# **FCC Test Report**

**APPLICANT**: Sony Mobile Communications Inc.

**EQUIPMENT**: Smart phone

BRAND NAME : SONY

TYPE NAME : PM-0631-BV FCC ID : PY7-PM0631

STANDARD : FCC 47 CFR FCC Part 15 Subpart B

CLASSIFICATION : FCC CLASS B PERSONAL

**COMPUTERS AND PERIPHERALS** 

The product was received on Oct. 21, 2014 and testing was completed on Nov. 02, 2014. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2009 and shown to be compliant with the applicable technical standards.

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

Reviewed by: Louis Wu / Manager

Louis Win

Approved by: Jones Tsai / Manager



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

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## **REVISION HISTORY**

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC4O2139	Rev. 01	Initial issue of report	Dec. 24, 2014

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## **SUMMARY OF TEST RESULT**

Report Section	FCC Rule	Description	Limit	Result	Remark
					Under limit
3.1	15.107	AC Conducted Emission	< 15.107 limits	PASS	10.30 dB at
					0.150 MHz
					Under limit
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	6.41 dB at
					240.330 MHz

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## 1. General Description

## 1.1. Applicant

Sony Mobile Communications Inc.

Nya Vattentornet, 22188 Lund, Sweden

### 1.2. Manufacturer

Arima Communications Corp.

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

## 1.3. Feature of Equipment Under Test

The Equipment Under Test (hereafter called: EUT) is Smart phone supporting, GSM / WCDMA, Wi-Fi 2.4GHz 802.11b/g/n, Bluetooth with FM Receiver, and GPS features, and below is details of information.

	Product Feature
Equipment	Smart phone
Brand Name	SONY
Type Name	PM-0631-BV
FCC ID	PY7-PM0631
GSM Operating Band(s)	GSM 850/900/1800/1900MHz
GPRS / EGPRS Multi Slot Class	GPRS Class 12, EGPRS Class 12
WCDMA Operating Band(s)	FDD Band I / VIII
WCDMA Rel. Version	Rel. 7
Wi-Fi Specification	802.11b/g/n (HT20/HT40)
Bluetooth Version	v3.0 + EDR / v4.0 - LE
Power Supply	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.

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## 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						
IMEI 1: 004402147901957 IMEI 2: 004402147901965	А	24.0.B.0.16	FT4A12D43539	Conducted Emission Radiated Spurious Emission						

	Accessory List				
Battery Model No. : Charles					
	Model No.: MH410c				
Earphone	Type No. : AG-1103				
	S/N: 1411204B00BC72C				
	Model No.: EC450				
USB Cable 1	Type No. : AI-0700				
	S/N: 1412D01471694				
	Model No.: EC300				
USB Cable 2	Type No. : AI-1000				
	S/N: 14280D76058321C				

#### 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.

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### 1.6. Test Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1022 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

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

## 1.7. Applied Standards

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

- FCC 47 CFR FCC Part 15 Subpart B
- ANSI C63.4-2009

#### Remark:

- 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.

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## 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.

		Test Condition		
Item	EUT Configuration	EMI	EMI	
		AC	RE	
1.	Data Link with Notebook	$\boxtimes$	$\boxtimes$	

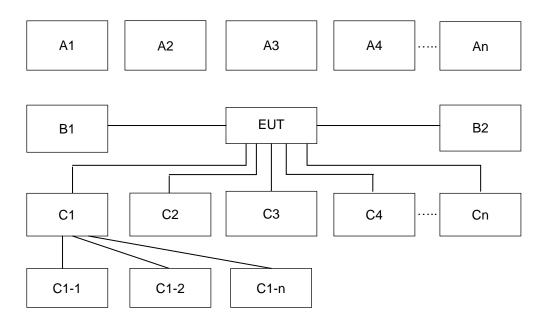
The data application (each file size is greater than 30Mbytes) is continuously transferred between the EUT and Notebook connected via USB cable, while GSM, WLAN, and Bluetooth and GPS idle.

#### Abbreviations:

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

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## 2.2. Connection Diagram of Test System



	Radiation and Conduction Test Setup								
Na	M/1001000000000000000000000000000000000	0 (1 7		Test Mode					
No.	Wireless Station	Connection Type	1	2	-	-	-	-	-
A1	BT Earphone	Bluetooth	Х	Х					
A2	System Simulator	GSM	Х	Х					
А3	GPS Station	GPS	Х	Х					
A4	AP router	WiFi	Х	Х					
No.	Power Source	Connection Type	1	2	-	-	-	-	-
B1	Notebook	USB port	Х	Х					
No.	Setup Peripherals	Connection Type	1	2	-	-	-	-	-
C1	Notebook	USB cable	Х	Х					
C1-1	IPod	USB Cable to C1	Х	Х					
C1-2	AP router	RJ-45 Cable to C1	Х	Х					
C2	Earphone	Earphone jack	Х	Х					
Co	CD cord	SD I/O interface	х	х					
C3	SD card	without cable	^	<b>X</b>					

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## 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.	GPS Station	Pendulum	GSG-54	N/A	N/A	Unshielded, 1.8 m
3.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
4.	WLAN AP	D-Link	DIR-865L	KA2IR865LA1	N/A	Unshielded, 1.8 m
5.	Bluetooth Earphone	Sony	SBH20	PY7-RD0010	Unshielded, 0.75m	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.	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 and Bluetooth, WLAN and GPS idle.

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## 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

<sup>\*</sup>Decreases with the logarithm of the frequency.

## 3.1.2 Measuring Instruments

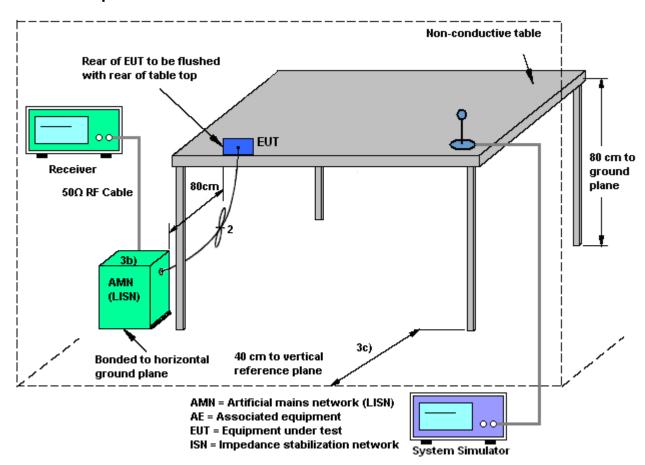
The measuring equipment is listed in the section 4 of this test report.

#### 3.1.3 Test Procedure

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

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## 3.1.4 Test Setup

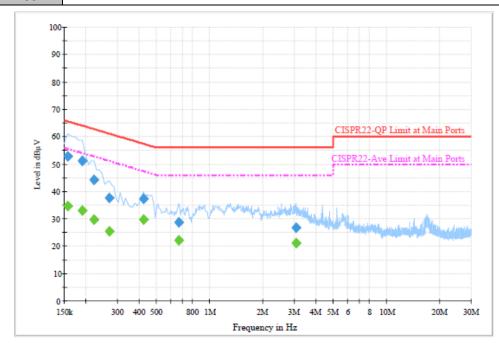


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## 3.1.5 Test Result of AC Conducted Emission

Test Engineer: Eric Jeng Relative Humidity: 46~48%	Test Mode :	Mode 1	Temperature :	21~23℃
	Test Engineer :	Eric Jeng	Relative Humidity :	46~48%
Test Voltage: 120Vac / 60Hz Phase: Line	Test Voltage :	120Vac / 60Hz	Phase :	Line

Function Type: Data Link with Notebook (with USB cable 1) + SIM1



### Final Result : Quasi-Peak

	•					
Frequency	Quasi-Peak	Filter	Line	Corr.	Margin	Limit
(MHz)	(dBµV)	Filler	Line	(dB)	(dB)	(dBµV)
0.158000	52.8	Off	L1	19.4	12.8	65.6
0.190000	51.3	Off	L1	19.5	12.7	64.0
0.222000	44.1	Off	L1	19.5	18.6	62.7
0.270000	37.6	Off	L1	19.5	23.5	61.1
0.422000	37.2	Off	L1	19.5	20.2	57.4
0.670000	28.7	Off	L1	19.5	27.3	56.0
3.078000	26.6	Off	L1	19.6	29.4	56.0

### Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	34.7	Off	L1	19.4	20.9	55.6
0.190000	33.0	Off	L1	19.5	21.0	54.0
0.222000	29.5	Off	L1	19.5	23.2	52.7
0.270000	25.5	Off	L1	19.5	25.6	51.1
0.422000	29.8	Off	L1	19.5	17.6	47.4
0.670000	22.0	Off	L1	19.5	24.0	46.0
3.078000	21.1	Off	L1	19.6	24.9	46.0

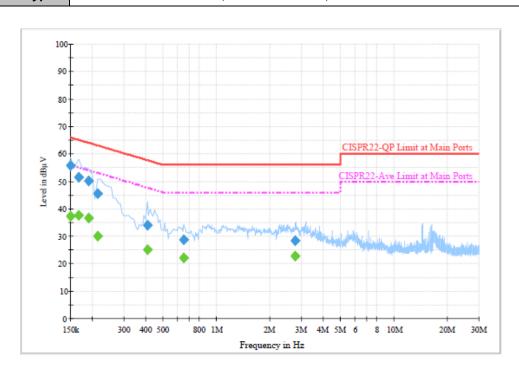
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 Test Mode :
 Mode 1
 Temperature :
 21~23°C

 Test Engineer :
 Eric Jeng
 Relative Humidity :
 46~48%

 Test Voltage :
 120Vac / 60Hz
 Phase :
 Neutral

Function Type: Data Link with Notebook (with USB cable 1) + SIM1



#### Final Result : Quasi-Peak

Frequency	Quasi-Peak	Filter	Line	Corr.	Margin	Limit
(MHz)	(dBµV)	I IIICI	Line	(dB)	(dB)	(dBµV)
0.150000	55.7	Off	N	19.5	10.3	66.0
0.166000	51.5	Off	N	19.5	13.7	65.2
0.190000	50.3	Off	N	19.5	13.7	64.0
0.214000	45.5	Off	N	19.5	17.5	63.0
0.406000	33.9	Off	N	19.5	23.8	57.7
0.654000	28.6	Off	N	19.5	27.4	56.0
2.758000	28.5	Off	N	19.5	27.5	56.0

### Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	37.1	Off	N	19.5	18.9	56.0
0.166000	37.7	Off	N	19.5	17.5	55.2
0.190000	36.6	Off	N	19.5	17.4	54.0
0.214000	30.0	Off	N	19.5	23.0	53.0
0.406000	25.1	Off	N	19.5	22.6	47.7
0.654000	22.0	Off	N	19.5	24.0	46.0
2.758000	22.7	Off	N	19.5	23.3	46.0

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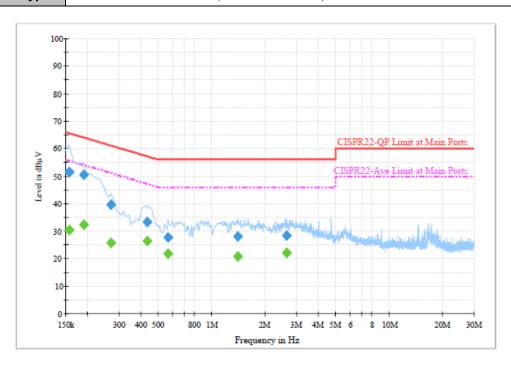
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Test Mode :
Mode 2
Temperature :
21~23℃

Test Engineer :
Eric Jeng
Relative Humidity :
46~48%

Test Voltage :
120Vac / 60Hz
Phase :
Line

Function Type: Data Link with Notebook (with USB cable 2) + SIM2



### Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	51.4	Off	L1	19.4	14.2	65.6
0.190000	50.4	Off	L1	19.5	13.6	64.0
0.270000	39.7	Off	L1	19.5	21.4	61.1
0.430000	33.4	Off	L1	19.5	23.9	57.3
0.566000	27.8	Off	L1	19.5	28.2	56.0
1.406000	28.2	Off	L1	19.5	27.8	56.0
2.646000	28.2	Off	L1	19.5	27.8	56.0

#### Final Result : Average

mar Result : Average									
Frequency	Average	Filter	Line	Corr.	Margin	Limit			
(MHz)	(dBµV)	I IIICI	0	(dB)	(dB)	(dBµV)			
0.158000	30.4	Off	L1	19.4	25.2	55.6			
0.190000	32.3	Off	L1	19.5	21.7	54.0			
0.270000	25.7	Off	L1	19.5	25.4	51.1			
0.430000	26.5	Off	L1	19.5	20.8	47.3			
0.566000	21.9	Off	L1	19.5	24.1	46.0			
1.406000	20.7	Off	L1	19.5	25.3	46.0			
2.646000	22.1	Off	L1	19.5	23.9	46.0			

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Test Voltage :

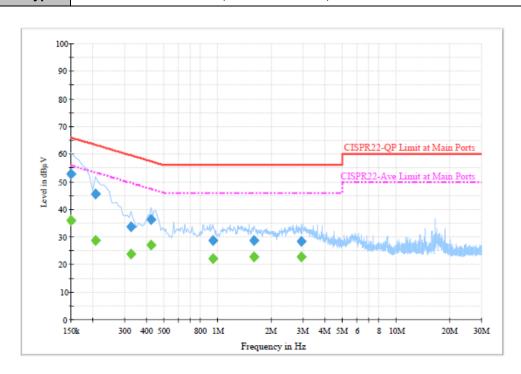
Test Mode :
Mode 2
Temperature :
21~23℃

Test Engineer :
Eric Jeng
Relative Humidity :
46~48%

Phase:

Function Type: Data Link with Notebook (with USB cable 2) + SIM2

120Vac / 60Hz



#### Final Result : Quasi-Peak

Frequency	Quasi-Peak	Filter	Line	Corr.	Margin	Limit
(MHz)	(dBµV)	1 1101	0	(dB)	(dB)	(dBµV)
0.150000	52.9	Off	N	19.5	13.1	66.0
0.206000	45.7	Off	N	19.5	17.7	63.4
0.326000	33.6	Off	N	19.5	26.0	59.6
0.422000	36.4	Off	N	19.5	21.0	57.4
0.934000	28.8	Off	N	19.5	27.2	56.0
1.582000	28.6	Off	N	19.5	27.4	56.0
2.926000	28.4	Off	N	19.6	27.6	56.0

#### Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	36.0	Off	N	19.5	20.0	56.0
0.206000	28.6	Off	N	19.5	24.8	53.4
0.326000	23.9	Off	N	19.5	25.7	49.6
0.422000	27.1	Off	N	19.5	20.3	47.4
0.934000	22.0	Off	N	19.5	24.0	46.0
1.582000	22.9	Off	N	19.5	23.1	46.0
2.926000	22.8	Off	N	19.6	23.2	46.0

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Neutral

### 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

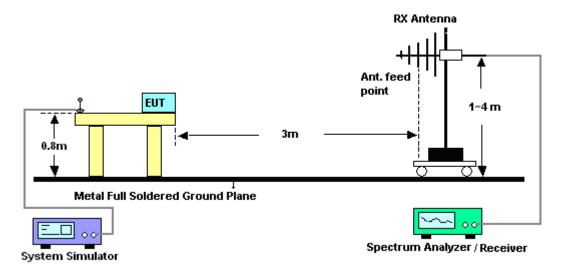
- 1. The EUT was placed on a turntable with 0.8 meter above ground.
- 2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
- 3. The table was rotated 360 degrees to determine the position of the highest radiation.
- 4. The 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.
- 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.

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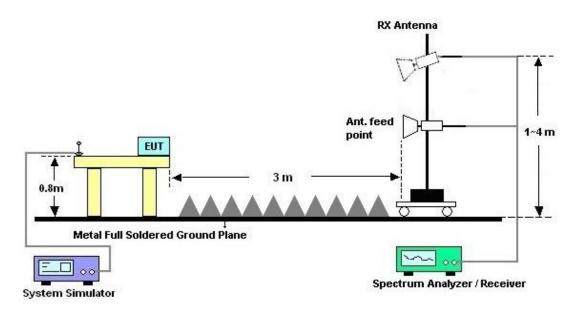
Report No.: FC402139

## 3.2.4. Test Setup of Radiated Emission

### For radiated emissions from 30MHz to 1GHz



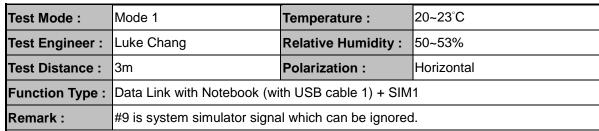
#### For radiated emissions above 1GHz

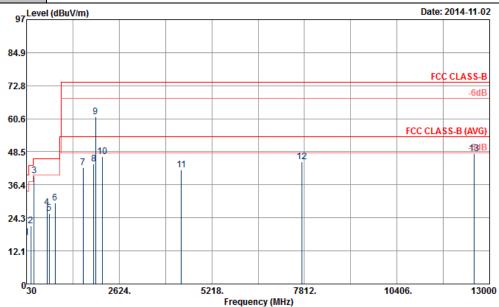


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### 3.2.5. Test Result of Radiated Emission





Site : 03CH06-HY

Condition : FCC CLASS-B 3m HF-ANT\_583\_140731 HORIZONTAL

Project : 402139
Power : From System
Mode : Mode 1

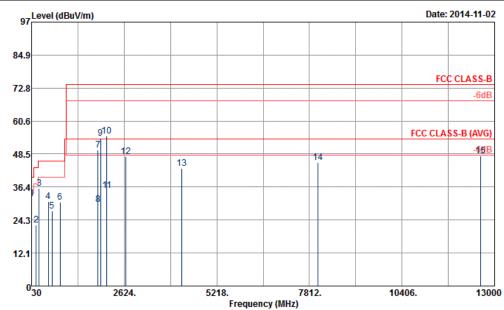
wode		wode I									
	Freq	Level	Over Limit	Limit Line		Antenna Factor		Preamp Factor	A/Pos	T/Pos	Remark
	MHz	$\overline{d}\overline{B}\overline{u}\overline{V}\overline{/}\overline{m}$	<u>dB</u>	$\overline{\mathtt{d}}\overline{\mathtt{B}}\overline{\mathtt{u}}\overline{\mathtt{V}}\overline{\mathtt{I}}\overline{\mathtt{m}}$	—dBu∀	$\overline{dB/m}$	<u>dB</u>	<u>dB</u>		deg	
1	32.70			40.00	31.31	16.70	0.67	31.79			Peak
2 3	147.45 240.33	21.48 39.59	-22.02 -6.41	43.50 46.00	41.26 58.15	10.64 11.49	1.33 1.69	31.75 31.74	121	253	Peak Peak
4 5 6	601.00 665.40	28.02 25.99	-17.98 -20.01	46.00 46.00	37.90 35.74	19.41 19.45	2.77 2.83	32.06 32.03			Peak Peak
6 7	828.50 1616.00	29.82 42.74	-16.18 -31.26	46.00 74.00	37.93 69.44	20.56 28.86	3.16 4.86	31.83 60.42			Peak Peak
8	1910.00	44.05	-29.95	74.00	68.11	31.08	5.34	60.48			Peak
9 10	1960.00 2162.00	61.34 46.64	-27.36	74.00	85.10 69.49	31.33 31.79	5.40 5.86	60.49 60.50			Peak Peak
11 12	4364.00 7742.00	41.82 44.87	-32.18 -29.13	74.00 74.00	61.40 57.11	33.91 35.75	8.14 12.16	61.63 60.15			Peak Peak
13	12572.00	47.90	-26.10	74.00	52.79	39.33	15.65	59.87	100	0	Peak

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FCC Test Report No.: FC4O2139

Test Mode :	Mode 1	Temperature :	20~23°C				
Test Engineer :	Luke Chang	Relative Humidity :	50~53%				
Test Distance :	3m	Polarization :	Vertical				
Function Type :	Data Link with Notebook (with USB cable 1) + SIM1						
Domork .	#0 is system simulator signs	Lwhich can be ignered	1				

Remark: #9 is system simulator signal which can be ignored.



Site : 03CH06-HY

Condition : FCC CLASS-B 3m HF-ANT\_583\_140731 VERTICAL

Project : 402139 Power : From System Mode : Mode 1

	Freq	Level	Over Limit	Limit Line		ntenna Factor		Preamp Factor	A/Pos	T/Pos	Remark
	MHz	$\overline{d}\overline{B}\overline{u}\overline{V}\overline{/}\overline{m}$	$\overline{dB}$	dBu∀7m	dBu∀	dB/m	dB	$\overline{d}\overline{B}$	cm	deg	
1 2 3 4 5 6 7 8 9 10 11 12 13	30.81 159.60 240.06 499.50 601.00 833.40 1892.00 1892.00 2142.00 2142.00 2660.00 4238.00 8054.00	32.15 22.53 36.04 31.17 27.48 30.88 50.09 30.04 54.19 55.03 35.26 47.43 43.33 45.37	-7.85 -20.97 -9.96 -14.83 -18.52 -15.12 -23.96 -18.97 -18.74 -26.57 -30.67 -28.63	40.00 43.50 46.00 46.00 46.00 74.00 54.00 74.00 74.00 74.00 74.00 74.00	45.39 42.71 54.60 42.83 37.36 38.89 74.43 54.38 77.95 58.18 69.34 62.49 57.13	17.90 10.10 11.49 17.79 19.41 20.63 30.84 31.33 31.78 31.78 32.27 33.73 35.78	0.65 1.47 1.69 2.48 2.77 5.30 5.30 5.40 5.80 6.49 8.76 12.14	31.79 31.75 31.74 31.93 32.06 31.81 60.48 60.49 60.50 60.50 60.67 61.65 59.68	203  110 110 101 101	74  192 192  93 93	Peak Peak Peak Peak Peak Peak Peak Average Peak Average Peak Peak Peak Peak
15	12618.00	47.96	-26.04	74.00	52.80	39.35	15.70	59.89	100		Peak

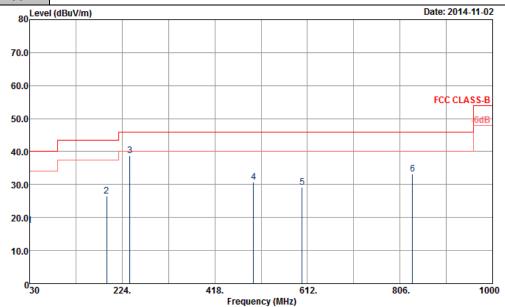
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Report No.: FC4O2139

Test Mode :	Mode 2	Temperature :	20~23°C
Test Engineer :	Luke Chang	Relative Humidity :	50~53%
Test Distance :	3m	Polarization :	Horizontal

Function Type: Data Link with Notebook (with USB cable 2) + SIM2



Site : 03CH06-HY

 ${\it Condition} \qquad : {\it FCC~CLASS-B~3m~BILO6\_131010~HORIZONTAL}$ 

Project : 402139
Power : From System
Mode : Mode 2

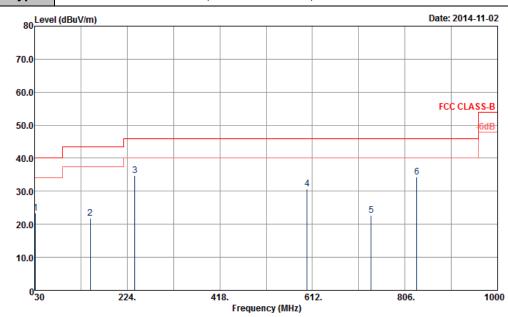
	Freq	Level		Limit Line							Remark
	MHz	$\overline{d}\overline{B}\overline{u}\overline{V}\overline{/m}$	$\phantom{aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa$	$\overline{\mathtt{d}}\overline{\mathtt{B}}\overline{\mathtt{u}}\overline{\mathtt{V}}7\overline{\mathtt{m}}$	d <u>Bu</u> ₹	$\overline{dB/m}$	<u>dB</u>	$\phantom{aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa$		deg	
1	30.00	17.57	-22.43	40.00	30.23	18.50	0.64	31.80			Peak
2	191.46	26.42	-17.08	43.50	47.58	9.10	1.49	31.75			Peak
2 3	240.06	38.87	-7.13	46.00	57.43	11.49	1.69	31.74	100	204	Peak
4	499.50	30.76	-15.24	46.00	42.42	17.79	2.48	31.93			Peak
5	601.00	29.17	-16.83	46.00	39.05	19.41	2.77	32.06			Peak
б		33.26	-12.74	46.00	41.29	20.62	3.17	31.82			Peak

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FCC Test Report No. : FC4O2139

Test Mode :Mode 2Temperature :20~23°CTest Engineer :Luke ChangRelative Humidity :50~53%Test Distance :3mPolarization :Vertical

Function Type : Data Link with Notebook (with USB cable 2) + SIM2



Site : 03CH06-HY

Condition : FCC CLASS-B 3m BILO6\_131010 VERTICAL

Project : 402139 Power : From System Mode : Mode 2

	Freq	Level		Limit Line						
	MHz	$\overline{d}\overline{B}\overline{u}\overline{V}\overline{/m}$	₫B	$\overline{\tt dBuV/m}$	dBu∇	<u>dB</u> /m	dB	$\overline{dB}$	cm	deg
1 2		23.50 21.74		40.00 43.50	37.33 41.54		0.66 1.33	31.79 31.75		Peak Peak
3 4	240.06 601.00			46.00 46.00	53.31 40.60	11.49 19.41	1.69 2.77	31.74 32.06	221	90 Peak Peak
5 6	735.40 830.60		-23.27 -11.76	46.00 46.00	31.68 42.30	20.05 20.60	3.00 3.16	32.00 31.82		Peak Peak

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## 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	Nov. 15, 2013	Nov. 01, 2014	Nov. 14, 2014	Conduction (CO05-HY)	
LISN (for auxiliary equipment)	Rohde & Schwarz	ENV216	100081	9kHz ~ 30MHz	Dec. 12, 2013	Nov. 01, 2014	Dec. 11, 2014	Conduction (CO05-HY)	
LISN	Rohde & Schwarz	ENV216	100080	9kHz ~ 30MHz	Dec. 04, 2013	Nov. 01, 2014	Dec. 03, 2014	Conduction (CO05-HY)	
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Nov. 01, 2014	N/A	Conduction (CO05-HY)	
Hygrometer	Testo	608-H1	34913912	N/A	Apr. 23, 2014	Nov. 01, 2014	Apr. 22, 2015	Conduction (CO05-HY)	
Test Software	N/A	EMC32	8.40.0	N/A	N/A	Nov. 01, 2014	N/A	Conduction (CO05-HY)	
LF Cable	Shuner	RG-402	N/A	N/A	Oct. 07, 2014	Nov. 01, 2014	Oct. 06, 2015	Conduction (CO05-HY)	
EMI Test Receiver	R&S	ESVS10	834468/0003	20MHz ~ 1000MHz	May 06, 2014	Nov. 02, 2014	May 05, 2015	Radiation (03CH06-HY)	
Spectrum Analyzer	Agilent	E4408B	MY44211028	9kHz ~ 26.5GHz	Aug. 23, 2014	Nov. 02, 2014	Aug. 22, 2015	Radiation (03CH06-HY)	
EMI Test Receiver	Rohde & Schwarz	ESU26	100472	20Hz~26.5GHz	Jan. 15, 2014	Nov. 02, 2014	Jan. 14, 2015	Radiation (03CH06-HY)	
Bilog Antenna	Teseq GmbH	CBL6112D	35379	30MHz -2GHz	Sep. 27, 2014	Nov. 02, 2014	Sep. 26, 2015	Radiation (03CH06-HY)	
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz ~ 18GHz	Jul. 24, 2014	Nov. 02, 2014	Jul. 23, 2015	Radiation (03CH06-HY)	
Amplifier	SONOMA	310N	186713	9kHz ~ 1GHz	Apr. 16, 2014	Nov. 02, 2014	Apr. 15, 2015	Radiation (03CH06-HY)	
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1850117	1GHz ~ 18GHz	Apr. 11, 2014	Nov. 02, 2014	Apr. 10, 2015	Radiation (03CH06-HY)	
Turn Table	INN-CO	DS2000	420/650/00	0 ~ 360 degree	N/A	Nov. 02, 2014	N/A	Radiation (03CH06-HY)	
Antenna Mast	MF	MF-7802	MF780208212	1 m ~ 4 m	N/A	Nov. 02, 2014	N/A	Radiation (03CH06-HY)	
Hygrometer	WISEWIND	0410	BU5004	N/A	May 06, 2014	Nov. 02, 2014	May 05, 2015	Radiation (03CH06-HY)	
RF Cable	HUBER + SUHNER	RG 142	N/A	30MHz ~1GHz	Nov. 28, 2013	Nov. 02, 2014	Nov. 27, 2014	Radiation (03CH06-HY)	
RF Cable	HUBER + SUHNER	SUCOFLEX 104	286027/4	1GHz ~26.5GHz	Nov. 28, 2013	Nov. 02, 2014	Nov. 27, 2014	Radiation (03CH06-HY)	
Test Software	Audix	E3	Version 6.2009-8-24	N/A	N/A	Nov. 02, 2014	N/A	Radiation (03CH06-HY)	

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

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## 5. Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of	2.26
Confidence of 95% (U = 2Uc(y))	2.20

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

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

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