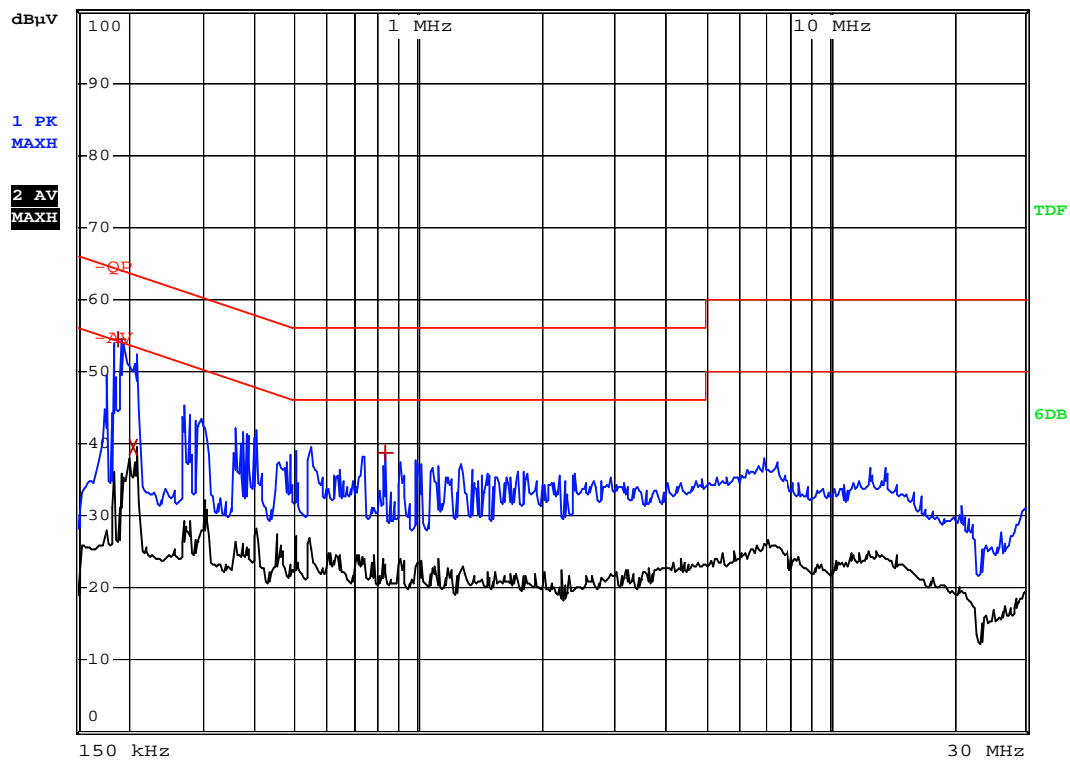
**Plot of Conducted Emissions Test Data***Conducted Disturbance**EUT: GSM/GPRS Dual-band Mobile Phone**M/N: R23**Operating Condition: Charging**Test Specification: N**Comment: 120V/60Hz*

EDIT PEAK LIST (Prescan Results)			
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
1 Max Peak	198 kHz	52.34	-11.34
2 Average	202 kHz	40.72	-12.80
1 Max Peak	282 kHz	42.60	-18.14



**Plot of Conducted Emissions Test Data***Conducted Disturbance**EUT: GSM/GPRS Dual-band Mobile Phone**M/N: R23**Operating Condition: Charging**Test Specification: L**Comment: 120V/60Hz*RBW 9 kHz  
MT 5 ms

Att 20 dB AUTO



EDIT PEAK LIST (Prescan Results)			
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
1 Max Peak	190 kHz	54.38	-9.64
2 Average	206 kHz	39.53	-13.83
1 Max Peak	830 kHz	38.72	-17.27

## 4. §15.109(a)- RADIATED EMISSION

### 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  $\pm 5.10$  dB.

### 4.2 Test Equipment List and Details

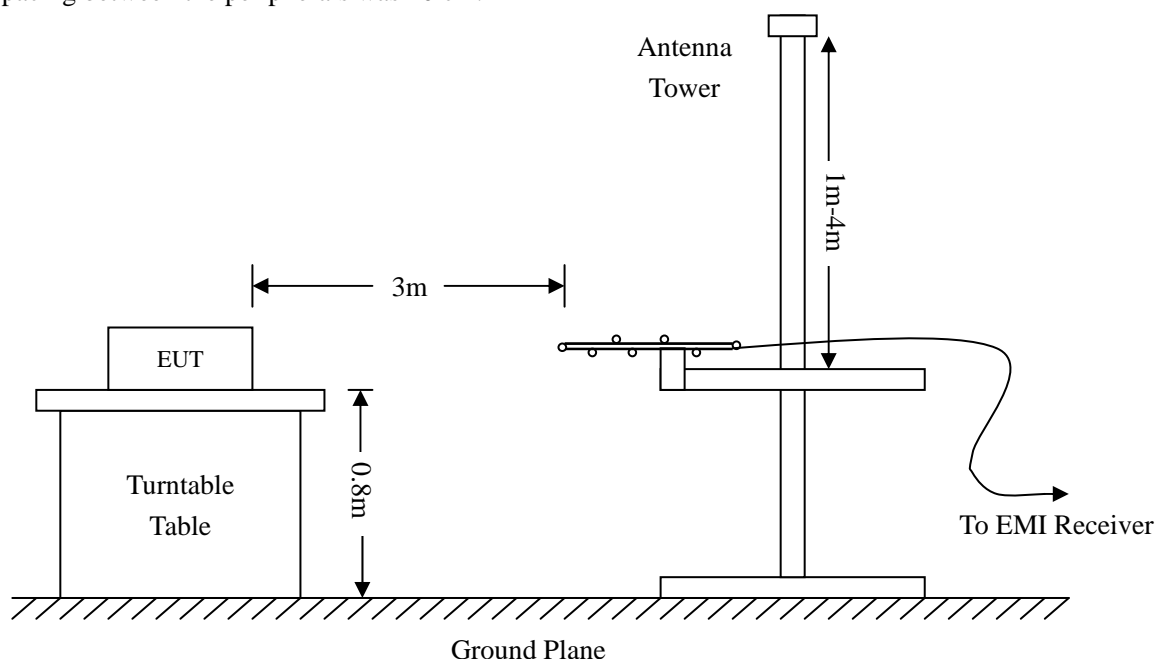
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2010-12-20	2011-12-19
EMI Test Receiver	R&S	ESVB	825471/005	2010-12-20	2011-12-19
Positioning Controller	C&C	CC-C-1F	N/A	2010-12-20	2011-12-19
RF Switch	EM	EMSW18	SW060023	2010-12-20	2011-12-19
Pre-amplifier	Agilent	8447F	3113A06717	2010-12-20	2011-12-19
Pre-amplifier	Compliance Direction	PAP-0118	24002	2010-12-20	2011-12-19
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2011-01-09	2012-01-08
Horn Antenna	ETS	3117	00086197	2011-01-09	2012-01-08
Loop Antenna	SCHWARZECK	HFRA 5165	9365	2011-01-09	2012-01-08

### 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 15.205 and 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 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 -6dBμV means the emission is 6dBμV below the maximum limit for Class B. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15B Limit}$$

#### 4.5 Environmental Conditions

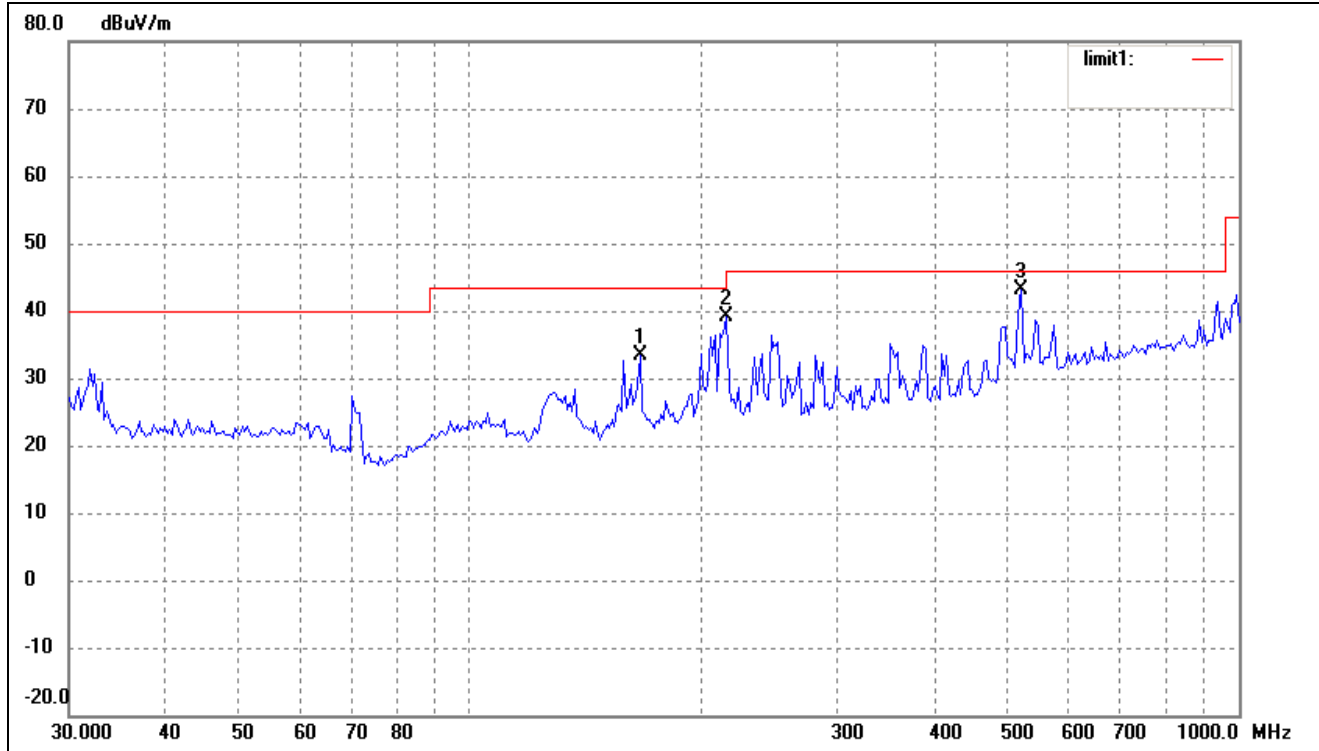
Temperature:	25 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

#### 4.6 Summary of Test Results/Plots

According to the data, the EUT complied with the FCC Part 15B Class B standards, and had the worst margin of:

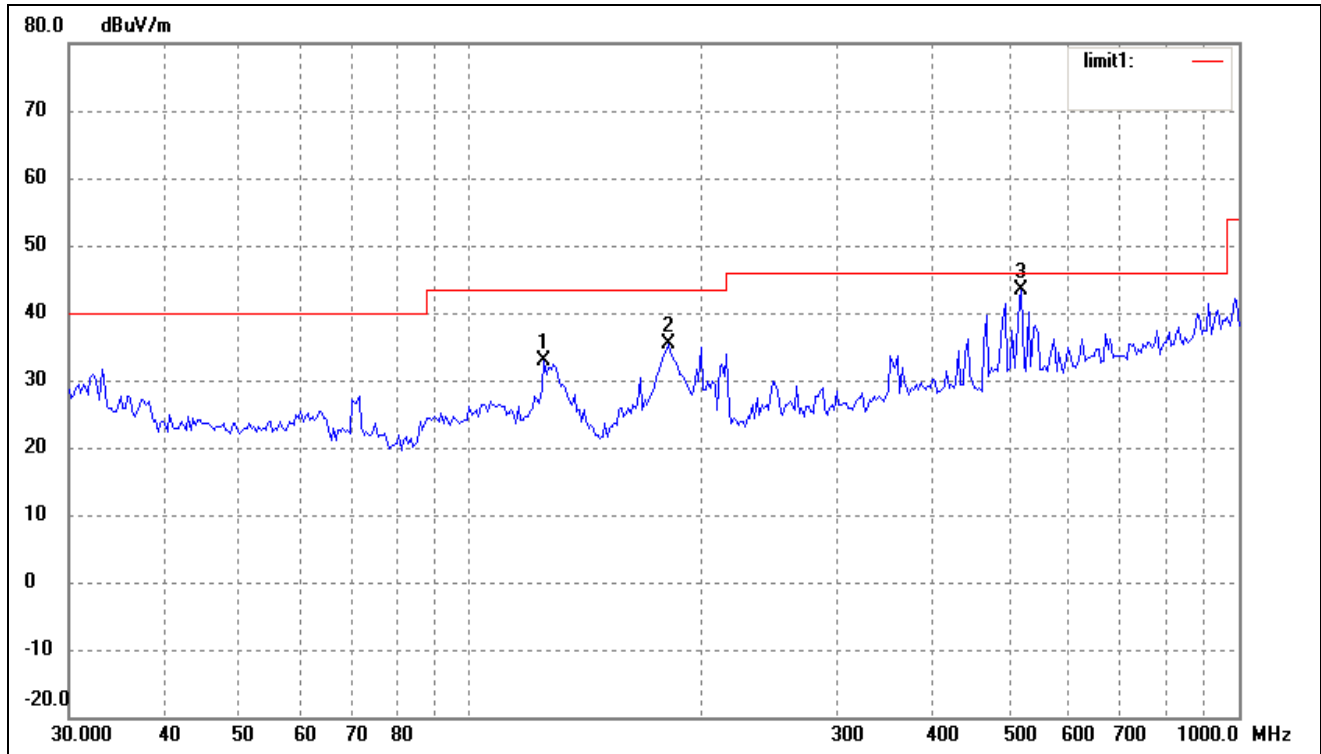
**-2.50 dBμV at 520.8881 MHz in the Vertical polarization, Reading and Writing mode, 9kHz to 1 GHz, 3Meters**

**-2.98 dBμV at 42.3022 MHz in the Vertical polarization, Charging mode, 9kHz to 1 GHz, 3Meters**

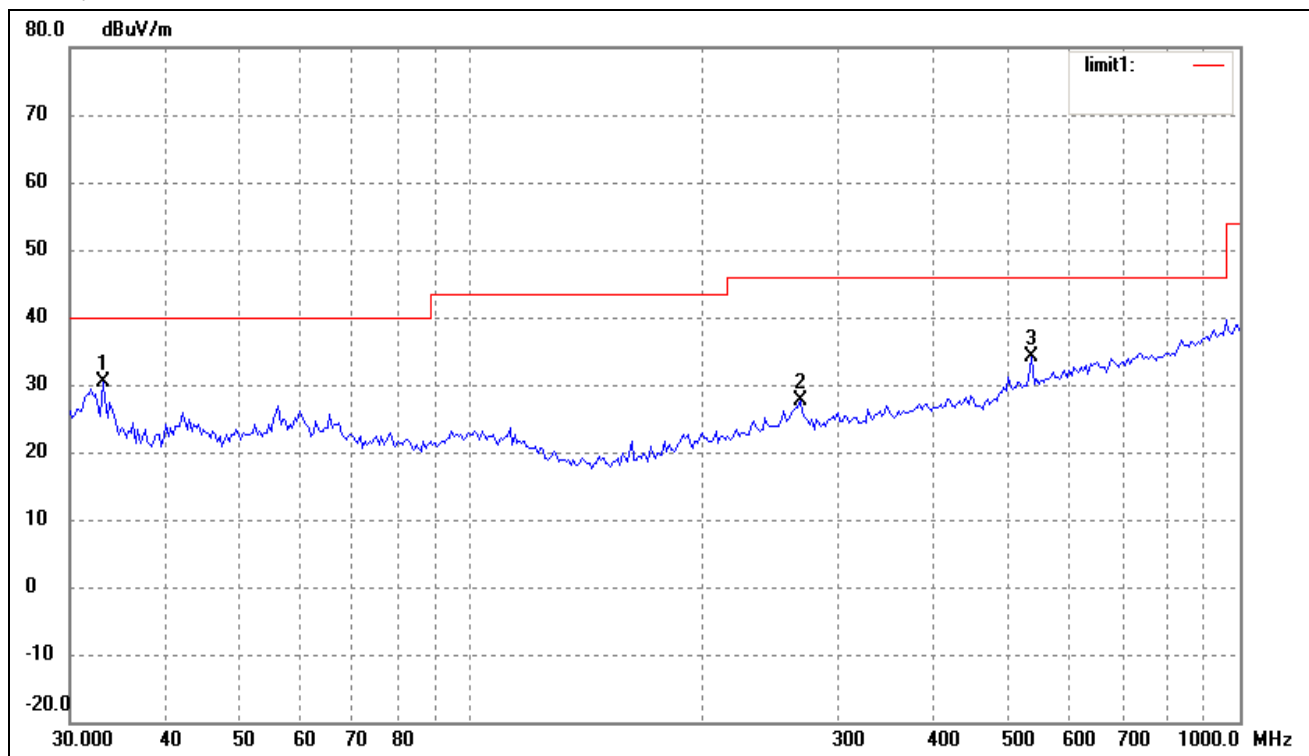
**Plot of Radiation Emissions Test Data***Radiated Disturbance**EUT: GSM/GPRS Dual-band Mobile Phone**M/N: R23**Operating Condition: Reading and Writing**Test Specification: Horizontal & Vertical**Comment: AC 120V/60Hz connect to PC, USB 5V***Horizontal**

No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( ° )	Height (cm)	Remark
1	166.0680	28.55	4.75	33.30	43.50	-10.20	360	200	peak
2	215.2678	31.91	7.12	39.03	43.50	-4.47	223	140	QP
3	520.8882	28.13	14.89	43.02	46.00	-2.98	152	150	QP

Vertical

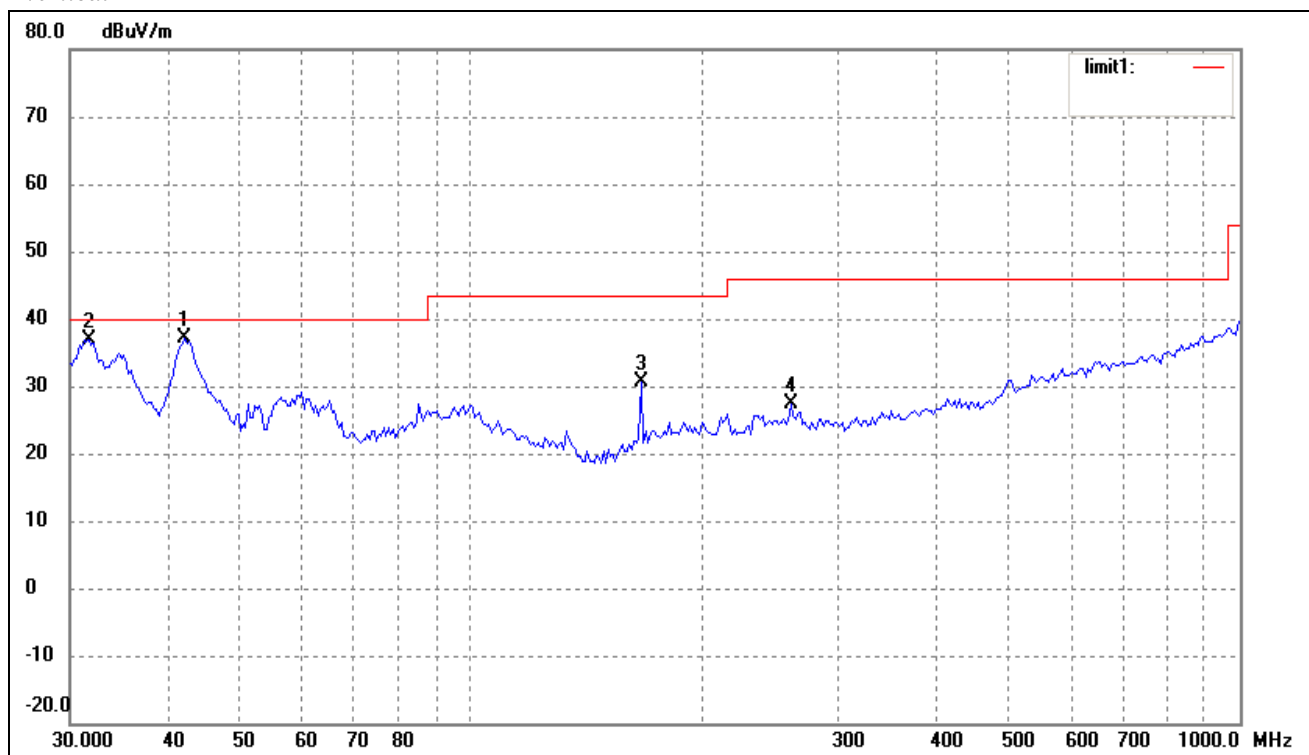


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( ° )	Height (cm)	Remark
1	124.5690	27.68	5.32	33.00	43.50	-10.50	0	100	peak
2	180.6488	29.58	5.70	35.28	43.50	-8.22	360	200	peak
3	520.8881	28.61	14.89	43.50	46.00	-2.50	142	135	QP

*Radiated Disturbance**EUT: GSM/GPRS Dual-band Mobile Phone**M/N: R23**Operating Condition: Charging**Test Specification: Horizontal & Vertical**Comment: AC 120V/60Hz, DC 5V by adapter**Horizontal*

No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( ° )	Height (cm)	Remark
1	33.0950	23.64	6.77	30.41	40.00	-9.59	0	200	peak
2	267.5455	18.53	9.17	27.70	46.00	-18.30	360	100	peak
3	535.7073	18.96	15.21	34.17	46.00	-11.83	0	200	peak

Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( ° )	Height (cm)	Remark
1	42.3022	28.84	8.18	37.02	40.00	-2.98	332	140	QP
2	31.7313	30.09	6.77	36.86	40.00	-3.14	126	150	QP
3	166.0680	25.86	4.75	30.61	43.50	-12.89	360	200	peak
4	260.1444	18.51	8.95	27.46	46.00	-18.54	0	200	peak

Note: The EUT was tested over frequency rang from 9kHz to 1GH for radiation emissions, emissions attenuated closely to the noise base are not reported for below 30MHz.

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