

FCC Test Report

APPLICANT: Brightstar Corporation

EQUIPMENT: GSM Mobile Phone

BRAND NAME : Avvio

MODEL NAME : Avvio 938 FCC ID : WVBA938X

STANDARD : FCC 47 CFR FCC Part 15 Subpart B

CLASSIFICATION: Certification

The product was received on Jan. 07, 2014 and testing was completed on Feb. 18, 2014. We, SPORTON INTERNATIONAL (SHENZHEN) INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown to be compliant with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL (SHENZHEN) INC., the test report shall not be reproduced except in full.

Reviewed by: Louis Wu / Manager

Louis Wu

Approved by: Jones Tsai / Manager

SPORTON INTERNATIONAL (SHENZHEN) INC.

No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P.R.C.

TEL: 86-755- 3320-2398 FCC ID: WVBA938X Page Number : 1 of 24

Testing Laboratory 2353

Report Issued Date: Feb. 18, 2014
Report Version: Rev. 01



TABLE OF CONTENTS

RE	VISIO	N HISTORY	
SU	ΜΜΔΕ	RY OF TEST RESULT	Δ
		ERAL DESCRIPTION	
	1.1. 1.2. 1.3. 1.4. 1.5. 1.6. 1.7.	Applicant Manufacturer Feature of Equipment Under Test Product Specification of Equipment Under Test Modification of EUT Test Site	
2.	2.1. 2.2. 2.3. 2.4.	Support Unit used in test configuration and system	9
3.	3.1. 3.2.		11
		OF MEASURING EQUIPMENT	
ΑP	PEND	IX A. SETUP PHOTOGRAPHS	

TEL: 86-755- 3320-2398 FCC ID: WVBA938X Report Issued Date : Feb. 18, 2014
Report Version : Rev. 01

Report No. : FC410704

REVISION HISTORY

Report No. : FC410704

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC410704	Rev. 01	Initial issue of report	Feb. 18, 2014

SUMMARY OF TEST RESULT

Report No. : FC410704

Report Section	FCC Rule	Description	Limit	Result	Remark
					Under limit
3.1	15.107	AC Conducted Emission	< 15.107 limits	PASS	1.54 dB at
					2.62 MHz
					Under limit
3.2	45 400 Badiata	Radiated Emission	< 15.109 limits	DACC	3.05 dB at
3.2	15.109	Radiated Effission	< 15.109 IIIIIIIS	PASS	497.540 MHz for
					Quasi-Peak

 TEL: 86-755- 3320-2398
 Report Issued Date : Feb. 18, 2014

 FCC ID: WVBA938X
 Report Version : Rev. 01

1. General Description

1.1. Applicant

Brightstar Corporation

9725 NW 117th Ave., Miami, Florida, FL 33178, United States

1.2. Manufacturer

Lakia Networks Co., Ltd.

2F, Unit A, Technology Service Building, Software Garden 1, Xiamen, Fujian, China

1.3. Feature of Equipment Under Test

	Product Feature
Equipment	GSM Mobile Phone
Brand Name	Avvio
Model Name	Avvio 938
FCC ID	WVBA938X
EUT supports Radios application	GSM/Bluetooth v3.0+EDR
EUT Stage	Identical Prototype

Remark:

The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

Report No.: FC410704

1.4. Product Specification of Equipment Under Test

Product Specification subjective to this standard					
Tx Frequency	GSM850 : 824.2 MHz ~ 848.8 MHz GSM1900 : 1850.2 MHz ~ 1909.8MHz Bluetooth: 2402 MHz ~ 2480 MHz				
Rx Frequency	GSM850 : 869.2 MHz ~ 893.8 MHz GSM1900 : 1930.2 MHz ~ 1989.8 MHz Bluetooth: 2402 MHz ~ 2480 MHz				
Antenna Type	WWAN : PIFA Antenna Bluetooth : FPC Antenna				
Type of Modulation	GSM: GMSK Bluetooth v3.0+EDR : GFSK, π /4-DQPSK, 8-DPSK				

SPORTON INTERNATIONAL (SHENZHEN) INC. Page Number

: 5 of 24 TEL: 86-755-3320-2398 Report Issued Date: Feb. 18, 2014 FCC ID: WVBA938X Report Version : Rev. 01

1.5. Modification of EUT

No modifications are made to the EUT during all test items.

1.6. Test Site

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.					
Test Site Location	No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P.R.C.					
	TEL: +86-755- 3320-2398					
Took Site No	Sporton Site No. FCC Registration No.					
Test Site No.	CO01-SZ	03CH01-SZ	831040			

1.7. Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC 47 CFR FCC Part 15 Subpart B
- ANSI C63.4-2003

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

TEL : 86-755- 3320-2398 FCC ID : WVBA938X Page Number : 6 of 24

Report No.: FC410704

Report Issued Date : Feb. 18, 2014
Report Version : Rev. 01

2. Test Configuration of Equipment Under Test

2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

Report No.: FC410704

Frequency range investigated: conduction (150 kHz to 30 MHz), radiation (30MHz to the 5th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

The following tables are showing the test modes as the worst cases and recorded in this report.

		Те	on	
Item	EUT Configuration	EMI AC	EMI RE<1G	EMI RE≥1G
1.	Charging Mode (EUT with adapter)			Note 1
2.	Data application transferred mode			\boxtimes
2.	(EUT connected with notebook)			

Abbreviations:

EMI AC: AC conducted emissions

• EMI RE ≥ 1G: EUT radiated emissions ≥ 1GHz

EMI RE < 1G: EUT radiated emissions < 1GHz

Note 1: Testing for this mode is not required or not the worst case.

Remark: For signal above 1GHz, the worst case was test item 2.

SPORTON INTERNATIONAL (SHENZHEN) INC.

Page Number

: 7 of 24



Test Items	EUT Configure Mode	Function Type
		Mode 1: GSM850 Idle + Bluetooth Idle + USB Cable (Charging from Adapter) + Earphone + Camera + SIM1 <fig. 1=""></fig.>
AC Conducted Emission	1/2	Mode 2: GSM1900 Idle + Bluetooth Idle + USB Cable (Charging from Adapter) + Earphone + MPEG4 + SIM1 <fig. 1=""></fig.>
		Mode 3: GSM850 Idle + Bluetooth Idle + USB Cable (Data Link with Notebook) + Earphone + SIM1 <fig. 2=""></fig.>
		Mode 1: GSM850 Idle + Bluetooth Idle + USB Cable (Charging from Adapter) + Earphone + Camera + SIM1 <fig. 1=""></fig.>
Radiated Emissions < 1GHz	1//	Mode 2: GSM1900 Idle + Bluetooth Idle + USB Cable (Charging from Adapter) + Earphone + MPEG4 + SIM1 <fig. 1=""></fig.>
		Mode 3: GSM850 Idle + Bluetooth Idle + USB Cable (Data Link with Notebook) + Earphone + SIM1 <fig. 2=""></fig.>
Radiated Emissions ≥ 1GHz	2	Mode 1: GSM850 Idle + Bluetooth Idle + USB Cable (Data Link with Notebook) + Earphone + SIM1 <fig. 2=""></fig.>

: 8 of 24

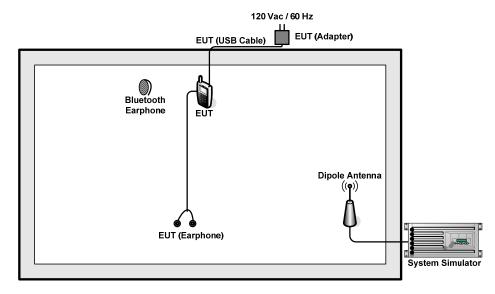
Page Number

Remark:

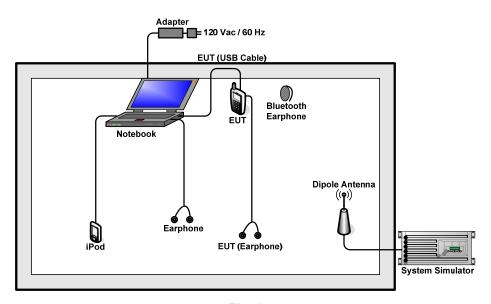
- 1. The worst case of AC is mode 1, and the USB Link mode of AC is mode 3, the test data of these modes are reported.
- 2. The worst case of RE < 1G is mode 3; only the test data of this mode is reported.
- 3. Link with Notebook means data application transferred mode between EUT and Notebook.



2.2. Connection Diagram of Test System



<Fig. 1>



<Fig. 2>

TEL: 86-755-3320-2398 Report Issued Date: Feb. 18, 2014 FCC ID: WVBA938X Report Version : Rev. 01

2.3. Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMW 500	N/A	N/A	Unshielded, 1.8 m
2.	WLAN AP	D-link	DIR-815	KA2IR815A1	N/A	Unshielded,1.8m
3.	Bluetooth Earphone	Nokia	BH-108	PYAHS-107W	N/A	N/A
4.	Notebook	Lenovo	G480	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
5.	iPod	Apple	MC525 ZP/A	FCC DoC	Shielded, 1.2 m	N/A
6.	SD Card	SanDisk	4G class 4	FCC DoC	N/A	N/A
7.	Earphone	Eimuse	E-500MV	FCC DoC	Shielded, 2.2 m	N/A

2.4. EUT Operation Test Setup

The EUT was in GSM idle mode during the testing. The EUT was synchronized to the BCCH, and was in continuous receiving mode by setting system simulator's paging reorganization.

At the same time, the EUT was attached to the Bluetooth earphone or WLAN AP, and the following programs installed in the EUT were programmed during the test.

- 1. Execute the program, "Winthrax" under WIN7 installed in notebook for files transfer with EUT via USB cable.
- 2. Execute "Video Player" to play MPEG4 files.
- 3. Turn on camera to capture images.

 ${\bf SPORTON\ INTERNATIONAL\ (SHENZHEN)\ INC.}$

TEL: 86-755- 3320-2398 FCC ID: WVBA938X Page Number : 10 of 24
Report Issued Date : Feb. 18, 2014

Report No.: FC410704

3. Test Result

3.1. Test of AC Conducted Emission Measurement

3.1.1 Limits of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission	Conducted limit (dBuV)			
(MHz)	Quasi-peak	Average		
0.15-0.5	66 to 56*	56 to 46*		
0.5-5	56	46		
5-30	60	50		

^{*}Decreases with the logarithm of the frequency.

3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedure

- 1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- 2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- 3. All the support units are connecting to the other LISN.
- 4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- 5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
- 6. Both sides of AC line were checked for maximum conducted interference.
- 7. The frequency range from 150 kHz to 30 MHz was searched.
- 8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

SPORTON INTERNATIONAL (SHENZHEN) INC. TEL: 86-755-3320-2398

FCC ID: WVBA938X

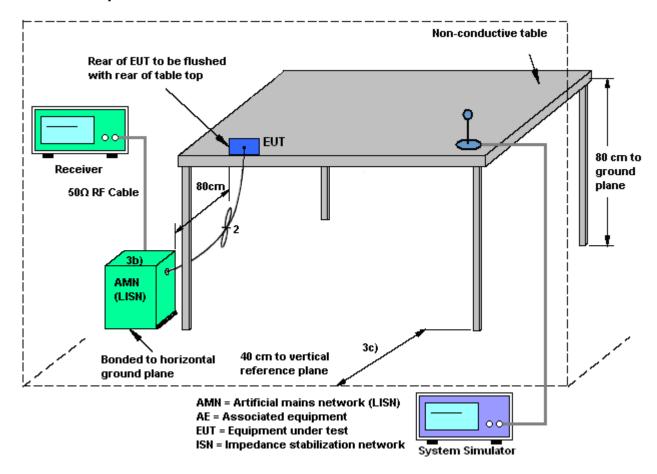
Page Number : 11 of 24

Report No.: FC410704

Report Issued Date: Feb. 18, 2014
Report Version: Rev. 01



3.1.4 Test Setup

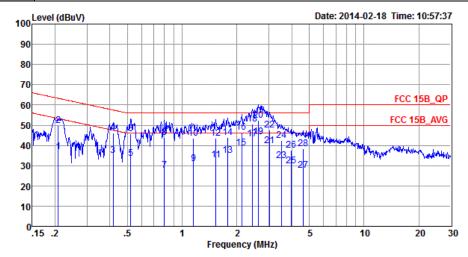


TEL: 86-755- 3320-2398 FCC ID: WVBA938X Page Number : 12 of 24
Report Issued Date : Feb. 18, 2014



3.1.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	21~22 ℃		
Test Engineer :	Henry Chen	Relative Humidity :	41~42%		
Test Voltage :	120Vac / 60Hz	Phase :	Line		
Function Tune	GSM850 Idle + Bluetooth Idle + USB Cable (Charging from Adapter) + Earphone +				
Function Type :	Camera + SIM1				



Site : CO01-SZ

Condition: FCC 15B_QP LISN_L_20130328 LINE

Project : (FC)410704

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
-	MHz	dBuV	dB	dBu∀	dBuV	dB	dB	
1	0.21	37.06	-16.21	53.27	26.71	0.07	10.28	Average
2	0.21	49.86	-13.41	63.27	39.51	0.07	10.28	QP
3	0.42	35.09	-12.42	47.51	24.79	0.13	10.17	Average
4	0.42	45.99	-11.52	57.51	35.69	0.13	10.17	QP
5	0.52	33.40	-12.60	46.00	23.11	0.14	10.15	Average
6	0.52	45.80	-10.20	56.00	35.51	0.14	10.15	QP
7	0.80	27.52	-18.48	46.00	17.20	0.17	10.15	Average
8	0.80	43.92	-12.08	56.00	33.60	0.17	10.15	QP
9	1.15	30.96	-15.04	46.00	20.59	0.21	10.16	Average
10	1.15	43.46	-12.54	56.00	33.09	0.21	10.16	QP
11	1.54	32.69	-13.31	46.00	22.30	0.22	10.17	Average
12	1.54	43.49	-12.51	56.00	33.10	0.22	10.17	QP
13	1.78	35.11	-10.89	46.00	24.70	0.23	10.18	Average
14	1.78	43.91	-12.09	56.00	33.50	0.23	10.18	QP
15	2.12	38.73	-7.27	46.00	28.31	0.23	10.19	Average
16	2.12	46.63	-9.37	56.00	36.21	0.23	10.19	QP
17	2.43	43.25	-2.75	46.00	32.80	0.25	10.20	Average
18	2.43	50.45	-5.55	56.00	40.00	0.25		_
19 *	2.62	44.46	-1.54	46.00	34.01	0.25	10.20	Average
20	2.62	52.26	-3.74	56.00	41.81	0.25	10.20	_

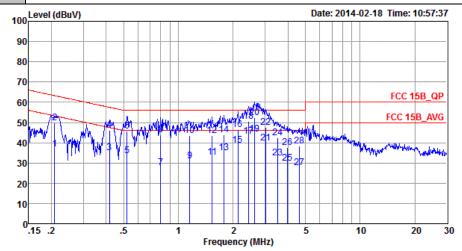
TEL: 86-755- 3320-2398 FCC ID: WVBA938X Page Number : 13 of 24
Report Issued Date : Feb. 18, 2014

Report No.: FC410704



21~22℃ Test Mode: Mode 1 Temperature : 41~42% Henry Chen Relative Humidity: Test Engineer: Phase: Test Voltage : 120Vac / 60Hz Line GSM850 Idle + Bluetooth Idle + USB Cable (Charging from Adapter) + Earphone + Function Type: Camera + SIM1

Report No.: FC410704



: CO01-SZ

Condition: FCC 15B_QP LISN_L_20130328 LINE

Project : (FC) 410704

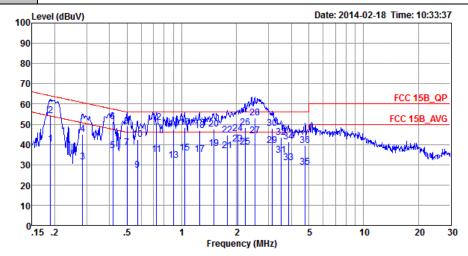
			Over	Limit	Read	LISN	Cable	
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBu∀	dB	dBu∀	dBuV	dB	dB	
21	3.03	39.68	-6.32	46.00	29.20	0.27	10.21	Average
22	3.03	47.78	-8.22	56.00	37.30	0.27	10.21	QP
23	3.53	32.60	-13.40	46.00	22.10	0.28	10.22	Average
24	3.53	42.50	-13.50	56.00	32.00	0.28	10.22	QP
25	3.96	29.72	-16.28	46.00	19.20	0.29	10.23	Average
26	3.96	37.72	-18.28	56.00	27.20	0.29	10.23	QP
27	4.65	27.54	-18.46	46.00	17.00	0.30	10.24	Average
28	4.65	38.24	-17.76	56.00	27.70	0.30	10.24	OP

SPORTON INTERNATIONAL (SHENZHEN) INC.

Page Number : 14 of 24 TEL: 86-755-3320-2398 Report Issued Date: Feb. 18, 2014 FCC ID: WVBA938X Report Version : Rev. 01



21~22℃ Test Mode: Mode 1 Temperature : 41~42% Henry Chen Relative Humidity: Test Engineer: Phase: Test Voltage : 120Vac / 60Hz Neutral GSM850 Idle + Bluetooth Idle + USB Cable (Charging from Adapter) + Earphone + Function Type: Camera + SIM1



Site : CO01-SZ Condition: FCC 15B_QP LISN_N_20130328 NEUTRAL

Project : (FC) 410704

	_		Over	Limit	Read			
	Freq	Level	Limit	Line	Tevel	Factor	Loss	Remark
	MHz	dBu∇	dB	dBu₹	dBuV	dB	dB	
1	0.19	40.05	-14.01	54.06	29.70	0.04	10.31	Average
2	0.19	54.35	-9.71	64.06	44.00	0.04	10.31	QP
3	0.28	31.25	-19.43	50.68	21.00	0.04	10.21	Average
4	0.28	45.05	-15.63	60.68	34.80	0.04	10.21	QP
5	0.42	36.81	-10.70	47.51	26.60	0.04	10.17	Average
6	0.42	51.31	-6.20	57.51	41.10	0.04	10.17	QP
7	0.50	38.50	-7.51	46.01	28.30	0.04	10.16	Average
8	0.50	49.20	-6.81	56.01	39.00	0.04	10.16	QP
9	0.57	27.19	-18.81	46.00	17.00	0.04	10.15	Average
10	0.57	42.59	-13.41	56.00	32.40	0.04	10.15	QP
11	0.73	35.19	-10.81	46.00	25.00	0.04	10.15	Average
12	0.73	50.99	-5.01	56.00	40.80	0.04	10.15	QP
13	0.90	32.19	-13.81	46.00	22.00	0.04	10.15	Average
14	0.90	47.59	-8.41	56.00	37.40	0.04	10.15	QP
15	1.04	35.79	-10.21	46.00	25.60	0.04	10.15	Average
16	1.04	48.49	-7.51	56.00	38.30	0.04	10.15	
17	1.25	35.01	-10.99	46.00	24.80	0.05	10.16	Average
18	1.25	46.71	-9.29	56.00	36.50	0.05	10.16	QP
19	1.50	37.82	-8.18	46.00	27.60	0.05	10.17	Average
20	1.50	47.42	-8.58	56.00	37.20	0.05	10.17	QP

TEL: 86-755-3320-2398 FCC ID: WVBA938X

Page Number : 15 of 24 Report Issued Date: Feb. 18, 2014

Report No.: FC410704

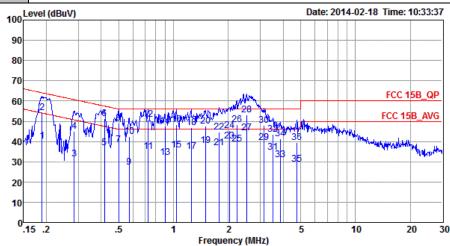


 Test Mode :
 Mode 1
 Temperature :
 21~22℃

 Test Engineer :
 Henry Chen
 Relative Humidity :
 41~42%

 Test Voltage :
 120Vac / 60Hz
 Phase :
 Neutral

 Function Type :
 GSM850 Idle + Bluetooth Idle + USB Cable (Charging from Adapter) + Earphone + Camera + SIM1



Site : CO01-SZ

Condition: FCC 15B_QP LISN_N_20130328 NEUTRAL

Project : (FC) 410704

			Over	Limit	Read	LISN	Cable	
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBu∀	dB	dB	
21	1.78		-9.06	46.00	26.70			Average
22 23	1.78 2.03	40.35	-11.36 -5.65	46.00	30.10	0.06	10.19	Average
24 25	2.03 2.24		-10.55 -7.24		35.20 28.50			QP Average
26 27 *	2.24			56.00 46.00	38.00 34.00			QP Average
28 29	2.53 3.16			56.00 46.00	42.80 29.01			QP Average
30 31	3.16 3.53		-7.90 -11.39	56.00 46.00	37.81 24.30			QP Average
32 33	3.53 3.86	43.51	-12.49 -15.10	56.00 46.00	33.20 20.57	0.09	10.22	
34 35	3.86 4.77	41.32	-14.68 -17.06	56.00 46.00	30.99	0.10	10.23	
36	4.77		-16.66	56.00	28.99		10.24	_

TEL: 86-755- 3320-2398 FCC ID: WVBA938X Page Number : 16 of 24
Report Issued Date : Feb. 18, 2014

Report No.: FC410704

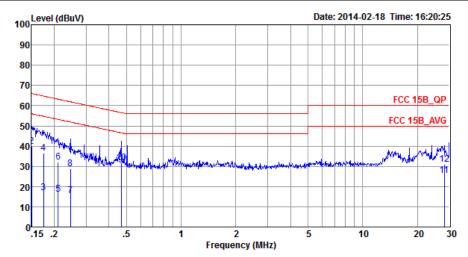


 Test Mode :
 Mode 3
 Temperature :
 21~22°C

 Test Engineer :
 Henry Chen
 Relative Humidity :
 41~42%

 Test Voltage :
 120Vac / 60Hz
 Phase :
 Line

 Function Type :
 GSM850 Idle + Bluetooth Idle + USB Cable (Data Link with Notebook) + Earphone + SIM1



Site : CO01-SZ

Condition: FCC 15B_QP LISN_L_20130328 LINE

Project : (FC) 410704

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBu∀	dB	dBu∀	dBu∀	dB	dB	
1	0.15	26.52	-29.48	56.00	16.10	0.06	10.36	Average
2	0.15	39.72	-26.28	66.00	29.30	0.06	10.36	QP
3	0.17	16.89	-37.83	54.72	6.50	0.07	10.32	Average
4	0.17	36.69	-28.03	64.72	26.30	0.07	10.32	QP
5	0.21	16.16	-37.02	53.18	5.81	0.07	10.28	Average
6	0.21	31.99	-31.19	63.18	21.64	0.07	10.28	QP
7	0.25	15.53	-36.38	51.91	5.19	0.09	10.25	Average
8	0.25	28.63	-33.28	61.91	18.29	0.09	10.25	QP
9 4	0.47	30.59	-15.95	46.54	20.29	0.14	10.16	Average
10	0.47	31.59	-24.95	56.54	21.29	0.14	10.16	QP
11	28.15	25.37	-24.63	50.00	13.01	1.76	10.60	Average
12	28.15	30.87	-29.13	60.00	18.51	1.76	10.60	QP

TEL : 86-755- 3320-2398 FCC ID : WVBA938X Page Number : 17 of 24
Report Issued Date : Feb. 18, 2014

Report No.: FC410704

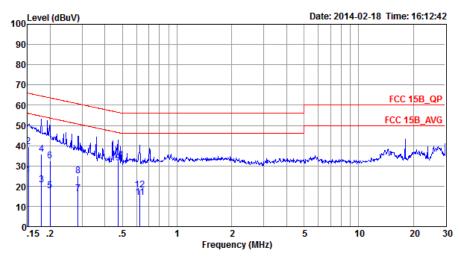


 Test Mode :
 Mode 3
 Temperature :
 21~22°C

 Test Engineer :
 Henry Chen
 Relative Humidity :
 41~42%

 Test Voltage :
 120Vac / 60Hz
 Phase :
 Neutral

 Function Type :
 GSM850 Idle + Bluetooth Idle + USB Cable (Data Link with Notebook) + Earphone + SIM1



Site : CO01-SZ

Condition: FCC 15B_QP LISN_N_20130328 NEUTRAL

Project : (FC)410704

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBu∇	dB	dBu∀	dBu∀	dB	dB	
1	0.15	25.40	-30.51	55.91	15.00	0.04	10.36	Average
2	0.15	39.40	-26.51	65.91	29.00	0.04	10.36	QP
3	0.18	20.56	-33.99	54.55	10.20	0.04	10.32	Average
4	0.18	35.96	-28.59	64.55	25.60	0.04	10.32	QP
5	0.20	17.83	-35.79	53.62	7.50	0.04	10.29	Average
6	0.20	32.43	-31.19	63.62	22.10	0.04	10.29	QP
7	0.28	16.25	-34.43	50.68	6.00	0.04	10.21	Average
8	0.28	25.25	-35.43	60.68	15.00	0.04	10.21	QP
9 *	0.47	31.40	-15.05	46.45	21.20	0.04	10.16	Average
10	0.47	32.60	-23.85	56.45	22.40	0.04	10.16	QP
11	0.62	14.29	-31.71	46.00	4.10	0.04	10.15	Average
12	0.62	18.19	-37.81	56.00	8.00	0.04	10.15	QP

TEL : 86-755- 3320-2398 FCC ID : WVBA938X Page Number : 18 of 24
Report Issued Date : Feb. 18, 2014

Report No.: FC410704

3.2. Test of Radiated Emission Measurement

3.2.1. Limit of Radiated Emission

The emissions from an unintentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.2.2. Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.2.3. Test Procedures

FCC ID: WVBA938X

- 1. The EUT was placed on a turntable with 0.8 meter above ground.
- 2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
- 3. The table was rotated 360 degrees to determine the position of the highest radiation.
- 4. The antenna height is adjusted between one to four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
- 5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
- 6. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, peak
 values of EUT will be reported. Otherwise, the emission will be repeated by using the
 quasi-peak method and reported.
- 8. Emission level (dB μ V/m) = 20 log Emission level (μ V/m)
- 9. Corrected Reading: Antenna Factor + Cable Loss + Read Level Preamp Factor = Level

SPORTON INTERNATIONAL (SHENZHEN) INC.Page Number: 19 of 24TEL: 86-755- 3320-2398Report Issued Date: Feb. 18, 2014

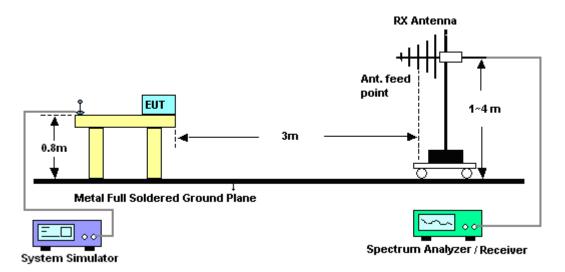
Report Version : Rev. 01

Report No.: FC410704

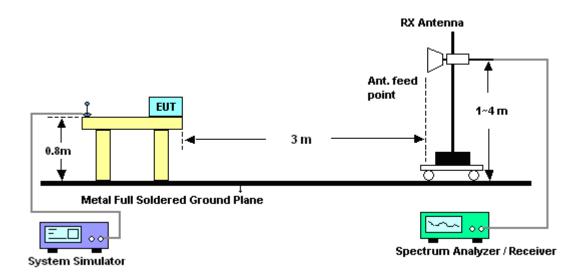


3.2.4. Test Setup of Radiated Emission

For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz

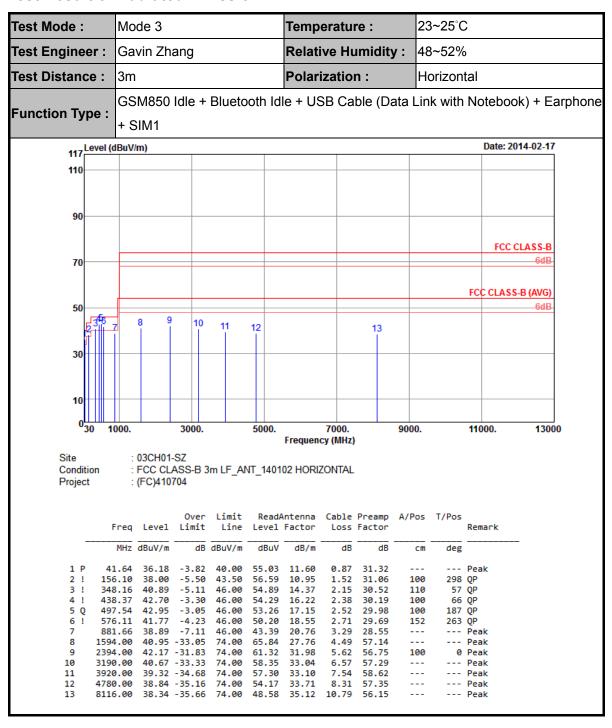


TEL: 86-755-3320-2398 FCC ID: WVBA938X

Page Number : 20 of 24 Report Issued Date: Feb. 18, 2014



3.2.5. Test Result of Radiated Emission



Page Number

Report Version

: 21 of 24

: Rev. 01

Report Issued Date: Feb. 18, 2014

Report No.: FC410704

TEL : 86-755- 3320-2398 FCC ID : WVBA938X

23~25°C Test Mode: Mode 3 Temperature: **Relative Humidity:** 48~52% Test Engineer: Gavin Zhang Polarization: Test Distance: 3m Vertical GSM850 Idle + Bluetooth Idle + USB Cable (Data Link with Notebook) + Earphone Function Type: + SIM1 117 Level (dBuV/m) Date: 2014-02-17 110 90 FCC CLASS-B 70 FCC CLASS-B (AVG) 50 12 30 10 0<mark>30</mark> 1000. 3000. 5000. 7000. 9000. 11000. 13000 Frequency (MHz) : 03CH01-SZ Site : FCC CLASS-B 3m LF_ANT_140102 VERTICAL Condition Project : (FC)410704 Over Limit ReadAntenna Cable Preamp A/Pos T/Pos Freq Level Limit Line Level Factor Remark Loss Factor MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cmdeg 40.67 33.02 -6.98 40.00 51.63 11.85 0.86 31.32 --- Peak 120.21 35.60 -7.90 43.50 53.90 --- Peak 11.50 1.35 31.15 ------ Peak 3 167.74 35.33 -8.17 43.50 54.00 10.79 1.57 31.03 4 P 5 Q 438.37 42.81 -3.19 46.00 54.40 16.22 2.38 30.19 --- Peak 53.26 485.90 42.65 -3.35 46.00 2.49 30.02 100 360 OP 16.92 587.75 2.74 290 QP 6 ! 41.83 -4.17 46.00 50.15 18.58 29.64 130 881.66 38.95 -7.05 46.00 43.45 20.76 28.55 1598.00 40.70 -33.30 74.00 65.59 27.76 4.49 57.14 ------ Peak 44.54 -29.46 45.70 -28.30 2478.00 74.00 63.20 32.41 5.71 56.78 57.29 --- Peak 3190.00 74.00 33.04 6.57 10 63.38 100 360 Peak 74.00 11 3988.00 38.16 -35.84 56.18 33.10 7.62 58.74 --- Peak 4798.00 40.36 -33.64 74.00 55.61 33.74 8.33 57.32

Report No.: FC410704

--- Peak

13

10192.00 41.34 -32.66

Page Number : 22 of 24 TEL: 86-755-3320-2398 Report Issued Date: Feb. 18, 2014 FCC ID: WVBA938X Report Version : Rev. 01

74.00

48.65

36.88

12.76

56.95

4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
ESCIO Test Receiver	R&S	ESCI	100724	9kHz~3GHz	Mar. 29, 2013	Feb. 18, 2014	Mar. 28, 2014	Conduction (CO01-SZ)
AC LISN	EMCO	3816/2SH	00103912	9kHz~30MHz	Mar. 28, 2013	Feb. 18, 2014	Mar. 27, 2014	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	EMCO	3816/2SH	00103892	9kHz~30MHz	Mar. 28, 2013	Feb. 18, 2014	Mar. 27, 2014	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	616020000 891	100Vac~250Vac	Nov. 20, 2013	Feb. 18, 2014	Nov. 19, 2014	Conduction (CO01-SZ)
Spectrum Analyzer	Agilent Technologies	N9038A	MY52260 185	20Hz~26.5GHz	Apr. 04, 2013	Feb. 17, 2014	Apr. 03, 2014	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS Lindgren	3117	00119436	1GHz~18GHz	Oct. 26, 2013	Feb. 17, 2014	Oct. 25, 2014	Radiation (03CH01-SZ)
Bilog Antenna	SCHAFFNER	CBL6112B	2614	30MHz~2GHz	Dec. 26, 2013	Feb. 17, 2014	Dec. 25, 2014	Radiation (03CH01-SZ)
Amplifier	ADVANTEST	BB525C	E9007003	9kHz~3000MHz GAIN 30db	Mar. 28, 2013	Feb. 17, 2014	Mar. 27, 2014	Radiation (03CH01-SZ)
Amplifier	Yiai	AV3860B	04030	2GHz~26.5GHz	Mar. 28, 2013	Feb. 17, 2014	Mar. 27, 2014	Radiation (03CH01-SZ)
Turn Table	EM Electronics	EM 1000	N/A	0 ~ 360 degree	N/A	Feb. 17, 2014	N/A	Radiation (03CH01-SZ)
Antenna Mast	EM Electronics	EM 1000	N/A	1 m - 4 m	N/A	Feb. 17, 2014	N/A	Radiation (03CH01-SZ)

TEL: 86-755- 3320-2398 FCC ID: WVBA938X Page Number : 23 of 24
Report Issued Date : Feb. 18, 2014

Report No. : FC410704



FCC Test Report

5. Uncertainty of Evaluation

<u>Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)</u>

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.26
---	------

Report No.: FC410704

<u>Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)</u>

Measuring Uncertainty for a Level of	3.90
Confidence of 95% (U = 2Uc(y))	3.90

SPORTON INTERNATIONAL (SHENZHEN) INC.

Page Number : 24 of 24

TEL: 86-755- 3320-2398

Report Issued Date : Feb. 18, 2014

FCC ID: WVBA938X Report Version: Rev. 01