LABCODE: 500069-0

FCC PART 15B

TEST REPORT

For

Binatone Electronics International Ltd.

Floor 23A, 9 Des Voeux Road West, Sheung Wan, Hong Kong, China

FCC ID: VLJ-SM800

Report Type:	Product Type:
Original Report	GSM Mobile Phone

Test Engineer:	Ares Liu
Report Number:	R2DG130917005-00A
Report Date:	2013-11-01
Reviewed By:	Ivan Cao RF Leader
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Dongguan) No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Binatone Electronics International Ltd.*'s product, model number: *SM800 (FCC ID: VLJ-SM800)* (the "EUT") in this report was a *GSM Mobile Phone*, which was measured approximately: 12.2 cm (L) x 6.5 cm (W) x1.3 cm (H), input voltage: DC 3.7V from lithium battery or DC 5.0V from adapter.

Adapter Information:
Model: A31-501000
Input: 100-240VAC, 50/60Hz, 0.2A
Output: DC 5.0V, 1000mA
Manufacturer: Shenzhen Aohai Technology Co.,Ltd

Note: The series product, model Voxtel -SM800, SM800 are electrically identical, the difference between them is just the model name, we selected The SM800 for fully testing, and the details was explained in the attached declaration letter.

All measurement and test data in this report was gathered from production sample serial number: 130917005 (Assigned by BACL, Dongguan). The EUT was received on 2013-10-11.

Objective

This report is prepared on behalf of *Binatone Electronics International Ltd.* in accordance with Part 2, Subpart J, Part 15, Subparts A and B of the Federal Communication Commissions rules.

The objective of the manufacturer is to determine compliance with FCC Part 15B, Class B.

Related Submittal(s)/Grant(s)

FCC Part 15C DSS submissions with FCC ID: *VLJ-SM800* for Bluetooth.
FCC Part 22H&24E PCE submissions with FCC ID: *VLJ-SM800*.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China

Test site at Bay Area Compliance Laboratories Corp. (Dongguan) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 02, 2012. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 273710. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratories Corp. (Dongguan) is an ISO/IEC 17025 accredited laboratory, and is accredited by National Voluntary Laboratory Accredited Program (Lab Code 500069-0).

The current scope of accreditations can be found at http://ts.nist.gov/standards/scopes/5000690.htm

SYSTEM TEST CONFIGURATION

Justification

The system was configured for testing in a typical fashion (as normally used by a typical user). The highest operating frequency is 360MHz.

EUT Exercise Software

"WINTHRAX.exe" software was used.

Equipment Modifications

No modification was made to the EUT.

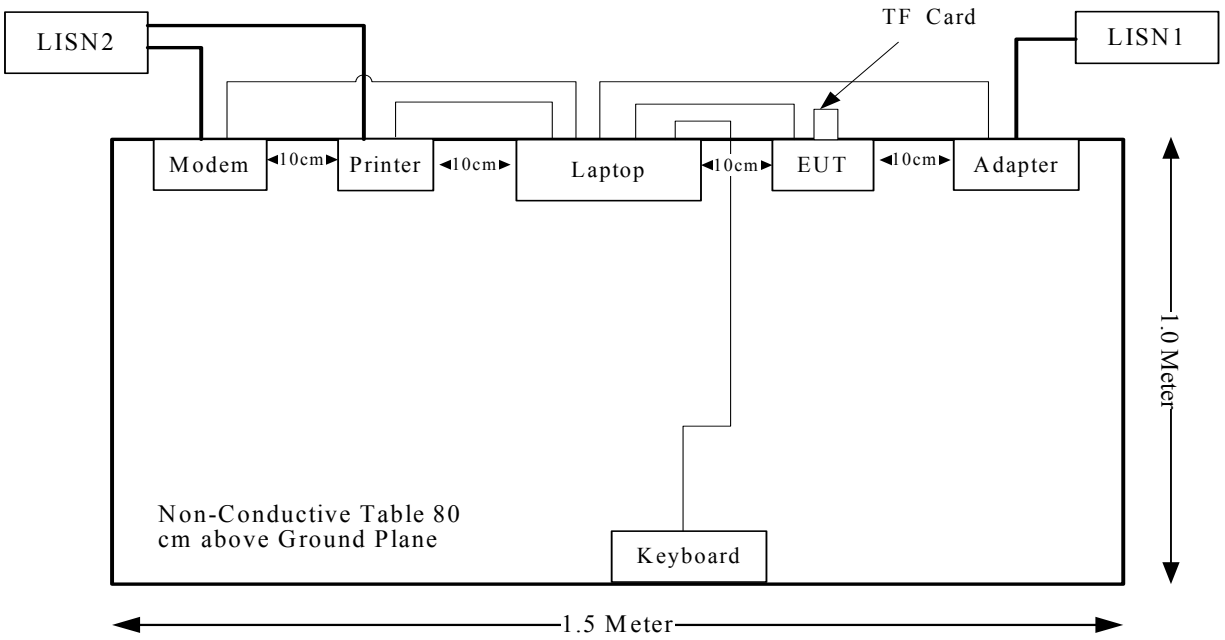
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
HP	Printer	C3941A	JPTVOB2337
SAST	Modem	AEM-2100	0293
DELL	Keyboard	L100	CNORH656658907BL05DC
DELL	Laptop	PP11L	N/A
SAMSUNG	TF CARD	N/A	N/A

External Cable

Cable Description	Length (m)	From	To
Shielded Detachable Printer Cable	1.2	Parallel Port of Laptop	Printer
Shielded Detachable Serial Cable	1.2	Serial Port of Laptop	Modem
Shielded Detachable Keyboard Cable	1.5	Keyboard Port of Laptop	Keyboard
Shielded USB Cable	1.0	EUT	Laptop

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§15.107	AC Line Conducted Emissions	Compliance
§15.109	Radiated Emissions	Compliance

FCC §15.107 – AC LINE CONDUCTED EMISSIONS

Measurement Uncertainty

Compliance or non- compliance with a disturbance limit shall be determined in the following manner：

If U_{lab} is less than or equal to U_{cispr} of Table 1, then:
- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

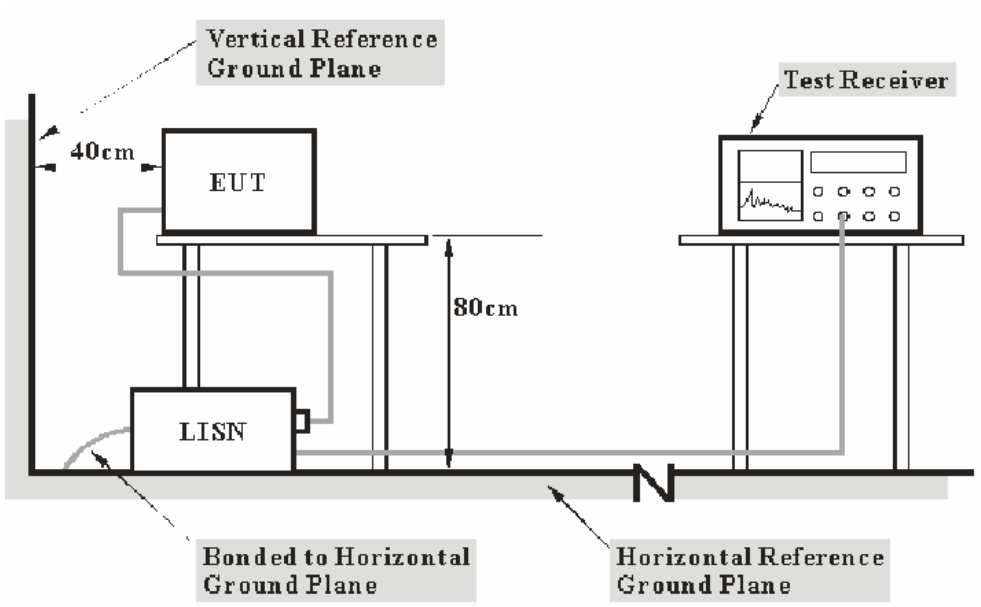
If U_{lab} is greater than U_{cispr} of Table 1, then:
- compliance is deemed to occur if no measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit.

Based on CISPR 16-4-2: 2011, measurement uncertainty of conducted disturbance at mains port using AMN at Bay Area Compliance Laboratories Corp. (Dongguan) is 3.46 dB (150 kHz to 30 MHz).

Table 1 – Values of U_{cispr}

Measurement	U_{cispr}
Conducted disturbance at mains port using AMN (150 kHz to 30 MHz)	3.4 dB

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

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

The adapter was connected to a 120 VAC/60 Hz power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

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

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter was connected to the first LISN and the other support equipments were connected to the outlet of the second LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$V_C = V_R + A_C + VDF$
$C_f = A_C + VDF$

Herein,
V_C (cord. Reading): corrected voltage amplitude
V_R: reading voltage amplitude
A_c: attenuation caused by cable loss
VDF: voltage division factor of AMN
C_f: Correction Factor

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the maximum limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI TEST RECEIVER	ESCS 30	830245/006	2012-11-29	2013-11-28
R&S	Two-line V-network	ENV216	3560.6550.12	2013-2-18	2014-2-17
R&S	L.I.S.N	ESH3-Z5	100113	2012-11-29	2013-11-28
BACL	Test Software	BACL-EMC	V1.0-2010	N/A	N/A

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.107, with the worst margin reading of:

7.93 dB at **0.190 MHz** in the **Neutral** conducted mode

Test Data

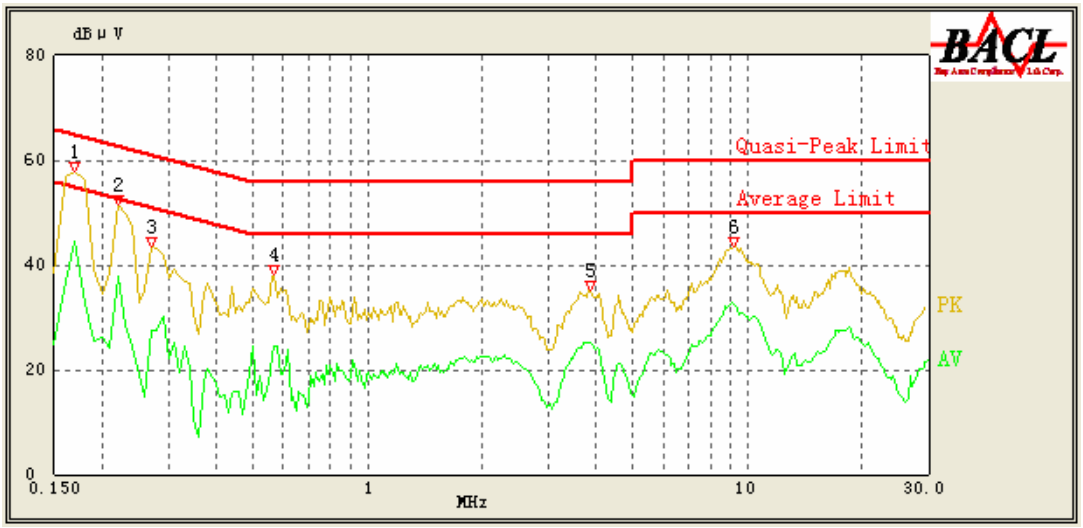
Environmental Conditions

Temperature:	27.3 °C
Relative Humidity:	50 %
ATM Pressure:	101.1 kPa

The testing was performed by Ares Liu on 2013-10-28.

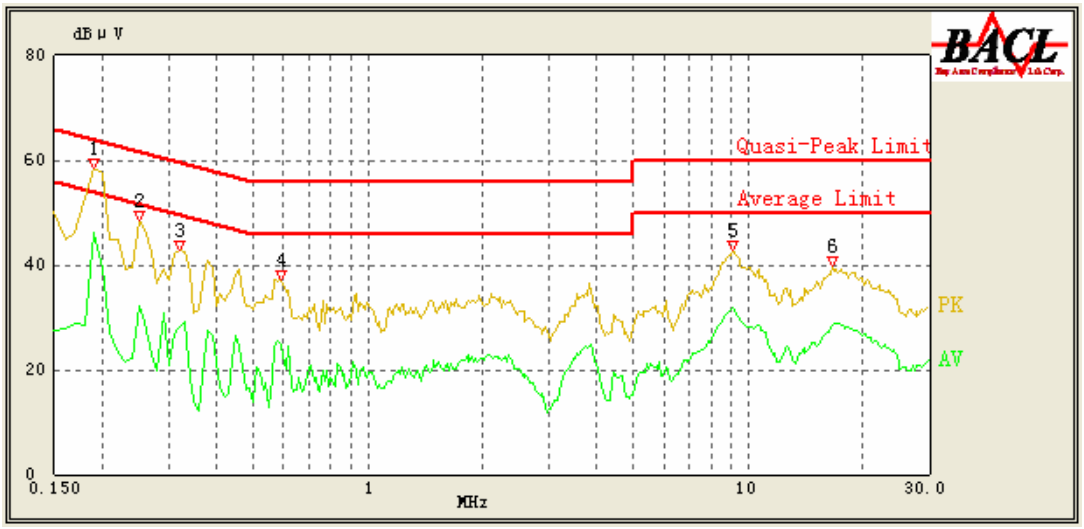
Operation mode: USB Downloading

230 V/ 50 Hz, Line



Frequency (MHz)	Cord. Reading (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/AV/QP)
0.170	53.75	0.45	64.96	11.21	QP
0.170	44.53	0.45	54.96	10.43	AV
0.220	46.71	0.41	62.82	16.11	QP
0.220	37.96	0.41	52.82	14.86	AV
0.270	39.58	0.37	61.12	21.54	QP
0.270	27.41	0.37	51.12	23.71	AV
0.570	33.36	0.31	56.00	22.64	QP
0.570	24.50	0.31	46.00	21.50	AV
3.880	28.85	0.43	56.00	27.15	QP
3.870	25.06	0.43	46.00	20.94	AV
9.250	37.30	0.82	60.00	22.70	QP
9.320	32.20	0.82	50.00	17.80	AV

230 V/ 50 Hz, Neutral:



Frequency (MHz)	Cord. Reading (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/AV/QP)
0.190	47.33	0.25	64.04	16.71	QP
0.190	46.11	0.25	54.04	7.93	AV
0.250	32.63	0.24	61.76	29.13	QP
0.250	32.05	0.24	51.76	19.71	AV
0.320	34.70	0.23	59.71	25.01	QP
0.320	28.31	0.23	49.71	21.40	AV
0.590	31.52	0.21	56.00	24.48	QP
0.590	24.96	0.21	46.00	21.04	AV
9.150	36.86	0.72	60.00	23.14	QP
9.140	31.73	0.72	50.00	18.27	AV
16.610	33.30	1.21	60.00	26.70	QP
16.710	28.55	1.22	50.00	21.45	AV

FCC §15.109 - RADIATED EMISSIONS

Measurement Uncertainty

Compliance or non- compliance with a disturbance limit shall be determined in the following manner：

If U_{lab} is less than or equal to U_{cispr} of Table 2, then:
- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If U_{lab} is greater than U_{cispr} of Table 1, then:
- compliance is deemed to occur if no measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit.

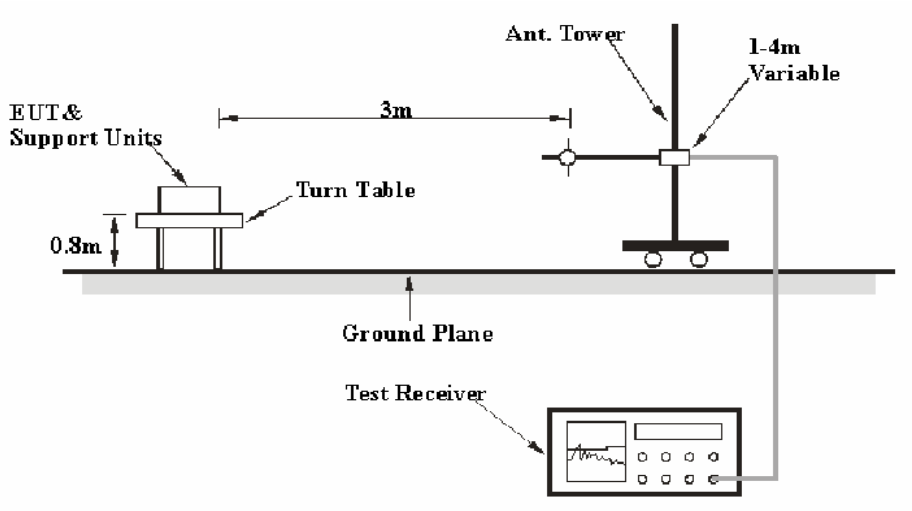
Based on CISPR 16-4-2: 2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Dongguan) is:
30M~200MHz: 5.0 dB
200M~1GHz: 6.2 dB
1G~6GHz: 4.45 dB
6G~18GHz: 5.23 dB

Table 2 – Values of U_{cispr}

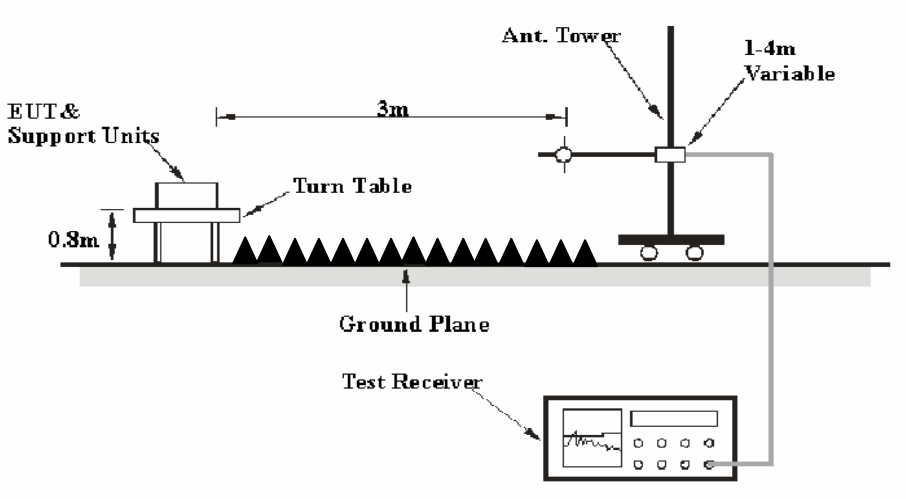
Measurement	U_{cispr}
Radiated disturbance (electric field strength at an OATS or in a SAC) (30 MHz to 1000 MHz)	6.3 dB
Radiated disturbance (electric field strength in a FAR) (1 GHz to 6 GHz)	5.2 dB
Radiated disturbance (electric field strength in a FAR) (6 GHz to 18 GHz)	5.5 dB

EUT Setup

Below 1 GHz:



Above 1GHz:



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC Part 15.109, Class B limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The adapter connected to a 120 VAC/60 Hz power source.

EMI Test Receiver Setup

According to FCC 15.33 requirements, the system was measured from 30 MHz to 6 GHz.

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

Frequency Range	RBW	Video B/W	IF B/W	Detector
30MHz – 1000 MHz	120 kHz	300 kHz	120kHz	QP
Above 1 GHz	1MHz	3 MHz	/	PK
	1MHz	10 Hz	/	Ave.

Test Procedure

During the radiated emissions, the adapter was connected to the first AC floor outlet and the other support equipments were connected to the second AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

The data was recorded in Quasi-peak detection mode for 30 MHz to 1 GHz, Peak and average detection mode above 1 GHz.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Loss and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude = Meter Reading + Antenna Loss + Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI TEST RECEIVER	ESCI	100224	2013-5-6	2014-5-5
Sunol Sciences	Antenna	JB3	A060611-1	2011-9-6	2014-9-5
HP	HP AMPLIFIER	8447E	2434A02181	N/A	N/A
R&S	Spectrum analyzer	FSEM 30	849016/001	2012-12-7	2013-12-6
ETS LINDGREN	horn antenna	3115	000 527 35	2012-9-6	2015-9-5
Mini-Circuit	Amplifier	ZVA-213-S+	054201245	N/A	N/A
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

Test Results Summary

According to the data in the following table, the EUT complied with the FCC §15.109, Class B, with the worst margin reading of:

5.90 dB at **56.190 MHz** in the **Vertical** polarization

Test Data

Environmental Conditions

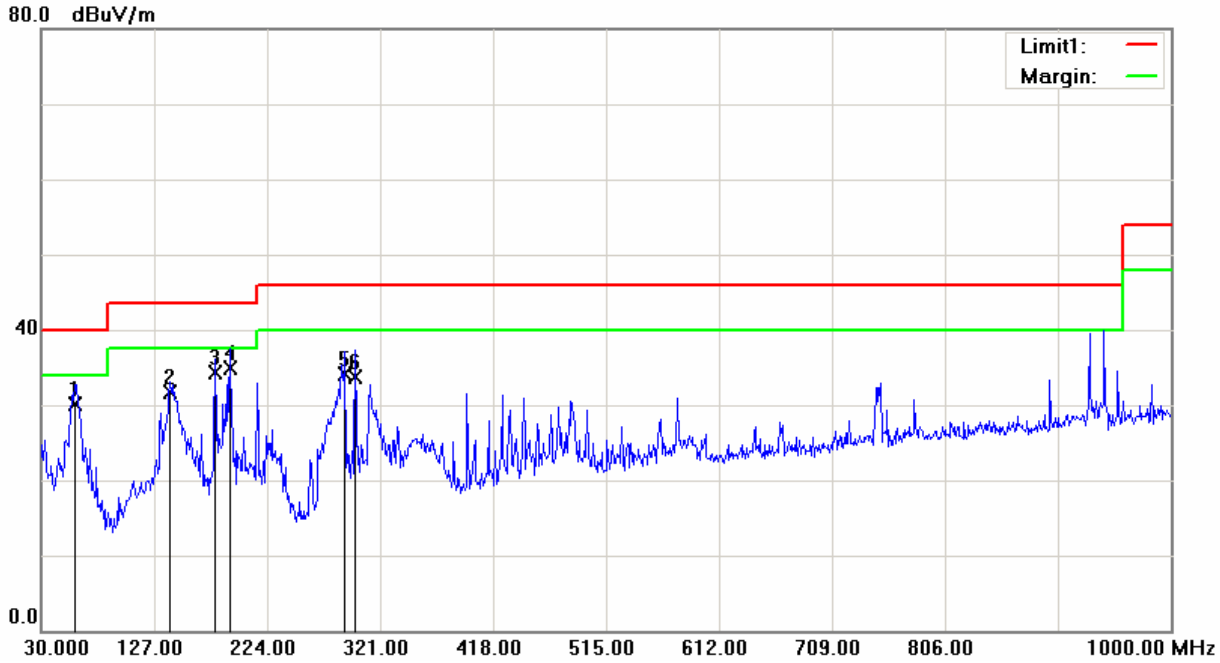
Temperature:	25.8 °C
Relative Humidity:	40 %
ATM Pressure:	101.1 kPa

The testing was performed by Ares Liu on 2013-10-25.

Operation mode: USB Downloading

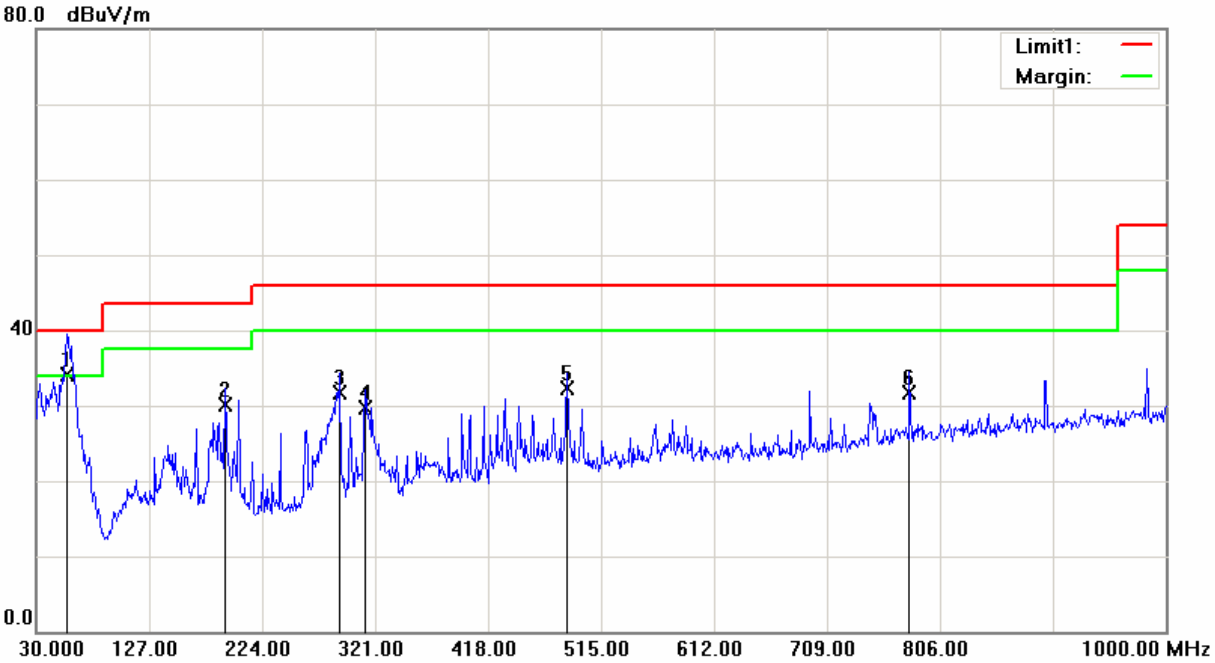
Below 1 GHz:

Horizontal



No.	Frequency (MHz)	Receiver Reading (dBuV)	Detector (PK/QP /Ave)	Correction Factor (dB)	Cord. Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	59.1000	43.18	QP	-12.98	30.20	40.00	9.80
2	140.5800	38.59	QP	-6.89	31.70	43.50	11.80
3	179.3800	42.89	QP	-8.59	34.30	43.50	9.20
4	191.9900	43.13	QP	-8.23	34.90	43.50	8.60
5	290.9300	39.84	QP	-5.74	34.10	46.00	11.90
6	299.6600	39.55	QP	-5.75	33.80	46.00	12.20

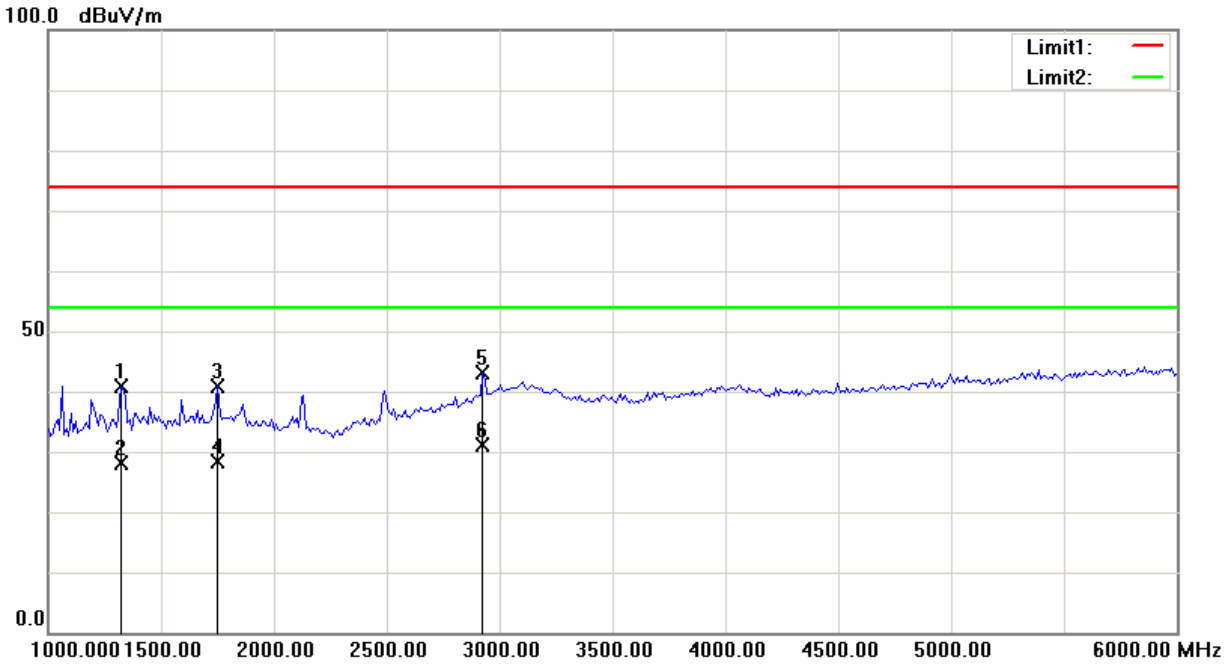
Vertical



No.	Frequency (MHz)	Receiver Reading (dBuV)	Detector (PK/QP /Ave)	Correction Factor (dB)	Cord. Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	56.1900	47.18	QP	-13.08	34.10	40.00	5.90
2	191.9900	38.33	QP	-8.23	30.10	43.50	13.40
3	290.9300	37.44	QP	-5.74	31.70	46.00	14.30
4	312.2700	34.99	QP	-5.29	29.70	46.00	16.30
5	485.9000	33.69	QP	-1.29	32.40	46.00	13.60
6	779.8100	29.12	QP	2.58	31.70	46.00	14.30

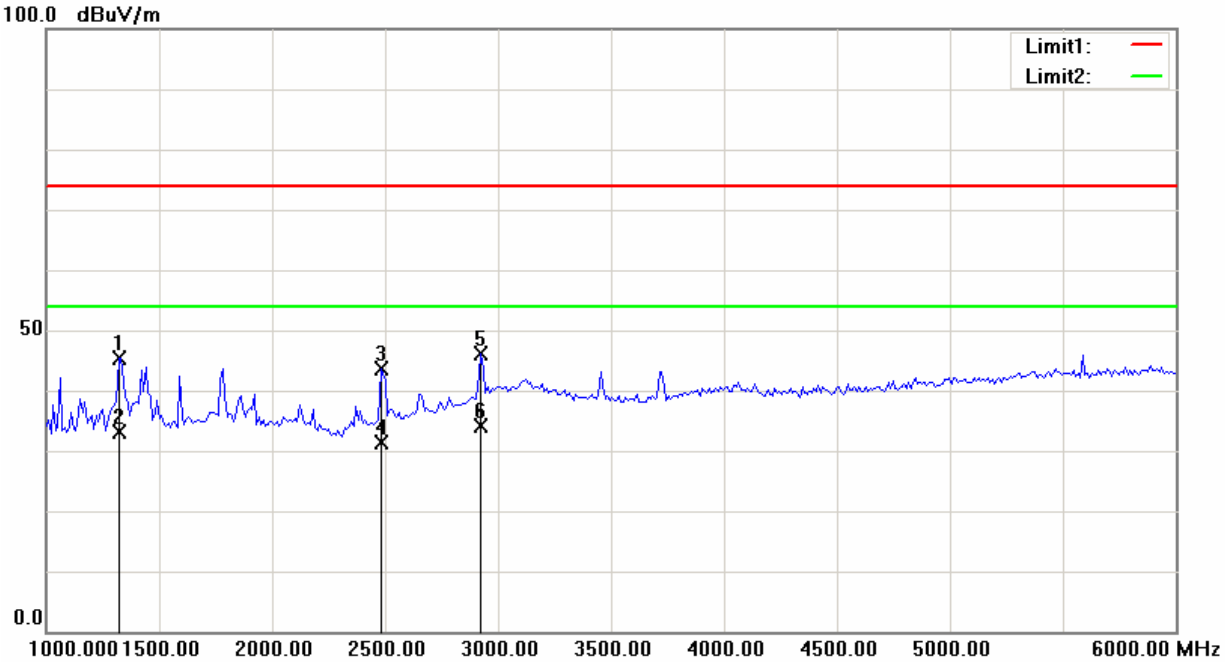
Above 1 GHz:

Horizontal



No.	Frequency (MHz)	Receiver Reading (dBuV)	Detector (PK/QP /Ave)	Correction Factor (dB)	Cord. Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	1320.641	41.90	peak	-1.10	40.80	74.00	33.20
2	1320.641	29.26	AVG	-1.10	28.16	54.00	25.84
3	1751.503	40.17	peak	0.79	40.96	74.00	33.04
4	1751.503	27.65	AVG	0.79	28.44	54.00	25.56
5	2923.848	36.82	peak	6.26	43.08	74.00	30.92
6	2923.848	24.99	AVG	6.26	31.25	54.00	22.75

Vertical



No.	Frequency (MHz)	Receiver Reading (dBuV)	Detector (PK/QP /Ave)	Correction Factor (dB)	Cord. Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	1320.641	46.54	peak	-1.10	45.44	74.00	28.56
2	1320.641	34.26	AVG	-1.10	33.16	54.00	20.84
3	2482.966	40.54	peak	3.12	43.66	74.00	30.34
4	2482.966	28.31	AVG	3.12	31.43	54.00	22.57
5	2923.848	39.87	peak	6.26	46.13	74.00	27.87
6	2923.848	27.82	AVG	6.26	34.08	54.00	19.92

DECLARATION OF SIMILARITY

Binatone Electronics International Ltd.
Add: Floor 23A, 9 Des Voeux Road West, Sheung Wan, Hong Kong, China
Tel: 00852-28027388 Fax: 00852-28028138

DECLARATION OF SIMILARITY

October 14, 2013

Dear Sir or Madam:

We, Binatone Electronics International Ltd., hereby declare that our product: GSM Mobile Phone, models: Voxtel-SM800 is electrically identical with the same electromagnetic emissions and electromagnetic compatibility characteristics as SM800. And they are tested by BACL, the results of which are featured in BACL project: R2DG130917005, R2DG130917006, R2DG130917006-03, R1DG130917005-20, R1DG130917006-20

A description of the differences between the tested model and those that are declared similar areas follows:

Models: Voxtel-SM800, SM800 the only difference is the model name.

Please contact me should there be need for any additional clarification or information.

Best Regards,

(Legally valid signature)

Patrick Cheung, Senior Product Manager

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