FCC RF Test Report

APPLICANT : Bullitt Group EQUIPMENT : Smartphone

BRAND NAME : KODAK
MODEL NAME : EKTRA

MARKETING : KODAK EKTRA Smartphone

NAME

FCC ID : ZL5EKTRA

STANDARD : FCC Part 15 Subpart C §15.225

CLASSIFICATION: (DXX) Low Power Communication Device Transmitter

The product was received on Mar. 07, 2017 and testing was completed on Apr. 13, 2017. We, Sporton International (KunShan) INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in 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.

Prepared by: James Huang / Manager

Approved by: Jones Tsai / Manager

Sporton International (KunShan) INC.

No.3-2, Pingxiang Road, Kunshan Development Zone, Jiangsu, China

Sporton International (KunShan) INC.

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: ZL5EKTRA Page Number : 1 of 20
Report Issued Date : Apr. 14, 2017
Report Version : Rev. 01

Report No.: FR730704D

TABLE OF CONTENTS

SUMM	ARY OF THE TEST RESULT	4
1. GEN	IERAL INFORMATION	5
1.1	Applicant	
1.2	Manufacturer	
1.3	Product Feature of Equipment Under Test	
1.4	Product Specification of Equipment Under Test	
1.5	Modification of EUT	
1.6	Testing Location	
1.7	Applicable Standards	
	••	
	T CONFIGURATION OF EQUIPMENT UNDER TEST	
2.1	Descriptions of Test Mode	
2.2	Connection Diagram of Test System	8
2.3	Table for Supporting Units	g
2.4	EUT Operation Test Setup	9
3. TES	T RESULTS	10
3.1	AC Power Line Conducted Emissions Measurement	
3.2	20dB and 99% OBW Spectrum Bandwidth Measurement	12
3.3	Frequency Stability Measurement	13
3.4	Field Strength of Fundamental Emissions and Mask Measurement	14
3.5	Radiated Emissions Measurement	
3.6	Antenna Requirements	19
4. LIST	OF MEASURING EQUIPMENT	20

APPENDIX A. TEST RESULTS OF CONDUCTED EMISSION TEST

APPENDIX B. TEST RESULTS OF CONDUCTED TEST ITEMS

- B1. Test Result of 20dB Spectrum Bandwidth
- B2. Test Result of Frequency Stability

APPENDIX C. TEST RESULTS OF RADIATED TEST ITEMS

- C1. Test Result of Field Strength of Fundamental Emissions
- C2. Results of Radiated Emissions (9 kHz~30MHz)
- C3. Results of Radiated Emissions (30MHz~1GHz)

APPEDNIX D. SETUP PHOTOGRAPHS

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: ZL5EKTRA Page Number : 2 of 20
Report Issued Date : Apr. 14, 2017
Report Version : Rev. 01

Report No.: FR730704D

REVISION HISTORY

Report No.: FR730704D

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR730704D	Rev. 01	Initial issue of report	Apr. 14, 2017

 Sporton International (KunShan) INC.
 Page Number
 : 3 of 20

 TEL: 86-0512-5790-0158
 Report Issued Date
 : Apr. 14, 2017

 FAX: 86-0512-5790-0958
 Report Version
 : Rev. 01

SUMMARY OF THE TEST RESULT

	Applied Standard: 47 CFR FCC Part 15 Subpart C					
Part	FCC Rule	Description of Test	Result	Under Limit		
3.1	15.207	AC Power Line Conducted Emissions	Complies	7.98 dB at 0.564MHz		
	15.215(c)	20dB Spectrum Bandwidth	Complies	-		
3.2	-	99% OBW Spectrum Bandwidth	Complies	•		
3.3	15.225(e)	Frequency Stability	Complies	-		
3.4	15.225(a)(b)(c)	Field Strength of Fundamental Emissions	Complies	65.240 dB at 13.560 MHz		
3.5	15.225(d) 15.209	Radiated Emissions	Complies	9.83 dB at 38.730 MHz		
3.6	15.203	Antenna Requirements	Complies	-		

Test Items	Uncertainty	Remark
AC Power Line Conducted Emissions	±2.3dB	Confidence levels of 95%
Radiated Emissions (30MHz~1000MHz)	±5.1dB	Confidence levels of 95%

Sporton International (KunShan) INC. TEL: 86-0512-5790-0158

FAX: 86-0512-5790-0958 FCC ID: ZL5EKTRA Page Number : 4 of 20
Report Issued Date : Apr. 14, 2017
Report Version : Rev. 01

Report No. : FR730704D

1. GENERAL INFORMATION

1.1 Applicant

Bullitt Group

One Valpy, Valpy Street, Reading, Berkshire, RG1 1AR, UK

1.2 Manufacturer

Shanghai Sunrise SimcomLimited

No. 888, Shengli Rd., Qingpu, Shanghai, P.R.China 201700

1.3 Product Feature of Equipment Under Test

	Product Feature
Equipment	Smartphone
Brand Name	KODAK
Model Name	EKTRA
Marketing Name	KODAK EKTRA Smartphone
FCC ID	ZL5EKTRA
	GSM/GPRS/EGPRS/WCDMA/HSPA/
	DC-HSDPA/HSPA+/LTE/NFC
EUT supports Radios application	WLAN 2.4GHz 802.11b/g/n HT20/HT40
EO I Supports Radios application	WLAN 5GHz 802.11a/n HT20/HT40
	WLAN 5GHz 802.11ac VHT20/VHT40/VHT80
	Bluetooth v3.0 + EDR/Bluetooth v4.0 LE/Bluetooth v4.1 LE
	Conducted: 357682080000718
IMEI Code	Radiation: N/A
	Conduction: 357682080000874
EUT Stage	Identical Prototype

Report No.: FR730704D

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

 Sporton International (KunShan) INC.
 Page Number
 : 5 of 20

 TEL: 86-0512-5790-0158
 Report Issued Date
 : Apr. 14, 2017

 FAX: 86-0512-5790-0958
 Report Version
 : Rev. 01

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification			
Tx/Rx Frequency Range 13.553 ~ 13.567MHz			
Channel Number	1		
20dBW	2.48 KHz		
99%OBW	2.10 KHz		
Antenna Type	Loop Antenna		
Type of Modulation	ASK		

Report No.: FR730704D

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

1.5 Modification of EUT

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

 Sporton International (KunShan) INC.
 Page Number
 : 6 of 20

 TEL: 86-0512-5790-0158
 Report Issued Date
 : Apr. 14, 2017

 FAX: 86-0512-5790-0958
 Report Version
 : Rev. 01

1.6 Testing Location

Test Site	Sporton International (KunShan) INC.		
	No.3-2, Pingxiang Road, Kunshan Do	evelopment Zone, Jiangsu, China	
Test Site Location	TEL: +86-0512-5790-0158		
	FAX: +86-0512-5790-0958		
Test Site No.	Sporton Site No.		
rest site No.	TH01-KS	CO01-KS	
Test Engineer	Silent Hai	Amos Zhang	
Temperature	21~25 ℃	22~24 ℃	
Relative Humidity	51~55%	42~46%	

Report No.: FR730704D

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. China TEL: +86-755- 3320-2398		
Test Site No.	Sporton Site No.	FCC/IC Registration No.	
rest site No.	03CH03-SZ		
Test Engineer	Liangliang Lu	F05005/40005	
Temperature	23~25 ℃	565805/4086F	
Relative Humidity	48~52%		

Note: The test site complies with ANSI C63.4 2014 requirement.

1.7 Applicable Standards

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

- FCC Part 15 Subpart C §15.225
- ANSI C63.10-2013

 Sporton International (KunShan) INC.
 Page Number
 : 7 of 20

 TEL: 86-0512-5790-0158
 Report Issued Date
 : Apr. 14, 2017

 FAX: 86-0512-5790-0958
 Report Version
 : Rev. 01

2. TEST CONFIGURATION OF EQUIPMENT UNDER TEST

2.1 Descriptions of Test Mode

Investigation has been done on all the possible configurations for searching the worst cases.

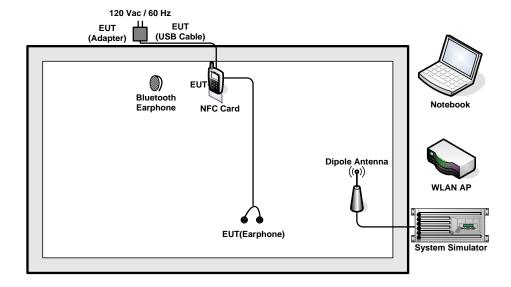
The following table is a list of the test modes shown in this test report.

Test Items			
AC Power Line Conducted Emissions	Field Strength of Fundamental Emissions		
20dB Spectrum Bandwidth	Frequency Stability		
Radiated Emissions 9kHz~30MHz	Radiated Emissions 30MHz~1GHz		

The EUT pre-scanned in four NFC type, A, B, F, V. The worst type (type F) was recorded in this report. Pre-scanned tests, X, Y, Z in three orthogonal panels to determine the final configuration (Z plane as worst plane) from all possible combinations.

2.2 Connection Diagram of Test System

<AC Conducted Emissions>

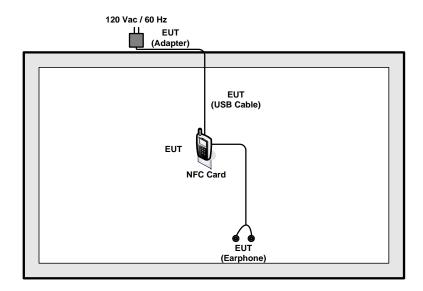


Sporton International (KunShan) INC.
TEL: 86-0512-5790-0158

FAX: 86-0512-5790-0958 FCC ID: ZL5EKTRA Page Number : 8 of 20
Report Issued Date : Apr. 14, 2017
Report Version : Rev. 01

Report No.: FR730704D

< For Fundamental Emissions and Mask and Radiated Emissions Measurement >



2.3 Table for Supporting Units

Support Unit	Manufacturer	Model	FCC ID
System Simulator	R&S	CMU 200	N/A
WLAN AP	LINKSYS	WRT600N	Q87-WRT600NV11
Bluetooth Earphone	Lenovo	LBH308	N/A
Notebook	Lenovo	G480	PRC4
NFC Card	N/A	N/A	N/A

2.4 EUT Operation Test Setup

The EUT was programmed to be in continuously transmitting mode.

The ancillary equipment, NFC card, is used to make the EUT (NFC) continuously transmit at 13.56MHz and is placed around 3 cm gap to the EUT.

Sporton International (KunShan) INC.

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: ZL5EKTRA Page Number : 9 of 20
Report Issued Date : Apr. 14, 2017
Report Version : Rev. 01

Report No.: FR730704D

3. TEST RESULTS

3.1 AC Power Line Conducted Emissions Measurement

3.1.1 Limit 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.

Report No.: FR730704D

Frequency of Emission	Conducted Limit (dBμV)		
(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.

For terminal test result, the testing follows FCC KDB 174176.

3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

- 1. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it 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.
- Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

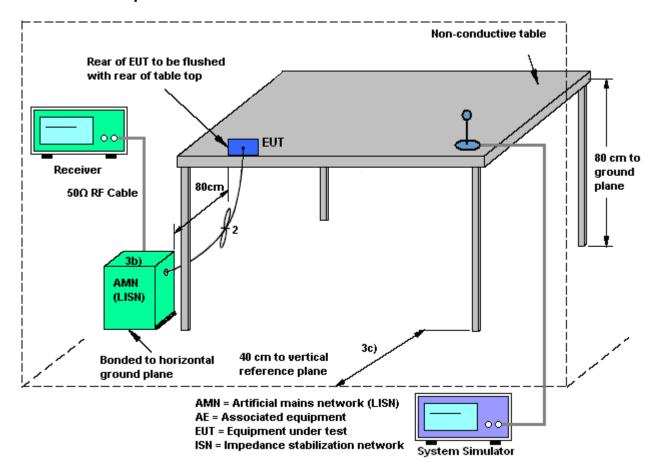
 Sporton International (KunShan) INC.
 Page Number
 : 10 of 20

 TEL: 86-0512-5790-0158
 Report Issued Date
 : Apr. 14, 2017

FAX: 86-0512-5790-0958 Report Version : Rev. 01



3.1.4 Test setup



3.1.5 Test Result of AC Conducted Emission

Please refer to Appendix A.

Sporton International (KunShan) INC.

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: ZL5EKTRA Page Number : 11 of 20 Report Issued Date : Apr. 14, 2017 Report Version : Rev. 01

Report No.: FR730704D

3.2 20dB and 99% OBW Spectrum Bandwidth Measurement

3.2.1 Limit

Intentional radiators must be designed to ensure that the 20dB and 99% emission bandwidth in the specific band 13.553~13.567MHz.

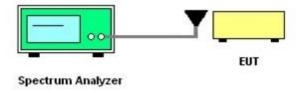
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

- 1. The spectrum analyzer connected via a receive antenna placed near the EUT in peak Max hold mode.
- 2. The resolution bandwidth of 1 kHz and the video bandwidth of 3 kHz were used.
- 3. Measured the spectrum width with power higher than 20dB below carrier.
- 4. Measured the 99% OBW.

3.2.4 Test Setup



3.2.5 Test Result of Conducted Test Items

Please refer to Appendix B.

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: ZL5EKTRA Page Number : 12 of 20
Report Issued Date : Apr. 14, 2017
Report Version : Rev. 01

Report No.: FR730704D

3.3 Frequency Stability Measurement

3.3.1 Limit

The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% (100ppm) of the operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

- 1. The spectrum analyzer connected via a receive antenna placed near the EUT.
- 2. EUT have transmitted signal and fixed channelize.
- 3. Set the spectrum analyzer span to view the entire emissions bandwidth.
- 4. Set RBW = 1 kHz, VBW = 3 kHz with peak detector and maxhold settings.
- 5. The fc is declaring of channel frequency. Then the frequency error formula is $(fc-f)/fc \times 10^6$ ppm and the limit is less than ± 100 ppm.
- 6. Extreme temperature rule is -20°C~50°C.

3.3.4 Test Setup



3.3.5 Test Result of Conducted Test Items

Please refer to Appendix B.

Sporton International (KunShan) INC.

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: ZL5EKTRA Page Number : 13 of 20
Report Issued Date : Apr. 14, 2017
Report Version : Rev. 01

Report No.: FR730704D

3.4 Field Strength of Fundamental Emissions and Mask Measurement

Report No.: FR730704D

3.4.1 Limit

Rules and specifications	FCC CFR 47 Part 15 section 15.225			
Description	Compliance with the spectrum mask is tested with RBW set to 9kHz.			
From of Emission (MUT)	Field Strength	Field Strength	Field Strength	Field Strength
Freq. of Emission (MHz)	(µV/m) at 30m	(dBµV/m) at 30m	(dBµV/m) at 10m	(dBµV/m) at 3m
1.705~13.110	30	29.5	48.58	69.5
13.110~13.410	106	40.5	59.58	80.5
13.410~13.553	334	50.5	69.58	90.5
13.553~13.567	15848	84.0	103.08	124.0
13.567~13.710	334	50.5	69.58	90.5
13.710~14.010	106	40.5	59.58	80.5
14.010~30.000	30	29.5	48.58	69.5

3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedures

- Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the loop receiving antenna mounted antenna tower was placed 3 meters far away from the turntable.
- 2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
- 3. The height of the receiving antenna was fixed at one meter above ground to find the maximum emissions field strength.
- 4. For Fundamental emissions, use the receiver to measure QP reading.

 Sporton International (KunShan) INC.
 Page Number
 : 14 of 20

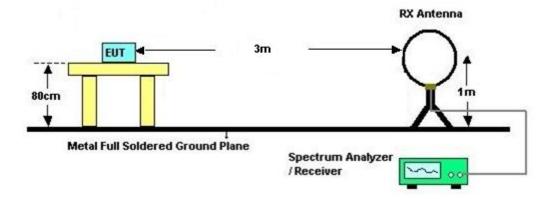
 TEL: 86-0512-5790-0158
 Report Issued Date
 : Apr. 14, 2017

 FAX: 86-0512-5790-0958
 Report Version
 : Rev. 01

- 5. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
- 6. Compliance with the spectrum mask is tested with RBW set to 9kHz. Note: Emission level ($dB\mu V/m$) = 20 log Emission level ($\mu V/m$).

3.4.4 Test Setup

For radiated emissions below 30MHz



3.4.5 Test Result of Field Strength of Fundamental Emissions and Mask

Please refer to Appendix C.

Sporton International (KunShan) INC.

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: ZL5EKTRA Page Number : 15 of 20
Report Issued Date : Apr. 14, 2017
Report Version : Rev. 01

Report No.: FR730704D

3.5 Radiated Emissions Measurement

3.5.1 Limit

The field strength of any emissions which appear outside of 13.110 ~14.010MHz band shall not exceed the general radiated emissions limits.

Report No.: FR730704D

Frequencies	Field Strength	Measurement Distance
(MHz)	(μV/m)	(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

3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Measuring Instrument Setting

The following table is the setting of receiver.

Receiver Parameter	Setting
Attenuation	Auto
Frequency Range: 9kHz~150kHz	RBW 200Hz for QP
Frequency Range: 150kHz~30MHz	RBW 9kHz for QP
Frequency Range: 30MHz~1000MHz	RBW 120kHz for Peak

Note: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz. Radiated emission limits in these two bands are based on measurements employing an average detector.

 Sporton International (KunShan) INC.
 Page Number
 : 16 of 20

 TEL: 86-0512-5790-0158
 Report Issued Date
 : Apr. 14, 2017

 FAX: 86-0512-5790-0958
 Report Version
 : Rev. 01

3.5.4 Test Procedures

- Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
- 2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
- The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
- 4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
- Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
- 6. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
- In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. Antenna Requirements

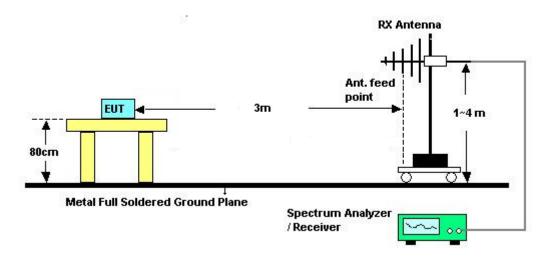
Sporton International (KunShan) INC.

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: ZL5EKTRA Page Number : 17 of 20
Report Issued Date : Apr. 14, 2017
Report Version : Rev. 01

Report No.: FR730704D

3.5.5 Test Setup

For radiated emissions above 30MHz



3.5.6 Test Result of Radiated Emissions Measurement

Please refer to Appendix C.

Sporton International (KunShan) INC.

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: ZL5EKTRA Page Number : 18 of 20
Report Issued Date : Apr. 14, 2017
Report Version : Rev. 01

Report No.: FR730704D

3.6 Antenna Requirements

3.6.1 Standard Applicable

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited.

The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

3.6.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

Page Number : 19 of 20
Report Issued Date : Apr. 14, 2017
Report Version : Rev. 01

Report No.: FR730704D

4. LIST OF MEASURING EQUIPMENT

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Aug. 09, 2016	Mar. 17, 2017	Aug. 08, 2017	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	-40~+150°C	Oct. 13, 2016	Mar. 17, 2017	Oct. 12, 2017	Conducted (TH01-KS)
AC Power Source	Chroma	61602	ABP000000 811	AC 0V~300V, 45Hz~1000Hz	Oct. 13, 2016	Mar. 17, 2017	Oct. 12, 2017	Conducted (TH01-KS)
EMI Test Receiver&SA	KEYSIGHT	N9038A	MY5445008 3	20Hz~8.4GHz	May 07, 2016	Mar. 27, 2017~ Apr. 13, 2017	May 06, 2017	Radiation (03CH03-SZ)
EXA Spectrum Anaiyzer	KEYSIGHT	N9010A	MY5515024 6	10Hz~44GHz;	May 07, 2016	Mar. 27, 2017~ Apr. 13, 2017	May 06, 2017	Radiation (03CH03-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	May 07, 2016	Mar. 27, 2017~ Apr. 13, 2017	May 06, 2017	Radiation (03CH03-SZ)
Bilog Antenna	TeseQ	CBL6112D	35408	30MHz-2GHz	May 21, 2016	Mar. 27, 2017~ Apr. 13, 2017	May 20, 2017	Radiation (03CH03-SZ)
Amplifier	Burgeon	BPA-530	102210	0.01Hz ~3000MHz	Oct. 11, 2016	Mar. 27, 2017~ Apr. 13, 2017	Oct. 10, 2017	Radiation (03CH03-SZ)
AC Power Source	Chroma	61601	6160100019 85	N/A	NCR	Mar. 27, 2017~ Apr. 13, 2017	NCR	Radiation (03CH03-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Mar. 27, 2017~ Apr. 13, 2017	NCR	Radiation (03CH03-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Mar. 27, 2017~ Apr. 13, 2017	NCR	Radiation (03CH03-SZ)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz	Apr. 29, 2016	Apr. 12, 2017	Apr. 28, 2017	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Oct. 13, 2016	Apr. 12, 2017	Oct. 12, 2017	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Oct. 13, 2016	Apr. 12, 2017	Oct. 12, 2017	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000 811	AC 0V~300V, 45Hz~1000Hz	Oct. 13, 2016	Apr. 12, 2017	Oct. 12, 2017	Conduction (CO01-KS)

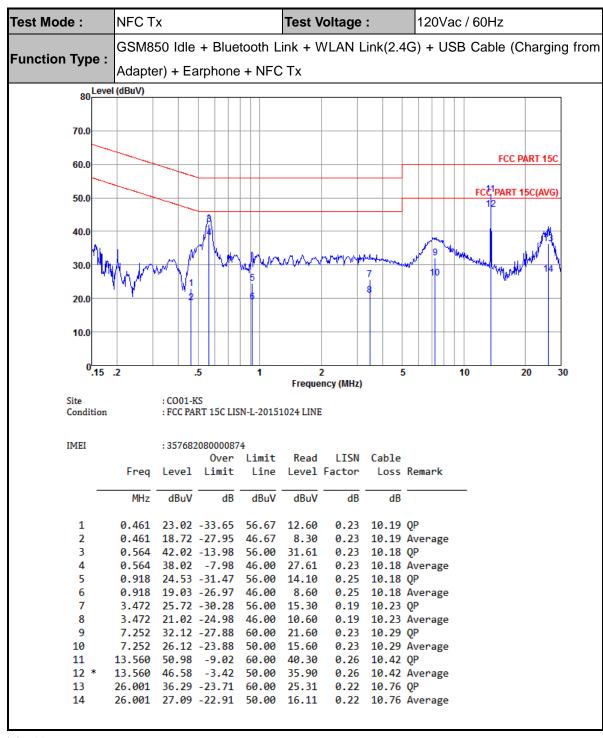
NCR: No Calibration Required

Sporton International (KunShan) INC.

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: ZL5EKTRA Page Number : 20 of 20
Report Issued Date : Apr. 14, 2017
Report Version : Rev. 01

Report No.: FR730704D

Appendix A. Test Results of Conducted Emission Test



(1) with antenna

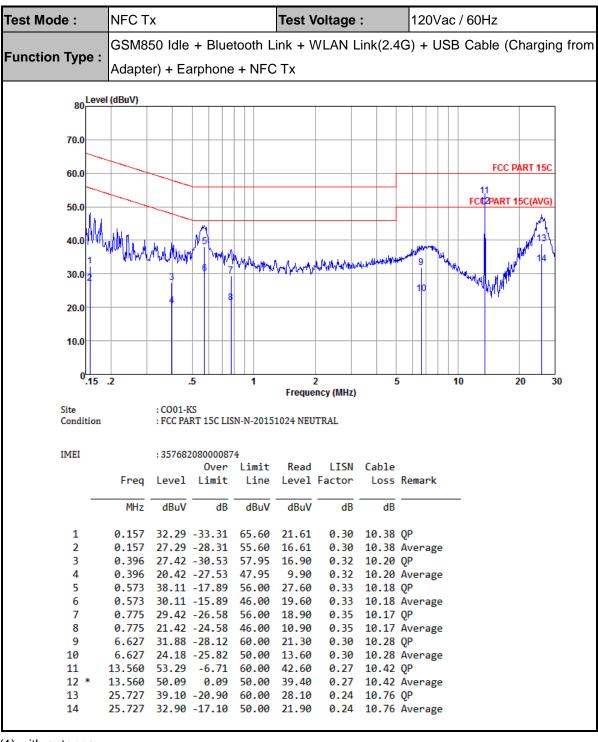
Remark: 13.560MHz is the NFC RF fundamental signal.

SPORTON INTERNATIONAL (KUNSHAN) INC.

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: ZL5EKTRA Page Number : A1 of A3
Report Issued Date : Apr. 14, 2017
Report Version : Rev. 01

Report No.: FR730704D



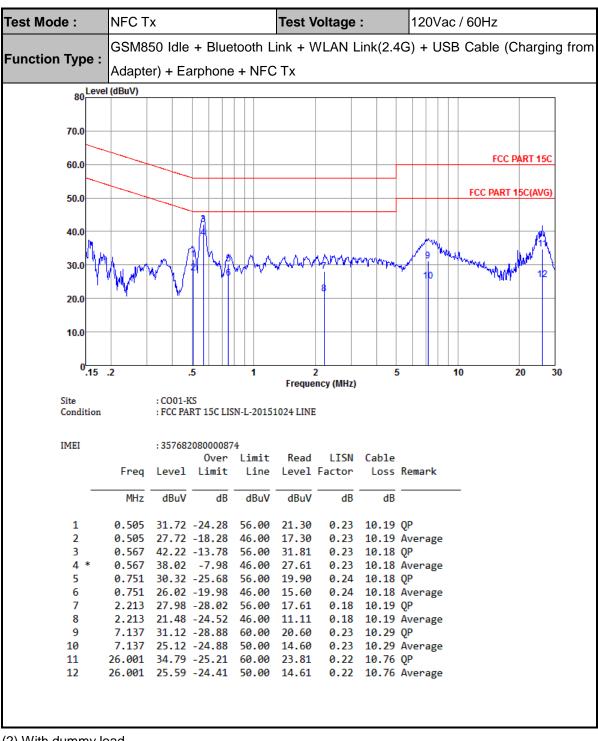


(1) with antenna

Remark: 13.560MHz is the NFC RF fundamental signal.

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: ZL5EKTRA Page Number : A2 of A3
Report Issued Date : Apr. 14, 2017
Report Version : Rev. 01

Report No.: FR730704D



(2) With dummy load

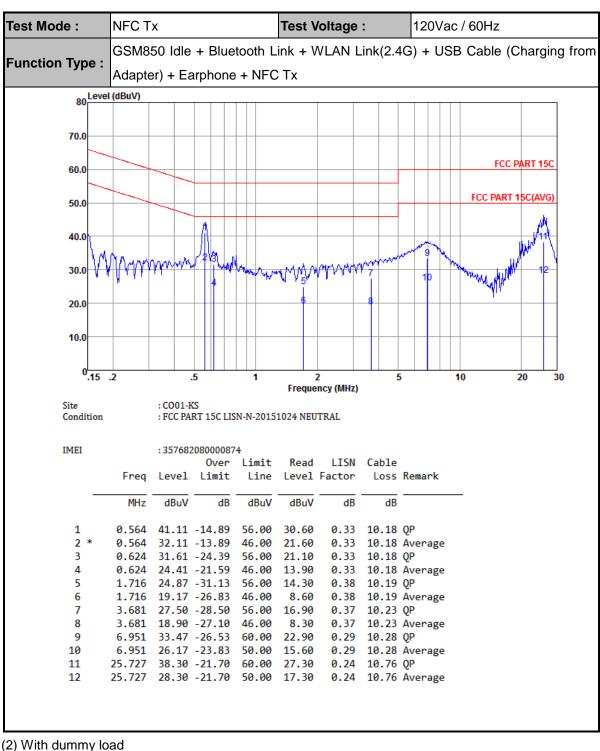
Remark: Only the fundamental NFC signal needs to be retested per C63.4.

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: ZL5EKTRA

Page Number : A3 of A3 Report Issued Date: Apr. 14, 2017 Report Version : Rev. 01

Report No.: FR730704D





Remark: Only the fundamental NFC signal needs to be retested per C63.4.

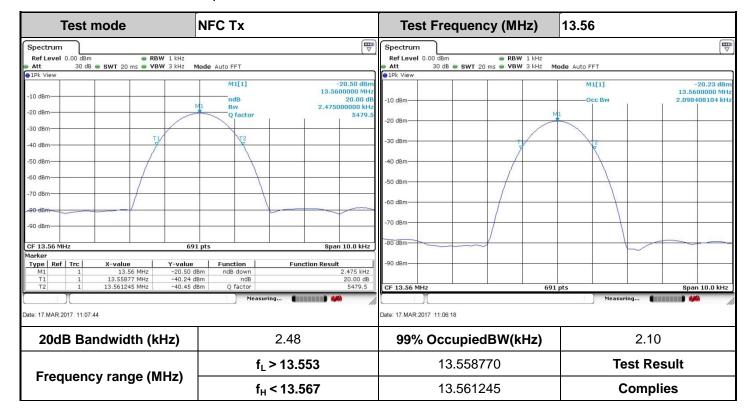
TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: ZL5EKTRA

Page Number : A1 of A1 Report Issued Date: Apr. 14, 2017 Report Version : Rev. 01

Report No.: FR730704D

Appendix B. Test Results of Conducted Test Items

B1. Test Result of 20dB Spectrum Bandwidth



Sporton International (KunShan) INC.

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: ZL5EKTRA Page Number : B1 of B2
Report Issued Date : Apr. 14, 2017
Report Version : Rev. 01

Report No.: FR730704D

B2. Test Result of Frequency Stability

Voltage vs. Freque	ncy Stability	Temperature vs. Frequency Stability			
Voltage (Vac)	Measurement Frequency (MHz)	Temperature (°C)	Measurement Frequency (MHz)		
120	13.560000	-20	13.560000		
102	13.560000	-10	13.560000		
138	13.560000	0	13.560008		
		10	13.560008		
		20	13.560000		
		30	13.560000		
		40	13.560008		
		50	13.560000		
Max.Deviation (MHz)	0.000000	Max.Deviation (MHz)	0.00008		
Max.Deviation (ppm)	0.0000	Max.Deviation (ppm)	0.5531		
Limit	FS < ±100 ppm	Limit	FS < ±100 ppm		
Test Result	PASS	Test Result	PASS		

Sporton International (KunShan) INC.
TEL: 86-0512-5790-0158

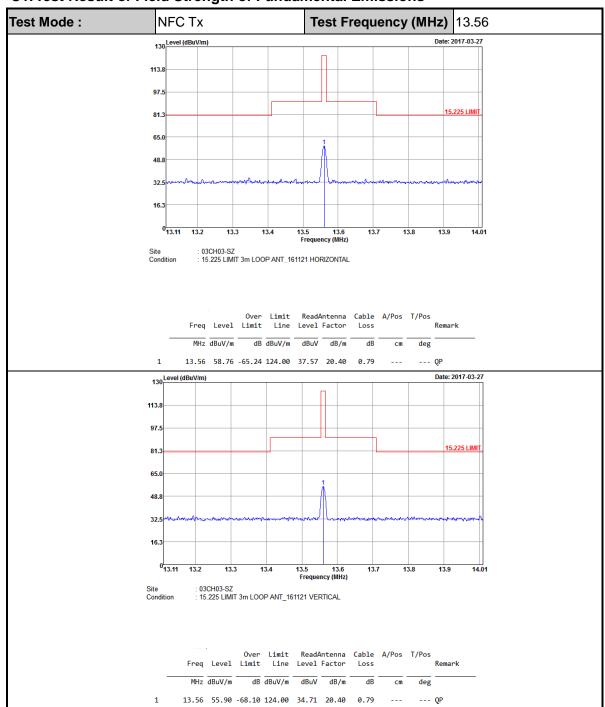
FAX: 86-0512-5790-0958 FCC ID: ZL5EKTRA Page Number : B2 of B2
Report Issued Date : Apr. 14, 2017
Report Version : Rev. 01

Report No.: FR730704D



Appendix C. Test Results of Radiated Test Items

C1. Test Result of Field Strength of Fundamental Emissions



Sporton International (KunShan) INC.

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: ZL5EKTRA Page Number : C1 of C3
Report Issued Date : Apr. 14, 2017
Report Version : Rev. 01

Report No.: FR730704D

C2. Results of Radiated Spurious Emissions (9 kHz~30MHz)

Test Mode :	NFC	Tx		Polariz	ation :				
Frequency (MHz)	Level	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
0.01022	50.39	-77.02	127.41	29.24	21	0.15	-	-	Average
0.07044	46.06	-64.59	110.65	24.78	21.1	0.18	-	-	Average
0.09165	41.94	-66.42	108.36	20.54	21.2	0.2	-	-	QP
0.12066	39.72	-66.25	105.97	18.39	21.1	0.23	-	-	Average
0.15555	49.64	-54.13	103.77	28.37	21	0.27	-	-	Average
2.006	36.86	-33.14	70	15.72	20.6	0.54	-	-	QP
13.392	35.88	-34.12	70	14.68	20.41	0.79	-	-	QP
24.721	35.41	-34.59	70	13.72	20.87	0.82	-	-	QP
29.97	35.71	-34.29	70	15.11	19.71	0.89			QP

Report No.: FR730704D

Test Mode	: NFC	Tx		Polariz	zation :	Vert	ical		
Frequency (MHz)	Level	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
0.01002	52.44	-75.15	127.59	31.29	21	0.15	-	-	Average
0.06522	42.04	-69.28	111.32	20.76	21.1	0.18	-	-	Average
0.09705	35.55	-72.31	107.86	14.15	21.2	0.2	-	-	QP
0.14172	36.78	-67.8	104.58	15.45	21.1	0.23	-	-	Average
0.16665	47.39	-55.78	103.17	26.12	21	0.27	-	-	Average
2.258	37.12	-32.88	70	15.97	20.6	0.55	-	-	QP
10.72	36.93	-33.07	70	15.71	20.48	0.74	-	-	QP
22.426	35.53	-34.47	70	14.09	20.59	0.85	-	-	QP
27.49	35.29	-34.71	70	14.14	20.3	0.85	-	-	QP

Note:

- 1. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
- 2. Distance extrapolation factor = 40 log (specific distance / test distance) (dB);
- 3. Limit line = specific limits $(dB\mu V)$ + distance extrapolation factor.

 Sporton International (KunShan) INC.
 Page Number
 : C2 of C3

 TEL: 86-0512-5790-0158
 Report Issued Date
 : Apr. 14, 2017

 FAX: 86-0512-5790-0958
 Report Version
 : Rev. 01

C3. Results of Radiated Spurious Emissions (30MHz~1GHz)

Test Mode : NFC Tx					olarization	:	Horizont	al		
Frequency (MHz)	Level	Limit	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	27.55	-12.45	40	32.52	26.7	0.33	32	150	20	Peak
97.9	30.14	-13.36	43.5	42.5	18.6	0.79	31.75	-	-	Peak
157.07	30.38	-13.12	43.5	43.29	17.5	1.08	31.49	-	-	Peak
204.6	30.01	-13.49	43.5	44.25	15.83	1.27	31.34	-	-	Peak
400.54	31.65	-14.35	46	34.97	25.98	1.95	31.25	-	-	Peak
842.86	31.02	-14.98	46	31.42	28	2.85	31.25	-	-	Peak

Test Mode	e: NFC	СТх		Polarization:				Vertical				
Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark		
(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB)	(dB)	(dB)	(cm)	(deg)			
38.73	30.17	-9.83	40	38.83	22.92	0.41	31.99	130	50	Peak		
97.9	25.37	-18.13	43.5	37.73	18.6	0.79	31.75	-	-	Peak		
153.19	24.29	-19.21	43.5	37.06	17.67	1.07	31.51	-	-	Peak		
193.93	27.97	-15.53	43.5	42.25	15.86	1.21	31.35	-	-	Peak		
390.84	28.11	-17.89	46	32.43	25.01	1.92	31.25	-	-	Peak		
795.33	30.44	-15.56	46	31.45	27.39	2.79	31.19	-	-	Peak		

Note:

- 1. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
- 2. Emission level (dB μ V/m) = 20 log Emission level (μ V/m).
- 3. Corrected Reading: Antenna Factor + Cable Loss + Read Level Preamp Factor= Level.

Sporton International (KunShan) INC.

TEL: 86-0512-5790-0158 FAX: 86-0512-5790-0958 FCC ID: ZL5EKTRA Page Number : C3 of C3
Report Issued Date : Apr. 14, 2017
Report Version : Rev. 01

Report No.: FR730704D