FCC Test Report

APPLICANT : LG Electronics Mobile Comm USA

EQUIPMENT: Smart phone

BRAND NAME : LG

MODEL NAME : LG-X240Y FCC ID : ZNFX240Y

STANDARD : FCC 47 CFR FCC Part 15 Subpart B

CLASSIFICATION: Certification

The product was received on Oct. 18, 2016 and testing was completed on Apr. 12, 2017. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI C63.4-2014 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 INC., the test report shall not be reproduced except in full.

Reviewed by: Louis Wu / Manager

Louis Wu

Approved by: Jones Tsai / Manager



No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C.

SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: ZNFX240Y Page Number : 1 of 23
Report Issued Date : Apr. 12, 2017
Report Version : Rev. 03

Testing Laboratory 1190

Report No. : FC6O1801

Report Template No.: BU5-FD15B Version 1.3

TABLE OF CONTENTS

RE	VISIO	N HISTORY	3
SU	MMAR	Y OF TEST RESULT	4
1	GENE	RAL DESCRIPTION	
	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.	Test Location	
	1.7.	Applicable Standards	8
2.	TEST	CONFIGURATION OF EQUIPMENT UNDER TEST	9
	2.1.	Test Mode	9
	2.2.	Connection Diagram of Test System	
	2.3.	Support Unit used in test configuration and system	13
	2.4.	EUT Operation Test Setup	13
3.	TEST	RESULT	14
	3.1.	Test of AC Conducted Emission Measurement	14
	3.2.	Test of Radiated Emission Measurement	
4.	LIST	OF MEASURING EQUIPMENT	22
5.	UNCE	RTAINTY OF EVALUATION	23
ΑP	PENDI	X A. SETUP PHOTOGRAPHS	

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: ZNFX240Y Page Number : 2 of 23
Report Issued Date : Apr. 12, 2017
Report Version : Rev. 03

Report Template No.: BU5-FD15B Version 1.3

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC6O1801	Rev. 01	Initial issue of report	Mar. 08, 2017
FC6O1801	Rev. 02	 Changing conducted emission photo in appendix a. Adding radiated emission near photo in appendix a. Adding FM mode in this report. 	Mar. 17, 2017
FC6O1801	Rev. 03	Adding FM Lowest and highest channel in this report.	Apr. 12, 2017

SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: ZNFX240Y Page Number : 3 of 23
Report Issued Date : Apr. 12, 2017
Report Version : Rev. 03

Report Template No.: BU5-FD15B Version 1.3

SUMMARY OF TEST RESULT

Report Section	FCC Rule Descript		Limit	Result	Remark
3.1	15.107	AC Conducted Emission	< 15.107 limits	PASS	Under limit
3.1	13.107	Ao Conducted Emission	< 13.107 mms	1 700	12.70 dB at 0.190 MHz
					Under limit
3.2 15.109 Radiated	Radiated Emission	< 15.109 limits	PASS	6.29 dB at 953.800 MHz	
					for Peak

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: ZNFX240Y Page Number : 4 of 23
Report Issued Date : Apr. 12, 2017
Report Version : Rev. 03

Report Template No.: BU5-FD15B Version 1.3

1. General Description

1.1. Applicant

LG Electronics Mobile Comm USA

LG Twin Towers 20, Yeouido-Dong Youngdeungpo-Gu, Seoul 150-721, Republic Of Korea

1.2. Manufacturer

Arima Communications Corp.

6F, No. 866, Jhongjheng Rd., Jhonghe Dist., New Taipei City 23586, Taiwan

1.3. Product Feature of Equipment Under Test

	Product Feature
Equipment	Smart phone
Brand Name	LG
Model Name	LG-X240Y
FCC ID	ZNFX240Y
	GSM/EGPRS/WCDMA/HSPA/LTE
EUT supports Radios application	WLAN 11b/g/n HT20/HT40
	Bluetooth BR/EDR/LE
HW Version	PP2
SW Version	LGX240YAT-00-V08a-CIS-XX-NOV-17-2016+0
EUT Stage	Production Unit

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 INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: ZNFX240Y Page Number : 5 of 23
Report Issued Date : Apr. 12, 2017
Report Version : Rev. 03

Report Template No.: BU5-FD15B Version 1.3

Specification of Accessory Brand Name Sunlin AC Adapter EAY64009102 (MCS-02WR2) **Model Name Brand Name** LGC **Model Name** EAC63382101 (BL-45F1F) Battery 1 3.85 Vdc, 2500 mAh **Power Rating Brand Name** TOCAD EAC63361401 (BL-45F1F) Battery 2 **Model Name** Power Rating 3.85 Vdc, 2500 mAh **Brand Name BYD** Battery 3 **Model Name** EAC63321601 (BL-45F1F) 3.85 Vdc, 2500 mAh **Power Rating Brand Name** Cresyn Earphone 1 EAB64468401 (EMB-LGE41STGWA) **Model Name Brand Name** Bujeon Earphone 2 **Model Name** EAB64468402 (GHSC303-W0) **Brand Name KSD** USB Cable 1 **Model Name** EAD62377922 (DC03WK-G) **Brand Name** Ningbo USB Cable 2 **Model Name** EAD62377927 (DC03WB-G)

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: ZNFX240Y Page Number : 6 of 23
Report Issued Date : Apr. 12, 2017
Report Version : Rev. 03

Report Template No.: BU5-FD15B Version 1.3

1.4. Product Specification of Equipment Under Test

Standards-related Product Specification					
Standards	-				
	GSM850: 824.2 MHz ~ 848.8 MHz				
	GSM1900: 1850.2 MHz ~ 1909.8MHz				
Tx Frequency	WCDMA Band V: 826.4 MHz ~ 846.6 MHz				
	LTE Band 7 : 2502.5 MHz ~ 2567.5 MHz				
	802.11b/g/n: 2412 MHz ~ 2462 MHz				
	Bluetooth: 2402 MHz ~ 2480 MHz				
	GSM850: 869.2 MHz ~ 893.8 MHz				
	GSM1900: 1930.2 MHz ~ 1989.8 MHz				
	WCDMA Band V: 871.4 MHz ~ 891.6 MHz				
Rx Frequency	LTE Band 7 : 759.5 MHz ~ 801.5 MHz				
I TA I requeitey	802.11b/g/n: 2412 MHz ~ 2462 MHz				
	Bluetooth: 2402 MHz ~ 2480 MHz				
	GPS : 1.57542 GHz				
	FM : 87.5 MHz ~ 108 MHz				
	WWAN : PIFA Antenna				
	LTE: PIFA Antenna				
	WLAN: PIFA Antenna				
Antenna Type	Bluetooth: PIFA Antenna				
	GPS: PIFA Antenna				
	FM : Integral Antenna (Earphone acting as FM antenna				
	deemed as an integral antenna)				
	GSM: GMSK				
	GPRS: GMSK				
	EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK				
	WCDMA: QPSK (Uplink)				
	HSDPA:64 QAM (Downlink)				
	HSUPA: QPSK (Uplink)				
	LTE: QPSK / 16QAM				
Type of Modulation	802.11b: DSSS (DBPSK / DQPSK / CCK)				
· ·	802.11g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM)				
	Bluetooth LE : GFSK				
	Bluetooth (1Mbps) : GFSK				
	Bluetooth (2Mbps) : π /4-DQPSK				
	Bluetooth (3Mbps) : 8-DPSK				
	GPS : BPSK				
	FM : FM				
	1				

1.5. Modification of EUT

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

SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: ZNFX240Y Page Number : 7 of 23
Report Issued Date : Apr. 12, 2017
Report Version : Rev. 03

Report Template No.: BU5-FD15B Version 1.3

1.6. Test Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW0007 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.			
	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park,			
Test Site Location	Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C.			
rest site Location	TEL: +886-3-327-3456			
	FAX: +886-3-328-4978			
Test Site No.	Sporton Site No.			
rest site No.	CO05-HY			

Test Site	SPORTON INTERNATIONAL INC.			
	No.58, Aly. 75, Ln. 564, Wenhua 3rd Rd. Guishan Dist,			
Took Cita Lagation	Taoyuan City, Taiwan (R.O.C.)			
Test Site Location	TEL: +886-3-327-0868			
	FAX: +886-3-327-0855			
Took Site No	Sporton Site No.			
Test Site No.	03CH10-HY			

1.7. Applicable 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 C63.4-2014

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

SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: ZNFX240Y Page Number : 8 of 23
Report Issued Date : Apr. 12, 2017
Report Version : Rev. 03

Report Template No.: BU5-FD15B Version 1.3

2. Test Configuration of Equipment Under Test

2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2014 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).

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: ZNFX240Y Page Number : 9 of 23
Report Issued Date : Apr. 12, 2017
Report Version : Rev. 03

Report Template No.: BU5-FD15B Version 1.3

Test Items Function Type Mode 1: GSM850 Idle + Bluetooth Idle + WLAN Idle + MPEG4 + Earphone 1 + Battery 1 + USB Cable 1 (Charging from Adapter) Mode 2: GSM1900 Idle + Bluetooth Idle + WLAN Idle + Camera (Front) + Earphone 2 + Battery 2 + USB Cable 2 (Charging from Adapter) Mode 3: GSM1900 Idle + Bluetooth Idle + WLAN Idle + Camera (Rear) + Earphone 2 + Battery 3 + USB Cable 2 (Charging from Adapter) Mode 4: Flight mode + Earphone 2 + Battery 2 + USB Cable 1 (Data Link with Notebook) AC Conducted **Emission** Mode 5: Flight Mode + Earphone 1 + Battery 1 + USB Cable 2 (Data Link with Notebook) Mode 6: : LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + FM Rx (98MHz) + Earphone 2+ Battery 2 + USB Cable 2 (Charging from Adapter) Mode 7: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + FM Rx (88MHz) + Earphone 2 + Battery 2 + USB Cable 2 (Charging from Adapter) Mode 8: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + FM Rx (108MHz) + Earphone 2 + Battery 2 + USB Cable 2 (Charging from Adapter) Mode 1: GSM850 Idle + Bluetooth Idle + WLAN Idle + MPEG4 + Earphone 1 + Battery 1 + USB Cable 1 (Charging from Adapter) Mode 2: GSM1900 Idle + Bluetooth Idle + WLAN Idle + Camera (Front) + Earphone 2 + Battery 2 + USB Cable 2 (Charging from Adapter) Mode 3: GSM1900 Idle + Bluetooth Idle + WLAN Idle + Camera (Rear) + Earphone 2 + Battery 3 + USB Cable 2 (Charging from Adapter) Mode 4: Flight Mode + Earphone 2 + Battery 2 + USB Cable 1 (Data Link with Notebook) Radiated Emissions < 1GHz Mode 5: Flight Mode + Earphone 1 + Battery 1 + USB Cable 2 (Data Link with Notebook) Mode 6: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + FM Rx (98MHz) + Earphone 2+ Battery 2 + USB Cable 2 (Charging from Adapter) Mode 7: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + FM Rx (88MHz) + Earphone 2 + Battery 2 + USB Cable 2 (Charging from Adapter) Mode 8: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + FM Rx (108MHz) + Earphone 2 + Battery 2 + USB Cable 2 (Charging from Adapter) Radiated Emissions | Mode 1: Flight Mode + Earphone 2 + Battery 2 + USB Cable 1 (Data Link with ≥ 1GHz Notebook)

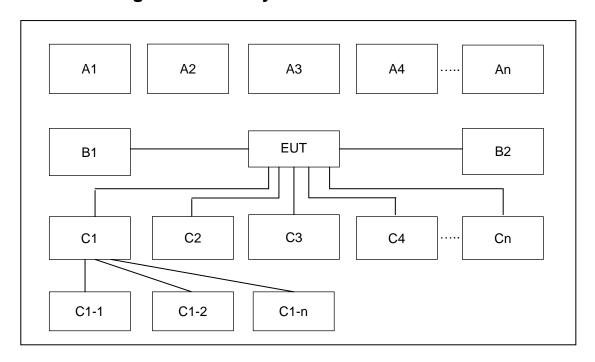
Remark:

- 1. The worst case of AC is mode 4; 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.
- 3. Data Link with Notebook means data application transferred mode between EUT and Notebook.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: ZNFX240Y Page Number : 10 of 23
Report Issued Date : Apr. 12, 2017
Report Version : Rev. 03

Report Template No.: BU5-FD15B Version 1.3

2.2. Connection Diagram of Test System



TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: ZNFX240Y Page Number : 11 of 23
Report Issued Date : Apr. 12, 2017
Report Version : Rev. 03

Report Template No.: BU5-FD15B Version 1.3

Conduction and Radiation Test Setup								
Wireless Station	O	Test Mode						
	Connection Type	1	2	3	4	5	6	7
BT Earphone	Bluetooth	Х	Χ	Х			Х	Х
System Simulator	GSM	Х	Χ	Х			Х	Х
AP router	WiFi	Х	Χ	Х			Х	Х
Power Source	Connection Type	1	2	3	4	5	6	7
AC: 120V/60Hz	AC Power Cable	Х	Χ	Х			Х	Х
Setup Peripherals	Connection Type	1	2	3	4	5	6	7
Notebook	USB Cable				Х	Х		
IPod	USB Cable to C1				Х	Х		
AP router	RJ-45 Cable to C1				Х	Х		
Earphone	Earphone jack	Х	Х	Х	Х	Х	Х	Х
SD card	SD I/O interface without Cable	Х	X	Х	Х	Х	х	Х
	Wireless Station BT Earphone System Simulator AP router Power Source AC: 120V/60Hz Setup Peripherals Notebook IPod AP router Earphone	Wireless Station BT Earphone Bluetooth System Simulator AP router WiFi Power Source Connection Type AC: 120V/60Hz AC Power Cable Setup Peripherals Notebook USB Cable USB Cable to C1 AP router Earphone Earphone Bluetooth USF Connection Type USB Cable USB Cable USB Cable to C1 Earphone Earphone	Wireless Station BT Earphone Bluetooth X System Simulator GSM X AP router WiFi X Power Source Connection Type 1 AC: 120V/60Hz AC Power Cable X Setup Peripherals Connection Type 1 Notebook USB Cable IPod USB Cable to C1 AP router RJ-45 Cable to C1 Earphone Earphone jack X SD I/O interface	Wireless Station Connection Type 1 2 BT Earphone Bluetooth X X System Simulator GSM X X AP router WiFi X X Power Source Connection Type 1 2 AC : 120V/60Hz AC Power Cable X X Setup Peripherals Connection Type 1 2 Notebook USB Cable USB Cable IPod USB Cable to C1 V AP router RJ-45 Cable to C1 V Earphone Earphone jack X X SD I/O interface X X	Wireless Station Connection Type Text of the state o	Wireless Station Connection Type Test Mode BT Earphone Bluetooth X X X System Simulator GSM X X X AP router WiFi X X X Power Source Connection Type 1 2 3 4 AC : 120V/60Hz AC Power Cable X X X Setup Peripherals Connection Type 1 2 3 4 Notebook USB Cable X X X IPod USB Cable to C1 X X AP router RJ-45 Cable to C1 X X Earphone Earphone jack X X X SD L/O interface X X X X	Test Mode Wireless Station Connection Type 1 2 3 4 5 BT Earphone Bluetooth X X X X X System Simulator GSM X X X X X AP router WiFi X X X X X Power Source Connection Type 1 2 3 4 5 AC : 120V/60Hz AC Power Cable X X X X Setup Peripherals Connection Type 1 2 3 4 5 Notebook USB Cable X X X X IPod USB Cable to C1 X X X AP router RJ-45 Cable to C1 X X X Earphone Earphone jack X X X X X	Wireless Station Connection Type Test Mode BT Earphone Bluetooth X X X X System Simulator GSM X X X X AP router WiFi X X X X Power Source Connection Type 1 2 3 4 5 6 AC : 120V/60Hz AC Power Cable X X X X X Setup Peripherals Connection Type 1 2 3 4 5 6 Notebook USB Cable X X X X IPod USB Cable to C1 X X X AP router RJ-45 Cable to C1 X X X Earphone Earphone jack X X X X X

	Conduction and Radiation Test Setup								
No.	Wireless Station	O	Test Mode						
NO.	Wireless Station	Connection Type	8	-	-	-	-	-	-
A1	BT Earphone	Bluetooth	Х						
A2	System Simulator	GSM	Х						
A4	AP router	WiFi	Х						
No.	Power Source	Connection Type	8	-	-	-	-	-	-
B1	AC: 120V/60Hz	AC Power Cable	Х						
No.	Setup Peripherals	Connection Type	8	-	-	-	-	-	-
C1	Notebook	USB Cable							
C1-1	IPod	USB Cable to C1							
C1-2	AP router	RJ-45 Cable to C1							
C2	Earphone	Earphone jack	Х						
C3	SD card	SD I/O interface without Cable	Х						

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: ZNFX240Y Page Number : 12 of 23
Report Issued Date : Apr. 12, 2017
Report Version : Rev. 03

Report Template No.: BU5-FD15B Version 1.3

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	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
3.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
4.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
5.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A
6.	Notebook	DELL	Latitude E6320	FCC DoC/ Contains FCC ID: QDS-BRCM1054	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
7.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	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 is 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. Data application is transferred between Laptop and EUT via USB cable.
- 2. Execute "Video player" to play MPEG4 files.
- 3. Turn on camera to capture images.
- 4. Turn on the Flight mode.
- 5. Turn on Radio and receive continuous signals from FM Generator during the test.

SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: ZNFX240Y Page Number : 13 of 23
Report Issued Date : Apr. 12, 2017
Report Version : Rev. 03

Report Template No.: BU5-FD15B Version 1.3

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 (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

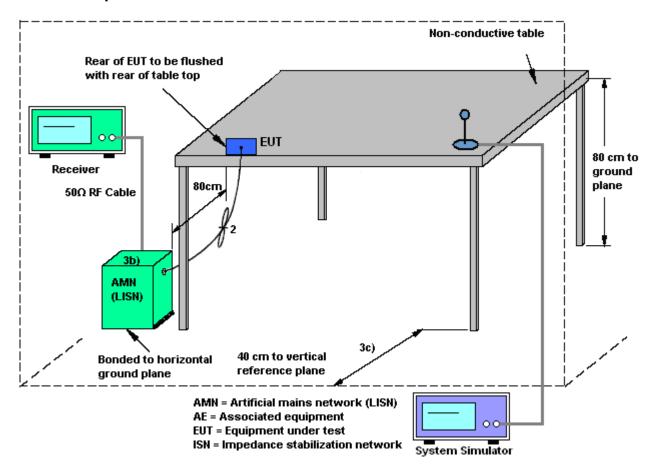
SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: ZNFX240Y Page Number : 14 of 23
Report Issued Date : Apr. 12, 2017
Report Version : Rev. 03

Report No. : FC6O1801

Report Template No.: BU5-FD15B Version 1.3

3.1.4 Test Setup



SPORTON INTERNATIONAL INC.

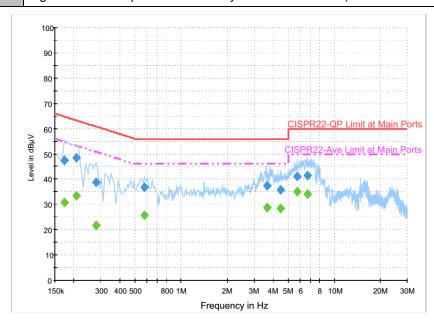
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: ZNFX240Y Page Number : 15 of 23
Report Issued Date : Apr. 12, 2017
Report Version : Rev. 03

Report Template No.: BU5-FD15B Version 1.3

3.1.5 Test Result of AC Conducted Emission

Test Mode :	Mode 4	Temperature :	21~24 ℃
Test Engineer :	Arthur Hsieh and Kai-Chun Chu	Relative Humidity :	52~54%
Test Voltage :	120Vac / 60Hz	Phase :	Line

Function Type: Flight mode + Earphone 2 + Battery 2 + USB Cable 1 (Data Link with Notebook)



Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.174000	47.3	Off	L1	19.6	17.5	64.8
0.206000	48.5	Off	L1	19.6	14.9	63.4
0.278000	38.7	Off	L1	19.6	22.2	60.9
0.574000	36.6	Off	L1	19.6	19.4	56.0
3.654000	37.5	Off	L1	19.6	18.5	56.0
4.454000	35.9	Off	L1	19.6	20.1	56.0
5.750000	41.1	Off	L1	19.6	18.9	60.0
6.694000	41.4	Off	L1	19.6	18.6	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.174000	30.8	Off	L1	19.6	24.0	54.8
0.206000	33.5	Off	L1	19.6	19.9	53.4
0.278000	21.8	Off	L1	19.6	29.1	50.9
0.574000	25.8	Off	L1	19.6	20.2	46.0
3.654000	28.6	Off	L1	19.6	17.4	46.0
4.454000	28.5	Off	L1	19.6	17.5	46.0
5.750000	35.0	Off	L1	19.6	15.0	50.0
6.694000	34.0	Off	L1	19.6	16.0	50.0

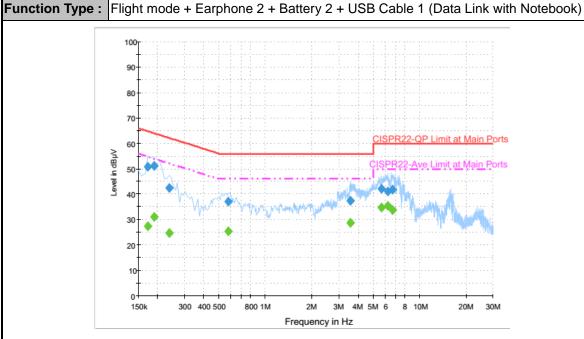
SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: ZNFX240Y Page Number : 16 of 23
Report Issued Date : Apr. 12, 2017
Report Version : Rev. 03

Report Template No.: BU5-FD15B Version 1.3



Test Mode :	Mode 4	Temperature :	21~24 ℃	
Test Engineer :	Arthur Hsieh and Kai-Chun Chu	Relative Humidity :	52~54%	
Test Voltage: 120Vac / 60Hz		Phase :	Neutral	



Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.174000	50.8	Off	N	19.5	14.0	64.8
0.190000	51.3	Off	N	19.5	12.7	64.0
0.238000	42.5	Off	N	19.5	19.7	62.2
0.574000	37.1	Off	N	19.5	18.9	56.0
3.558000	37.4	Off	N	19.5	18.6	56.0
5.638000	42.1	Off	N	19.6	17.9	60.0
6.238000	41.3	Off	N	19.6	18.7	60.0
6.670000	41.7	Off	N	19.6	18.3	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.174000	27.4	Off	N	19.5	27.4	54.8
0.190000	31.1	Off	N	19.5	22.9	54.0
0.238000	24.7	Off	N	19.5	27.5	52.2
0.574000	25.5	Off	N	19.5	20.5	46.0
3.558000	28.6	Off	N	19.5	17.4	46.0
5.638000	34.8	Off	N	19.6	15.2	50.0
6.238000	35.3	Off	N	19.6	14.7	50.0
6.670000	33.7	Off	N	19.6	16.3	50.0

SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: ZNFX240Y

Page Number : 17 of 23 Report Issued Date: Apr. 12, 2017 Report Version : Rev. 03

Report Template No.: BU5-FD15B Version 1.3

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)	
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

- 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 is a Bi-Log antenna and its 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 (RBW=120kHz/VBW=300kHz for frequency below 1GHz; RBW=1MHz VBW=3MHz (Peak), RBW=1MHz/VBW=10Hz (Average) for frequency above 1GHz).
- 7. 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 $(dB\mu V/m) = 20 \log Emission level (\mu V/m)$
- 9. Corrected Reading: Antenna Factor + Cable Loss + Read Level Preamp Factor = Level

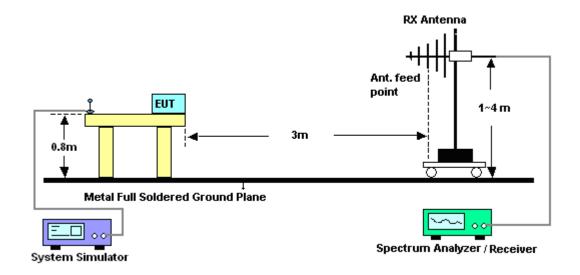
SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: ZNFX240Y Page Number : 18 of 23
Report Issued Date : Apr. 12, 2017
Report Version : Rev. 03

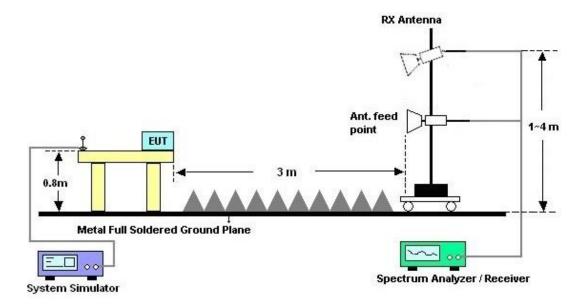
Report Template No.: BU5-FD15B Version 1.3

3.2.4. Test Setup of Radiated Emission

For radiated emissions from 30MHz to 1GHz



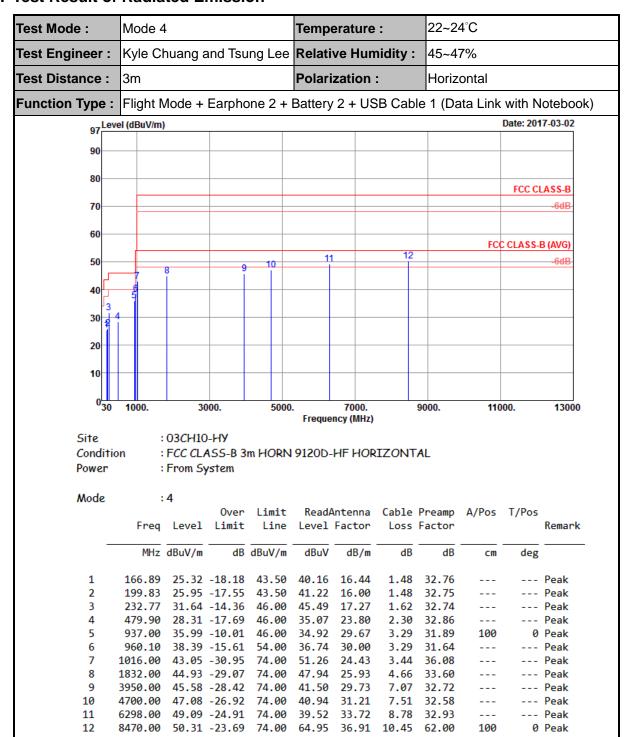
For radiated emissions above 1GHz



TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: ZNFX240Y Page Number : 19 of 23
Report Issued Date : Apr. 12, 2017
Report Version : Rev. 03

Report Template No.: BU5-FD15B Version 1.3

3.2.5. Test Result of Radiated Emission



TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: ZNFX240Y Page Number : 20 of 23
Report Issued Date : Apr. 12, 2017
Report Version : Rev. 03

Report Template No.: BU5-FD15B Version 1.3

22~24°C Test Mode: Mode 4 Temperature: Test Engineer: Kyle Chuang and Tsung Lee Relative Humidity: 45~47% Test Distance: Polarization: Vertical Flight Mode + Earphone 2 + Battery 2 + USB Cable 1 (Data Link with Notebook) Function Type: 97 Level (dBuV/m) Date: 2017-03-02 90 80 FCC CLASS-B 70 60 FCC CLASS-B (AVG) 50 40 30 20 10 1000. 3000. 5000. 7000. 9000. 11000. 13000 Frequency (MHz) : 03CH10-HY Site Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL Power : From System Mode : 4 Over Limit ReadAntenna Cable Preamp A/Pos T/Pos Freq Level Limit Line Level Factor Loss Factor Remark MHz dBuV/m dB dBuV/m dBuV dB/m deg cm35.67 26.74 -13.26 40.00 36.10 22.74 --- Peak 1 0.65 32.75 --- Peak 2 126.39 34.11 -9.39 43.50 47.62 17.92 1.33 32.76 141.24 34.15 -9.35 43.50 47.63 17.95 --- Peak 3 1.33 32.76 ---405.70 34.47 -11.53 4 46.00 42.59 22.49 2.16 32.77 ------ Peak 5 914.60 36.49 -9.51 46.00 36.34 29.08 3.20 32.13 --- Peak 953.80 39.71 -6.29 46.00 38.13 0 Peak 6 30.00 3.29 31.71 100 7 1018.00 44.74 -29.26 74.00 52.95 24.43 3.44 36.08 Peak 4.66 33.64 --- Peak 8 1826.00 44.21 -29.79 74.00 47.26 25.93 ---9 3404.00 43.24 -30.76 74.00 40.90 28.74 6.52 32.92 --- Peak 4904.00 46.57 -27.43 10 74.00 39.67 31.63 7.82 32.55 ------ Peak 5108.00 46.43 -27.57 74.00 39.06 --- Peak 11 31.94 7.96 32.53 ---8485.00 50.25 -23.75 74.00 64.90 36.90 10.45 62.00 100 0 Peak

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: ZNFX240Y Page Number : 21 of 23
Report Issued Date : Apr. 12, 2017
Report Version : Rev. 03

Report Template No.: BU5-FD15B Version 1.3

4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Feb. 02, 2017 ~ Apr. 12, 2017	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Aug. 30, 2016	Feb. 02, 2017 ~ Apr. 12, 2017	Aug. 29, 2017	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Nov. 29, 2016	Feb. 02, 2017 ~ Apr. 12, 2017	Nov. 28, 2017	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Dec. 06, 2016	Feb. 02, 2017 ~ Apr. 12, 2017	Dec. 05, 2017	Conduction (CO05-HY)
Amplifier	SONOMA	310N	187311	9kHz~1GHz	Oct. 26, 2016	Mar. 02, 2017 ~ Apr. 11, 2017	Oct. 25, 2017	Radiation (03CH10-HY)
Bilog Antenna	TESEQ	CBL 6111D&00800 N1D01N-06	35413&02	30MHz~1GHz	Jan. 07, 2017	Mar. 02, 2017 ~ Apr. 11, 2017	Jan. 06, 2018	Radiation (03CH10-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-1325	1GHz ~ 18GHz	Sep. 30, 2016	Mar. 02, 2017 ~ Apr. 11, 2017	Sep. 29, 2017	Radiation (03CH10-HY)
Preamplifier	Keysight	83017A	MY53270078	1GHz~26.5GHz	Oct. 26, 2016	Mar. 02, 2017 ~ Apr. 11, 2017	Oct. 25, 2017	Radiation (03CH10-HY)
Spectrum Analyzer	Keysight	N9010A	MY54200485	10Hz ~ 44GHz	Oct. 17, 2016	Mar. 02, 2017 ~ Apr. 11, 2017	Oct. 16, 2017	Radiation (03CH10-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1~4m	N/A	Mar. 02, 2017 ~ Apr. 11, 2017	N/A	Radiation (03CH10-HY)
Turn Table	EMEC	TT 2200	N/A	0~360 Degree	N/A	Mar. 02, 2017 ~ Apr. 11, 2017	N/A	Radiation (03CH10-HY)
Preamplifier	Jet-Power	JPA00101800- 30-10P	1601180002	1GHz~18GHz	Jul. 27, 2016	Mar. 02, 2017 ~ Apr. 11, 2017	Jul. 26, 2017	Radiation (03CH10-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY55420170	N/A	Mar. 10, 2016	Mar. 02, 2017	Mar. 09, 2017	Radiation (03CH10-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY53290045	N/A	Jan. 19, 2017	Mar. 15, 2017 ~ Apr. 11, 2017	Jan. 18, 2018	Radiation (03CH10-HY)

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: ZNFX240Y Page Number : 22 of 23
Report Issued Date : Apr. 12, 2017
Report Version : Rev. 03

Report Template No.: BU5-FD15B Version 1.3



5. Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of	2.7
Confidence of 95% (U = 2Uc(y))	2.1

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

Measuring Uncertainty for a Level of	
	5.6
Confidence of 95% (U = 2Uc(y))	5.5

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 13000 MHz)

Measuring Uncertainty for a Level of	E 0
Confidence of 95% (U = 2Uc(y))	5.9

SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: ZNFX240Y Page Number : 23 of 23
Report Issued Date : Apr. 12, 2017
Report Version : Rev. 03

Report Template No.: BU5-FD15B Version 1.3