

FCC/IC RF Test Report

APPLICANT	:	Sony Mobile Communications AB
EQUIPMENT	:	Smart phone
BRAND NAME	:	SONY
MODEL NAME	:	D2306
TYPE NAME	:	PM-0723-BV
FCC ID	:	PY7PM-0723
IC	:	4170B-PM0723
STANDARD	:	FCC Part 15 Subpart C §15.247
		IC RSS-210 issue 8
CLASSIFICATION	:	(DTS) Digital Transmission System

The product was received on Nov. 15, 2013 and testing was completed on Dec. 12, 2013. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures 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: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

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

SPORTON INTERNATIONAL INC. TEL : 886-3-327-3456 FAX : 886-3-328-4978 FCC ID : PY7PM-0723 IC : 4170B-PM0723 Page Number: 1 of 62Report Issued Date: Jan. 24, 2014Report Version: Rev. 01



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR3N1535B	Rev. 01	Initial issue of report	Jan. 24, 2014



Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	RSS-210 A8.2(a)	6dB Bandwidth	≥ 0.5MHz	Pass	-
3.1	-	RSS-Gen 4.6.1	99% Bandwidth	-	Pass	-
3.2	15.247(b)(1)	RSS-210 A8.1(b)	Peak Output Power	≤ 30dBm	Pass	-
3.3	15.247(e)	RSS-210 A8.2(b)	Power Spectral Density	≤ 8dBm	Pass	-
3.4	15.247(d)		Conducted Band Edges and Spurious Emission	≤ 20dBc	Pass	-
3.5	15.247(d)	RSS-210 A8.5	Radiated Band Edges and Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 9.29 dB at 30.000 MHz
3.6	15.207	RSS-Gen 7.2.4	AC Conducted Emission 15.207(a)		Pass	Under limit 8.70 dB at 0.190 MHz
3.7	15.203 & RSS-210 15.247(b) A8.4		Antenna Requirement	N/A	Pass	-

SUMMARY OF TEST RESULT



1 General Description

1.1 Applicant

Sony Mobile Communications AB

Nya Vattentornet, 22188 Lund, Sweden

1.2 Manufacturer

Compal Communications, INC.

No. 385, Yangguang Street, Neihu, Taipei 11491, Taiwan

1.3 Feature of Equipment Under Test

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

General Information of Equipment Under Test					
Equipment	Smart phone				
Brand Name	SONY				
Model Name	D2306				
Marketing Name	PM-0723-BV				
FCC ID	PY7PM-0723				
IC	4170B-PM0723				
GSM Operating Band(s)	GSM 850/900/1800/1900MHz				
GPRS / EGPRS Multi Slot Class	GPRS Class 33, EGPRS Class 33				
WCDMA Operating Band(s)	FDD Band I / II / IV / V				
WCDMA Rel. Version	Rel. 8				
LTE Operating Band(s)	FDD Band IV / VII / XVII				
Wi Fi Specification	802.11b/g/n (HT20)				
Wi-Fi Specification	802.11a/n (HT20/HT40)				
Bluetooth Version	v3.0+EDR / v4.0-LE				
NFC Specification	ISO14443A / ISO14443B / Felica				
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.



1.4 Product Specification of Equipment Under Test

Product Specification subjective to this standard					
Tx/Rx Frequency Range	2402 MHz ~ 2480 MHz				
Number of Channels	40				
Carrier Frequency of Each Channel	40 Channel(37 hopping + 3 advertising channel)				
Maximum Output Power to Antenna	1.39 dBm (0.0014 W)				
99% Occupied Bandwidth	1.064MHz				
Antenna Type	PIFA Antenna type with gain 1.55 dBi				
Type of Modulation	GFSK				
EUT #1	IMEI : 004402451442879				
201 #1	S/N : ZH8001NA38				
EUT #2	IMEI : 004402451650869				
201 #2	S/N : 468191348BB				
EUT #3	IMEI : 004402451443497				
201 #3	S/N : ZH8001NA4U				
HW Version	A				
SW Version	18.0.C.0.30				
EUT Stage	Production Unit				

Accessory List					
AC Adapter	Model No. : EP800				
AC Adapter	Type No. : CAA-0002016-US B				
Pottony	Model No. : LIS1502ERPC				
Battery	Type No. : LIS1502ERPC				
Earphone	Model No. : MH410c				
Laiphone	Type No. : AG-1100				
USB Cable	Model No. : AHAB EC450				
	Part No. : 1242-6715.4				

- 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, and the serial number of each type of accessories is listed in each section of this report.
- 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 Testing Site

Test Site	SPORTON INT	SPORTON INTERNATIONAL INC.				
	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park,					
Test Site Location	Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.					
	TEL: +886-3-3273456 / FAX: +886-3-3284978					
Toot Site No	9	Sporton Site No).	FCC/IC Registration No.		
Test Site No.	TH02-HY	CO05-HY	03CH06-HY	722060/4086B-1		

Note: The test site complies with ANSI C63.4 2003 requirement.

1.7 Applied Standards

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

- FCC Part 15 Subpart C §15.247
- FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r01
- ANSI C63.4-2003
- IC RSS-210 Issue 8
- IC RSS-Gen Issue 3
- NOTICE 2012-DRS0126

Remark:

- 1. All test items were verified and recorded according to the standards and without any deviation during the test.
- **2.** This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.
- Per the section 2.2.3 of Notice of 2012-DRS0126, "Receivers Excluded from Industry Canada Requirements", only radiocommunication receivers operating in stand-alone mode within the band 30-960 MHz and scanner receivers are subject to Industry Canada requirements.



2 Test Configuration of Equipment Under Test

2.1 Descriptions of Test Mode

	Frequency	Bluetooth 4.0 – LE RF Output Power
Channel		Data Rate / Modulation
Channel		GFSK
		1Mbps
Ch00	2402MHz	0.36 dBm
Ch19	2440MHz	<mark>1.39</mark> dBm
Ch39	2480MHz	-0.51 dBm

The RF output power was recorded in the following table:

- a. The EUT has been associated with peripherals 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 (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). Pre-scanned tests, X, Y, Z in three orthogonal panels to determine the final configuration (Y plane as worst plane) from all possible combinations.
- b. AC power line Conducted Emission was tested under maximum output power.



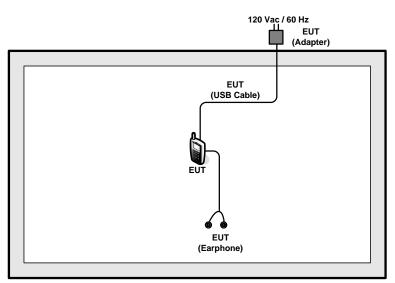
2.2 Test Mode

The following summary table is showing all test modes to demonstrate in compliance with the standard.

	Summary table of Test Cases							
Test Item	Data Rate / Modulation							
Test item	Bluetooth 4.0 – LE / GFSK							
Conducted	Mode 1: Bluetooth Tx CH00_2402 MHz_1Mbps							
TCs	Mode 2: Bluetooth Tx CH19_2440 MHz_1Mbps							
105	Mode 3: Bluetooth Tx CH39_2480 MHz_1Mbps							
Radiated	Mode 1: Bluetooth Tx CH00_2402 MHz_1Mbps							
TCs	Mode 2: Bluetooth Tx CH19_2440 MHz_1Mbps							
TCS	Mode 3: Bluetooth Tx CH39_2480 MHz_1Mbps							
AC	Mode 1: GSM1900 Idle + Bluetooth Link + WLAN Idle + GPS Rx + Earphone + Battery +							
	USB Cable (Data Link with Notebook)							
Conducted	Mode 2: GSM1900 Idle + Bluetooth Idle + WLAN Link + GPS Rx + Earphone + Battery +							
Emission	USB Cable (Data Link with Notebook)							

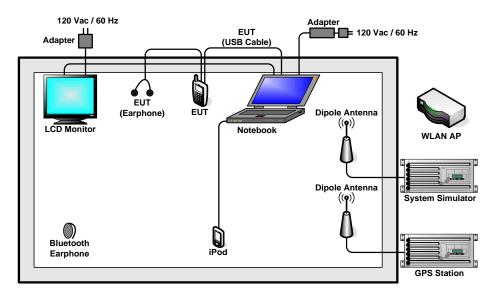
2.3 Connection Diagram of Test System

<Bluetooth 4.0 – LE Tx Mode>



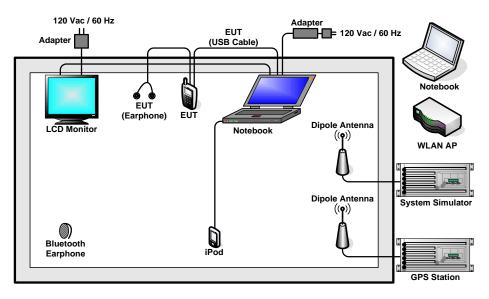
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<AC Conducted Emission Mode in WLAN Idle>

<AC Conducted Emission Mode in WLAN Link>



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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.	Notebook	DELL	Latitude E6320	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
5.	LCD Monitor	DELL	U2410	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m
6.	Bluetooth Earphone	Sony Ericsson	MH755	FCC Doc	N/A	N/A
7.	Bluetooth Body	Sony Ericsson	SBH20	PY7-RD0010	N/A	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 Support Unit used in test configuration and system

2.5 EUT Operation Test Setup

For Bluetooth function, the RF utility, "QPST" was installed in EUT which was programmed in order to make the EUT get into the engineering modes for continuous transmitting and receiving signals.

2.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example :

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 4.2 + 10 = 14.2 (dB)

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3 Test Result

3.1 6dB and 99% Bandwidth Measurement

3.1.1 Limit of 6dB and 99% Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

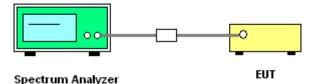
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

- 1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r01.
- 2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 3. Set to the maximum power setting and enable the EUT transmit continuously.
- Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 kHz.
- 5. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 30kHz and set the Video bandwidth (VBW) = 100kHz.
- 6. Measure and record the results in the test report.

3.1.4 Test Setup

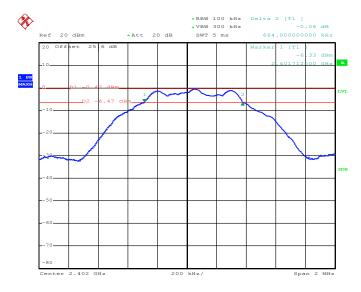




3.1.5 Test Result of 6dB Bandwidth

Test Mode : Bluetooth		h 4.0 - LE	Temperature :	22~25 ℃		
Test Engineer : Citta Ke		Relative Humidity :		51~55%		
Channel		requency (MHz) 6dB Band		lwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
00	24	402 0.		.664	0.5	Pass
19	24	440	0	.660	0.5	Pass
39	24	480	0	.660	0.5	Pass

6 dB Bandwidth Plot on Channel 00

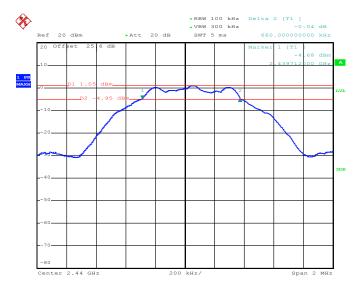


Date: 12.DEC.2013 16:33:24

Note: The total loss is 25.4 dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.

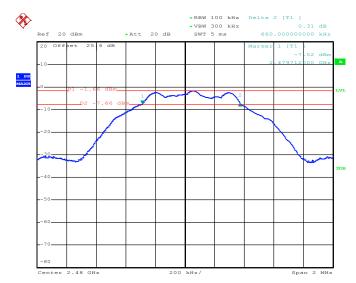
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6 dB Bandwidth Plot on Channel 19

Date: 12.DEC.2013 16:38:34



6 dB Bandwidth Plot on Channel 39

Date: 12.DEC.2013 16:42:09

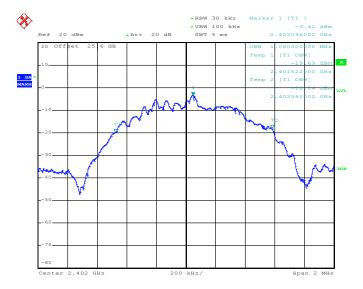
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3.1.6 Test Result of 99% Occupied Bandwidth

Test Mode : Bluetooth 4.0 - LE		Ter	nperature :	22~25 ℃	
Test Engineer :	Citta K	e Relative Humidity :		51~55%	
Channel Frequency (MHz))	99% Occu	pied Bandwidth (MHz)	
00		2402			1.060
19		2440			1.060
39		2480			1.064

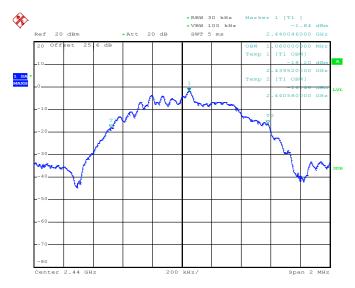
99% Bandwidth Plot on Channel 00



Date: 12.DEC.2013 16:45:14

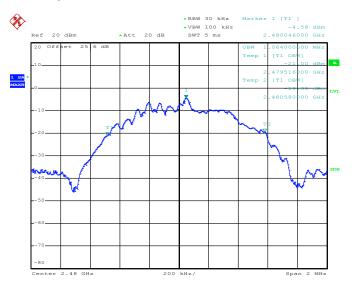
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99% Occupied Bandwidth Plot on Channel 19

Date: 12.DEC.2013 16:40:05



99% Occupied Bandwidth Plot on Channel 39

Date: 12.DEC.2013 16:43:40

Note: The total loss is 25.4 dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.

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3.2 Peak Output Power Measurement

3.2.1 Limit of Peak Output Power

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. If transmitting antenna of directional gain greater than 6dBi is used, the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

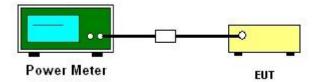
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

- The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v03r01.
- 2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 3. Set to the maximum power setting and enable the EUT transmit continuously.
- 4. Measure the conducted output power and record the results in the test report.

3.2.4 Test Setup



3.2.5 Test Result of Peak Output Power

Test Mode :	Test Mode : Bluetooth 4.0 - LE		Temperature :		22~25 ℃	
Test Engineer : Citta Ke		Relative Humidity : 51~55%				
	F		R	F Powe	er (dBm)	
Channel	Frequency	(GFSK	М	ax. Limits	Pass/Fail
	(MHz)	1	Mbps	(dBm)	(dBm)	Pass/Fail
00	2402		0.36		30.00	Pass
19	2440		1.39		30.00	Pass
39	2480		-0.51		30.00	Pass



3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.

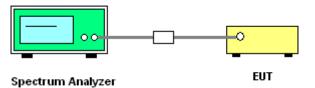
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

- The testing follows Measurement Procedure 10.2 Method PKPSD of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r01
- 2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 3. Set to the maximum power setting and enable the EUT transmit continuously.
- Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz.
 Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
- 5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
- 6. Measure and record the results in the test report.
- 7. The Measured power density (dBm)/ 100kHz is a reference level and used as 20dBc down limit line for Conducted Band Edges and Conducted Spurious Emission.

3.3.4 Test Setup



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3.3.5 Test Result of Power Spectral Density

Test Mode : Bluetooth 4.0 - LE		Temperature :	22~25 ℃			
Test Eng	Test Engineer : Citta Ke Relative Humidity : 51~5		51~55%			
Channal	Freque	ncy	Power I	Density	Max. Limits	Dece/Feil
Channel	(MHz)	PSD/100kHz (dBm)	PSD/3kHz (dBm)	(dBm/3kHz)	Pass/Fail
00	2402	2	-0.46	-15.82	8	Pass
19	2440)	1.05	-14.24	8	Pass
39	2480)	-1.66	-16.90	8	Pass

Note:

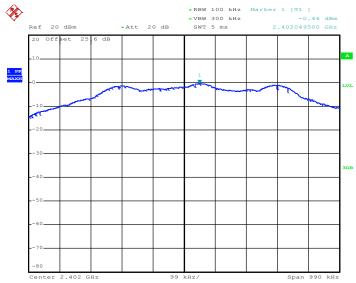
1. The total loss is 25.6 dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.

2. Measured power density (dBm) has offset with cable loss.

3. The Measured power density (dBm)/ 100kHz is reference level and used as 20dBc down for Conducted Band Edges and Conducted Spurious Emission limit line.

3.3.6 Test Result of Power Spectral Density Plots (100kHz)

PSD 100kHz Plot on Channel 00



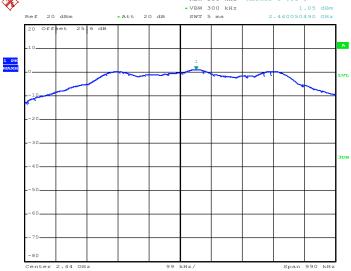
Date: 12.DEC.2013 16:34:41

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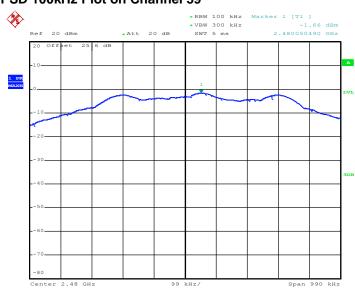




PSD 100kHz Plot on Channel 19



Date: 12.DEC.2013 16:39:16



PSD 100kHz Plot on Channel 39

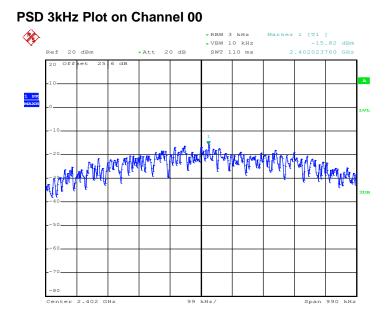
Date: 12.DEC.2013 16:42:38

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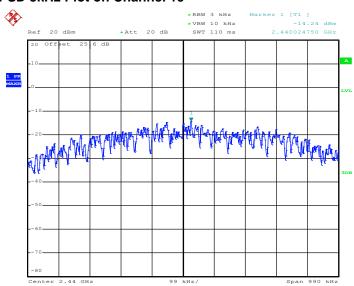
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3.3.7 Test Result of Power Spectral Density Plots (3kHz)



Date: 12.DEC.2013 16:34:16

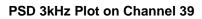


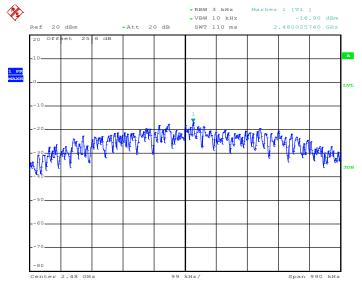
PSD 3kHz Plot on Channel 19

Date: 12.DEC.2013 16:38:57

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Date: 12.DEC.2013 16:42:29

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3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission

All harmonics/spurious must be at least 20 dB down from the highest emission level within the authorized band.

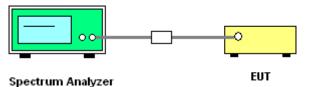
3.4.2 Measuring Instruments

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

3.4.3 Test Procedure

- 1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r01.
- 2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 3. Set to the maximum power setting and enable the EUT transmit continuously.
- 4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).
- 5. Measure and record the results in the test report.
- 6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.4.4 Test Setup



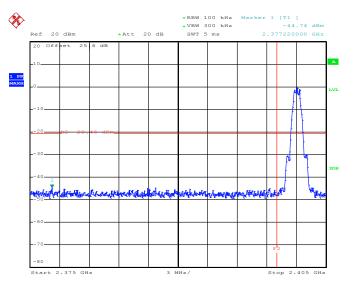
SPORTON INTERNATIONAL INC. TEL : 886-3-327-3456 FAX : 886-3-328-4978 FCC ID : PY7PM-0723 IC : 4170B-PM0723



3.4.5 Test Result of Conducted Band Edges

Test Mode :	Bluetooth 4.0 - LE	Temperature :	22~25 ℃
Test Channel :	00 and 39	Relative Humidity :	51~55%
		Test Engineer :	Citta Ke

Low Band Edge Plot on Channel 00

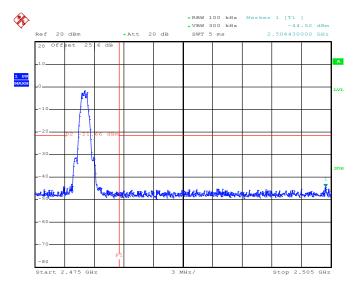


Date: 12.DEC.2013 16:35:12

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Date: 12.DEC.2013 16:42:51

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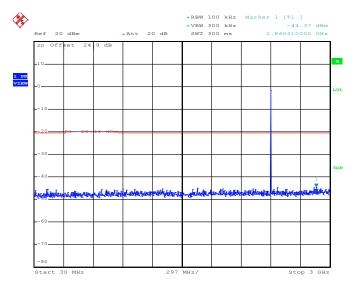


3.4.6 Test Result of Conducted Spurious Emission

Test Mode :	Bluetooth 4.0 - LE	Temperature :	22~25 ℃
Test Channel :	00	Relative Humidity :	51~55%
		Test Engineer :	Citta Ke

Conducted Spurious Emission Plot on Bluetooth LE 1Mbps

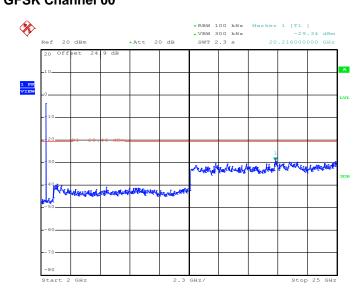
GFSK Channel 00



Date: 12.DEC.2013 16:35:36

- 1. The total loss is 24.9 of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.
- 2. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.





Conducted Spurious Emission Plot on Bluetooth LE 1Mbps GFSK Channel 00

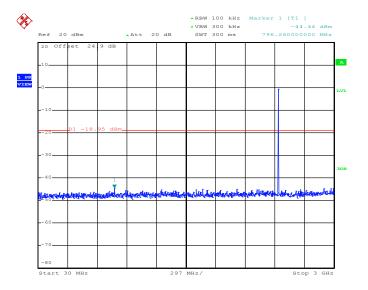
Date: 12.DEC.2013 16:35:54

- 1. The total loss is 24.9 of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.
- 2. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.



Test Mode :	Bluetooth 4.0 - LE	Temperature :	22~25 ℃
Test Channel :	19	Relative Humidity :	51~55%
		Test Engineer :	Citta Ke

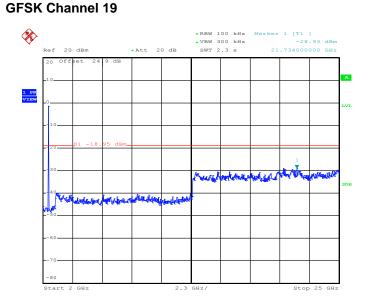
Conducted Spurious Emission Plot on Bluetooth LE 1Mbps GFSK Channel 19



Date: 12.DEC.2013 16:39:36

- 1. The total loss is 24.9 of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.
- 2. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.





Conducted Spurious Emission Plot on Bluetooth LE 1Mbps

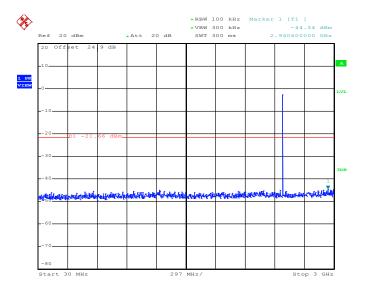
Date: 12.DEC.2013 16:39:54

- 1. The total loss is 24.9 of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.
- 2. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.



Test Mode :	Bluetooth 4.0 - LE	Temperature :	22~25 ℃
Test Channel :	39	Relative Humidity :	51~55%
		Test Engineer :	Citta Ke

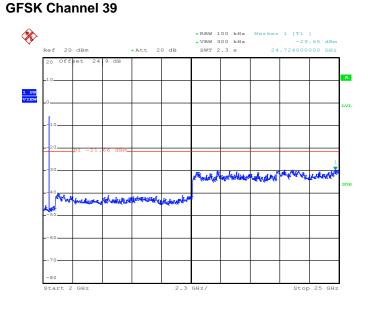
Conducted Spurious Emission Plot on Bluetooth LE 1Mbps GFSK Channel 39



Date: 12.DEC.2013 16:43:11

- 1. The total loss is 24.9 of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.
- 2. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.





Conducted Spurious Emission Plot on Bluetooth LE 1Mbps

Date: 12.DEC.2013 16:43:29

- 1. The total loss is 24.9 of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.
- 2. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.



3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated Band Edges and Spurious Emission

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the FCC section 15.209 limits as below.

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

3.5.2 Measuring Instruments

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



3.5.3 Test Procedures

- 1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r01.
- 2. 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. A pre-amp and a high pass filter are used for the test in order to get better signal level.
- 3. The EUT was placed on a turntable with 0.8 meter above ground.
- 4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
- 5. Corrected Reading: Antenna Factor + Cable Loss + Read Level Preamp Factor = Level
- 6. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
- 7. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW=100 kHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold;

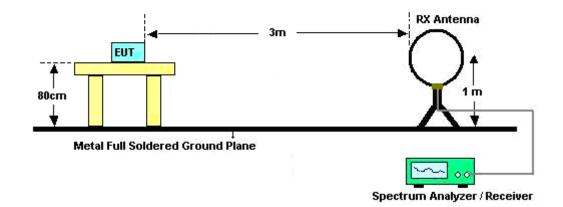
(3) Set RBW = 1 MHz, VBW= 3MHz for $f \ge 1$ GHz for peak measurement. For average measurement:

- VBW = 10 Hz, when duty cycle is no less than 98 percent.
- VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

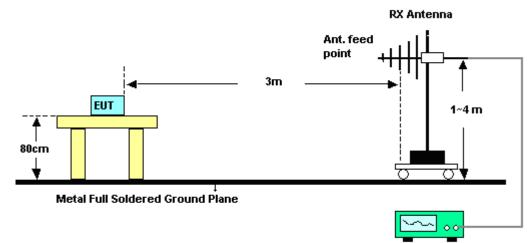
Band	Duty Cycle(%)	T(µs)	1/T(kHz)	VBW Setting
Bluetooth 4.0 - LE	62.66	396.00	2.52	3kHz

3.5.4 Test Setup

For radiated emissions below 30MHz

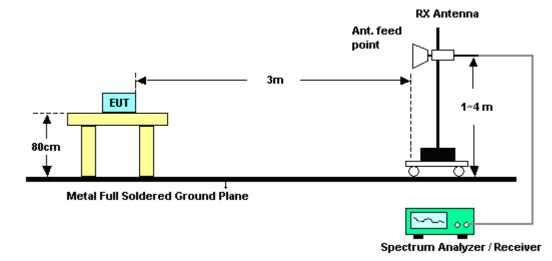


For radiated emissions from 30MHz to 1GHz



Spectrum Analyzer / Receiver

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For radiated emissions above 1GHz

3.5.5 Test Results of Radiated Spurious Emissions (9 kHz ~ 30 MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

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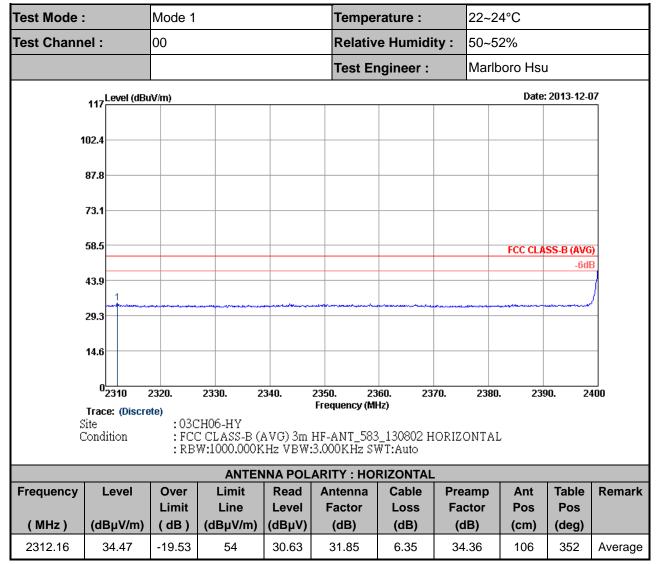


Test Mode :		Mode 1			Ten	perature :		22~2	4°C		
Test Channe	el :	00			Rel	ative Humi	dity :	50~5	2%		
					Tes	t Engineer	:	Marlb	oro Hsu	I	
1	17	V/m)		1					Date: 3	2013-12-07	,
10	2.4										
8	7.8										
7	3.1								FCC	CLASS-B -6dB	
5	8.5										
4	3.9 Mahalmatanaka	nyakanterinterinterinteri	w.Martalapter.managati	halphathlathla	hand	wheese and a state of the state	araf and an, disperap	enan debugean in	-	the start of the start	
2	9.3										
1	4.6										
т	0 2310 2 race: (Discret		2330. 23		350. Frequency		370.	2380.	2390). 24])0
Sit		: 03C : FCC	H06-HY CLASS-B 3m V:1000.000KI	n HF-ANT Hz VBW:3	_583_13 000.000	0802 HORIZ KHz SWT:Au	ONTAL to				
				1	ARITY :	HORIZONT	1				
Frequency	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Anten Facto (dB)		Fa	amp ctor IB)	Ant Pos (cm)	Table Pos (deg)	Remark
\ /											

3.5.6 Test Result of Radiated Spurious at Band Edges

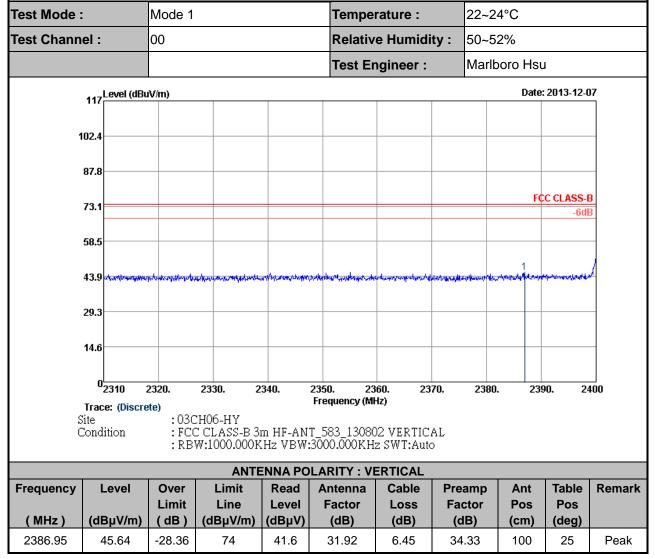
Note: Worst case measurement on 2355.18 MHz is compliance with 74/54 dBuV/m (peak/average) limit and Edge Measurement in the restricted band 2310-2390MHz. And, 2390-2400 MHz is non-restricted band which limit line is 20dB below the fundamental frequency emission level which is tested by conducted spurious emission. Both the test results are compliance with the FCC limit line.





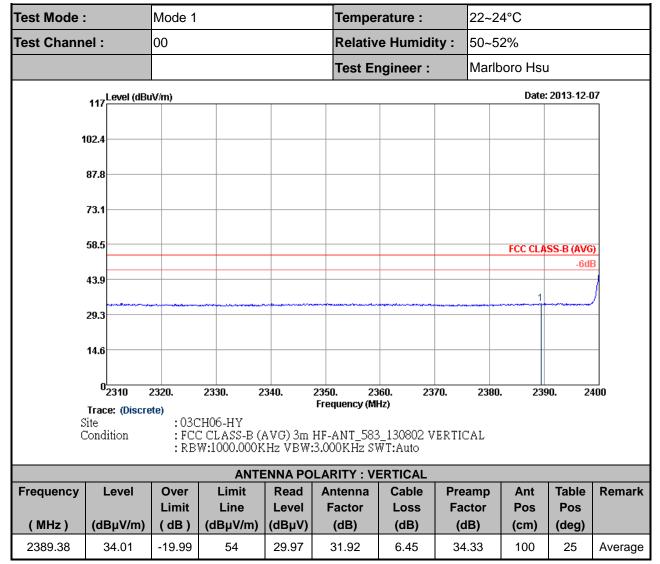
Note: Worst case measurement on 2312.16 MHz is compliance with 74/54 dBuV/m (peak/average) limit and Edge Measurement in the restricted band 2310-2390MHz. And, 2390-2400 MHz is non-restricted band which limit line is 20dB below the fundamental frequency emission level which is tested by conducted spurious emission. Both the test results are compliance with the FCC limit line.





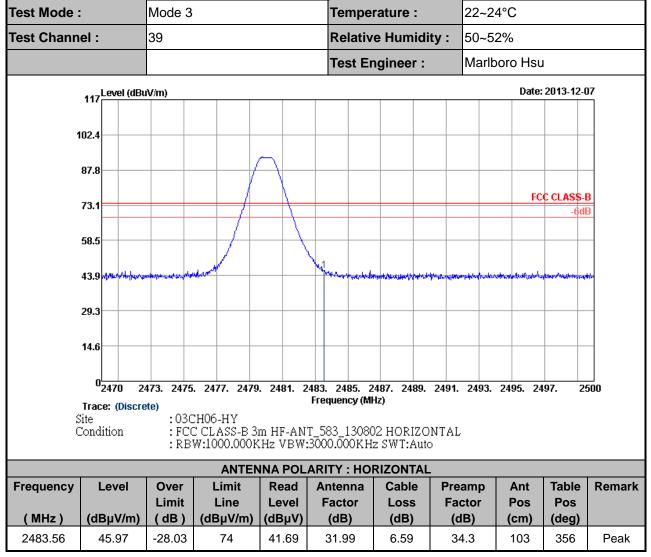
Note: Worst case measurement on 2386.95 MHz is compliance with 74/54 dBuV/m (peak/average) limit and Edge Measurement in the restricted band 2310-2390MHz. And, 2390-2400 MHz is non-restricted band which limit line is 20dB below the fundamental frequency emission level which is tested by conducted spurious emission. Both the test results are compliance with the FCC limit line.





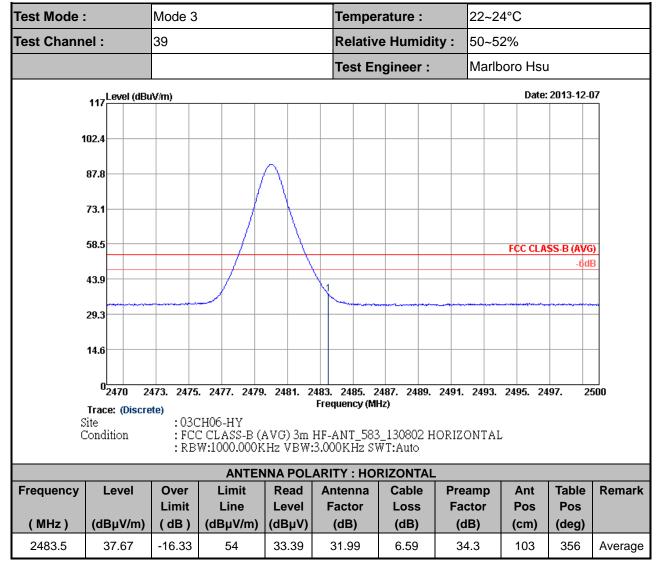
Note: Worst case measurement on 2389.38 MHz is compliance with 74/54 dBuV/m (peak/average) limit and Edge Measurement in the restricted band 2310-2390MHz. And, 2390-2400 MHz is non-restricted band which limit line is 20dB below the fundamental frequency emission level which is tested by conducted spurious emission. Both the test results are compliance with the FCC limit line.





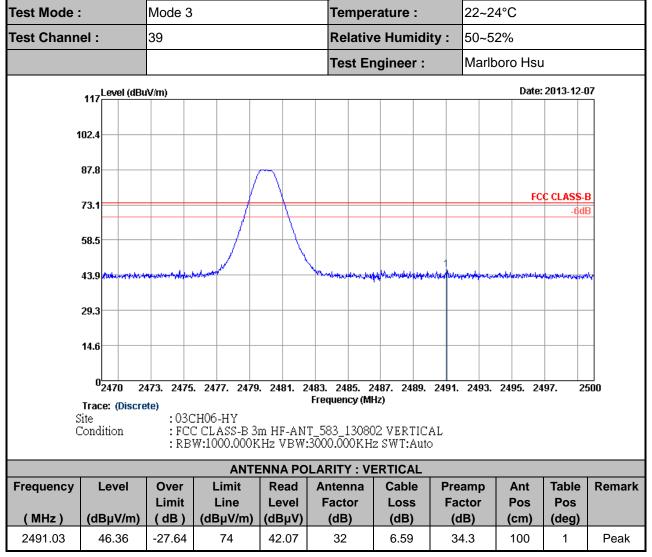
Note: Worst case measurement on 2483.56 MHz is compliance with 74/54 dBuV/m (peak/average) limit and Edge Measurement in the restricted band 2483.5-2500 MHz. And, 2470-2483.5 MHz is non-restricted band which limit line is 20dB below the fundamental frequency emission level which is tested by conducted spurious emission. Both the test results are compliance with the FCC limit line.





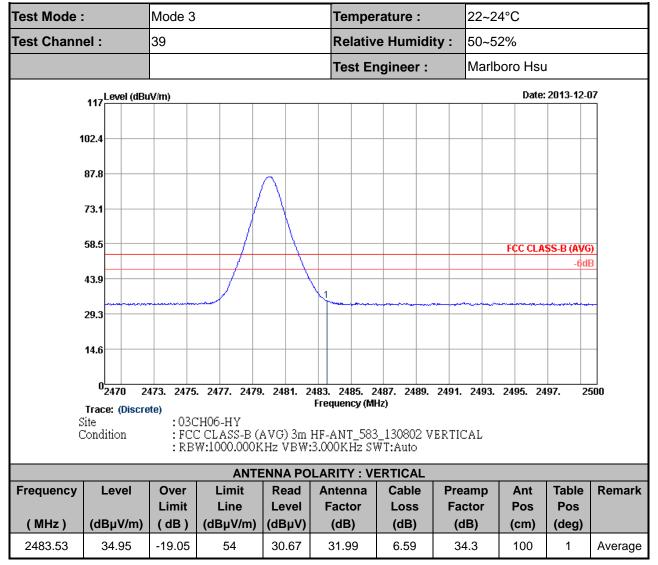
Note: Worst case measurement on 2483.50 MHz is compliance with 74/54 dBuV/m (peak/average) limit and Edge Measurement in the restricted band 2483.5-2500 MHz. And, 2470-2483.5 MHz is non-restricted band which limit line is 20dB below the fundamental frequency emission level which is tested by conducted spurious emission. Both the test results are compliance with the FCC limit line.





Note: Worst case measurement on 2491.03 MHz is compliance with 74/54 dBuV/m (peak/average) limit and Edge Measurement in the restricted band 2483.5-2500 MHz. And, 2470-2483.5 MHz is non-restricted band which limit line is 20dB below the fundamental frequency emission level which is tested by conducted spurious emission. Both the test results are compliance with the FCC limit line.





Note: Worst case measurement on 2483.53 MHz is compliance with 74/54 dBuV/m (peak/average) limit and Edge Measurement in the restricted band 2483.5-2500 MHz. And, 2470-2483.5 MHz is non-restricted band which limit line is 20dB below the fundamental frequency emission level which is tested by conducted spurious emission. Both the test results are compliance with the FCC limit line.



3.5.7 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic)

Note: Pre-scanned all test modes and only choose the worst case mode recorded in the test report for radiated spurious emission below 1GHz.

Test Mode :	Mod	le 1			Tempe	erature	:	22~24°0	2		
Test Channel :	00				Relativ	ve Hum	nidity :	50~52%)		
Test Engineer :	Marl	lboro H	su								
	1.	2402	MHz is fu	ndamei	ntal sigi	nal whic	ch can b	e ignored	d.		
	2.	7206	MHz and	9609 N	IHz are	not wit	hin a res	stricted b	and.		
Remark :	3.	Avera	ge measi	uremen	t was n	ot perf	ormed if	peak lev	/el wer	nt lower	than the
		avera	ge limit.								
	4.	The h	narmonic	(5 th , 6	th , 7 th ,.	etc.)	and oth	ner spuri	ous ar	re not i	eported,
			se those	levels a	re lowe	er than a	average			-	nd noise.
1	17 Level	(dBuV/m)							Date: 2013-1	12-07	
102	2.4										
87	7.8	2									
73	3.1								FCC CLAS	SS-B -6dB	
51	3.5										
			3 4	5				FCC	CLASS-B (-6dB	
43	3.9										
29	9.3										
14	1.6										
	0 <mark>1000</mark>	4000.	6000. 80	100. 10000			6000. 1800	0. 20000. 2	2000.	25000	
Site	е)3СН06-НҮ		Frequen						
Co	ndition	:	FCC CLASS-I				ZONTAL				
Frequency Leve	el	Over	Limit	Rea		itenna	Cable	Preamp	Ant	Table	Remark
(MHz) (dBµV	//m)	Limit (dB)	Line (dBµV/m	Lev) (dB)		actor dB)	Loss (dB)	Factor (dB)	Pos (cm)	Pos (deg)	
2402 89.8		-	-	85		31.92	6.45	34.33	106		Average
2402 91.2	27	-	-	87.2	23 3	31.92	6.45	34.33	106	352	Peak
4803 48.0)4	-25.96	74	59.0	03 3	84.41	10.16	55.56	100	0	Peak
7206 48.0)7	-25.93	74	57.9	91 3	5.68	10.97	56.49	100	0	Peak
9609 47.	6	-26.4	74	56.	76 3	6.32	10.56	56.04	100	0	Peak

Note: Other harmonics are lower than background noise.

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Test Mode	:	Mod	le 1			Temp	peratur	e :	22~24°C)		
Test Chan	nel :	00				Relat	ive Hu	midity :	50~52%			
Test Engin	eer:	Mar	lboro H	su								
		1.	2402	MHz is fun	damer	ntal sig	gnal wh	ich can b	e ignorec	ł.		
		2.	7206	MHz and 9	9609 M	IHz ar	e not w	ithin a res	stricted ba	and.		
Demonitor		3.	Avera	ge measu	remen	t was	not per	formed if	peak lev	vel wen	t lower	than the
Remark :			avera	ge limit.								
		4.	The h	narmonic	(5 th , 6	th , 7 th	,etc.)	and oth	er spuri	ous are	e not r	eported,
			becau	se those le	evels a	re lov	er than	average	limit line	and ba	ckgrour	nd noise.
	11	7 Level	(dBuV/m)						D)ate: 2013-1	2-07	
	102	4										
			2									
	87.	.8										
	73	.1								FCC CLAS	6dB	
	58	.5							FCC	CLASS-B (A	VG)	
	43	.9		3 4	5						6dB	
	29	3										
	23											
	14	.6									_	
		0 <mark>1000</mark>	4000.	6000. 800	0. 10000			16000. 1800	0. 20000. 2	2000. 2	25000	
	Site)3СН06-НҮ	_	-	ency (MHz)					
	Cor	idition	. :	FCC CLASS-B			RTICAL TY : VEI	RTICAL				
Frequency	Leve	el	Over	Limit	Rea		ntenna	Cable	Preamp	Ant	Table	Remark
		(m)	Limit	Line	Lev	-	Factor	Loss	Factor	Pos	Pos	
(MHz) 2402	dBμV 85.8		(dB)	(dBµV/m) -	(dB<u>)</u> ((81.8		(dB) 31.92	(dB) 6.45	(dB) 34.33	(cm) 100	(deg) 25	Average
				_							25 25	
2402	87.2		-	-	83.7		31.92	6.45	34.33	100		Peak
4803	46.7		-27.29	74	57.		34.41	10.16	55.56	100	0	Peak
7206	48.4		-25.58	74	58.2		35.68	10.97	56.49	100	0	Peak
9609	47.1		-26.9	74	56.2	26	36.32	10.56	56.04	100	0	Peak

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Test Mode :	Mod	e 2			Т	emperat	ture :	22~24°C	>		
Test Channel :	19				R	elative	Humidity :	50~52%)		
Test Engineer :	Mar	lboro H	su								
	1.	2440 I	MHz is	fund	amenta	al signal	which can l	e ignored	ł.		
	2.	9759 l	MHz is	not v	within a	restricte	ed band.				
	3.	Avera	ge mea	asure	ement v	vas not	performed i	f peak lev	vel wen	t lower	than the
Remark :		avera	- ge limit								
	4.		-		5 th . 6 th .	7 th et	c.) and ot	her spuri	ous ar	e not r	eported
						-	í nan average	•			•
	17 ^{Level}	(dBuV/m))ate: 2013-1	-	
	"										
102	2.4	_									
87	7.8	1									
									FCC CLAS	S-B	
73	3.1									6dB	
58	3.5				5			FCC	CLASS-B (A		
43	3.9		3	4						6dB	
20	9.3										
14	1.6										
	0 <mark>1000</mark>	4000.	6000.	8000.	10000.	12000. 140	DO. 16000. 180)0. 20000. 2	2000.	25000	
Tr Site		iscrete))3CH06-F	IY		Frequency (M	Hz)				
	ndition		FCC CLA:	SS-B 3r		F HORIZON					
Frequency Leve	el	Over	AN I Lim		A POLA Read	Anten	ORIZONTAL	Preamp	Ant	Table	Remark
		Limit	Lin		Level			Factor	Pos	Pos	
(MHz) (dBµV	//m)	(dB)	(dBµV	/m)	(dBµV) (dB) (dB)	(dB)	(cm)	(deg)	
2440 90.6	6	-	-		86.5	31.9	6 6.52	34.32	109	356	Average
2440 92.1	1	-	-		87.95	31.9	6 6.52	34.32	109	356	Peak
2440 92.1 4881 46.6		- -27.33	- 74		87.95 57.79			34.32 55.68	109 100	356 0	Peak Peak
	67	- -27.33 -25.84	- 74 74			34.3	7 10.19				

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Test Mode	: M	ode 2		Те	mperature	:	22~24°C	;		
Test Chanr	n el: 19)		Re	lative Hun	nidity :	50~52%			
Test Engin	eer: Ma	arlboro H	su							
	1.	2440	MHz is fund	amental	signal whi	ch can b	e ignorec	l.		
	2.	9759	MHz is not	within a r	estricted b	and.				
	3.	Avera	ge measure	ement wa	as not perf	ormed if	peak lev	vel wen	t lower	than the
Remark :		avera	ge limit.							
	4.	The I	narmonic (5 th , 6 th ,	7 th ,etc.)	and oth	er spuri	ous are	e not r	eported
		becau	ise those le	vels are	ower than	average	limit line	and ba	ckgrour	nd noise
	117	vel (dBuV/m)						ate: 2013-1	-	
	102.4								_	
	87.8	2								
								FCC CLAS	S-B	
	73.1							-	6dB	
	58.5						FCC	CLASS-B (A	VG)	
	43.9		3 4	5					6dB	
	29.3									
	14.6									
		00 4000. (Discrete)	6000. 8000.		2000. 14000. 1 equency (MHz)	16000. 1800	D. 20000. 2	2000. 2	25000	
	Site Conditi	:	03CH06-HY FCC CLASS-B 3	m SHE-EHE	VERTICAL					
					RITY : VER	TICAL				
Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
/ 			Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBµV/m) (dB)	(dBµV/m)	(dBµV)	(dB)	(dB)	(dB)	(cm)	(deg)	A
2440	87.49	-	-	83.33	31.96	6.52	34.32	100	31	Average
2440	88.93	-	-	84.77	31.96	6.52	34.32	100	31	Peak
2440 4881	88.93 49.11	- -24.89	- 74	84.77 60.23	31.96 34.37	6.52 10.19	34.32 55.68	100 100	31 0	Peak Peak
		- -24.89 -26.03	- 74 74							

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Test Mode	:	Mod	de 3			Те	mperatu	re :		22~24°(
Test Chan	nel :	39				Re	lative H	umidity	/ :	50~52%)		
Test Engin	neer :	Mar	lboro H	su									
		1.	2480 I	MHz is fu	ndame	ental	signal w	hich ca	ın be	ignored	d.		
		2.	9921 I	MHz is no	ot withi	n a r	estricted	l band.					
		3.	Avera	ge measi	ureme	nt wa	as not pe	erforme	d if I	peak lev	vel wer	t lower	than the
Remark :			avera	ge limit.									
		4.	The h	armonic	(5 th ,	6 th , [·]	7 th ,etc	.) and	othe	er spuri	ous ar	e not r	eported
			becau	se those	levels	are l	ower tha	in avera	age l	imit line	and ba	ckgrour	nd noise
	11	7Leve	l (dBuV/m)								Date: 2013-1	12-07	
	102												
			9										
	87	.8											
	73	.1									FCC CLAS	6dB	
	58	.5								FCC	CLASS-B (4	IVG)	
	43	.9 —		9	10	11						6dB	
	29	56											
		4 23											
	14	.6											
		0 ₃₀	3000.	5000. 700	i 0. 9000.)0. 13000.		000. 1	9000. 2100	0. 23000.	25000	
	Site)3CH06-HY	D 2 CUI		equency (MHz						
	Cor	idition	1 1	FCC CLASS-I			ITY : HO		AL				
Frequency	Leve	el	Over	Limit		ead	Antenn		ole	Preamp	Ant	Table	Remark
(MHz)	(dBµV	/m)	Limit (dB)	Line (dBµV/m	-	evel BµV)	Factor	Los (dE		Factor (dB)	Pos (cm)	Pos (deg)	
105.6	14.8	-	-28.63	43.5		6.77	11.72	1.1		31.75	-	-	Peak
137.46	18.1		-25.39	43.5		.26	11.3	1.3		31.75	-	-	Peak
227.1	15.8		-30.13	46		5.07	9.9	1.6		31.74	-	-	Peak
333.6	22.9		-23.01	46		.94	13.81	1.9		31.75	-	-	Peak
422.5	31.3		-14.63	46		.16	16.8	2.2		31.84	100	109	Peak
525.4	29.3	0	-16.65	46	40	.61	18.18	2.5	2	31.96	-	-	Peak



			ANTENN	A POLAR	ITY : HORI	ZONTAL				
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)	
2480	91.26	-	-	86.98	31.99	6.59	34.3	103	356	Average
2480	92.59	-	-	88.31	31.99	6.59	34.3	103	356	Peak
4959	47.56	-26.44	74	58.87	34.32	10.21	55.84	100	0	Peak
7440	49.72	-24.28	74	59.29	35.53	10.9	56	100	0	Peak
9921	48.02	-25.98	74	56.57	36.72	10.57	55.84	100	0	Peak



Test Mode :	Mode 3		Те	mperature	:	22~24°C)		
Test Channel :	39		Re	lative Hun	nidity :	50~52%			
Test Engineer :	Marlboro I	Isu							
	1. 2480	MHz is fund	lamental	signal which	ch can b	e ignored	ł.		
	2. 9921	MHz is not	within a r	estricted b	and.				
Remark :	3. Aver	age measure	ement wa	as not perf	ormed if	peak lev	vel wen	t lower	than the
Remark.	avera	age limit.							
	4. The	harmonic (5	$5^{th}, 6^{th},$	7 th ,etc.)	and oth	ner spuri	ous ar	e not r	eported,
		use those le	vels are l	ower than	average	limit line	and ba	ckgrour	nd noise.
1	17 Level (dBuV/m)					C)ate: 2013-1	2-07	
102	.4								
87	.8						FCC CLAS	S.B.	
73	.1							5dB	
58	.5					FCC	CLASS-B (A		
43	.9	9 10	11					<u>ôdB</u>	
29	.3 5								
14	.6								
14									
T	0 ¹ 30 3000 ace: (Discrete)	. 5000. 7000.		0. 13000. 150 equency (MHz)	00. 17000.	19000. 2100	0. 23000. 2	25000	
Site		: 03CH06-HY : FCC CLASS-B 3:	m SHF-EHF '	VERTICAL					
	1	ANTEN	NA POLA	RITY : VER	TICAL				
Frequency Leve		Limit Line	Read Level	Antenna	Cable	Preamp	Ant	Table	Remark
(MHz) (dBµV	/m)(dB)	(dBµV/m)	(dBµV)	Factor (dB)	Loss (dB)	Factor (dB)	Pos (cm)	Pos (deg)	
30 30.7		40	43.37	18.5	0.64	31.8	100	206	Peak
66.45 14.8	5 -25.15	40	39.44	6.26	0.92	31.77	-	-	Peak
92.64 16.2	2 -27.3	43.5	37.38	9.5	1.07	31.75	-	-	Peak
433 27.4	4 -18.6	46	40.19	16.8	2.27	31.86	-	-	Peak
525.4 25.7	8 -20.22	46	37.04	18.18	2.52	31.96	-	-	Peak



			ANTEN	NA POLA	RITY : VER	TICAL				
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)	
2480	87.86	-	-	83.58	31.99	6.59	34.3	100	1	Average
2480	89.22	-	-	84.94	31.99	6.59	34.3	100	1	Peak
4959	47.39	-26.61	74	58.7	34.32	10.21	55.84	100	0	Peak
7440	48.62	-25.38	74	58.19	35.53	10.9	56	100	0	Peak
9921	47.75	-26.25	74	56.3	36.72	10.57	55.84	100	0	Peak



3.6 AC Conducted Emission Measurement

3.6.1 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.

Frequency of omission (MHz)	Conducted	limit (dBµV)
Frequency of emission (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.

3.6.2 Measuring Instruments

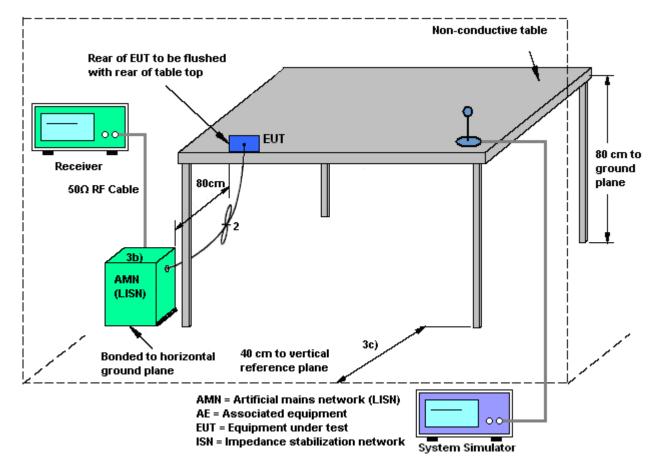
The measuring equipment is listed in the section 4 of this test report.

3.6.3 Test Procedures

- 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.



3.6.4 Test Setup





3.6.5 Test Result of AC Conducted Emission

Test Mo	ode :		Mode 1			Tempe	erature :		20~22 ℃
Test En	ginee	r :	Cosmo Xu			Relativ	ve Humi	idity :	45~47%
Test Vo	Itage :		120Vac / 60Hz	2		Phase	:		Line
Functio		۰.	GSM1900 Idle USB Cable (Da					dle + G	PS Rx + Earphone + Battery +
	Level in dBµV	100 90 80 70 60 50 40 30 20							R 22-QP Limit at Main R 22-QP Limit at Main R 22-Ave Limit at Main Ports
		10- 0- 15	iok 300 400	500 80	001M	2M Frequer	3M 41 ncy in Hz	M 5M 6	8 10M 20M 30M
Fi		0- 15	lt : Quasi-Peal		001M	Frequer	ncy in Hz		8 10M 20M 30M
Fi	Freque	0. 15 esul	lt : Quasi-Peal Quasi-Peak		D01M	Frequer Corr.	Margin	Limit]
Fi	Freque (MH	0 15 esul ency Iz)	lt : Quasi-Peal Quasi-Peak (dBµV)	Filter	Line	Frequer Corr. (dB)	Margin (dB)	Limit (dBµV)]
Fi	Freque (MH 0.190	esul ency 200	lt : Quasi-Peak Quasi-Peak (dBµV) 55.3	Filter Off	Line L1	Frequer Corr. (dB) 19.4	Margin (dB) 8.7	Limit (dBµV) 64.0]
Fi	Freque (MH	0 - 15 esul ency iz) 000 000	lt : Quasi-Peal Quasi-Peak (dBµV)	Filter	Line	Frequer Corr. (dB)	Margin (dB)	Limit (dBµV)	I
Fi	Freque (MH 0.190 0.262	0 - 15 esul ency iz) 000 000 000	lt : Quasi-Peak Quasi-Peak (dBµV) 55.3 45.0	Filter Off Off	Line L1 L1	Frequer Corr. (dB) 19.4 19.4	Margin (dB) 8.7 16.4	Limit (dBµV) 64.0 61.4]
Fi	Freque (MH 0.190 0.262 0.318	0 - 15 esul ency 12) 000 000 000	t : Quasi-Peak Quasi-Peak (dBμV) 55.3 45.0 42.0	Filter Off Off Off	Line L1 L1 L1	Corr. (dB) 19.4 19.4	Margin (dB) 8.7 16.4 17.8	Limit (dBµV) 64.0 61.4 59.8]
Fi 	Freque (MH 0.1900 0.2620 0.3180 0.5260	0 - 15 esul ency <u> z)</u> 000 000 000 000 000	t : Quasi-Peak Quasi-Peak (dBµV) 55.3 45.0 42.0 31.4	Filter Off Off Off Off	Line L1 L1 L1 L1	Corr. (dB) 19.4 19.4 19.4 19.4	Margin (dB) 8.7 16.4 17.8 24.6	Limit (dBµV) 64.0 61.4 59.8 56.0 56.0 60.0]
	Freque (MH 0.1900 0.2622 0.318 0.5260 4.6622 16.646 23.862	esul ency z) 000 000 000 000 000 000 000	t : Quasi-Peak Quasi-Peak (dBµV) 55.3 45.0 42.0 31.4 35.9 27.7 34.0	Filter Off Off Off Off Off Off	Line L1 L1 L1 L1 L1 L1	Corr. (dB) 19.4 19.4 19.4 19.4 19.4 19.4	Margin (dB) 8.7 16.4 17.8 24.6 20.1	Limit (dBµV) 64.0 61.4 59.8 56.0 56.0]
	Freque (MH 0.1900 0.2620 0.3180 0.5260 4.6620 16.6460 23.862	esul ency z) 000 000 000 000 000 000 000 000 000	t : Quasi-Peak Quasi-Peak (dBµV) 55.3 45.0 42.0 31.4 35.9 27.7 34.0 t : Average	C Filter Off Off Off Off Off Off Off	Line L1 L1 L1 L1 L1 L1 L1 L1	Frequer (dB) 19.4 19.4 19.4 19.4 19.4 19.6 19.8 19.9	Margin (dB) 8.7 16.4 17.8 24.6 20.1 32.3 26.0	Limit (dBµV) 64.0 61.4 59.8 56.0 56.0 60.0 60.0]
	Freque (MH 0.1900 0.2620 0.3180 0.5260 4.6620 16.640 23.8620 inal Re Freque	esul ency iz) 0000 0000 0000 0000 0000 0000 0000	t : Quasi-Peak (dBµV) 55.3 45.0 42.0 31.4 35.9 27.7 34.0 t : Average Average	Filter Off Off Off Off Off Off Off	Line L1 L1 L1 L1 L1 L1 L1	Frequer (dB) 19.4 19.4 19.4 19.4 19.4 19.6 19.8 19.9	Margin (dB) 8.7 16.4 17.8 24.6 20.1 32.3 26.0 Margin	Limit (dBµV) 64.0 61.4 59.8 56.0 56.0 60.0 60.0 Limit	
	Freque (MH 0.1900 0.2620 0.3180 0.5260 4.6620 16.6460 23.862	esul ency z) 000 000 000 000 000 000 000 000 000	t : Quasi-Peak Quasi-Peak (dBµV) 55.3 45.0 42.0 31.4 35.9 27.7 34.0 t : Average	C Filter Off Off Off Off Off Off Off	Line L1 L1 L1 L1 L1 L1 L1 L1	Frequer (dB) 19.4 19.4 19.4 19.4 19.4 19.6 19.8 19.9	Margin (dB) 8.7 16.4 17.8 24.6 20.1 32.3 26.0	Limit (dBµV) 64.0 61.4 59.8 56.0 56.0 60.0 60.0	
	Freque (MH 0.1900 0.2620 0.3180 4.6620 16.646 23.862 inal Re Freque (MH	esul ency (z) 0000 0000 0000 0000 0000 0000 0000	t : Quasi-Peak Quasi-Peak (dBµV) 55.3 45.0 42.0 31.4 35.9 27.7 34.0 t : Average (dBµV)	Filter Off Off Off Off Off Off Off Off Filter	Line L1 L1 L1 L1 L1 L1 L1 L1	Corr. (dB) 19.4 19.4 19.4 19.4 19.4 19.4 19.4 19.4 19.4 19.4 19.4 19.4 19.5 19.8 19.9 Corr. (dB) (dB)	Margin (dB) 8.7 16.4 17.8 24.6 20.1 32.3 26.0 Margin (dB)	Limit (dBµV) 64.0 61.4 59.8 56.0 56.0 60.0 60.0 60.0 Limit (dBµV)	
	Freque (MH 0.1900 0.2620 0.3188 0.5260 4.6620 16.646 23.862 23.862 500 Freque (MH 0.190	esul ency iz) 0000 0000 0000 0000 0000 0000 esul ency iz) 0000 0000	t : Quasi-Peak Quasi-Peak (dBµV) 55.3 45.0 42.0 31.4 35.9 27.7 34.0 t : Average (dBµV) 39.3	Filter Off Off Off Off Off Off Off Off Filter	Line L1 L1 L1 L1 L1 L1 L1 L1	Corr. (dB) 19.4 19.4 19.4 19.4 19.4 19.4 19.4 19.6 19.8 19.9 Corr. (dB) 19.9 19.4	Margin (dB) 8.7 16.4 17.8 24.6 20.1 32.3 26.0 Margin (dB) 14.7	Limit (dBµV) 64.0 61.4 59.8 56.0 56.0 60.0 60.0 60.0 Limit (dBµV) 54.0	
	Freque (MH 0.1900 0.2622 0.318 0.5260 4.6620 16.646 23.862 inal Re Freque (MH 0.1900 0.2620	esul ency (z) 0000 0000 0000 0000 0000 0000 esul ency (z) 0000 0000 0000	t : Quasi-Peak Quasi-Peak (dBµV) 55.3 45.0 42.0 31.4 35.9 27.7 34.0 t : Average (dBµV) 39.3 30.2	Filter Off Off Off Off Off Off Off Off Filter	Line L1 L1 L1 L1 L1 L1 L1 L1 L1 L1 L1	Frequer (dB) 19.4 19.4 19.4 19.4 19.4 19.6 19.8 19.9 Corr. (dB) 19.4 19.4	Margin (dB) 8.7 16.4 17.8 24.6 20.1 32.3 26.0 Margin (dB) 14.7 21.2	Limit (dBµV) 64.0 61.4 59.8 56.0 56.0 60.0 60.0 60.0 Limit (dBµV) 54.0 51.4	
	Freque (MH 0.1900 0.262 0.318 0.526 4.662 16.646 23.862 inal Re Freque (MH 0.1900 0.262 0.318	esul ency z) 000 000 000 000 000 2000 esul ency z) 000 000 000 000 000	t : Quasi-Peak Quasi-Peak (dBμV) 55.3 45.0 42.0 31.4 35.9 27.7 34.0 t : Average (dBμV) 39.3 30.2 26.2	Filter Off Off Off Off Off Off Off Filter Off Off Off Off Off	Line L1 L1 L1 L1 L1 L1 L1 L1 L1 L1 L1	Frequer (dB) 19.4 19.4 19.4 19.4 19.4 19.6 19.8 19.9 Corr. (dB) 19.4 19.4 19.4	Margin (dB) 8.7 16.4 17.8 24.6 20.1 32.3 26.0 Margin (dB) 14.7 21.2 23.6	Limit (dBµV) 64.0 61.4 59.8 56.0 56.0 60.0 60.0 60.0 60.0 60.0 51.4 49.8	
	Freque (MH 0.1900 0.2620 0.3180 0.5260 4.6620 16.640 23.862 inal Re Freque (MH 0.1900 0.2620 0.3180 0.5260	esul ency z) 000 000 000 000 000 000 esul ency z) 000 000 000 000 000 000	t : Quasi-Peak Quasi-Peak (dBμV) 55.3 45.0 42.0 31.4 35.9 27.7 34.0 t : Average (dBμV) 39.3 30.2 26.2 17.3	Filter Off Off Off Off Off Off Off Filter Filter Off Off Off Off Off	Line L1 L1 L1 L1 L1 L1 L1 L1 L1 L1	Frequer (dB) 19.4 19.4 19.4 19.4 19.4 19.4 19.8 19.9 Corr. (dB) 19.4 19.4 19.4 19.4	Margin (dB) 8.7 16.4 17.8 24.6 20.1 32.3 26.0 Margin (dB) 14.7 21.2 23.6 28.7	Limit (dBµV) 64.0 61.4 59.8 56.0 56.0 60.0 60.0 60.0 60.0 54.0 54.0 51.4 49.8 46.0	

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Test Mode :	Mode 1			Temp	erature :	:	20~22 ℃
Test Engineer	: Cosmo Xu			Relati	ve Humi	idity :	45~47%
Test Voltage :	120Vac / 60H	z		Phase	:		Neutral
Function Type	: GSM1900 Idl USB Cable (I					dle + G	PS Rx + Earphone + Battery +
	00-						
1	⁰⁰ T						
	90						
	80-						
	70-						
Ę	60-					CISF	PR22-QP Limit at Main Ports
Level in dBµV						CISP	R22-Ave Limit at Main Ports
e i	50	•••••••••••••••••••••••••••••••••••••••					
Le,	40 🕂 🔶 🗸 🍐 🛝	m			. In Manual		
	30+	Vim	1-MAYARA	11 M		Y (11)	
						.	
	20-						
	10-						
					+++	+++	
	150k 300 40	0000 8	001M	2N	ncyin Hz	M 5M 6	8 10M 20M 30M
				Tieque	ancy in the		
Final Pag							
	sult : Quasi-Pea	ak					
				Corr.	Margin	Limit	
Final Res Frequer (MHz)	cy Quasi-Peak		Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	
Frequer	cy Quasi-Peak (dBµV)		Line N		-		
Frequer (MHz)	Quasi-Peak (dBμV) 00 54.0	Filter		(dB)	(dB)	(dBµV)	
Frequer (MHz) 0.15000	су Quasi-Peak (dBµV) 00 54.0 00 54.8	Filter Off	N	(dB) 19.4	(dB) 12.0	(dBµV) 66.0	
Frequer (MHz) 0.15000 0.19000	Quasi-Peak (dBμV) 00 54.0 00 54.8 00 44.2 00 39.5	Filter Off Off	N N N N	(dB) 19.4 19.3	(dB) 12.0 8.9	(dBµV) 66.0 63.7 61.9 60.0	
Frequer (MHz) 0.15000 0.19000 0.24600 0.31000 4.39800	Quasi-Peak (dBµV) 00 54.0 00 54.8 00 44.2 00 39.5 00 35.1	Filter Off Off Off Off Off	N N N N	(dB) 19.4 19.3 19.4 19.4 19.7	(dB) 12.0 8.9 17.7 20.5 20.9	(dBµV) 66.0 63.7 61.9 60.0 56.0	
Frequer (MHz) 0.15000 0.19000 0.24600 0.31000 4.39800 16.6540	Quasi-Peak (dBµV) 00 54.0 00 54.8 00 44.2 00 39.5 00 35.1 00 29.7	Filter Off Off Off Off Off Off	N N N N N	(dB) 19.4 19.3 19.4 19.4 19.7 19.9	(dB) 12.0 8.9 17.7 20.5 20.9 30.3	(dBµV) 66.0 63.7 61.9 60.0 56.0 60.0	
Frequer (MHz) 0.15000 0.19000 0.24600 0.31000 4.39800 16.6540 24.5420	Quasi-Peak (dBµV) 00 54.0 00 54.8 00 44.2 00 39.5 00 35.1 00 29.7 00 30.0	Filter Off Off Off Off Off	N N N N	(dB) 19.4 19.3 19.4 19.4 19.7	(dB) 12.0 8.9 17.7 20.5 20.9	(dBµV) 66.0 63.7 61.9 60.0 56.0	
Frequer (MHz) 0.15000 0.19000 0.24600 0.31000 4.39800 16.6540 24.5420 Final Res	Quasi-Peak (dBμV) 00 54.0 00 54.8 00 44.2 00 39.5 00 35.1 00 29.7 00 30.0 sult : Average	Filter Off Off Off Off Off Off	N N N N N	(dB) 19.4 19.3 19.4 19.4 19.7 19.9 20.0	(dB) 12.0 8.9 17.7 20.5 20.9 30.3 30.0	(dBµV) 66.0 63.7 61.9 60.0 56.0 60.0 60.0	
Frequer (MHz) 0.15000 0.19000 0.24600 0.31000 4.39800 16.6540 24.5420 Final Res	Quasi-Peak (dBμV) 00 54.0 00 54.8 00 44.2 00 39.5 00 35.1 00 29.7 00 30.0 Sult : Average cy Average	Filter Off Off Off Off Off Off	N N N N N	(dB) 19.4 19.3 19.4 19.4 19.7 19.9 20.0 Corr.	(dB) 12.0 8.9 17.7 20.5 20.9 30.3 30.0 Margin	(dBµV) 66.0 63.7 61.9 60.0 56.0 60.0 60.0 Limit	
Frequer (MHz) 0.15000 0.19000 0.24600 0.31000 4.39800 16.6540 24.5420 Final Res Frequer (MHz)	Quasi-Peak (dBµV) 00 54.0 00 54.8 00 54.8 00 44.2 00 39.5 00 35.1 00 29.7 00 30.0 Sult : Average (dBµV)	Filter Off Off Off Off Off Off Off Off Off Filter	N N N N N Line	(dB) 19.4 19.3 19.4 19.4 19.7 19.9 20.0 Corr. (dB)	(dB) 12.0 8.9 17.7 20.5 20.9 30.3 30.0 Margin (dB)	(dBμV) 66.0 63.7 61.9 60.0 56.0 60.0 60.0 Limit (dBμV)	
Frequer (MHz) 0.15000 0.19000 0.24600 0.31000 4.39800 16.6540 24.5420 Final Res Frequer (MHz) 0.15000	Quasi-Peak (dBµV) 00 54.0 00 54.8 00 54.8 00 44.2 00 39.5 00 35.1 00 29.7 00 30.0 sult : Average (dBµV) 00 36.0	Filter Off Off Off Off Off Off Off Off Off Of	N N N N N Line	(dB) 19.4 19.3 19.4 19.7 19.9 20.0 Corr. (dB) 19.4	(dB) 12.0 8.9 17.7 20.5 20.9 30.3 30.0 Margin (dB) 20.0	(dBμV) 66.0 63.7 61.9 60.0 56.0 60.0 60.0 60.0 Limit (dBμV) 56.0	
Frequer (MHz) 0.15000 0.24600 0.31000 4.39800 16.6540 24.5420 Final Res Frequer (MHz) 0.15000 0.19000	Quasi-Peak (dBμV) 00 54.0 00 54.8 00 44.2 00 39.5 00 35.1 00 29.7 00 30.0 sult : Average 00 40.2 00 30.0 sult : Average 00 36.0 00 39.0	Filter Off Off Off Off Off Off Off Off Off Filter	N N N N N N Line N N	(dB) 19.4 19.3 19.4 19.7 19.9 20.0 Corr. (dB) 19.4 19.3	(dB) 12.0 8.9 17.7 20.5 20.9 30.3 30.0 Margin (dB) 20.0 14.7	(dBμV) 66.0 63.7 61.9 60.0 56.0 60.0 60.0 Climit (dBμV) 56.0 53.7	
Frequer (MHz) 0.15000 0.24600 0.31000 4.39800 16.6540 24.5420 Final Res Frequer (MHz) 0.15000 0.19000	Quasi-Peak (dBµV) 00 54.0 00 54.8 00 54.8 00 44.2 00 39.5 00 35.1 00 29.7 00 30.0 Sult : Average (dBµV) 00 36.0 00 39.0 00 39.0	Filter Off Off Off Off Off Off Off Off Off Filter Off Off Off Off Off	N N N N N Line	(dB) 19.4 19.3 19.4 19.7 19.9 20.0 Corr. (dB) 19.4 19.3 19.4	(dB) 12.0 8.9 17.7 20.5 20.9 30.3 30.0 Margin (dB) 20.0 14.7 27.0	(dBμV) 66.0 63.7 61.9 60.0 56.0 60.0 60.0 Limit (dBμV) 56.0 53.7 51.9	
Frequer (MHz) 0.15000 0.24600 0.31000 4.39800 16.6540 24.5420 Final Res Frequer (MHz) 0.15000 0.19000	Quasi-Peak (dBµV) 00 54.0 00 54.8 00 54.8 00 44.2 00 39.5 00 35.1 00 29.7 00 30.0 sult : Average (dBµV) 00 36.0 00 39.0 00 24.9 00 22.1	Filter Off Off Off Off Off Off Off Off Off Of	N N N N N N Line N N N	(dB) 19.4 19.3 19.4 19.7 19.9 20.0 Corr. (dB) 19.4 19.3	(dB) 12.0 8.9 17.7 20.5 20.9 30.3 30.0 Margin (dB) 20.0 14.7	(dBμV) 66.0 63.7 61.9 60.0 56.0 60.0 60.0 Climit (dBμV) 56.0 53.7	
Frequer (MHz) 0.15000 0.19000 0.24600 4.39800 16.65400 24.5420 Final Res Frequer (MHz) 0.15000 0.24600 0.31000	Quasi-Peak (dBµV) 00 54.0 00 54.8 00 54.8 00 44.2 00 39.5 00 35.1 00 29.7 00 30.0 Sult : Average (dBµV) 00 36.0 00 39.0 00 39.0 00 24.9 00 22.1 00 23.9	Filter Off Off Off Off Off Off Off Off Off Filter Off Off Off Off Off Off Off Off Off	N N N N N N Line N N N N	(dB) 19.4 19.3 19.4 19.7 19.9 20.0 Corr. (dB) 19.4 19.3 19.4 19.4	(dB) 12.0 8.9 17.7 20.5 20.9 30.3 30.0 Margin (dB) 20.0 14.7 27.0 27.9	(dBμV) 66.0 63.7 61.9 60.0 56.0 60.0 60.0 Limit (dBμV) 56.0 53.7 51.9 50.0	

SPORTON INTERNATIONAL INC. TEL : 886-3-327-3456 FAX : 886-3-328-4978 FCC ID : PY7PM-0723 IC : 4170B-PM0723 Page Number: 56 of 62Report Issued Date: Jan. 24, 2014Report Version: Rev. 01



Test Mode :	Mode 2	Temperature :			20~22 °C		
Test Engineer :	Cosmo Xu	Relative Humidity :			45~47%		
Test Voltage :	120Vac / 60Hz	Phase :			Line		
Function Type :	GSM1900 Idle USB Cable (Da	Idle + WLAN Link + GPS Rx + Earphone + B Notebook)					
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8	o∓						
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7	0+						
<u>≩</u> 6	o+					CISF	PR22-QP Limit at Main Ports
Level in dBµV 9 9	• • • • • • • • • • • • • • • • • • •					CISP	R22-Ave Limit at Main Ports
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	0 400	500 8	00 1 M	21	1 3M 4	M 5M 6	8 10M 20M 30M
	150k 300 400	500 8	001M	2M Freque		M 5M 6	8 10M 20M 30M
		500 8	001M		1 3M 41 ncy in Hz		8 10M 20M 30M
			00 1 M				8 10M 20M 30M
Final Resu Frequenc	150k 300 400 Ilt : Quasi-Peak	<u>د</u>		Freque	ncy in Hz Margin		8 10M 20M 30M
Final Resu Frequenc (MHz)	ISOk 300 400 Ilt : Quasi-Peak y Quasi-Peak (dBµV)		Line	Freque	Margin (dB)	Limit (dBµV)	
Final Resu Frequenc (MHz) 0.150000	150k 300 400 Ilt : Quasi-Peak y Quasi-Peak (dBµV) 53.7	Filter Off	Line L1	Corr. (dB) 19.4	Margin (dB) 12.3	Limit (dBµV) 66.0	
Final Resu Frequenc (MHz) 0.150000 0.190000	ISOk 300 400 ult: Quasi-Peak y Quasi-Peak (dBμV) 53.7 54.8	Filter Off Off	Line L1 L1	Freque Corr. (dB) 19.4 19.4	Margin (dB) 12.3 9.2	Limit (dBµV) 66.0 64.0	
Final Resu Frequenc (MHz) 0.150000 0.190000 0.254000	I50k 300 400 Ilt : Quasi-Peak (dBμV) 53.7 54.8 44.7 44.7	Filter Off Off	Line L1 L1 L1	Corr. (dB) 19.4 19.5	Margin (dB) 12.3 9.2 16.9	Limit (dBµV) 66.0 64.0 61.6	
Final Resu Frequenc (MHz) 0.150000 0.190000 0.254000 0.310000	Isok 300 400 Ilt: Quasi-Peak (dBµV) 53.7 54.8 44.7 34.7	Filter Off Off Off	Line L1 L1 L1 L1	Freque Corr. (dB) 19.4 19.4 19.5 19.4	Margin (dB) 12.3 9.2 16.9 25.3	Limit (dBµV) 66.0 64.0 61.6 60.0	
Final Resu Frequenc (MHz) 0.150000 0.190000 0.254000 0.310000 2.502000	ISOk 300 400 IIt : Quasi-Peak (dBµV) 53.7 54.8 44.7 34.7 33.7	Filter Off Off Off Off Off	Line L1 L1 L1 L1 L1 L1	Freque Corr. (dB) 19.4 19.4 19.5 19.4 19.5	Margin (dB) 12.3 9.2 16.9 25.3 22.3	Limit (dBµV) 66.0 64.0 61.6 60.0 56.0	
Final Resu Frequenc (MHz) 0.150000 0.190000 0.254000 0.310000 2.502000 4.918000	I50k 300 400 Ilt : Quasi-Peak (dBµV) 53.7 54.8 44.7 34.7 33.7 33.4	Filter Off Off Off Off Off Off	Line L1 L1 L1 L1 L1 L1 L1	Freque Corr. (dB) 19.4 19.4 19.5 19.4 19.6 19.6	Margin (dB) 12.3 9.2 16.9 25.3 22.3 22.6	Limit (dBµV) 66.0 64.0 61.6 60.0 56.0 56.0	
Final Resu Frequenc (MHz) 0.150000 0.190000 0.254000 0.310000 2.502000 4.918000 16.782000	I50k 300 400 Ilt : Quasi-Peak (dBµV) 53.7 54.8 44.7 34.7 33.7 33.4	Filter Off Off Off Off Off	Line L1 L1 L1 L1 L1 L1	Freque Corr. (dB) 19.4 19.4 19.5 19.4 19.5	Margin (dB) 12.3 9.2 16.9 25.3 22.3	Limit (dBµV) 66.0 64.0 61.6 60.0 56.0	
Final Resu Frequenc (MHz) 0.150000 0.190000 0.254000 0.310000 2.502000 4.918000 16.782000	ISOk 300 400 Ilt: Quasi-Peak (dBμV) 53.7 54.8 44.7 33.7 33.7 33.4 28.5 Ilt:	Filter Off Off Off Off Off Off Off Off	Line L1 L1 L1 L1 L1 L1 L1 L1	Freque Corr. (dB) 19.4 19.4 19.5 19.4 19.6 19.6	Margin (dB) 12.3 9.2 16.9 25.3 22.3 22.6	Limit (dBµV) 66.0 64.0 61.6 60.0 56.0 56.0	
Final Resu Frequenc (MHz) 0.150000 0.190000 0.254000 0.310000 2.502000 4.918000 16.782000 Final Resu	ISOk 300 400 Ilt:Quasi-Peak (dBμV) 53.7 54.8 44.7 34.7 33.7 33.4 28.5 Ilt:Average	Filter Off Off Off Off Off Off	Line L1 L1 L1 L1 L1 L1 L1	Freque Corr. (dB) 19.4 19.4 19.5 19.4 19.6 19.6 19.8	Margin (dB) 12.3 9.2 16.9 25.3 22.3 22.6 31.5	Limit (dBµV) 66.0 64.0 61.6 60.0 56.0 56.0 60.0	
Final Resu Frequenc (MHz) 0.150000 0.190000 0.254000 0.310000 2.502000 4.918000 16.782000 Final Resu Frequenc	150k 300 400 Ilt : Quasi-Peak (dBµV) 9 Quasi-Peak (dBµV) 1 53.7 1 54.8 1 34.7 1 33.4 2 28.5 Ilt : Average (dBµV)	Filter Off Off Off Off Off Off Off Off	Line L1 L1 L1 L1 L1 L1 L1 L1 L1 Line L1	Freque Corr. (dB) 19.4 19.4 19.5 19.4 19.6 19.6 19.8 Corr.	Margin (dB) 12.3 9.2 16.9 25.3 22.3 22.6 31.5 Margin (dB) 20.0	Limit (dBµV) 66.0 64.0 61.6 60.0 56.0 56.0 60.0	
Final Resu Frequence (MHz) 0.150000 0.190000 0.2540000 0.310000 2.502000 4.9180000 16.782000 Final Resu Frequence (MHz) 0.1500000 0.1900000	150k 300 400 Ilt: Quasi-Peak (dBμV) 9 Quasi-Peak (dBμV) 1 53.7 1 54.8 44.7 33.7 33.4 2 28.5 Ilt: Average (dBμV) 36.0 39.0	Filter Off Off Off Off Off Off Off Filter Off Off	Line L1 L1 L1 L1 L1 L1 L1 L1 L1 L1 L1	Freque Corr. (dB) 19.4 19.4 19.5 19.4 19.6 19.6 19.8 Corr. (dB) 19.4 19.4	Margin (dB) 12.3 9.2 16.9 25.3 22.3 22.6 31.5 Margin (dB) 20.0 15.0	Limit (dBµV) 66.0 64.0 61.6 60.0 56.0 56.0 60.0 Limit (dBµV) 56.0 54.0	
Final Resu Frequenc (MHz) 0.150000 0.190000 0.254000 0.310000 2.502000 4.918000 16.782000 Final Resu Frequenc (MHz) 0.150000 0.190000 0.254000	ISOk 300 400 III : Quasi-Peak (dBμV) (dBμV) 53.7 54.8 44.7 34.7 33.4 28.5 III : Average (dBμV) 36.0 39.0 30.1	Filter Off Off Off Off Off Off Off Filter	Line L1 L1 L1 L1 L1 L1 L1 L1 L1 L1 L1	Freque Corr. (dB) 19.4 19.4 19.5 19.4 19.6 19.6 19.6 19.8 Corr. (dB) 19.4 19.4 19.4 19.5	Margin (dB) 12.3 9.2 16.9 25.3 22.3 22.6 31.5 Margin (dB) 20.0 15.0 21.5	Limit (dBµV) 66.0 64.0 61.6 60.0 56.0 56.0 60.0 Limit (dBµV) 56.0 54.0 51.6	
Final Resu Frequenc (MHz) 0.150000 0.190000 0.254000 0.310000 2.502000 4.918000 16.782000 Final Resu Frequenc (MHz) 0.150000 0.254000 0.310000	ISOk 300 400 Ilt: Quasi-Peak (dBμV) 9 Quasi-Peak (dBμV) 1 53.7 54.8 44.7 33.7 33.4 0 28.5 Ilt: Average (dBμV) 36.0 39.0 30.1 22.7	Filter Off Off Off Off Off Off Off Filter Off Off Off Off Off	Line L1 L1 L1 L1 L1 L1 L1 L1 L1 L1 L1 L1	Freque Corr. (dB) 19.4 19.4 19.5 19.4 19.6 19.6 19.8 Corr. (dB) 19.4 19.4 19.5 19.4	Margin (dB) 12.3 9.2 16.9 25.3 22.3 22.6 31.5 Margin (dB) 20.0 15.0 21.5 27.3	Limit (dBµV) 66.0 64.0 61.6 60.0 56.0 56.0 60.0 Limit (dBµV) 56.0 54.0 51.6 50.0	
Final Resu Frequenc (MHz) 0.150000 0.190000 0.254000 4.918000 16.782000 Final Resu Frequenc (MHz) 0.150000 0.190000 0.254000 0.310000 2.502000	Isok 300 400 IIt : Quasi-Peak (dBμV) y Quasi-Peak (dBμV) 53.7 54.8 44.7 33.4 28.5 IIt : Average (dBμV) 36.0 39.0 30.1 22.7 23.4	Filter Off Off Off Off Off Off Off Filter Off Off Off Off Off Off	Line L1 L1 L1 L1 L1 L1 L1 L1 L1 L1	Freque Corr. (dB) 19.4 19.4 19.5 19.4 19.6 19.6 19.8 Corr. (dB) 19.4 19.4 19.5 19.4 19.5	Margin (dB) 12.3 9.2 16.9 25.3 22.3 22.6 31.5 Margin (dB) 20.0 15.0 21.5 27.3 22.6	Limit (dBµV) 66.0 64.0 61.6 60.0 56.0 56.0 60.0 Limit (dBµV) 56.0 54.0 51.6 50.0 46.0	
Final Resu Frequenc (MHz) 0.150000 0.190000 0.254000 0.310000 2.502000 4.918000 16.782000 Final Resu Frequenc (MHz) 0.150000 0.254000 0.310000	ISOk 300 400 III : Quasi-Peak (dBμV) y Quasi-Peak (dBμV) 53.7 54.8 44.7 33.7 33.4 28.5 III : Average (dBμV) 36.0 39.0 30.1 22.7 23.4 21.4	Filter Off Off Off Off Off Off Off Filter Off Off Off Off Off	Line L1 L1 L1 L1 L1 L1 L1 L1 L1 L1 L1 L1	Freque Corr. (dB) 19.4 19.4 19.5 19.4 19.6 19.6 19.8 Corr. (dB) 19.4 19.4 19.5 19.4	Margin (dB) 12.3 9.2 16.9 25.3 22.3 22.6 31.5 Margin (dB) 20.0 15.0 21.5 27.3	Limit (dBµV) 66.0 64.0 61.6 60.0 56.0 56.0 60.0 Limit (dBµV) 56.0 54.0 51.6 50.0	

SPORTON INTERNATIONAL INC. TEL : 886-3-327-3456 FAX : 886-3-328-4978 FCC ID : PY7PM-0723 IC : 4170B-PM0723 Page Number: 57 of 62Report Issued Date: Jan. 24, 2014Report Version: Rev. 01



	Mode 2	Temperature :			20~22 °C			
Test Engineer :	gineer: Cosmo Xu				ve Humi	idity :	45~47%	
Test Voltage :	120Vac / 60Hz	Phase :			Neutral			
Function Type :	GSM1900 Idle USB Cable (Da				PS Rx + Earphone + Battery +			
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90)+							
80	1							
	+							
70) 							
≩ 60	J.					CISF	PR22-QP Limit at Main Ports	
- B						CISP	R <u>22-Ave Limit at Main P</u> orts	
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	50k 300 400	500 80	001M	21		M 5M 6	8 10M 20M 30M	
	50K 300 400	500 80	001M		1 3M 4 Incyin Hz		8 10M 20M 30M	
			001M				8 10M 20M 30M	
Final Resu	ılt : Quasi-Peak		001M	Freque	ency in Hz		8 10M 20M 30M	
Final Resu Frequenc	Ilt : Quasi-Peak		Line	Freque	ency in Hz Margin	Limit		
Final Resu Frequence (MHz)	Ilt : Quasi-Peak y Quasi-Peak (dBµV)	Filter	Line	Freque Corr. (dB)	ency in Hz Margin (dB)	Limit (dBµV)		
Final Resu Frequenc (MHz) 0.150000	Ilt : Quasi-Peak y Quasi-Peak (dBµV) 53.2	Filter Off	Line	Corr. (dB) 19.4	Margin (dB) 12.8	Limit (dBµV) 66.0		
Final Resu Frequenc (MHz) 0.150000 0.190000	Ilt : Quasi-Peak Quasi-Peak (dBµV) 53.2 54.8	Filter	Line	Freque Corr. (dB) 19.4 19.4	Margin (dB) 12.8 9.2	Limit (dBµV) 66.0 64.0		
Final Resu Frequenc (MHz) 0.150000	Ilt : Quasi-Peak y Quasi-Peak (dBµV) 53.2 54.8 44.0	Filter Off Off	Line N N	Corr. (dB) 19.4	Margin (dB) 12.8	Limit (dBµV) 66.0		
Final Resu Frequenc (MHz) 0.150000 0.190000 0.246000	Ilt : Quasi-Peak y Quasi-Peak (dBµV) 53.2 54.8 44.0 40.0	Filter Off Off	Line N N N	Corr. (dB) 19.4 19.4 19.4	Margin (dB) 12.8 9.2 17.9	Limit (dBµV) 66.0 64.0 61.9		
Final Resu Frequence (MHz) 0.150000 0.190000 0.246000 0.310000	Ilt : Quasi-Peak y Quasi-Peak (dBµV) 53.2 54.8 44.0 40.0 24.9	Filter Off Off Off Off	Line N N N N	Corr. (dB) 19.4 19.4 19.4 19.4	Margin (dB) 12.8 9.2 17.9 20.0	Limit (dBµV) 66.0 64.0 61.9 60.0		
Final Resu Frequence (MHz) 0.150000 0.190000 0.246000 0.310000 4.326000 16.542000 24.542000	Ilt : Quasi-Peak y Quasi-Peak (dBµV) 53.2 54.8 44.0 40.0 24.9 30.3 32.0	Filter Off Off Off Off Off	Line N N N N N	Freque Corr. (dB) 19.4 19.4 19.4 19.4 19.4	Margin (dB) 12.8 9.2 17.9 20.0 31.1	Limit (dBµV) 66.0 64.0 61.9 60.0 56.0		
Final Resu Frequence (MHz) 0.150000 0.190000 0.246000 0.310000 4.326000 16.542000 24.542000	Ilt : Quasi-Peak y Quasi-Peak (dBµV) 53.2 54.8 44.0 40.0 24.9 30.3	Filter Off Off Off Off Off Off	Line N N N N N N	Freque Corr. (dB) 19.4 19.4 19.4 19.4 19.4 19.6 19.9	Margin (dB) 12.8 9.2 17.9 20.0 31.1 29.7	Limit (dBµV) 66.0 64.0 61.9 60.0 56.0 60.0		
Final Resu Frequence (MHz) 0.150000 0.190000 0.246000 0.310000 4.326000 16.542000 24.542000 Final Resu Frequence	Ilt : Quasi-Peak (dBµV) 53.2 54.8 44.0 40.0 24.9 30.3 32.0 Ilt : Average y Average	Filter Off Off Off Off Off Off Off Off	Line N N N N N N N	Freque Corr. (dB) 19.4 19.4 19.4 19.4 19.4 19.6 19.9 20.0	Margin (dB) 12.8 9.2 17.9 20.0 31.1 29.7 28.0 Margin	Limit (dBµV) 66.0 64.0 61.9 60.0 56.0 60.0 60.0 Limit		
Final Resu Frequence (MHz) 0.150000 0.190000 0.246000 0.310000 4.326000 16.542000 24.542000 Final Resu Frequence (MHz)	Ilt : Quasi-Peak (dBµV) 53.2 54.8 44.0 24.9 0 30.3 0 32.0 Ilt : Average (dBµV)	Filter Off Off Off Off Off Off Off Off Filter	Line N N N N N N Line	Freque (dB) 19.4 19.4 19.4 19.4 19.4 19.6 19.9 20.0 Corr. (dB)	Margin (dB) 12.8 9.2 17.9 20.0 31.1 29.7 28.0 Margin (dB)	Limit (dBµV) 66.0 64.0 61.9 60.0 56.0 60.0 60.0 Limit (dBµV)		
Final Resu Frequence (MHz) 0.150000 0.190000 0.246000 0.310000 4.326000 16.542000 24.542000 Final Resu Frequence (MHz) 0.150000	Ilt : Quasi-Peak (dBµV) 53.2 54.8 44.0 24.9 0 30.3 0 32.0 Ilt : Average (dBµV) 35.0	Filter Off Off Off Off Off Off Off Off Filter	Line N N N N N N Line N	Freque (dB) 19.4 19.4 19.4 19.4 19.6 19.9 20.0 Corr. (dB) 19.4	Margin (dB) 12.8 9.2 17.9 20.0 31.1 29.7 28.0 Margin (dB) 21.0	Limit (dBµV) 66.0 64.0 61.9 60.0 56.0 60.0 60.0 Limit (dBµV) 56.0		
Final Resu Frequence (MHz) 0.150000 0.190000 0.246000 0.310000 4.326000 16.542000 24.542000 Final Resu Frequence (MHz) 0.150000 0.190000	Ilt : Quasi-Peak (dBµV) 53.2 54.8 44.0 24.9 0 30.3 0 32.0 Ilt : Average (dBµV) 35.0 39.0	Filter Off Off Off Off Off Off Off Off Filter	Line N N N N N N Line N N	Freque (dB) 19.4 19.4 19.4 19.4 19.6 19.9 20.0 Corr. (dB) 19.4 19.4	Margin (dB) 12.8 9.2 17.9 20.0 31.1 29.7 28.0 Margin (dB) 21.0 15.0	Limit (dBµV) 66.0 64.0 61.9 60.0 56.0 60.0 60.0 Climit (dBµV) 56.0 54.0		
Final Resu Frequency (MHz) 0.150000 0.190000 0.246000 0.310000 4.326000 16.542000 24.542000 Final Resu Frequency (MHz) 0.150000 0.190000 0.246000	Ilt : Quasi-Peak (dBµV) 53.2 54.8 44.0 24.9 0 30.3 0 32.0 Ilt : Average (dBµV) 35.0 39.0 24.4	Filter Off Off Off Off Off Off Off Off Filter	Line N N N N N N Line N N N N	Freque Corr. (dB) 19.4 19.4 19.4 19.4 19.4 19.9 20.0 Corr. (dB) 19.4 19.4 19.4	Margin (dB) 12.8 9.2 17.9 20.0 31.1 29.7 28.0 Margin (dB) 21.0 15.0 27.5	Limit (dBµV) 66.0 64.0 61.9 60.0 56.0 60.0 60.0 Limit (dBµV) 56.0 54.0 51.9		
Final Resu Frequence (MHz) 0.150000 0.190000 0.246000 0.310000 4.326000 16.542000 24.542000 Final Resu Frequence (MHz) 0.150000 0.190000 0.246000 0.310000	Ilt : Quasi-Peak (dBµV) 53.2 54.8 44.0 24.9 0 30.3 0 32.0 Ilt : Average (dBµV) 35.0 39.0 24.4 22.8	Filter Off Off Off Off Off Off Off Off Filter	Line N N N N N N Line N N N N N	Freque Corr. (dB) 19.4 19.4 19.4 19.4 19.4 19.9 20.0 Corr. (dB) 19.4 19.4 19.4 19.4	Margin (dB) 12.8 9.2 17.9 20.0 31.1 29.7 28.0 Margin (dB) 21.0 15.0 27.5 27.2	Limit (dBµV) 66.0 64.0 61.9 60.0 56.0 60.0 60.0 Climit (dBµV) 56.0 54.0 51.9 50.0		
Final Resu Frequence (MHz) 0.150000 0.190000 0.246000 0.310000 4.326000 16.542000 24.542000 Final Resu Frequence (MHz) 0.150000 0.246000 0.310000 4.326000	Ilt : Quasi-Peak (dBµV) 53.2 54.8 44.0 40.0 24.9 0 30.3 0 32.0 Ilt : Average (dBµV) 35.0 39.0 24.4 22.8 21.6	Filter Off Off Off Off Off Off Off Off Off Of	Line N N N N N N Line N N N N N N N	Freque (dB) 19.4 19.4 19.4 19.4 19.4 19.4 19.9 20.0 Corr. (dB) 19.4 19.4 19.4 19.4 19.4	Margin (dB) 12.8 9.2 17.9 20.0 31.1 29.7 28.0 Margin (dB) 21.0 15.0 27.5 27.2 24.4	Limit (dBµV) 66.0 64.0 61.9 60.0 56.0 60.0 60.0 60.0 Climit (dBµV) 56.0 51.9 50.0 46.0		
Final Resu Frequence (MHz) 0.150000 0.190000 0.246000 0.310000 4.326000 16.542000 24.542000 Final Resu Frequence (MHz) 0.150000 0.190000 0.246000 0.310000	Ilt : Quasi-Peak (dBµV) 53.2 54.8 44.0 24.9 0 30.3 0 32.0 Ilt : Average (dBµV) 35.0 39.0 24.4 22.8 21.6 0 21.5	Filter Off Off Off Off Off Off Off Off Filter	Line N N N N N N Line N N N N N	Freque Corr. (dB) 19.4 19.4 19.4 19.4 19.4 19.9 20.0 Corr. (dB) 19.4 19.4 19.4 19.4	Margin (dB) 12.8 9.2 17.9 20.0 31.1 29.7 28.0 Margin (dB) 21.0 15.0 27.5 27.2	Limit (dBµV) 66.0 64.0 61.9 60.0 56.0 60.0 60.0 Climit (dBµV) 56.0 54.0 51.9 50.0		

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3.7 Antenna Requirements

3.7.1 Standard Applicable

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. 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.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz~40GHz	Jun. 07, 2013	Dec. 02, 2013 ~ Dec. 12, 2013	Jun. 06, 2014	Conducted (TH02-HY)
Power Meter	Agilent	E4416A	GB41292 344	300MHz~40GHz	Feb. 05, 2013	Dec. 02, 2013 ~ Dec. 12, 2013	Feb. 04, 2014	Conducted (TH02-HY)
Power Sensor	Agilent	E9327A	US404415 48	300MHz~40GHz	Feb. 05, 2013	Dec. 02, 2013 ~ Dec. 12, 2013	Feb. 04, 2014	Conducted (TH02-HY)
Hygrometer	Testo	608-H1	34897199	N/A	May 07, 2013	Dec. 02, 2013 ~ Dec. 12, 2013	May 06, 2014	Conducted (TH02-HY)
RF cable	HONOVA	MF86	N/A	N/A	Nov. 25, 2013	Dec. 02, 2013 ~ Dec. 12, 2013	Nov. 24, 2014	Conducted (TH02-HY)
Spectrum Analyzer	R&S	FSP30	101067	9kHz ~ 30GHz	Nov. 20, 2013	Dec. 07, 2013	Nov. 19, 2014	Radiation (03CH06-HY)
Spectrum Analyzer	Agilent	E4408B	MY44211 030	9kHz ~ 26.5GHz	Dec. 02, 2013	Dec. 07, 2013	Dec. 01, 2014	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESVS10	834468/00 03	20MHz ~ 1000MHz	May 06, 2013	Dec. 07, 2013	May 05, 2014	Radiation (03CH06-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	860004/00 01	9kHz ~ 30MhZ	Jul. 03, 2012	Dec. 07, 2013	Jul. 02, 2014	Radiation (03CH06-HY)
Bilog Antenna	Schaffner	CBL6112B	2885	30MHz ~ 2GHz	Oct. 10, 2013	Dec. 07, 2013	Oct. 09, 2014	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz ~ 18GHz	Aug. 02, 2013	Dec. 07, 2013	Aug. 01, 2014	Radiation (03CH06-HY)
Amplifier	Agilent	310N	186713	9kHz ~ 1GHz	Apr. 12, 2013	Dec. 07, 2013	Apr. 11, 2014	Radiation (03CH06-HY)
Pre Amplifier	EMCI	EMC051845	SN980048	1GHz ~ 18GHz	Jul. 18, 2013	Dec. 07, 2013	Jul. 17, 2014	Radiation (03CH06-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	BBHA917 0251	15GHz ~ 40GHz	Oct. 03, 2013	Dec. 07, 2013	Oct. 02, 2014	Radiation (03CH06-HY)
Preamplifier	Agilent	8449B	3008A019 17	1GHz ~ 26.5GHz	Apr. 12, 2013	Dec. 07, 2013	Apr. 11, 2014	Radiation (03CH06-HY)
Turn Table	INN-CO	DS2000	420/650/0 0	0 ~ 360 degree	N/A	Dec. 07, 2013	N/A	Radiation (03CH06-HY)
Antenna Mast	MF	MF-7802	MF78020 8212	1 m ~ 4 m	N/A	Dec. 07, 2013	N/A	Radiation (03CH06-HY)
LF RF Cable	warison	WCBA-WC04 NM.NM2	N/A	30MHz~1GHz	Nov. 28, 2013	Dec. 07, 2013	Nov. 27, 2014	Radiation (03CH06-HY)
HF RF Cable	Huber + Suhner	sucoflex 104	286027/4	1GHz~26.5GHz	Nov. 28, 2013	Dec. 07, 2013	Nov. 27, 2014	Radiation (03CH06-HY)
High Pass Filter	Microwave Circuits	H3G018G1	SN477219	3G HPF	Nov. 28, 2013	Dec. 07, 2013	Nov. 27, 2014	Radiation (03CH06-HY)
High Pass Filter	Microwave Circuits	H07G18G3	282388	7G HPF	Nov. 28, 2013	Dec. 07, 2013	Nov. 27, 2014	Radiation (03CH06-HY)

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Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Low Pass Filter	Wainwright	WLKS1500-8 SS	SN51	1.5G LPF	Nov. 28, 2013	Dec. 07, 2013	Nov. 27, 2014	Radiation (03CH06-HY)
Hygrometer	WISEWIND	410	BU5004	N/A	May 07, 2013	Dec. 07, 2013	May 06, 2014	Radiation (03CH06-HY)
Test Software	Audix	E3 V6.0	N/A	N/A	N/A	Dec. 07, 2013	N/A	Radiation (03CH06-HY)
EMI Test Receiver	Rohde & Schwarz	ESCS 30	100356	9kHz ~ 2.75GHz	Nov. 15, 2013	Nov. 29, 2013	Nov. 14, 2014	Conduction (CO05-HY)
Two-LISN	Rohde & Schwarz	ENV216	100081	9kHz ~ 30MHz	Dec. 12, 2012	Nov. 29, 2013	Dec. 11, 2013	Conduction (CO05-HY)
Two-LISN	Rohde & Schwarz	ENV216	100080	9kHz ~ 30MHz	Dec. 06, 2012	Nov. 29, 2013	Dec. 05, 2013	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	Nov. 29, 2013	N/A	Conduction (CO05-HY)
Test Software	N/A	EMC32	8.40.0	N/A	N/A	Nov. 29, 2013	N/A	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Apr. 25, 2013,	Nov. 29, 2013	Apr. 24, 2014	Conduction (CO05-HY)
LF Cable	Shuner	RG-402	N/A	N/A	Oct. 17, 2013	Nov. 29, 2013	Oct. 16, 2014	Conduction (CO05-HY)

Note: Test equipment calibration is traceable to the procedure of ISO17025.



5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence	2.26
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