

FCC PART 15B
MEASUREMENT AND TEST REPORT
FOR

Verykool USA Inc
350 Executive Dr. #100, San Diego

FCC ID: WA6I675

Report Concerns: Original Report	Equipment Type: GSM/GPRS Quad-band Mobile Phone
Model:	<u>i675 & i674</u>
Report No.:	<u>STR12038074I-4</u>
Test Date:	<u>2012-03-08 to 2012-03-22</u>
Issue Date:	<u>2012-03-31</u>
Tested By:	<u>Seven Song / Engineer</u> <i>Seven Song</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.

TABLE OF CONTENTS

1. GENERAL INFORMATION.....	3
1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT).....	3
1.2 TEST STANDARDS.....	3
1.3 TEST METHODOLOGY.....	3
1.4 TEST FACILITY.....	4
1.5 EUT EXERCISE SOFTWARE.....	4
1.6 ACCESSORIES EQUIPMENT LIST AND DETAILS.....	4
1.7 EUT CABLE LIST AND DETAILS.....	4
2. SUMMARY OF TEST RESULTS.....	5
3. §15.107 (A)- CONDUCTED EMISSION.....	6
3.1 MEASUREMENT UNCERTAINTY.....	6
3.2 TEST EQUIPMENT LIST AND DETAILS.....	6
3.3 TEST PROCEDURE.....	6
3.4 BASIC TEST SETUP BLOCK DIAGRAM.....	6
3.5 ENVIRONMENTAL CONDITIONS.....	7
3.6 TEST RECEIVER SETUP.....	7
3.7 SUMMARY OF TEST RESULTS/PLOTS.....	7
3.8 CONDUCTED EMISSIONS TEST DATA.....	7
4. §15.109(A)- RADIATED EMISSION.....	10
4.1 MEASUREMENT UNCERTAINTY.....	10
4.2 TEST EQUIPMENT LIST AND DETAILS.....	10
4.3 TEST PROCEDURE.....	10
4.4 TEST RECEIVER SETUP.....	11
4.5 CORRECTED AMPLITUDE & MARGIN CALCULATION.....	11
4.6 ENVIRONMENTAL CONDITIONS.....	11
4.7 SUMMARY OF TEST RESULTS/PLOTS.....	11

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Verykool USA Inc
Address of applicant: 350 Executive Dr. #100, San Diego

Manufacturer: Verykool Hong Kong Limited
Address of manufacturer: SUITE 2311 SHELL TOWER TIMES SQUARE 1
MATHESON ST CAUSEWAY BAY HK

General Description of E.U.T

Items	Description
EUT Description:	GSM/GPRS Quad-band Mobile Phone
Trade Name:	Verykool
Model No.:	i675 & i674
Rated Voltage:	Battery DC 3.7V, Adapter DC USB 5V
Battery:	M/N: 414455Ar; DC 3.7V/1100mAh
Power Adapter:	M/N: ASUC30a-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. Test is carried out with i675 since the other model listed in this report is only different number of SIM socket without others circuit and electronic construction changed, declared by the manufacture.

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. under the Windows XP terminal.

1.6 Accessories Equipment List and Details

Description	Manufacturer	Model	Serial Number
Notebook	SAMSUNG	NP-R20	/
/	/	/	/

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	1.6	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 ± 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	2011-12-20	2012-12-19
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2011-12-20	2012-12-19
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2011-12-20	2012-12-19

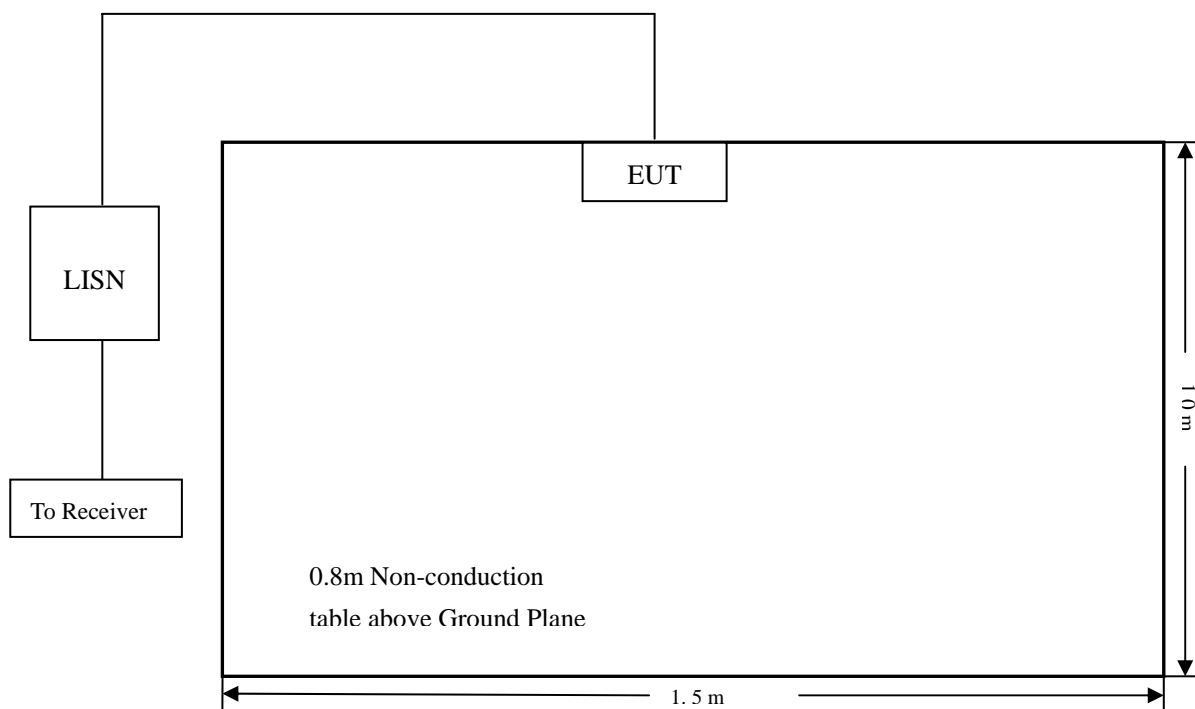
3.3 Test Procedure

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

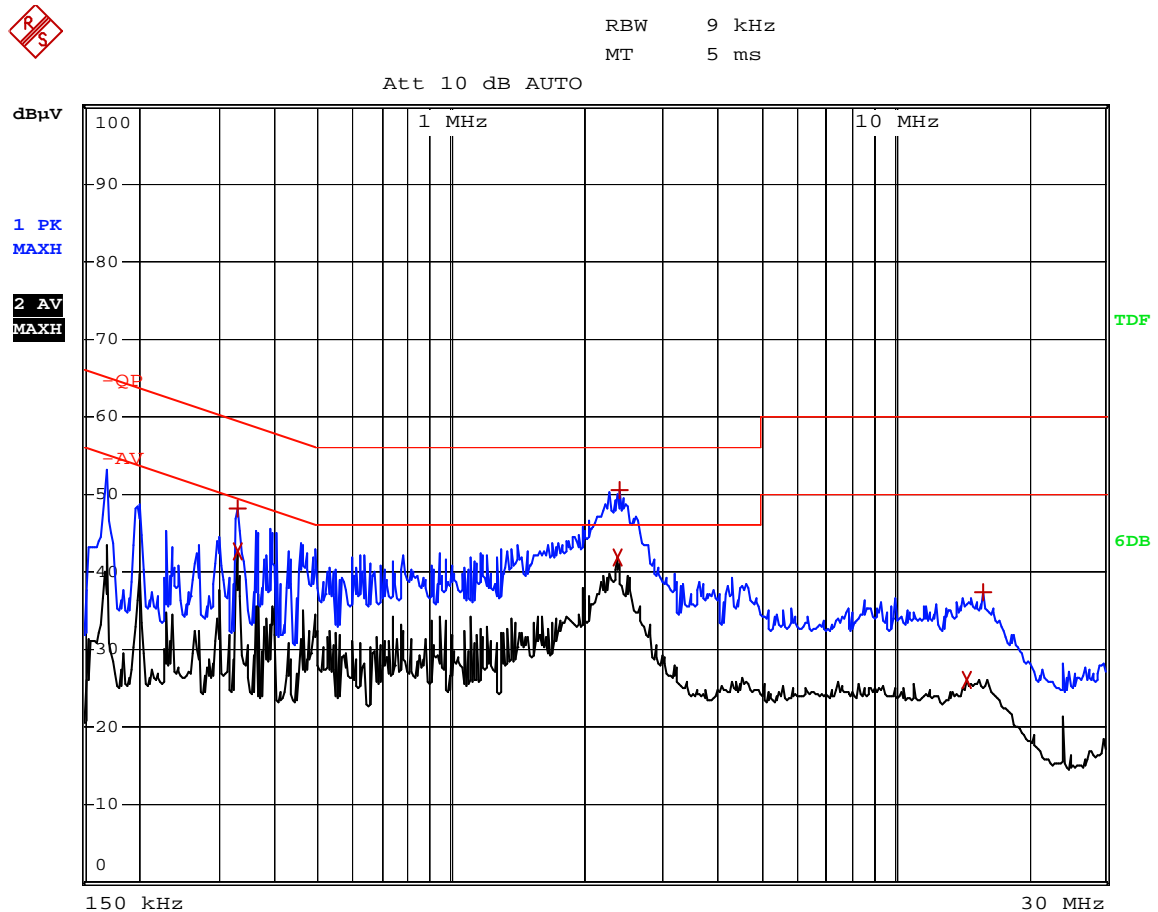
3.7 Summary of Test Results/Plots

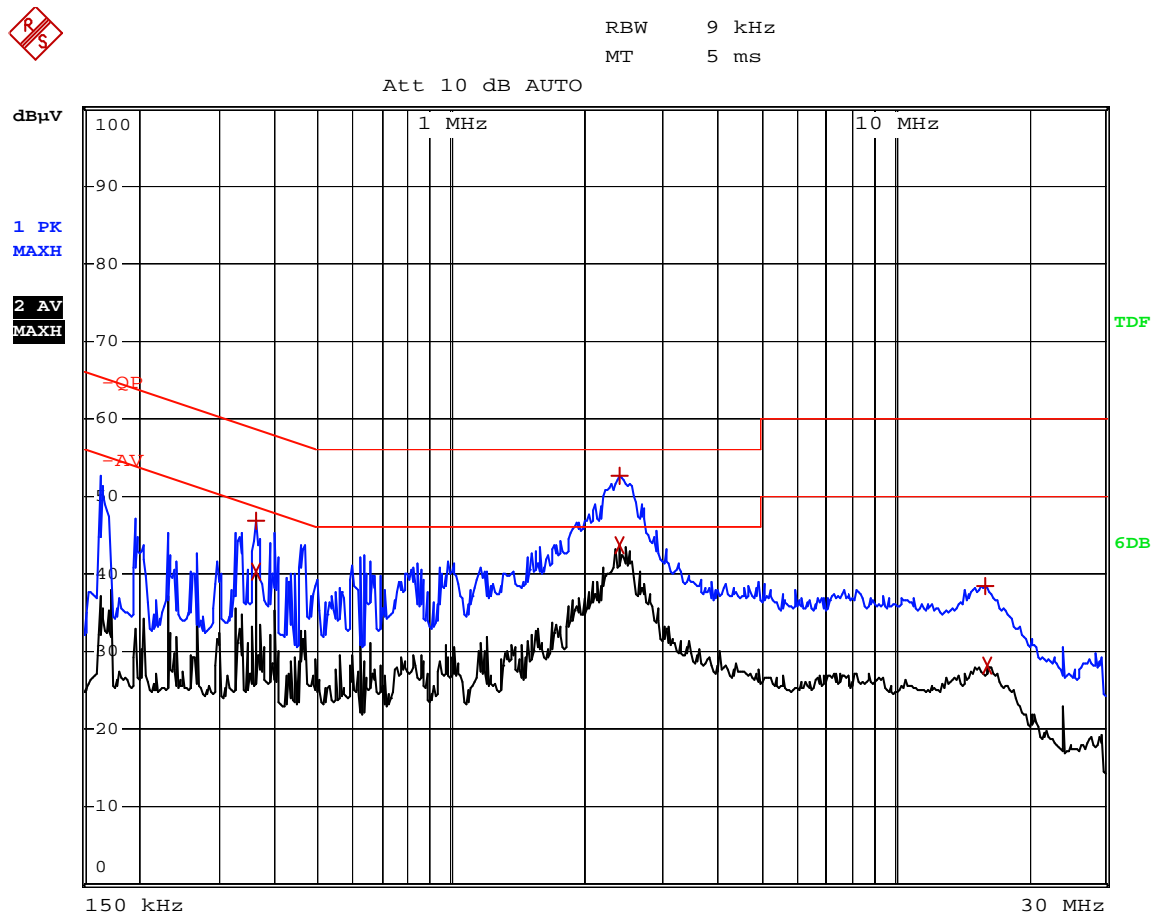
According to the data in section 3.8, the EUT complied with the FCC Part 15B Conducted margin for a Class B device, with the *worst* margin reading of:

-2.28 dBμV at 2.410 MHz in the Average mode Line Phase, Pk detector, 0.15-30MHz

3.8 Conducted Emissions Test Data

LINE CONDUCTED EMISSIONS				FCC PART 15 CLASS B	
Frequency	Amplitude	Detector	Phase	Limit	Margin
MHz	dBμV	QP/Ave/Pk	Line/Neutral	dBμV	dB
2.410	43.72	Ave	Line	46.00	-2.28
2.41	52.74	Pk	Line	56.00	-3.26
2.378	41.85	Ave	Neutral	46.00	-4.15
2.414	50.44	Pk	Neutral	56.00	-5.56
0.330	42.63	Ave	Neutral	49.45	-6.82
0.362	40.21	Ave	Line	48.68	-8.47
0.330	48.16	Pk	Neutral	59.45	-11.29
0.362	46.72	Pk	Line	58.68	-11.96
16.090	38.32	Pk	Line	60.00	-21.68
16.254	28.09	Ave	Line	50.00	-21.91
15.822	37.30	Pk	Neutral	60.00	-22.70
14.662	26.07	Ave	Neutral	50.00	-23.93

Plot of Conducted Emissions Test Data*Conducted Disturbance**EUT: GSM/GPRS Quad-band Mobile Phone**M/N: i675**Operating Condition: Charging**Test Specification: N**Comment: AC 120V/60Hz adapter DC 5V*

Plot of Conducted Emissions Test Data*Conducted Disturbance**EUT: GSM/GPRS Quad-band Mobile Phone**M/N: i675**Operating Condition: Charging**Test Specification: L**Comment: AC 120V/60Hz adapter DC 5V*

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 ± 5.10 dB.

4.2 Test Equipment List and Details

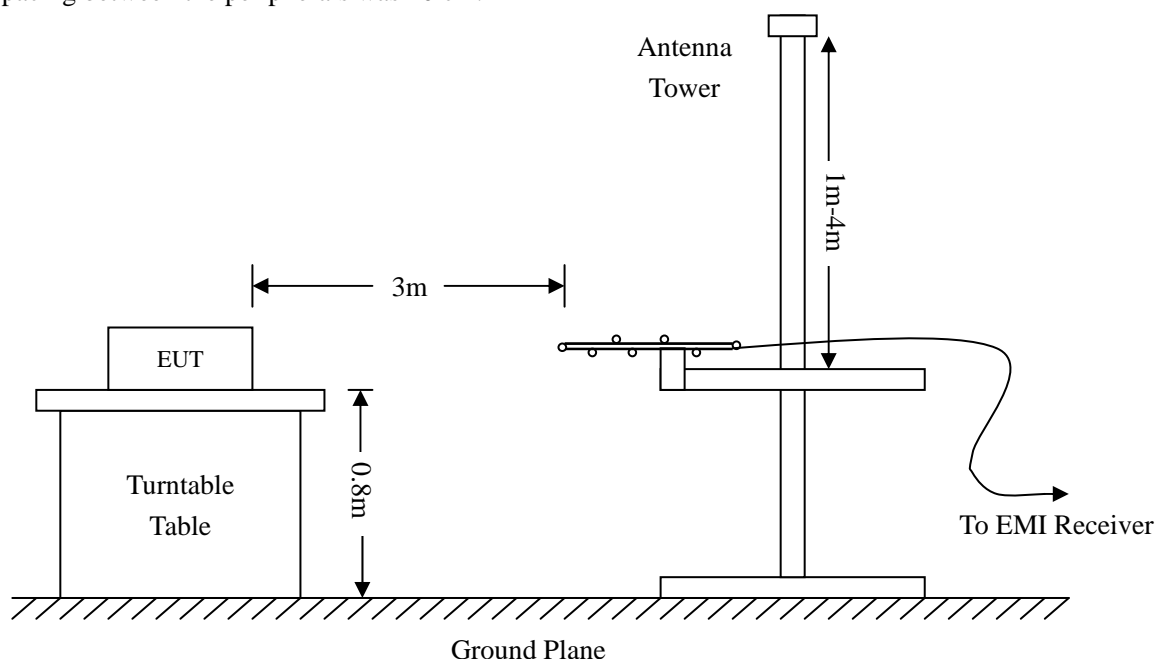
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2011-12-20	2012-12-19
EMI Test Receiver	R&S	ESVB	825471/005	2011-12-20	2012-12-19
Positioning Controller	C&C	CC-C-1F	N/A	2011-12-20	2012-12-19
RF Switch	EM	EMSW18	SW060023	2011-12-20	2012-12-19
Pre-amplifier	Agilent	8447F	3113A06717	2011-12-20	2012-12-19
Pre-amplifier	Compliance Direction	PAP-0118	24002	2011-12-20	2012-12-19
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2012-02-25	2013-02-24
Horn Antenna	ETS	3117	00086197	2012-02-25	2013-02-24
Loop Antenna	SCHWARZECK	HFRA 5165	9365	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 15.205 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 Test Receiver Setup

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

Start Frequency 30 MHz
 Stop Frequency..... 1000 MHz
 Sweep Speed Auto
 IF Bandwidth..... 100 kHz
 Quasi-Peak Adapter Bandwidth 120 kHz
 Quasi-Peak Adapter Mode Normal

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 Class B. The equation for margin calculation is as follows:

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

4.6 Environmental Conditions

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

4.7 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:

-4.39 dB μ V at 31.9546 MHz in the Vertical polarization for Charging & Multimedia Playing Mode, 9 kHz to 1 GHz, 3 Meters

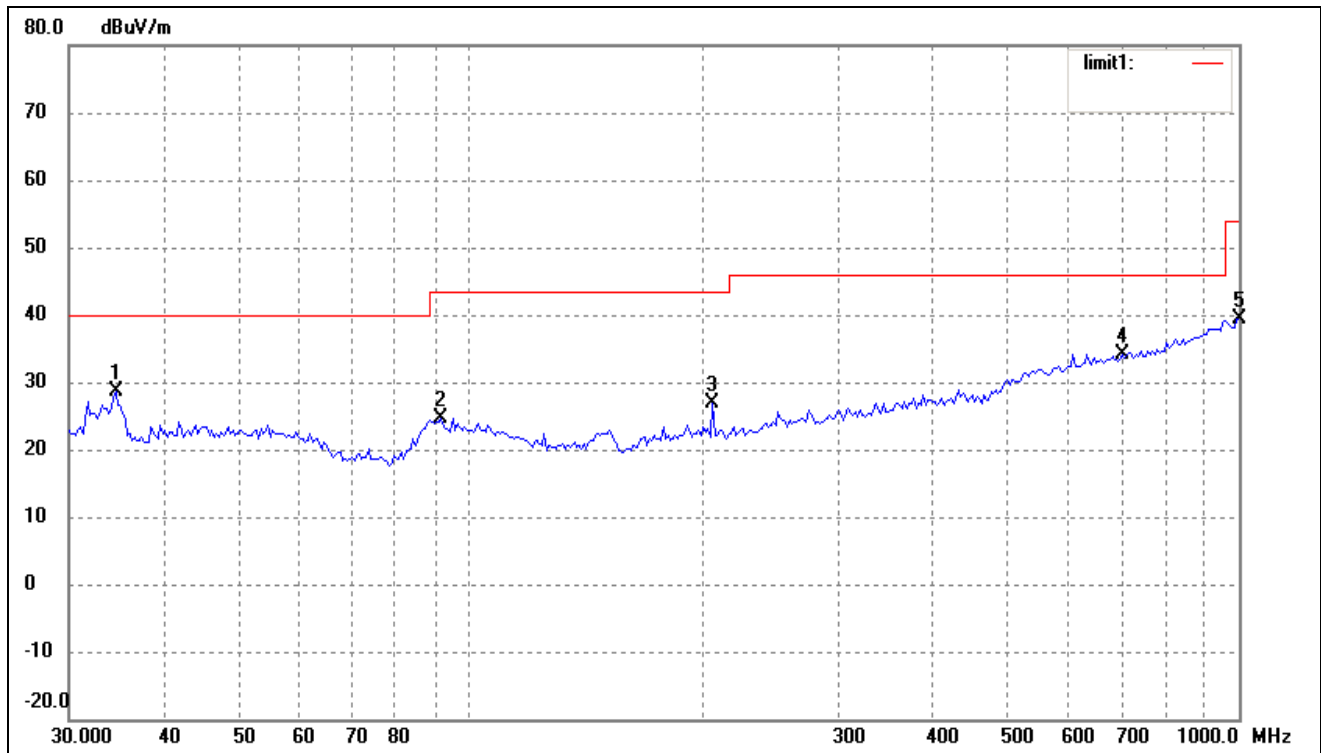
-4.77 dB μ V at 289.0021 MHz in the Horizontal polarization for Connect to PC Downloading Mode, 9 kHz to 1 GHz, 3 Meters

Note: Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

From 30 MHz to 1 GHz

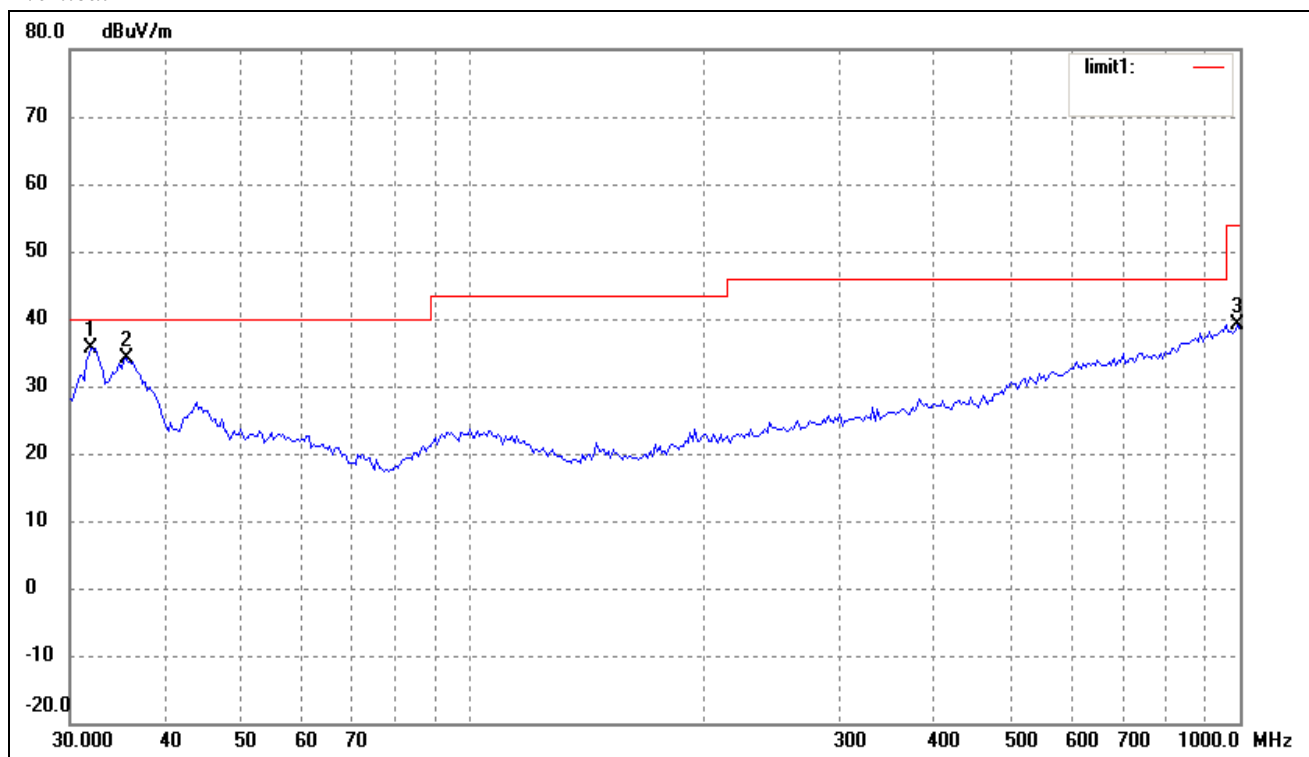
Test Mode: Charging & Multimedia Playing

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	34.5173	21.90	6.77	28.67	40.00	-11.33	213	100	peak
2	91.4949	17.38	7.37	24.75	43.50	-18.75	221	100	peak
3	206.3976	20.05	6.81	26.86	43.50	-16.64	360	200	peak
4	704.2261	16.49	17.56	34.05	46.00	-11.95	115	200	peak
5	1000.0000	16.67	22.74	39.41	54.00	-14.59	95	100	peak

Vertical

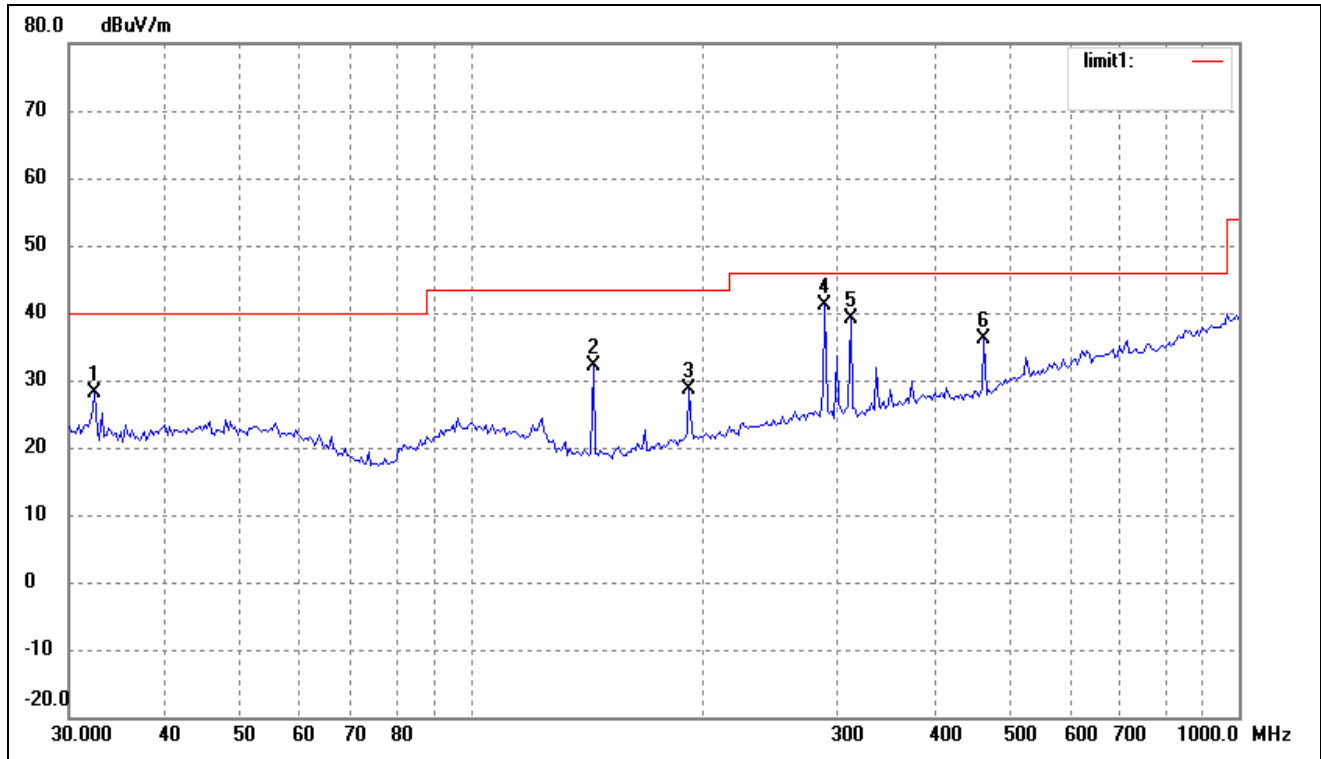


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	31.9546	28.84	6.77	35.61	40.00	-4.39	92	100	QP
2	35.4993	27.11	6.90	34.01	40.00	-5.99	185	100	QP
3	993.0114	16.52	22.61	39.13	54.00	-14.87	220	100	peak

From 30 MHz to 1 GHz

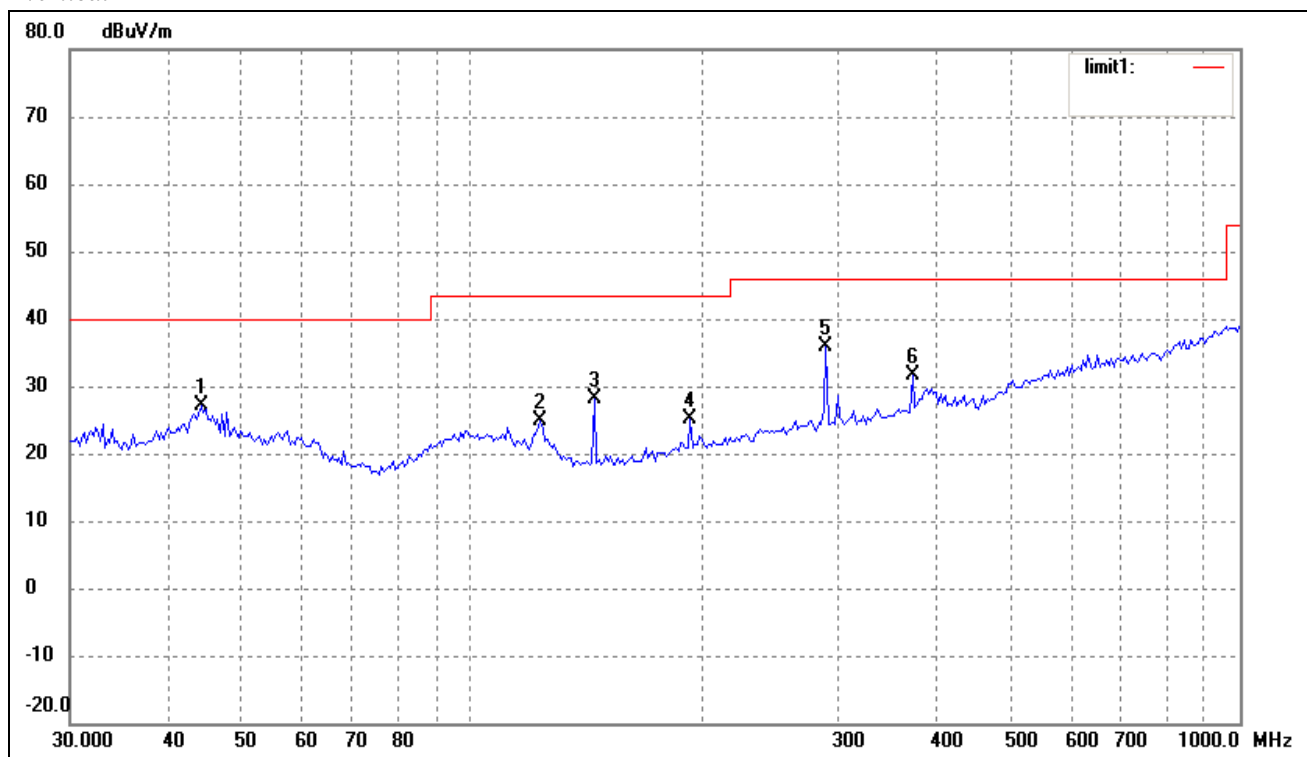
Test Mode: Connect to PC Downloading

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	32.4059	21.34	6.77	28.11	40.00	-11.89	264	100	peak
2	144.3348	28.05	4.01	32.06	43.50	-11.44	112	100	peak
3	192.4186	22.16	6.54	28.70	43.50	-14.80	350	100	peak
4	289.0021	31.60	9.63	41.23	46.00	-4.77	90	100	QP
5	312.1794	29.31	9.90	39.21	46.00	-6.79	360	100	peak
6	465.5994	24.29	11.95	36.24	46.00	-9.76	112	100	peak

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	44.4308	18.95	8.22	27.17	40.00	-12.83	135	100	peak
2	122.8340	19.22	5.56	24.78	43.50	-18.72	310	200	peak
3	144.3348	24.11	4.01	28.12	43.50	-15.38	360	100	peak
4	192.4186	18.48	6.54	25.02	43.50	-18.48	260	100	peak
5	289.0021	26.34	9.63	35.97	46.00	-10.03	193	100	peak
6	374.6226	20.64	11.11	31.75	46.00	-14.25	90	100	peak

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, which above 5th Harmonics are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

The measurements greater than 20dB below the limit from 9kHz to 30MHz.

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