

# FCC Part 15B

## Measurement and Test Report

### For

Verykool USA Inc

4350 Executive Dr. #100, San Diego, CA 92121, USA

**FCC ID: WA6S135**

<b>Test Standards:</b>	<u>FCC Part 15 Subpart B</u>
<b>Product Description:</b>	<u>3G Mobile Phone</u>
<b>Tested Model:</b>	<u>S135</u>
<b>Report No.:</b>	<u>STR12078082I-4</u>
<b>Tested Date:</b>	<u>2012-07-16 to 2012-07-30</u>
<b>Issued Date:</b>	<u>2012-07-31</u>
<b>Tested By:</b>	<u>Seven Song</u>
<b>Reviewed By:</b>	<u>Lahm Peng / EMC Manager</u>
<b>Approved &amp; Authorized By:</b>	<u>Jandy so / PSQ Manager</u>
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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 permission 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, CA 92121, USA  
Manufacturer: Shenzhen SanMu Communication Technology Co., Ltd.  
Address of manufacturer: 3/F Block T2-A, Shenzhen Software Park, Southern Zone, Hi-Tech Industrial Park, Nanshan, Shenzhen

<b>General Description of EUT</b>	
Product Name:	3G Mobile Phone
Trade Name:	verykool
Model No.:	S135
Rated Voltage:	Battery DC 3.7V, Adapter Charging: DC 5V
<i>Note: The test data is gathered from a production sample (with two SIM card), provided by the manufacturer. The other sample have same model name listed in the report has different Number SIM card socket only without circuit and electronic construction changed, declared by the manufacturer.</i>	

<b>Technical Characteristics of EUT</b>	
Rated Voltage:	DC 3.7V Li-ion Battery, Adapter DC5V
Rated Current:	/
Power Adapter Model:	A261-0500500U (Input: AC 100-240V,50/60Hz 0.2A, Output: DC 5V,500mA)
Highest Internal Frequency:	26MHz
Classification of ITE:	B
Support Interface:	Earphone Port, DC Power 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	Playing	Playing multimedia from TF card
TM2	Charging	Charging with adapter
TM3	Downloading	Reading & writing

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
DC Power Cable	0.9	Unshielded	Unshielded
Earphone Cable	0.9	Unshielded	Without Ferrite

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Notebook	SAMSUNG	NP-R20	124V93FP30082V

Special Cable List and Details

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

## 2. SUMMARY OF TEST RESULTS

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FCC Rules	Description of Test Item	Result
§ 15.107 (a)	Conducted Emissions	Compliant
§ 15.109 (a)	Radiated Emissions	Compliant

N/A: not applicable

### 3. §15.107 (a) 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  $\pm 2.88$  dB.

#### 3.2 Test Equipment List and Details

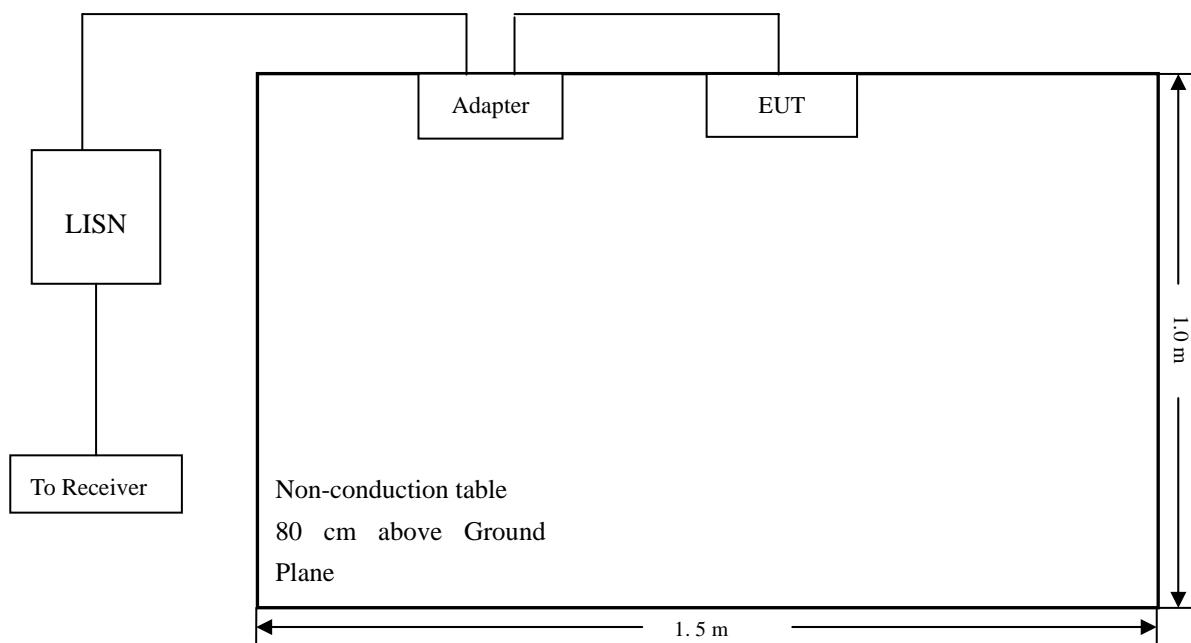
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2012-03-28	2013-03-27
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2012-03-28	2013-03-27
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2012-03-28	2013-03-27

**Statement of Traceability:** All calibrations have been performed per the NVLAP requirements traceable to the NIST.

#### 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

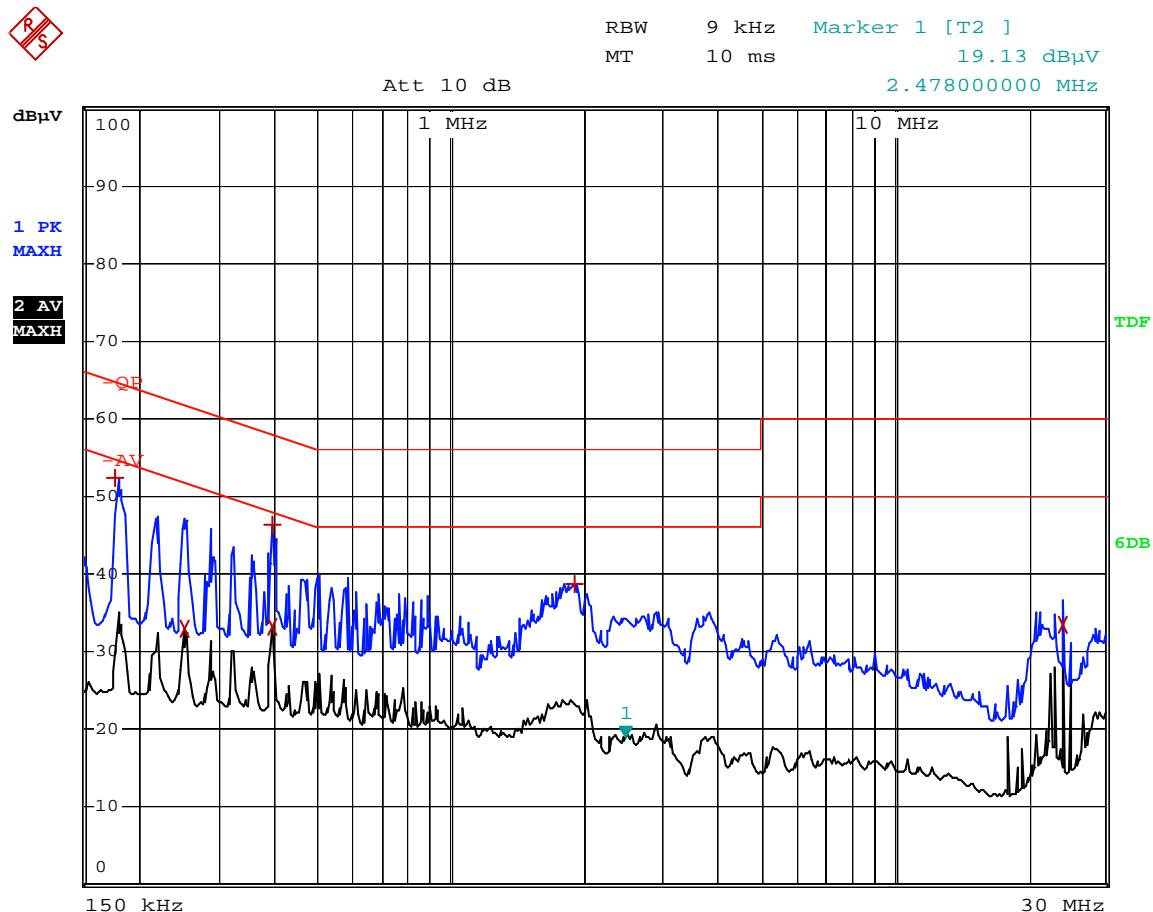
According to the data in section 3.7, the EUT complied with the FCC Part 15.107(a) Conducted margin for a Class B device, with the *worst* margin reading of:

**-11.72 dB $\mu$ V at 0.394 MHz** in the **Neutral, Peak** detector, 0.15-30MHz

### 3.7 Conducted Emissions Test Data

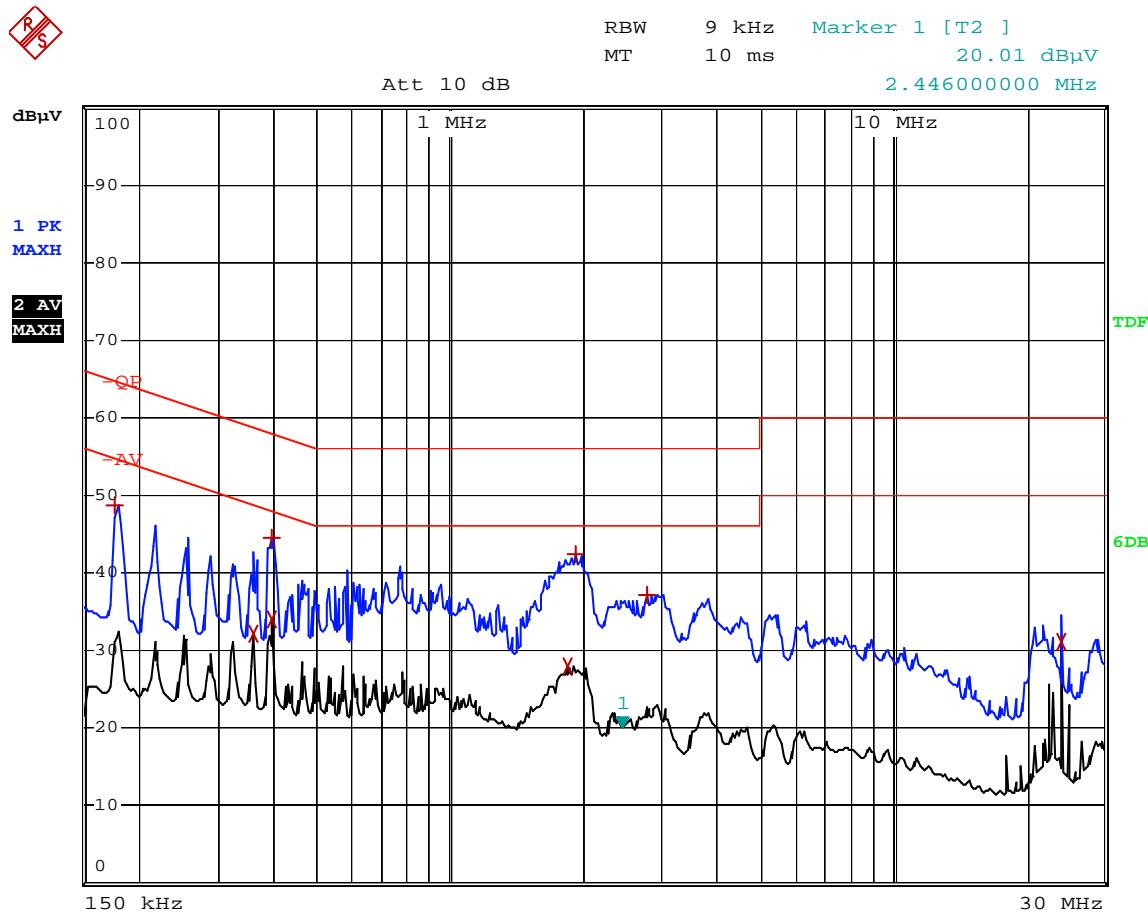
**Plot of Conducted Emissions Test Data**

EUT: *3G Mobile Phone*  
 Tested Model: *S135*  
 Operating Condition: *Charging with adapter*  
 Comment: *AC 120V/60Hz*  
 Test Specification: *Neutral*



EDIT PEAK LIST (Prescan Results)				
Trace1:	-QP			
Trace2:	-AV			
Trace3:	---			
TRACE	FREQUENCY	LEVEL dB $\mu$ V	DELTA	LIMIT dB
1 Max Peak	178 kHz	52.35	-12.22	
2 Average	250 kHz	32.87	-18.87	
1 Max Peak	394 kHz	46.25	-11.72	
2 Average	394 kHz	33.17	-14.80	
1 Max Peak	1.91 MHz	38.80	-17.19	
2 Average	23.982 MHz	33.55	-16.44	

Test Specification: Line



EDIT PEAK LIST (Prescan Results)				
Trace1:	-QP			
Trace2:	-AV			
Trace3:	---			
TRACE	FREQUENCY	LEVEL dBµV	DELTA	LIMIT dB
1 Max Peak	178 kHz	48.69		-15.88
2 Average	358 kHz	32.12		-16.65
1 Max Peak	394 kHz	44.40		-13.57
2 Average	394 kHz	33.89		-14.08
2 Average	1.846 MHz	27.91		-18.08
1 Max Peak	1.918 MHz	42.31		-13.68
1 Max Peak	2.802 MHz	37.13		-18.86
2 Average	23.982 MHz	31.02		-18.97

## 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.

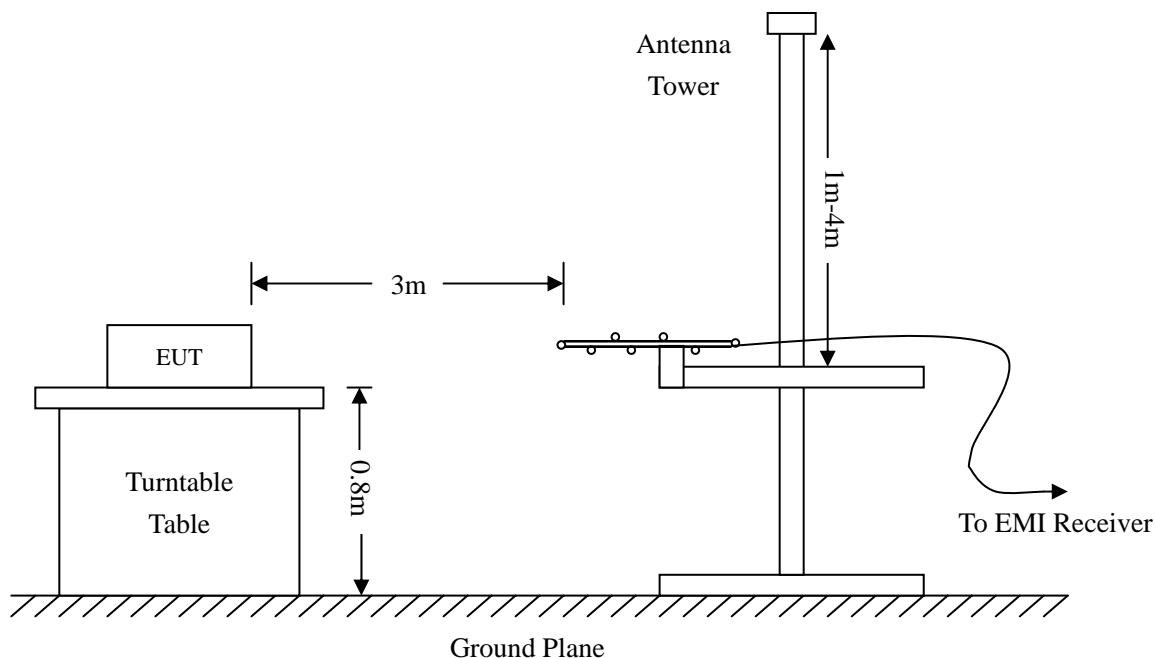
### 4.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	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 $\mu$ V means the emission is 6dB $\mu$ 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:

**-2.80 dB $\mu$ V at 42.8998MHz** in the **Vertical polarization, Charging & Playing Mode, 30 MHz to 1 GHz, 3Meters**

**-1.36 dB $\mu$ V at 364.2595 MHz** in the **Vertical polarization, Downloading Mode 30 MHz to 1 GHz, 3Meters**

**Plot of Radiated Emissions Test Data**

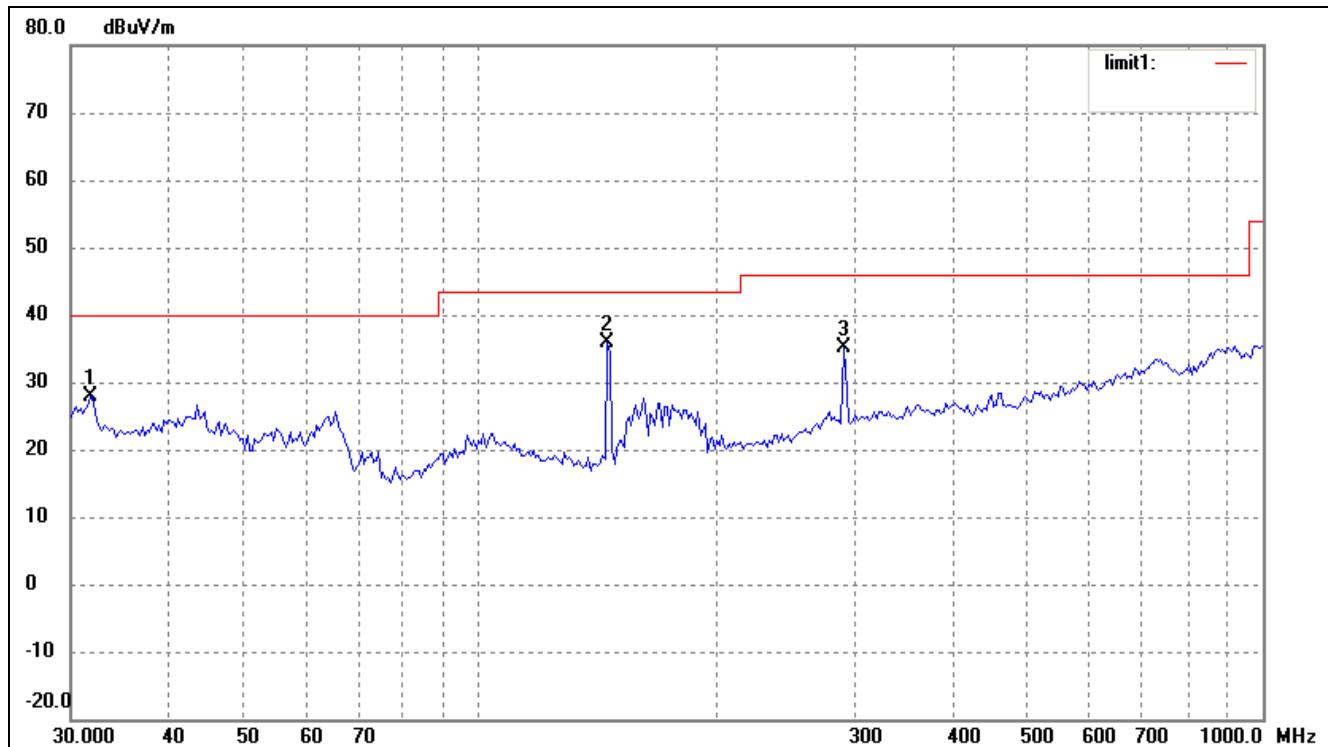
*EUT:* 3G Mobile Phone

*Tested Model:* S135

*Operating Condition:* Charging & Playing

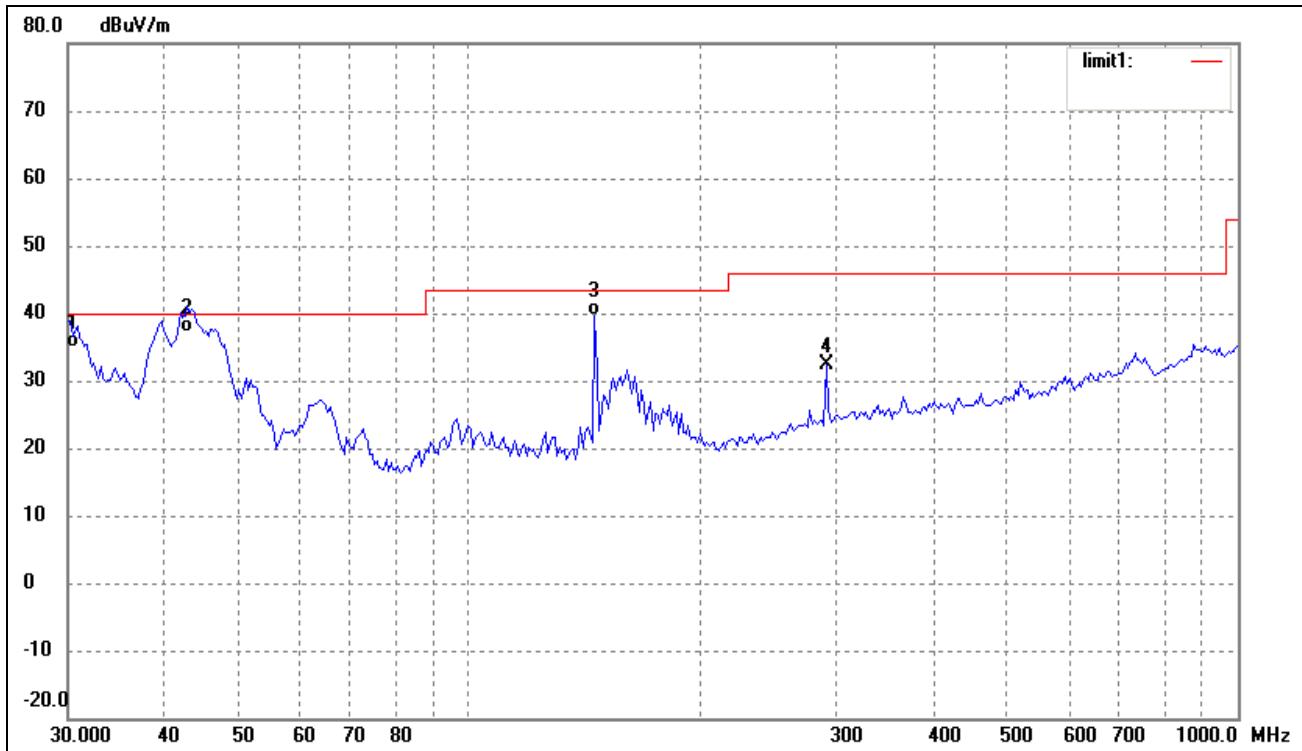
*Comment:* Playing multimedia from TF card

*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	31.7313	19.62	8.33	27.95	40.00	-12.05	225	100	peak
2	145.3506	32.40	3.48	35.88	43.50	-7.62	174	100	peak
3	291.0360	25.37	9.77	35.14	46.00	-10.86	63	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	30.0000	26.94	8.04	34.98	40.00	-5.02	276	100	QP
2	42.8998	28.41	8.79	37.20	40.00	-2.80	64	100	QP
3	145.3506	36.09	3.48	39.57	43.50	-3.93	113	100	QP
4	291.0360	22.53	9.77	32.30	46.00	-13.70	180	100	peak

**Plot of Radiated Emissions Test Data**

*EUT:* 3G Mobile Phone

*Tested Model:* S135

*Operating Condition:* Downloading

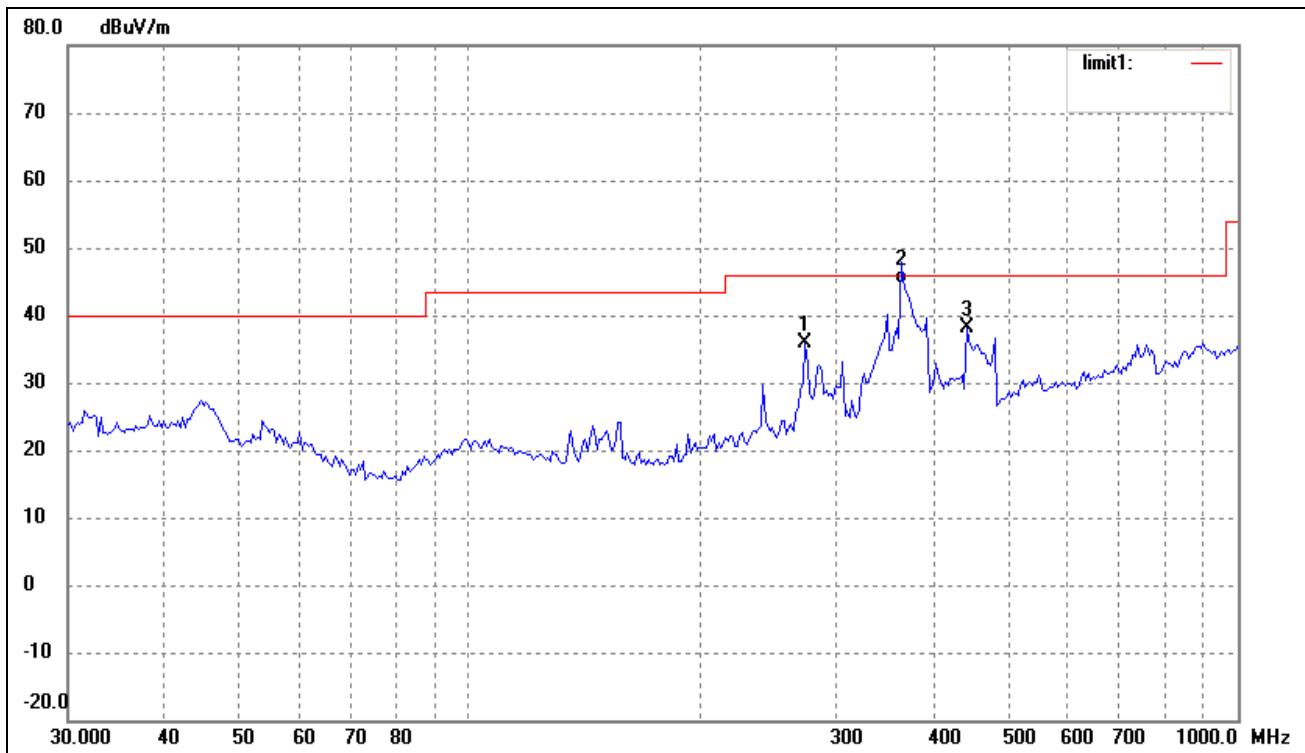
*Comment:* Connect to PC

*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	284.9767	27.94	9.47	37.41	46.00	-8.59	254	100	peak
2	349.2500	31.40	10.41	41.81	46.00	-4.19	164	100	peak
3	364.2595	33.70	10.68	44.38	46.00	-1.62	341	100	QP
4	744.8661	20.84	17.94	38.78	46.00	-7.22	112	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	273.2341	27.18	8.72	35.90	46.00	-10.10	225	100	peak
2	364.2595	33.96	10.68	44.64	46.00	-1.36	87	100	QP
3	443.2943	26.77	11.34	38.11	46.00	-7.89	116	100	peak