

FCC Test Report

APPLICANT : CT Asia

EQUIPMENT : **GSM** mobile phone

BRAND NAME : BLU
MODEL NAME : Bar Q

FCC ID : YHLBLUBARQ

STANDARD : FCC 47 CFR FCC Part 15 Subpart B

CLASSIFICATION : Certification

The product was received on May 13, 2011 and completely tested on May 25, 2011. We, SPORTON INTERNATIONAL (KUNSAHN) 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 the compliance with the applicable technical standards.

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

Reviewed by:

Jones Tsai / Manager



Report No.: FD151304

SPORTON INTERNATIONAL (KUNSHAN) INC. No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C.

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: YHLBLUBARQ Page Number : 1 of 22
Report Issued Date : Jun. 16, 2011

Report Version : Rev. 01





TABLE OF CONTENTS

RE	VISIO	N HISTORY	
ei i		RY OF TEST RESULT	
30	IVIIVIA	(1 OF 1E51 RESUL1	4
1.	GENI	ERAL DESCRIPTION	5
	1.1.	Applicant	5
	1.2.	Manufacturer	
	1.3.	Feature of Equipment Under Test	5
	1.4.	Test Site	
	1.5.	Applied Standards	
	1.6.	Ancillary Equipment List	6
2.	TEST	CONFIGURATION OF EQUIPMENT UNDER TEST	7
	2.1.	Test Mode	7
	2.2.	Connection Diagram of Test System	9
	2.3.	Test Software	11
3.	TEST	RESULT	12
	3.1.	Test of AC Conducted Emission Measurement	12
	3.2.	Test of Radiated Emission Measurement	16
4.	LIST	OF MEASURING EQUIPMENT	20
5.	UNCI	ERTAINTY OF EVALUATION	21
ΑP	PEND	IX A. PHOTOGRAPHS OF EUT	
ΑP	PEND	IX B. SETUP PHOTOGRAPHS	

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: YHLBLUBARQ Page Number : 2 of 22
Report Issued Date : Jun. 16, 2011
Report Version : Rev. 01



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FD151304	Rev. 01	Initial issue of report	Jun. 16, 2011

SPORTON INTERNATIONAL (KUNSHAN) INC.

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: YHLBLUBARQ Page Number : 3 of 22
Report Issued Date : Jun. 16, 2011
Report Version : Rev. 01



SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.107	7.2.2	AC Conducted Emission	< 15.107 limits	PASS	Under limit 9.23 dB at
				< RSS-Gen table 2 limits		0.20 MHz
				< 15.109 limits or		Under limit
3.2	15.109	.109 7.2.3.2	Radiated Emission	< RSS-Gen table 1 limits	PASS	5.17 dB at
				(Section 6)		720.00 MHz

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: YHLBLUBARQ Page Number : 4 of 22
Report Issued Date : Jun. 16, 2011
Report Version : Rev. 01



1. General Description

1.1. Applicant

CT Asia

RMA2011, 20/F, GOLDEN CENTRAL TOWER, NO.3037# JINTIAN ROAD, FUTIAN DISTRICT

1.2. Manufacturer

CT Asia

RMA2011, 20/F, GOLDEN CENTRAL TOWER, NO.3037# JINTIAN ROAD, FUTIAN DISTRICT

1.3. Feature of Equipment Under Test

Product Feature & Specification					
Equipment	GSM mobile phone				
Brand Name	BLU				
Model Name	Bar Q				
FCC ID	YHLBLUBARQ				
Tx Frequency Range	GSM850 : 824 MHz ~ 849 MHz GSM1900 : 1850 MHz ~ 1910 MHz Bluetooth : 2400 MHz ~ 2483.5 MHz				
Rx Frequency Range	GSM850 : 869 MHz ~ 894 MHz GSM1900 : 1930 MHz ~ 1990 MHz Bluetooth : 2400 MHz ~ 2483.5 MHz				
Antenna Type	WWAN : Fixed Internal Antenna Bluetooth : Dipole Antenna				
HW Version	V3.1				
SW Version	V013				
Type of Modulation	GSM / GPRS : GMSK Bluetooth (1Mbps) : GFSK Bluetooth EDR (2Mbps) : π/4-DQPSK Bluetooth EDR (3Mbps) : 8-DPSK				
EUT Stage	Production Unit				

Remark:

- 1. The above DUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
- 2. It is only the SIM card different between Bar Q single SIM card mobile and Bar Q double SIM card mobile, the others are the same including circuit design, PCB board, structure and all components. It is special to declare. Only double SIM card mobile was performed for this test.

SPORTON INTERNATIONAL (KUNSHAN) INC.

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: YHLBLUBARQ Page Number : 5 of 22
Report Issued Date : Jun. 16, 2011
Report Version : Rev. 01



1.4. Test Site

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.			
	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C.			
Test Site Location	TEL: +86-0512-5790-0158			
	FAX: +86-0512-5790-0958			
Test Site No.	Sporton Site No.			
	CO01-KS 03CH01-KS			

1.5. 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
- · IC RSS-Gen Issue 3

Remark:

- 1, All test items were verified and recorded according to the standards and without any deviation during the test.
- 2, This report is intention of applying for FCC 15B certification only.

1.6. Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Base Station	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	Signal Generator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
3.	Bluetooth Earphone	Nokia	BH-102	PYAHS-107W	N/A	N/A
4.	PC	Dell	MT320	Fcc DoC	N/A	Unshielded, 1.8 m
5.	Monitor	QDELL	LC99	Fcc DoC	Shielded, 1.2 m	Unshielded, 1.8 m
6.	iPod	Apple	A1199	DoC	Shielded, 1.2 m	N/A
7.	(USB) Mouse	Dell	MO56UC	Fcc DoC	Shielded, 1.8 m	N/A
8.	(USB) Keyboard	DELL	L100	Fcc DoC	Shielded, 1.8 m with Core	N/A
9.	Printer	HP	Laser Jet 1018	Fcc DoC	Shielded, 1.8 m	Unshielded, 1.8 m

SPORTON INTERNATIONAL (KUNSHAN) INC.

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: YHLBLUBARQ Page Number : 6 of 22
Report Issued Date : Jun. 16, 2011
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.

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.

		Test Condition				
Item	Item EUT Configuration		EMI	EMI		
		AC	RE<1G	RE≥1G		
1.	Charging Mode (EUT with adapter)	\boxtimes	\boxtimes	Note 1		
2.	Charging Mode (EUT with PC)			\boxtimes		

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.

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TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: YHLBLUBARQ Page Number : 7 of 22
Report Issued Date : Jun. 16, 2011
Report Version : Rev. 01



Test Items	EUT Configure Mode	Function Type
AC Conducted Emission	1/2	Mode 1: GSM850 Idle + Bluetooth Idle + Adapter + Camera Mode 2: GSM1900 Idle + Bluetooth Idle + Adapter + MPEG4 Mode 3: GSM850 Idle + Bluetooth Idle + USB Cable (Link with PC)
Radiated Emissions < 1GHz	1/2	Mode 1: GSM850 Idle + Bluetooth Idle + Adapter + Camera Mode 2: GSM1900 Idle + Bluetooth Idle + Adapter + MPEG4 Mode 3: GSM850 Idle + Bluetooth Idle + Earphone + FM Rx Mode 4: GSM850 Idle + Bluetooth Idle + USB Cable (Link with PC)
Radiated Emissions ≥ 1GHz	2	Mode 1: GSM850 Idle + Bluetooth Idle + USB Cable (Link with PC)

Remark:

- 1. The worst case of AC is mode 1; only the test data of this mode was reported.
- 2. The worst case of RE < 1G is mode 4; only the test data of this mode was reported.

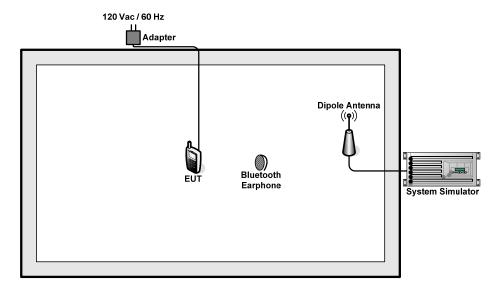
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TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: YHLBLUBARQ Page Number : 8 of 22
Report Issued Date : Jun. 16, 2011
Report Version : Rev. 01

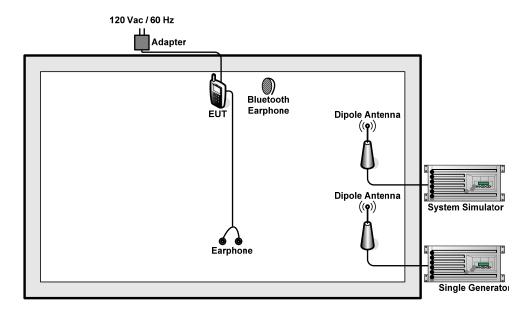


2.2. Connection Diagram of Test System

<EUT with Adapter Mode>



<EUT with Adapter in FM Rx Mode>



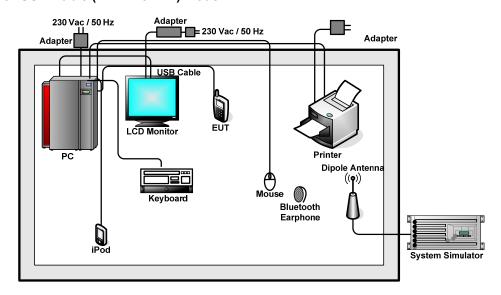
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TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: YHLBLUBARQ Page Number : 9 of 22 Report Issued Date : Jun. 16, 2011 Report Version : Rev. 01





<EUT with USB Cable (Link with PC) Mode>



TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: YHLBLUBARQ Page Number : 10 of 22 Report Issued Date : Jun. 16, 2011 Report Version : Rev. 01



FCC Test Report Report No.: FD151304

2.3. Test Software

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

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

- 1. Execute the program, "Winthrax", installed in PC for active sync files transfer with EUT via USB cable.
- 2. Execute "Video Player" to play MPEG4 files.
- 3. Turn on camera to capture images.
- 4. Keep the EUT receiving signals continuously in FM Rx mode.

SPORTON INTERNATIONAL (KUNSHAN) INC.

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: YHLBLUBARQ

: 11 of 22 Page Number Report Issued Date: Jun. 16, 2011

Report Version : Rev. 01



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

See list of measuring instruments 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.

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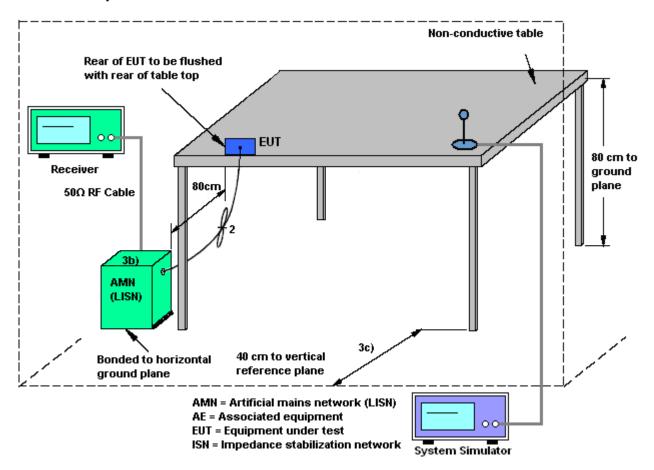
TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: YHLBLUBARQ Page Number : 12 of 22
Report Issued Date : Jun. 16, 2011

Report No.: FD151304

Report Version : Rev. 01



3.1.4 Test Setup



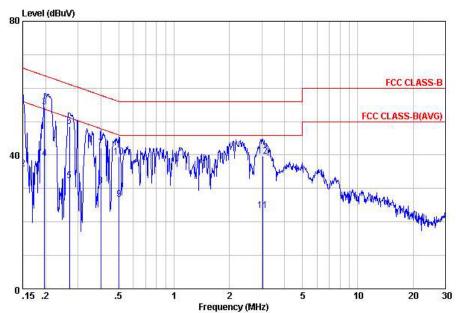
TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: YHLBLUBARQ Page Number : 13 of 22 Report Issued Date : Jun. 16, 2011 Report Version : Rev. 01





3.1.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	18~21℃			
Test Engineer :	Okey Yuan	Relative Humidity :	39~42%			
Test Voltage :	120Vac / 60Hz	Phase :	Line			
Function Type :	Function Type: GSM850 Idle + Bluetooth Idle + Adapter + Camera					
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.					
	Lossel (dDubb					



Site : C001-KS Condition: FCC CLASS-B LISN-100807 LINE

Project : (FD)151304 mode : Mode 1

mode

LOGC	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
ž:	MHz	dBu∀	dB	dBuV	dBuV	dB	dB	6.
1	0.15	53.67	-12.33	66.00	43.60	-0.07	10.14	QP
2	0.15	35.97	-20.03	56.00	25.90	-0.07	10.14	Average
3	0.20	54.48	-9.23	63.71	44.40	-0.07	10.15	QP
2 3 4 5 6 7 8 9	0.20	39.08	-14.63	53.71	29.00	-0.07	10.15	Average
5	0.27	32.39	-18.73	51.12	22.30	-0.07		Average
6	0.27	48.49	-12.63	61.12	38.40	-0.07	10.16	
7	0.40	42.01	-15.85	57.86	31.90	-0.08	10.19	ÖΡ
8	0.40	30.71	-17.15	47.86	20.60	-0.08	10.19	Average
9	0.50	26.73	-19.27	46.00	16.60	-0.08		Average
10	0.50	39.53	-16.47	56.00	29.40	-0.08	10.21	OP
11	3.04	23.35	-22.65	46.00	13.10	-0.12	10.37	Average
12	3.04		-16.35	56.00	29.40	-0.12	10.37	

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: YHLBLUBARQ

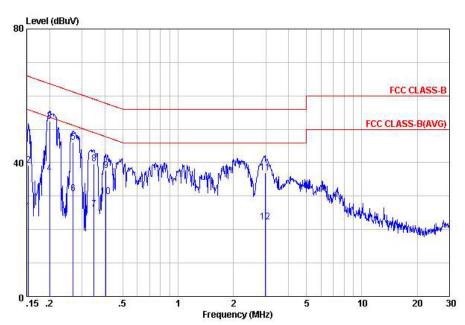
Page Number : 14 of 22 Report Issued Date: Jun. 16, 2011 Report Version : Rev. 01



18~21°C Test Mode: Mode 1 Temperature: Test Engineer : Okey Yuan Relative Humidity: 39~42% 120Vac / 60Hz Test Voltage: Phase: Neutral

Function Type: GSM850 Idle + Bluetooth Idle + Adapter + Camera

Remark: All emissions not reported here are more than 10 dB below the prescribed limit.



: C001-KS

Condition: FCC CLASS-B LISN-100807 NEUTRAL

Project : (FD)151304 mode : Mode 1

iouc	. Hode I		^	14-12-12-12-12	SHOW SHE	TICH	011		
	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	
85	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.15	25.35	-30.47	55.82	15.30	-0.09	10.14	Average	
2	0.15	39.25	-26.57	65.82	29.20	-0.09	10.14	QP	
3	0.20	52.38	-11.24	63.62	42.30	-0.07	10.15	QP	
4	0.20	36.78	-16.84	53.62	26.70	-0.07	10.15	Average	
4 5 6 7	0.27	46.19	-14.97	61.16	36.10	-0.07	10.16	QP	
6	0.27	30.69	-20.47	51.16	20.60	-0.07	10.16	Average	
	0.35	26.10	-22.90	49.00	16.00	-0.08	10.18	Average	
8	0.35	39.60	-19.40	59.00	29.50	-0.08	10.18	QP	
9	0.40	37.71	-20.06	57.77	27.60	-0.08	10.19	QP	
10	0.40	29.81	-17.96	47.77	19.70	-0.08	10.19	Average	
11	2.98	37.05	-18.95	56.00	26.80	-0.12	10.37	QP	
12	2 98	22 25	-23 75	46 00	12 00	-0.12	10 37	Average	

SPORTON INTERNATIONAL (KUNSHAN) INC.

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: YHLBLUBARQ

Page Number : 15 of 22 Report Issued Date: Jun. 16, 2011 Report Version : Rev. 01



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	Field Strength	Measurement Distance		
(MHz)	(microvolts/meter)	(meters)		
0.009 – 0.490	2400/F(kHz)	300		
0.490 – 1.705	24000/F(kHz)	30		
1.705 – 30.0	30	30		
30 – 88	100	3		
88 – 216	150	3		
216 - 960	200	3		
Above 960	500	3		

3.2.2. Measuring Instruments

See list of measuring instruments of this test report.

SPORTON INTERNATIONAL (KUNSHAN) INC.

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: YHLBLUBARQ Page Number : 16 of 22
Report Issued Date : Jun. 16, 2011
Report Version : Rev. 01

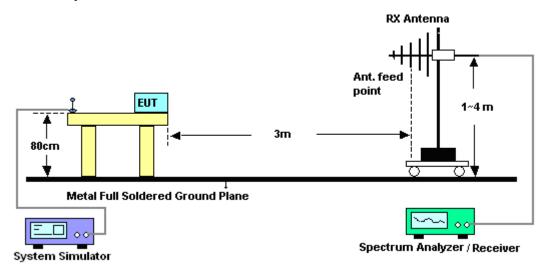


Report No.: FD151304

3.2.3. Test Procedures

- 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 is a Bi-Log antenna and its height is adjusted between one meter and 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.
- 7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the quasi-peak method and reported
- Emission level (dBuV/m) = 20 log Emission level (uV/m) 8.
- 9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

3.2.4. Test Setup of Radiated Emission



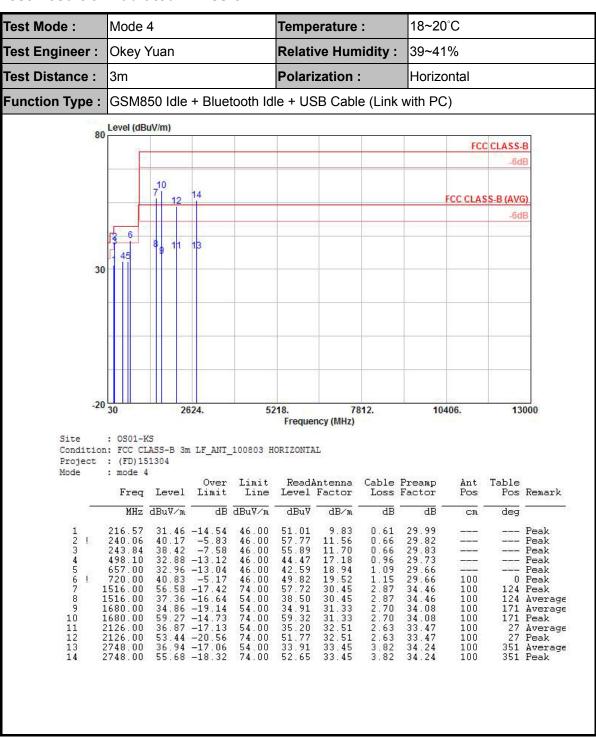
SPORTON INTERNATIONAL (KUNSHAN) INC.

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: YHLBLUBARQ

Page Number : 17 of 22 Report Issued Date: Jun. 16, 2011 Report Version : Rev. 01



3.2.5. Test Result of Radiated Emission

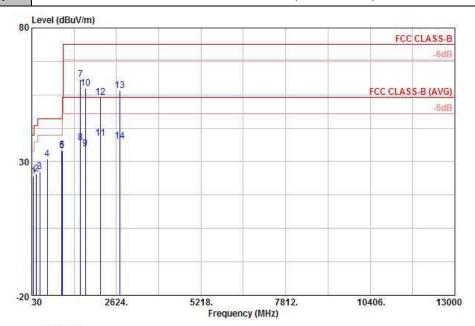


TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: YHLBLUBARQ Page Number : 18 of 22
Report Issued Date : Jun. 16, 2011
Report Version : Rev. 01



Test Mode: Mode 4 Temperature: 18~20°C 39~41% Test Engineer: Okey Yuan Relative Humidity: Test Distance: 3m Polarization: Vertical

Function Type: GSM850 Idle + Bluetooth Idle + USB Cable (Link with PC)



Site : OS01-KS

Condition: FCC CLASS-B 3m LF_ANT_100803 VERTICAL

Project : (FD)151304 Mode : mode 4

mode	: mode	±									
	Freq	Level	Over Limit	Limit Line		Antenna Factor		Preamp Factor	Ant Pos	Table Pos	Remark
5	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	CM	deg	56 EX
1	83.73	24.48	-15.52	40.00	46.81	7.34	0.36	30.03			Peak
2	167.97	25.38	-18.12	43.50	45.49	9.27	0.54	29.92			Peak
2	280.29	26.25	-19.75	46.00	42.84	12.66	0.70	29.95	750000	7200	Peak
4	510.00	31.01	-14.99	46.00	42.36	17.40	0.97	29.72			Peak
5	946.80	34.38	-11.62	46.00	41.87	20.72	1.33	29.54	100	14	Peak
5 6	960.10	33.96	-20.04	54.00	41.37	20.79	1.34	29.54		2 -1111	Peak
7	1518.00	60.91	-13.09	74.00	62.05	30.45	2.87	34.46	100	40	Peak
8	1518.90	37.21	-16.79	54.00	38.22	30.56	2.85	34.42	100	40	Average
8 9	1670.00	34.77	-19.23	54.00	34.91	31.26	2.72	34.12	100		Average
10	1670.00	57.31	-16.69	74.00	57.45	31.26	2.72	34.12	100		Peak
11	2134.00	38.81	-15.19	54.00	37.09	32.53	2.68	33.49	100	237	Average
12	2134.00	53.96	-20.04	74.00	52.24	32.53	2.68	33.49	100		Peak
13	2736.00	56.47	-17.53	74.00	53.45	33.43	3.82	34.23	100		Peak
14	2736.00	37.54	-16.46	54.00	34.52	33.43	3.82	34.23	100		Average

SPORTON INTERNATIONAL (KUNSHAN) INC.

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: YHLBLUBARQ

Page Number : 19 of 22 Report Issued Date: Jun. 16, 2011 Report Version : Rev. 01



4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz	Jun. 22, 2010	Jun. 21, 2011	Conduction (CO01-KS)
LISN	MessTec	AN3016	60103	9kHz~30MHz	Jan. 07, 2011	Jan. 06, 2012	Conduction (CO01-KS)
LISN	MessTec	AN3016	60105	9kHz~30MHz	Jan. 07, 2011	Jan. 06, 2012	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP00000081	N/A	Nov. 10, 2010	Nov. 09, 2011	Conduction (CO01-KS)
System Simulator	R&S	CMU200	837587/066	Full-Band	Jan. 07, 2011	Jan. 06, 2012	Conduction (CO01-KS)
GPS Station	T&E	GS-50	N/A	N/A	N/A	N/A	Conduction (CO01-KS)
EMI Test Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 16, 2010	Nov. 15, 2011	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Jan. 07, 2011	Jan. 06, 2012	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Dec. 07, 2010	Dec. 06, 2011	Radiation (03CH01-KS)
Double Ridge Horn Antenna	EMCO	3117	00075959	1MHz~18GHz	Jan. 07, 2011	Jan. 06, 2012	Radiation (03CH01-KS)
Amplifier	Wireless	FPA-6592G	060004	30MHz~2GHz	Dec. 09, 2010	Dec. 08, 2011	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Jan. 07, 2011	Jan. 06, 2012	Radiation (03CH01-KS)
Actice hore antenna	com-power	AHA-118	701023	1G-18GHz	Nov. 09, 2010	Nov. 08, 2011	Radiation (03CH01-KS)
Signal Generator	R&S	SMR40	100455	10G-40GHz	Jan. 06, 2011	Jan. 05, 2012	Radiation (03CH01-KS)
SHE-EHF Horn	Schwarzbeck	BBHA9170	BBHA170249	15-40GHz	Oct. 15,2010	Oct. 14,2011	Radiation (03CH01-KS)
Loop Antenna	R&S	HFH2-Z2	860004/00	9G-30GHz	Jul. 29, 2010	Jul. 28, 2011	Radiation (03CH01-KS)
Bluetooth Base Station	R&S	СВТ	100783	N/A	Aug. 17, 2010	Aug. 16, 2011	Radiation (03CH01-KS)

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: YHLBLUBARQ Page Number : 20 of 22
Report Issued Date : Jun. 16, 2011
Report Version : Rev. 01





5. Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

	Uncerta			
Contribution	dB	Probability Distribution	u(X _i)	
Receiver Reading	0.10	Normal (k=2)	0.05	
Cable Loss	0.10	Normal (k=2)	0.05	
AMN Insertion Loss	2.50	Rectangular	0.63	
Receiver Specification	1.50	Rectangular	0.43	
Site Imperfection	1.39	Rectangular	0.80	
Mismatch	+0.34 / -0.35	U-Shape	0.24	
Combined Standard Uncertainty Uc(y)	1.13			
Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.26			

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

	Uncerta			
Contribution	dB	Probability Distribution	u(X _i)	
Receiver Reading	0.41	Normal (k=2)	0.21	
Antenna Factor Calibration	0.83	Normal (k=2)	0.42	
Cable Loss Calibration	0.25	Normal (k=2)	0.13	
Pre-Amplifier Gain Calibration	0.27	Normal (k=2)	0.14	
RCV/SPA Specification	2.50	Rectangular	0.72	
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29	
Site Imperfection	1.43	Rectangular	0.83	
Mismatch	+0.39 / -0.41	U-Shape	0.28	
Combined Standard Uncertainty Uc(y)	1.27			
Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.54			

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: YHLBLUBARQ Page Number : 21 of 22
Report Issued Date : Jun. 16, 2011
Report Version : Rev. 01





Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

		<u> </u>				
	Uncertai					
Contribution	dB Probability Distribution		u(X _i)	C _i	C _i * u(X _i)	
Receiver Reading	±0.10	Normal (k=2)	0.10	1	0.10	
Antenna Factor Calibration	±1.70	Normal (k=2)	0.85	1	0.85	
Cable Loss Calibration	±0.50	Normal (k=2)	0.25	1	0.25	
Receiver Correction	±2.00	Rectangular	1.15	1	1.15	
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87	
Site Imperfection	±2.80	Triangular	1.14	1	1.14	
Mismatch Receiver VSWR Γ 1 = 0.197 Antenna VSWR Γ 2 = 0.194 Uncertainty = 20Log(1- Γ 1* Γ 2)	+0.34 / -0.35	U-Shape	0.244	1	0.244	
Combined Standard Uncertainty Uc(y)	2.36					
Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.72					

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: YHLBLUBARQ Page Number : 22 of 22
Report Issued Date : Jun. 16, 2011
Report Version : Rev. 01



FCC Test Report Report No.: FD151304

Appendix A. Photographs of EUT

Please refer to Sporton report number EP151304 as below.

SPORTON INTERNATIONAL (KUNSHAN) INC.

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: YHLBLUBARQ

: A1 of A1 Page Number Report Issued Date: Jun. 16, 2011

Report Version : Rev. 01