FCC RF Test Report

APPLICANT	:	Sony Mobile Communications AB
EQUIPMENT	:	Smart phone
BRAND NAME	:	Sony
MODEL NAME	:	C2305
TYPE NAME	:	PM-0570-BV
FCC ID	:	PY7PM-0570
STANDARD	:	FCC 47 CFR Part 15 Subpart C
CLASSIFICATION	:	(DTS) Digital Transmission System

The product was received on Apr. 25, 2013 and completely tested on Jun. 07, 2013. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and shown the compliance with the applicable technical standards.

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

Reviewed by: 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.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR342505B	Rev. 01	Initial issue of report	Jun. 11, 2013

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	6dB Bandwidth	≥ 0.5MHz	Pass	-
3.2	15.247(b)(1)	Peak Output Power	≤ 30dBm	Pass	-
3.3	15.247(e)	Power Spectral Density	≤ 8dBm	Pass	-
3.4	15.247(d)	Conducted Band Edges and Spurious Emission	≤ 20dBc	Pass	-
3.5	15.247(d)	Radiated Band Edges and Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 10.71 dB at 78.600 MHz
3.6	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 16.10 dB at 2.694 MHz
3.7	15.203 & 15.247(b)	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

Sony Mobile Communications AB
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
Model Name	C2305
Type Name	PM-0570-BV
FCC ID	PY7PM-0570
GSM Operating Band(s)	GSM 900/1800/1900MHz
WCDMA Operating Band(s)	FDD Band I / VIII
WCDMA Rel. Version	Rel. 8
GPRS / EGPRS Multi Slot Class	GPRS Class 12 , EGPRS Class 12
Wi-Fi Specification	802.11b/g/n (HT20 / HT40)
Bluetooth Version	V2.1 + EDR / V3.0 / 4.0LE
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 Details of Tested Sample (EUT) Information

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	4.39 dBm (0.0027 W)
Antenna Type	IFA Antenna with gain -1.53 dBi
Type of Modulation	Bluetooth 4.0 - LE : GFSK
EUT #1	IMEI : 004402146643444 S/N : WUJ0131F11
EUT #2	IMEI : 004402146638030 S/N : WUJ5864333
H/W :	AP
S/W :	16.0.A.0.14
EUT Stage	Production Unit

Accessory List	
AC Adapter	Model No. : EP800
	Type No. : AC-0300-CN
Battery	Model No. : N/A
Earphone	Model No. : MH410c
	Type No. : AG-1100
USB Cable	Model No. : EC450
	Part No. : 1242-6715.2

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, and the serial number of each type of accessories is listed in each section of this report.
3. No modifications are made to the EUT during all test items.
4. For other wireless features of this EUT, test report will be issued separately.

1.5 Testing Facility

Test Site	SPORTON INTERNATIONAL INC.			
Test Site Location	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978			
Test Site No.	Sporton Site No.			FCC/IC Registration No.
	TH02-HY	CO05-HY	03CH07-HY	722060/4086B-1

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

1.6 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 C63.10-2009

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.

2 Test Configuration of Equipment Under Test

2.1 Descriptions of Test Mode

The RF output power was recorded in the following table:

Channel	Frequency	Bluetooth 4.0 – LE RF Output Power
		Data Rate / Modulation
		GFSK
		1Mbps
Ch00	2402MHz	**4.39 dBm**
Ch19	2440MHz	4.17 dBm
Ch39	2480MHz	3.89 dBm

a. The EUT has been associated with peripherals pursuant to ANSI C63.10-2009 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 (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 (Z plane as worst plane) from all possible combinations.

b. AC power line Conducted Emission was tested under maximum output power.

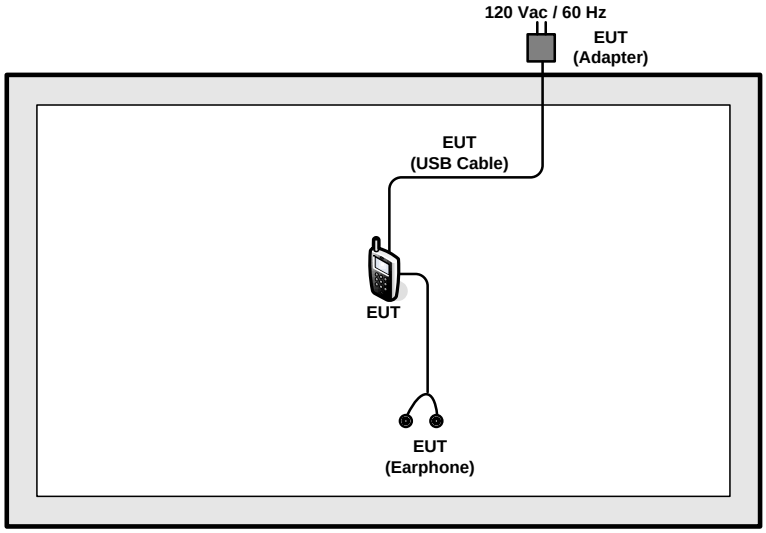
2.2 Test Mode

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

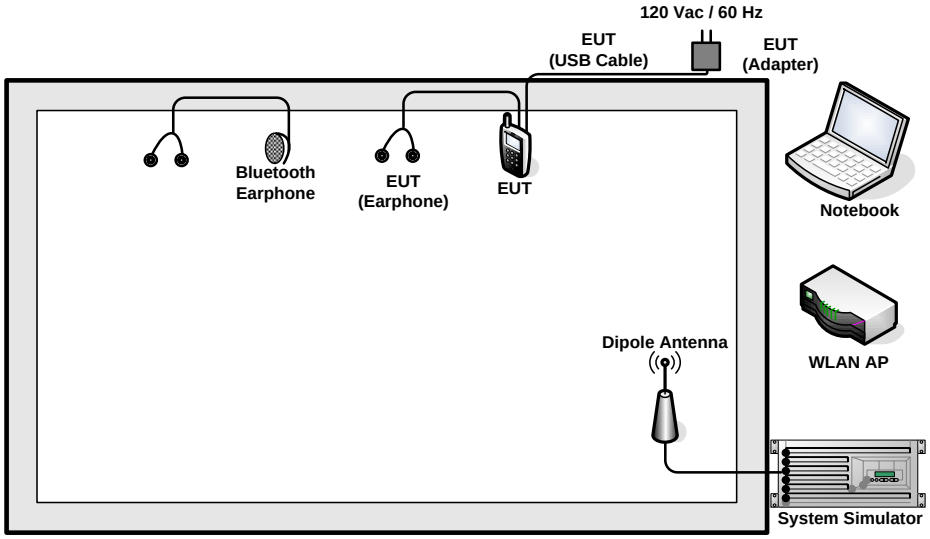
Summary table of Test Cases	
Test Item	**Data Rate / Modulation**
	Bluetooth 4.0 – LE / GFSK
Conducted Test Cases	Mode 1: Bluetooth Tx CH00_2402 MHz_1Mbps Mode 2: Bluetooth Tx CH19_2440 MHz_1Mbps Mode 3: Bluetooth Tx CH39_2480 MHz_1Mbps
Radiated Test Cases	Mode 1: Bluetooth Tx CH00_2402 MHz_1Mbps Mode 2: Bluetooth Tx CH19_2440 MHz_1Mbps Mode 3: Bluetooth Tx CH39_2480 MHz_1Mbps
AC Conducted Emission	Mode 1 :GSM1900 Idle + WLAN Idle + Bluetooth Link + MP3 + Earphone + Battery + USB Cable (Charging from Adapter) + SIM 2 Mode 2 : GSM1900 Idle + WLAN Link + Bluetooth Idle + MP3 + Earphone + Battery + USB Cable (Charging from Adapter) + SIM 2
Remark: The SIM2 is tested based on the worst case of SIM for verification from Part 15B.	

2.3 Connection Diagram of EUT Test Configurations

<Bluetooth 4.0 – LE Tx Mode>



<AC Conducted Emission Mode>



2.4 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.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
3.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A
4.	Notebook	DELL	Latitude E6320	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
5.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m

2.5 Description of EUT Operation Test Setup

For Bluetooth function, enter "＊＃＊＃3646633＃＊＃＊" to the EUT for setting the EUT into engineering modes. Turn on Bluetooth function 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.

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.

Example :

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

= 4.2 + 10 = 14.2 (dB)

3 Test Result

3.1 6dB Bandwidth Measurement

3.1.1 Limit of 6dB Bandwidth

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

3.1.2 Measuring Instruments

The section 4.0 of List of Measuring Equipment of this test report is used for test.

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.
4. 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. Measure and record the results in the test report.

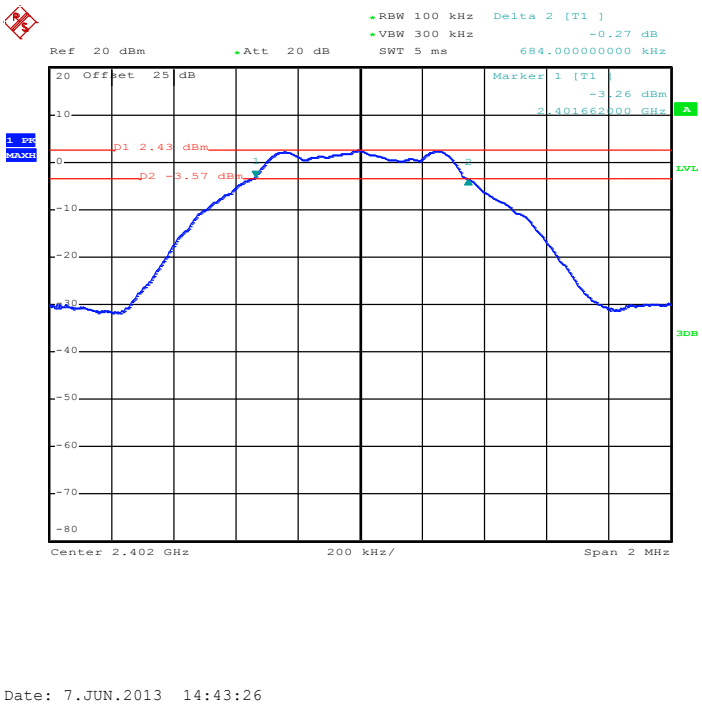
3.1.4 Test Setup

3.1.5 Test Result of 6dB Bandwidth

Test Mode :	Bluetooth 4.0 - LE	Temperature :	22~25℃
Test Engineer :	Coyote Lin	Relative Humidity :	51~55%

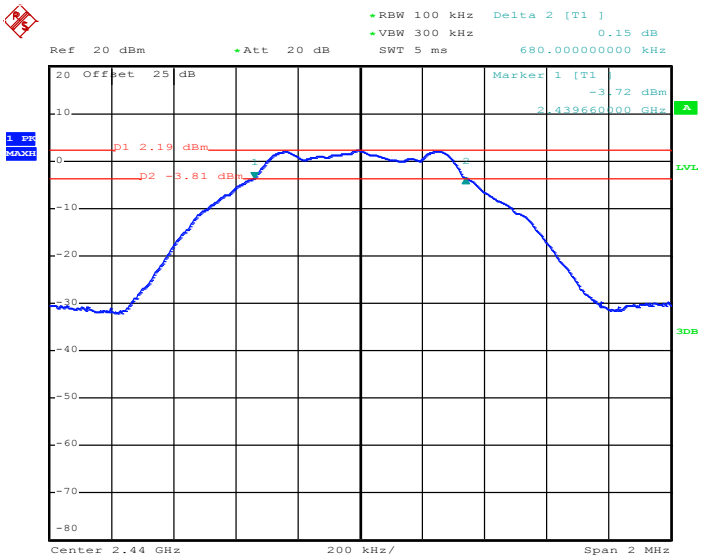
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
00	2402	0.68	0.5	Pass
19	2440	0.68	0.5	Pass
39	2480	0.69	0.5	Pass

6 dB Bandwidth Plot on Channel 00



Note: The total loss is 25 dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.

6 dB Bandwidth Plot on Channel 19



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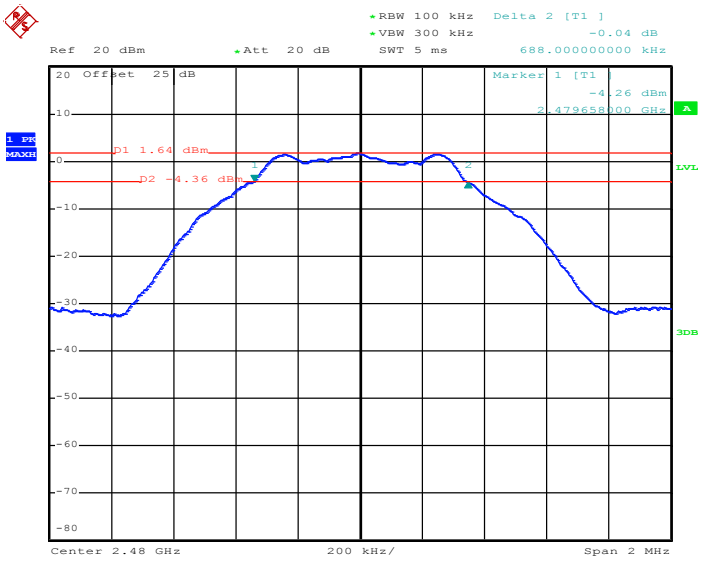
6 dB Bandwidth Plot on Channel 39



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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.

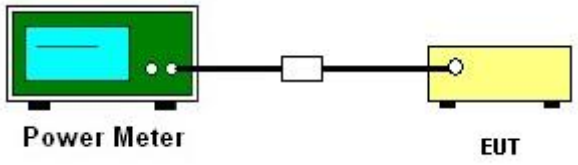
3.2.2 Measuring Instruments

The section 4.0 of List of Measuring Equipment of this test report is used for test.

3.2.3 Test Procedures

1. 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 :	Bluetooth 4.0 - LE	Temperature :	22~25℃
Test Engineer :	Coyote Lin	Relative Humidity :	51~55%

Channel	Frequency (MHz)	RF Power (dBm)		
		GFSK	Max. Limits (dBm)	Pass/Fail
		1 Mbps		
00	2402	4.39	30.00	Pass
19	2440	4.17	30.00	Pass
39	2480	3.89	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 section 4.0 of List of Measuring Equipment of this test report is used for test.

3.3.3 Test Procedures

1. 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.
4. 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

3.3.5 Test Result of Power Spectral Density

Test Mode :	Bluetooth 4.0 - LE	Temperature :	22~25℃
Test Engineer :	Coyote Lin	Relative Humidity :	51~55%

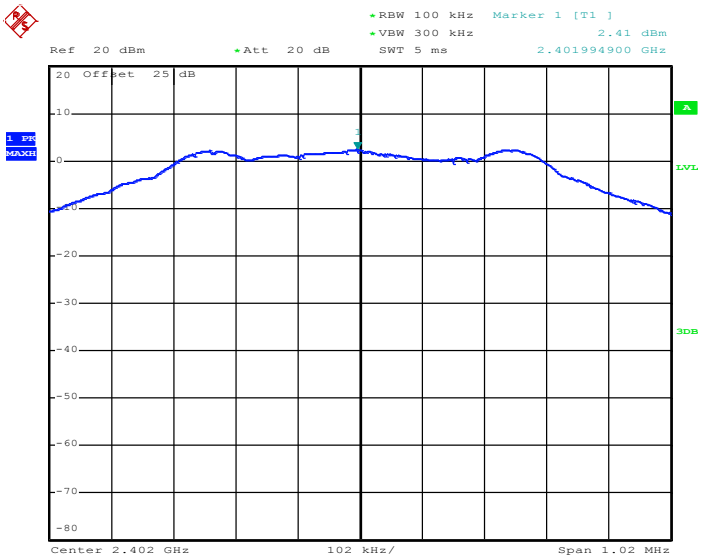
Channel	Frequency (MHz)	Power Density		Max. Limits (dBm/3kHz)	Pass/Fail
		PSD/100kHz (dBm)	PSD/3kHz (dBm)		
00	2402	2.41	-11.81	8	Pass
19	2440	2.18	-12.08	8	Pass
39	2480	1.62	-12.63	8	Pass

Note:

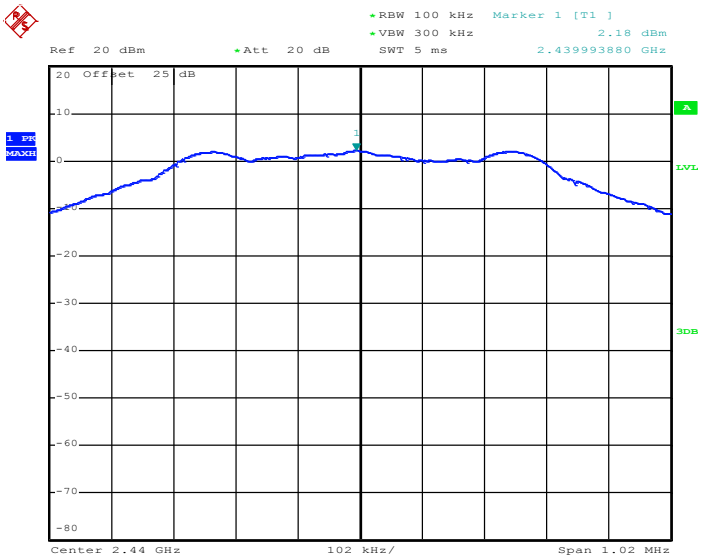
1. *The total loss is 24.8 dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.*
2. *Measured power density (dBm) has offset with cable loss.*
3. *The Measured power density (dBm)/ 100kHz is reference level and used as 20dBc down for Conducted Band Edges and Conducted Spurious Emission limit line.*

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

PSD 100kHz Plot on Channel 00



PSD 100kHz Plot on Channel 19



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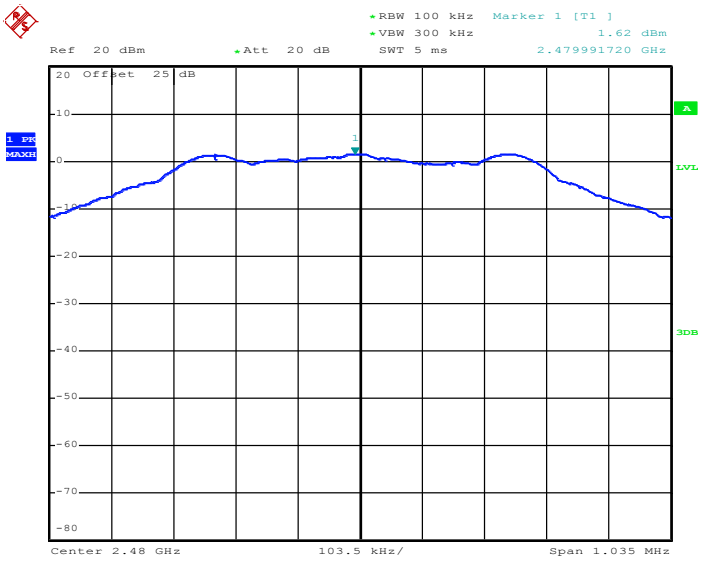
PSD 100kHz Plot on Channel 39



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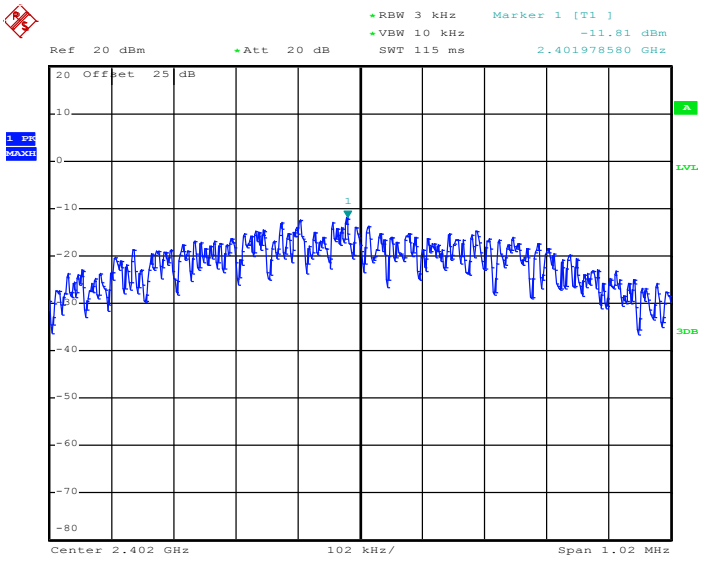
3.3.7 Test Result of Power Spectral Density Plots (3kHz)

PSD 3kHz Plot on Channel 00



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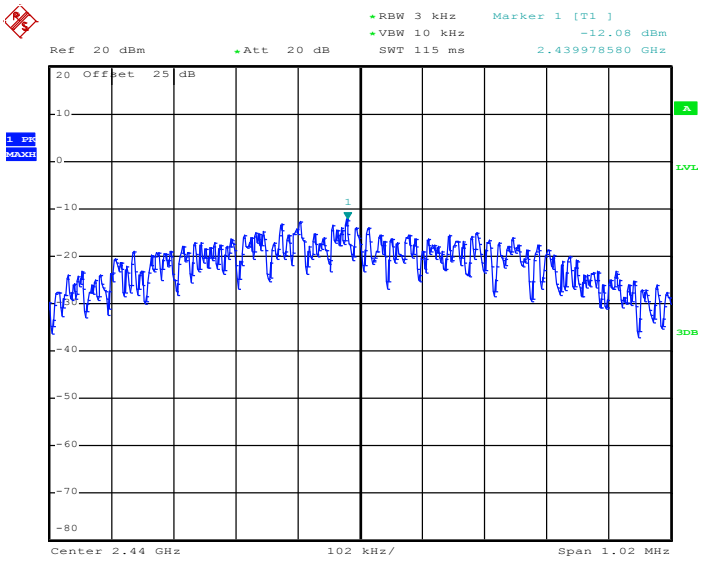
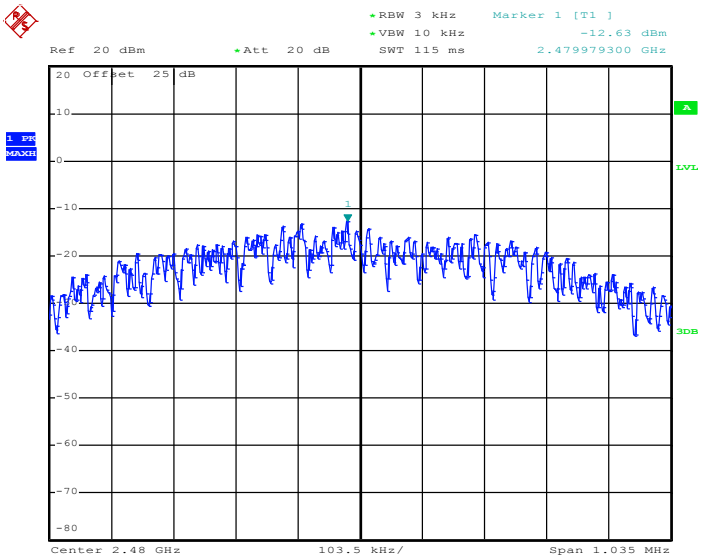
PSD 3kHz Plot on Channel 19



Date: 7.JUN.2013 14:47:01

PSD 3kHz Plot on Channel 39



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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.

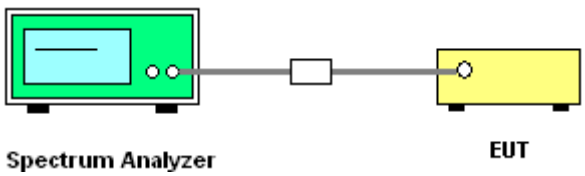
3.4.2 Measuring Instruments

The section 4.0 of List of Measuring Equipment of this test report is used for test.

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.

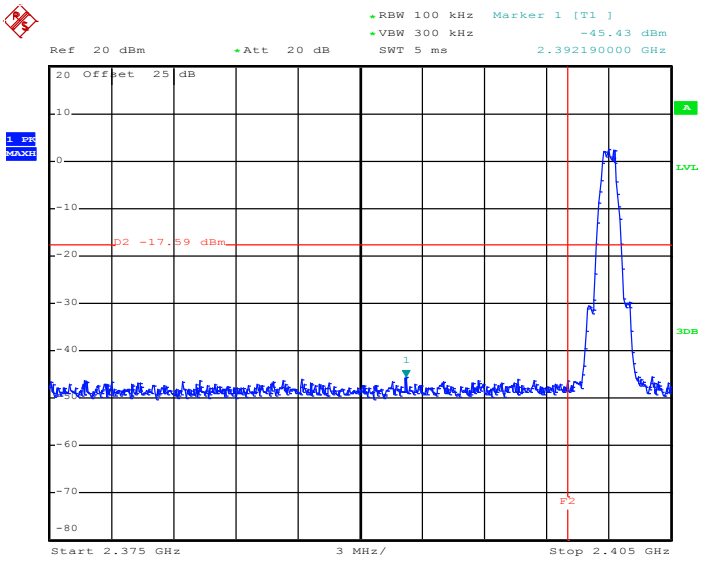
3.4.4 Test Setup



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 :	Coyote Lin

Low Band Edge Plot on Channel 00



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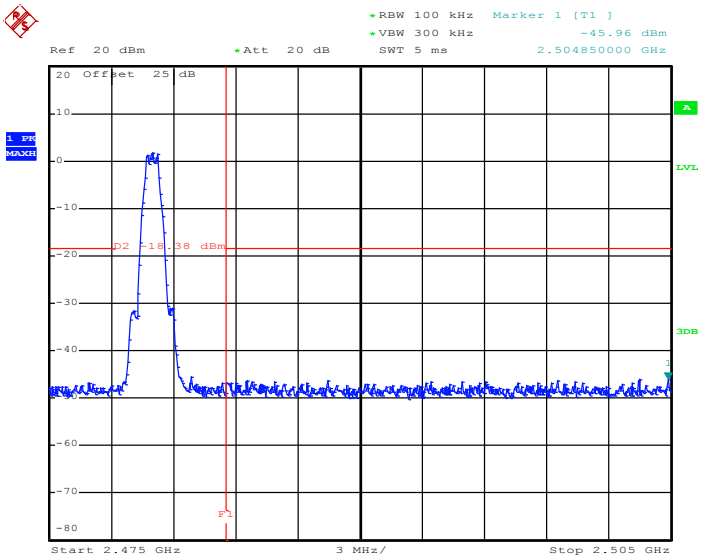
High Band Edge Plot on Channel 39



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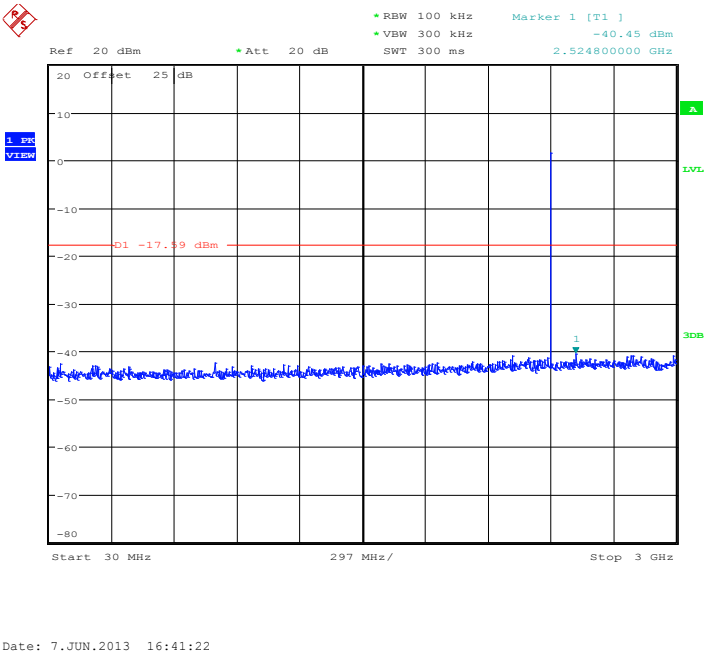
Note: The total loss is 25 dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer offset.

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 :	Coyote Lin

Conducted Spurious Emission Plot on Bluetooth LE 1Mbps

GFSK Channel 00

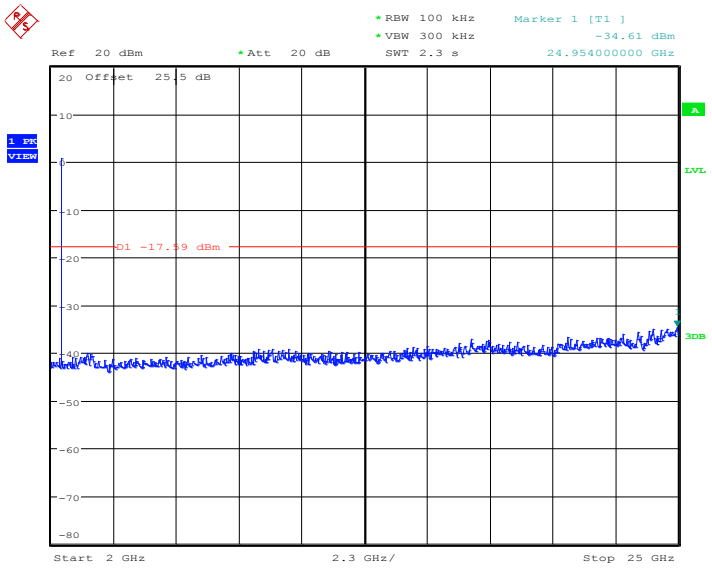


Note:

1. The total loss is 25 dB 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



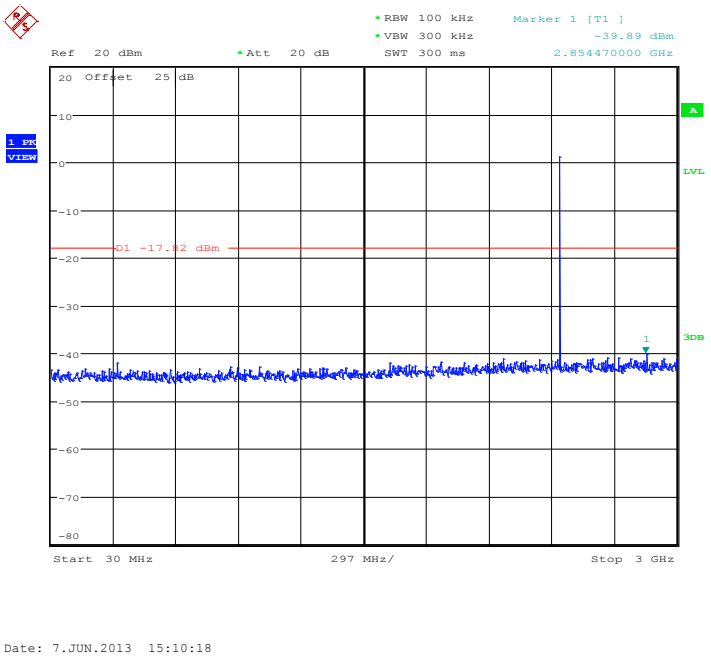
Note:

1. The total loss is 25.5 dB 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 :	Coyote Lin

Conducted Spurious Emission Plot on Bluetooth LE 1Mbps

GFSK Channel 19

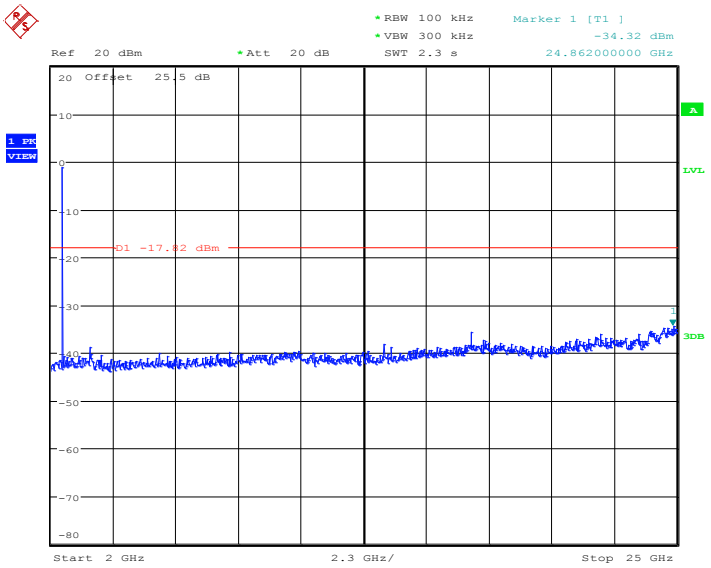


Note:

1. The total loss is 25 dB 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 19



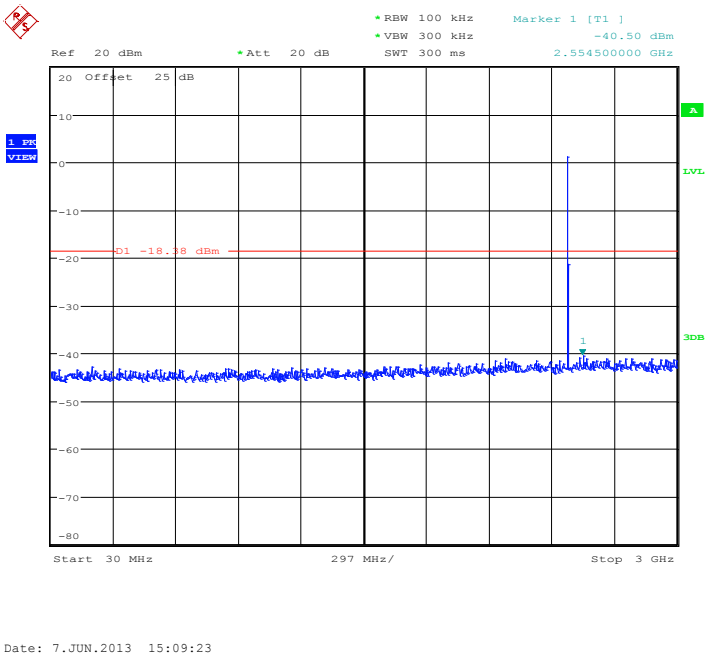
Note:

1. The total loss is 25.5 dB 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 :	Coyote Lin

Conducted Spurious Emission Plot on Bluetooth LE 1Mbps

GFSK Channel 39

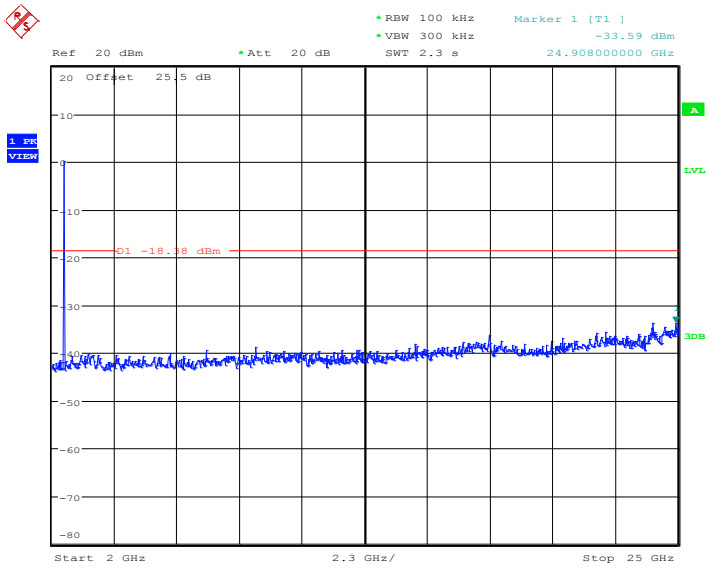


Note:

1. The total loss is 25 dB 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 39



Note:

1. The total loss is 25.5 dB 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 (MHz)	Field Strength (microvolts/meter)	Measurement Distance (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 section 4.0 of List of Measuring Equipment of this test report is used for test.

3.5.3 Test Procedures

1. The testing follows the guidelines in ANSI C63.10-2009.
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 ≥ 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	65.19	412.000	2.427	3kHz

Note: For average measurement with duty cycle < 98%, use reduced VBW measurement method 4.2.3.2.3 in ANSI C63.10.

Marker-Delta method：

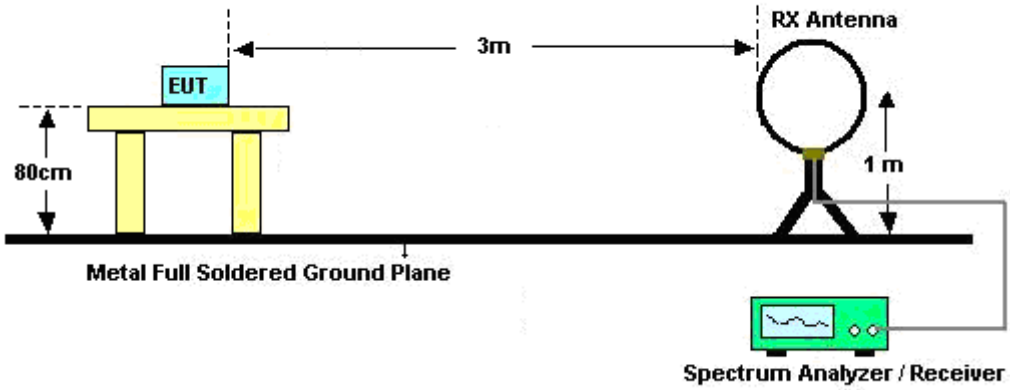
(1) Set RBW = 1 MHz, VBW = 3 MHz, peak detector.
Repeat the measurement with an average detector, use RBW = 1MHz
VBW = 10 Hz, when duty cycle is no less than 98 percent.
VBW ≥ 1/T, when duty cycle is less than 98 percent

(2) Set span = 10MHz, that encompasses both the peak of the fundamental emission and the band-edge emission under investigation. Set RBW = 100KHz, 1% of the total span. Set VBW = 100KHz >= RBW.

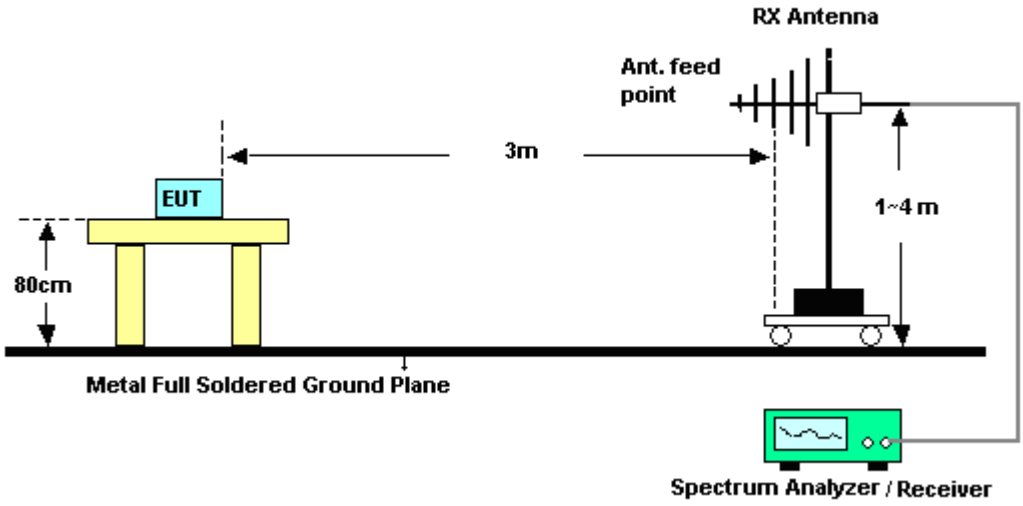
(3) Subtract the delta measured in step (2) from the field strengths measured in step (1). The resultant field strengths (peak/average) are then used to determine band-edge compliance as required by Section 15.205.

3.5.4 Test Setup

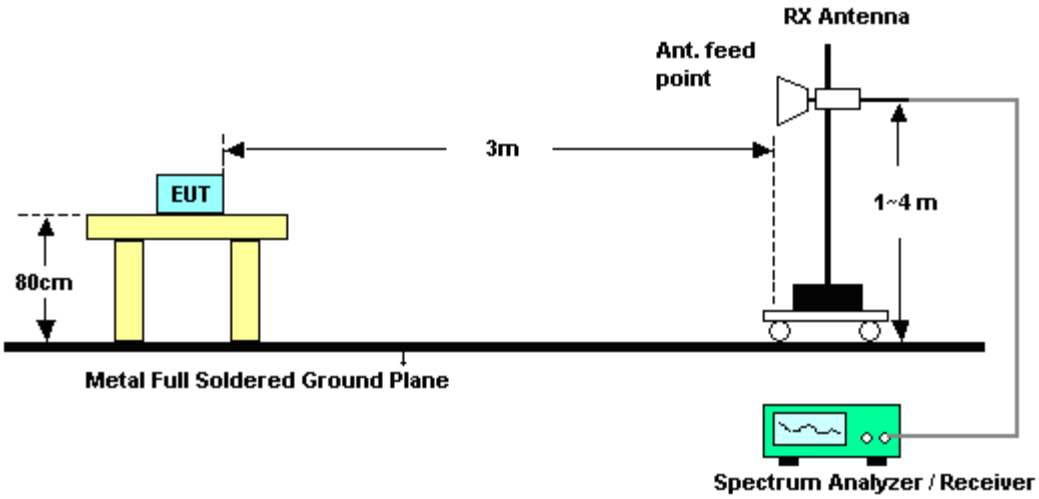
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz

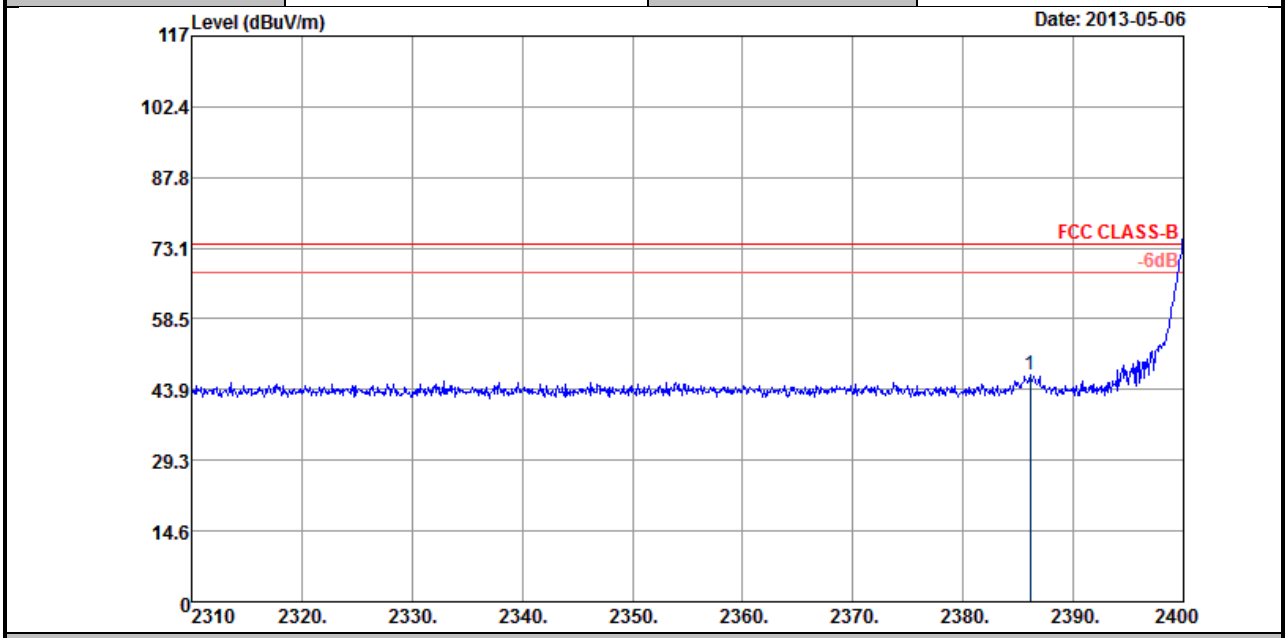


3.5.5 Test Results of Radiated Emissions (9 kHz ~ 30 MHz)

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.

3.5.6 Test Result of Radiated Band Edges

Test Mode :	Mode 1	Temperature :	21~23°C
Test Channel :	00	Relative Humidity :	51~53%
		Test Engineer :	Beer Chang

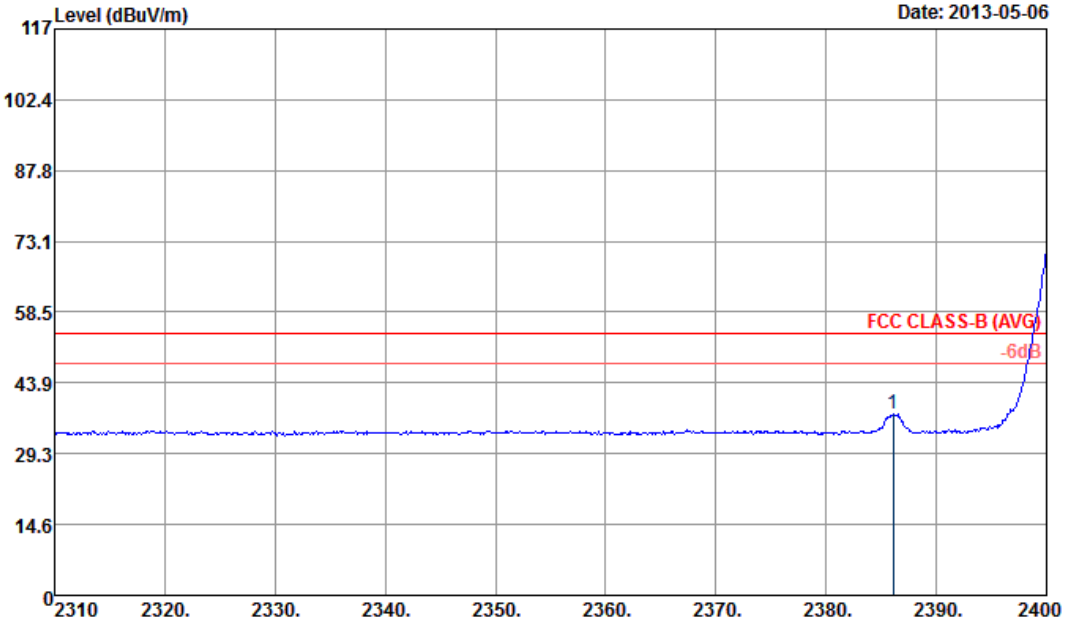


ANTENNA POLARITY : HORIZONTAL

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2386.05	46.8	-27.2	74	41.86	32.3	6.91	34.27	165	146	Peak

Note: Worst case measurement on 2386.05 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.

Test Mode :	Mode 1	Temperature :	21~23°C
Test Channel :	00	Relative Humidity :	51~53%
		Test Engineer :	Beer Chang

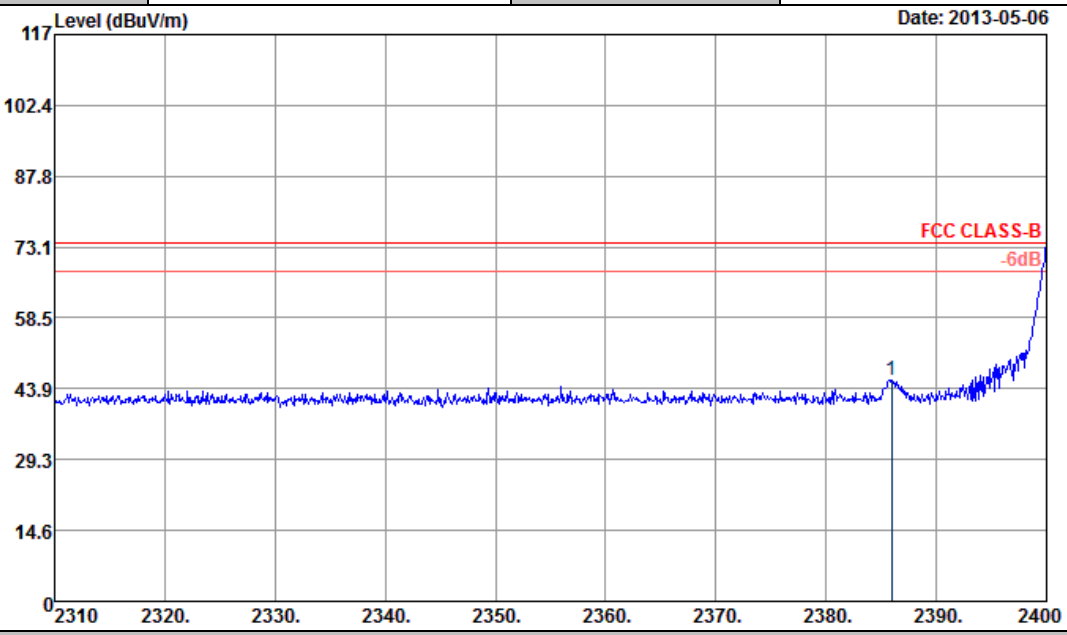


ANTENNA POLARITY : HORIZONTAL

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2386.05	37.34	-16.66	54	32.4	32.3	6.91	34.27	165	146	Average

Note: Worst case measurement on 2386.05 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.

Test Mode :	Mode 1	Temperature :	21~23°C
Test Channel :	00	Relative Humidity :	51~53%
		Test Engineer :	Beer Chang

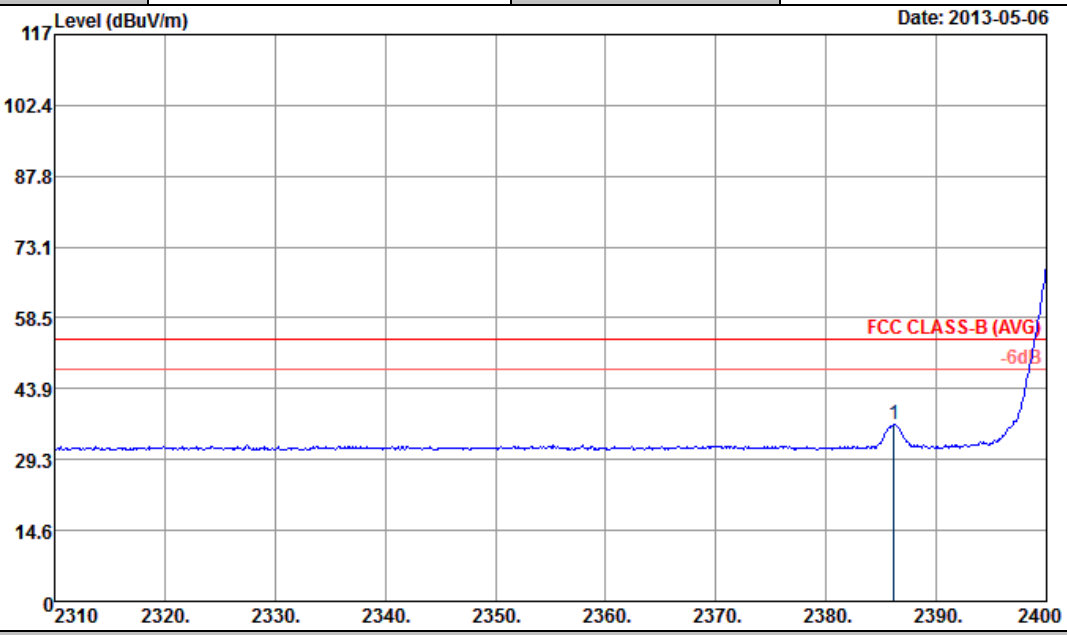


ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2385.96	45.73	-28.27	74	40.79	32.3	6.91	34.27	100	115	Peak

Note: Worst case measurement on 2385.96 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.

Test Mode :	Mode 1	Temperature :	21~23°C
Test Channel :	00	Relative Humidity :	51~53%
		Test Engineer :	Beer Chang

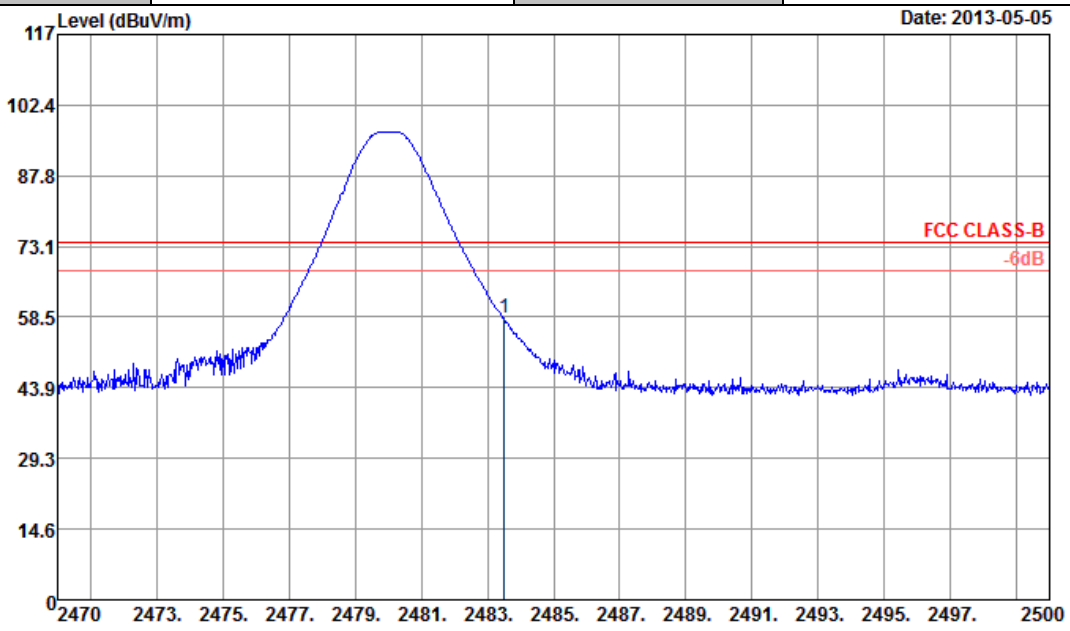


ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2386.14	36.58	-17.42	54	31.64	32.3	6.91	34.27	100	115	Average

Note: Worst case measurement on 2386.14 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.

Test Mode :	Mode 3	Temperature :	21~23°C
Test Channel :	39	Relative Humidity :	51~53%
		Test Engineer :	Beer Chang



ANTENNA POLARITY : HORIZONTAL

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	58.19	-15.81	74	53.18	32.38	7.06	34.43	118	50	Peak
2483.5	43.18	-30.82	74	-	-	-	-	-	-	Peak

Note: Worst case measurement on 2483.5 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.

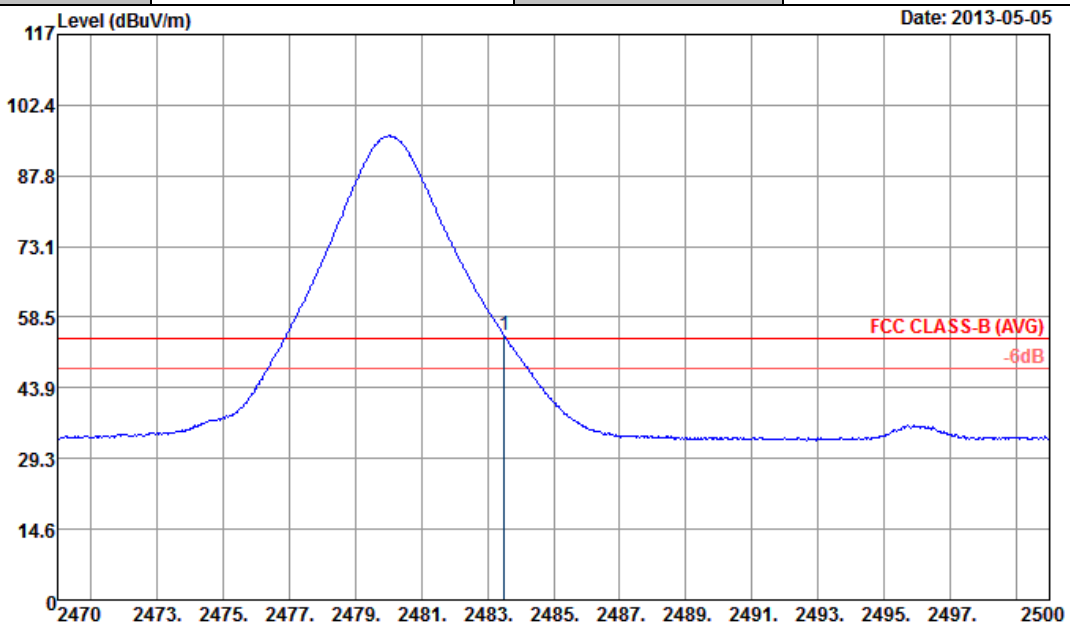
Summary results of marker-delta method:

Test mode	Maximum field strength of the fundamental emission (dBµV/m)	Delta Result (dB)	Measurement Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
Peak	96.89	53.71	43.18	74	-30.82	Pass
Average	96	53.71	42.29	54	-11.71	Pass

Note :

1. Measurement result = Maximum field strength – Delta result
2. Delta-Marker Method is used for the 2483.5MHz average measurement as described in the test procedure of this report and the test result is under 30.82dB.

Test Mode :	Mode 3	Temperature :	21~23°C
Test Channel :	39	Relative Humidity :	51~53%
		Test Engineer :	Beer Chang



ANTENNA POLARITY : HORIZONTAL

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	54.84	0.84	54	49.83	32.38	7.06	34.43	118	50	Average
2483.5	42.29	-11.71	54	-	-	-	-	-	-	Average

Note: Worst case measurement on 2483.5 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.

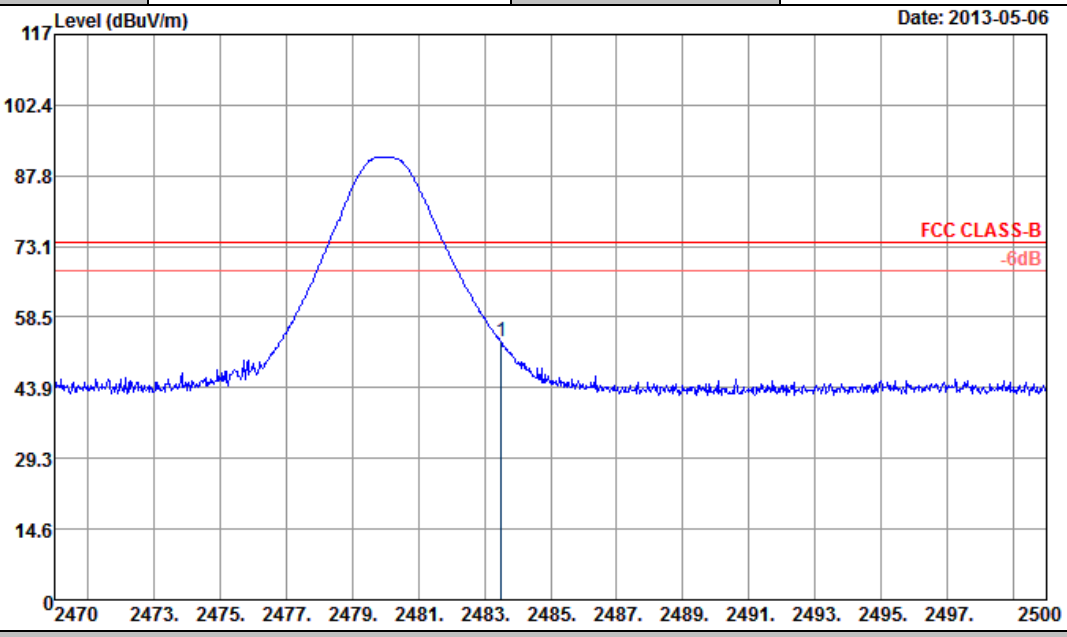
Summary results of marker-delta method:

Test mode	Maximum field strength of the fundamental emission (dBµV/m)	Delta Result (dB)	Measurement Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
Peak	96.89	53.71	43.18	74	-30.82	Pass
Average	96	53.71	42.29	54	-11.71	Pass

Note:

1. Measurement result = Maximum field strength – Delta result
2. Delta-Marker Method is used for the 2483.5MHz average measurement as described in the test procedure of this report and the test result is under 11.71dB.

Test Mode :	Mode 3	Temperature :	21~23°C
Test Channel :	39	Relative Humidity :	51~53%
		Test Engineer :	Beer Chang



ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	53.56	-20.44	74	48.55	32.38	7.06	34.43	152	118	Peak
2483.5	43.27	-30.73	74	-	-	-	-	-	-	Peak

Note: Worst case measurement on 2483.5 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.

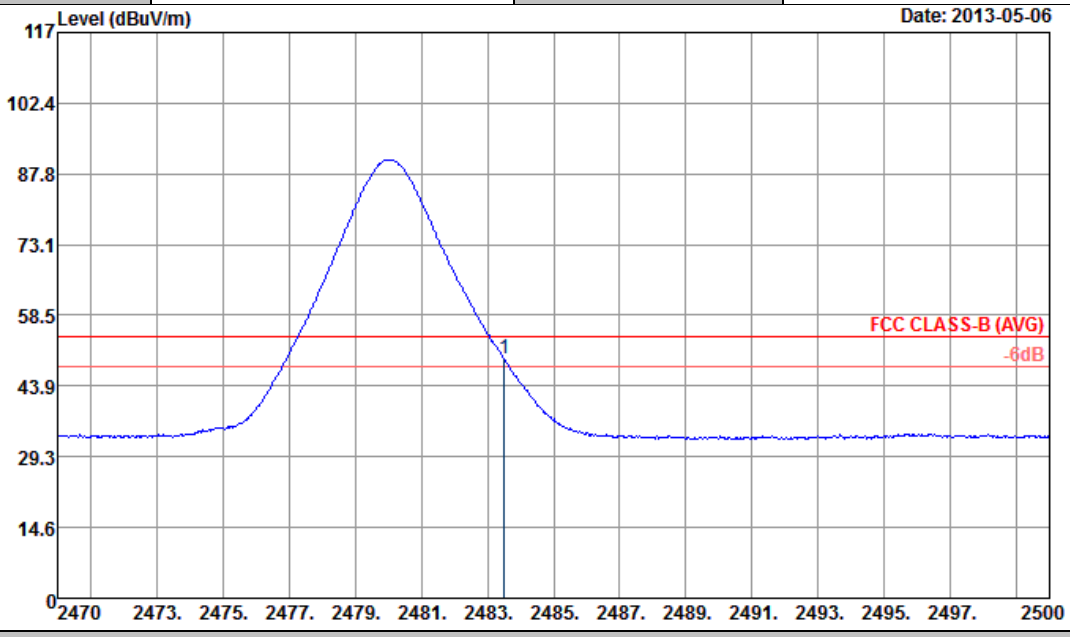
Summary results of marker-delta method:

Test mode	Maximum field strength of the fundamental emission (dBµV/m)	Delta Result (dB)	Measurement Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
Peak	91.63	48.36	43.27	74	-30.73	Pass
Average	90.69	48.36	42.33	54	-11.67	Pass

Note:

1. Measurement result = Maximum field strength – Delta result
2. Delta-Marker Method is used for the 2483.5MHz average measurement as described in the test procedure of this report and the test result is under 30.73dB.

Test Mode :	Mode 3	Temperature :	21~23°C
Test Channel :	39	Relative Humidity :	51~53%
		Test Engineer :	Beer Chang



ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	49.55	-4.45	54	44.54	32.38	7.06	34.43	152	118	Average
2483.5	42.33	-11.67	54	-	-	-	-	-	-	Average

Note: Worst case measurement on 2483.5 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.

Summary results of marker-delta method:

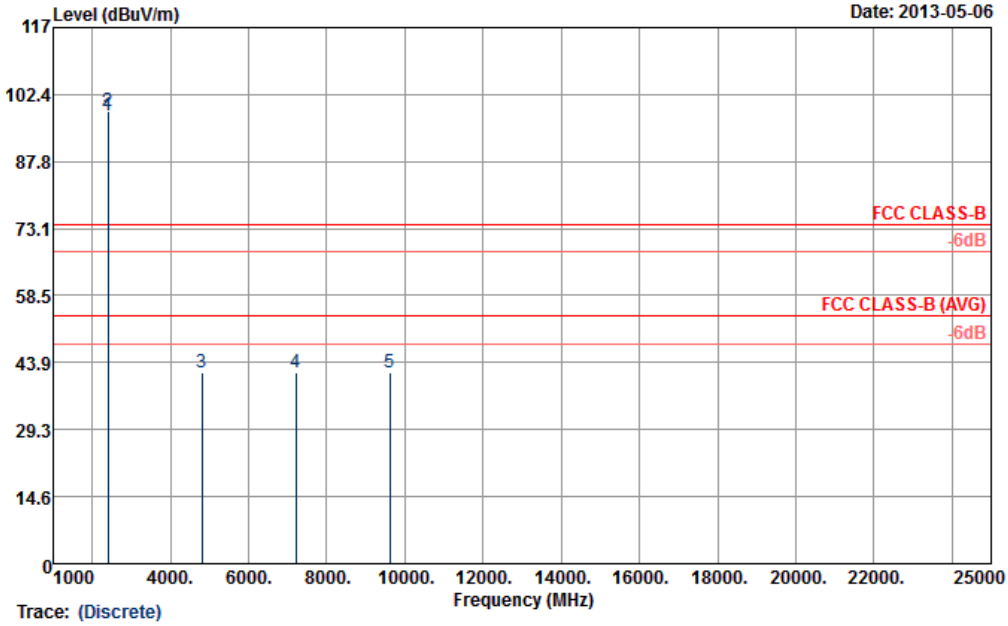
Test mode	Maximum field strength of the fundamental emission (dBµV/m)	Delta Result (dB)	Measurement Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
Peak	91.63	48.36	43.27	74	-30.73	Pass
Average	90.69	48.36	42.33	54	-11.67	Pass

Note:

1. Measurement result = Maximum field strength – Delta result
2. Delta-Marker Method is used for the 2483.5MHz average measurement as described in the test procedure of this report and the test result is under 11.67dB.

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

Test Mode :	Mode 1	Temperature :	21~23°C
Test Channel :	00	Relative Humidity :	51~53%
Test Engineer :	Beer Chang		
Remark :	1. 2402 MHz is fundamental signal which can be ignored. 2. 7206 MHz and 9608 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 98.59 dB μV/m - 20dB = 78.59 dB μV/m. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (5th ,6th , 7th,…etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise.		

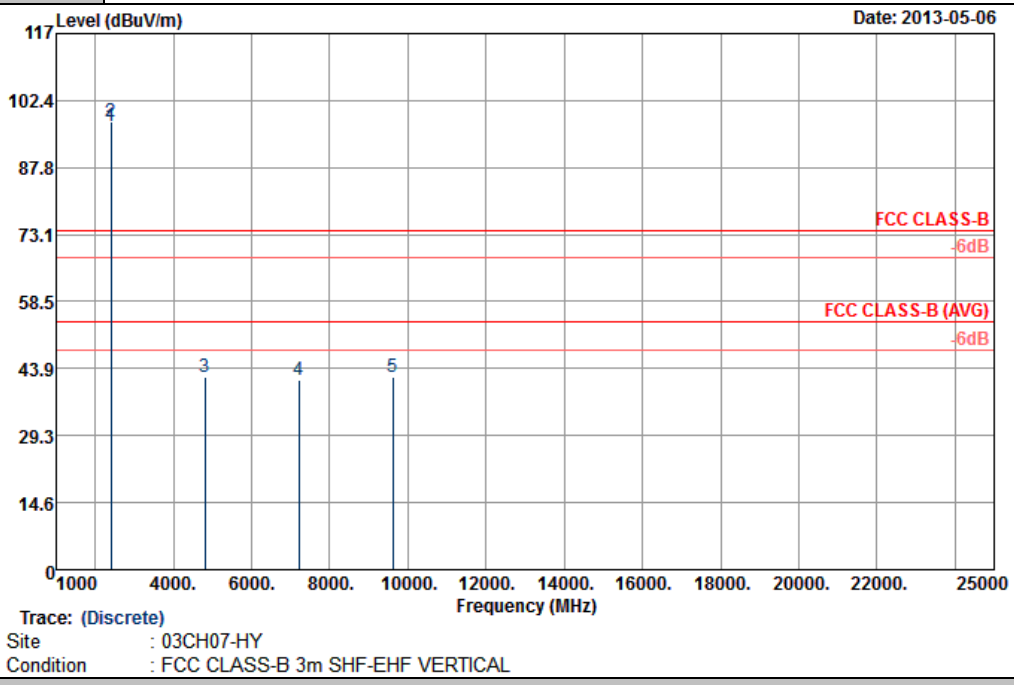


ANTENNA POLARITY : HORIZONTAL

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2402	97.65	-	-	92.74	32.3	6.91	34.3	165	146	Average
2402	98.59	-	-	93.68	32.3	6.91	34.3	165	146	Peak
4803	41.81	-32.19	74	56.55	33.98	8.75	57.47	100	0	Peak
7206	41.76	-36.83	78.59	53.35	35.56	10.81	57.96	100	0	Peak
9608	41.8	-36.79	78.59	49.89	36.44	13.7	58.23	100	0	Peak

Note: Other harmonics are lower than background noise.

Test Mode :	Mode 1	Temperature :	21~23°C
Test Channel :	00	Relative Humidity :	51~53%
Test Engineer :	Beer Chang		
Remark :	1. 2404 MHz is fundamental signal which can be ignored. 2. 7206 MHz and 9609 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (5^{th} ,6^{th} , 7^{th},…etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise.		

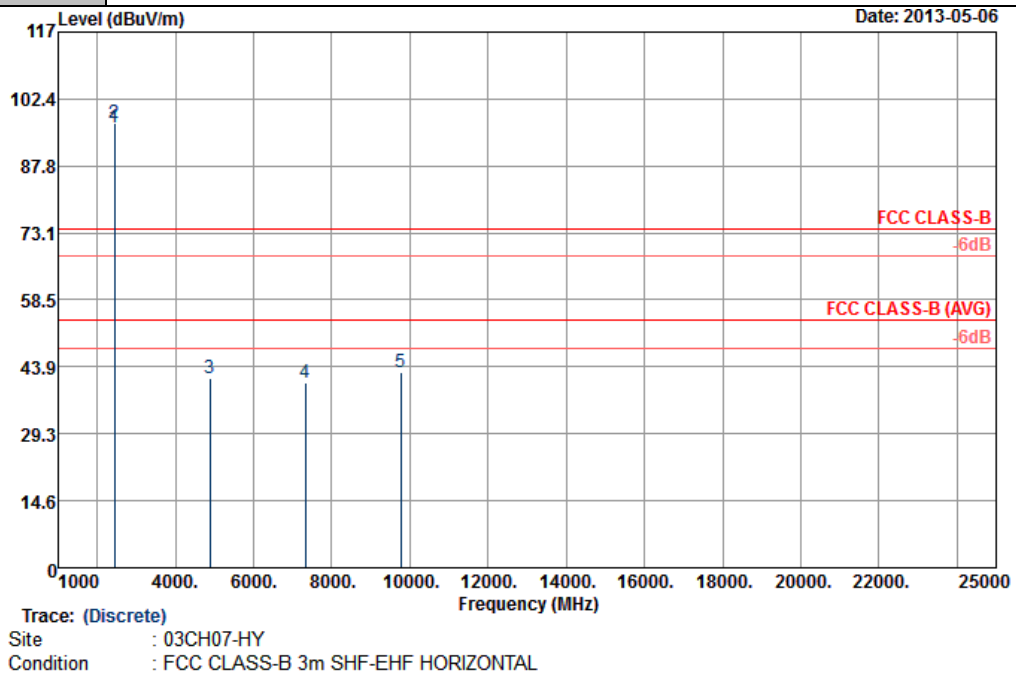


ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2404	96.79	-	-	91.87	32.31	6.91	34.3	100	115	Average
2404	97.8	-	-	92.88	32.31	6.91	34.3	100	115	Peak
4803	42.13	-31.87	74	56.87	33.98	8.75	57.47	100	0	Peak
7206	41.27	-36.53	77.8	52.86	35.56	10.81	57.96	100	0	Peak
9609	42.07	-35.73	77.8	50.16	36.44	13.7	58.23	100	0	Peak

Note: Other harmonics are lower than background noise.

Test Mode :	Mode 2	Temperature :	21~23°C
Test Channel :	19	Relative Humidity :	51~53%
Test Engineer :	Beer Chang		
Remark :	1. 2440 MHz is fundamental signal which can be ignored. 2. 9765 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (5th ,6th , 7th,…etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise.		

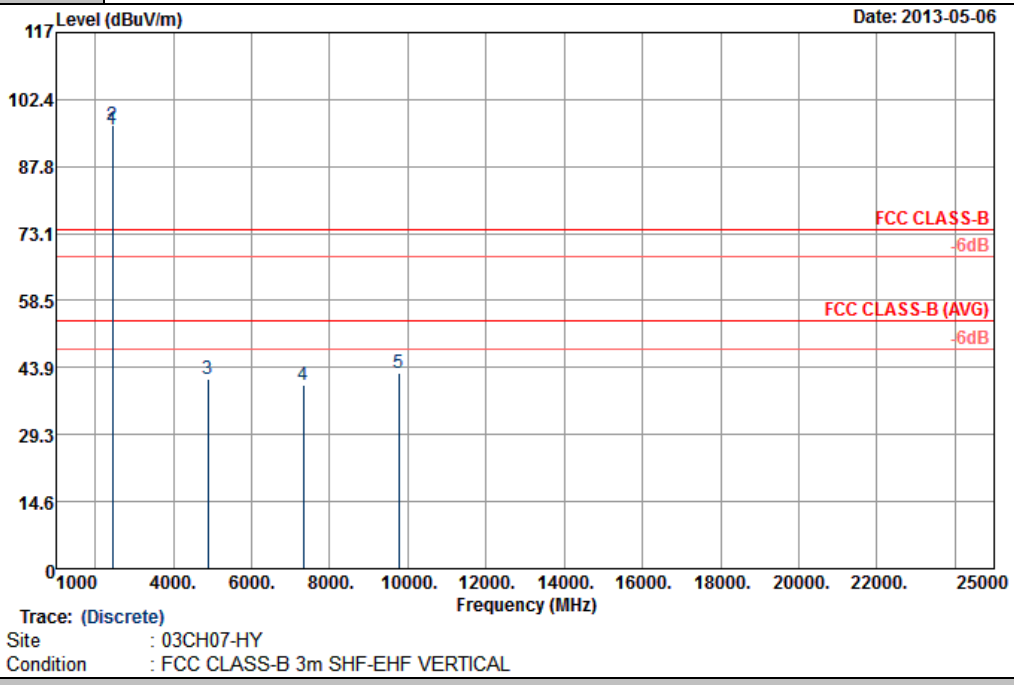


ANTENNA POLARITY : HORIZONTAL

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2440	96.08	-	-	91.09	32.35	6.99	34.35	105	132	Average
2440	97.1	-	-	92.11	32.35	6.99	34.35	105	132	Peak
4881	41.31	-32.69	74	55.99	33.95	8.85	57.48	100	0	Peak
7323	40.41	-33.59	74	52.01	35.53	10.91	58.04	100	0	Peak
9765	42.75	-34.35	77.1	50.61	36.69	13.69	58.24	100	0	Peak

Note: Other harmonics are lower than background noise.

Test Mode :	Mode 2	Temperature :	21~23°C
Test Channel :	19	Relative Humidity :	51~53%
Test Engineer :	Beer Chang		
Remark :	1. 2441 MHz is fundamental signal which can be ignored. 2. 9765 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (5th ,6th , 7th,…etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise.		

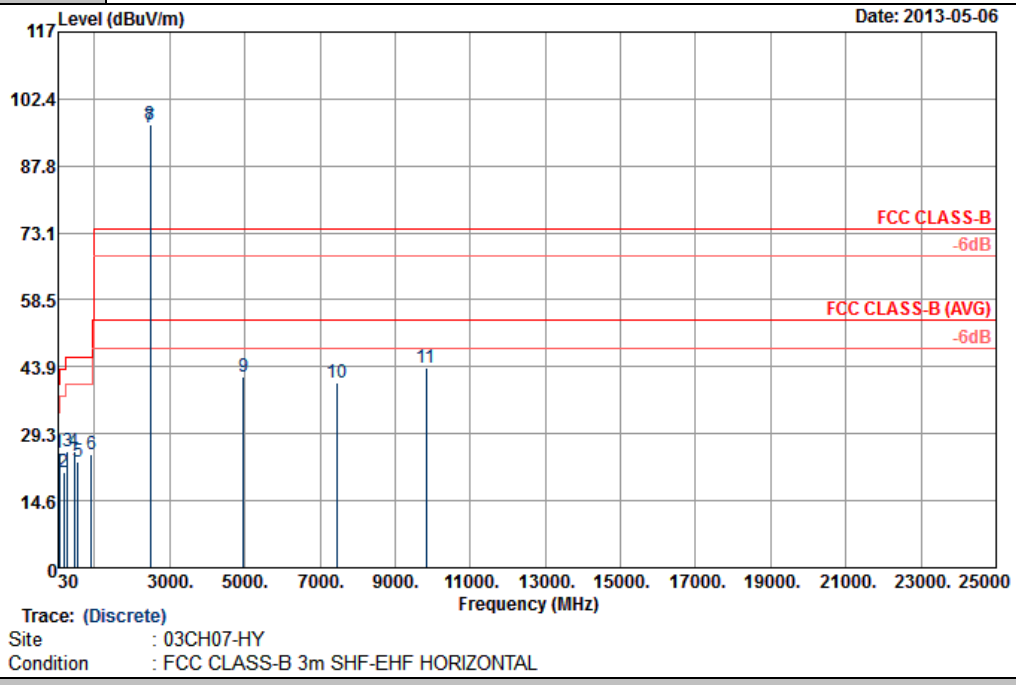


ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2441	95.77	-	-	90.82	32.35	6.99	34.39	120	259	Average
2441	96.69	-	-	91.74	32.35	6.99	34.39	120	259	Peak
4881	41.3	-32.7	74	55.98	33.95	8.85	57.48	100	0	Peak
7323	40.16	-33.84	74	51.76	35.53	10.91	58.04	100	0	Peak
9765	42.71	-33.98	76.69	50.57	36.69	13.69	58.24	100	0	Peak

Note: Other harmonics are lower than background noise.

Test Mode :	Mode 3	Temperature :	21~23°C
Test Channel :	39	Relative Humidity :	51~53%
Test Engineer :	Beer Chang		
Remark :	1. 2481 MHz is fundamental signal which can be ignored. 2. 9819 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (5th ,6th , 7th,…etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise.		



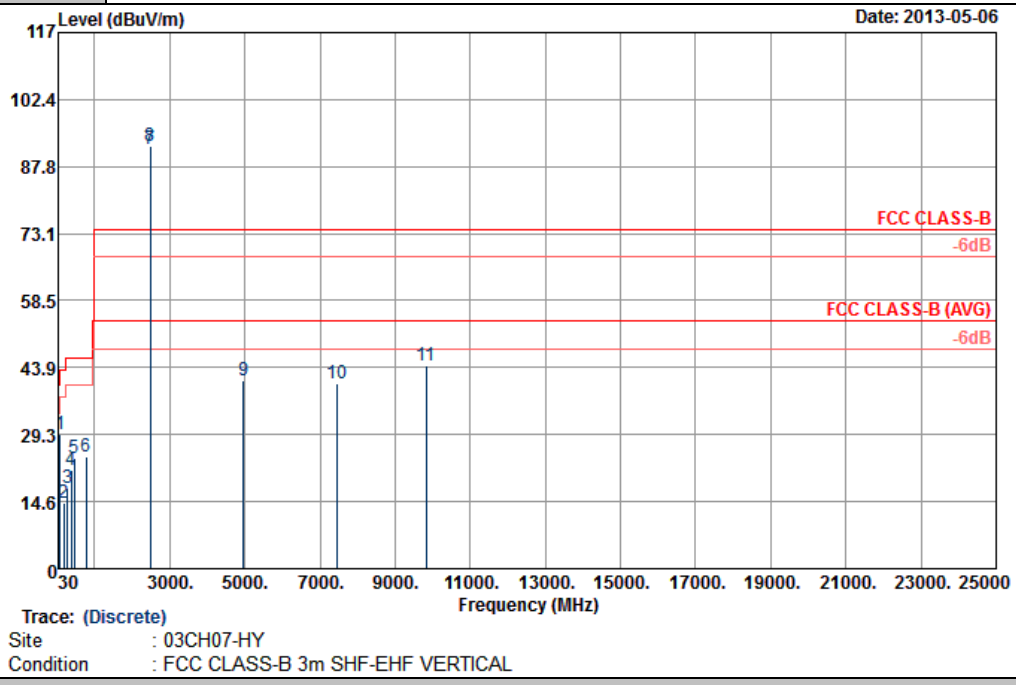
ANTENNA POLARITY : HORIZONTAL

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
50.79	25.03	-14.97	40	47.86	8.1	0.7	31.63	124	168	Peak
182.55	20.97	-22.53	43.5	42.01	8.92	1.26	31.22	-	-	Peak
275.43	25.46	-20.54	46	42.21	12.96	1.64	31.35	-	-	Peak
465.9	25.51	-20.49	46	36.9	17.37	2.34	31.1	-	-	Peak
555.5	23.19	-22.81	46	32.77	19.04	2.57	31.19	-	-	Peak
904.8	24.66	-21.34	46	28.97	23.17	3.35	30.83	-	-	Peak

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2481	96	-	-	90.99	32.38	7.06	34.43	118	50	Average
2481	96.69	-	-	91.68	32.38	7.06	34.43	118	50	Peak
4959	41.78	-32.22	74	56.44	33.91	8.92	57.49	100	0	Peak
7440	40.31	-33.69	74	51.88	35.51	11.04	58.12	100	0	Peak
9819	43.74	-32.95	76.69	51.54	36.76	13.69	58.25	100	0	Peak

Note: Other harmonics are lower than background noise.

Test Mode :	Mode 3	Temperature :	21~23°C
Test Channel :	39	Relative Humidity :	51~53%
Test Engineer :	Beer Chang		
Remark :	1. 2482 MHz is fundamental signal which can be ignored. 2. 9819 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit. 4. The harmonic (5th ,6th , 7th,…etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise.		



ANTENNA POLARITY : VERTICAL

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
78.6	29.29	-10.71	40	52.7	7.45	0.87	31.73	162	235	Peak
183.9	14.34	-29.16	43.5	35.38	8.94	1.26	31.24	-	-	Peak
277.86	17.71	-28.29	46	34.45	13	1.64	31.38	-	-	Peak
372.1	21.64	-24.36	46	35.63	15.27	2.08	31.34	-	-	Peak
459.6	24.16	-21.84	46	35.76	17.25	2.32	31.17	-	-	Peak
773.2	24.45	-21.55	46	30.02	21.69	3.1	30.36	-	-	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2482	91.68	-	-	86.67	32.38	7.06	34.43	152	118	Average
2482	92.34	-	-	87.33	32.38	7.06	34.43	152	118	Peak
4959	41	-33	74	55.66	33.91	8.92	57.49	100	0	Peak
7440	40.29	-33.71	74	51.86	35.51	11.04	58.12	100	0	Peak
9819	44.29	-28.05	72.34	52.09	36.76	13.69	58.25	100	0	Peak

Note: Other harmonics are lower than background noise.

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 emission (MHz)	Conducted limit (dBμV)	
	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.

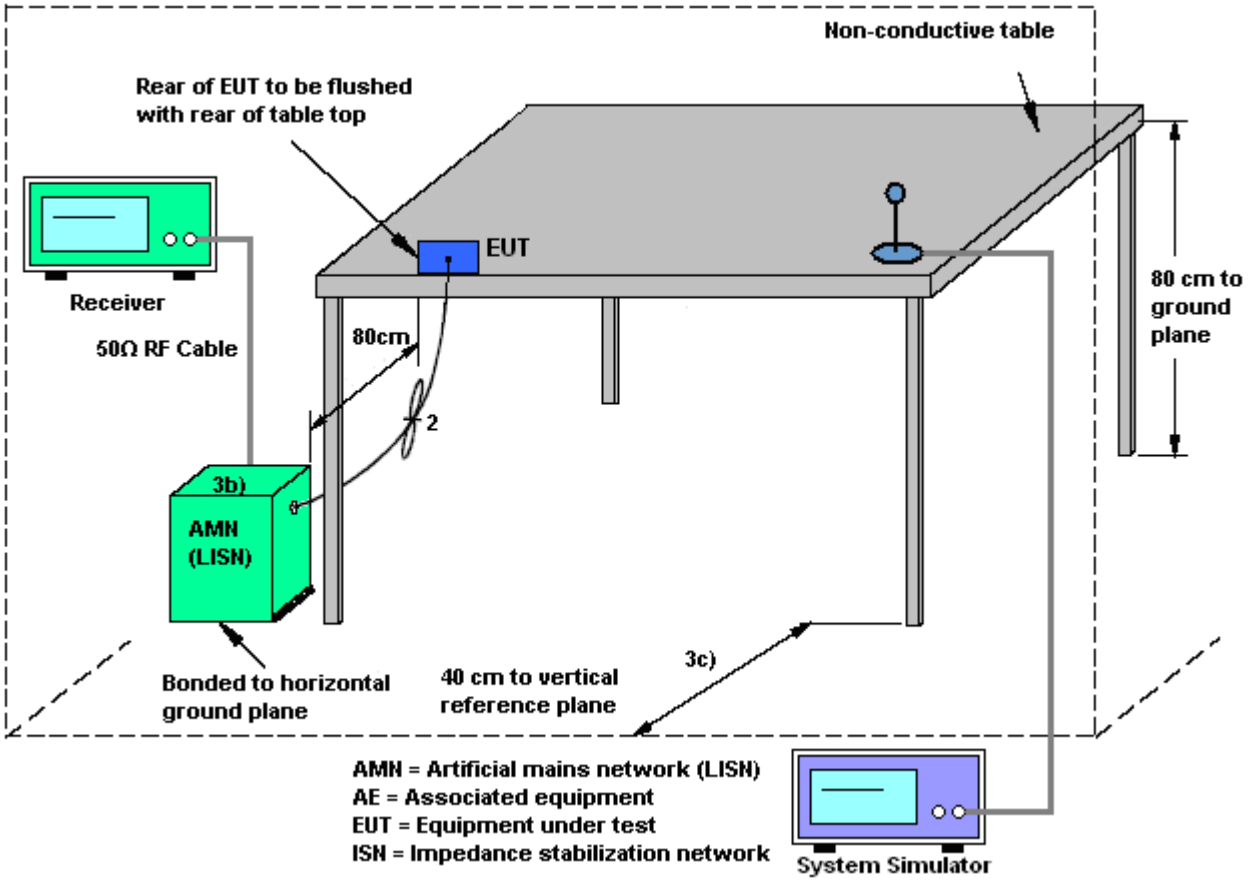
3.6.2 Measuring Instruments

The section 4.0 of List of Measuring Equipment of this test report is used for test.

3.6.3 Test Procedures

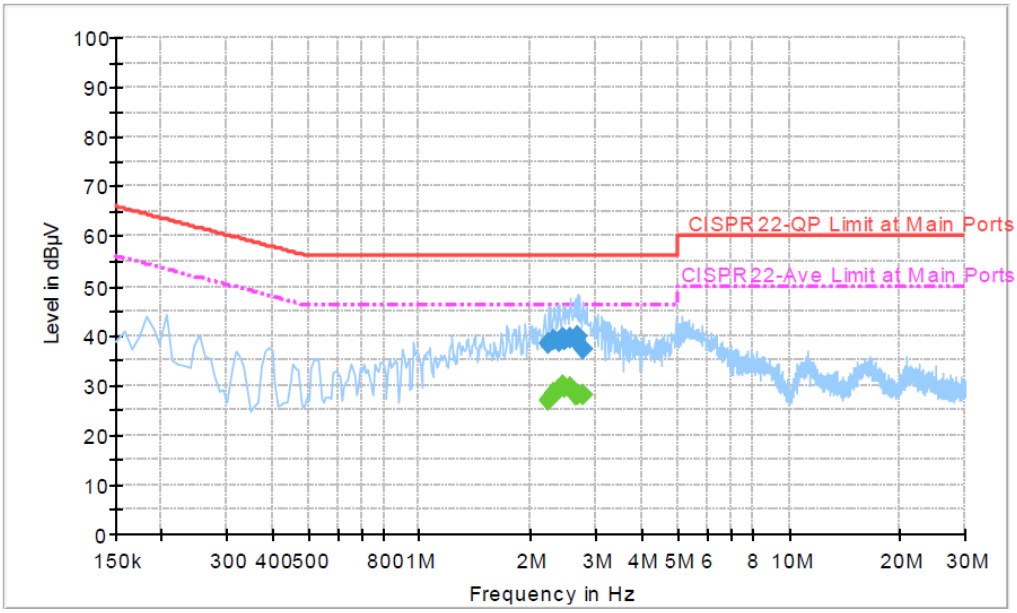
1. The testing follows the guidelines in ANSI C63.10-2009.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN).
4. All the support units are connecting to the other LISN.
5. The LISN provides 50 ohm coupling impedance for the measuring instrument.
6. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
7. Both sides of AC line were checked for maximum conducted interference.
8. The frequency range from 150 kHz to 30 MHz was searched.
9. 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

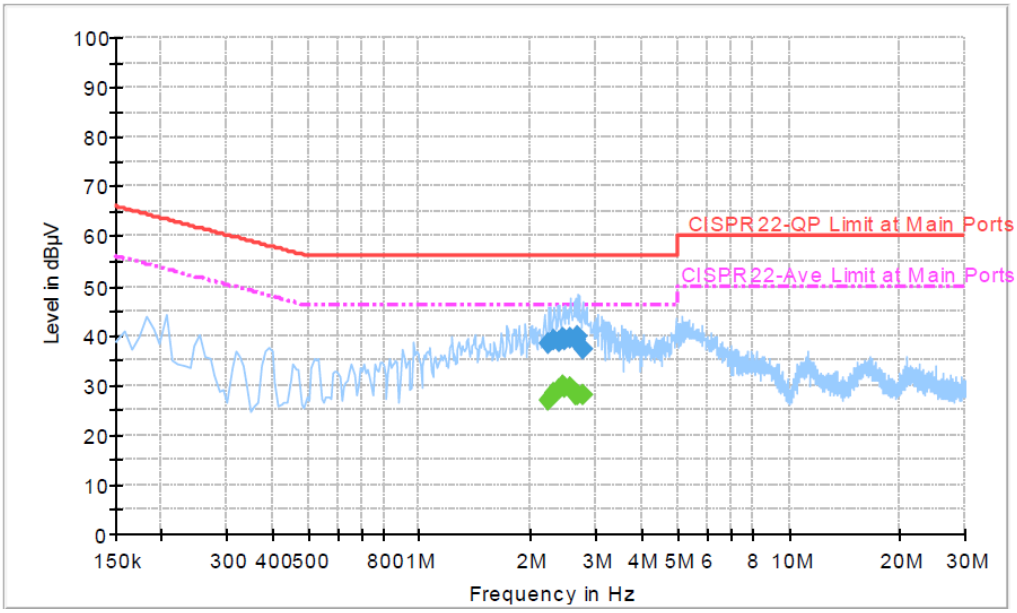
Test Mode :	Mode 1	Temperature :	20~22℃
Test Engineer :	Kyle Jhuang	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM1900 Idle + WLAN Idle + Bluetooth Link + MP3 + Earphone + Battery + USB Cable (Charging from Adapter) + SIM 2		



Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
2.238000	38.2	Off	L1	19.5	17.8	56.0
2.310000	38.9	Off	L1	19.6	17.1	56.0
2.390000	38.9	Off	L1	19.6	17.1	56.0
2.446000	39.3	Off	L1	19.6	16.7	56.0
2.486000	39.1	Off	L1	19.6	16.9	56.0
2.558000	39.6	Off	L1	19.6	16.4	56.0
2.638000	39.2	Off	L1	19.6	16.8	56.0
2.694000	39.9	Off	L1	19.6	16.1	56.0
2.758000	37.4	Off	L1	19.6	18.6	56.0

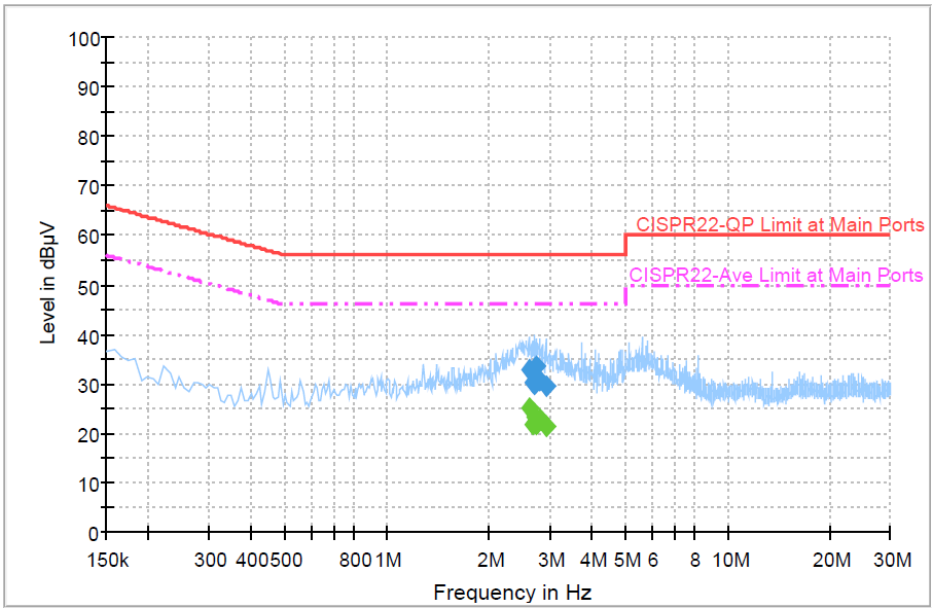
Test Mode :	Mode 1	Temperature :	20~22℃
Test Engineer :	Kyle Jhuang	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM1900 Idle + WLAN Idle + Bluetooth Link + MP3 + Earphone + Battery + USB Cable (Charging from Adapter) + SIM 2		



Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
2.238000	27.0	Off	L1	19.5	19.0	46.0
2.310000	28.3	Off	L1	19.6	17.7	46.0
2.390000	29.2	Off	L1	19.6	16.8	46.0
2.446000	29.8	Off	L1	19.6	16.2	46.0
2.486000	29.5	Off	L1	19.6	16.5	46.0
2.558000	29.6	Off	L1	19.6	16.4	46.0
2.638000	28.0	Off	L1	19.6	18.0	46.0
2.694000	28.1	Off	L1	19.6	17.9	46.0
2.758000	27.9	Off	L1	19.6	18.1	46.0

Test Mode :	Mode 1	Temperature :	20~22℃
Test Engineer :	Kyle Jhuang	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM1900 Idle + WLAN Idle + Bluetooth Link + MP3 + Earphone + Battery + USB Cable (Charging from Adapter) + SIM 2		



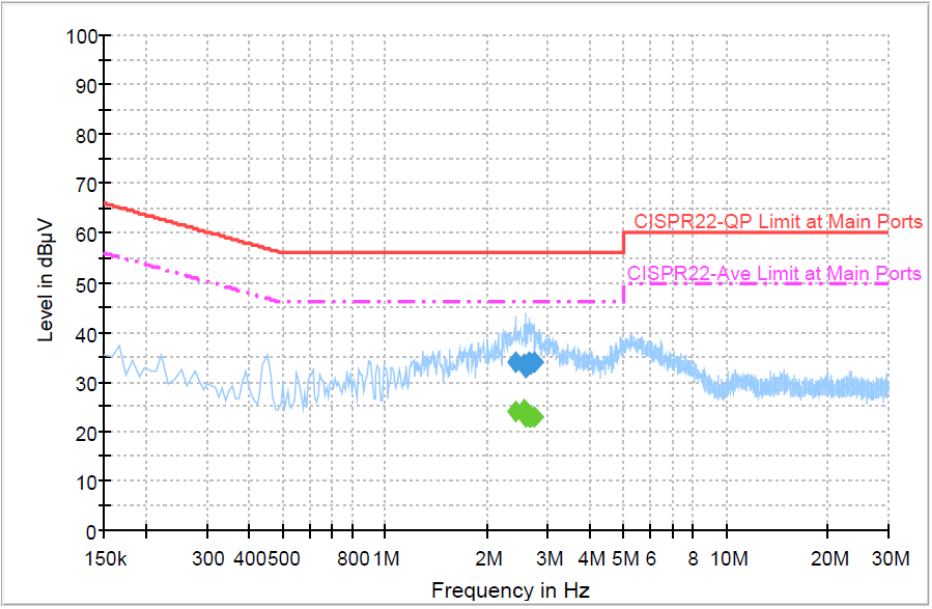
Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
2.606000	33.0	Off	N	19.6	23.0	56.0
2.678000	30.3	Off	N	19.6	25.7	56.0
2.710000	29.8	Off	N	19.6	26.2	56.0
2.726000	33.5	Off	N	19.6	22.5	56.0
2.798000	30.8	Off	N	19.7	25.2	56.0
2.926000	29.4	Off	N	19.6	26.6	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
2.606000	25.1	Off	N	19.6	20.9	46.0
2.678000	21.9	Off	N	19.6	24.1	46.0
2.710000	23.1	Off	N	19.6	22.9	46.0
2.726000	21.6	Off	N	19.6	24.4	46.0
2.798000	22.8	Off	N	19.7	23.2	46.0
2.926000	21.4	Off	N	19.6	24.6	46.0

Test Mode :	Mode 2	Temperature :	20~22℃
Test Engineer :	Kyle Jhuang	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM1900 Idle + WLAN Link + Bluetooth Idle + MP3 + Earphone + Battery + USB Cable (Charging from Adapter) + SIM 2		



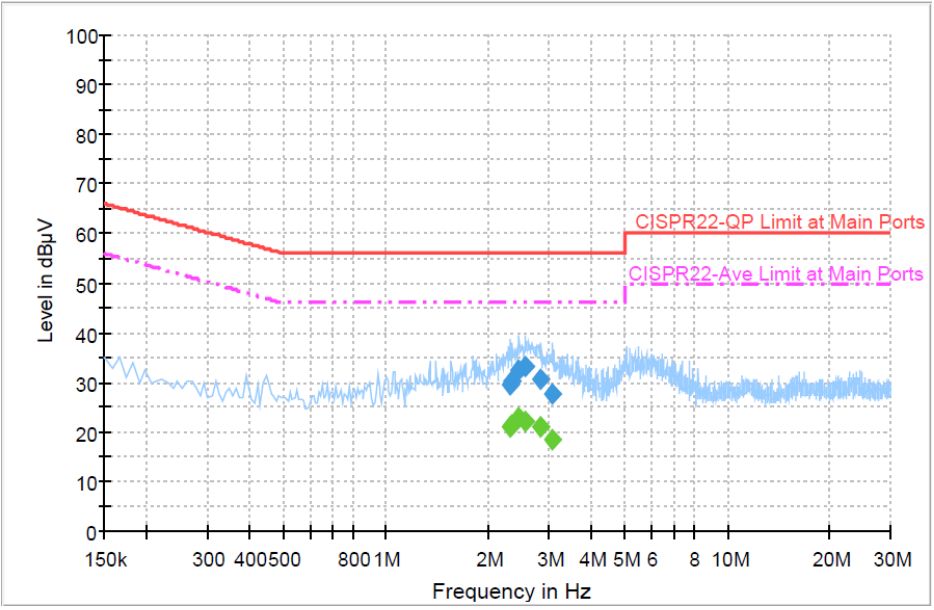
Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
2.414000	34.0	Off	L1	19.6	22.0	56.0
2.566000	33.5	Off	L1	19.6	22.5	56.0
2.590000	32.7	Off	L1	19.6	23.3	56.0
2.646000	33.8	Off	L1	19.5	22.2	56.0
2.694000	33.8	Off	L1	19.6	22.2	56.0
2.742000	33.9	Off	L1	19.6	22.1	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
2.414000	24.0	Off	L1	19.6	22.0	46.0
2.566000	24.4	Off	L1	19.6	21.6	46.0
2.590000	23.0	Off	L1	19.6	23.0	46.0
2.646000	22.7	Off	L1	19.5	23.3	46.0
2.694000	23.0	Off	L1	19.6	23.0	46.0
2.742000	22.9	Off	L1	19.6	23.1	46.0

Test Mode :	Mode 2	Temperature :	20~22℃
Test Engineer :	Kyle Jhuang	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM1900 Idle + WLAN Link + Bluetooth Idle + MP3 + Earphone + Battery + USB Cable (Charging from Adapter) + SIM 2		



Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
2.310000	29.7	Off	N	19.6	26.3	56.0
2.350000	30.2	Off	N	19.6	25.8	56.0
2.454000	32.4	Off	N	19.6	23.6	56.0
2.566000	33.2	Off	N	19.6	22.8	56.0
2.846000	30.4	Off	N	19.6	25.6	56.0
3.086000	27.6	Off	N	19.6	28.4	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
2.310000	21.2	Off	N	19.6	24.8	46.0
2.350000	21.5	Off	N	19.6	24.5	46.0
2.454000	22.7	Off	N	19.6	23.3	46.0
2.566000	22.1	Off	N	19.6	23.9	46.0
2.846000	21.0	Off	N	19.6	25.0	46.0
3.086000	18.4	Off	N	19.6	27.6	46.0

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 Connected Construction

Non-standard connector 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	R&S	FSP40	100057	9kHz~40GHz	Oct. 29, 2012	May 03, 2013~ Jun. 07, 2013	Oct. 28, 2013	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	1036004	300MHz~40GHz	Sep. 08, 2012	May 03, 2013~ Jun. 07, 2013	Sep. 07, 2013	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	1027253	300MHz~40GHz	Sep. 08, 2012	May 03, 2013~ Jun. 07, 2013	Sep. 07, 2013	Conducted (TH02-HY)
Thermometer	Wisewind	410	N/A	N/A	Nov. 20, 2012	May 03, 2013~ Jun. 07, 2013	Nov. 19, 2013	Conducted (TH02-HY)
RF cable	HONOVA	MF86	N/A	N/A	Nov. 26, 2012	May 03, 2013~ Jun. 07, 2013	Nov. 25, 2013	Conducted (TH02-HY)
RF cable	HONOVA	MF86	N/A	N/A	Nov. 26, 2012	May 03, 2013~ Jun. 07, 2013	Nov. 25, 2013	Conducted (TH02-HY)
Bilog Antenna	Schaffner	CBL6111C	2726	30MHz ~ 1GHz	Oct. 06, 2012	May 05, 2013 ~ May 06, 2013	Oct. 05, 2013	Radiation (03CH07-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP30	101067	9KHz ~ 30GHz	Nov. 30, 2012	May 05, 2013 ~ May 06, 2013	Nov. 29, 2013	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 22, 2012	May 05, 2013 ~ May 06, 2013	Aug. 21, 2013	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~ 26.5GHz	Dec. 01, 2012	May 05, 2013 ~ May 06, 2013	Nov. 30, 2013	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-00101800-30-10P	159088	1GHz ~ 18GHz	Feb. 27, 2013	May 05, 2013 ~ May 06, 2013	Feb. 26, 2014	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10-1000MHz. 32dB.GAIN	Feb. 26, 2013	May 05, 2013 ~ May 06, 2013	Feb. 25, 2014	Radiation (03CH07-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Sep. 03, 2012	May 05, 2013 ~ May 06, 2013	Sep. 02, 2013	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz ~ 40GHz	Sep. 28, 2012	May 05, 2013 ~ May 06, 2013	Sep. 27, 2013	Radiation (03CH07-HY)
Test Software	N/A	E3	Version 6, 2009-08-24(k5)	N/A	N/A	May 05, 2013 ~ May 06, 2013	N/A	Radiation (03CH07-HY)
Filter	WAINWRIGHT	WLKS1500-8SS	SN2	1.5G LPF	Dec. 28, 2012	May 05, 2013 ~ May 06, 2013	Dec. 27, 2013	Radiation (03CH07-HY)
Filter	WAINWRIGHT	WRCGV2400/2483-2390/2493-35/10SS	N/A	2.4G Notch Filter	Dec.29 , 2012	May 05, 2013 ~ May 06, 2013	Dec. 28, 2013	Radiation (03CH07-HY)
Filter	Microwave	H3G018G1	SN279268	3G HPF	Nov. 26, 2012	May 05, 2013 ~ May 06, 2013	Nov. 25, 2013	Radiation (03CH07-HY)
Test Software	Audix	E3	Version 6.2009-8-24	N/A	N/A	May 05, 2013 ~ May 06, 2013	N/A	Radiation (03CH07-HY)
Thermometer	Wisewind	410	BU5004	N/A	Nov. 20, 2012	May 05, 2013 ~ May 06, 2013	Nov. 19, 2013	Radiation (03CH07-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9KHz ~ 30MHz	Jul. 03, 2012	May 05, 2013 ~ May 06, 2013	Jul. 02, 2013	Radiation (03CH07-HY)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Turn Table	HD	DS 420	420/650/00	0 ~ 360 degree	N/A	May 03, 2013	N/A	Radiation (03CH07-HY)
Antenna Mast	HD GmbH	MA 240	N/A	N/A	N/A	May 03, 2013	N/A	Radiation (03CH07-HY)
RF Cable	Huber+Suhner	RG 142	NA	30M~1G	Dec. 04, 2012	May 03, 2013	Dec. 03, 2013	Radiation (03CH07-HY)
RF Cable	Huber+Suhner	SF104	NA	1G~26.5G	Dec. 04, 2012	May 03, 2013	Dec. 03,2013	Radiation (03CH07-HY)
Antenna Mast	HD GmbH	MA 240	N/A	N/A	N/A	May 03, 2013	N/A	Radiation (03CH07-HY)
EMI Test Receiver	Rohde & Schwarz	ESCS 30	100356	9KHz – 2.75GHz	Nov. 13, 2012	May 08, 2013	Nov. 12, 2013	Conduction (CO05-HY)
Two-LISN	Rohde & Schwarz	ENV216	100081	9KHz ~ 30MHz	Dec. 12, 2012	May 08, 2013	Dec. 11, 2013	Conduction (CO05-HY)
Two-LISN	Rohde & Schwarz	ENV216	100080	9KHz ~ 30MHz	Dec. 06, 2012	May 08, 2013	Dec. 05, 2013	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	May 08, 2013	N/A	Conduction (CO05-HY)
System Simulator	R&S	CMU200	117995	N/A	Jul. 28, 2011	May 08, 2013	Jul. 27, 2013	Conduction (CO05-HY)
Test Software	N/A	EMC32	Version 8.40.0	N/A	N/A	May 08, 2013	N/A	Conduction (CO05-HY)
Thermometer	Testo	608-H1	34913912	N/A	Apr. 25, 2013,	May 08, 2013	Apr. 24, 2014	Conduction (CO05-HY)
LF Cable	Shuner	RG-402	N/A	N/A	Apr. 20, 2013	May 08, 2013	May 19, 2013	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 of 95% (U = 2Uc(y))	**2.26**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.54**

Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.72**