ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART C REQUIREMENT

OF

WIRELESS-G 23DBM NETWORK MINI PCI ADAPTER

FCC ID: TK4-WLM54GP23

MODEL No.: IWAVEPORT WLM54GP23

BRAND NAME: Compex

REPORT NO: LW-SZ06040045R

ISSUE DATE: May 16, 2006

Prepared for

COMPEX SYSTEMS PTE. LTD
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Prepared by

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d.b.a.

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VERIFICATION OF COMPLIANCE

Applicant:	Compex Systems Pte. Ltd 135, Joo Seng Road, #08-01 PM Industrial Singapore 368363
Manufacturer	Compex Systems Pte. Ltd 135, Joo Seng Road, #08-01 PM Industrial Singapore 368363
Product Description:	WIRELESS-G 23DBM NETWORK MINI PCI ADAPTER
Brand Name:	Compex
Model Number:	IWAVEPORT WLM54GP23
Serial Number:	N/A
File Number:	LW-SZ06040045R
Date of Test:	May 01, 2006 ~ May 10, 2006

We hereby certify that:

The EUT was assessed by LONGWAY (SHENZHEN) CERTIFICATION SERVICE CO., LTD. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC Rules Part 15.247.

The test results of this report relate only to the tested sample identified in this report.

Approved By

King Chen / Q.A. Manager
LONGWAY(SHENZHEN) CERTIFICATION SERVICE CO., LTD.

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1 GENERAL INFORMATION

1.1 Product Description

The EUT is an short range, lower power, WIRELESS-G 23DBM NETWORK MINI PCI ADAPTER designed as an " Network Device". It is designed by way of utilizing the Spread Spectrum technology to achieve the system operation.

A major technical descriptions of EUT is described as following:

A). Operation Frequency: From 2412 MHz to 2462 MHz With 5 MHz intervals
Totally 11 Channels
B). Modulation: DSSS
C). Antenna Designation: Dedicated External RF Port
D). Power Supply: DC 3.3V Powered by PC
E), Operating Mode: 802.11b/g

1.2 Related Submittal(s) / Grant (s)

This test report is intended to show the compliance with the Section 15.247 of the FCC Part 15, Subpart C Rules.

1.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 (2003). Radiated testing was performed at an antenna to EUT distance 3 meters.

1.4 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located on No. 6, Jinao industrial park, No.35 Jukeng Road, Dashuikeng Village, Guanlan Town, Baoan District, Shenzhen, China. The Open Area Test Sites and the Line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003 and CISPR 22/EN 55022 requirements.

1.5 Special Accessories

Not available for this EUT intended for grant.

1.6 Equipment Modifications

Not available for this EUT intended for grant.

2 System Test Configuration

2.1 Configuration of Tested System

Fig. 2-1Configuration of Tested System For Normal Operation

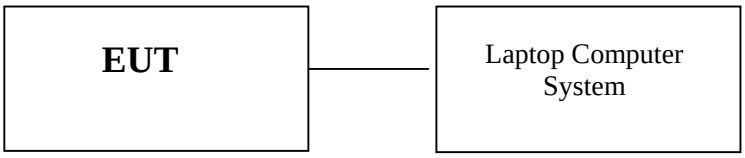


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
E-1	WIRELESS-G 23DBM NETWORK MINI PCI ADAPTER	Compex	IWAVEPORTWLM54GP23	TK4-WLM54GP23	N/A	***EUT***
	Laptop Computer	HASEE	S263C	N/A	N/A	

3 Summary Of Test Results

FCC Rules	Description Of Test	Result
§ 15.207	Conduction Emission	Compliant
§ 15.247	Transmitter Radiated Emission	Compliant
§ 15.247	Maximum Output Power	Compliant
§ 15.247	6 dB Bandwidth	Compliant
§ 15.247	Maximum Power Density	Compliant
§ 15.247	Out of Band Spurious Emission	Compliant
§ 15.247	Band Edge Measurement	Compliant
§ 15.203	Antenna Requirements	Compliant

4 Description of test modes

Continuous Transmitting Mode

1. The EUT (WIRELESS-G 23DBM NETWORK MINI PCI ADAPTER) has been set to operate continuously on the lowest, the middle and the highest operation frequency individually.
2. The EUT stays in continuous transmitting mode on the operation frequency being set.

3, Both operating modes of 802.11b and 802.11g have been chosen for full test.

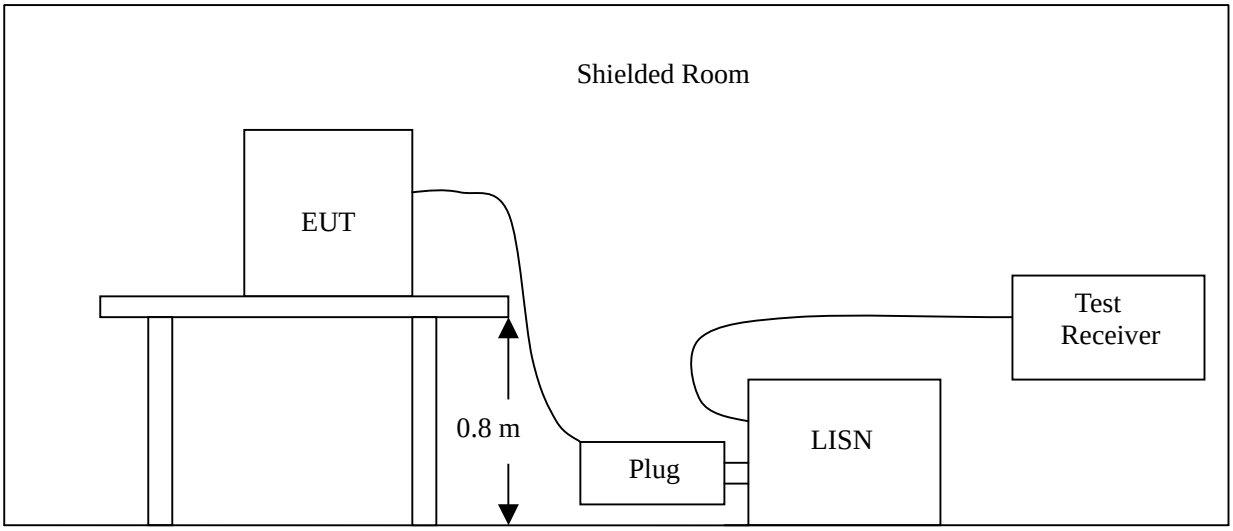
5 Test Results

5.1 Conduction Emissions

5.1.1 Measurement Procedure:

1 The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4.
2 Support equipment, if needed, was placed as per ANSI C63.4.
3 All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
4 The EUT received DC3V power from the adapter, the adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5 All support equipments received AC power from a second LISN, if any.
6 The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7 Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
8 During the above scans, the emissions were maximized by cable manipulation.

5.1.2 Test SET-UP (Block Diagram of Configuration)



5.1.3 Measurement Equipment Used:

Conducted Emission Test Site # 3					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
EMI TEST RECEIVER	ROHDE & SCHWARZ	ESCS30	100038	2005/11	2006/11
ARTIFICIAL MAINS	ROHDE & SCHWARZ	ESH2-Z5	100028	2005/11	2006/11
PULSE LIMITER	ROHDE & SCHWARZ	ESHSZ2	100044	2005/11	2006/11
EMI TEST SOFTWARE	ROHDE & SCHWARZ	ESK1	N/A	N/A	N/A

5.1.4 Limits And Measurement Result:

Limits and Measurement Result Of Conduction Emission			
Applicable Limits	**Measurement Result**		
	Modes	Test Data	Criteria
Per 15.207 Conducted Emission Limit	802.11b	See as the table below	PASS
	802.11g		PASS

Conducted Emission Measurement Result of 802.11g

FREQ MHz	PEAK RAW dBuV	Q.P. RAW dBuV	AVG RAW dBuV	Q.P. Limit dBuV	AVG Limit dBuV	Q.P. Margin dB	AVG Margin dB	NOTE
0.403	33.74	---	---	58.76	48.76	---	-15.02	L1
0.460	32.18	---	---	57.12	47.12	---	-14.94	L1
0.581	32.96	---	---	56.00	46.00	---	-13.04	L1
0.708	34.35	---	---	56.00	46.00	---	-11.65	L1
0.952	30.27	---	---	56.00	46.00	---	-15.73	L1
1.113	31.61	---	---	56.00	46.00	---	-14.39	L1
0.606	35.52	---	---	56.00	46.00	---	-10.48	L2
0.692	31.49	---	---	56.00	46.00	---	-14.51	L2
0.988	33.84	---	---	56.00	46.00	---	-12.16	L2
1.428	37.63	---	---	56.00	46.00	---	-8.37	L2
2.011	34.48	---	---	56.00	46.00	---	-11.52	L2
2.807	32.76	---	---	56.00	46.00	---	-13.24	L2

Conducted Emission Measurement Result of 802.11b

FREQ MHz	PEAK RAW dBuV	Q.P. RAW dBuV	AVG RAW dBuV	Q.P. Limit dBuV	AVG Limit dBuV	Q.P. Margin dB	AVG Margin dB	NOTE
0.403	33.74	---	---	58.76	48.76	---	-15.02	L1
0.460	32.05	---	---	57.12	47.12	---	-15.07	L1
0.581	32.72	---	---	56.00	46.00	---	-13.28	L1
0.708	34.44	---	---	56.00	46.00	---	-11.56	L1
0.952	30.38	---	---	56.00	46.00	---	-15.62	L1
1.113	31.49	---	---	56.00	46.00	---	-14.51	L1
0.606	35.73	---	---	56.00	46.00	---	-10.27	L2
0.692	31.47	---	---	56.00	46.00	---	-14.53	L2
0.988	33.66	---	---	56.00	46.00	---	-12.34	L2
1.428	37.28	---	---	56.00	46.00	---	-8.72	L2
2.011	34.31	---	---	56.00	46.00	---	-11.69	L2
2.807	32.72	---	---	56.00	46.00	---	-13.28	L2

L1 = Line One (Hot side) / L2 = Line Two (Neutral side)

****NOTE:** "---" denotes the peak emission level was or more than 2dB below the Average limit, so no re-check anymore.

5.2 Transmitter Radiated Emission

5.2.1 Measurement Procedure:

1 On a test site, the EUT shall be placed on a turntable

2 The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.

3 The output of the antenna shall be connected to the measuring receiver and either a peak or quasi-peak detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.

4 The transmitter shall be switched on; if possible, without the modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.

5 The test antenna shall be raised and lowered through the specified range of height (1-4m) until the measuring receiver detects a maximum signal level.

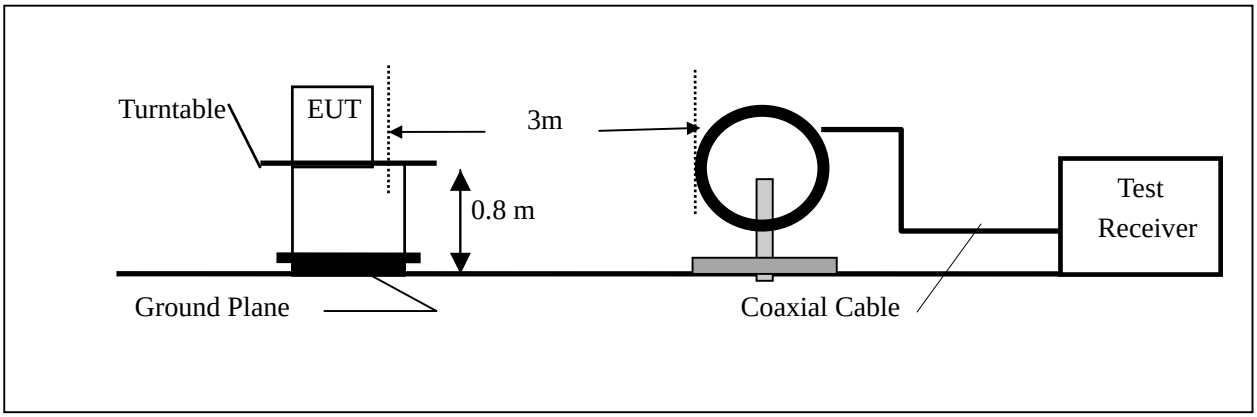
6 The transmitter shall than be rotated through 360 ° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.

7 The test antenna shall be raised and lowered again through the specified range of height until the measuring receiver detects a maximum signal level.

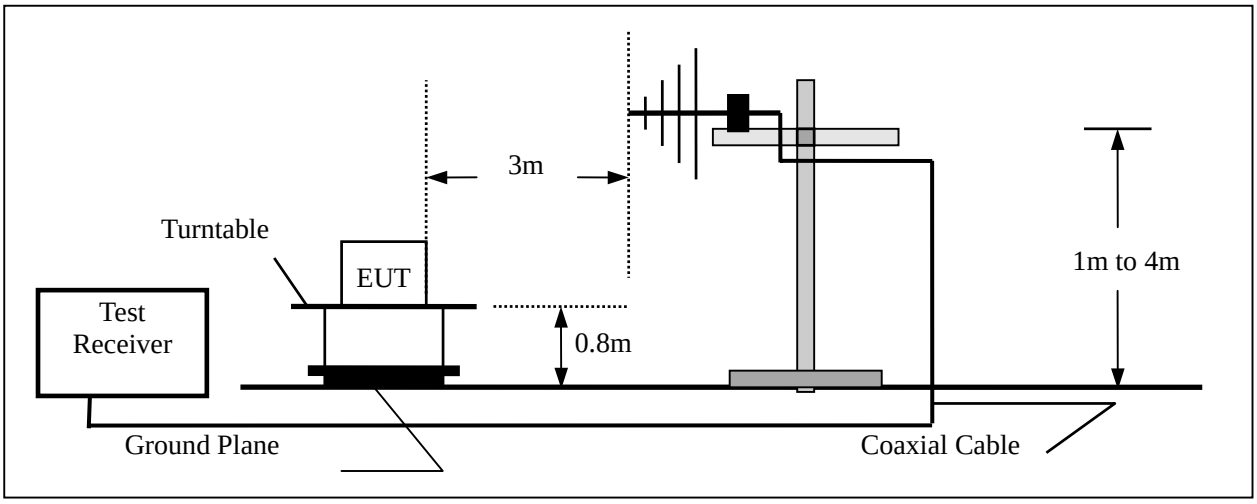
8 The maximum signal level detected by the measuring receiver shall be noted.

5.2.2 Test SET-UP (Block Diagram of Configuration)

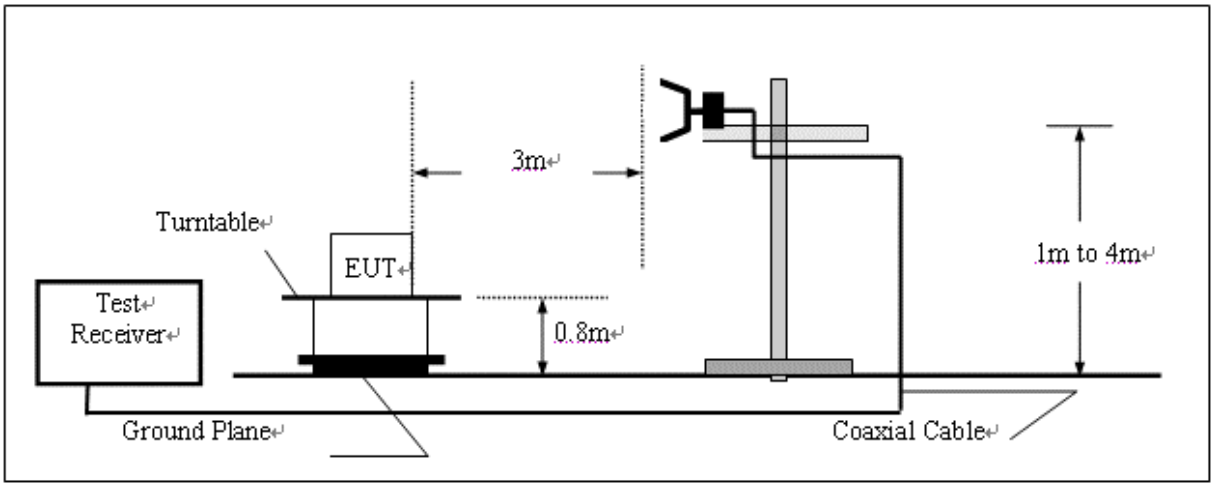
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



(B) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(C) Radiated Emission Test Set-Up, Frequency Above 1000MHz



5.2.3 Measurement Equipment Used:

3/5 Anechoic Chamber Radiation Test Site # 4					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
ULTRA-BROADBAND ANTENNA	ROHDE & SCHWARZ	HL562	100015	2005/11	2006/11
EMI TEST RECEIVER	ROHDE & SCHWARZ	ESI 26	100009	2005/11	2006/11
RF TEST PANEL	ROHDE & SCHWARZ	TS / RSP	335015/ 0017	N/A	N/A
TURNTABLE	ETS	2088	2149	N/A	N/A
ANTENNA MAST	ETS	2075	2346	N/A	N/A
EMI TEST SOFTWARE	ROHDE & SCHWARZ	ESK1	NA	N/A	N/A

5.2.4 Limits And Measurement Result:

Limits and Measurement Result Of Transmitter Radiated Emission			
Applicable Limits	**Measurement Result**		
	Modes	Test Data	Criteria
Per 15.247 (c) and 15.207	802.11g	See as the table below	PASS
	802.11b		PASS

Operation Mode: 802.11b
Temperature : 22 ℃
Humidity : 50 %

Test Date : May 8, 2006
Test By: Army
Pol: Vertical & Horizontal

Freq. (MHz)	Ant.Pol. H/V	DetectorMode (PK/AV)	Reading (dBuV)	Ant./CL/ Amp. CF(dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Margin (dB)
179.000	V	Peak	15.01	13.73	28.74	43.50	-14.76
279.212	V	Peak	22.20	19.08	41.28	46.00	-4.72
314.075	V	Peak	13.91	16.50	30.41	46.00	-15.59
488.625	V	Peak	16.80	22.09	38.89	46.00	-7.11
649.975	V	Peak	12.87	23.07	35.94	46.00	-10.06
837.600	V	Peak	17.56	25.42	42.98	46.00	-3.02
54.300	H	Peak	13.84	9.93	23.77	40.00	-16.23
139.600	H	Peak	25.07	8.04	33.11	43.50	-10.39
335.575	H	Peak	21.98	18.73	40.71	46.00	-5.29
419.388	H	Peak	22.50	19.79	42.29	46.00	-3.71
593.850	H	Peak	10.77	20.92	31.69	46.00	-14.31
698.038	H	Peak	14.26	28.44	42.70	46.00	-3.30
2390.000	V	Peak	13.46	31.10	44.56	74.00	-29.44
2390.000	V	AV.	9.52	31.10	40.62	54.00	-13.38
2390.000	H	Peak	11.84	31.10	42.94	74.00	-31.06
2390.000	H	AV.	8.05	31.10	39.15	54.00	-14.85
2483.500	V	Peak	12.26	32.26	44.52	74.00	-29.48
2483.500	V	AV.	9.93	32.26	42.19	54.00	-11.81
2483.500	H	Peak	9.59	32.26	41.85	74.00	-32.15
2483.500	H	AV.	7.18	32.26	39.44	54.00	-14.56
Other	V	Peak	---			74.00	At least 20 dB down than the limit
Frequencies	H	Peak	---			74.00	
Above	V	AV.	---			54.00	
1GHz	H	AV.	---			54.00	

Remark：

(1) Measuring frequencies from 25 MHz to the 25 GHz。

(2) Datum of measurement within this frequency range shown "--- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

(3) The IF bandwidth of EMI Test Receiver between 25MHz to 1GHz was 120KHz and 1 MHz for above 1 GHz

Operation Mode:	802.11g	Test Date :	May 8, 2006
Temperature :	22 ℃	Test By:	Army
Humidity :	50 %	Pol:	Vertical & Horizontal

Freq. (MHz)	Ant.Pol. H/V	DetectorMode (PK/AV)	Reading (dBuV)	Ant./CL/ Amp. CF(dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Margin (dB)
179.000	V	Peak	14.37	13.73	28.10	43.50	-15.40
279.212	V	Peak	22.35	19.08	41.43	46.00	-4.57
314.075	V	Peak	14.21	16.50	30.71	46.00	-15.29
488.625	V	Peak	16.64	22.09	38.73	46.00	-7.27
649.975	V	Peak	12.75	23.07	35.82	46.00	-10.18
837.600	V	Peak	17.21	25.42	42.63	46.00	-3.37
54.300	H	Peak	13.36	9.93	23.29	40.00	-16.71
139.600	H	Peak	25.27	8.04	33.31	43.50	-10.19
335.575	H	Peak	21.48	18.73	40.21	46.00	-5.79
419.388	H	Peak	22.30	19.79	42.09	46.00	-3.91
593.850	H	Peak	10.96	20.92	31.88	46.00	-14.12
698.038	H	Peak	14.11	28.44	42.55	46.00	-3.45
2390.000	V	Peak	12.27	31.10	43.37	74.00	-30.63
2390.000	V	AV.	8.93	31.10	40.03	54.00	-13.97
2390.000	H	Peak	11.32	31.10	42.42	74.00	-31.58
2390.000	H	AV.	7.85	31.10	38.95	54.00	-15.05
2483.500	V	Peak	10.11	32.26	42.37	74.00	-31.63
2483.500	V	AV.	9.00	32.26	41.26	54.00	-12.74
2483.500	H	Peak	9.02	32.26	41.28	74.00	-32.72
2483.500	H	AV.	7.45	32.26	39.71	54.00	-14.29
Other Frequencies Above 1 GHz	V	Peak	---			74.00	At least 20 dB down than the limit
	H	Peak	---			74.00	
	V	AV.	---			54.00	
	H	AV.	---			54.00	

Remark：

(1) Measuring frequencies from 25 MHz to the 25 GHz。

(2) Datum of measurement within this frequency range shown "--- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

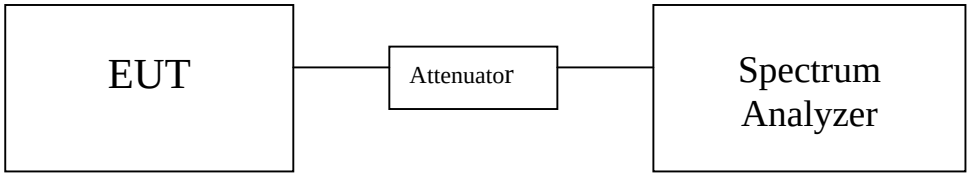
(3) The IF bandwidth of EMI Test Receiver between 25MHz to 1GHz was 120KHz and 1 MHz for above 1 GHz

5.3 Maximum Output Power

5.3.1 Measurement Procedure:

1, The EUT and the measurement instruments were placed on a support table which is 0.8m above ground plane of a shielding room.
2, Connet the RF Output to the Specturm Analyzer's RF input port via an RF Cable with proper attenuator
3. Set EUT as Normal Operation mode to transmit on the top channel.
4. Set SPA Span= 5 MHz, RBW= 10 KHz, VBW= 10 KHz, Sweep Time= Auto
5. Set SPA Trace 1 Max hold, then View.
6, Mark, Peak Search
7, Repeat the procedure when the middle channel and the bottom channel being assessed

5.3.2 Test SET-UP (Block Diagram of Configuration)



5.3.3 Measurement Equipment Used:

The same as described in section 5.1.3

5.3.4 Limits And Measurement Result:

Limits and Measurement Result Of Max. Output Power For Top Channel Operating on 802.11b		
Applicable Limits	**Measurement Result**	
	Test Data	Criteria
Per 15.247 (b) 1W Maximum Conducted Power bases on the direction gain of the used antenna shall no exceed 6 dBi	25.46 dBm	PASS

Limits and Measurement Result Of Max. Output Power For Middle Channel Operating on 802.11b		
Applicable Limits	**Measurement Result**	
	Test Data	Criteria
Per 15.247 (b) 1W Maximum Conducted Power bases on the direction gain of the used antenna shall no exceed 6 dBi	25.94 dBm	PASS

Limits and Measurement Result Of Max. Output Power For Bottom Channel Operating on 802.11b		
Applicable Limits	**Measurement Result**	
	Test Data	Criteria
Per 15.247 (b) 1W Maximum Conducted Power bases on the direction gain of the used antenna shall no exceed 6 dBi	25.39 dBm	PASS

Limits and Measurement Result Of Max. Output Power For Top Channel Operating on 802.11g		
Applicable Limits	**Measurement Result**	
	Test Data	Criteria
Per 15.247 (b) 1W Maximum Conducted Power bases on the direction gain of the used antenna shall no exceed 6 dBi	25.11 dBm	PASS

Limits and Measurement Result Of Max. Output Power For Middle Channel Operating on 802.11g		
Applicable Limits	**Measurement Result**	
	Test Data	Criteria
Per 15.247 (b) 1W Maximum Conducted Power bases on the direction gain of the used antenna shall no exceed 6 dBi	25.53 dBm	PASS

Limits and Measurement Result Of Max. Output Power For Bottom Channel Operating on 802.11g		
Applicable Limits	**Measurement Result**	
	Test Data	Criteria
Per 15.247 (b) 1W Maximum Conducted Power bases on the direction gain of the used antenna shall no exceed 6 dBi	24.97 dBm	PASS

5.4 6 dB Bandwidth

5.4.1 Measurement Procedure

The Same as described in section 5.3.1

5.4.2 Test SET-UP (Block Diagram of Configuration)

The Same as described in Section 5.3.2

5.4.3 Measurement Equipment Used:

The same as described in Section 5.3.3

5.4.4 Limits And Measurement Results:

Limits and Measurement Result Of 6 dB Bandwidth For The Top Channel Operating on 802.11b		
Applicable Limits	**Measurement Result**	
	Test Data	Criteria
Per 15.247 (a)(2) The minimum 6 dB bandwidth shall be at least 500 KHz	8.7 MHz	PASS

Limits and Measurement Result Of 6 dB Bandwidth For The Middle Channel Operating on 802.11b		
Applicable Limits	**Measurement Result**	
	Test Data	Criteria
Per 15.247 (a)(2) The minimum 6 dB bandwidth shall be at least 500 KHz	9.0 MHz	PASS

Limits and Measurement Result Of 6 dB Bandwidth For The Bottom Channel Operating on 802.11b		
Applicable Limits	**Measurement Result**	
	Test Data	Criteria
Per 15.247 (a)(2) The minimum 6 dB bandwidth shall be at least 500 KHz	9.0 MHz	PASS

Limits and Measurement Result Of 6 dB Bandwidth For The Top Channel Operating on 802.11g		
Applicable Limits	**Measurement Result**	
	Test Data	Criteria
Per 15.247 (a)(2) The minimum 6 dB bandwidth shall be at least 500 KHz	10.6 MHz	PASS

Limits and Measurement Result Of 6 dB Bandwidth For The Middle Channel Operating on 802.11g		
Applicable Limits	**Measurement Result**	
	Test Data	Criteria
Per 15.247 (a)(2) The minimum 6 dB bandwidth shall be at least 500 KHz	10.7 MHz	PASS

Limits and Measurement Result Of 6 dB Bandwidth For The Bottom Channel Operating on 802.11g		
Applicable Limits	**Measurement Result**	
	Test Data	Criteria
Per 15.247 (a)(2) The minimum 6 dB bandwidth shall be at least 500 KHz	10.6 MHz	PASS

5.5 Maximum Power Density

5.5.1 Measurement Procedure:

The same as described in Section 5.3.1

5.5.2 Test SET-UP (Block Diagram of Configuration)

The same as described in Section 5.3.2

5.5.3 Measurement Equipment Used:

The same as described in Section 5.3.3

5.5.4 Limits And Measurement Result:

Limits and Measurement Result Of Spectral Density For the Top channel Operating on 802.11b		
Applicable Limits	**Measurement Result**	
	Test Data	Criteria
Per 15.247(e) For digital modulated system, the power spectral density shall not exceed 8dBm in any 3 KHz band	-5.41	PASS

Limits and Measurement Result Of Spectral Density For the Middle channel Operating on 802.11b		
Applicable Limits	**Measurement Result**	
	Test Data	Criteria
Per 15.247(e) For digital modulated system, the power spectral density shall not exceed 8dBm in any 3 KHz band	-5.25	PASS

Limits and Measurement Result Of Spectral Density For the Bottom channel Operating on 802.11b		
Applicable Limits	**Measurement Result**	
	Test Data	Criteria
Per 15.247(e) For digital modulated system, the power spectral density shall not exceed 8dBm in any 3 KHz band	-5.47	PASS

Limits and Measurement Result Of Spectral Density For the Top channel Operating on 802.11g		
Applicable Limits	**Measurement Result**	
	Test Data	Criteria
Per 15.247(e) For digital modulated system, the power spectral density shall not exceed 8dBm in any 3 KHz band	-8.29	PASS

Limits and Measurement Result Of Spectral Density For the Middle channel Operating on 802.11g		
Applicable Limits	**Measurement Result**	
	Test Data	Criteria
Per 15.247(e) For digital modulated system, the power spectral density shall not exceed 8dBm in any 3 KHz band	-8.17	PASS

Limits and Measurement Result Of Spectral Density For the Bottom channel Operating on 802.11g		
Applicable Limits	**Measurement Result**	
	Test Data	Criteria
Per 15.247(e) For digital modulated system, the power spectral density shall not exceed 8dBm in any 3 KHz band	-8.32	PASS

5.6 Out of Band Coducted Spurious Emission

5.6.1 Measurement Procedure:

The same as described in section 5.3.1

5.6.2 Test SET-UP (Block Diagram of Configuration)

The same as described in section 5.3.2

5.6.3 Measurement Equipment Used:

3/5 Anechoic Chamber Radiation Test Site # 4					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
ULTRA-BROADBAND ANTENNA	ROHDE & SCHWARZ	HL562	100015	2005/11	2006/11
EMI TEST RECEIVER	ROHDE & SCHWARZ	ESI 26	100009	2005/11	2006/11
RF TEST PANEL	ROHDE & SCHWARZ	TS / RSP	335015/ 0017	N/A	N/A
TURNTABLE	ETS	2088	2149	N/A	N/A
ANTENNA MAST	ETS	2075	2346	N/A	N/A
EMI TEST SOFTWARE	ROHDE & SCHWARZ	ESK1	NA	N/A	N/A

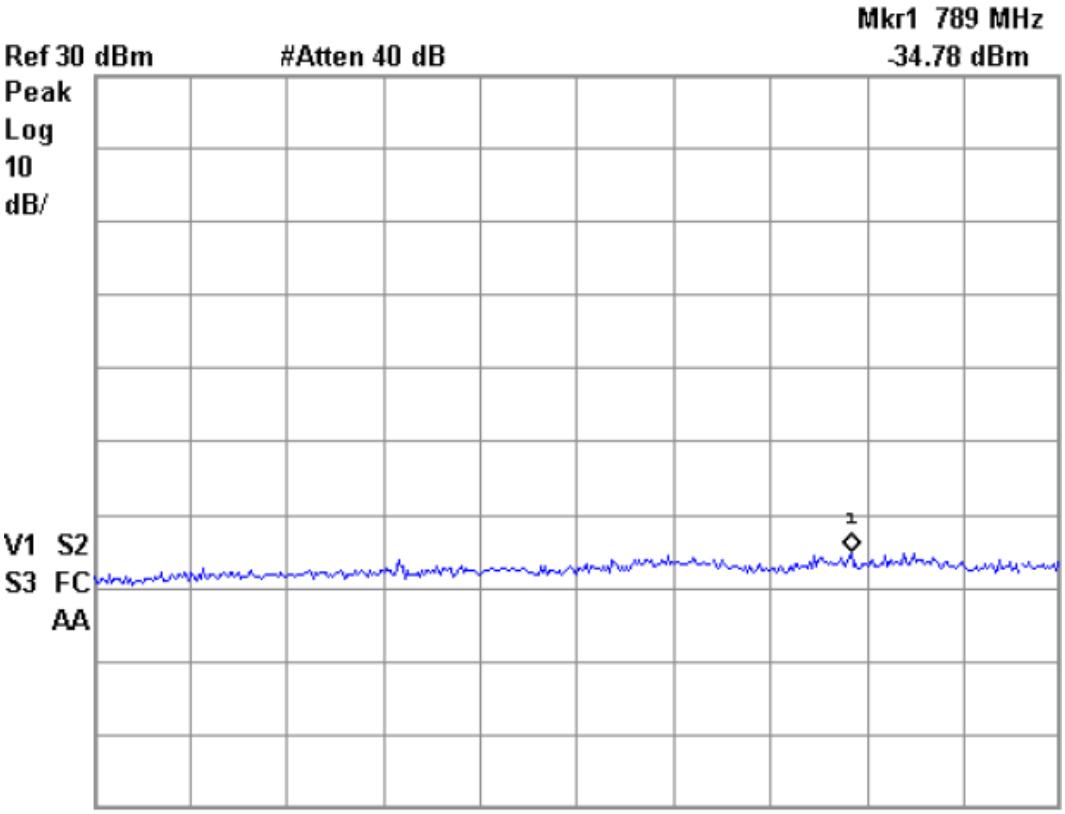
5.6.4 Limits And Measurement Result:

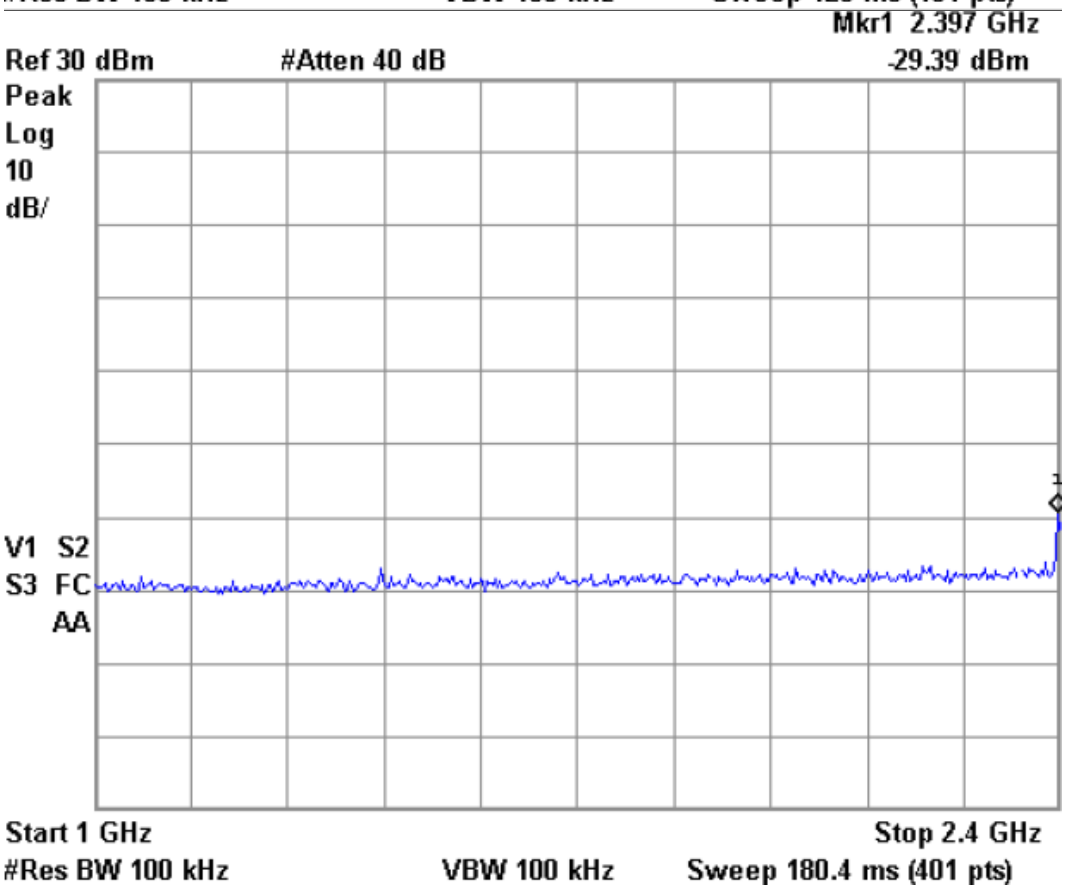
Limits and Measurement Result Of Out Of Band Conducted Emission For the Top channel Operating on 802.11b		
Applicable Limits	**Measurement Result**	
	Test Data	Criteria
Per 15.247 (d) In any 100 KHz outside the frequency band shall be at least 20 dB down than that in the 100 KHz bandwidth within the frequency band	At least 40 dB down than the maximum output power	Pass

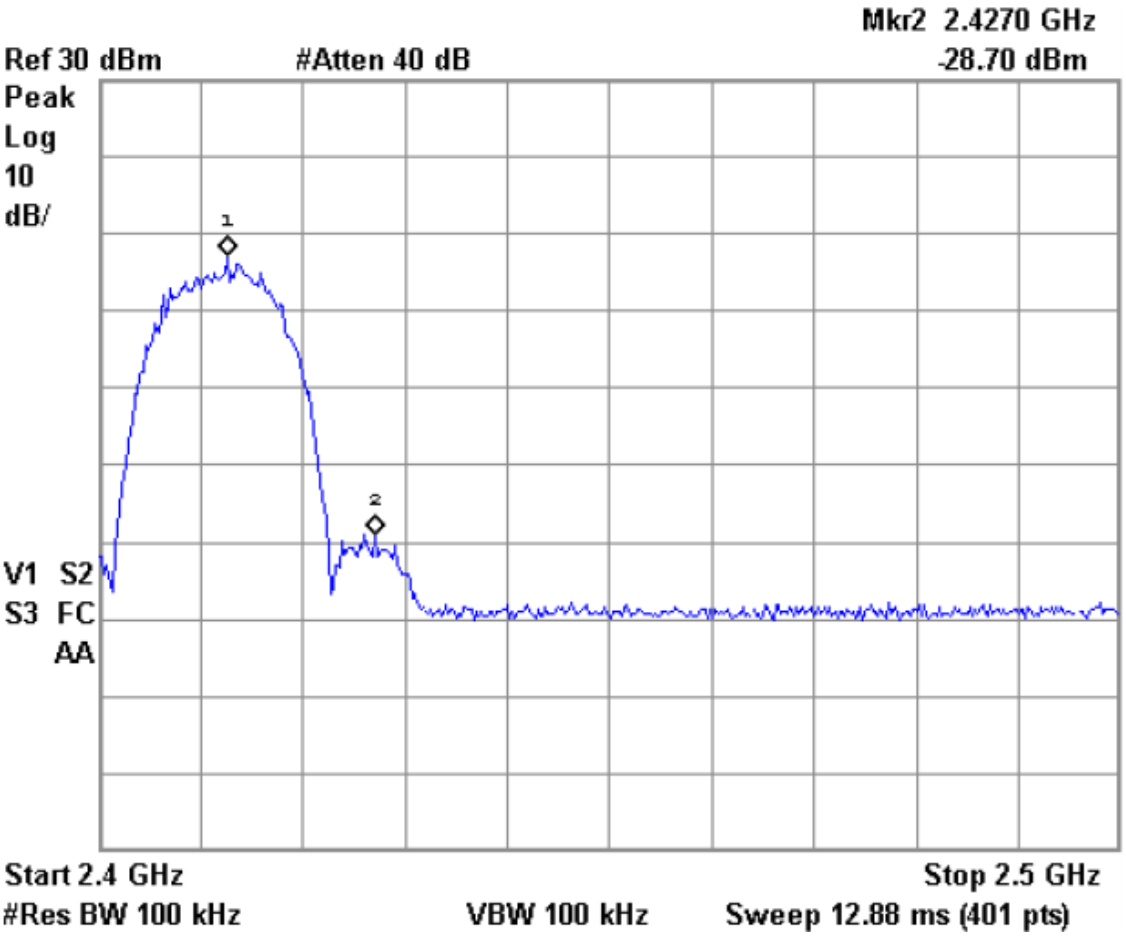
Limits and Measurement Result Of Out Of Band Conducted Emission For the Middle channel Operating on 802.11b		
Applicable Limits	**Measurement Result**	
	Test Data	Criteria
Per 15.247 (d) In any 100 KHz outside the frequency band shall be at least 20 dB down than that in the 100 KHz bandwidth within the frequency band	At least 40 dB down than the maximum output power	Pass

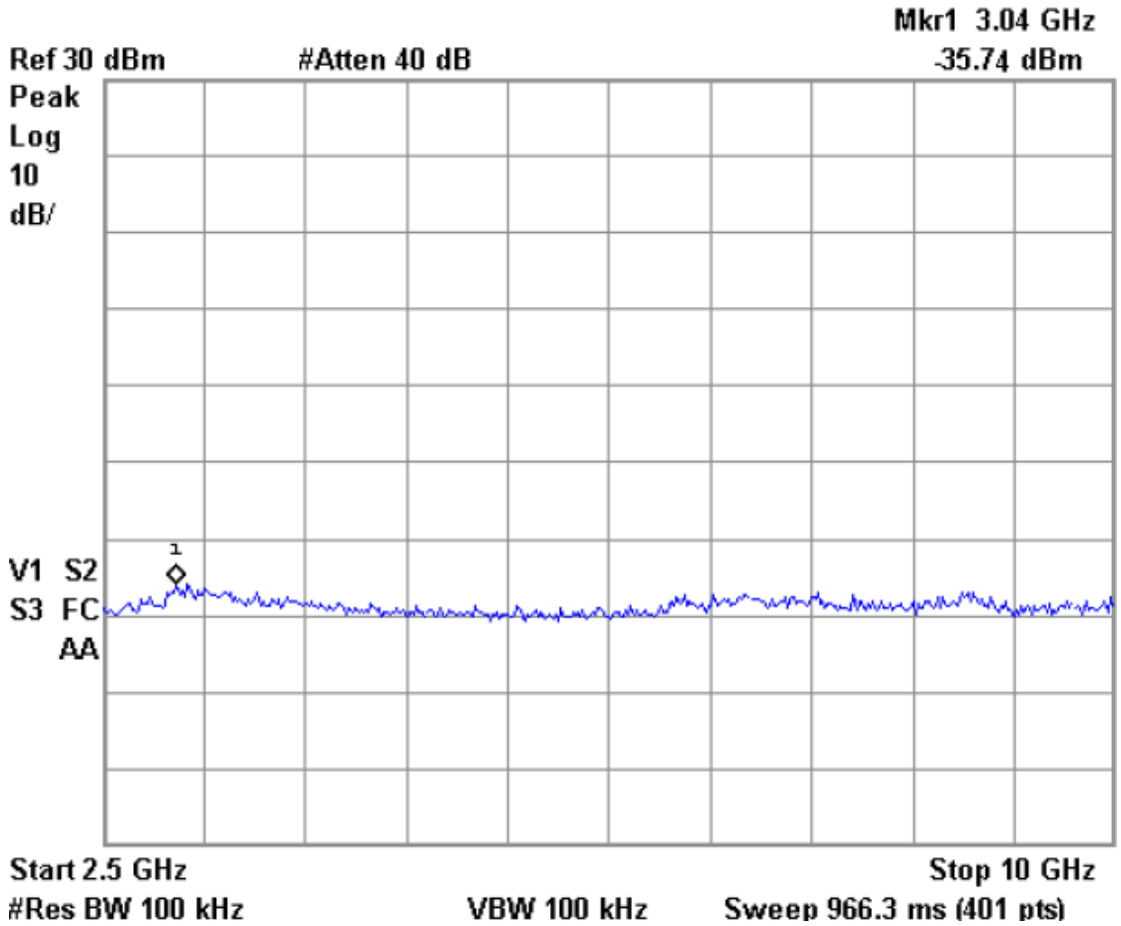
Limits and Measurement Result Of Out Of Band Conducted Emission For the Bottom channel Operating on 802.11b		
Applicable Limits	**Measurement Result**	
	Test Data	Criteria
Per 15.247 (d) In any 100 KHz outside the frequency band shall be at least 20 dB down than that in the 100 KHz bandwidth within the frequency band	At least 40 dB down than the maximum output power	Pass

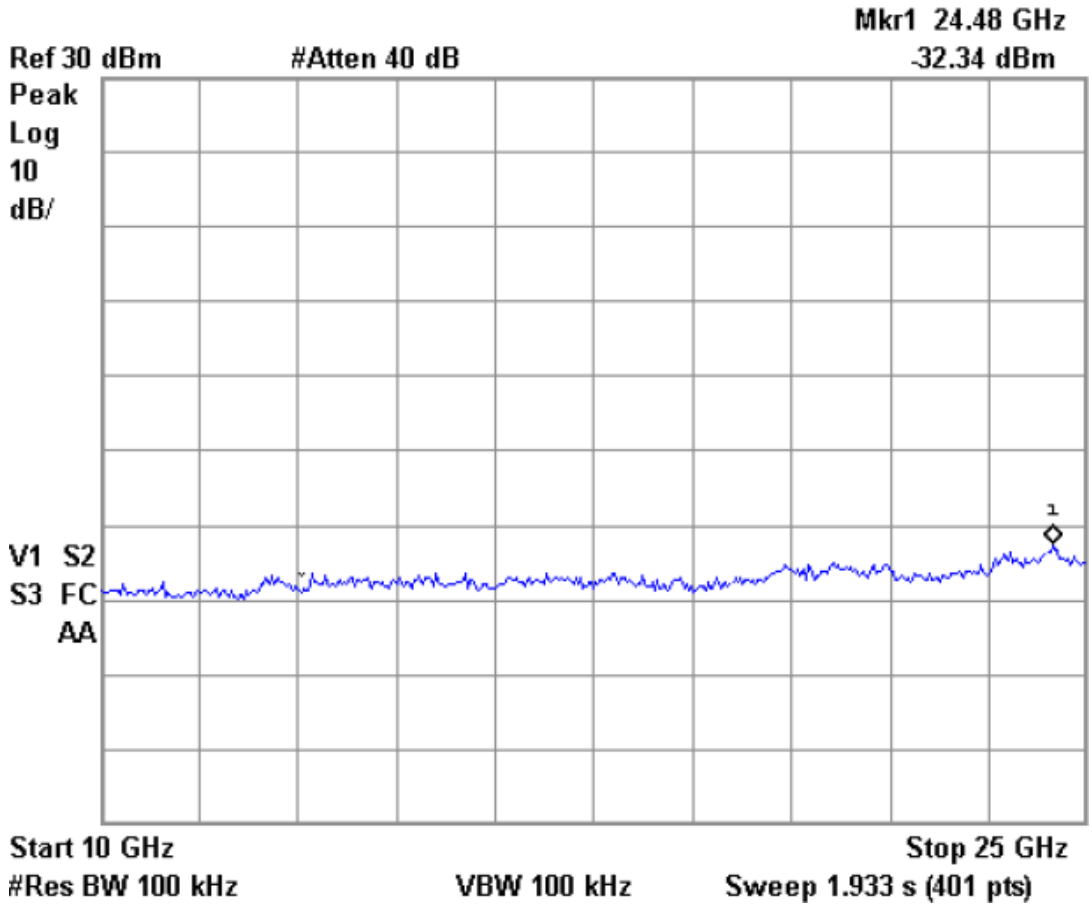
Out of Band Conducted Spurious Emission of Bottom Channel



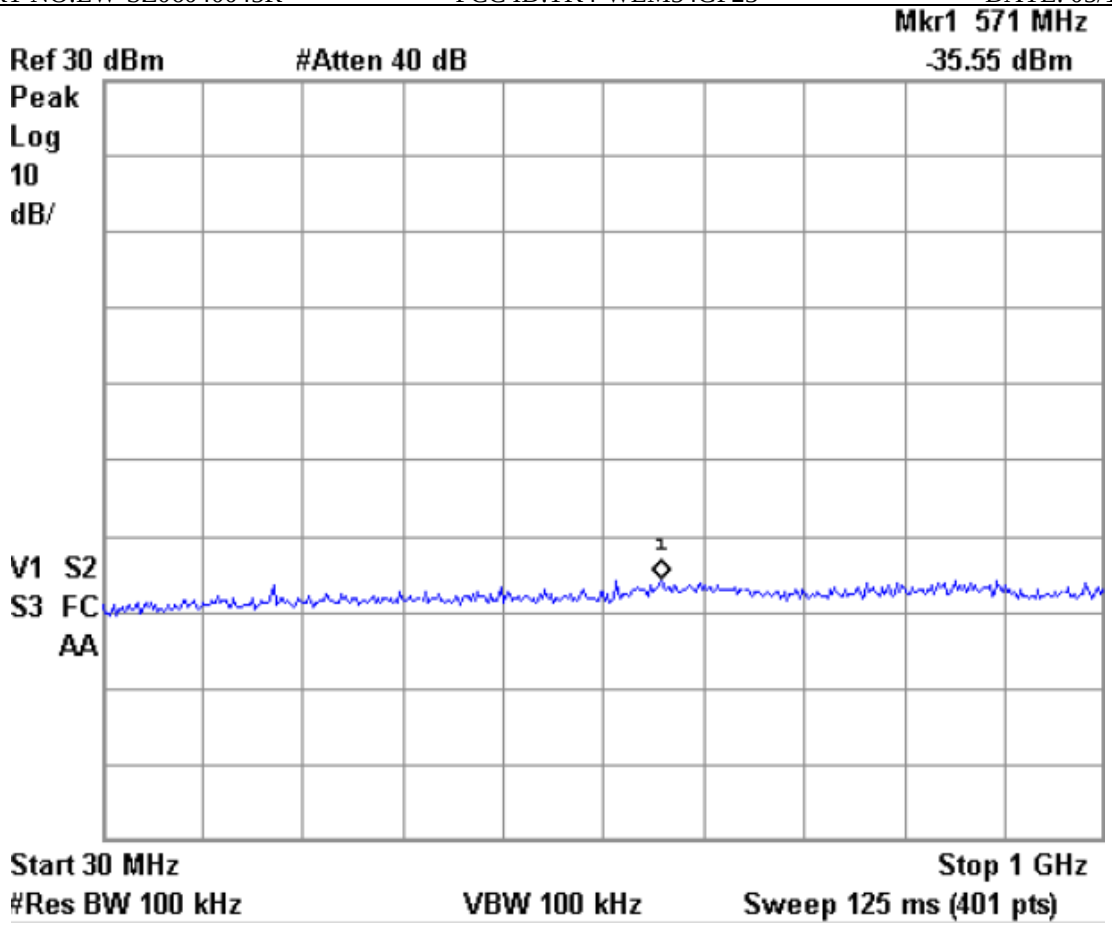


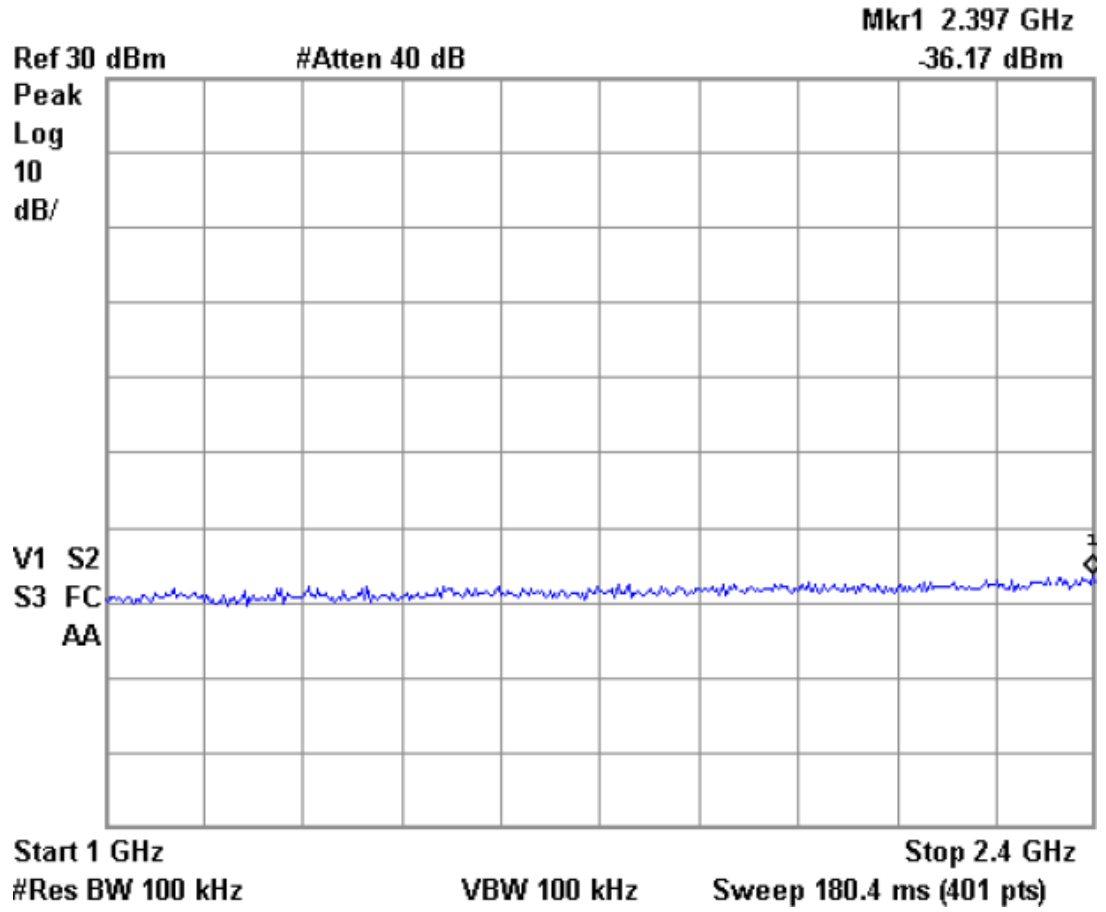

Mkr2 2.4270 GHz
-28.70 dBm
Ref 30 dBm
#Atten 40 dB
Peak
Log
10
dB/
1
2
V1 S2
S3 FC
AA
Start 2.4 GHz
Stop 2.5 GHz
#Res BW 100 kHz
VBW 100 kHz
Sweep 12.88 ms (401 pts)

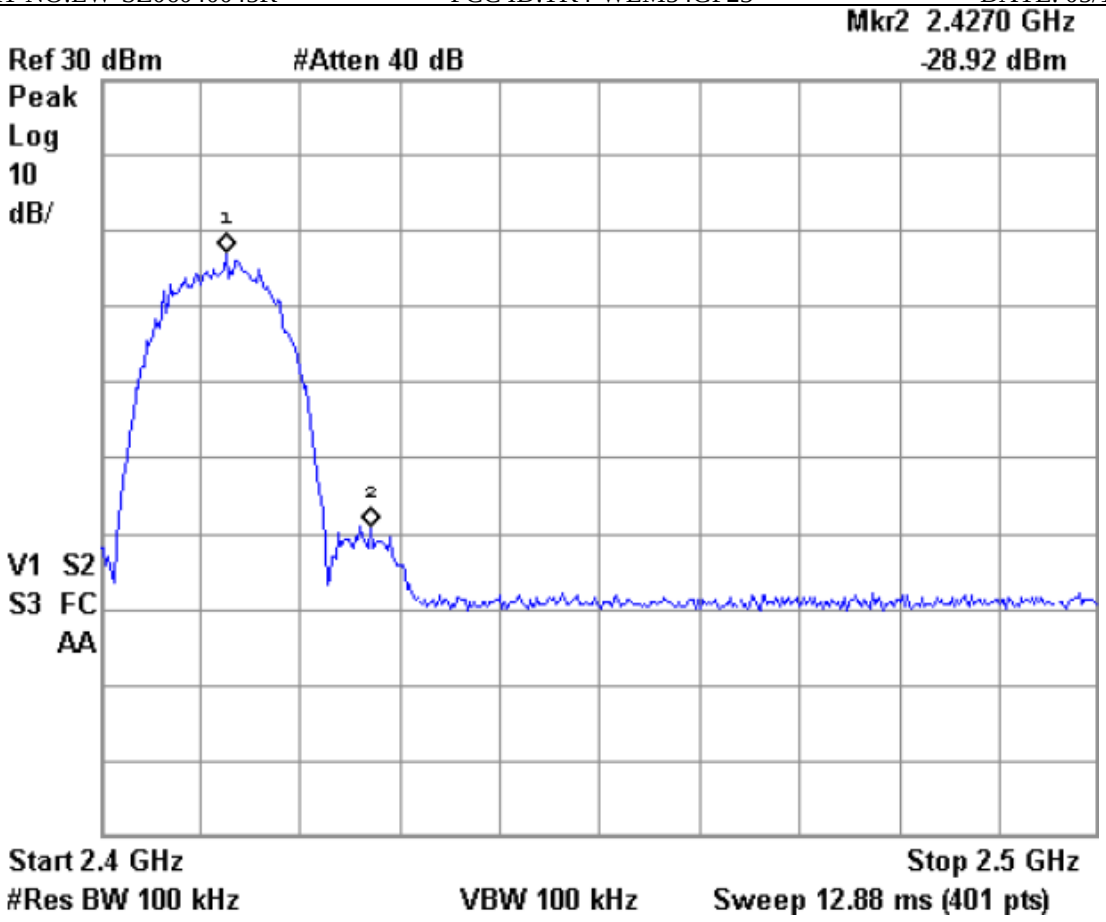

Mkr1 3.04 GHz
-35.74 dBm
Ref 30 dBm
#Atten 40 dB
Peak
Log
10
dB/
1
V1 S2
S3 FC
AA
Start 2.5 GHz
Stop 10 GHz
#Res BW 100 kHz
VBW 100 kHz
Sweep 966.3 ms (401 pts)

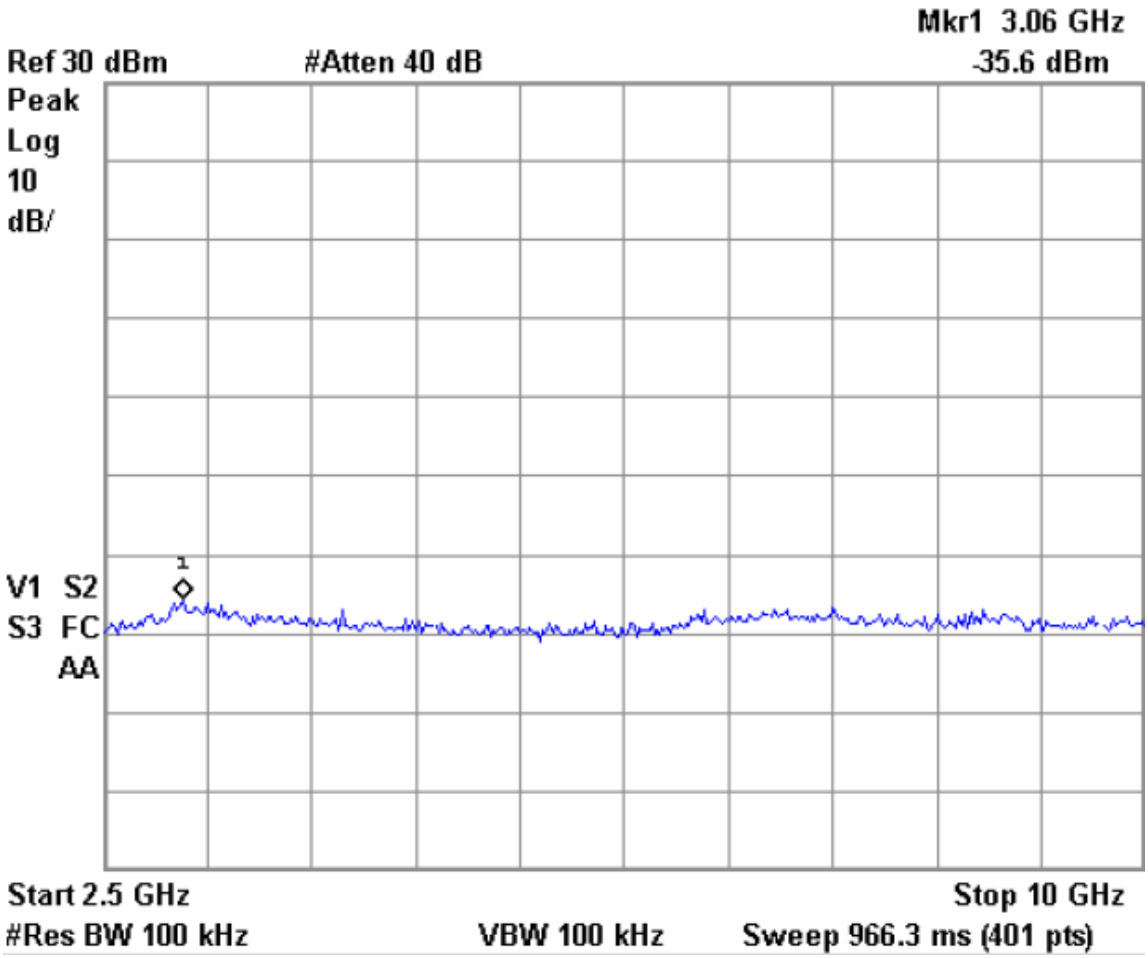


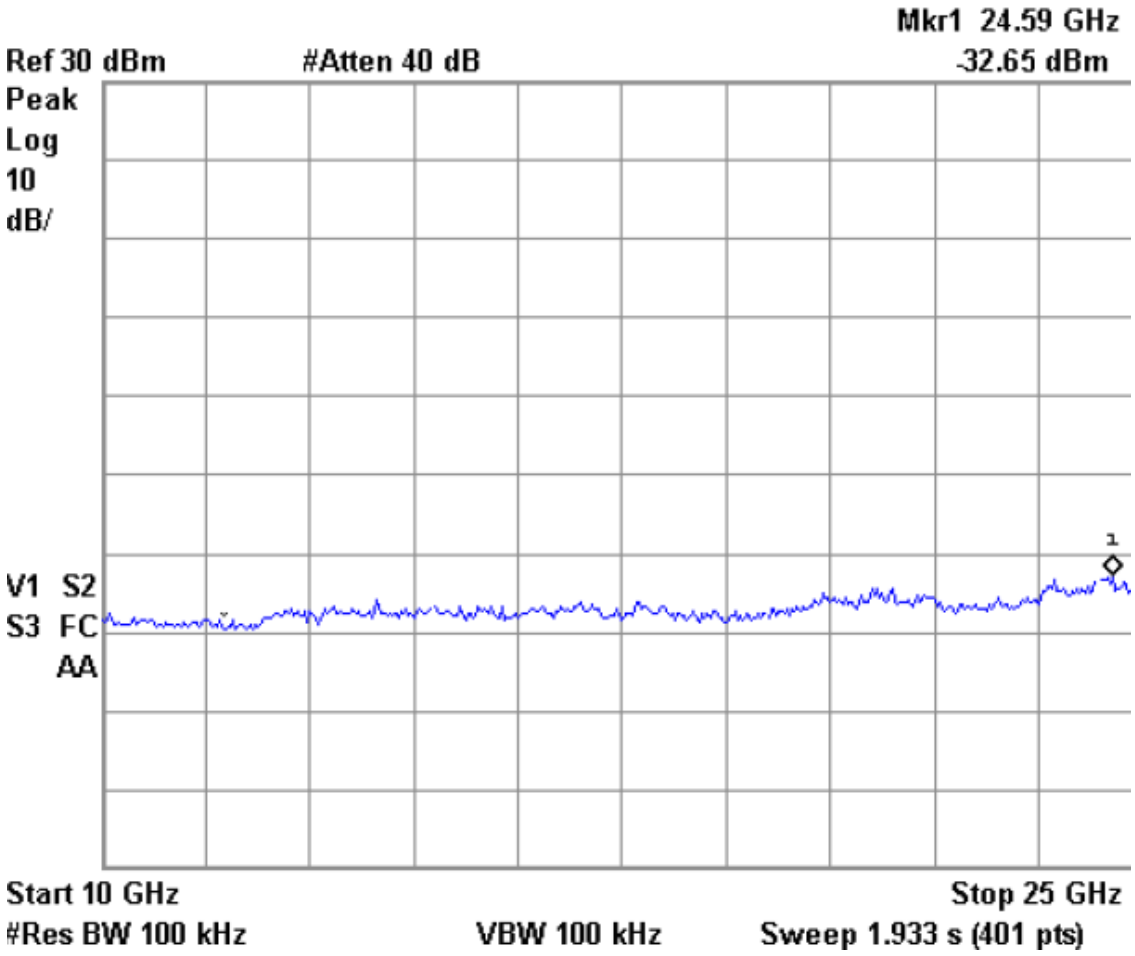
Out of Band Conducted Spurious Emission of Middle Channel


Mkr1 571 MHz
Ref 30 dBm
#Atten 40 dB
-35.55 dBm
Peak
Log
10
dB/
V1 S2
S3 FC
AA
Start 30 MHz
Stop 1 GHz
#Res BW 100 kHz
VBW 100 kHz
Sweep 125 ms (401 pts)

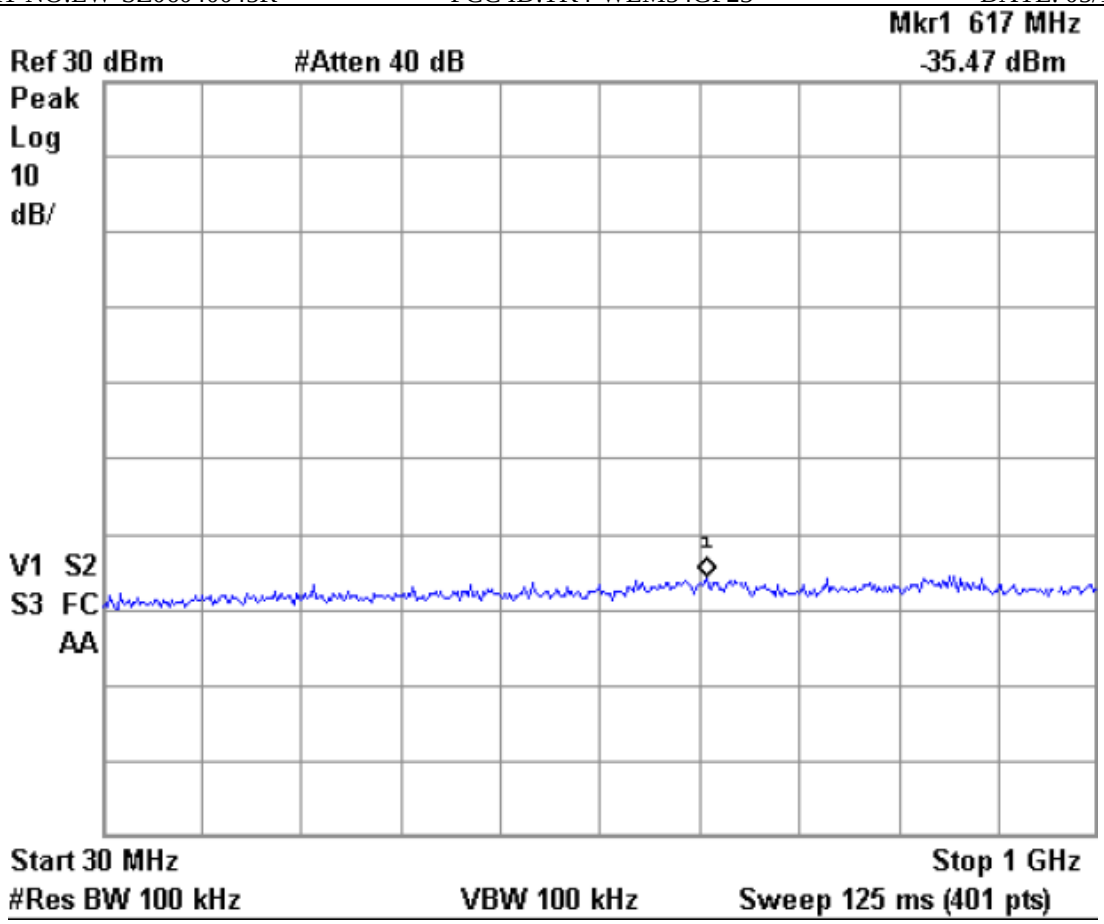

Mkr1 2.397 GHz
Ref 30 dBm
#Atten 40 dB
-36.17 dBm
Peak
Log
10
dB/
V1 S2
S3 FC
AA
Start 1 GHz
Stop 2.4 GHz
#Res BW 100 kHz
VBW 100 kHz
Sweep 180.4 ms (401 pts)

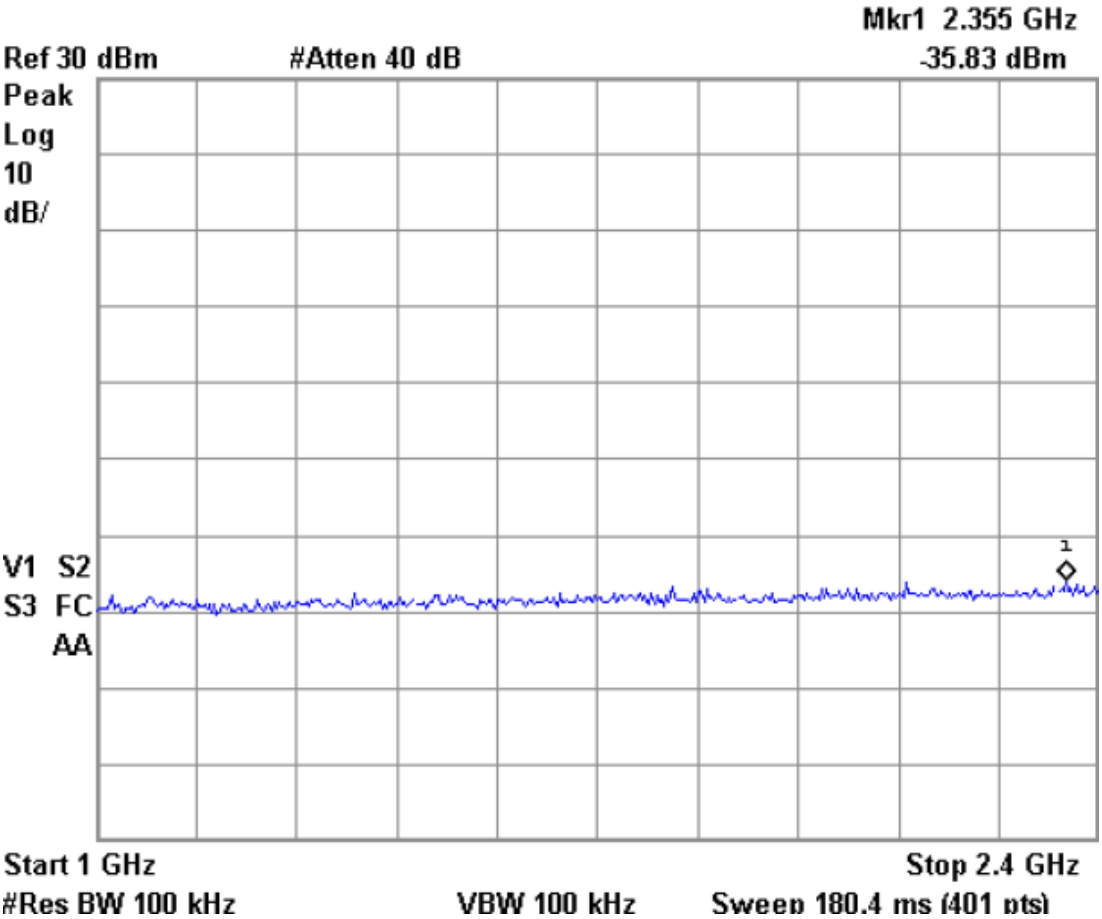

Mkr2 2.4270 GHz
Ref 30 dBm
#Atten 40 dB
-28.92 dBm
Peak
Log
10
dB/
1
2
V1 S2
S3 FC
AA
Start 2.4 GHz
Stop 2.5 GHz
#Res BW 100 kHz
VBW 100 kHz
Sweep 12.88 ms (401 pts)

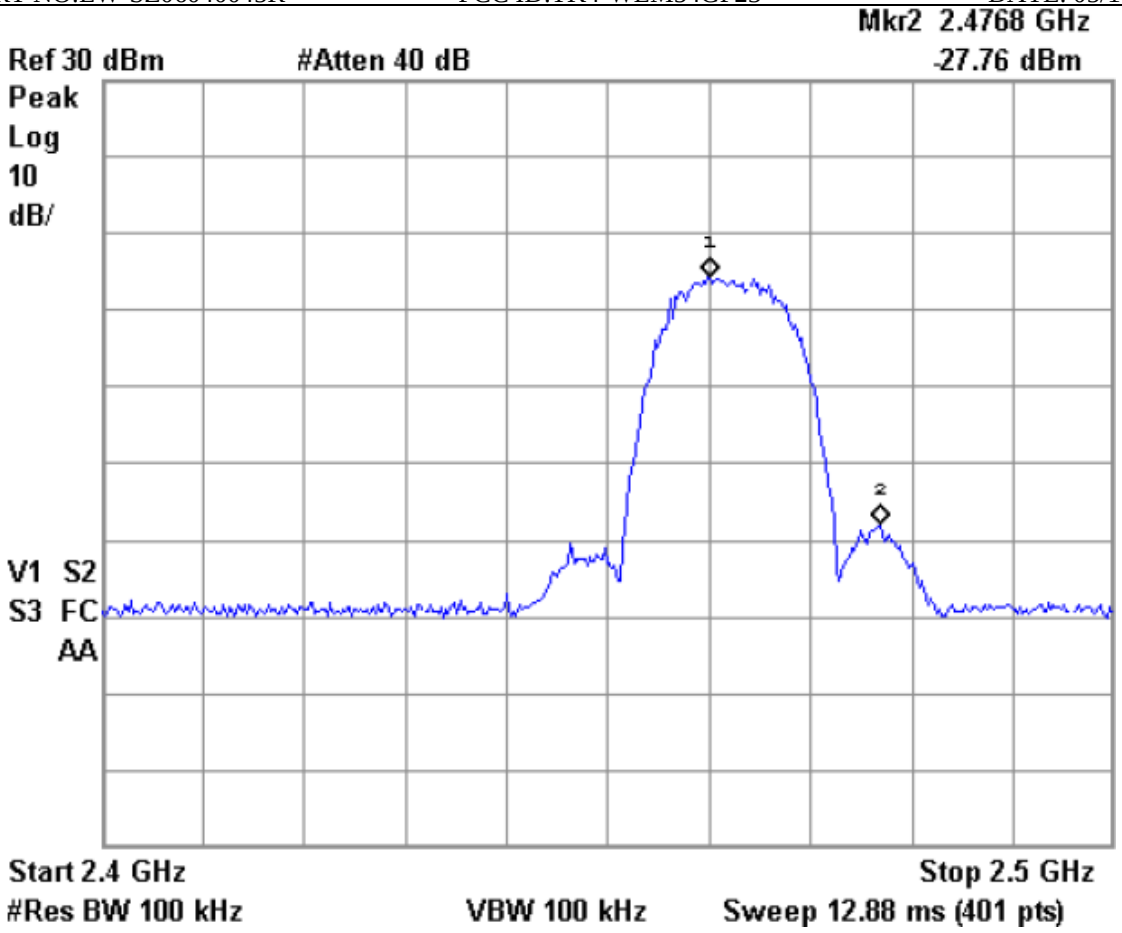

Mkr1 3.06 GHz
Ref 30 dBm
#Atten 40 dB
-35.6 dBm
Peak
Log
10
dB/
1
V1 S2
S3 FC
AA
Start 2.5 GHz
Stop 10 GHz
#Res BW 100 kHz
VBW 100 kHz
Sweep 966.3 ms (401 pts)

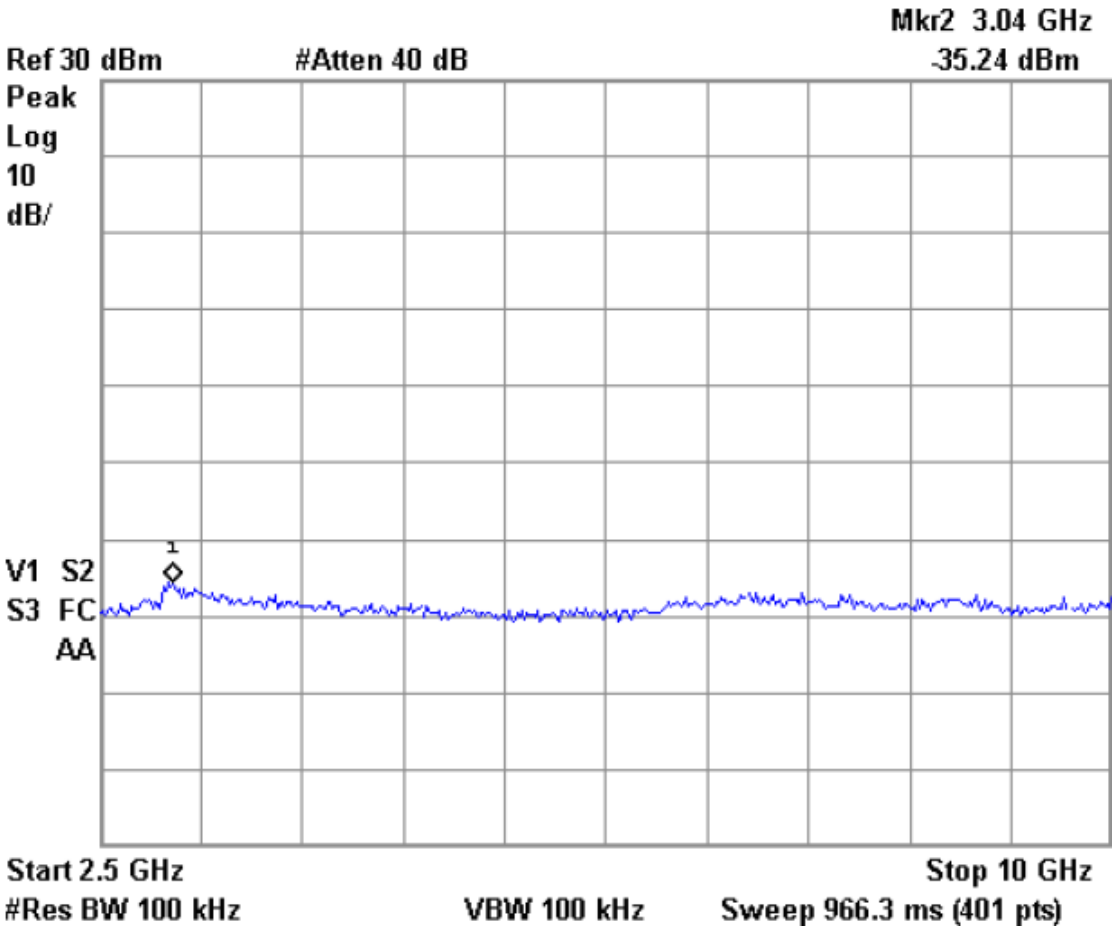


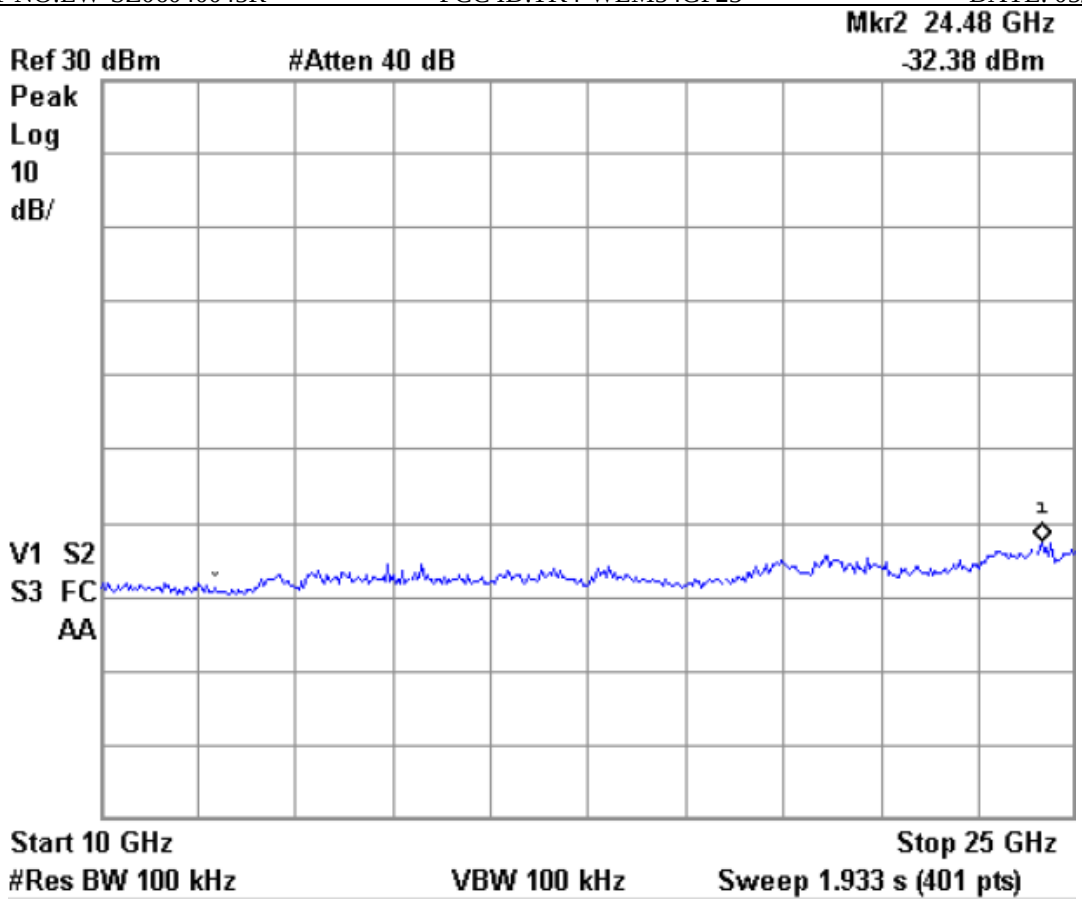
Out of Band Conducted Spurious Emission of Top Channel


Mkr1 617 MHz
Ref 30 dBm
#Atten 40 dB
-35.47 dBm
Peak
Log
10
dB/
V1 S2
S3 FC
AA
Start 30 MHz
Stop 1 GHz
#Res BW 100 kHz
VBW 100 kHz
Sweep 125 ms (401 pts)


Mkr1 2.355 GHz
Ref 30 dBm
#Atten 40 dB
-35.83 dBm
Peak
Log
10
dB/
V1 S2
S3 FC
AA
Start 1 GHz
Stop 2.4 GHz
#Res BW 100 kHz
VBW 100 kHz
Sweep 180.4 ms (401 pts)


Mkr2 2.4768 GHz
Ref 30 dBm
#Atten 40 dB
-27.76 dBm
Peak
Log
10
dB/
1
2
V1 S2
S3 FC
AA
Start 2.4 GHz
Stop 2.5 GHz
#Res BW 100 kHz
VBW 100 kHz
Sweep 12.88 ms (401 pts)


Mkr2 3.04 GHz
Ref 30 dBm
#Atten 40 dB
-35.24 dBm
Peak
Log
10
dB/
1
V1 S2
S3 FC
AA
Start 2.5 GHz
Stop 10 GHz
#Res BW 100 kHz
VBW 100 kHz
Sweep 966.3 ms (401 pts)

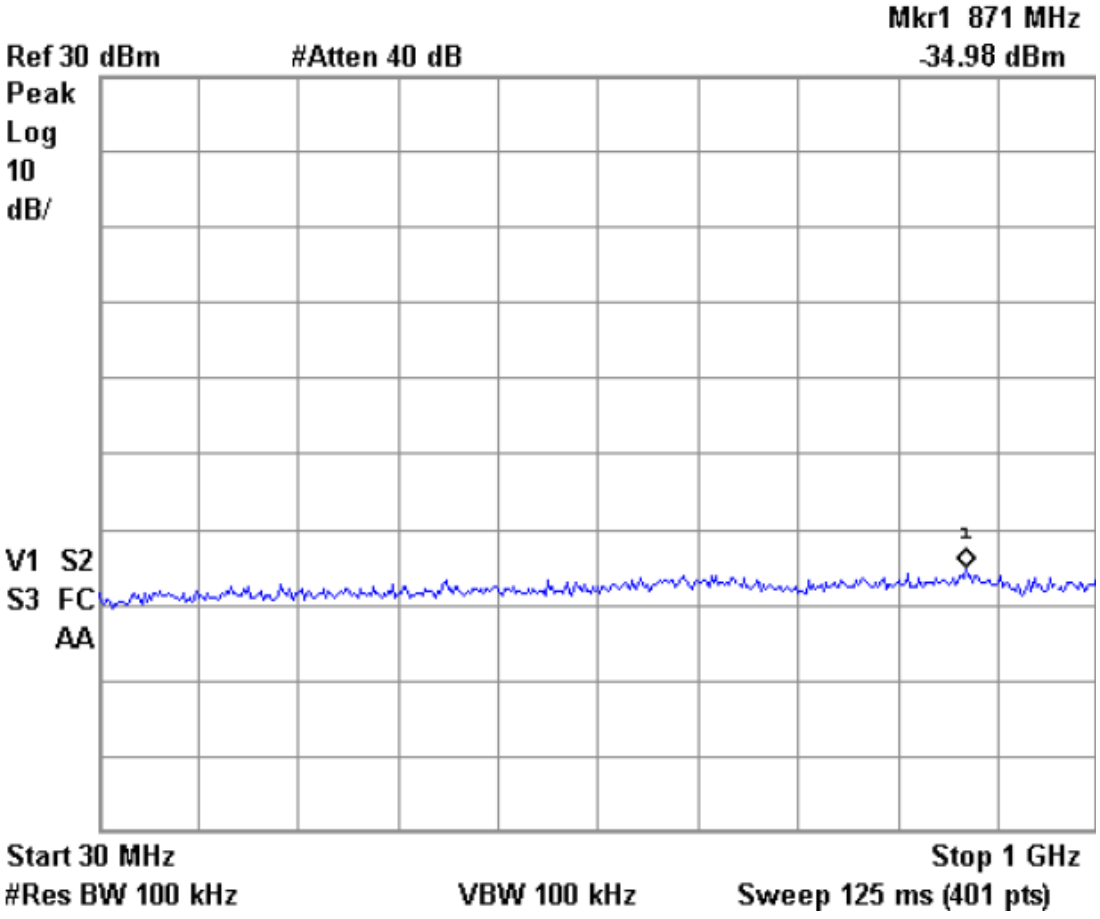

Mkr2 24.48 GHz
Ref 30 dBm
#Atten 40 dB
-32.38 dBm
Peak
Log
10
dB/
V1 S2
S3 FC
AA
Start 10 GHz
Stop 25 GHz
#Res BW 100 kHz
VBW 100 kHz
Sweep 1.933 s (401 pts)

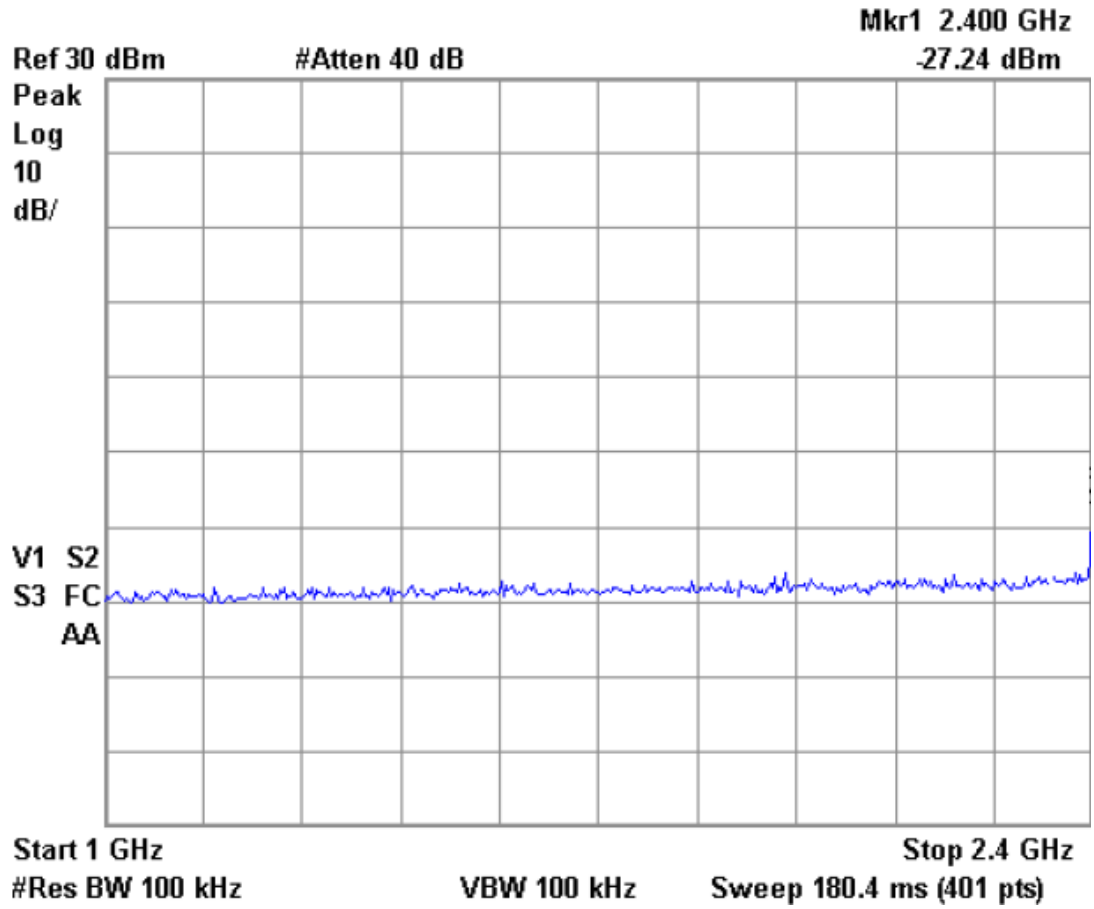
Limits and Measurement Result Of Out Of Band Conducted Emission For the Top channel Operating on 802.11g		
Applicable Limits	**Measurement Result**	
	Test Data	Criteria
Per 15.247 (d) In any 100 KHz outside the frequency band shall be at least 20 dB down than that in the 100 KHz bandwidth within the frequency band	At least 40 dB down than the maximum output power	Pass

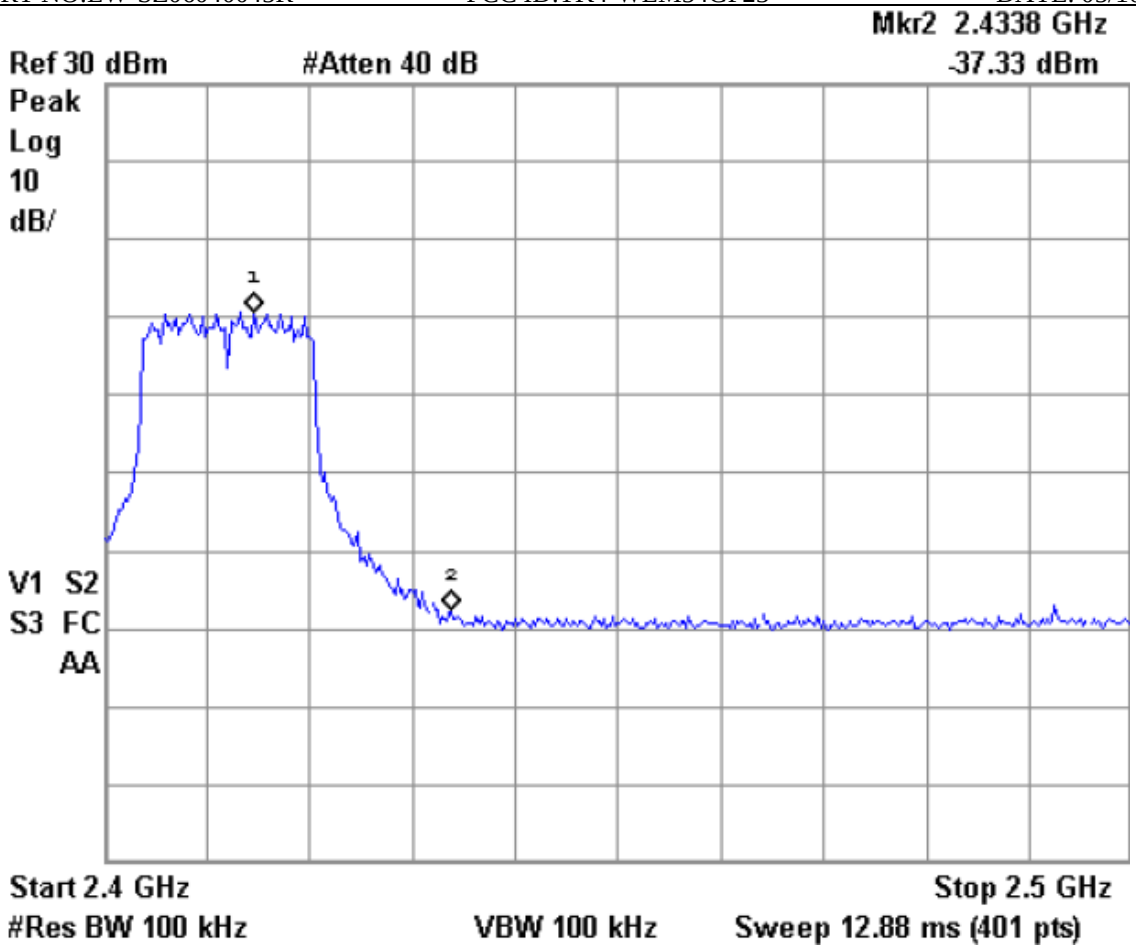
Limits and Measurement Result Of Out Of Band Conducted Emission For the Middle channel Operating on 802.11g		
Applicable Limits	**Measurement Result**	
	Test Data	Criteria
Per 15.247 (d) In any 100 KHz outside the frequency band shall be at least 20 dB down than that in the 100 KHz bandwidth within the frequency band	At least 40 dB down than the maximum output power	Pass

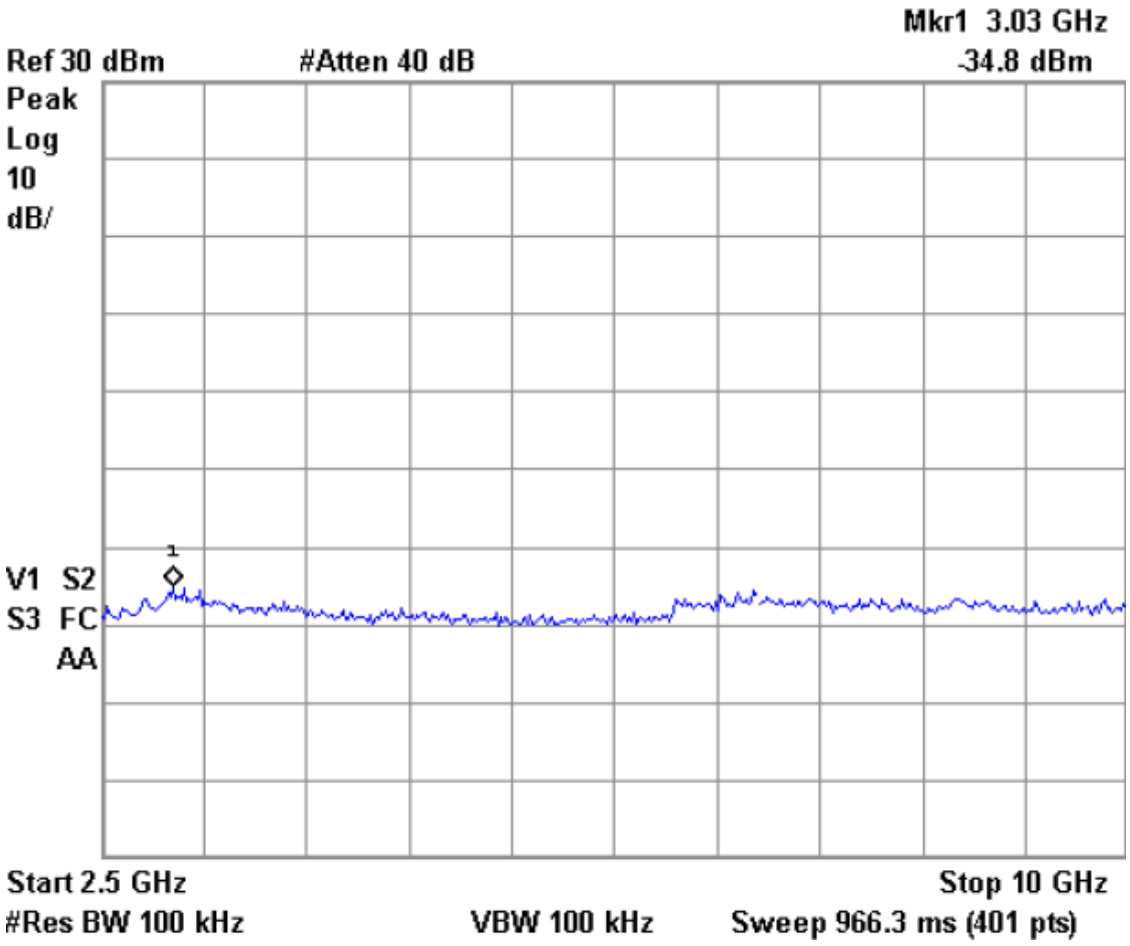
Limits and Measurement Result Of Out Of Band Conducted Emission For the Bottom channel Operating on 802.11g		
Applicable Limits	**Measurement Result**	
	Test Data	Criteria
Per 15.247 (d) In any 100 KHz outside the frequency band shall be at least 20 dB down than that in the 100 KHz bandwidth within the frequency band	At least 40 dB down than the maximum output power	Pass

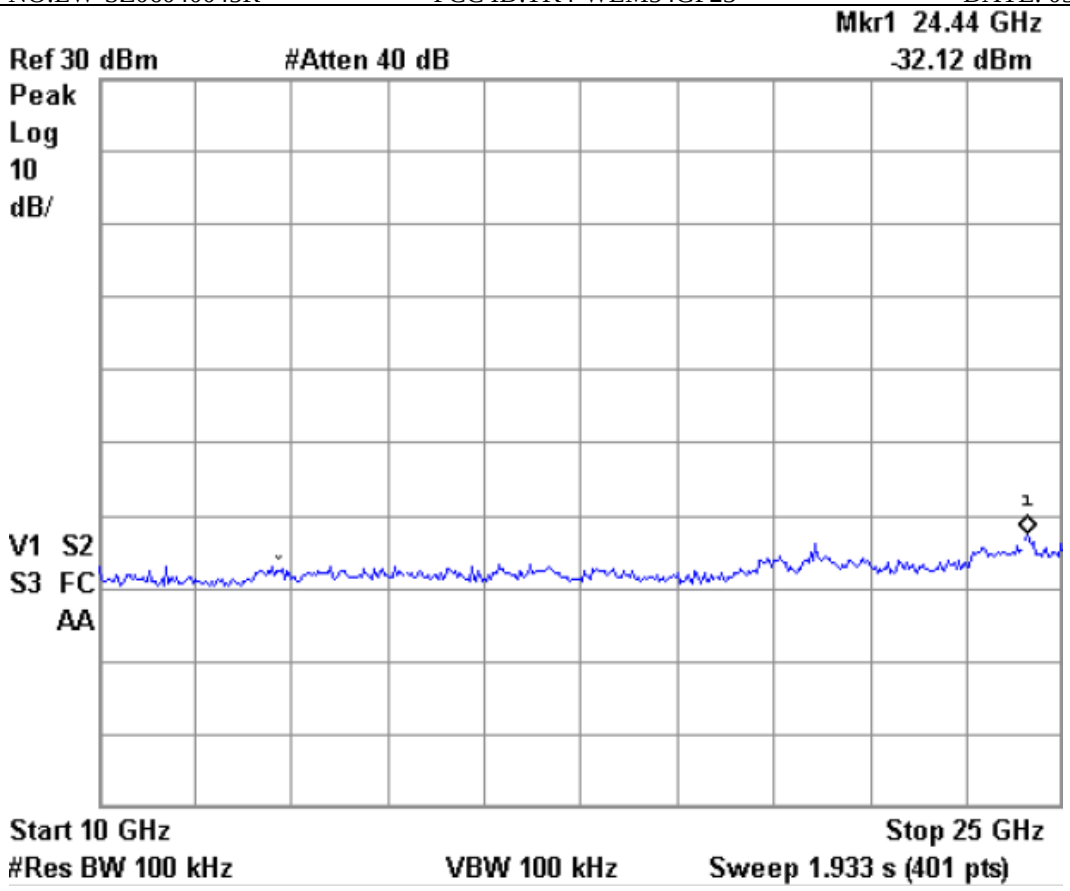
Out of Band Conducted Spurious Emission of Top Channel



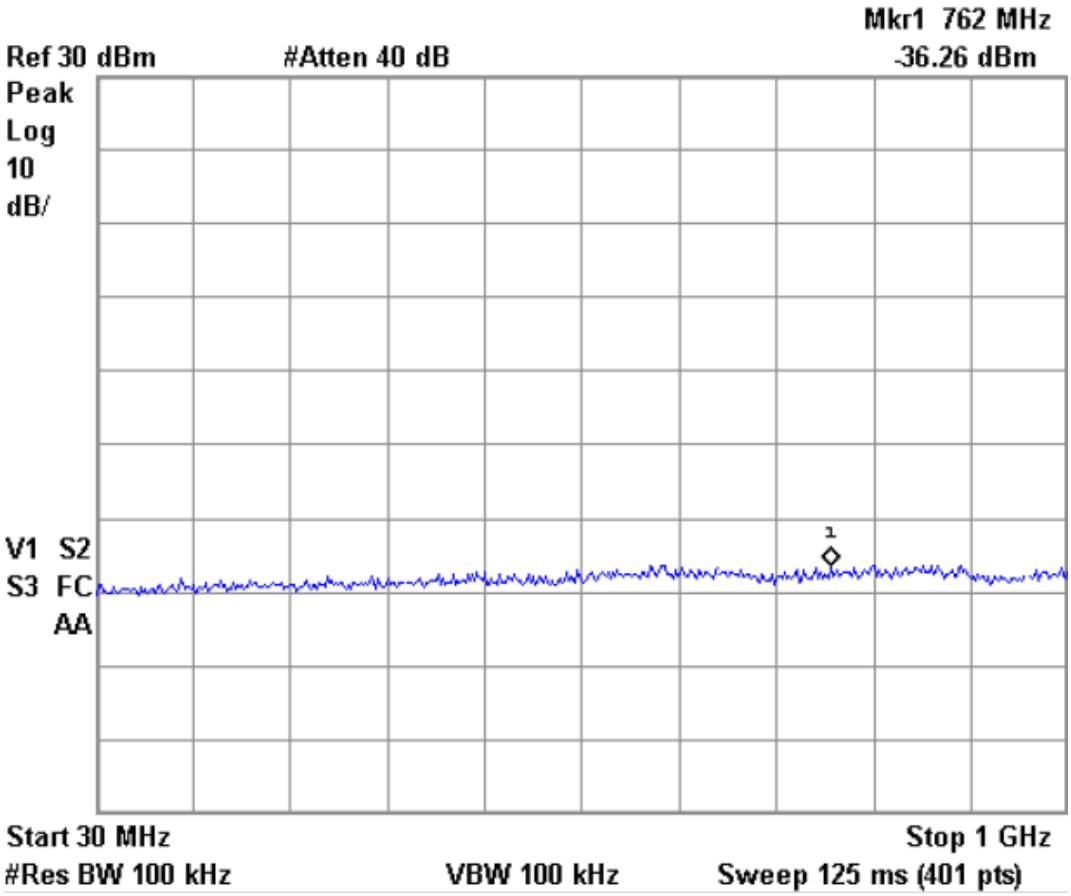


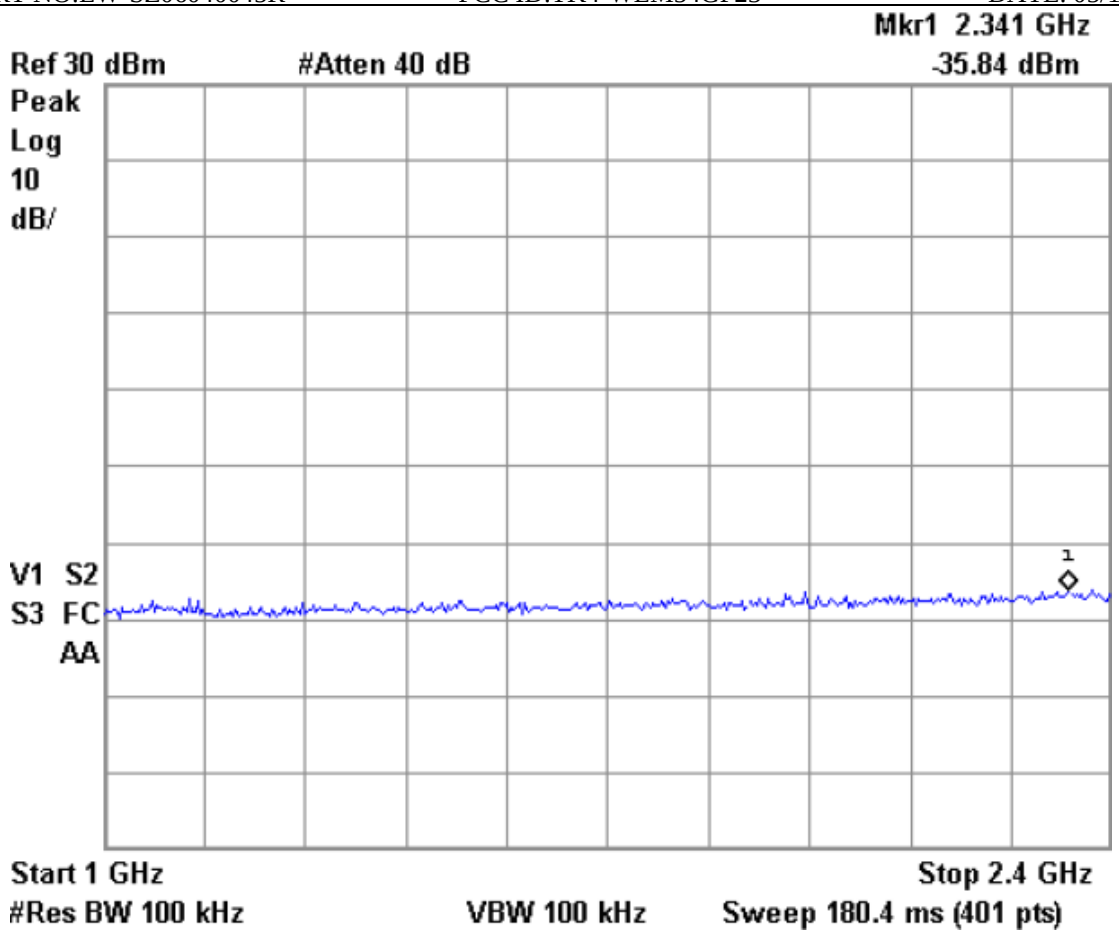

Mkr2 2.4338 GHz
Ref 30 dBm
#Atten 40 dB
-37.33 dBm
Peak
Log
10
dB/
1
2
V1 S2
S3 FC
AA
Start 2.4 GHz
Stop 2.5 GHz
#Res BW 100 kHz
VBW 100 kHz
Sweep 12.88 ms (401 pts)

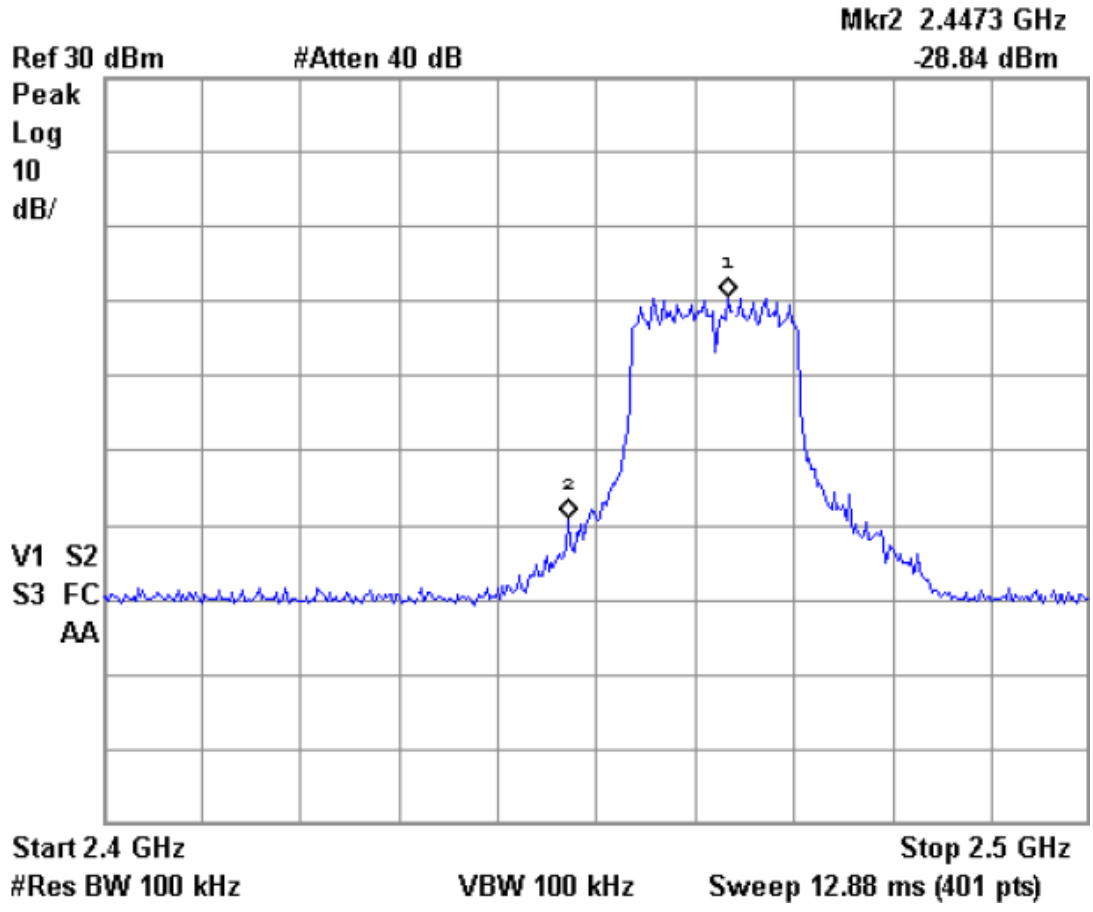

Mkr1 3.03 GHz
Ref 30 dBm
#Atten 40 dB
-34.8 dBm
Peak
Log
10
dB/
1
V1 S2
S3 FC
AA
Start 2.5 GHz
Stop 10 GHz
#Res BW 100 kHz
VBW 100 kHz
Sweep 966.3 ms (401 pts)

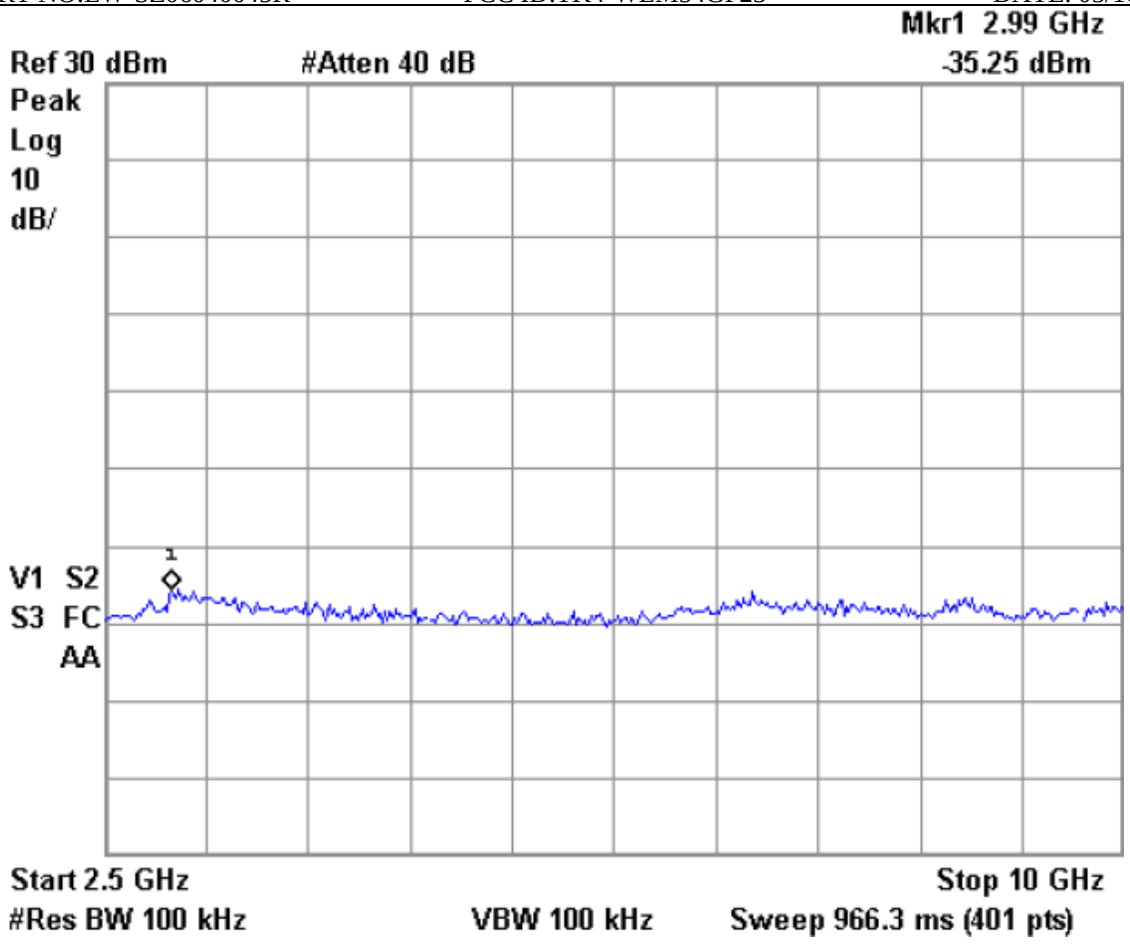


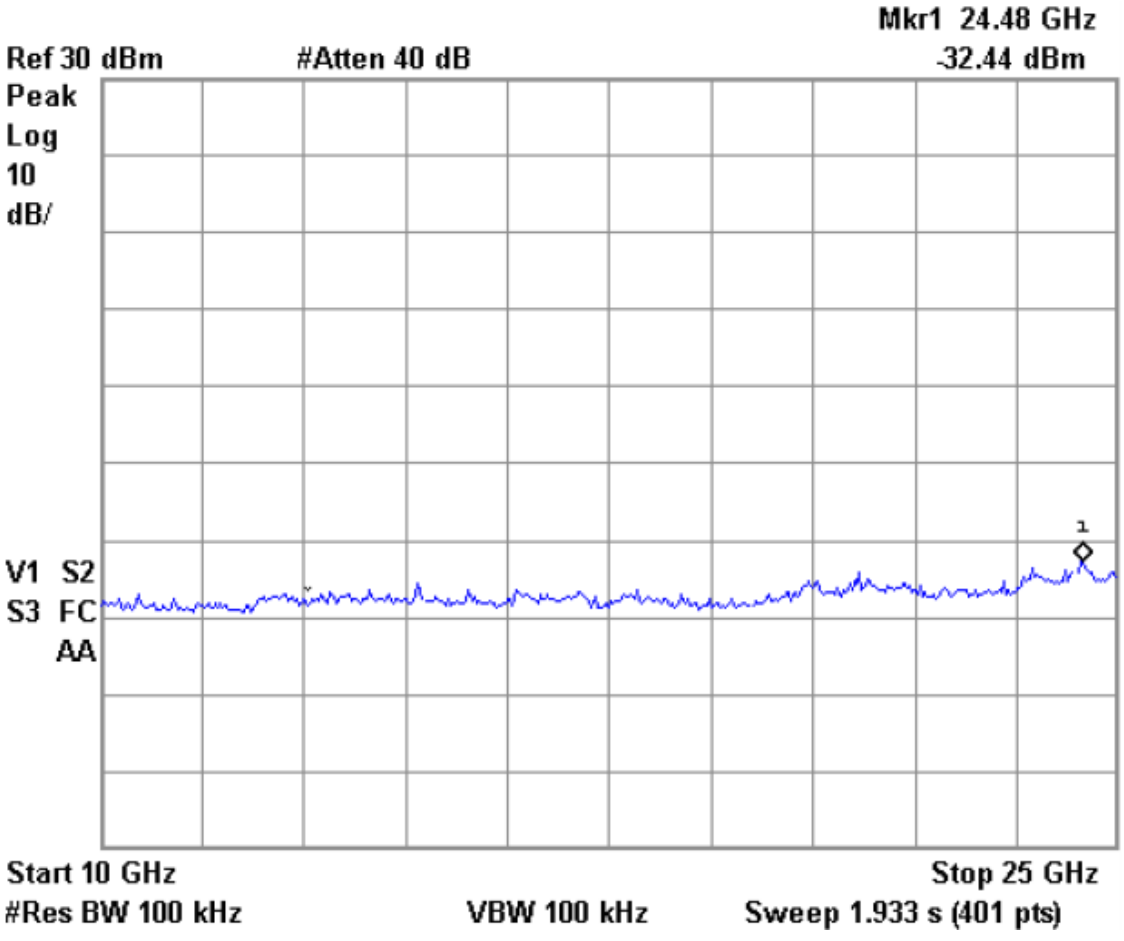
Out of Band Conducted Spurious Emission of Middle Channel



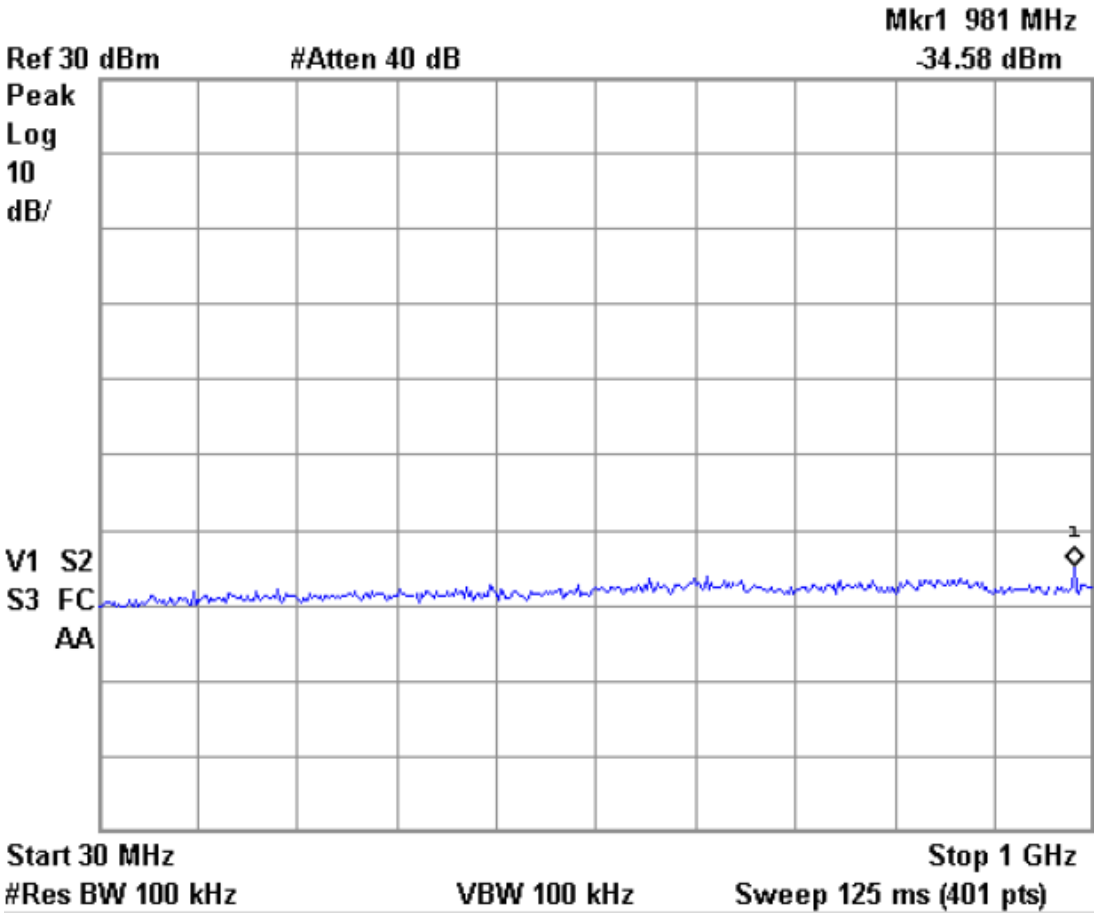

Mkr1 2.341 GHz
Ref 30 dBm
#Atten 40 dB
-35.84 dBm
Peak
Log
10
dB/
V1 S2
S3 FC
AA
1
Start 1 GHz
Stop 2.4 GHz
#Res BW 100 kHz
VBW 100 kHz
Sweep 180.4 ms (401 pts)

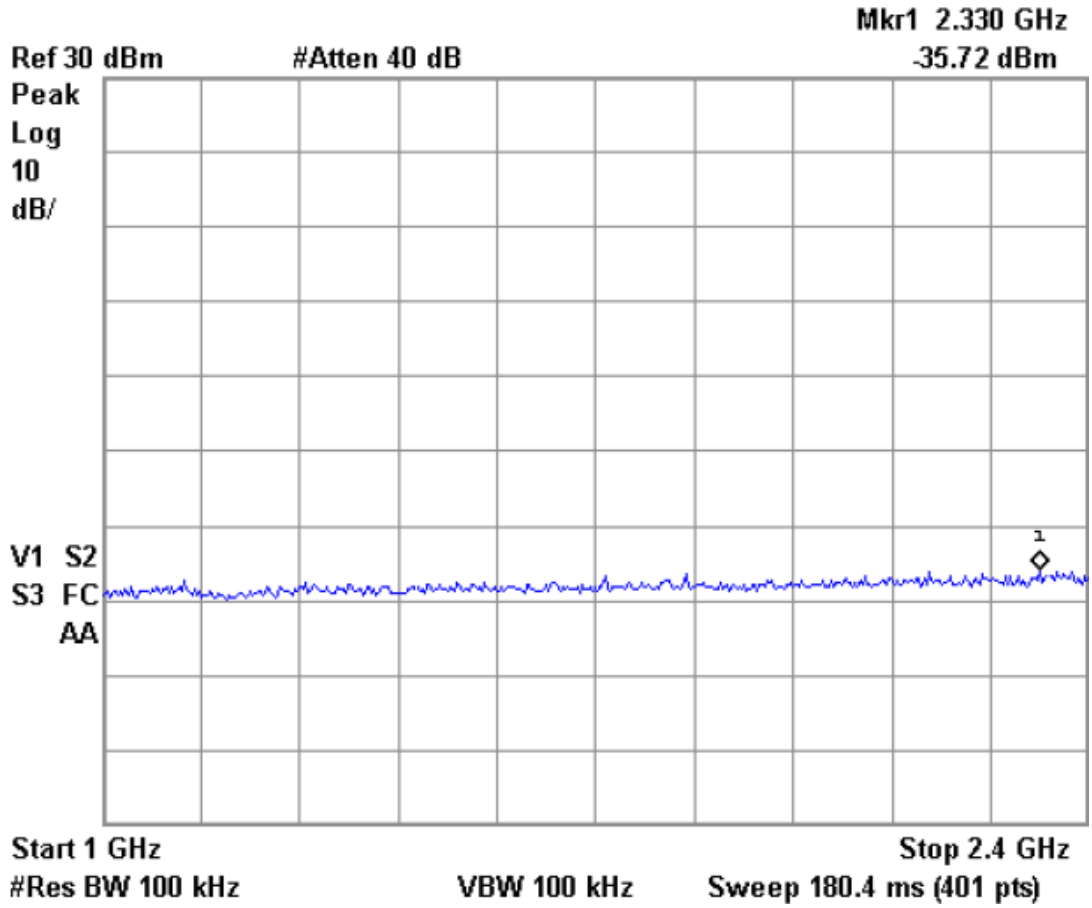

Mkr2 2.4473 GHz
Ref 30 dBm
#Atten 40 dB
-28.84 dBm
Peak
Log
10
dB/
V1 S2
S3 FC
AA
1
2
Start 2.4 GHz
Stop 2.5 GHz
#Res BW 100 kHz
VBW 100 kHz
Sweep 12.88 ms (401 pts)

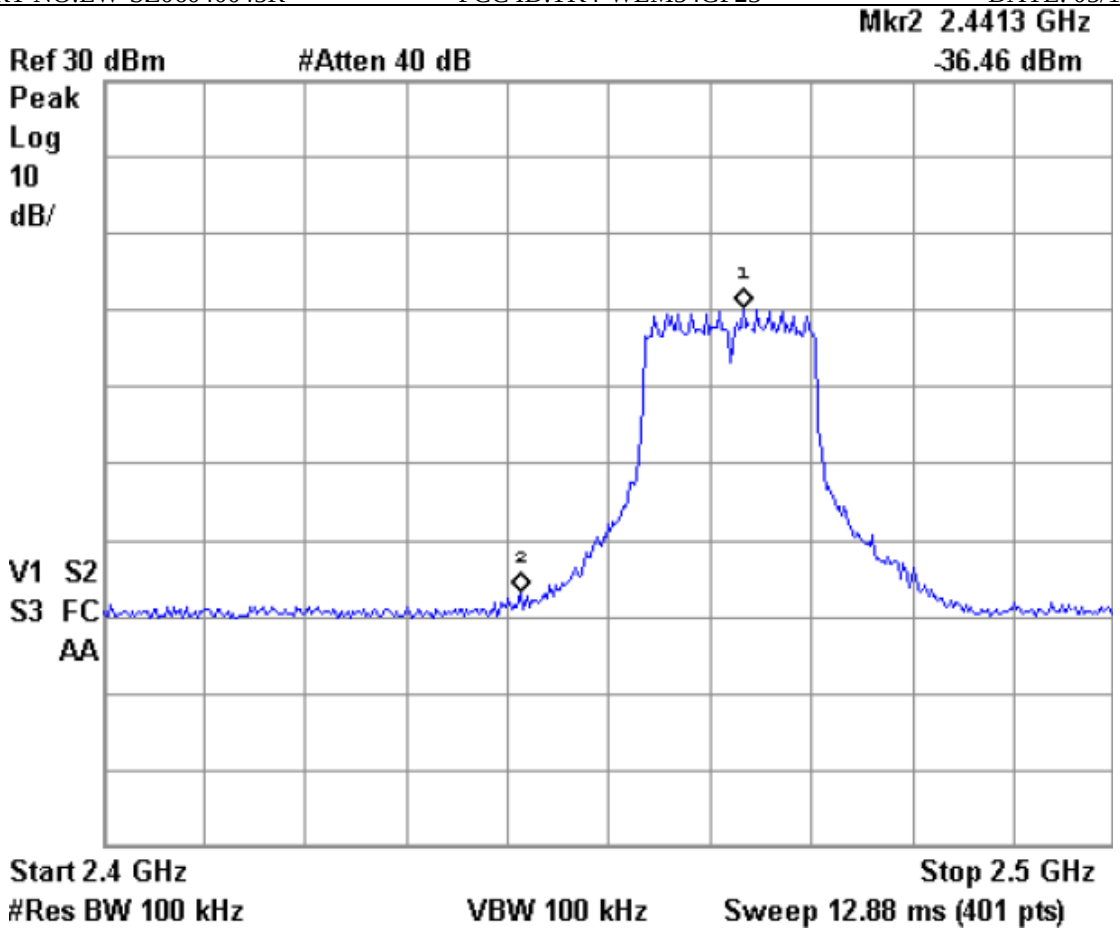

Mkr1 2.99 GHz
Ref 30 dBm
#Atten 40 dB
-35.25 dBm
Peak
Log
10
dB/
V1 S2
S3 FC
AA
Start 2.5 GHz
Stop 10 GHz
#Res BW 100 kHz
VBW 100 kHz
Sweep 966.3 ms (401 pts)

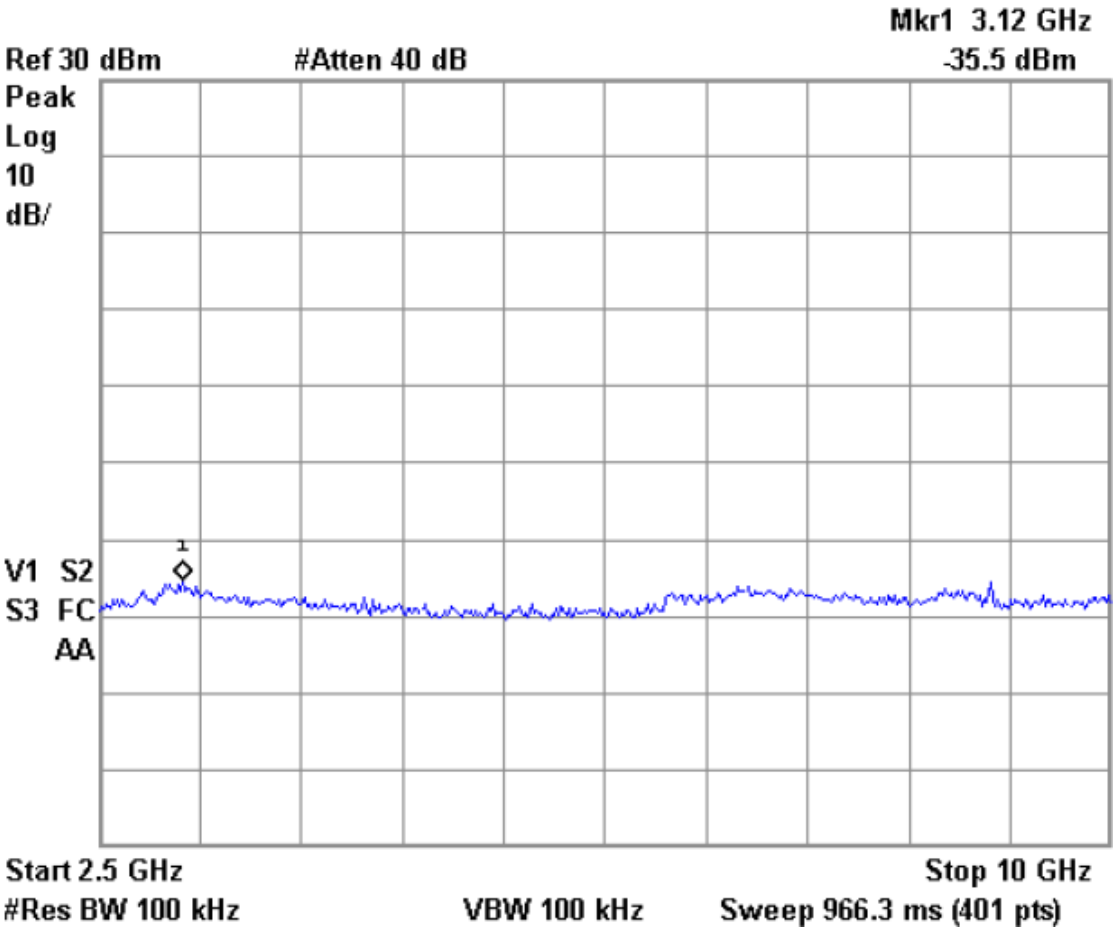

Mkr1 24.48 GHz
Ref 30 dBm
#Atten 40 dB
-32.44 dBm
Peak
Log
10
dB/
V1 S2
S3 FC
AA
Start 10 GHz
Stop 25 GHz
#Res BW 100 kHz
VBW 100 kHz
Sweep 1.933 s (401 pts)

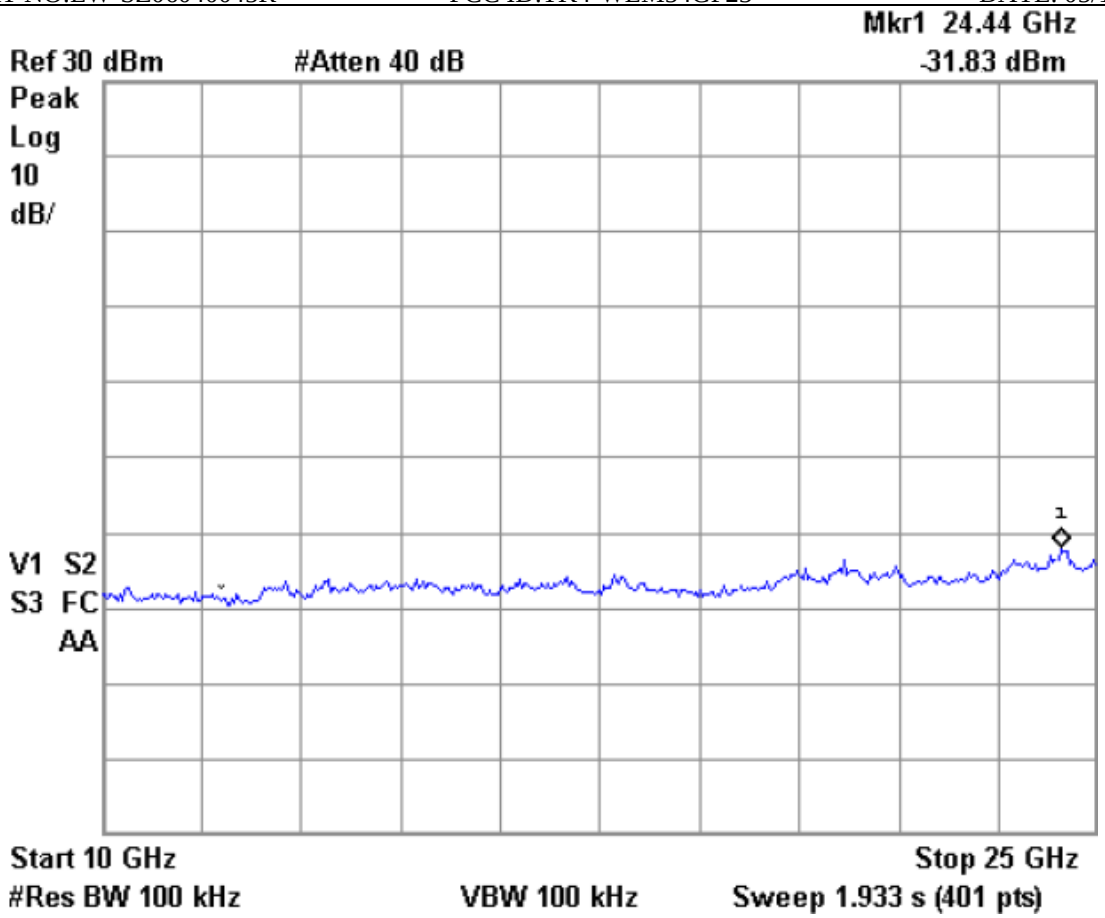
Out of Band Conducted Spurious Emission of Top Channel






Mkr2 2.4413 GHz
Ref 30 dBm
#Atten 40 dB
-36.46 dBm
Peak
Log
10
dB/
1
2
V1 S2
S3 FC
AA
Start 2.4 GHz
Stop 2.5 GHz
#Res BW 100 kHz
VBW 100 kHz
Sweep 12.88 ms (401 pts)


Mkr1 3.12 GHz
Ref 30 dBm
#Atten 40 dB
-35.5 dBm
Peak
Log
10
dB/
1
V1 S2
S3 FC
AA
Start 2.5 GHz
Stop 10 GHz
#Res BW 100 kHz
VBW 100 kHz
Sweep 966.3 ms (401 pts)


Mkr1 24.44 GHz
Ref 30 dBm
#Atten 40 dB
-31.83 dBm
Peak
Log
10
dB/
V1 S2
S3 FC
AA
Start 10 GHz
Stop 25 GHz
#Res BW 100 kHz
VBW 100 kHz
Sweep 1.933 s (401 pts)

5.7 Band Edge

5.7.1 Measurement Procedure:

The same as described in section 5.3.1

5.7.2 Test SET-UP (Block Diagram of Configuration)

The same as described in section 5.3.2

5.7.3 Measurement Equipment Used:

3/5 Anechoic Chamber Radiation Test Site # 4					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
ULTRA-BROADBAND ANTENNA	ROHDE & SCHWARZ	HL562	100015	2005/11	2006/11
EMI TEST RECEIVER	ROHDE & SCHWARZ	ESI 26	100009	2005/11	2006/11
RF TEST PANEL	ROHDE & SCHWARZ	TS / RSP	335015/ 0017	N/A	N/A
TURNTABLE	ETS	2088	2149	N/A	N/A
ANTENNA MAST	ETS	2075	2346	N/A	N/A
EMI TEST SOFTWARE	ROHDE & SCHWARZ	ESK1	NA	N/A	N/A

5.7.4 Limits And Measurement Result:

Limits and Measurement Result Of Band Edge For the Top channel, the Middle channel and the Bottom Channel		
Applicable Limits	**Measurement Result of 802.11b**	
	Test Data	Criteria
1, Per 15.247, the operation frequency shall lie whololy within the frequency rang of 2.4 GHz to 2.4835 GHz; 2, Per 15.247 (d) In any 100 KHz outside the frequency band shall be at least 20 dB down than that in the 100 KHz bandwidth within the frequency band; 3,The restricted band shall not exceed the greneral radiated limits	At least 55 dB down Than the 100 KHz bandwidth containing the maximum output power at both band edges (the top one of 2.4835 GHz, the bottom of 2.4 GHz) The spurious emission including the restricted bands have been reported as Section 5.2 Transmitter Radiated Emission of the test report.	Pass

Limits and Measurement Result Of Band Edge For the Top channel, the Middle channel and the Bottom Channel		
Applicable Limits	**Measurement Result of 802.11g**	
	Test Data	Criteria
1, Per 15.247, the operation frequency shall lie whololy within the frequency rang of 2.4 GHz to 2.4835 GHz; 2, Per 15.247 (d) In any 100 KHz outside the frequency band shall be at least 20 dB down than that in the 100 KHz bandwidth within the frequency band; 3,The restricted band shall not exceed the greneral radiated limits	At least 55 dB down Than the 100 KHz bandwidth containing the maximum output power at both band edges (the top one of 2.4835 GHz, the bottom of 2.4 GHz) The spurious emission including the restricted bands have been reported as Section 5.2 Transmitter Radiated Emission of the test report.	Pass

5.8 Antenna Requirement

Antenna Requirement for 802.11b & 802.11g	
Applicable Limits	Antenna Connector Construction
1, Per 15.203, the intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. 2, Per 15.247(b), if transmitting antennas of directional gain greater than 6 dBi are used, the output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi	The antenna used with this product shall be 1/4λ DIOPLE antenna with UFL Connector. And the maximum gain of usable antenna is 4.0 dBi

APPENDIX 1

PHOTOGRAPHS OF SET UP

Conduction Emission Setup Photo

Radiated Emission Setup Photos