



# FCC Test Report

APPLICANT : Sony Mobile Communications Inc  
EQUIPMENT : PDA Phone  
BRAND NAME : Sony  
TYPE NAME : PM-0780-BV  
FCC ID : PY7-PM0780  
STANDARD : FCC 47 CFR FCC Part 15 Subpart B  
CLASSIFICATION : FCC CLASS B PERSONAL  
COMPUTERS AND PERIPHERALS

The product was received on Dec. 03, 2014 and testing was completed on Feb. 13, 2015. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI C63.4-2009 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

Approved by: Jones Tsai / Manager



## SPORTON INTERNATIONAL INC.

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FCC ID : PY7-PM0780

Page Number : 1 of 29

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## TABLE OF CONTENTS

REVISION HISTORY ..... 3

SUMMARY OF TEST RESULT ..... 4

1. GENERAL DESCRIPTION ..... 5

    1.1. Applicant..... 5

    1.2. Manufacturer ..... 5

    1.3. Product Feature of Equipment Under Test ..... 5

    1.4. Details of Tested Sample (EUT) Information ..... 6

    1.5. Modification of EUT ..... 6

    1.6. Test Location ..... 7

    1.7. Applicable Standards ..... 7

2. TEST CONFIGURATION OF EQUIPMENT UNDER TEST ..... 8

    2.1. Test Mode ..... 8

    2.2. Connection Diagram of Test System ..... 9

    2.3. Support Unit used in test configuration and system ..... 10

    2.4. EUT Operation Test Setup ..... 10

3. TEST RESULT ..... 11

    3.1. Test of AC Conducted Emission Measurement ..... 11

    3.2. Test of Radiated Emission Measurement ..... 19

4. LIST OF MEASURING EQUIPMENT ..... 27

5. UNCERTAINTY OF EVALUATION ..... 29





## SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.107	AC Conducted Emission	< 15.107 limits	PASS	Under limit 5.60 dB at 0.190 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 9.73 dB at 720.000 MHz



# 1. General Description

## 1.1. Applicant

**Sony Mobile Communications Inc**  
Nya Vattentorget 22188 Lund/Sweden

## 1.2. Manufacturer

**Sony Mobile Communications Inc**  
Nya Vattentorget 22188 Lund/Sweden

## 1.3. Product Feature of Equipment Under Test

The Equipment Under Test (hereafter called: EUT) is PDA Phone supporting, GSM / WCDMA / LTE, Wi-Fi 2.4GHz 802.11b/g/n, 5GHz 802.11a/n, Bluetooth with FM Receiver, GPS, ANT+, and NFC features, and below is details of information

Product Feature	
<b>Equipment</b>	PDA Phone
<b>Brand Name</b>	Sony
<b>Type Name</b>	PM-0780-BV
<b>FCC ID</b>	PY7-PM0780
<b>GSM Operating Band(s)</b>	GSM 850/900/1800/1900MHz
<b>GPRS / EGPRS Multi Slot Class</b>	GPRS Class 33, EGPRS Class 33
<b>WCDMA Operating Band(s)</b>	FDD Band I / II / V / VIII
<b>WCDMA Rel. Version</b>	Rel. 8
<b>LTE Operating Band(s)</b>	FDD Band I / II / III / V / VII / VIII / XX
<b>LTE Rel. Version</b>	Rel. 10
<b>Wi-Fi Specification</b>	802.11b/g/n HT20 802.11a/n HT20/HT40
<b>Bluetooth Version</b>	v3.0 + EDR / v4.0 - LE
<b>NFC Specification</b>	ISO14443A / ISO14443B / Felica / ISO15693
<b>ANT+</b>	ANT+
<b>Power Supply</b>	Battery / AC Adapter / Car Charger

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



### 1.4. Details of Tested Sample (EUT) Information

Below EUT sample and accessory are used to test.

EUT Information List				
IMEI	HW Version	SW Version	S/N	Performed Test Item
004402453306957	AP	26.1.A.0.79	YT910ZRWBG	Conducted Emission
004402453306932			YT910ZRWDS	Radiated Spurious Emission

Accessory List	
<b>Battery</b>	Model No. : Bellis
<b>Earphone</b>	Model No. : MH410c
	Type No. : AG-1100
	S/N : 12431A1B0011582 (For Conducted Emission) 12431A180011AEC (For Radiated Spurious Emission)
<b>USB Cable 1</b>	Model No. : EC450
	Type No. : AI-0700
	S/N : 142412D8250297C (For Conducted Emission) 132312D02961412 (For Radiated Spurious Emission)
<b>USB Cable 2</b>	Model No. : AA9
	Type No. : N/A
	S/N : N/A (For Conducted Emission) N/A (For Radiated Spurious Emission)

**Note:**

1. Above EUT list and accessory list used are electrically identical per declared by manufacturer.
2. Above the accessories list are used to exercise the EUT during test.
3. For other wireless features of this EUT, test report will be issued separately.

### 1.5. Modification of EUT

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



### 1.6. Test Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation TW1022 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

<b>Test Site</b>	SPORTON INTERNATIONAL INC.	
<b>Test Site Location</b>	No. 52, Hwa Ya 1 <sup>st</sup> Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978	
<b>Test Site No.</b>	<b>Sporton Site No.</b>	
	CO05-HY	03CH06-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 C63.4-2009

**Remark:**

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. For FCC 15 Subpart B - Unintentional Radiators, device supporting USB interface or similar peripherals (defined as the Section 15.3 (r) Peripheral device) acting as a peripheral for personal computers shall be authorized as “The Class B personal computers and peripherals” per the Section 15.101 (a) Equipment authorization of unintentional radiators.
3. For other Unintentional Radiators features of this EUT, test reports are be issued separately.  
Per the Note of the Section 15.101, when device supports features (USB, FM Radio, digital devices...etc) more than one category of authorization, type of authorization shall be appropriately chosen for FCC 15B compliance rule, and the Section 15.101 (b), only those receivers that operate (tune) within the frequency range of 30-960 MHz, CB receivers and radar detectors are subject to the authorizations shown in paragraph (a) of the Section 15.101. However, receivers indicated as being subject to Declaration of Conformity that are contained within a transceiver, the transmitter portion of which is subject to certification, shall be authorized under the verification procedure.



## 2. Test Configuration of Equipment Under Test

### 2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2009 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.

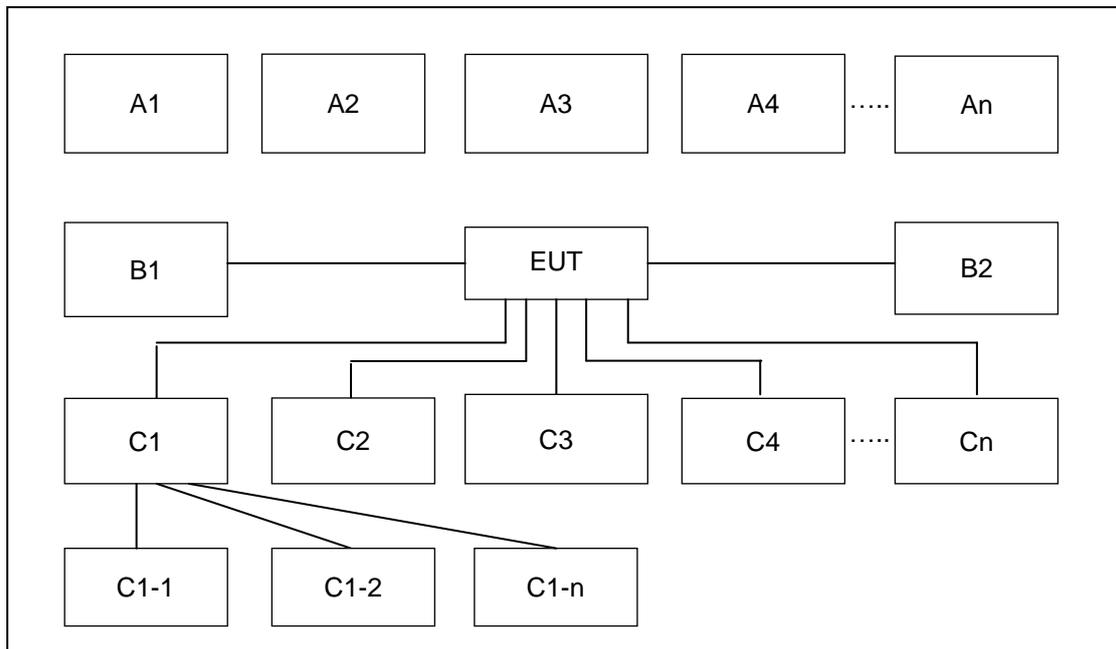
Item	EUT Configuration	Test Condition	
		EMI AC	EMI RE
1.	Data Link with Notebook	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

The data application (each file size is greater than 30Mbytes) is continuously transferred between the EUT and Notebook connected via USB cable, while GSM, WLAN, Bluetooth, NFC, and GPS idle.

**Abbreviations:**

- EMI AC: AC conducted emissions
- EMI RE: EUT radiated emission

## 2.2. Connection Diagram of Test System



Conduction Test Setup									
No.	Wireless Station	Connection Type	Test Mode						
			1	2	3	-	-	-	-
A1	Bluetooth Earphone	Bluetooth	X	X	X				
A2	System Simulator	GSM	X	X	X				
A3	GPS Station	GPS	X		X				
A4	WLAN AP	WiFi	X	X	X				
No.	Setup Peripherals	Connection Type	1	2	3	-	-	-	-
C1	Notebook	USB Cable	X	X	X				
C1-1	iPod	USB Cable to C1	X	X	X				
C1-2	WLAN AP	RJ-45 Cable to C1	X	X	X				
C2	Earphone	Earphone jack	X	X	X				
C3	SD Card	SD I/O interface without Cable	X	X	X				

Radiation Test Setup									
No.	Wireless Station	Connection Type	Test Mode						
			1	2	3	-	-	-	-
A1	Bluetooth Earphone	Bluetooth	X	X	X				
A2	System Simulator	GSM	X	X	X				
A3	GPS Station	GPS	X						
A4	WLAN AP	WiFi	X	X	X				
No.	Setup Peripherals	Connection Type	1	2	-	-	-	-	-
C1	Notebook	USB Cable	X	X	X				
C1-1	iPod	USB Cable to C1	X	X	X				
C1-2	WLAN AP	RJ-45 Cable to C1	X	X	X				
C2	Earphone	Earphone jack	X	X	X				
C3	SD Card	SD I/O interface without Cable	X	X	X				

### 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	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
3.	GPS Station	Pendulum	GSG-54	N/A	N/A	Unshielded, 1.8 m
4.	Bluetooth Earphone	Samsung	SBH20	PY7-RD0010	N/A	N/A
5.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
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.	iPod	Apple	A1199	FCC DoC	Shielded, 1.0 m	N/A
8.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A
9.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A

### 2.4. EUT Operation Test Setup

The data application (each file size is greater than 30Mbytes) is continuously transferred between the EUT and Notebook connected via USB cable, while GSM, WLAN, Bluetooth, NFC, and GPS idle.



### 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 (MHz)	Conducted limit (dBuV)	
	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.

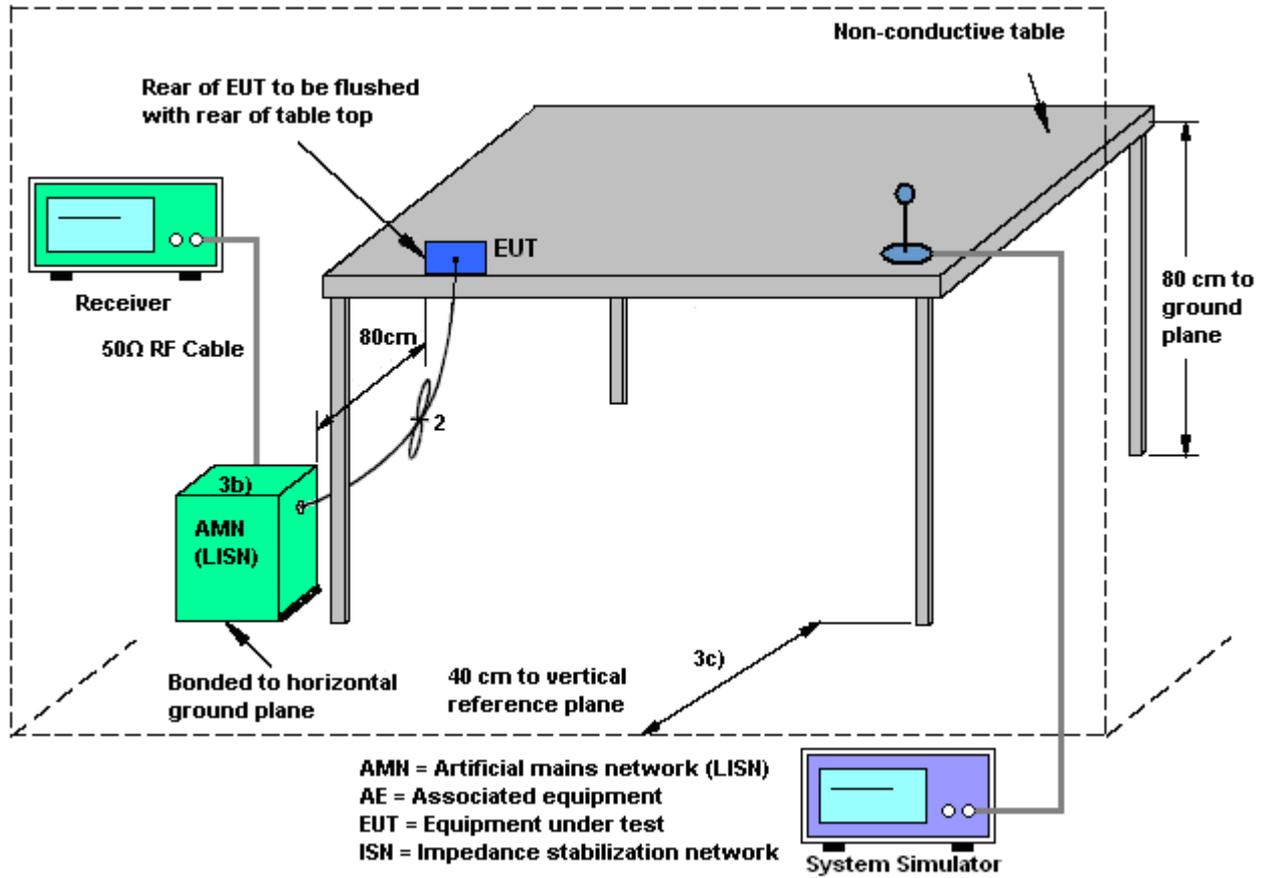
##### 3.1.2 Measuring Instruments

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

##### 3.1.3 Test Procedure

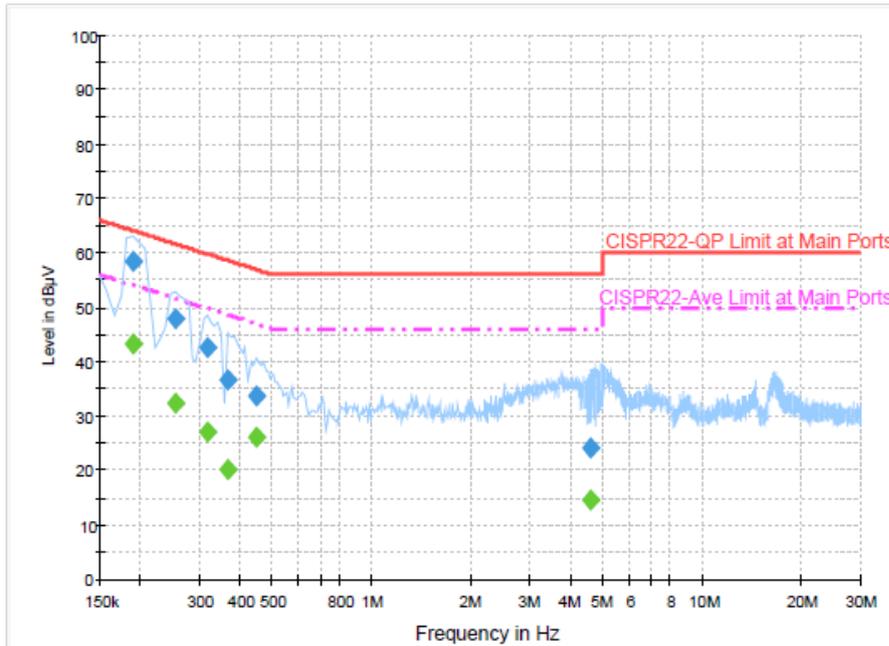
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
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.

### 3.1.4 Test Setup



### 3.1.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Kai-Chun Chu	Relative Humidity :	46~48%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	Data Link with Notebook (with USB Cable 1) + SIM1 + WLAN (2.4GHz) Idle + GPS Rx		



**Final Result : Quasi-Peak**

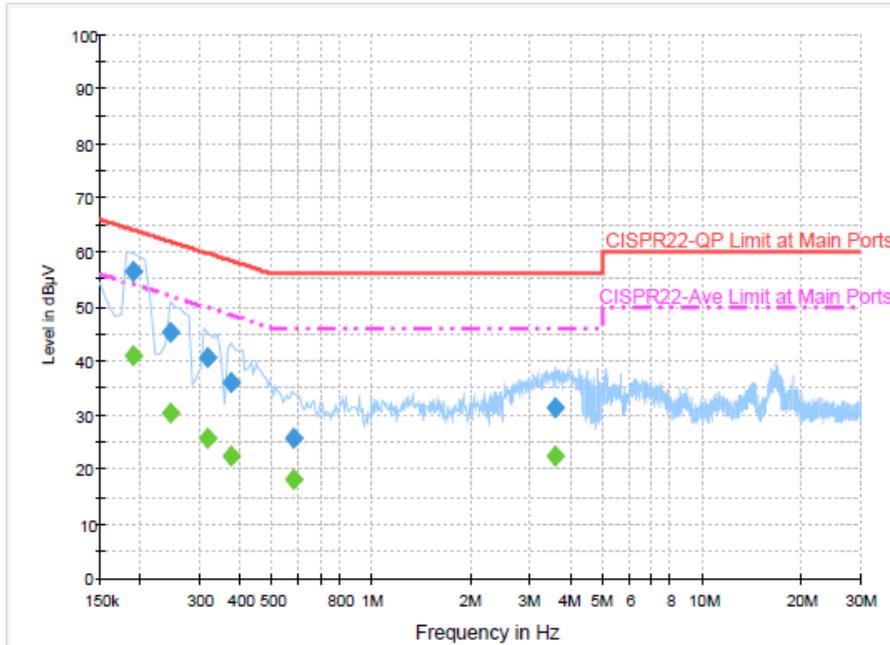
Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.190000	58.4	Off	L1	19.5	5.6	64.0
0.254000	47.8	Off	L1	19.5	13.8	61.6
0.318000	42.5	Off	L1	19.4	17.3	59.8
0.366000	36.5	Off	L1	19.4	22.1	58.6
0.446000	33.7	Off	L1	19.5	23.2	56.9
4.574000	24.2	Off	L1	19.7	31.8	56.0

**Final Result : Average**

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.190000	43.1	Off	L1	19.5	10.9	54.0
0.254000	32.3	Off	L1	19.5	19.3	51.6
0.318000	27.2	Off	L1	19.4	22.6	49.8
0.366000	20.0	Off	L1	19.4	28.6	48.6
0.446000	26.2	Off	L1	19.5	20.7	46.9
4.574000	14.7	Off	L1	19.7	31.3	46.0



Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Kai-Chun Chu	Relative Humidity :	46~48%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	Data Link with Notebook (with USB Cable 1) + SIM1 + WLAN (2.4GHz) Idle + GPS Rx		



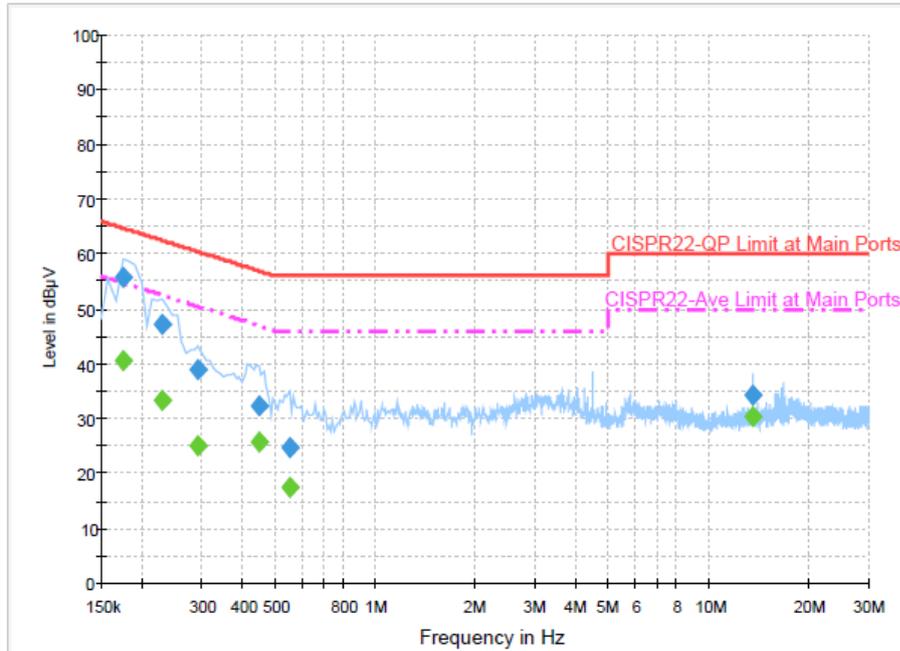
**Final Result : Quasi-Peak**

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.190000	56.3	Off	N	19.5	7.7	64.0
0.246000	45.3	Off	N	19.5	16.6	61.9
0.318000	40.5	Off	N	19.4	19.3	59.8
0.374000	36.1	Off	N	19.5	22.3	58.4
0.582000	25.8	Off	N	19.5	30.2	56.0
3.598000	31.2	Off	N	19.6	24.8	56.0

**Final Result : Average**

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.190000	40.9	Off	N	19.5	13.1	54.0
0.246000	30.2	Off	N	19.5	21.7	51.9
0.318000	25.7	Off	N	19.4	24.1	49.8
0.374000	22.5	Off	N	19.5	25.9	48.4
0.582000	18.1	Off	N	19.5	27.9	46.0
3.598000	22.4	Off	N	19.6	23.6	46.0

Test Mode :	Mode 2	Temperature :	20~22°C
Test Engineer :	Kai-Chun Chu	Relative Humidity :	46~48%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	Data Link with Notebook (with USB Cable 1) + SIM1 + WLAN (5GHz) Idle + NFC On		



**Final Result : Quasi-Peak**

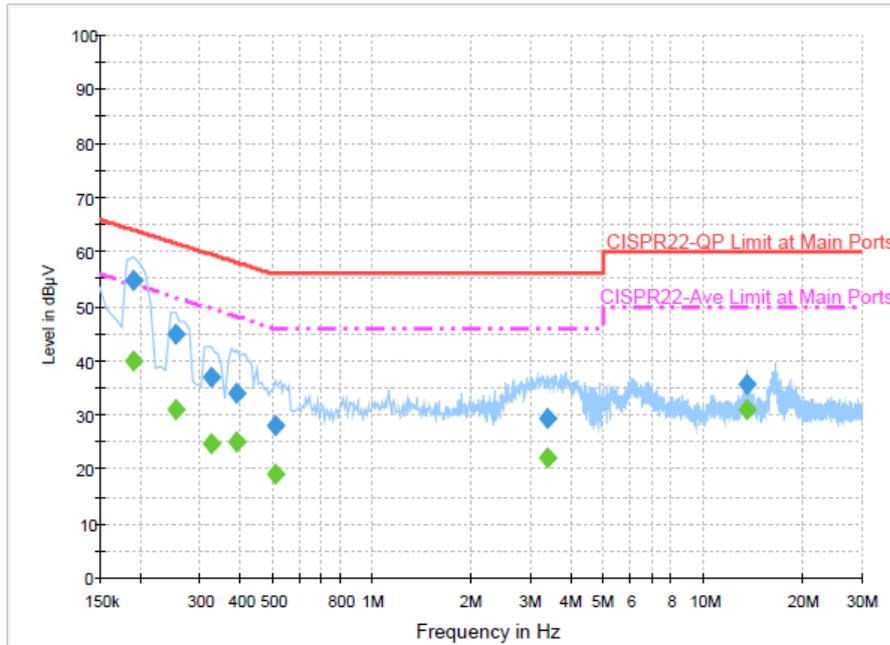
Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.174000	55.8	Off	L1	19.5	9.0	64.8
0.230000	47.1	Off	L1	19.5	15.3	62.4
0.294000	38.9	Off	L1	19.4	21.5	60.4
0.446000	32.5	Off	L1	19.5	24.4	56.9
0.550000	24.7	Off	L1	19.5	31.3	56.0
13.558000	34.4	Off	L1	19.9	25.6	60.0

**Final Result : Average**

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.174000	40.5	Off	L1	19.5	14.3	54.8
0.230000	33.4	Off	L1	19.5	19.0	52.4
0.294000	25.0	Off	L1	19.4	25.4	50.4
0.446000	25.8	Off	L1	19.5	21.1	46.9
0.550000	17.5	Off	L1	19.5	28.5	46.0
13.558000	30.4	Off	L1	19.9	19.6	50.0



Test Mode :	Mode 2	Temperature :	20~22°C
Test Engineer :	Kai-Chun Chu	Relative Humidity :	46~48%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	Data Link with Notebook (with USB Cable 1) + SIM1 + WLAN (5GHz) Idle + NFC On		



**Final Result : Quasi-Peak**

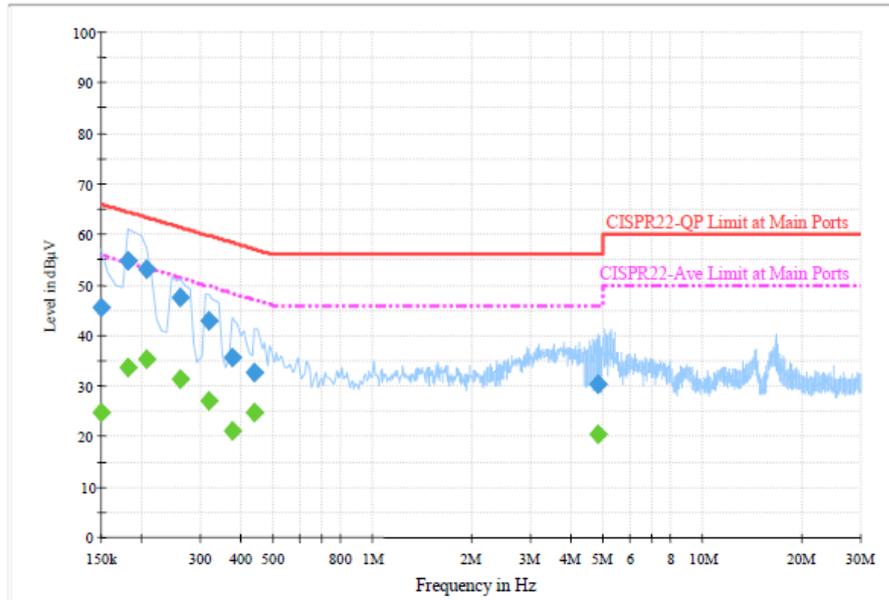
Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.190000	54.7	Off	N	19.5	9.3	64.0
0.254000	44.7	Off	N	19.5	16.9	61.6
0.326000	37.0	Off	N	19.4	22.6	59.6
0.390000	33.9	Off	N	19.5	24.2	58.1
0.510000	28.1	Off	N	19.5	27.9	56.0
3.382000	29.2	Off	N	19.6	26.8	56.0
13.558000	35.7	Off	N	19.9	24.3	60.0

**Final Result : Average**

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.190000	40.1	Off	N	19.5	13.9	54.0
0.254000	30.9	Off	N	19.5	20.7	51.6
0.326000	24.7	Off	N	19.4	24.9	49.6
0.390000	25.1	Off	N	19.5	23.0	48.1
0.510000	19.1	Off	N	19.5	26.9	46.0
3.382000	22.1	Off	N	19.6	23.9	46.0
13.558000	31.0	Off	N	19.9	19.0	50.0



Test Mode :	Mode 3	Temperature :	20~22°C
Test Engineer :	Kai-Chun Chu	Relative Humidity :	46~48%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	Data Link with Notebook (with USB Cable 2) + SIM1 + WLAN (2.4GHz) Idle + GPS Rx		



**Final Result : Quasi-Peak**

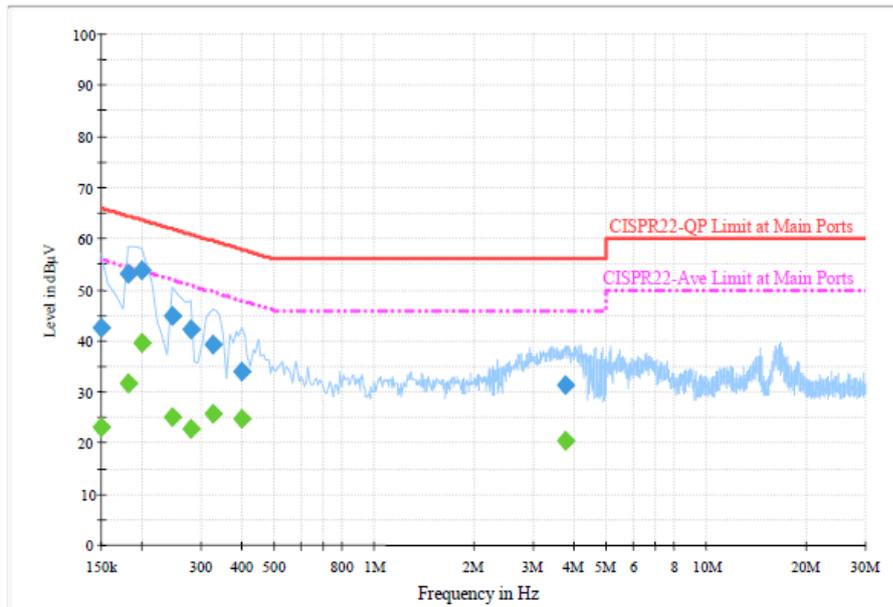
Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	45.5	Off	L1	19.5	20.5	66.0
0.182000	54.9	Off	L1	19.4	9.5	64.4
0.206000	53.1	Off	L1	19.4	10.3	63.4
0.262000	47.5	Off	L1	19.4	13.9	61.4
0.318000	42.8	Off	L1	19.5	17.0	59.8
0.374000	35.7	Off	L1	19.5	22.7	58.4
0.438000	32.6	Off	L1	19.5	24.5	57.1
4.798000	30.5	Off	L1	19.7	25.5	56.0

**Final Result : Average**

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	24.7	Off	L1	19.5	31.3	56.0
0.182000	33.5	Off	L1	19.4	20.9	54.4
0.206000	35.4	Off	L1	19.4	18.0	53.4
0.262000	31.4	Off	L1	19.4	20.0	51.4
0.318000	27.2	Off	L1	19.5	22.6	49.8
0.374000	21.2	Off	L1	19.5	27.2	48.4
0.438000	24.7	Off	L1	19.5	22.4	47.1
4.798000	20.5	Off	L1	19.7	25.5	46.0



Test Mode :	Mode 3	Temperature :	20~22°C
Test Engineer :	Kai-Chun Chu	Relative Humidity :	46~48%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	Data Link with Notebook (with USB Cable 2) + SIM1 + WLAN (2.4GHz) Idle + GPS Rx		



**Final Result : Quasi-Peak**

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	42.5	Off	N	19.5	23.5	66.0
0.182000	53.1	Off	N	19.4	11.3	64.4
0.198000	54.0	Off	N	19.4	9.7	63.7
0.246000	44.8	Off	N	19.4	17.1	61.9
0.278000	42.2	Off	N	19.4	18.7	60.9
0.326000	39.3	Off	N	19.5	20.3	59.6
0.398000	34.0	Off	N	19.5	23.9	57.9
3.766000	31.3	Off	N	19.7	24.7	56.0

**Final Result : Average**

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	23.2	Off	N	19.5	32.8	56.0
0.182000	31.6	Off	N	19.4	22.8	54.4
0.198000	39.5	Off	N	19.4	14.2	53.7
0.246000	25.0	Off	N	19.4	26.9	51.9
0.278000	22.8	Off	N	19.4	28.1	50.9
0.326000	25.6	Off	N	19.5	24.0	49.6
0.398000	24.8	Off	N	19.5	23.1	47.9
3.766000	20.6	Off	N	19.7	25.4	46.0



### 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

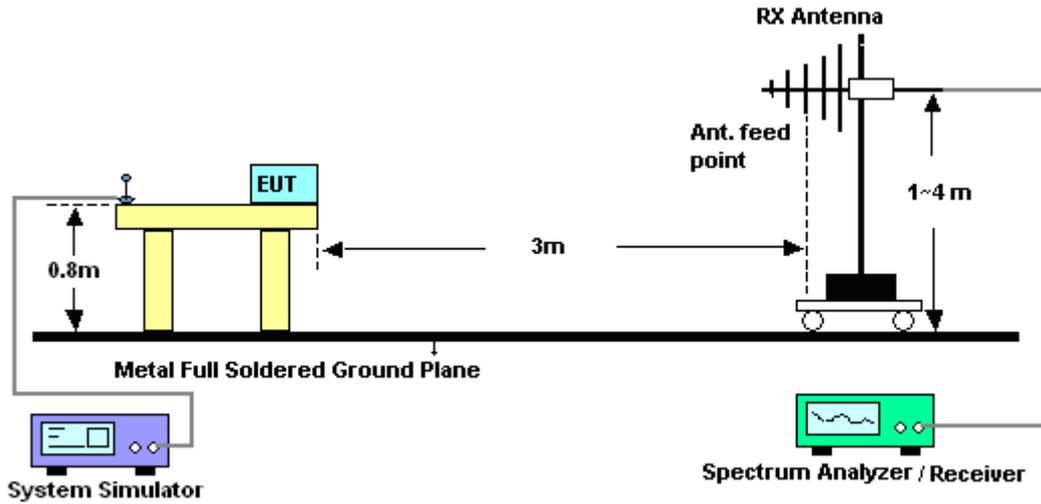
The measuring equipment is listed in the section 4 of this test report.

#### 3.2.3. Test Procedures

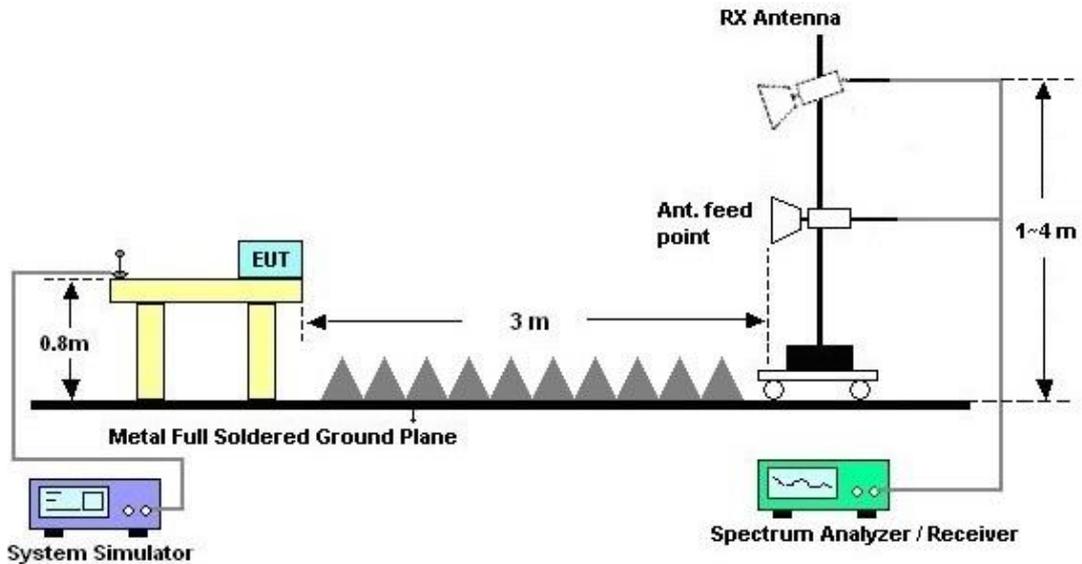
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna 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 (dBµV/m) = 20 log Emission level (µV/m)
9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

### 3.2.4. Test Setup of Radiated Emission

For radiated emissions from 30MHz to 1GHz



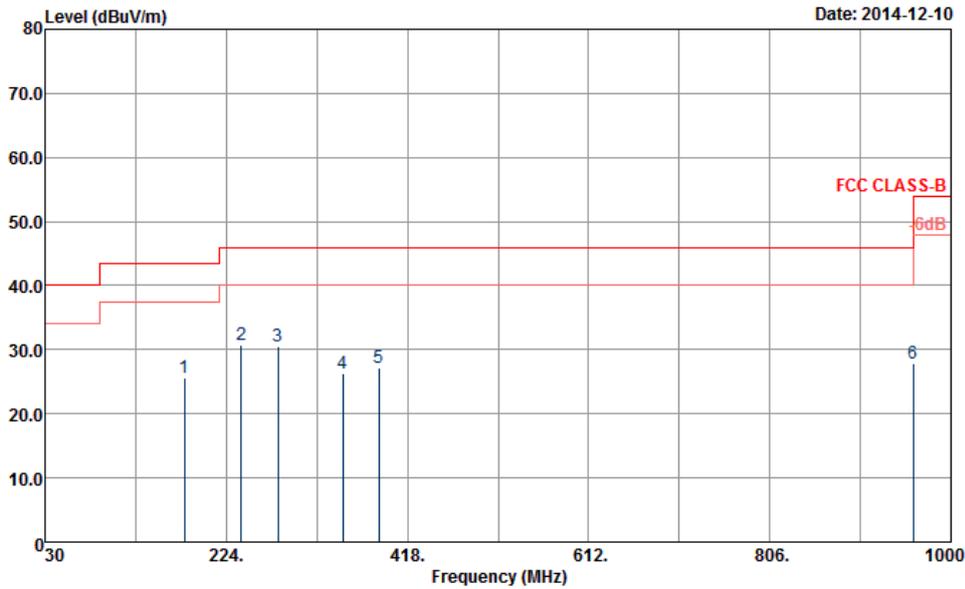
For radiated emissions above 1GHz





3.2.5. Test Result of Radiated Emission

Test Mode :	Mode 1	Temperature :	20~23°C
Test Engineer :	Daniel Lee	Relative Humidity :	50~53%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	Data Link with Notebook (with USB Cable 1) + SIM1 + WLAN (2.4GHz) Idle + GPS Rx		



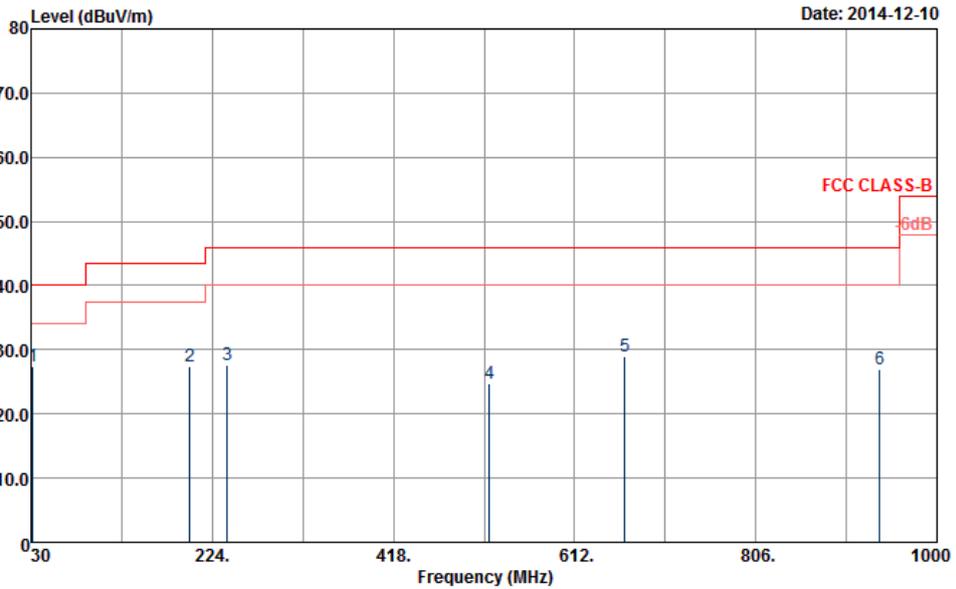
Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BILOG\_131010\_9664 HORIZONTAL

Power : From System  
 Mode : Mode 1

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	179.04	25.60	-17.90	43.50	46.55	9.33	1.47	31.75	---	---	Peak
2	240.06	30.66	-15.34	46.00	49.32	11.39	1.69	31.74	100	232	Peak
3	279.75	30.45	-15.55	46.00	47.55	12.79	1.84	31.73	---	---	Peak
4	349.00	26.20	-19.80	46.00	41.57	14.35	2.05	31.77	---	---	Peak
5	387.50	27.14	-18.86	46.00	41.56	15.24	2.15	31.81	---	---	Peak
6	959.40	27.94	-18.06	46.00	34.68	20.89	3.35	30.98	---	---	Peak



Test Mode :	Mode 1	Temperature :	20~23°C
Test Engineer :	Daniel Lee	Relative Humidity :	50~53%
Test Distance :	3m	Polarization :	Vertical
Function Type :	Data Link with Notebook (with USB Cable 1) + SIM1 + WLAN (2.4GHz) Idle + GPS Rx		



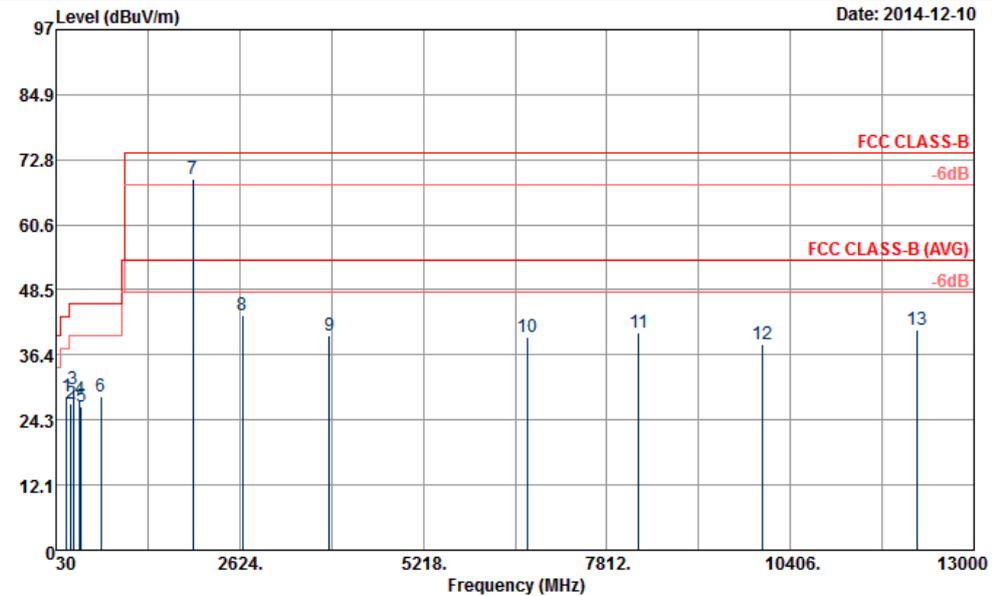
Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BILOG\_131010\_9664 VERTICAL

Power : From System  
 Mode : Mode 1

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	32.16	27.49	-12.51	40.00	40.98	17.64	0.66	31.79	100	266	Peak
2	200.10	27.41	-16.09	43.50	48.42	9.20	1.54	31.75	---	---	Peak
3	240.06	27.66	-18.34	46.00	46.32	11.39	1.69	31.74	---	---	Peak
4	520.50	24.69	-21.31	46.00	36.72	17.42	2.51	31.96	---	---	Peak
5	665.40	28.98	-17.02	46.00	39.23	18.95	2.83	32.03	---	---	Peak
6	938.40	26.89	-19.11	46.00	34.04	20.68	3.35	31.18	---	---	Peak



Test Mode :	Mode 2	Temperature :	20~23°C
Test Engineer :	Daniel Lee	Relative Humidity :	50~53%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	Data Link with Notebook (with USB Cable 1) + SIM1 + WLAN (5GHz) Idle + NFC On		
Remark :	#7 is system simulator signal which can be ignored.		

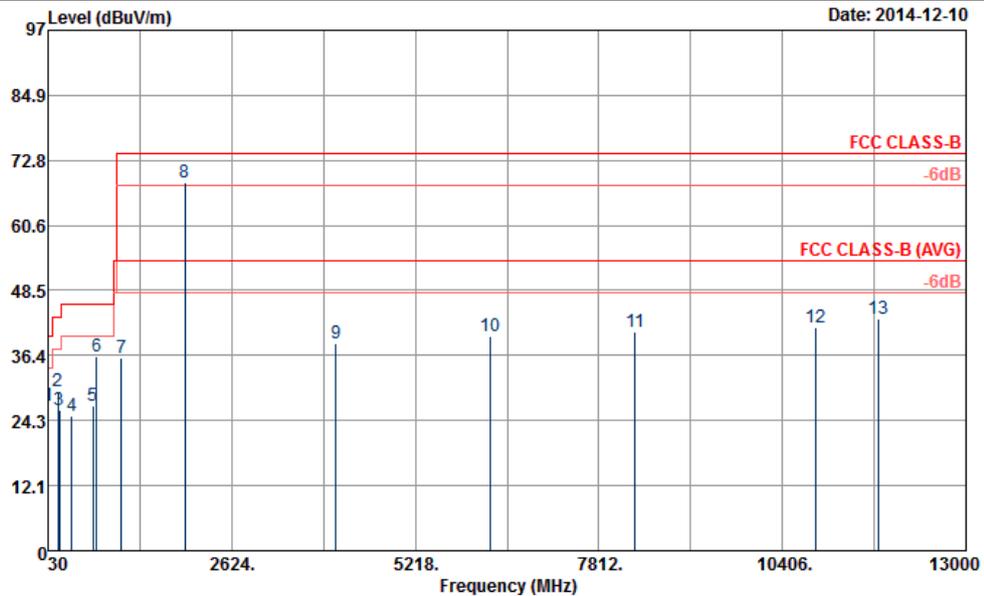


Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m HF-ANT\_583\_140731 HORIZONTAL  
 Power : From System  
 Mode : Mode 2

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	
	MHz	dBUV/m	dB	dBUV/m	Level	Loss	Factor	cm	deg		
					dBuV	Factor					
1	178.50	28.52	-14.98	43.50	49.42	9.37	1.48	31.75	100	274 Peak	
2	240.06	27.21	-18.79	46.00	45.87	11.39	1.69	31.74	---	---	Peak
3	271.65	30.09	-15.91	46.00	47.28	12.72	1.82	31.73	---	---	Peak
4	368.60	28.21	-17.79	46.00	43.21	14.68	2.11	31.79	---	---	Peak
5	387.50	26.84	-19.16	46.00	41.26	15.24	2.15	31.81	---	---	Peak
6	665.40	28.66	-17.34	46.00	38.91	18.95	2.83	32.03	---	---	Peak
7	1960.00	69.12	...	...	92.88	31.33	5.40	60.49	---	---	Peak
8	2664.00	43.76	-30.24	74.00	65.67	32.27	6.49	60.67	100	0	Peak
9	3886.00	40.09	-33.91	74.00	60.97	33.23	7.53	61.64	---	---	Peak
10	6692.00	39.68	-34.32	74.00	54.47	35.80	9.87	60.46	---	---	Peak
11	8260.00	40.45	-33.55	74.00	51.71	35.70	12.64	59.60	---	---	Peak
12	10014.00	38.44	-35.56	74.00	50.18	37.01	12.43	61.18	---	---	Peak
13	12202.00	41.07	-32.93	74.00	45.95	39.01	15.32	59.21	---	---	Peak



Test Mode :	Mode 2	Temperature :	20~23°C
Test Engineer :	Daniel Lee	Relative Humidity :	50~53%
Test Distance :	3m	Polarization :	Vertical
Function Type :	Data Link with Notebook (with USB Cable 1) + SIM1 + WLAN (5GHz) Idle + NFC On		
Remark :	#8 is system simulator signal which can be ignored.		



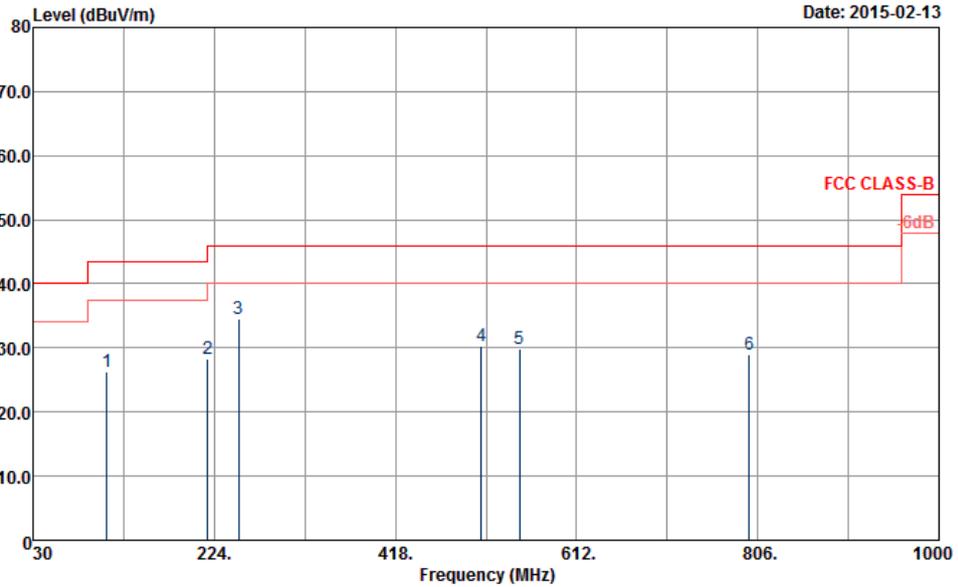
Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m HF-ANT\_583\_140731 VERTICAL

Power : From System  
 Mode : Mode 2

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	34.86	27.14	-12.86	40.00	41.74	16.50	0.69	31.79	---	---	Peak
2	171.75	29.67	-13.83	43.50	50.20	9.62	1.60	31.75	---	---	Peak
3	193.35	26.29	-17.21	43.50	47.54	9.00	1.50	31.75	---	---	Peak
4	366.50	25.19	-20.81	46.00	40.21	14.66	2.11	31.79	---	---	Peak
5	664.00	26.95	-19.05	46.00	37.20	18.95	2.83	32.03	---	---	Peak
6	720.00	36.27	-9.73	46.00	46.23	19.10	2.95	32.01	100	21	Peak
7	1062.00	36.00	-38.00	74.00	65.23	27.74	3.86	60.83	---	---	Peak
8	1960.00	68.62			92.38	31.33	5.40	60.49	---	---	Peak
9	4094.00	38.76	-35.24	74.00	58.63	33.54	8.27	61.68	---	---	Peak
10	6282.00	40.00	-34.00	74.00	55.15	35.58	9.64	60.37	---	---	Peak
11	8326.00	40.72	-33.28	74.00	51.91	35.67	12.71	59.57	---	---	Peak
12	10874.00	41.54	-32.46	74.00	49.74	37.63	13.61	59.44	---	---	Peak
13	11758.00	43.18	-30.82	74.00	48.55	38.46	14.83	58.66	100	0	Peak



Test Mode :	Mode 3	Temperature :	20~23°C
Test Engineer :	Daniel Lee	Relative Humidity :	50~53%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	Data Link with Notebook (with USB Cable 2) + SIM1 + WLAN (2.4GHz) Idle + NFC On		



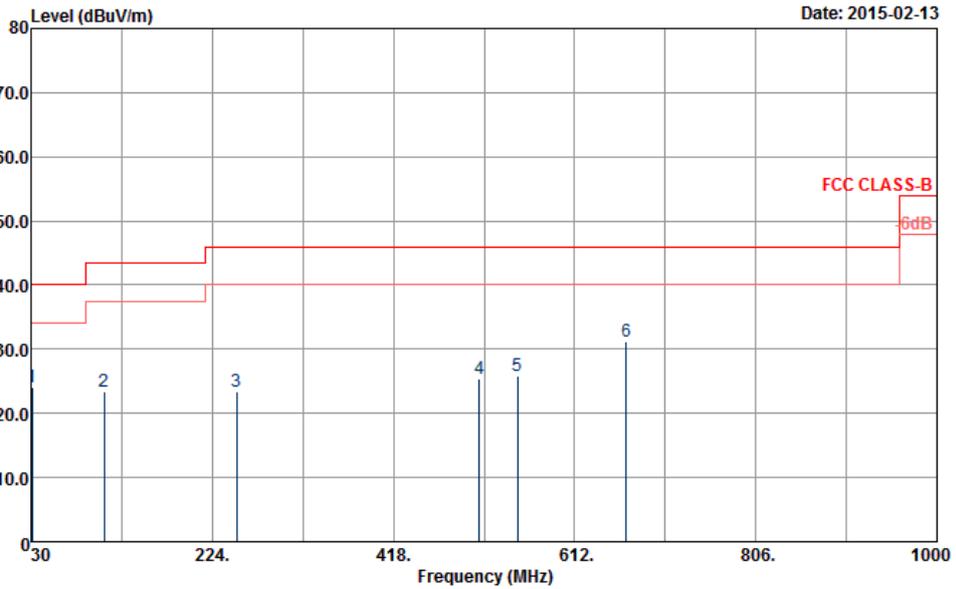
Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BILOG\_131010\_9664 HORIZONTAL

Power : From System  
 Mode : Mode 3

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	108.84	26.33	-17.17	43.50	44.98	11.96	1.14	31.75	---	---	Peak
2	216.84	28.26	-17.74	46.00	49.16	9.23	1.61	31.74	---	---	Peak
3	250.05	34.50	-11.50	46.00	52.21	12.30	1.73	31.74	100	226	Peak
4	510.00	30.29	-15.71	46.00	42.33	17.40	2.50	31.94	---	---	Peak
5	550.60	29.94	-16.06	46.00	40.60	18.80	2.54	32.00	---	---	Peak
6	797.00	28.92	-17.08	46.00	37.91	19.90	3.06	31.95	---	---	Peak



Test Mode :	Mode 3	Temperature :	20~23°C
Test Engineer :	Daniel Lee	Relative Humidity :	50~53%
Test Distance :	3m	Polarization :	Vertical
Function Type :	Data Link with Notebook (with USB Cable 2) + SIM1 + WLAN (2.4GHz) Idle + NFC On		



Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BILOG\_131010\_9664 VERTICAL

Power : From System  
 Mode : Mode 3

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	31.35	24.15	-15.85	40.00	37.27	18.02	0.65	31.79	---	---	Peak
2	108.30	23.44	-20.06	43.50	42.09	11.96	1.14	31.75	---	---	Peak
3	250.05	23.49	-22.51	46.00	41.20	12.30	1.73	31.74	---	---	Peak
4	510.00	25.48	-20.52	46.00	37.52	17.40	2.50	31.94	---	---	Peak
5	550.60	25.92	-20.08	46.00	36.58	18.80	2.54	32.00	---	---	Peak
6	667.50	31.23	-14.77	46.00	41.46	18.97	2.83	32.03	100	52	Peak



## 4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver	Rohde & Schwarz	ESCS 30	100356	9kHz ~ 2.75GHz	Dec. 01, 2014	Dec. 11, 2014~ Feb. 13, 2015	Nov. 30, 2015	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz ~ 30MHz	Dec. 02, 2014	Dec. 11, 2014~ Feb. 13, 2015	Dec. 01, 2015	Conduction (CO05-HY)
LISN (for auxiliary equipment)	Rohde & Schwarz	ENV216	100081	9kHz ~ 30MHz	Dec. 08, 2014	Dec. 11, 2014~ Feb. 13, 2015	Dec. 07, 2015	Conduction (CO05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Dec. 11, 2014~ Feb. 13, 2015	N/A	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Apr. 23, 2014	Dec. 11, 2014~ Feb. 13, 2015	Apr. 22, 2015	Conduction (CO05-HY)
LF Cable	Shuner	RG-402	N/A	N/A	Oct. 07, 2014	Dec. 11, 2014~ Feb. 13, 2015	Oct. 06, 2015	Conduction (CO05-HY)
Test Software	N/A	EMC32	8.40.0	N/A	N/A	Dec. 11, 2014~ Feb. 13, 2015	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESVS10	834468/0003	20MHz-1000M Hz	May. 06, 2014	Dec. 10, 2014~ Feb. 13, 2015	May. 05, 2015	Radiation (03CH06-HY)
Spectrum Analyzer	Agilent	E4408B	MY44211028	9kHz ~ 26.5GHz	Aug. 23, 2014	Dec. 10, 2014~ Feb. 13, 2015	Aug. 22, 2015	Radiation (03CH06-HY)
EMI Test Receiver	Rohde & Schwarz	ESU26	100472	20Hz~26.5GHz	Jan. 15, 2014	Dec. 10, 2014~ Jan. 13, 2015	Jan. 14, 2015	Radiation (03CH06-HY)
EMI Test Receiver	Rohde & Schwarz	ESU26	100472	20Hz~26.5GHz	Jan. 19, 2015	Jan. 19, 2015~ Feb. 12, 2015	Jan. 18, 2016	Radiation (03CH06-HY)
Bilog Antenna	Teseq GmbH	CBL6112D	35379	30MHz -2GHz	Sep. 27, 2014	Dec. 10, 2014~ Feb. 13, 2015	Sep. 26, 2015	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz~18GHz	Jul. 24, 2014	Dec. 10, 2014~ Feb. 13, 2015	Jul. 23, 2015	Radiation (03CH06-HY)
Amplifier	SONOMA	310N	186713	9kHz~1GHz	Apr. 16, 2014	Dec. 10, 2014~ Feb. 13, 2015	Apr. 15, 2015	Radiation (03CH06-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590074	1GHz~18GHz	Jul. 07, 2014	Dec. 10, 2014~ Feb. 13, 2015	Jul. 06, 2015	Radiation (03CH08-HY)
Controller	INN-CO	CO2000	8000604	N/A	N/A	Dec. 10, 2014~ Feb. 13, 2015	N/A	Radiation (03CH06-HY)
Turn Table	INN-CO	DS2000	420/650/00	0 ~ 360 degree	N/A	Dec. 10, 2014~ Feb. 13, 2015	N/A	Radiation (03CH06-HY)
Antenna Mast	MF	MF-7802	MF78020821 2	1 m ~ 4 m	N/A	Dec. 10, 2014~ Feb. 13, 2015	N/A	Radiation (03CH06-HY)
Hygrometer	WISEWIND	410	BU5004	N/A	May. 06, 2014	Dec. 10, 2014~ Feb. 13, 2015	May. 05, 2015	Radiation (03CH06-HY)
RF Cable	HUBER + SUHNER	RG 142	NA	30MHz ~ 1GHz	Nov. 27, 2014	Dec. 10, 2014~ Feb. 13, 2015	Nov. 26, 2015	Radiation (03CH06-HY)
RF Cable	Infinet	LL142	Infinet CA3601-3601 -1000	1GHz ~ 26.5GHz	Nov. 27, 2014	Dec. 10, 2014~ Feb. 13, 2015	Nov. 26, 2015	Radiation (03CH06-HY)
Test Software	Audix	E3	Version 6.2009-8-24	N/A	N/A	Dec. 10, 2014~ Feb. 13, 2015	N/A	Radiation (03CH06-HY)

**Note:** The test equipment calibration is traceable to the ISO17025.





## 5. Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	2.26
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### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	4.50
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