

FCC Test Report

Product Name	Wireless Storage Drive
Model No.	WSD-A1
FCC ID.	QT7ASUSWSDA1

Applicant	Power7 Technology(Dong Guan) Co., Ltd.
Address	No.28 Binjiang Blvd Shishuikou Village, Qiaotou To Dongguan China

Date of Receipt	Aug. 21, 2015
Issue Date	Nov. 26, 2015
Report No.	1580595R-RFUSP02V00
Report Version	V1.0



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.

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Product Name	Wireless Storage Drive
Applicant	Power7 Technology(Dong Guan) Co., Ltd.
Address	No.28 Binjiang Blvd Shishuikou Village, Qiaotou To Dongguan China
Manufacturer	POWER 7 TECHNOLOGY Co.,Ltd.
Model No.	WSD-A1
EUT Rated Voltage	DC 3.7V(By Battery), DC 5V(By USB)
EUT Test Voltage	DC 5V(By USB)
Trade Name	ASUS
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2014 ANSI C63.4: 2014, ANSI C63.10: 2013 KDB 558074 D01 DTS Meas Guidance v03r03
Test Result	Complied

Documented By : Genie Chang

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Tested By : Jack Hsu

(Engineer / Jack Hsu)

Approved By : Vincent Lin

(Director / Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Wireless Storage Drive
Trade Name	ASUS
Model No.	WSD-A1
FCC ID.	QT7ASUSWSDA1
Frequency Range	802.11b/g/n-20MHz:2412-2462MHz,802.11n-40MHz:2422-2452MHz
Number of Channels	802.11b/g/n-20MHz: 11, n-40MHz: 7
Data Speed	802.11b: 1-11Mbps, 802.11g: 6-54Mbps, 802.11n: up to 300Mbps
Type of Modulation	802.11b:DSSS, DBPSK, DQPSK, CCK 802.11g/n: OFDM, BPSK, QPSK, 16QAM, 64QAM
Antenna Type	Chip Antenna
Antenna Gain	Refer to the table "Antenna List"
Channel Control	Auto

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	RIMON TECHNOLOGY CO., LTD.	WAN3216F245C04	Chip Antenna	1.69dBi for 2.4GHz

Note: The antenna of EUT is conform to FCC 15.203

802.11b/g/n-20MHz Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01:	2412 MHz	Channel 02:	2417 MHz	Channel 03:	2422 MHz	Channel 04:	2427 MHz
Channel 05:	2432 MHz	Channel 06:	2437 MHz	Channel 07:	2442 MHz	Channel 08:	2447 MHz
Channel 09:	2452 MHz	Channel 10:	2457 MHz	Channel 11:	2462 MHz		

802.11n-40MHz (2.4G Band) Center Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 03:	2422 MHz	Channel 04:	2427 MHz	Channel 05:	2432 MHz	Channel 06:	2437 MHz
Channel 07:	2442 MHz	Channel 08:	2447 MHz	Channel 09:	2452 MHz		

Note:

1. This device is a Wireless Storage Drive with a built-in WLAN transceiver.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11b is 1Mbps 、802.11g is 6Mbps 、802.11n(20M-BW) is 14.4Mbps and, 802.11n(40M-BW) is 30Mbps).
4. At result of pretests, module supports dual-channel transmission, only the worst case is shown in the report. (802.11b is chain A, 802.11g is chain A)
5. These tests are conducted on a sample for the purpose of demonstrating compliance of 802.11b/g/n transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum devices.
6. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

Test Mode:	Mode 1: Transmit (802.11b 1Mbps)
	Mode 2: Transmit (802.11g 6Mbps)
	Mode 3: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)
	Mode 4: Transmit - 802.11n-40BW_30Mbps(2.4G Band)

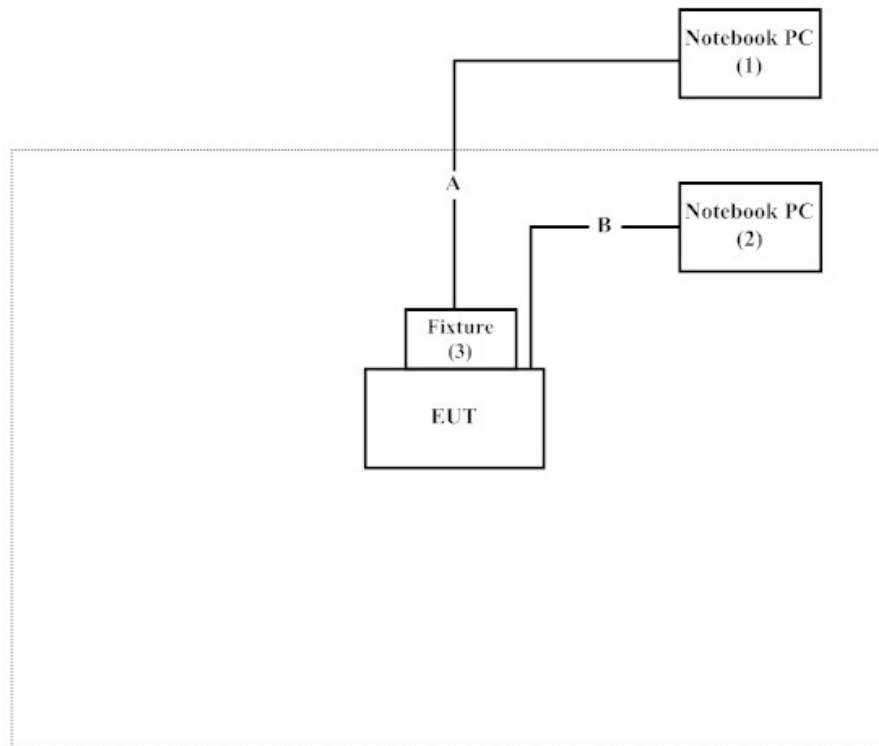
1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product	Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1 Notebook PC	DELL	Latitude E5440	74BTK32	DoC	Non-Shielded, 1.8m
2 Notebook PC	DELL	M65	CG098	DoC	Non-Shielded, 1.8m
3 Fixture	ASUS	N/A	N/A	N/A	N/A

Signal Cable Type	Signal cable Description
A SATA Cable	Non-Shielded, 5.0m
B Micro USB to USB Cable	Shielded, 2.3m

1.4. Configuration of Tested System



1.5. EUT Exercise Software

- (1) Setup the EUT as shown on 1.4
- (2) Execute “QATest MFC Application (v1.0.6.0)” program on the Notebook PC.
- (3) Configure the test mode, the test channel, and the data rate.
- (4) Start the continuous transmission.
- (5) Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

The related certificate for our laboratories about the test site and management system can be downloaded from

Quietek Corporation's Web Site : <http://www.quietek.com/chinese/about/certificates.aspx?bval=5>

The address and introduction of Quietek Corporation's laboratories can be founded in our Web site : <http://www.quietek.com/>

Site Description: File on
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7435 Oakland Mills Road
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FCC Accreditation Number: TW1014

2. Conducted Emission

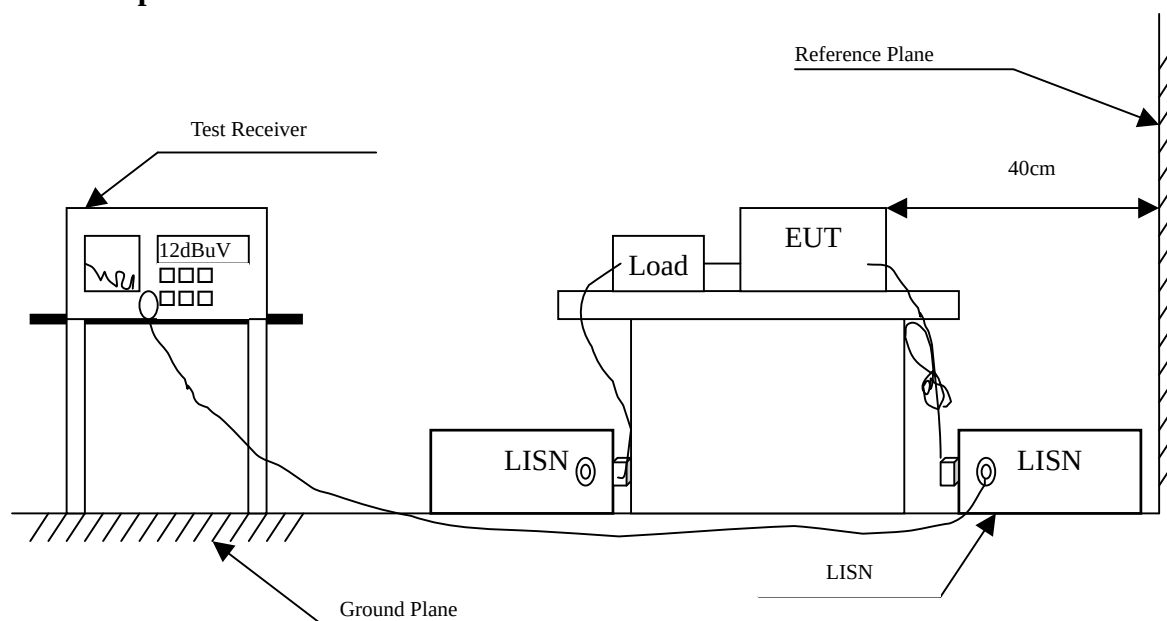
2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
X	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2015	
X	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2015	Peripherals
X	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2015	EUT
	DC LISN	Schwarzbeck	8226 / 176	Mar, 2015	EUT
X	Pulse Limiter	R & S	ESH3-Z2 / 357.8810.52	Feb., 2015	
	No.1 Shielded Room				

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked by "X" are used to measure the final test results.

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit		
Frequency MHz	Limits	
	QP	AVG
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement.

Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : Wireless Storage Drive
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 4: Transmit - 802.11n-40BW_30Mbps(2.4G Band) (2437MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.154	9.790	49.100	58.890	-6.996	65.886
0.177	9.790	46.250	56.040	-9.189	65.229
0.252	9.790	36.310	46.100	-16.986	63.086
0.267	9.790	33.440	43.230	-19.427	62.657
0.326	9.790	26.930	36.720	-24.251	60.971
0.701	9.790	28.190	37.980	-18.020	56.000
Average					
0.154	9.790	33.130	42.920	-12.966	55.886
0.177	9.790	33.050	42.840	-12.389	55.229
0.252	9.790	23.950	33.740	-19.346	53.086
0.267	9.790	21.650	31.440	-21.217	52.657
0.326	9.790	12.540	22.330	-28.641	50.971
0.701	9.790	16.420	26.210	-19.790	46.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Wireless Storage Drive
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 4: Transmit - 802.11n-40BW_30Mbps(2.4G Band) (2437MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.162	9.770	49.320	59.090	-6.567	65.657
0.205	9.770	42.790	52.560	-11.869	64.429
0.248	9.770	37.180	46.950	-16.250	63.200
0.283	9.770	32.170	41.940	-20.260	62.200
0.341	9.770	24.580	34.350	-26.193	60.543
0.673	9.770	27.400	37.170	-18.830	56.000
Average					
0.162	9.770	37.310	47.080	-8.577	55.657
0.205	9.770	30.160	39.930	-14.499	54.429
0.248	9.770	24.930	34.700	-18.500	53.200
0.283	9.770	19.260	29.030	-23.170	52.200
0.341	9.770	11.680	21.450	-29.093	50.543
0.673	9.770	15.950	25.720	-20.280	46.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

3. Maximum Conducted Power

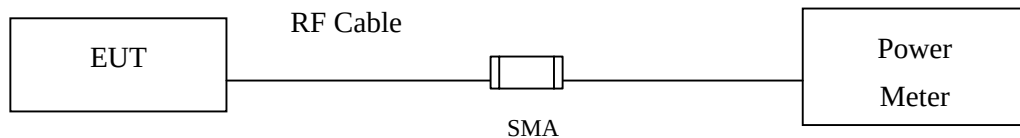
3.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2015
X	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2015
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2015
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2015
	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

3.2. Test Setup



3.3. Limits

The maximum average power shall be less 1 Watt. (Section 15.247 (b)(3))

3.4. Test Procedure

The EUT was tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements. The maximum peak conducted output power using KDB 558074 D01 DTS Meas Guidance v03r02 section 9.1.2 PKPM1 Peak power meter method.

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Maximum Conducted Power

Product : Wireless Storage Drive
Test Item : Maximum Conducted Power
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)				Peak Power	Required Limit	Result
		1	2	5.5	11	1		
		Measurement Level (dBm)						
01	2412	16.07	--	--	--	20.16	<30dBm	Pass
06	2437	16.54	16.34	16.11	15.97	19.92	<30dBm	Pass
11	2462	16.66	--	--	--	20.07	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)				Peak Power	Required Limit	Result
		1	2	5.5	11	1		
		Measurement Level (dBm)						
01	2412	15.98	--	--	--	20.01	<30dBm	Pass
06	2437	16.41	16.22	16.04	15.95	19.83	<30dBm	Pass
11	2462	16.62	--	--	--	20.02	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

Product : Wireless Storage Drive
Test Item : Maximum Conducted Power
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		6	9	12	18	24	36	48	54	6		
		Measurement Level (dBm)										
01	2412	13.96	--	--	--	--	--	--	--	22.94	<30dBm	Pass
06	2437	13.72	13.57	13.29	13.10	12.88	12.67	12.45	12.24	22.55	<30dBm	Pass
11	2462	13.87	--	--	--	--	--	--	--	22.63	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		6	9	12	18	24	36	48	54	6		
		Measurement Level (dBm)										
01	2412	13.88	--	--	--	--	--	--	--	22.67	<30dBm	Pass
06	2437	13.64	13.49	13.26	13.08	12.89	12.70	12.51	12.32	22.41	<30dBm	Pass
11	2462	13.8	--	--	--	--	--	--	--	22.55	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

Product : Wireless Storage Drive
Test Item : Maximum Conducted Power
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	14.4
		Measurement Level (dBm)								
01	2412	13.6	--	--	--	--	--	--	--	22.3
06	2437	13.67	13.48	13.39	13.23	13.09	12.95	12.81	12.67	22.5
11	2462	13.78	--	--	--	--	--	--	--	22.52

Note: Peak Power Output Value =Reading value on power meter + cable loss

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	14.4
		Measurement Level (dBm)								
01	2412	13.57	--	--	--	--	--	--	--	22.14
06	2437	13.60	13.46	13.22	13.05	12.86	12.67	12.48	12.29	22.14
11	2462	13.68	--	--	--	--	--	--	--	22.13

Note: Peak Power Output Value =Reading value on power meter + cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rate (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
1	2412	14.4	22.30	22.14	25.23	<30dBm	Pass
6	2437	14.4	22.50	22.14	25.33	<30dBm	Pass
11	2462	14.4	22.52	22.13	25.34	<30dBm	Pass

Note: Peak Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

Product : Wireless Storage Drive
Test Item : Maximum Conducted Power
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-40BW_30Mbps(2.4G Band)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		30	60	90	120	180	240	270	300	30
		Measurement Level (dBm)								
3	2422	13.95	--	--	--	--	--	--	--	22.22
6	2437	13.87	13.74	13.59	13.45	13.31	13.17	13.03	12.89	22.14
9	2452	13.65	--	--	--	--	--	--	--	22.38

Note: Peak Power Output Value = Reading value on power meter + cable loss

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		30	60	90	120	180	240	270	300	30
		Measurement Level (dBm)								
3	2422	13.54	--	--	--	--	--	--	--	22.01
6	2437	13.73	13.58	13.36	13.19	13.00	12.82	12.63	12.45	22.7
9	2452	13.73	--	--	--	--	--	--	--	22.13

Note: Peak Power Output Value = Reading value on power meter + cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rate (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
3	2422	30	22.22	22.01	25.13	<30dBm	Pass
6	2437	30	22.14	22.70	25.44	<30dBm	Pass
9	2452	30	22.38	22.13	25.27	<30dBm	Pass

Note: Peak Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

4. Radiated Emission

4.1. Test Equipment

The following test equipments are used during the radiated emission test:

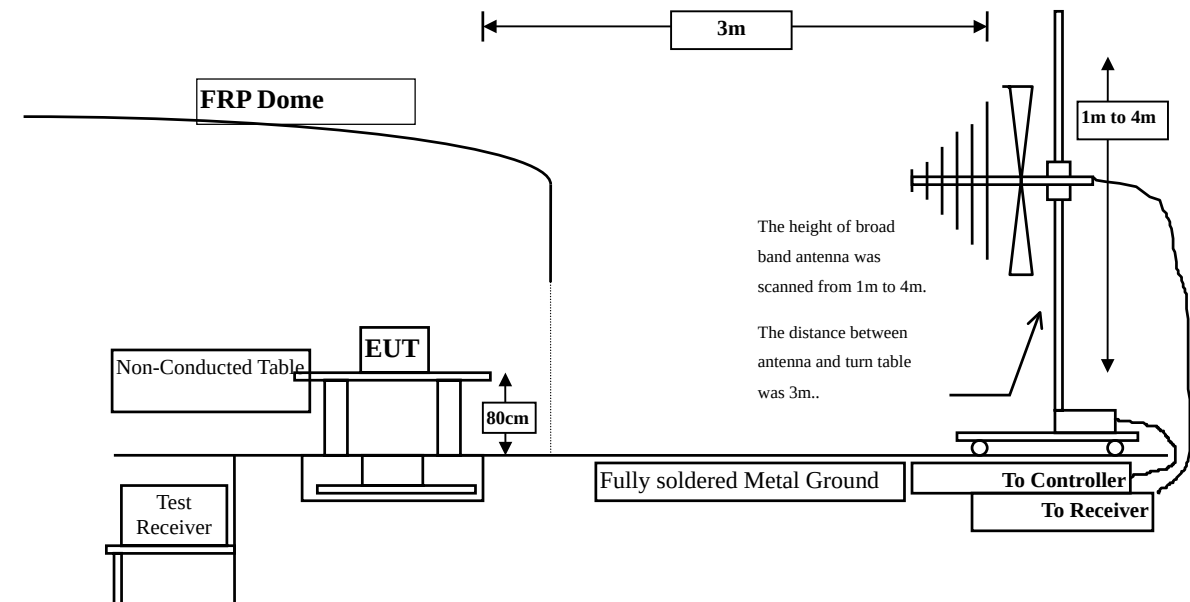
Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒ Site # 3	X	Magnetic Loop Antenna	Teseq	HLA6121/ 37133	Sep, 2015
	X	Bilog Antenna	Schaffner Chase	CBL6112B/ 2707	Jun, 2015
	X	EMI Test Receiver	R&S	ESCS 30/838251/ 001	Jun, 2015
	X	Coaxial Cable	QTK(Arnist)	RG 214/ LC003-RG	Jun, 2015
	X	Coaxial signal switch	Arnist	MP59B/ 6200798682	Jun, 2015

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒ CB # 8	X	Spectrum Analyzer	R&S	FSP40/ 100339	Oct, 2015
	X	Horn Antenna	ETS-Lindgren	3117/ 35205	Mar, 2015
	X	Horn Antenna	Schwarzbeck	BBHA9170/209	Jan, 2015
	X	Horn Antenna	TRC	AH-0801/95051	Aug, 2015
	X	Pre-Amplifier	EMCI	EMC012630SE/980210	Jan, 2015
	X	Pre-Amplifier	MITEQ	JS41-001040000-58-5P/153945	Jul, 2015
	X	Pre-Amplifier	NARDA	DBL-1840N506/013	Jul, 2015

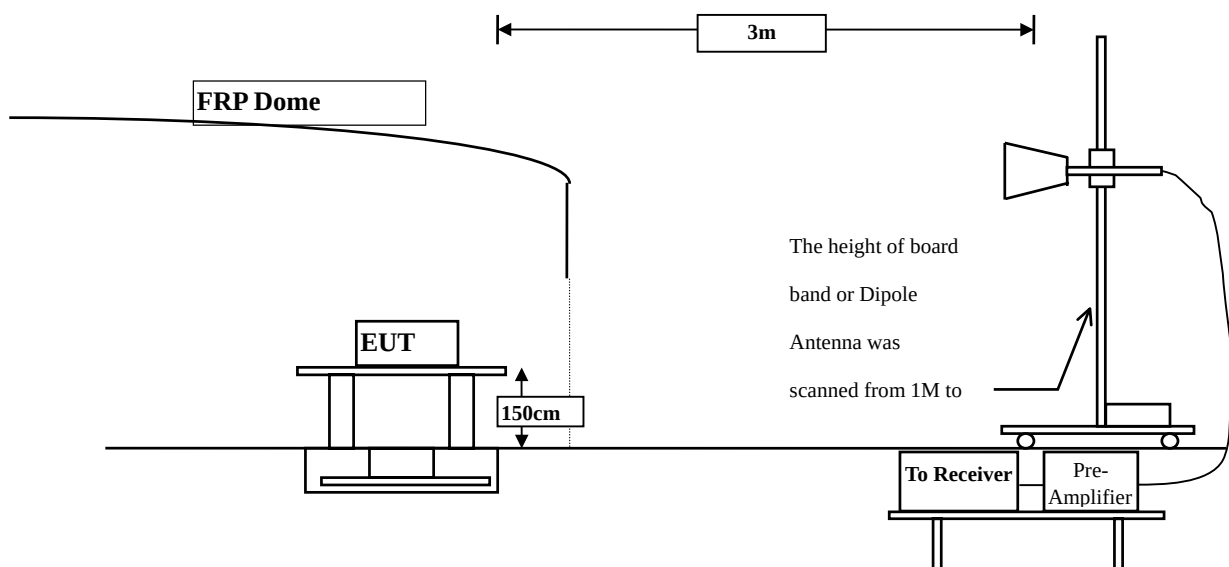
- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with "X" are used to measure the final test results.

4.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



4.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 30dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209(a) Limits		
Frequency MHz	Field strength (microvolts/meter)	Measurement distance (meter)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remarks: E field strength (dBuV/m) = 20 log E field strength (uV/m)

4.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Measuring the frequency range below 1GHz, the EUT is placed on a turn table which is 0.8 meter above ground, when measuring the frequency range above 1GHz, the EUT is placed on a turn table which is 1.5 meter above ground.

The turn table is rotated 360 degrees to determine the position of the maximum emission level.

The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2013 on radiated measurement.

The resolution bandwidth below 30MHz setting on the field strength meter is 9kHz and 30MHz~1GHz is 120kHz and above 1GHz is 1MHz.

Radiated emission measurements below 30MHz are made using Loop Antenna and 30MHz~1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The worst radiated emission is measured in the Open Area Test Site on the Final Measurement.

The measurement frequency range from 9kHz - 10th Harmonic of fundamental was investigated.

4.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

4.6. Test Result of Radiated Emission

Product : Wireless Storage Drive
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.261	46.010	49.271	-24.729	74.000
7236.000	10.650	32.680	43.330	-30.670	74.000
9648.000	13.337	32.570	45.906	-28.094	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	47.970	54.391	-19.609	74.000
7236.000	11.495	31.530	43.025	-30.975	74.000
9648.000	13.807	32.170	45.976	-28.024	74.000
Average Detector:					
4824.000	6.421	45.960	52.381	-1.619	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Wireless Storage Drive
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	48.370	51.407	-22.593	74.000
7311.000	11.795	32.410	44.204	-29.796	74.000
9748.000	12.635	31.960	44.595	-29.405	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	47.810	53.621	-20.379	74.000
7311.000	12.630	32.290	44.919	-29.081	74.000
9748.000	13.126	32.410	45.536	-28.464	74.000
Average					
Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Wireless Storage Drive
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4924.000	2.858	46.350	49.207	-24.793	74.000
7386.000	12.127	32.830	44.958	-29.042	74.000
9808.000	12.475	32.610	45.085	-28.915	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	46.710	52.230	-21.770	74.000
7386.000	13.254	32.610	45.864	-28.136	74.000
9848.000	13.367	32.390	45.757	-28.243	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Wireless Storage Drive
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4824.000	3.261	38.910	42.171	-31.829	74.000
7236.000	10.650	31.630	42.280	-31.720	74.000
9648.000	13.337	32.070	45.406	-28.594	74.000

Average

Detector:

--

Vertical

Peak Detector:

4824.000	6.421	40.420	46.841	-27.159	74.000
7236.000	11.495	31.590	43.085	-30.915	74.000
9648.000	13.807	31.830	45.636	-28.364	74.000

Average

Detector:

--

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Wireless Storage Drive
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	42.630	45.667	-28.333	74.000
7311.000	11.795	32.510	44.304	-29.696	74.000
9748.000	12.635	31.960	44.595	-29.405	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	43.580	49.391	-24.609	74.000
7311.000	12.630	31.970	44.599	-29.401	74.000
9748.000	13.126	32.460	45.586	-28.414	74.000
Average					
Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Wireless Storage Drive
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4924.000	2.858	41.030	43.887	-30.113	74.000
7386.000	12.127	32.710	44.838	-29.162	74.000
9848.000	12.852	32.290	45.143	-28.857	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	41.840	47.360	-26.640	74.000
7386.000	13.254	32.740	45.994	-28.006	74.000
9848.000	13.367	32.510	45.877	-28.123	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Wireless Storage Drive
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band) (2412MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4824.000	3.261	40.970	44.231	-29.769	74.000
7236.000	10.650	31.620	42.270	-31.730	74.000
9648.000	13.337	32.140	45.476	-28.524	74.000

Average

Detector:

--

Vertical

Peak Detector:

4824.000	6.421	41.790	48.211	-25.789	74.000
7236.000	11.495	31.930	43.425	-30.575	74.000
9648.000	13.807	32.460	46.266	-27.734	74.000

Average

Detector:

--

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Wireless Storage Drive
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	41.610	44.647	-29.353	74.000
7311.000	11.795	32.510	44.304	-29.696	74.000
9748.000	12.635	32.270	44.905	-29.095	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4874.000	36.080	42.640	48.451	-25.549	74.000
7311.000	40.533	32.510	45.139	-28.861	74.000
9748.000	41.651	32.170	45.296	-28.704	74.000
Average					
Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Wireless Storage Drive
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band) (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4924.000	2.858	41.380	44.237	-29.763	74.000
7386.000	12.127	32.620	44.748	-29.252	74.000
9848.000	12.852	32.710	45.563	-28.437	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	41.310	46.830	-27.170	74.000
7386.000	13.254	32.510	45.764	-28.236	74.000
9848.000	13.367	32.480	45.847	-28.153	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Wireless Storage Drive
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-40BW_30Mbps(2.4G Band) (2422MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4844.000	3.171	39.170	42.341	-31.659	74.000
7266.000	11.162	31.470	42.632	-31.368	74.000
9688.000	12.964	31.720	44.685	-29.315	74.000

Average

Detector:

--

Vertical

Peak Detector:

4844.000	6.178	39.170	45.348	-28.652	74.000
7266.000	11.982	31.720	43.702	-30.298	74.000
9688.000	13.507	32.670	46.178	-27.822	74.000

Average

Detector:

--

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Wireless Storage Drive
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-40BW_30Mbps(2.4G Band) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	39.470	42.507	-31.493	74.000
7311.000	11.795	32.370	44.164	-29.836	74.000
9748.000	12.635	32.610	45.245	-28.755	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	41.170	46.981	-27.019	74.000
7311.000	12.630	32.150	44.779	-29.221	74.000
9748.000	13.126	31.980	45.106	-28.894	74.000
Average					
Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Wireless Storage Drive
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-40BW_30Mbps(2.4G Band) (2452 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4904.000	2.914	39.170	42.085	-31.915	74.000
7356.000	11.995	32.180	44.174	-29.826	74.000
9808.000	12.475	32.430	44.905	-29.095	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4904.000	5.530	40.830	46.361	-27.639	74.000
7356.000	13.005	32.510	45.514	-28.486	74.000
9808.000	12.901	32.470	45.371	-28.629	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Wireless Storage Drive
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
98.884	-7.565	48.008	40.444	-3.056	43.500
193.072	-10.565	51.031	40.466	-3.034	43.500
292.884	-4.019	42.593	38.574	-7.426	46.000
419.406	-3.234	46.162	42.928	-3.072	46.000
499.536	0.051	35.151	35.202	-10.798	46.000
849.580	5.837	25.424	31.261	-14.739	46.000
Vertical					
98.884	-0.706	41.089	40.383	-3.117	43.500
193.072	-9.846	43.925	34.079	-9.421	43.500
374.420	-2.179	37.439	35.260	-10.740	46.000
531.870	-0.546	35.656	35.110	-10.890	46.000
817.246	3.263	34.892	38.155	-7.845	46.000
943.768	6.593	24.740	31.333	-14.667	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : Wireless Storage Drive
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
98.884	-7.565	47.985	40.421	-3.079	43.500
266.174	-4.970	44.867	39.896	-6.104	46.000
374.420	-1.202	39.633	38.431	-7.569	46.000
499.536	0.051	34.589	34.640	-11.360	46.000
633.087	1.842	30.251	32.094	-13.906	46.000
808.812	5.020	34.646	39.666	-6.334	46.000
Vertical					
108.725	-0.372	39.356	38.984	-4.516	43.500
374.420	-2.179	37.537	35.358	-10.642	46.000
524.841	-0.383	38.906	38.523	-7.477	46.000
620.435	-2.779	41.135	38.356	-7.644	46.000
797.565	2.819	28.558	31.378	-14.622	46.000
931.116	6.341	24.125	30.466	-15.534	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : Wireless Storage Drive
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
98.884	-7.565	47.944	40.380	-3.120	43.500
321.000	-4.369	44.241	39.872	-6.128	46.000
429.246	-2.319	44.192	41.873	-4.127	46.000
672.449	2.374	30.197	32.571	-13.429	46.000
741.333	3.351	31.855	35.206	-10.794	46.000
853.797	6.548	34.536	41.084	-4.916	46.000
Vertical					
105.913	-0.261	40.268	40.007	-3.493	43.500
208.536	-7.794	44.688	36.894	-6.606	43.500
374.420	-2.179	37.763	35.584	-10.416	46.000
499.536	-0.848	33.454	32.606	-13.394	46.000
791.942	2.897	31.965	34.862	-11.138	46.000
929.710	6.434	29.264	35.698	-10.302	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : Wireless Storage Drive
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-40BW_30Mbps(2.4G Band) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
46.870	-8.585	45.512	36.927	-3.073	40.000
193.072	-10.565	50.683	40.118	-3.382	43.500
344.899	-2.415	36.645	34.230	-11.770	46.000
499.536	0.051	33.074	33.125	-12.875	46.000
745.551	3.310	26.484	29.795	-16.205	46.000
945.174	6.537	25.158	31.695	-14.305	46.000
Vertical					
107.319	-0.308	35.533	35.225	-8.275	43.500
209.942	-7.854	45.659	37.805	-5.695	43.500
374.420	-2.179	34.994	32.815	-13.185	46.000
507.971	-0.350	33.513	33.162	-12.838	46.000
725.870	-0.159	29.386	29.227	-16.773	46.000
921.275	5.525	23.356	28.881	-17.119	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

5. RF Antenna conducted test

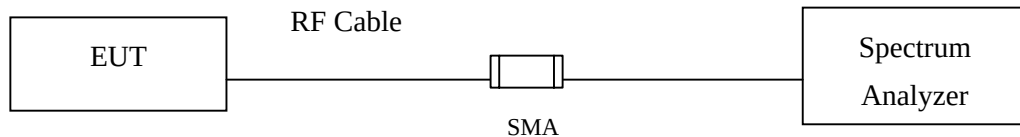
5.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2015
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2015
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with “X” are used to measure the final test results.

5.2. Test Setup

RF antenna Conducted Measurement:



5.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

5.4. Test Procedure

The EUT was tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Set VBW > RBW, scan up through 10th harmonic.

5.5. Uncertainty

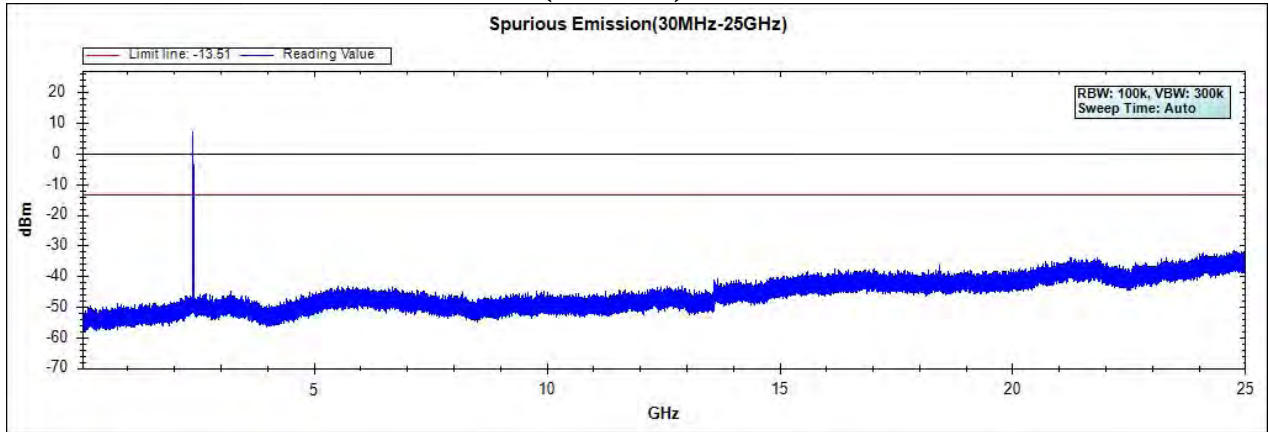
The measurement uncertainty

Conducted is defined as $\pm 1.27\text{dB}$

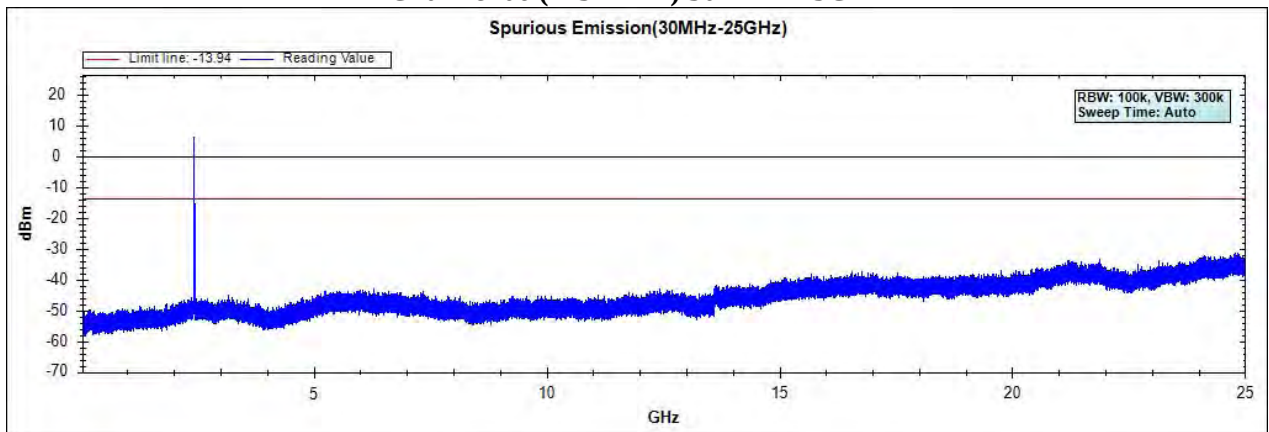
5.6. Test Result of RF antenna conducted test

Product : Wireless Storage Drive
Test Item : RF antenna conducted test
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

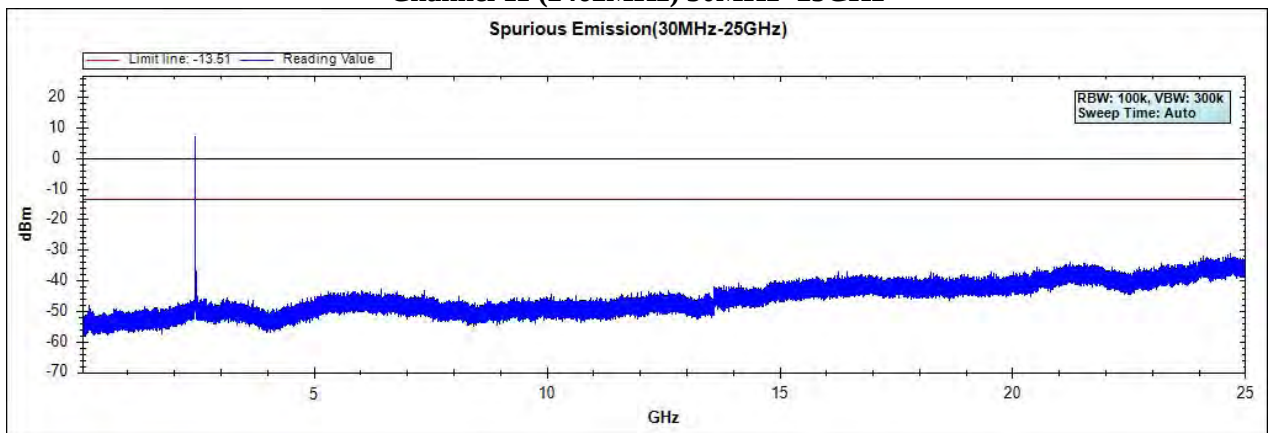
Channel 01 (2412MHz) 30MHz-25GHz



Channel 06 (2437MHz) 30MHz -25GHz



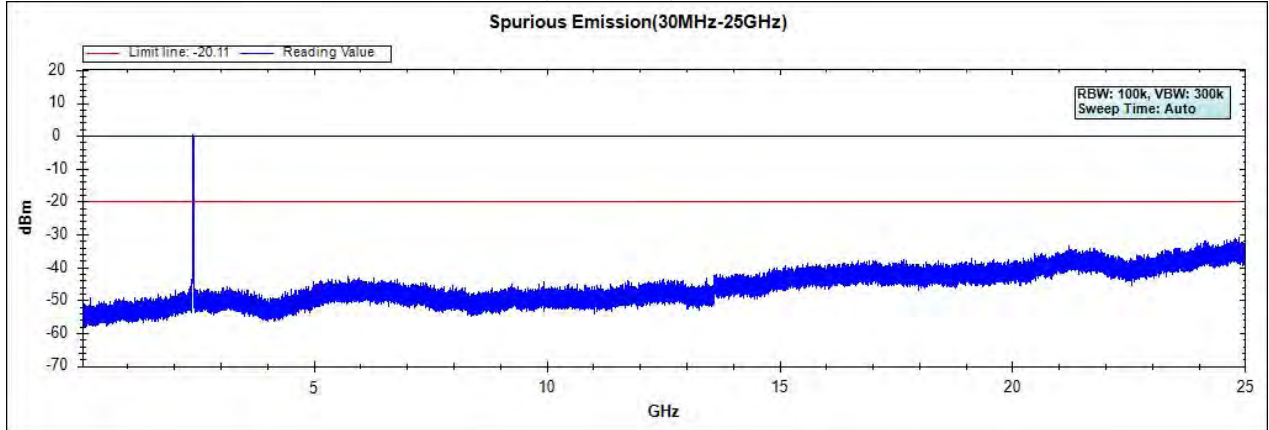
Channel 11 (2462MHz) 30MHz -25GHz



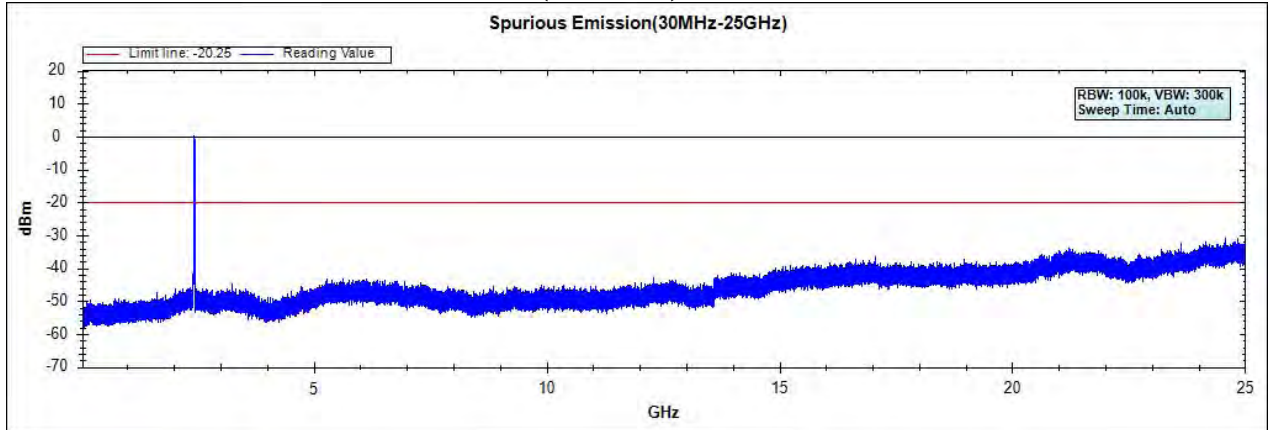
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : Wireless Storage Drive
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

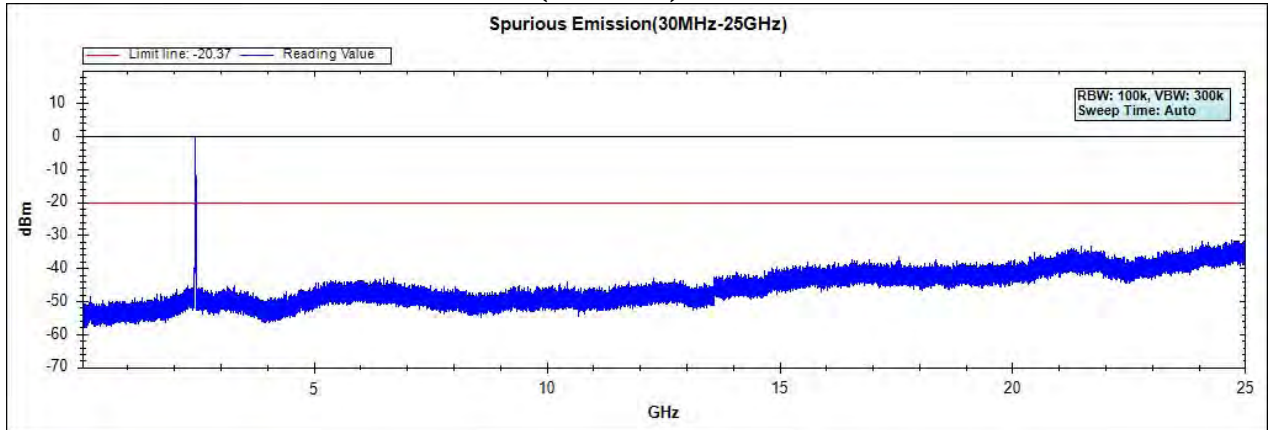
Channel 01 (2412MHz) 30MHz -25GHz



Channel 06 (2437MHz) 30MHz -25GHz



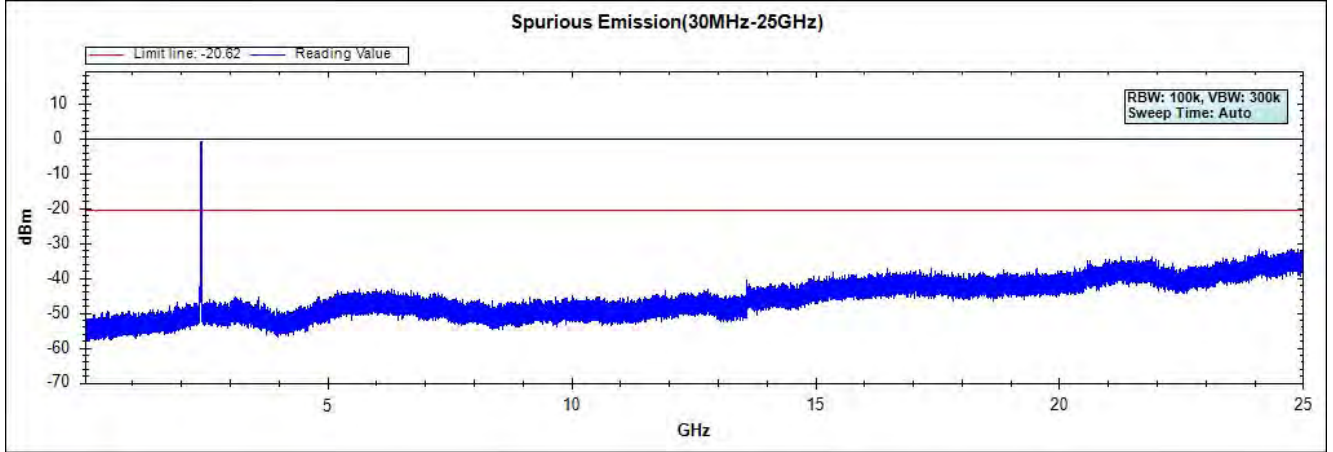
Channel 11 (2462MHz) 30MHz -25GHz



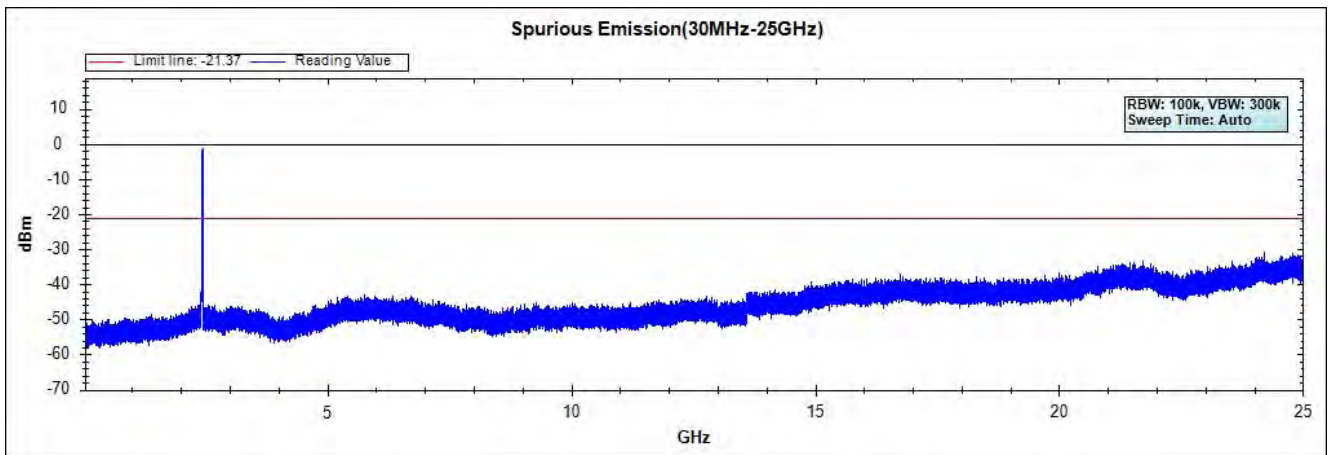
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : Wireless Storage Drive
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)

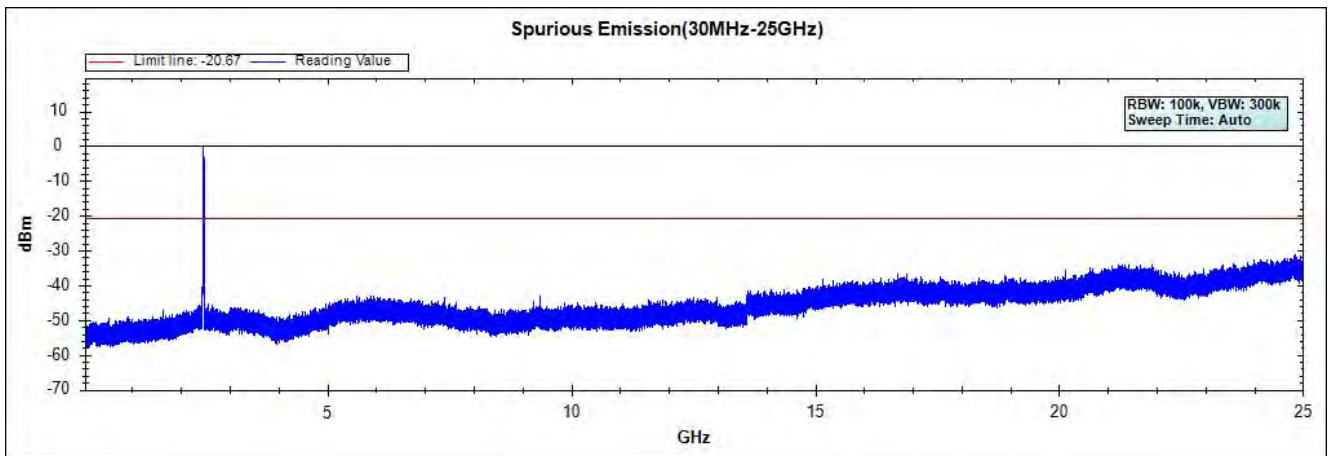
Channel 01 (2412MHz) 30MHz -25GHz-Chain A



Channel 06 (2437MHz) 30MHz -25GHz-Chain A

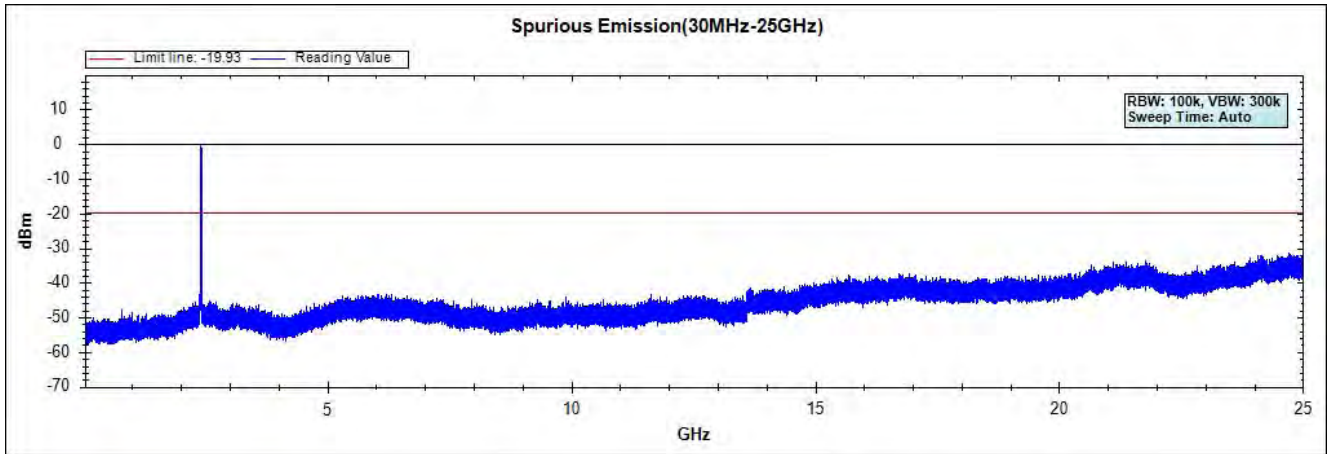


Channel 11 (2462MHz) 30MHz -25GHz-Chain A

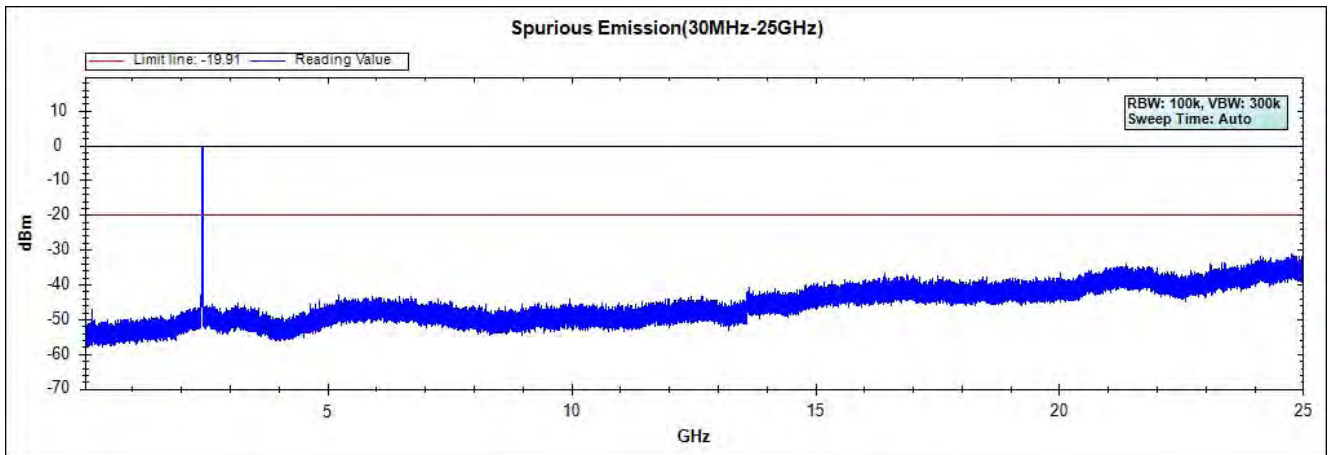


Note: The above test pattern is synthesized by multiple of the frequency range.

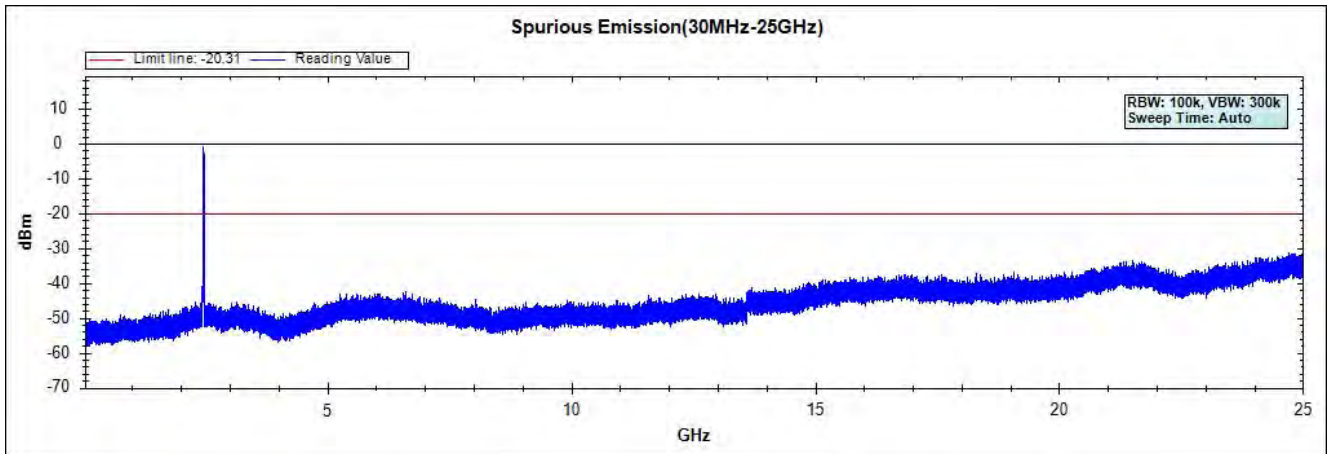
Channel 01 (2412MHz) 30MHz -25GHz-Chain B



Channel 06 (2437MHz) 30MHz -25GHz-Chain B



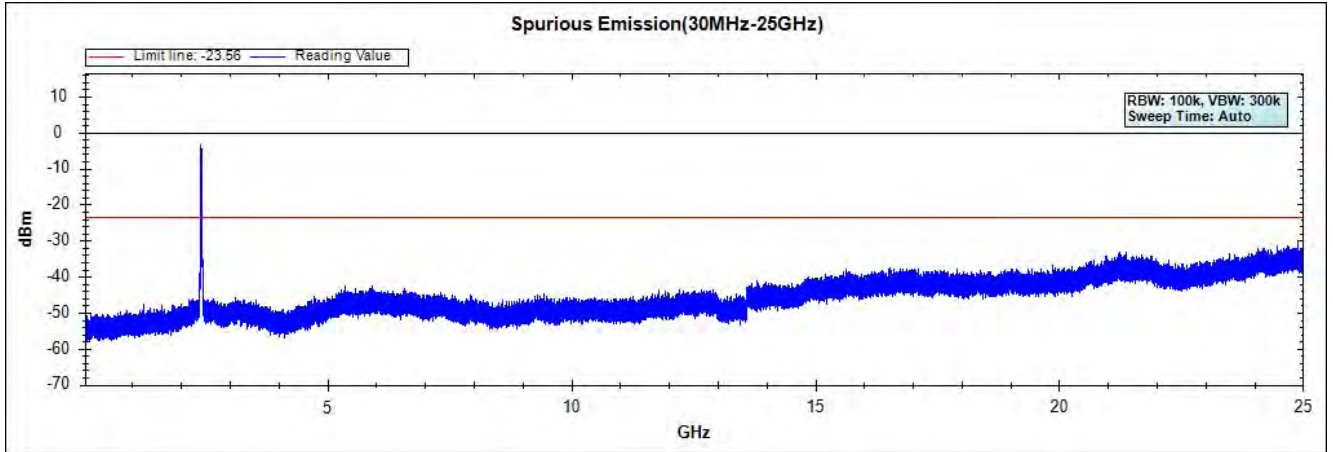
Channel 11 (2462MHz) 30MHz -25GHz-Chain B



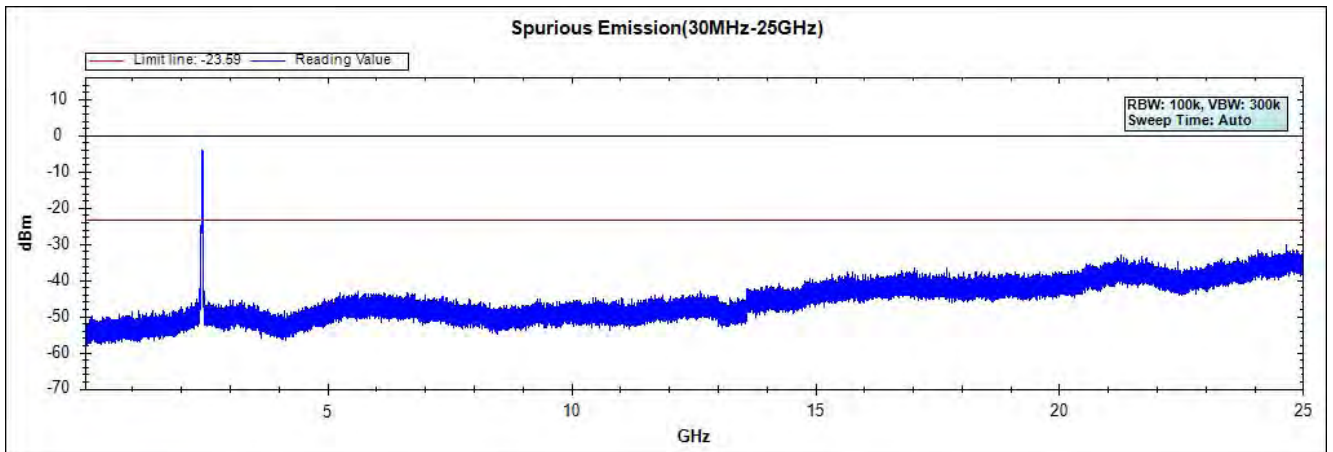
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : Wireless Storage Drive
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-40BW_30Mbps(2.4G Band)

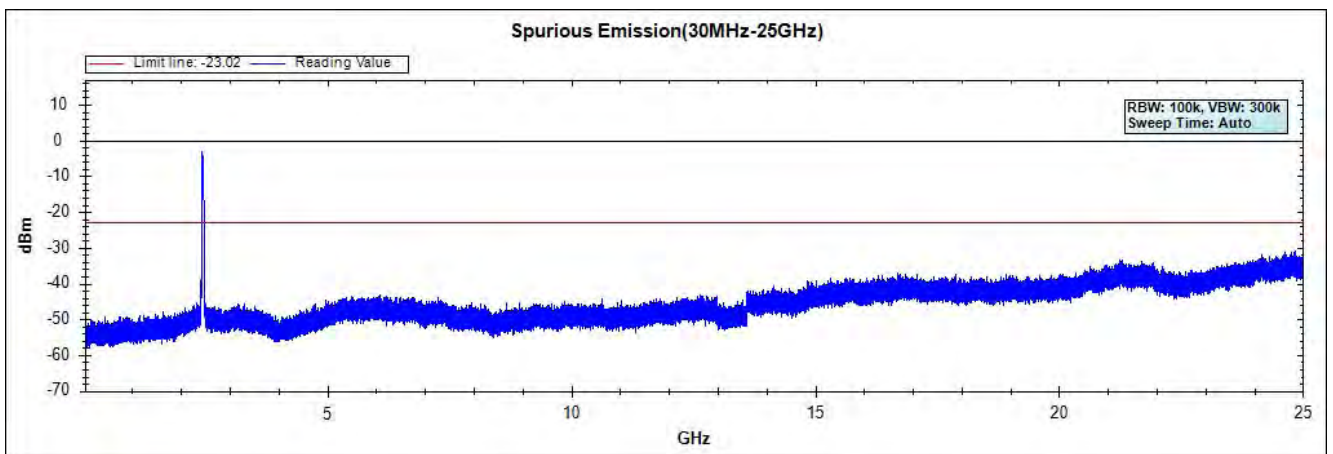
Channel 01 (2422MHz) 30MHz -25GHz-Chain A



Channel 04 (2437MHz) 30MHz -25GHz-Chain A

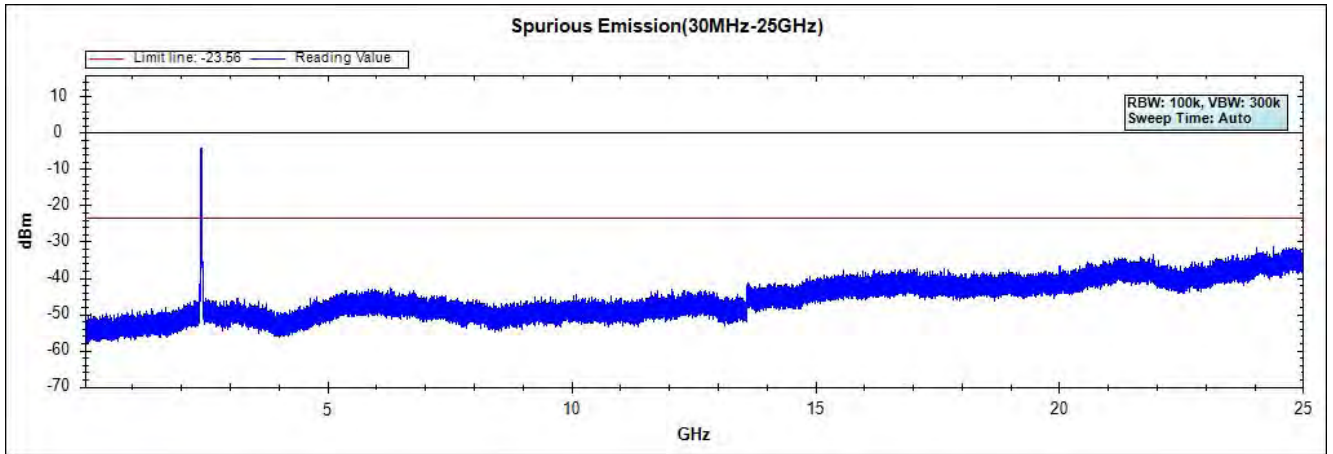


Channel 07 (2452MHz) 30MHz -25GHz-Chain A

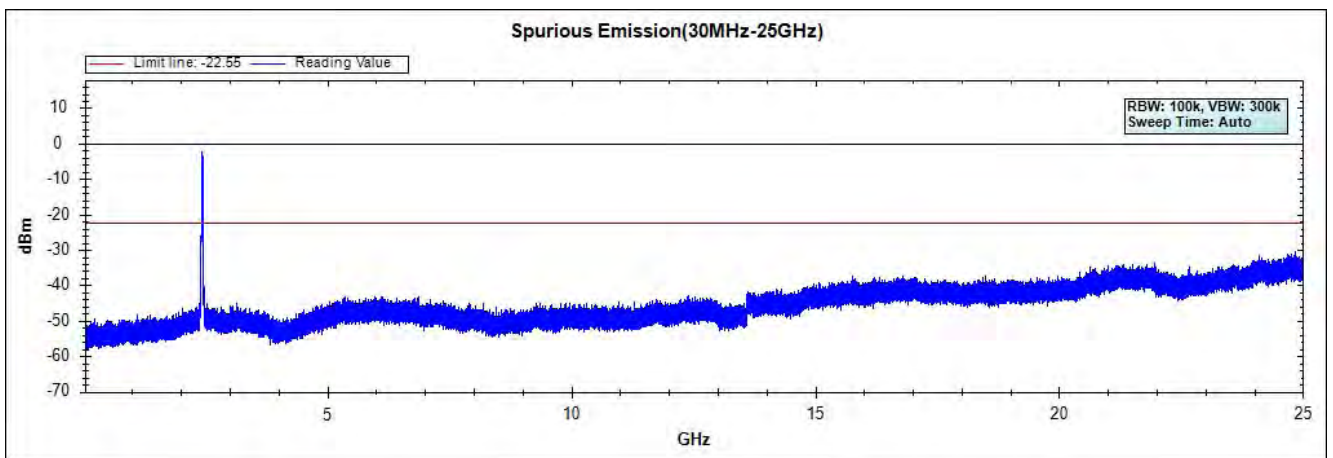


Note: The above test pattern is synthesized by multiple of the frequency range.

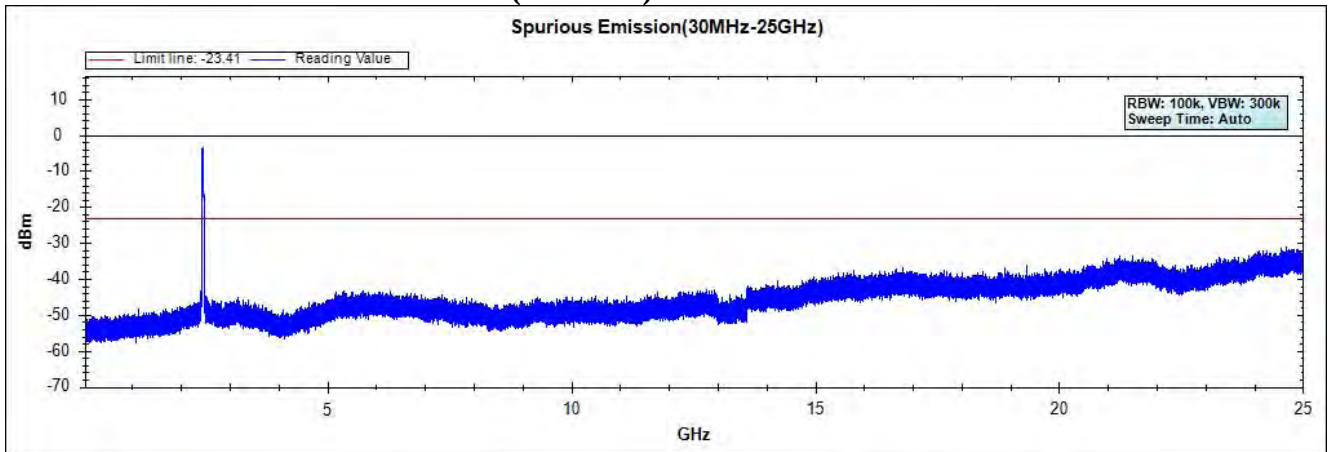
Channel 01 (2422MHz) 30MHz -25GHz-Chain B



Channel 04 (2437MHz) 30MHz -25GHz-Chain B



Channel 07 (2452MHz) 30MHz -25GHz-Chain B



Note: The above test pattern is synthesized by multiple of the frequency range.

6. Band Edge

6.1. Test Equipment

RF Conducted Measurement

The following test equipments are used during the band edge tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2015
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2015
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

RF Radiated Measurement:

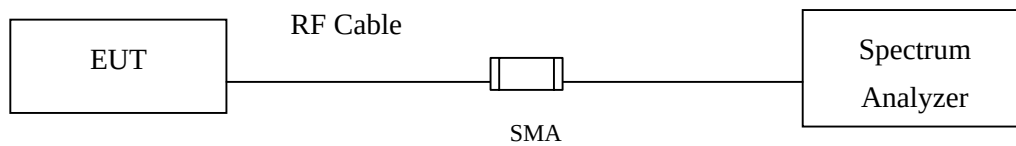
The following test equipments are used during the band edge tests:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒ CB # 8	X	Spectrum Analyzer	R&S	FSP40/ 100339	Oct, 2015
	X	Horn Antenna	ETS-Lindgren	3117/ 35205	Mar, 2015
	X	Horn Antenna	Schwarzbeck	BBHA9170/209	Jan, 2015
	X	Horn Antenna	TRC	AH-0801/95051	Aug, 2015
	X	Pre-Amplifier	EMCI	EMC012630SE/980210	Jan, 2015
	X	Pre-Amplifier	MITEQ	JS41-001040000-58-5P/153945	Jul, 2015
	X	Pre-Amplifier	NARDA	DBL-1840N506/013	Jul, 2015

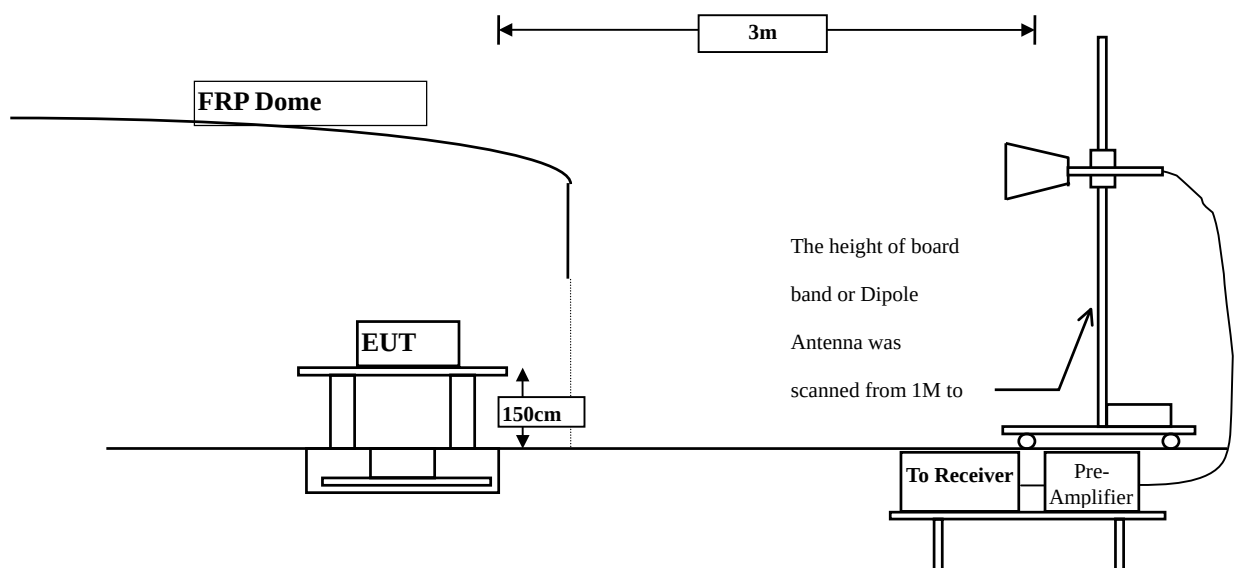
- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with “X” are used to measure the final test results.

6.2. Test Setup

RF Conducted Measurement



RF Radiated Measurement:



6.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 30dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

6.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2013 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10:2013 on radiated measurement.

6.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

6.6. Test Result of Band Edge

Product : Wireless Storage Drive
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2365.507	31.413	28.502	59.915	74.00	54.00	Pass
01 (Peak)	2390.000	31.509	27.251	58.760	74.00	54.00	Pass
01 (Peak)	2397.826	31.548	31.721	63.269	--	--	--
01 (Peak)	2400.000	31.561	30.840	62.401	--	--	--
01 (Peak)	2410.580	31.628	70.051	101.679	--	--	--
01 (Average)	2340.000	31.313	14.972	46.286	74.00	54.00	Pass
01 (Average)	2390.000	31.509	13.981	45.490	74.00	54.00	Pass
01 (Average)	2397.971	31.549	20.880	52.429	--	--	--
01 (Average)	2400.000	31.561	19.600	51.161	--	--	--
01 (Average)	2412.754	31.644	66.847	98.491	--	--	--

Figure Channel 01: Horizontal (Peak)

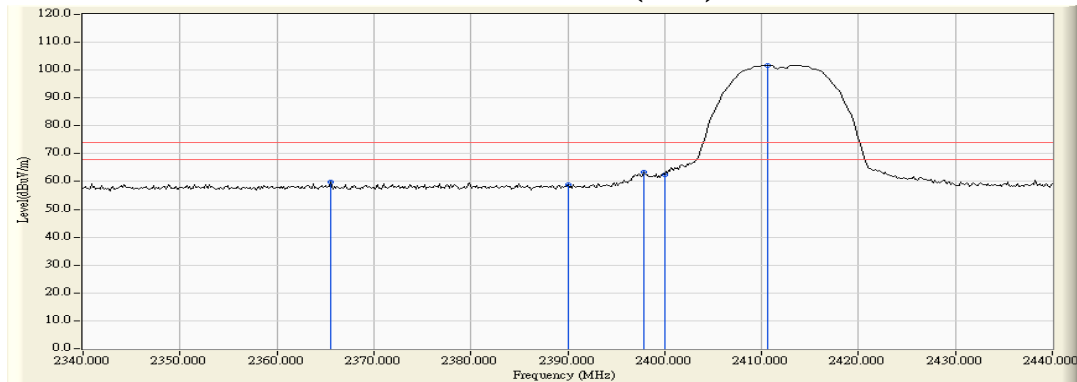
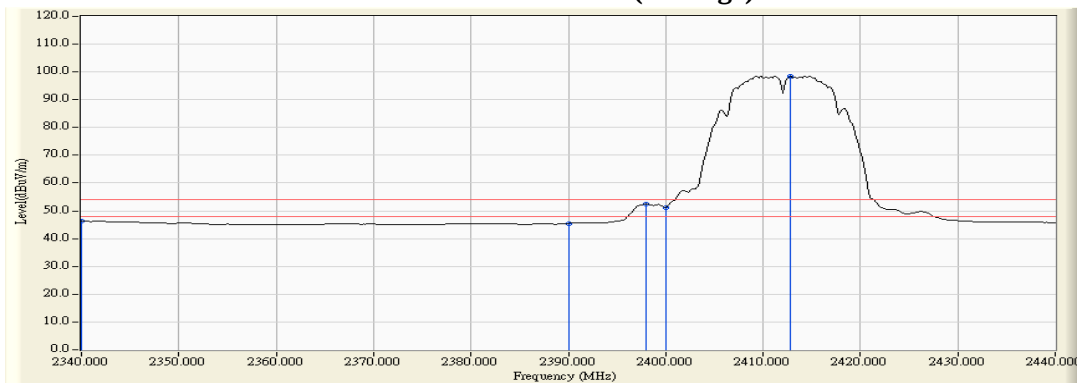


Figure Channel 01: Horizontal (Average)



- Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Wireless Storage Drive
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2347.681	31.112	28.550	59.661	74.00	54.00	Pass
01 (Peak)	2390.000	30.915	27.141	58.056	74.00	54.00	Pass
01 (Peak)	2397.246	30.905	30.003	60.908	--	--	--
01 (Peak)	2400.000	30.912	29.952	60.864	--	--	--
01 (Peak)	2413.623	30.960	67.130	98.090	--	--	--
01 (Average)	2341.739	31.140	14.840	45.979	74.00	54.00	Pass
01 (Average)	2390.000	30.915	13.723	44.638	74.00	54.00	Pass
01 (Average)	2397.826	30.907	17.801	48.708	--	--	--
01 (Average)	2400.000	30.912	17.155	48.067	--	--	--
01 (Average)	2414.348	30.966	64.075	95.040	--	--	--

Figure Channel 01:

Vertical (Peak)

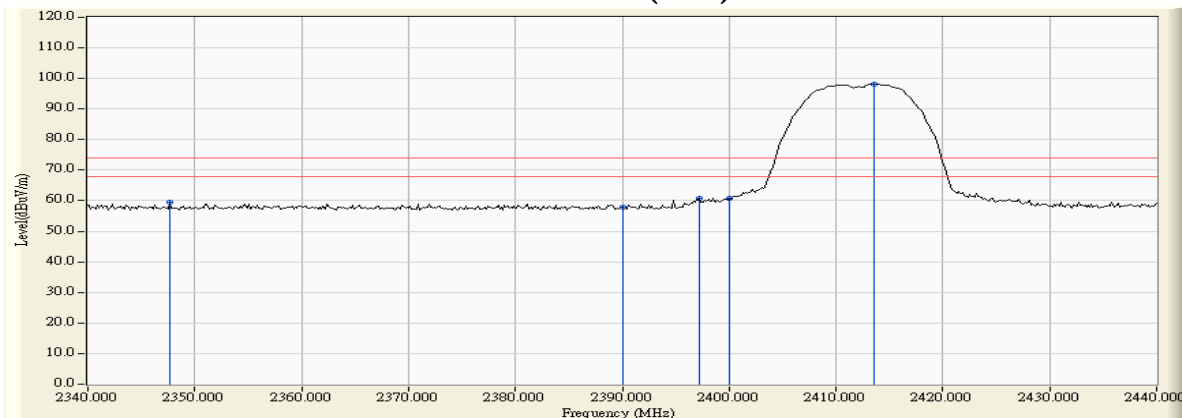
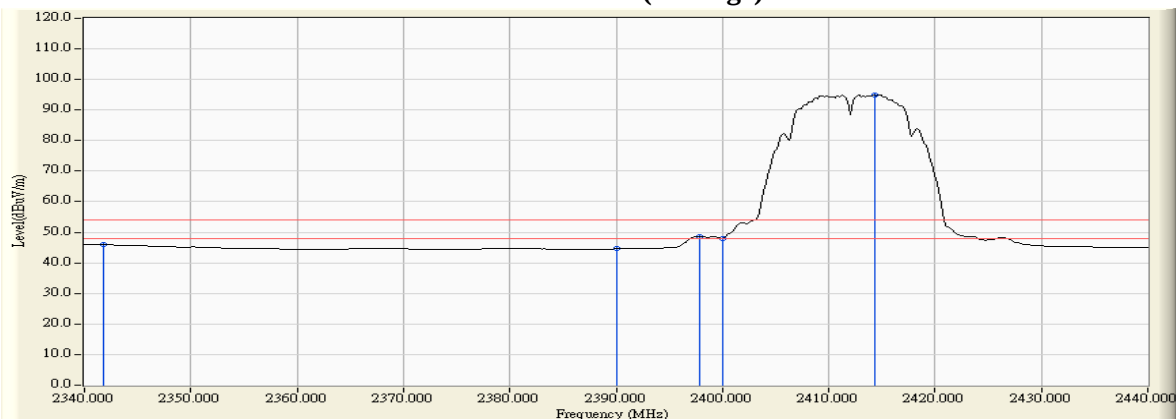


Figure Channel 01:

Vertical (Average)



- Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Wireless Storage Drive
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2460.457	32.008	72.375	104.383	--	--	--
11 (Peak)	2483.500	32.182	28.352	60.534	74.00	54.00	Pass
11 (Peak)	2508.862	32.254	28.954	61.208	74.00	54.00	Pass
11 (Average)	2461.181	32.014	69.188	101.201	--	--	--
11 (Average)	2483.500	32.182	14.669	46.851	74.00	54.00	Pass
11 (Average)	2509.442	32.253	15.829	48.082	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)

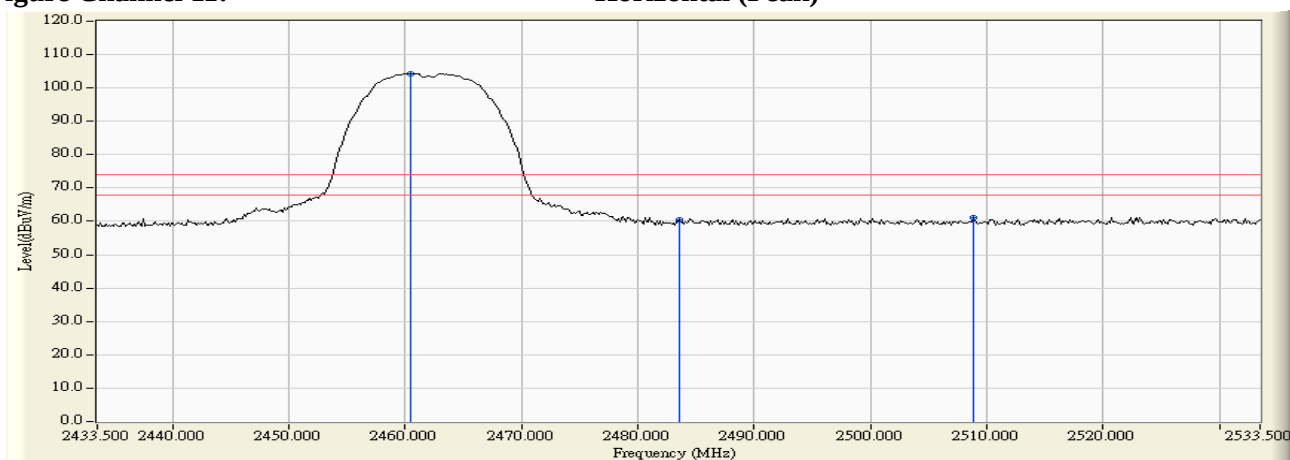
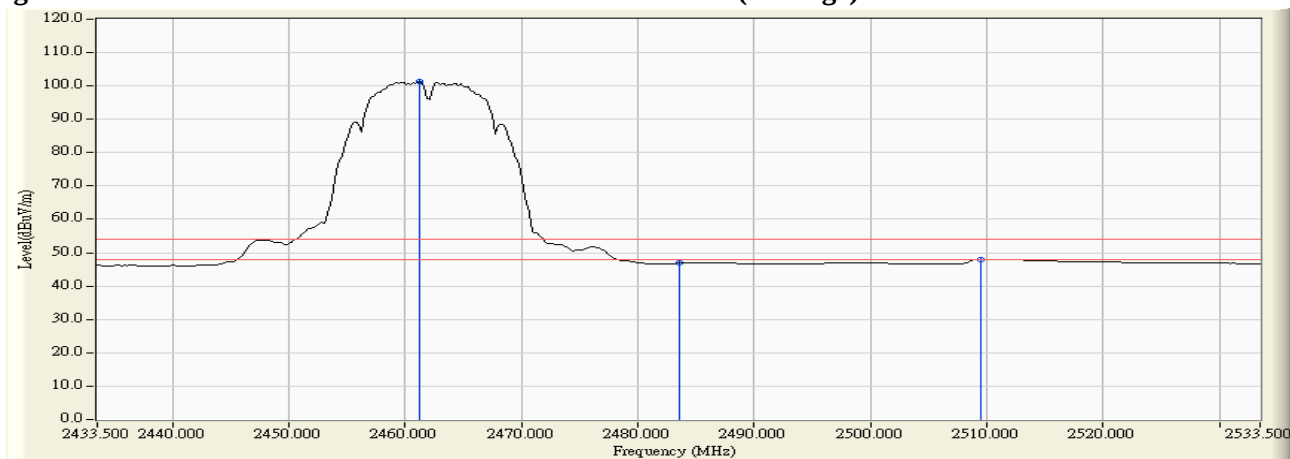


Figure Channel 11: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Wireless Storage Drive
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2463.500	31.300	75.036	106.336	--	--	--
11 (Peak)	2483.500	31.435	27.449	58.884	74.00	54.00	Pass
11 (Peak)	2506.109	31.540	29.302	60.841	74.00	54.00	Pass
11 (Average)	2464.804	31.309	71.975	103.284	--	--	--
11 (Average)	2483.500	31.435	14.883	46.318	74.00	54.00	Pass
11 (Average)	2509.587	31.546	15.859	47.405	74.00	54.00	Pass

Figure Channel 11: Vertical (Peak)

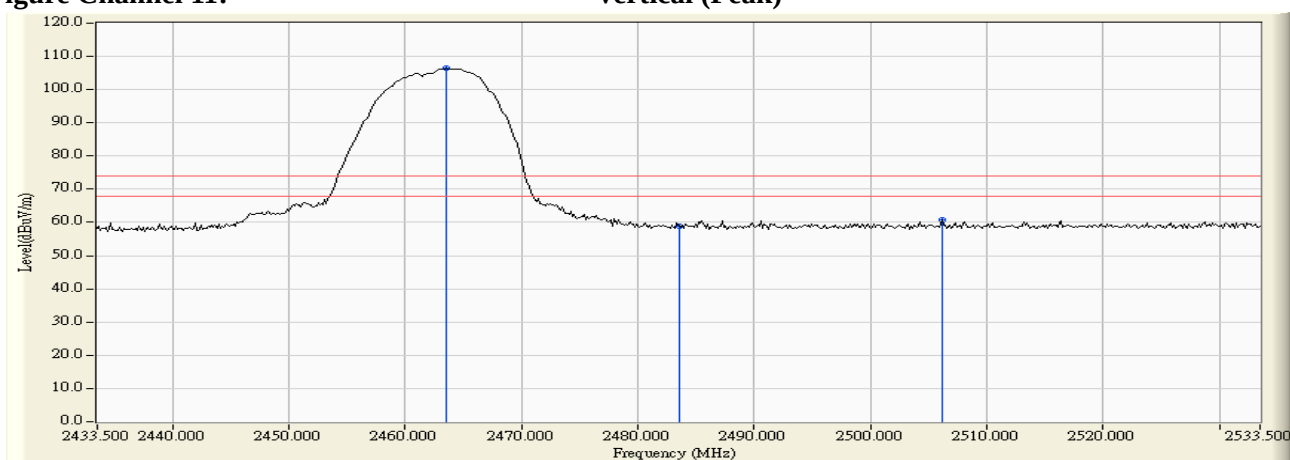
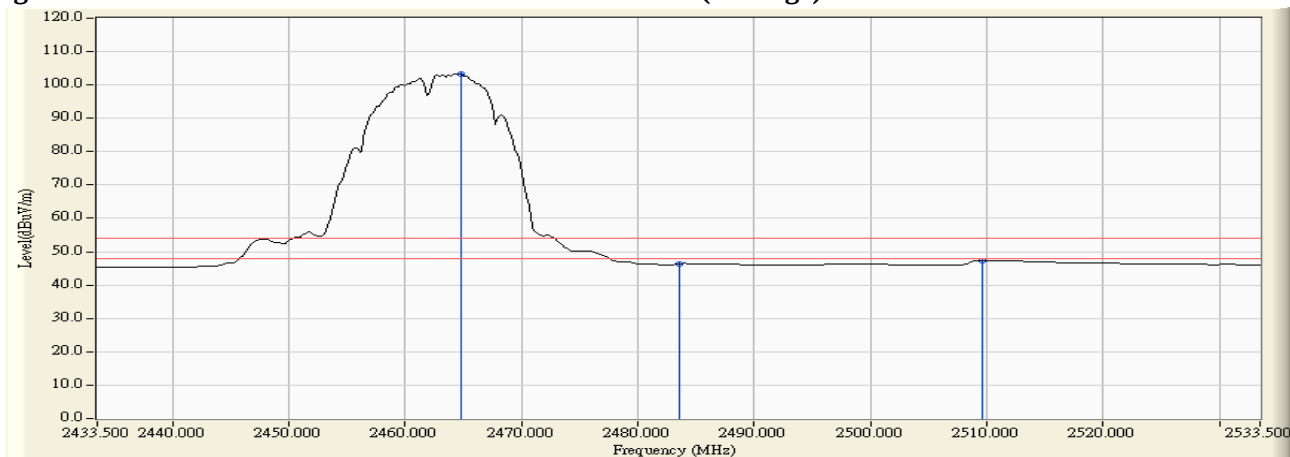


Figure Channel 11: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Wireless Storage Drive
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.000	31.509	28.796	60.305	74.00	54.00	Pass
01 (Peak)	2399.275	31.557	37.817	69.374	--	--	--
01 (Peak)	2400.000	31.561	36.825	68.386	--	--	--
01 (Peak)	2419.130	31.692	69.271	100.964	--	--	--
01(Average)	2390.000	31.509	14.650	46.159	74.00	54.00	Pass
01(Average)	2400.000	31.561	21.802	53.363	--	--	--
01(Average)	2419.420	31.695	59.791	91.486	--	--	--

Figure Channel 01: Horizontal (Peak)

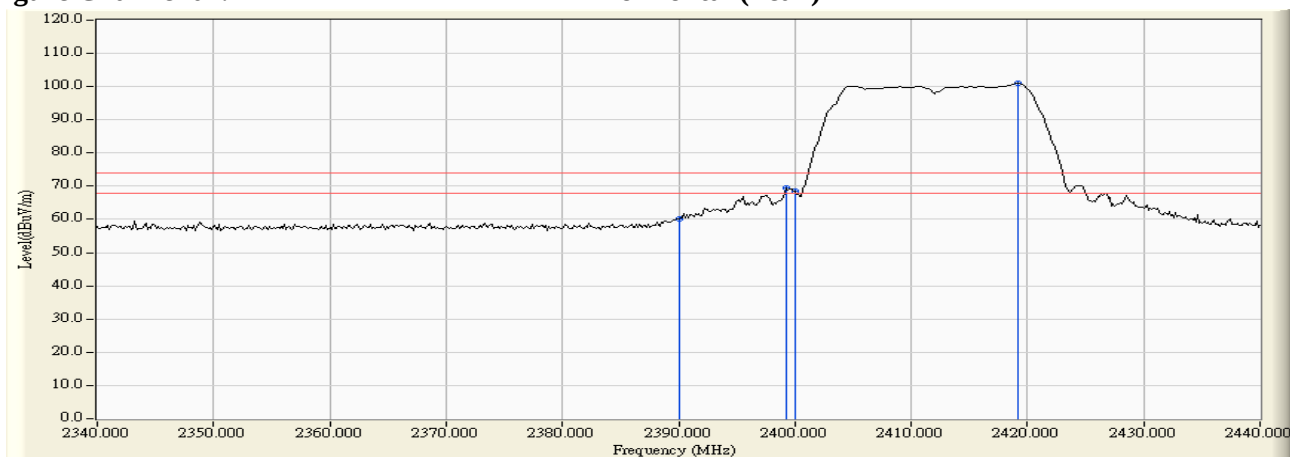
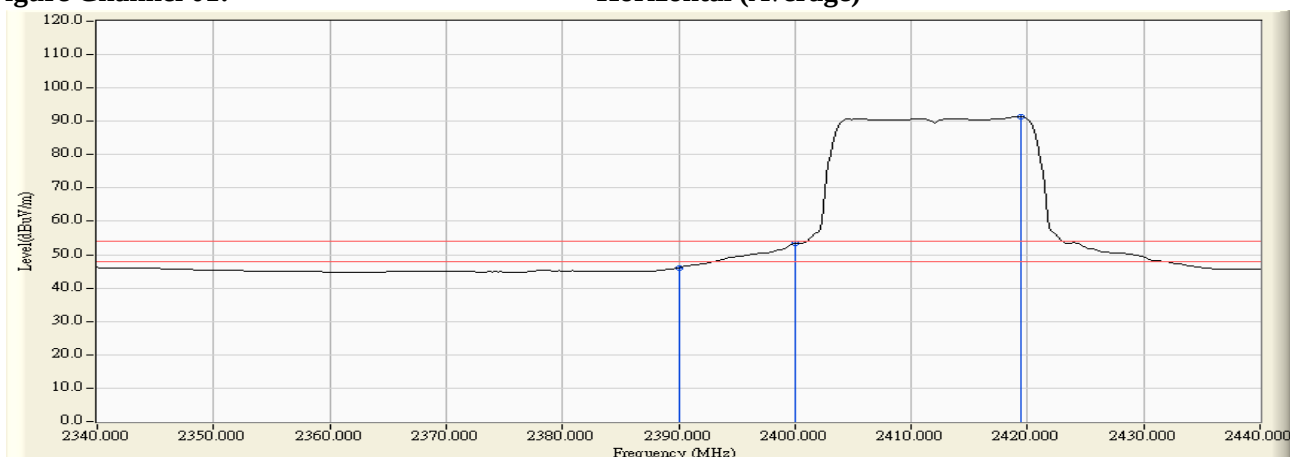


Figure Channel 01: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Wireless Storage Drive
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2379.710	30.964	28.312	59.275	74.00	54.00	Pass
01 (Peak)	2390.000	30.915	28.010	58.925	74.00	54.00	Pass
01 (Peak)	2399.565	30.911	35.584	66.495	--	--	--
01 (Peak)	2400.000	30.912	34.442	65.354	--	--	--
01 (Peak)	2419.130	30.997	67.223	98.221	--	--	--
01 (Average)	2341.739	31.140	14.809	45.948	74.00	54.00	Pass
01 (Average)	2390.000	30.915	14.100	45.015	74.00	54.00	Pass
01 (Average)	2400.000	30.912	19.126	50.038	--	--	--
01 (Average)	2419.420	31.000	57.779	88.779	--	--	--

Figure Channel 01: Vertical (Peak)

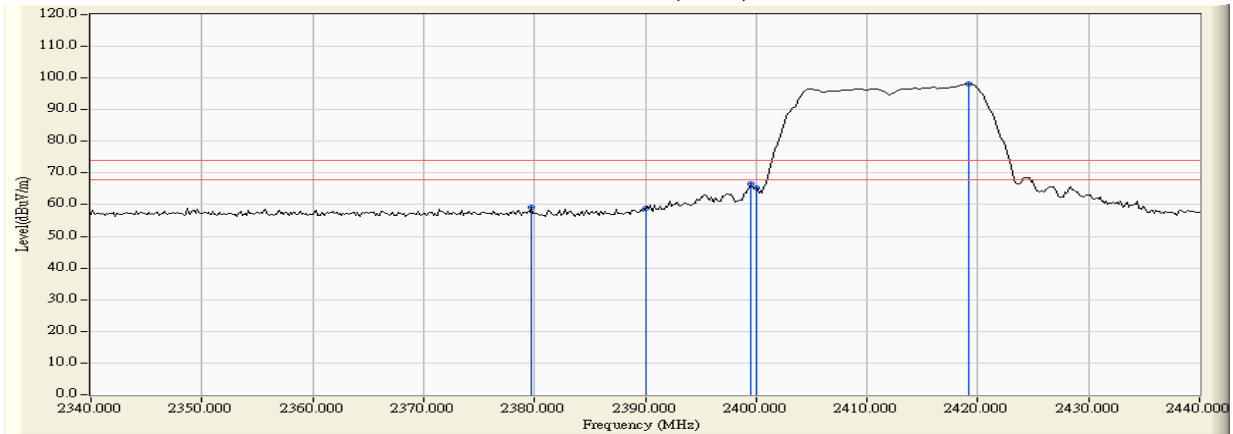
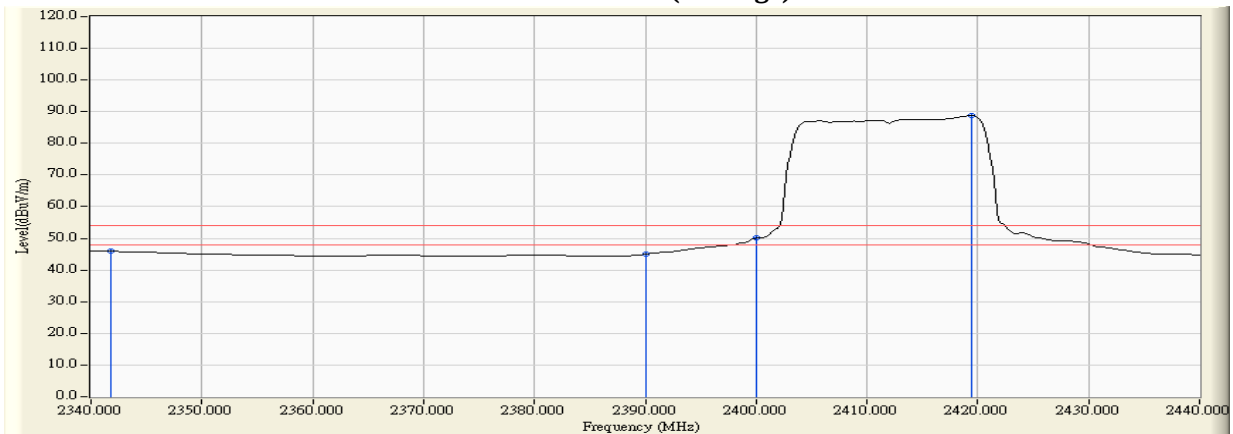


Figure Channel 01: Vertical (Average)



- Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Wireless Storage Drive
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2469.442	32.076	71.469	103.545	--	--	--
11 (Peak)	2483.500	32.182	29.923	62.105	74.00	54.00	Pass
11 (Peak)	2484.080	32.186	30.779	62.965	74.00	54.00	Pass
11 (Average)	2469.297	32.074	62.489	94.564	--	--	--
11 (Average)	2483.500	32.182	16.376	48.558	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)

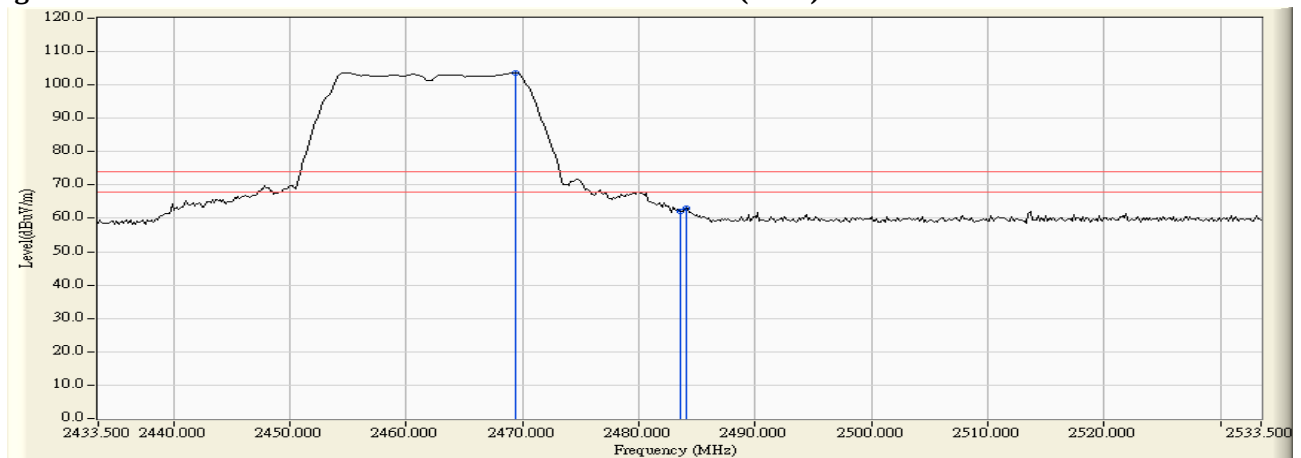
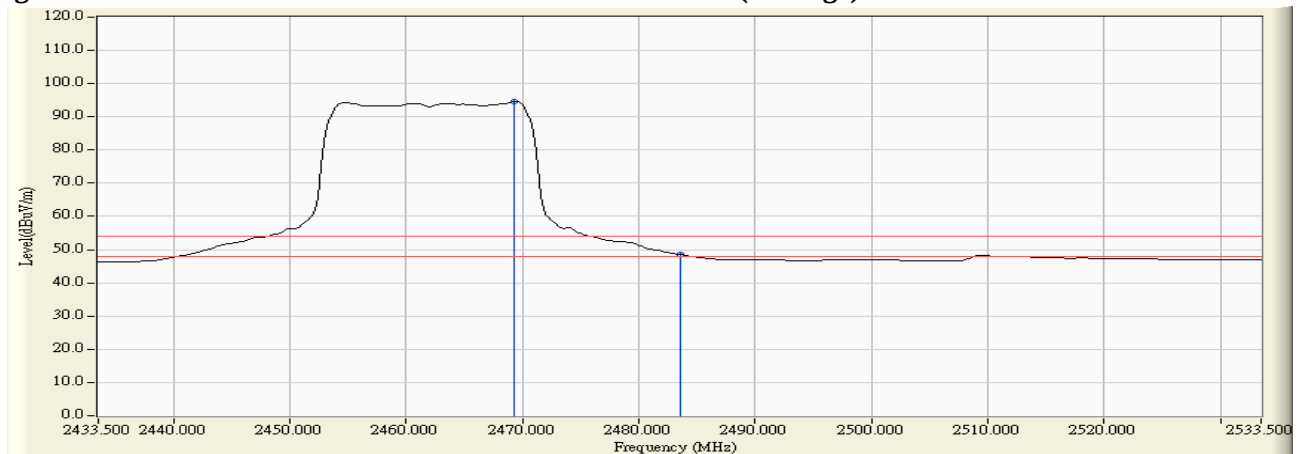


Figure Channel 11: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Wireless Storage Drive
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2469.297	31.339	71.339	102.678	--	--	--
11 (Peak)	2483.500	31.435	30.546	61.981	74.00	54.00	Pass
11 (Peak)	2484.080	31.439	31.048	62.487	74.00	54.00	Pass
11 (Average)	2469.297	31.339	62.421	93.760	--	--	--
11 (Average)	2483.500	31.435	16.591	48.026	74.00	54.00	Pass

Figure Channel 11: Vertical (Peak)

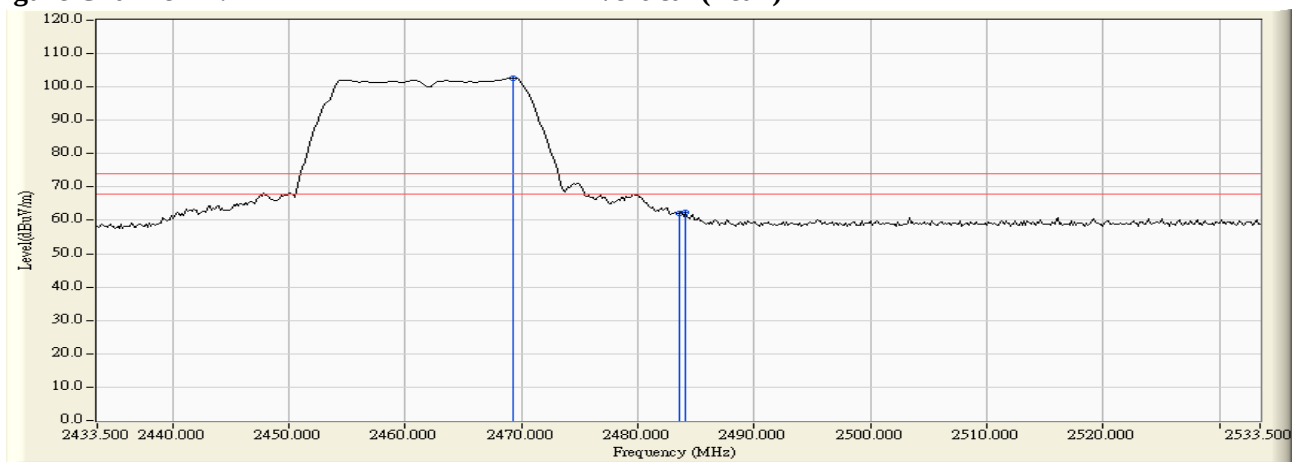
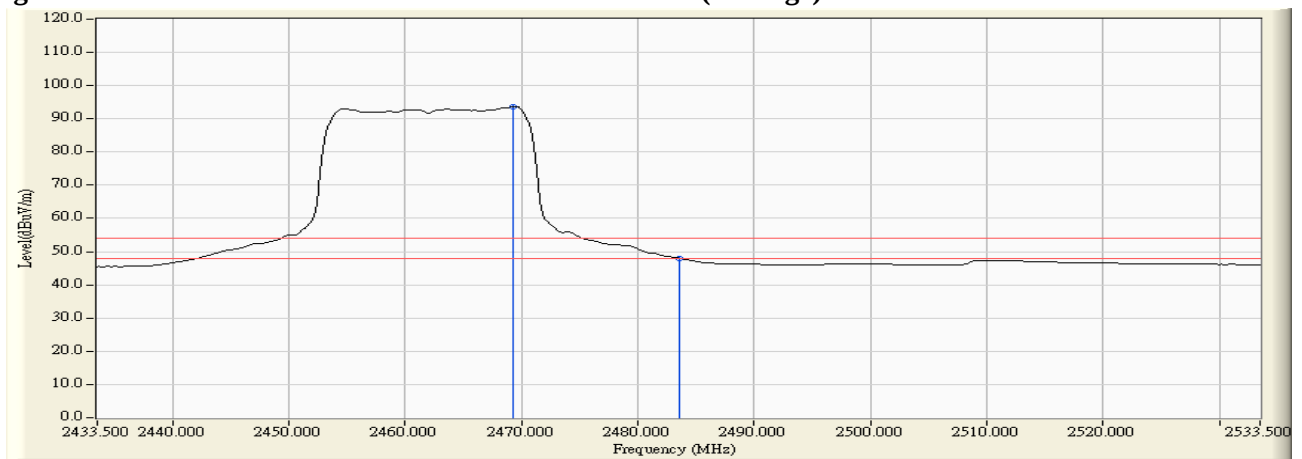


Figure Channel 11: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Wireless Storage Drive
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2388.986	31.505	30.459	61.964	74.00	54.00	Pass
01 (Peak)	2390.000	31.509	29.115	60.624	74.00	54.00	Pass
01 (Peak)	2400.000	31.561	38.134	69.695	--	--	--
01 (Peak)	2405.362	31.595	70.920	102.515	--	--	--
01 (Average)	2390.000	31.509	15.723	47.232	74.00	54.00	Pass
01 (Average)	2400.000	31.561	23.169	54.730	--	--	--
01 (Average)	2419.565	31.697	59.946	91.642	--	--	--

Figure Channel 01:

Horizontal (Peak)

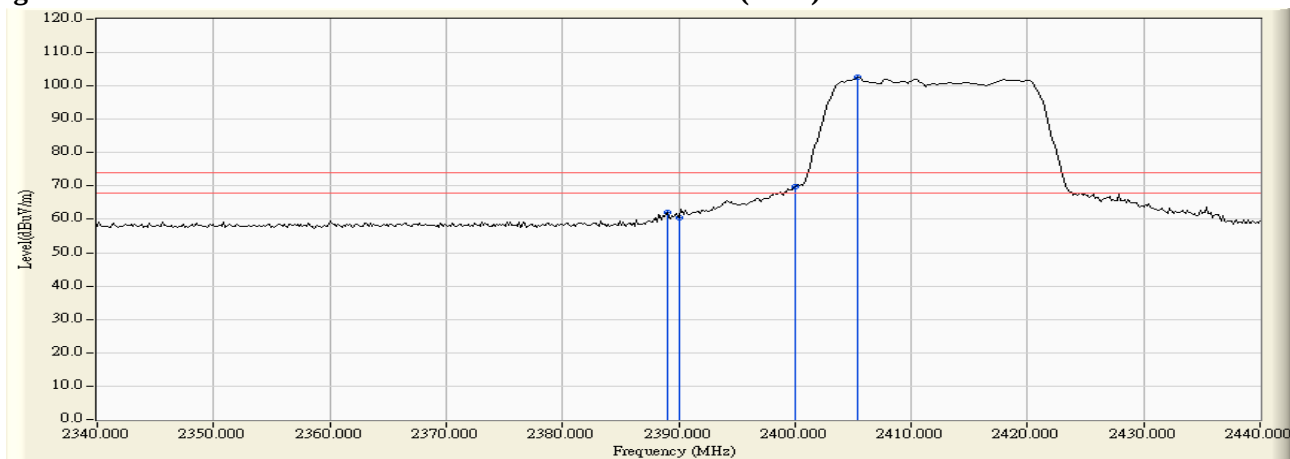
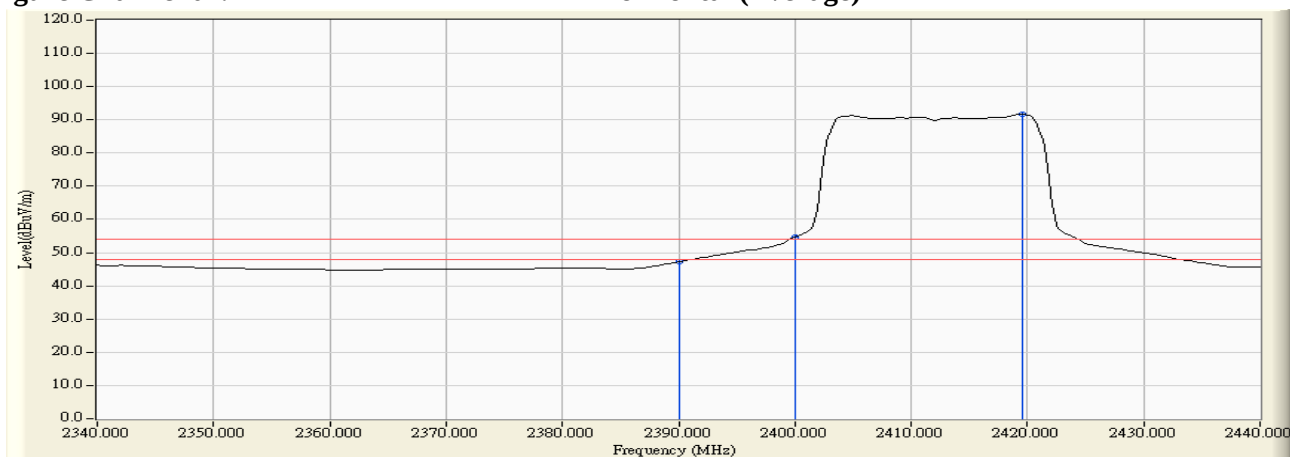


Figure Channel 01:

Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Wireless Storage Drive
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2388.986	30.920	33.251	64.171	74.00	54.00	Pass
01 (Peak)	2390.000	30.915	32.197	63.112	74.00	54.00	Pass
01 (Peak)	2400.000	30.912	39.887	70.799	--	--	--
01 (Peak)	2418.986	30.996	73.717	104.714	--	--	--
01 (Average)	2390.000	30.915	16.685	47.600	74.00	54.00	Pass
01 (Average)	2400.000	30.912	25.503	56.415	--	--	--
01 (Average)	2419.565	31.001	62.561	93.562	--	--	--

Figure Channel 01: Vertical (Peak)

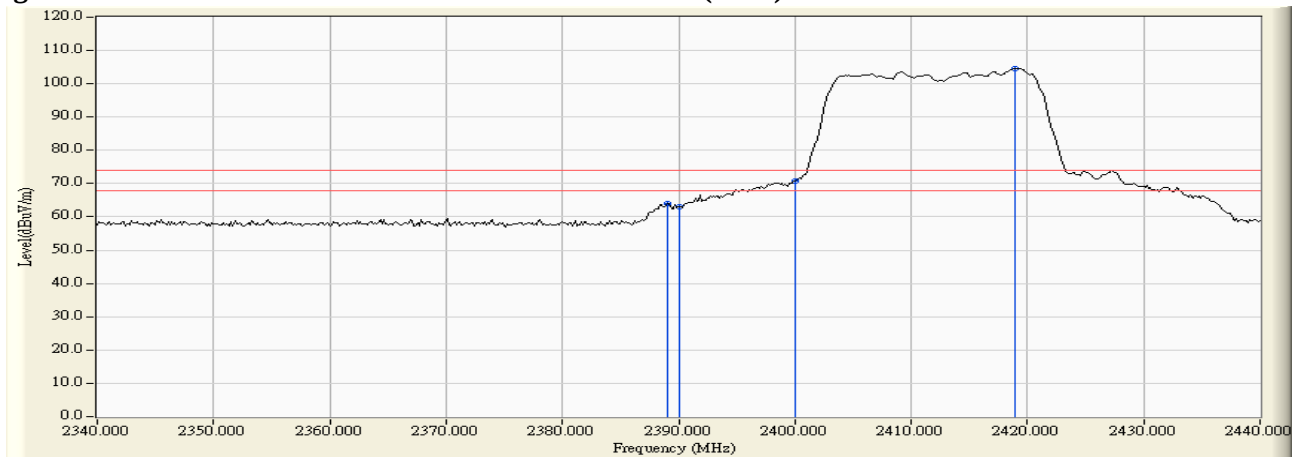
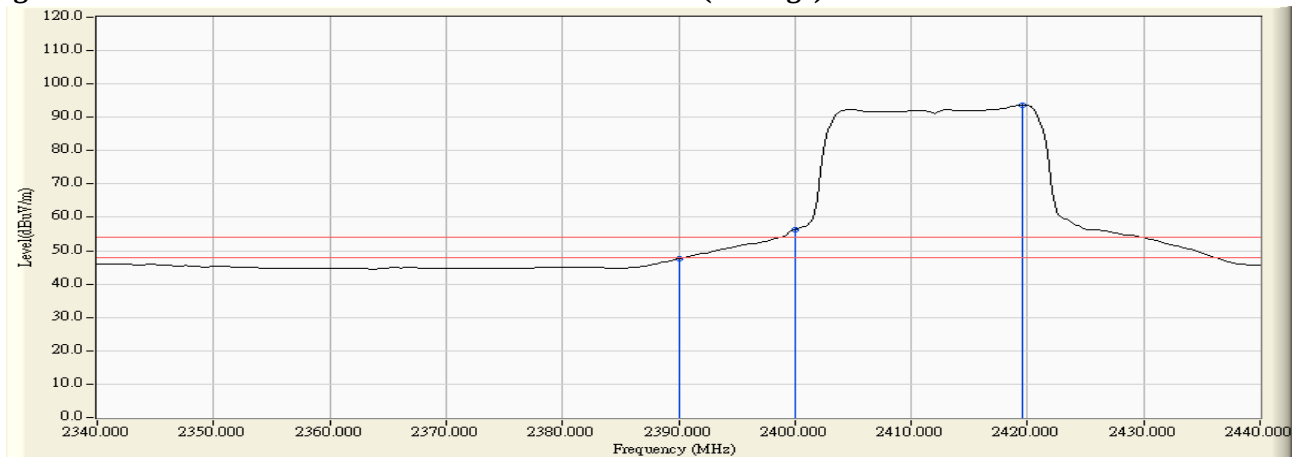


Figure Channel 01: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Wireless Storage Drive
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2457.703	31.987	71.700	103.687	--	--	--
11 (Peak)	2483.500	32.182	30.875	63.057	74.00	54.00	Pass
11 (Peak)	2485.674	32.198	33.207	65.406	74.00	54.00	Pass
11 (Average)	2469.732	32.078	61.751	93.829	--	--	--
11 (Average)	2483.500	32.182	17.222	49.404	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)

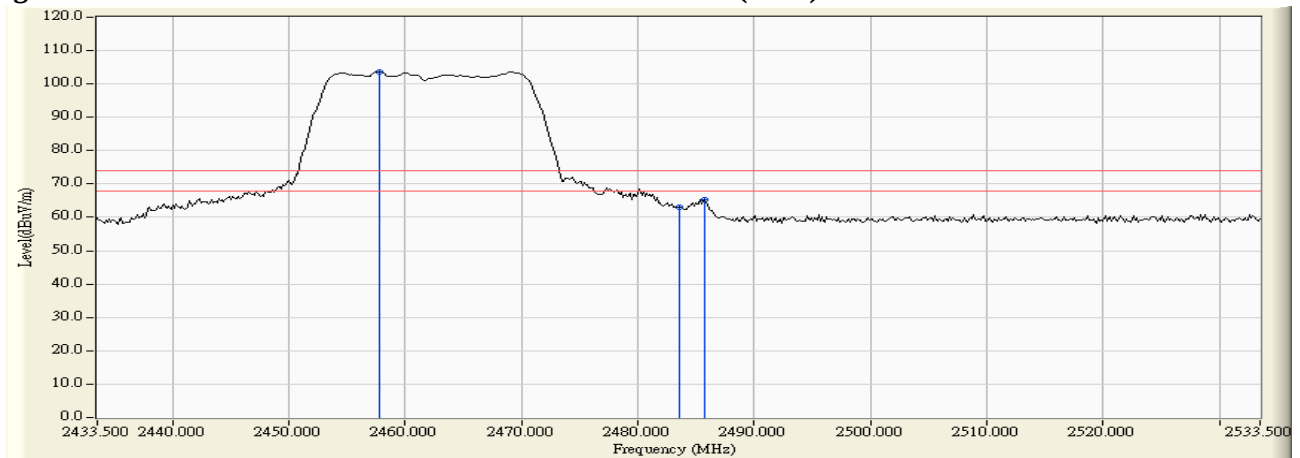
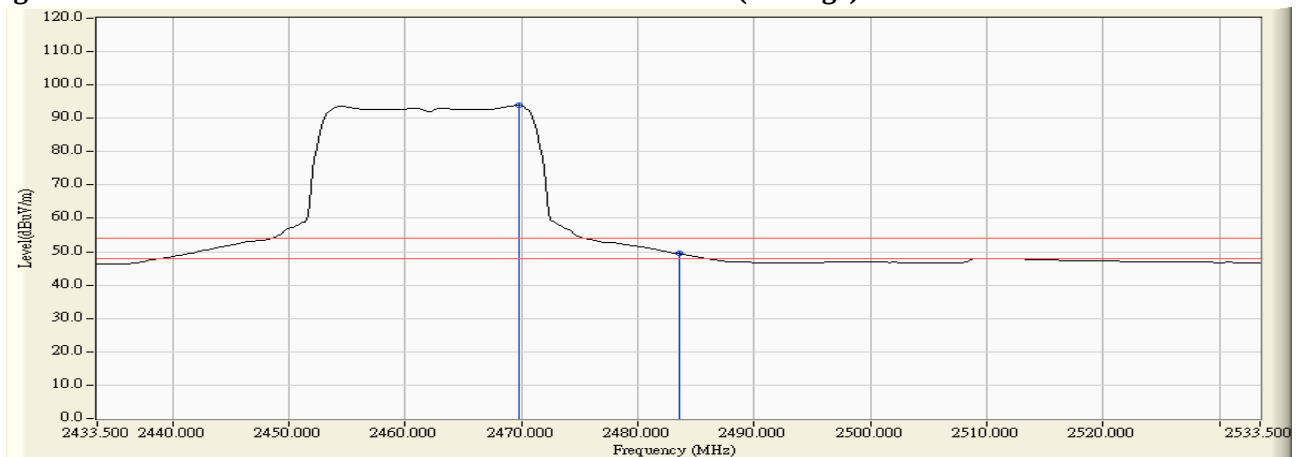


Figure Channel 11: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Wireless Storage Drive
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2454.370	31.238	75.259	106.497	--	--	--
11 (Peak)	2483.500	31.435	33.189	64.624	74.00	54.00	Pass
11 (Peak)	2483.645	31.436	32.256	63.692	74.00	54.00	Pass
11 (Average)	2454.514	31.238	63.986	95.225	--	--	--
11 (Average)	2483.500	31.435	18.741	50.176	74.00	54.00	Pass

Figure Channel 11: Vertical (Peak)

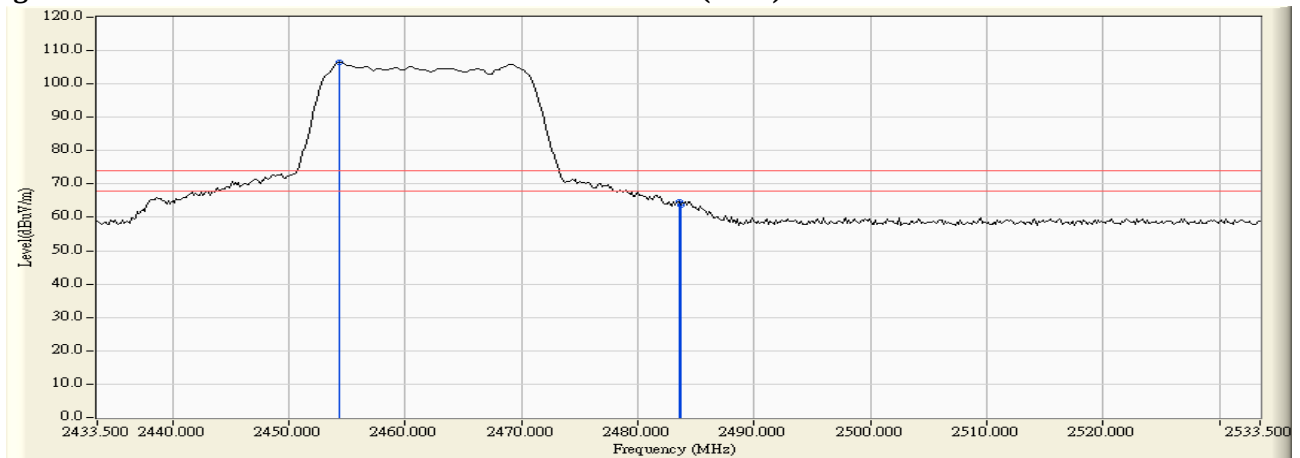
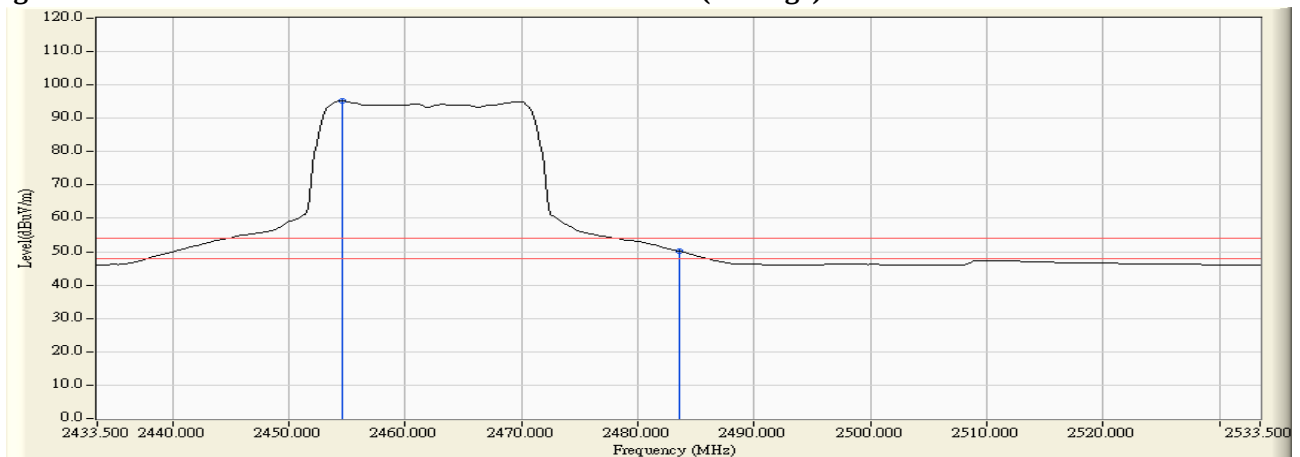


Figure Channel 11: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Wireless Storage Drive
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-40BW_30Mbps(2.4G Band)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
0 (Peak)	2389.855	31.509	32.108	63.617	74.00	54.00	Pass
0 (Peak)	2390.000	31.509	31.346	62.855	74.00	54.00	Pass
01 (Peak)	2400.000	31.561	39.772	71.333	--	--	--
01 (Peak)	2405.362	31.595	68.550	100.145	--	--	--
01 (Average)	2390.000	31.509	17.835	49.344	74.00	54.00	Pass
01 (Average)	2400.000	31.561	26.250	57.811	--	--	--
01 (Average)	2405.217	31.594	57.538	89.132	--	--	--

Figure Channel 01: Horizontal (Peak)

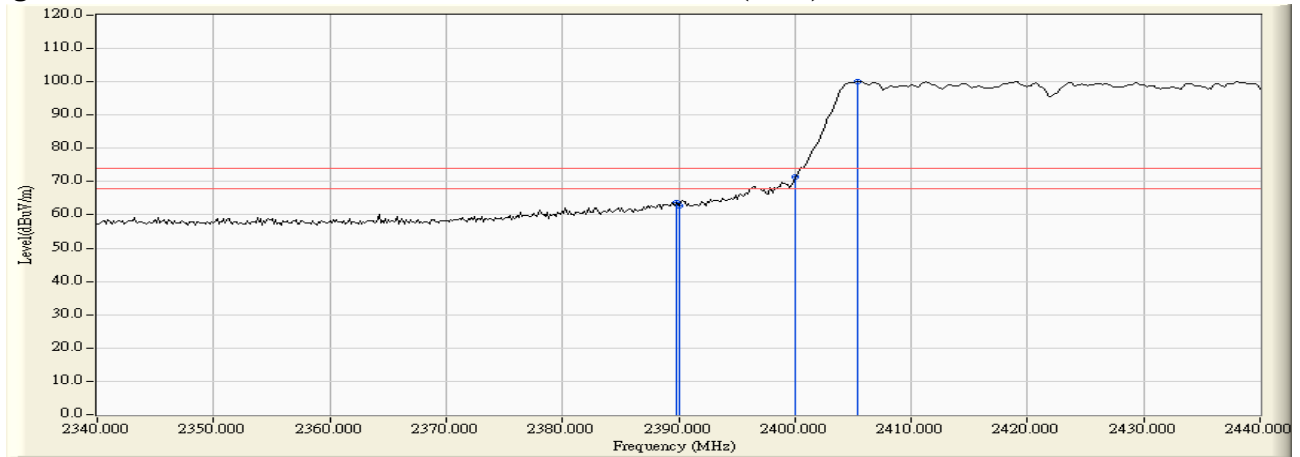
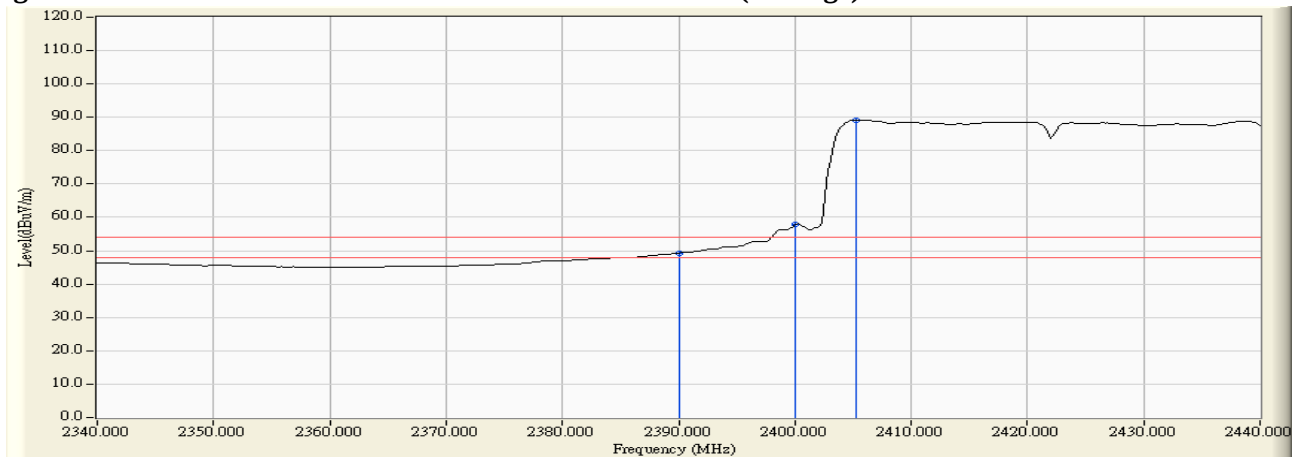


Figure Channel 01: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Wireless Storage Drive
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-40BW_30Mbps(2.4G Band)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2388.551	30.922	32.439	63.361	74.00	54.00	Pass
01 (Peak)	2390.000	30.915	32.008	62.923	74.00	54.00	Pass
01 (Peak)	2399.275	30.911	38.857	69.767	--	--	--
01 (Peak)	2400.000	30.912	38.520	69.432	--	--	--
01 (Peak)	2438.406	31.129	71.208	102.337	--	--	--
01 (Average)	2390.000	30.915	18.650	49.565	74.00	54.00	Pass
01 (Average)	2400.000	30.912	27.252	58.164	--	--	--
01 (Average)	2438.551	31.130	60.403	91.533	--	--	--

Figure Channel 01: Vertical (Peak)

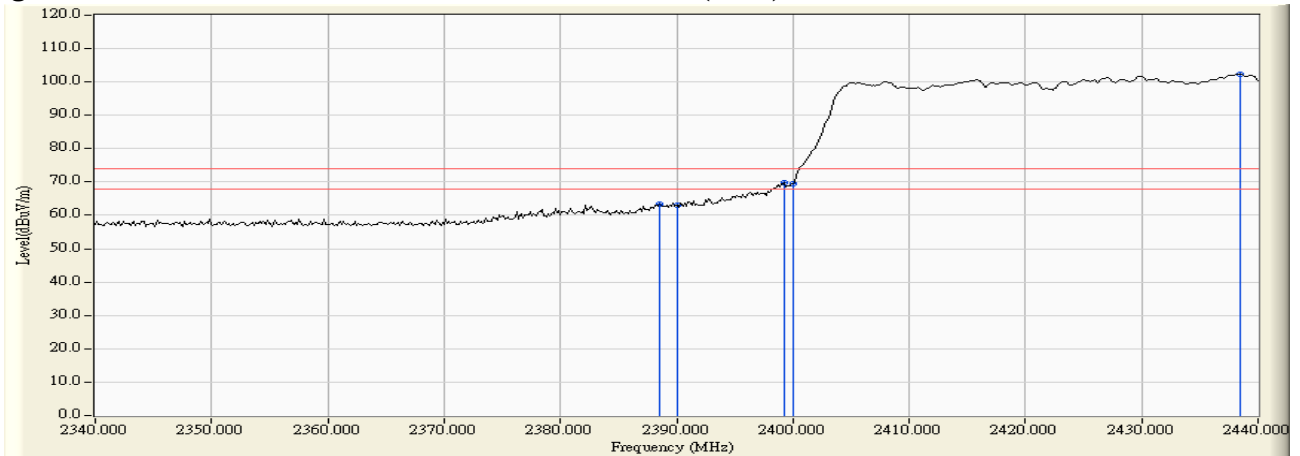
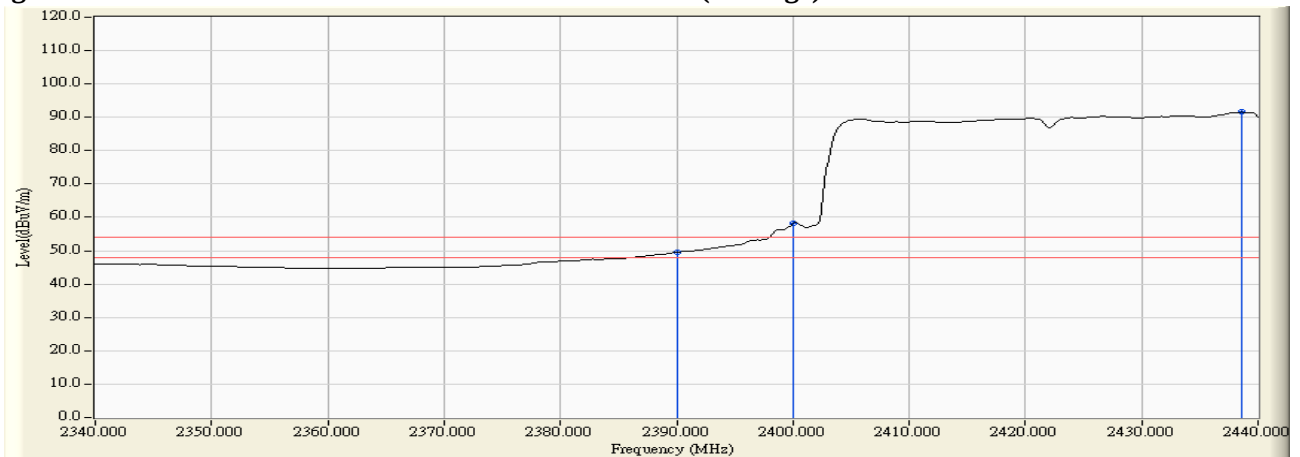


Figure Channel 01: Vertical (Average)



- Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Wireless Storage Drive
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-40BW_30Mbps(2.4G Band)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
07 (Peak)	2468.138	32.066	68.292	100.358	--	--	--
07 (Peak)	2483.500	32.182	31.537	63.719	74.00	54.00	Pass
07 (Peak)	2484.949	32.193	33.267	65.460	74.00	54.00	Pass
07 (Average)	2469.007	32.072	58.578	90.650	--	--	--
07 (Average)	2483.500	32.182	18.513	50.695	74.00	54.00	Pass
07 (Average)	2483.935	32.185	18.568	50.753	74.00	54.00	Pass

Figure Channel 07: Horizontal (Peak)

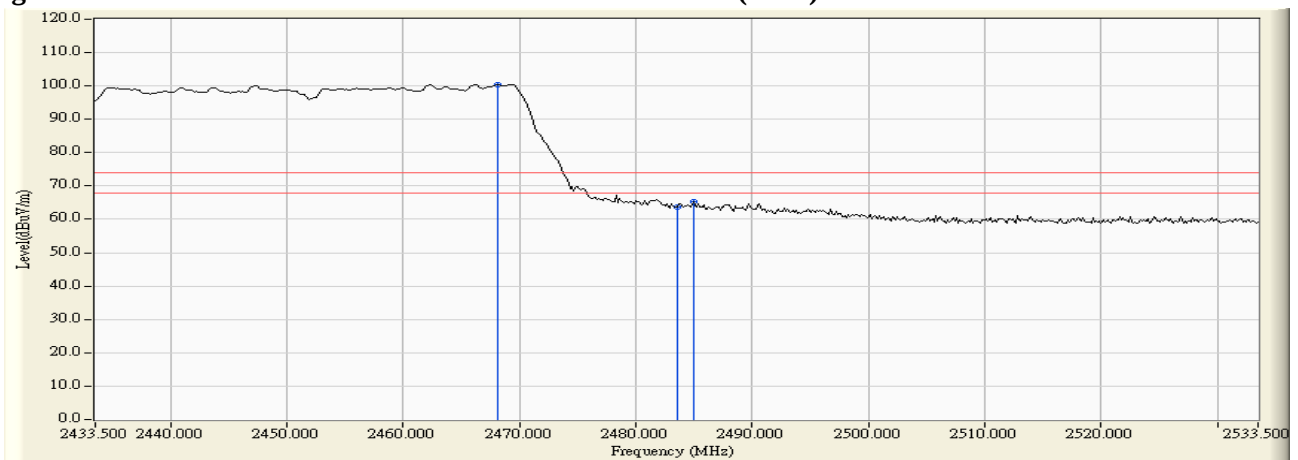
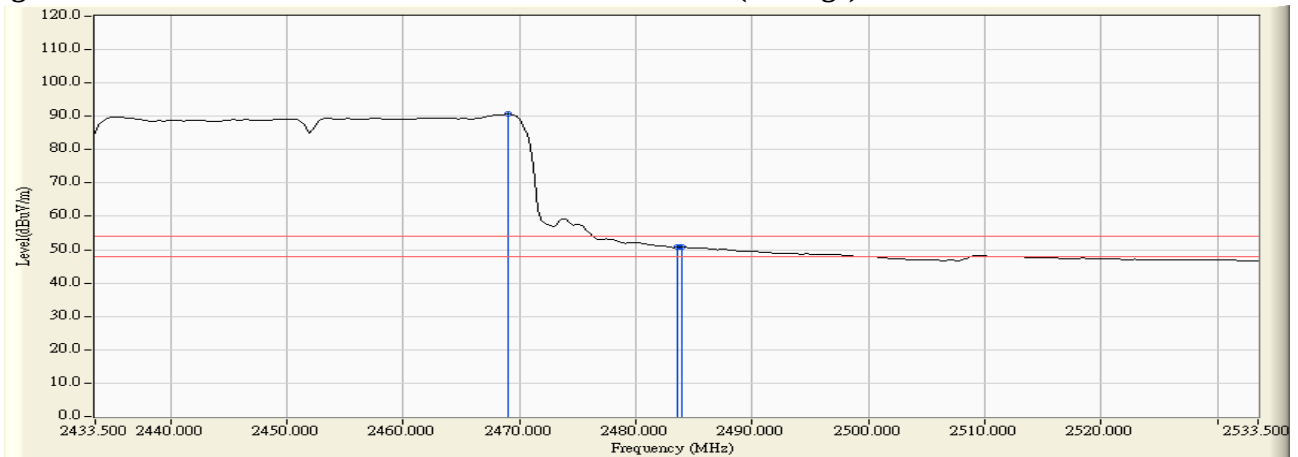


Figure Channel 07: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Wireless Storage Drive
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-40BW_30Mbps(2.4G Band)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
07 (Peak)	2456.109	31.250	72.005	103.255	--	--	--
07 (Peak)	2483.500	31.435	33.287	64.722	74.00	54.00	Pass
07 (Peak)	2486.109	31.452	33.889	65.342	74.00	54.00	Pass
07 (Average)	2435.529	31.109	61.167	92.276	--	--	--
07 (Average)	2483.500	31.435	20.661	52.096	74.00	54.00	Pass

Figure Channel 07: Vertical (Peak)

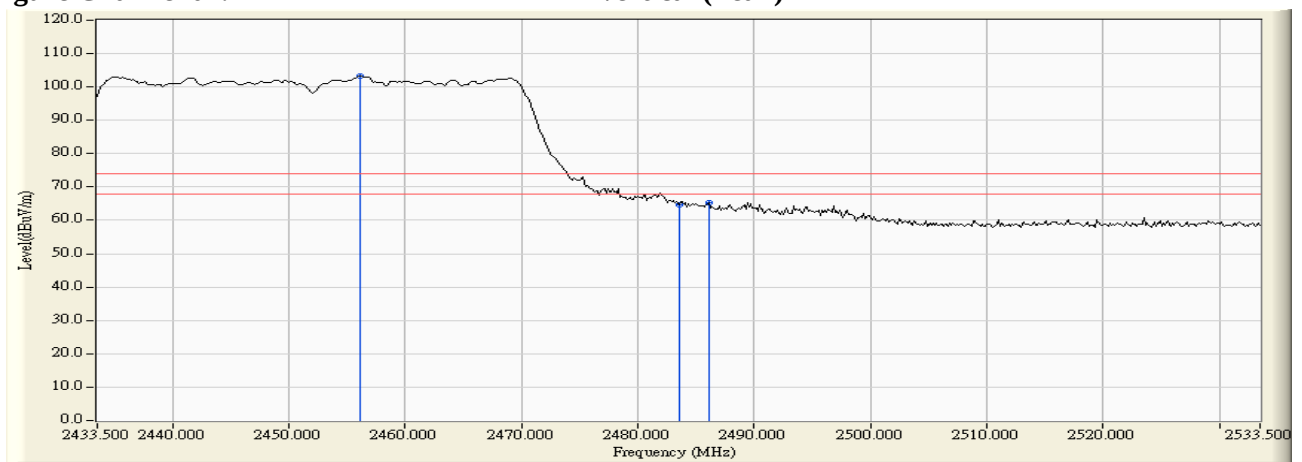
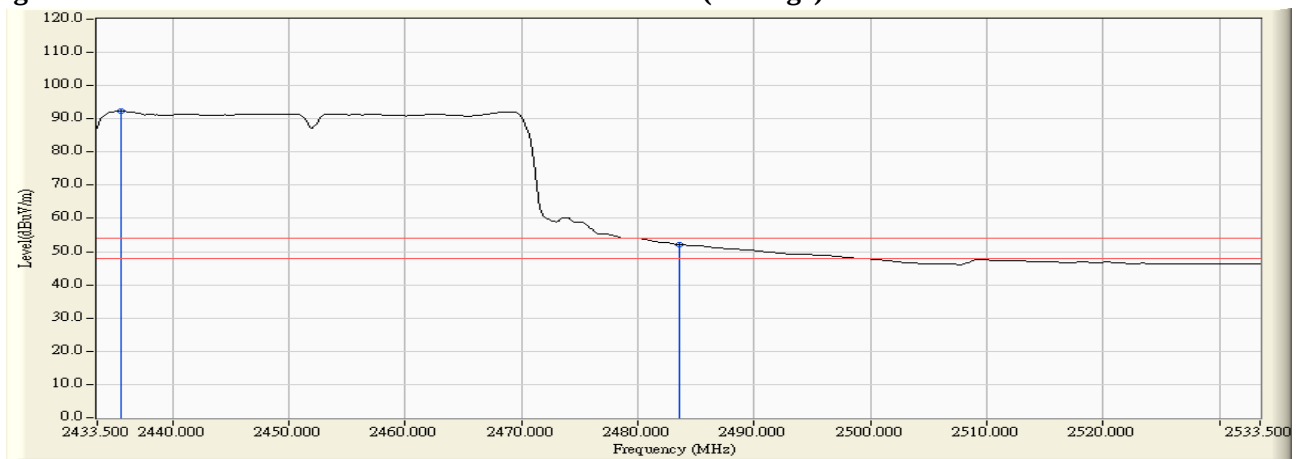


Figure Channel 07: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

7. Occupied Bandwidth

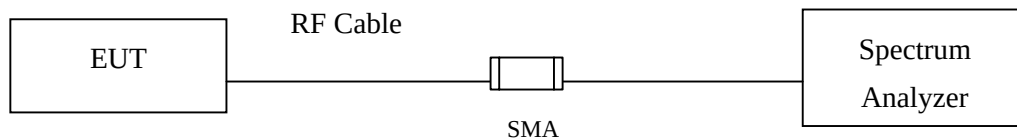
7.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2015
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2015
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

7.2. Test Setup



7.3. Limits

The minimum bandwidth shall be at least 500 kHz.

7.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2013; tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 1-5% of the emission bandwidth, $VBW \geq 3 \cdot RBW$

7.5. Uncertainty

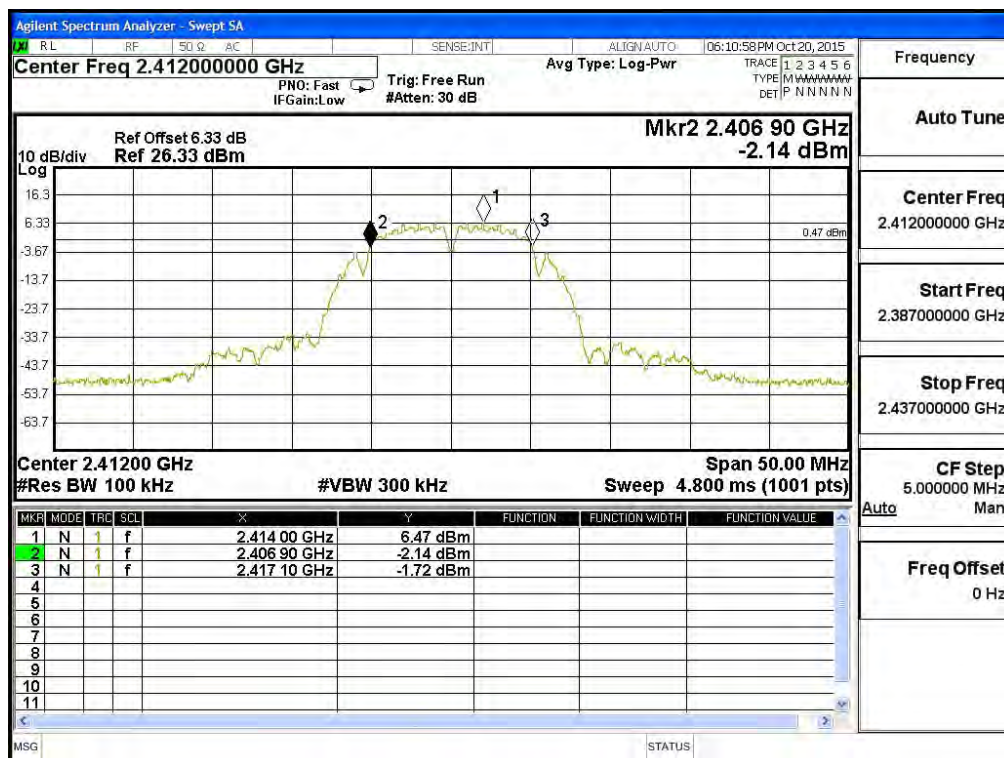
$\pm 150\text{Hz}$

7.6. Test Result of Occupied Bandwidth

Product : Wireless Storage Drive
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	10200	>500	Pass

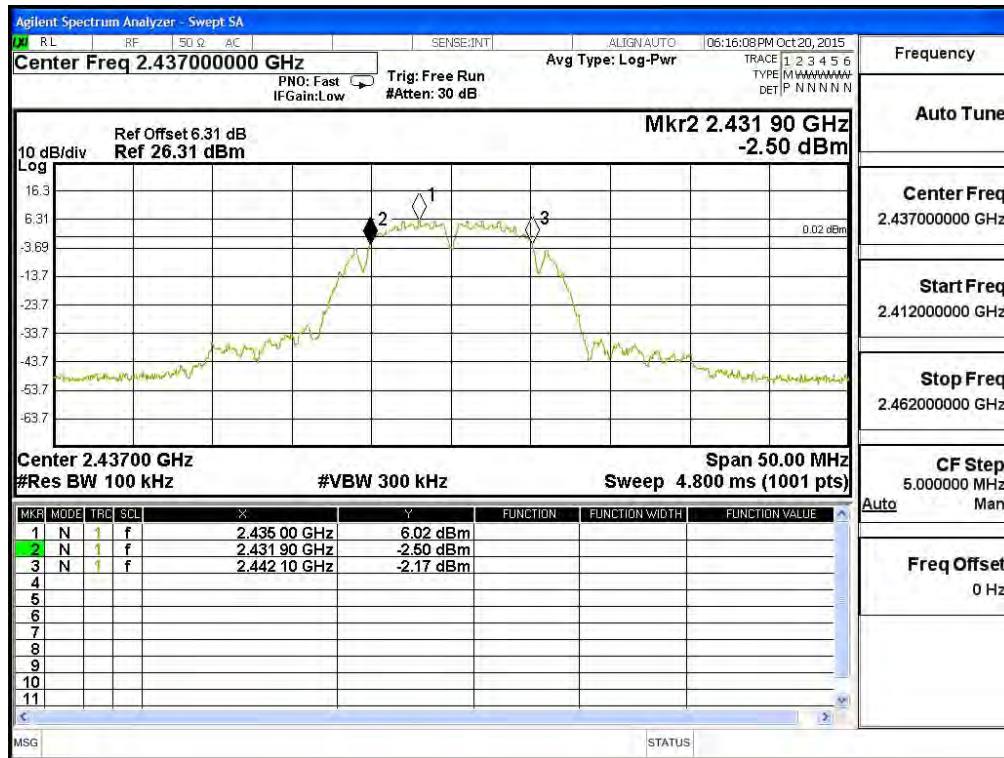
Figure Channel 1:



Product : Wireless Storage Drive
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	10200	>500	Pass

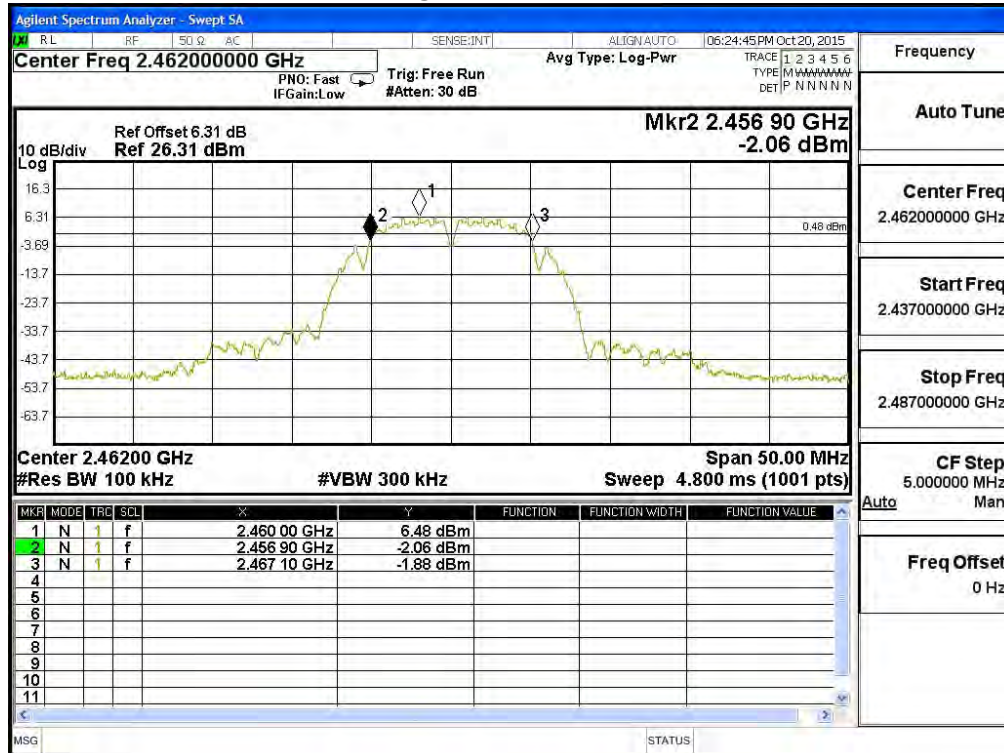
Figure Channel 6:



Product : Wireless Storage Drive
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	10200	>500	Pass

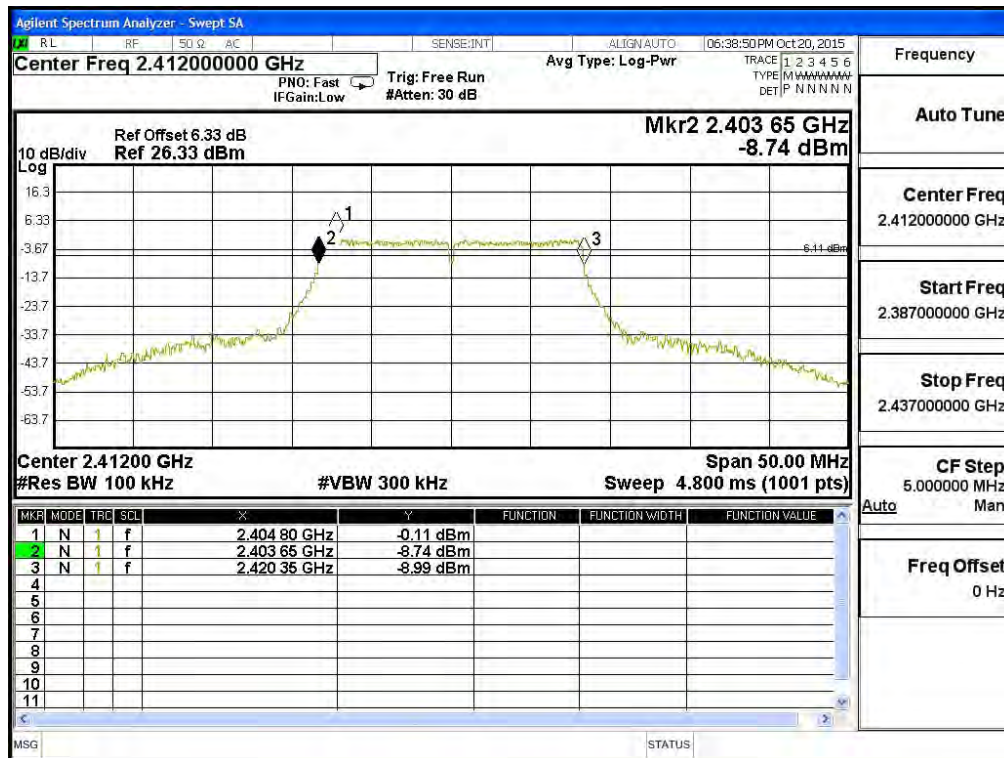
Figure Channel 11:



Product : Wireless Storage Drive
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	16700	>500	Pass

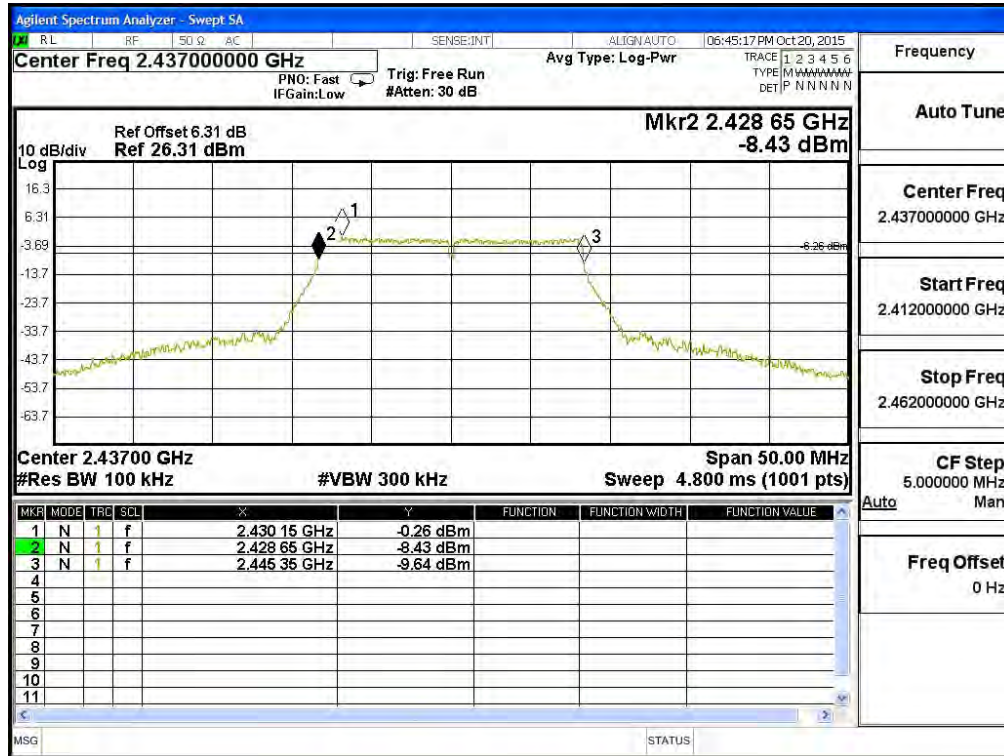
Figure Channel 1:



Product : Wireless Storage Drive
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	16700	>500	Pass

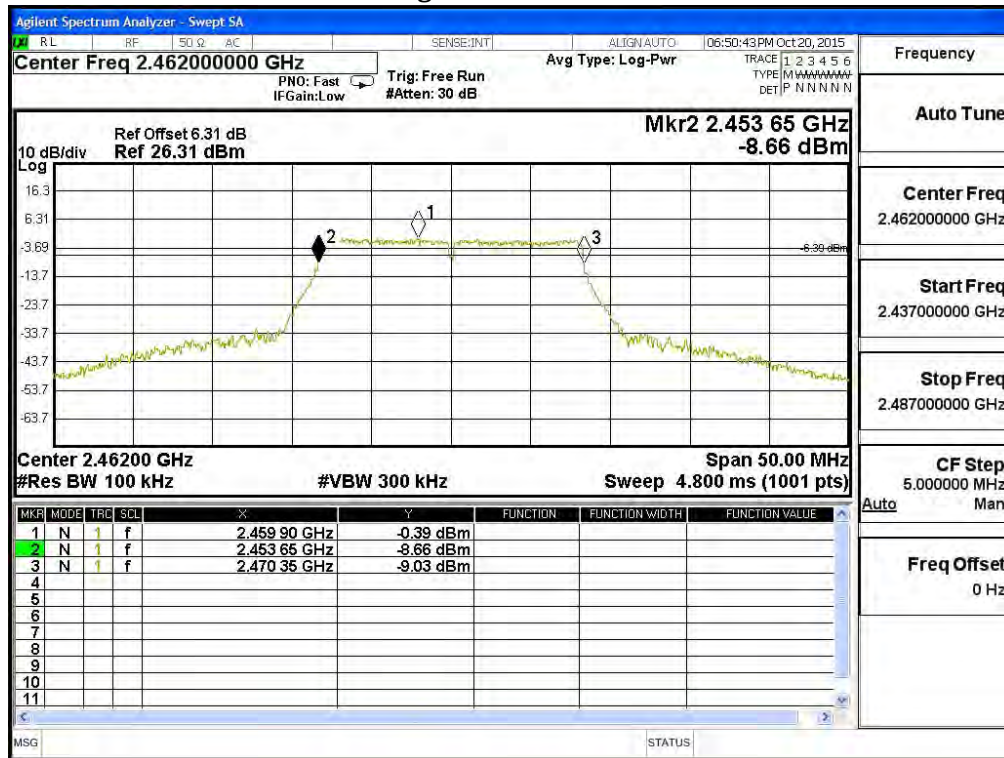
Figure Channel 6:



Product : Wireless Storage Drive
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	16700	>500	Pass

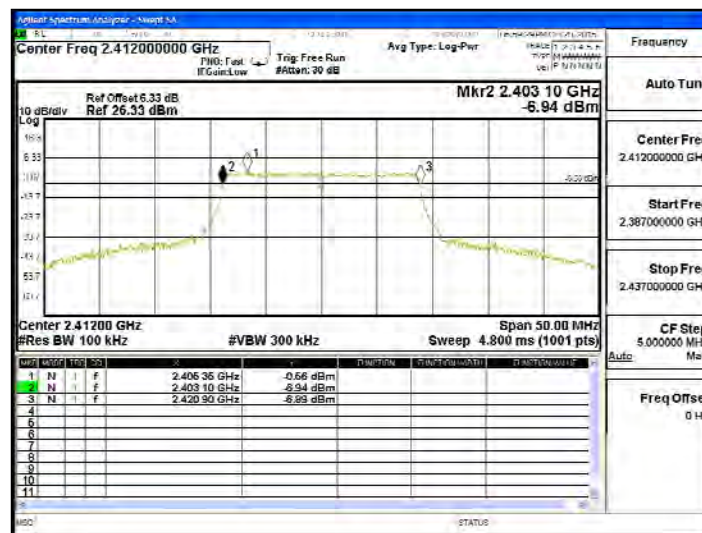
Figure Channel 11:



Product : Wireless Storage Drive
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band) (2412MHz)

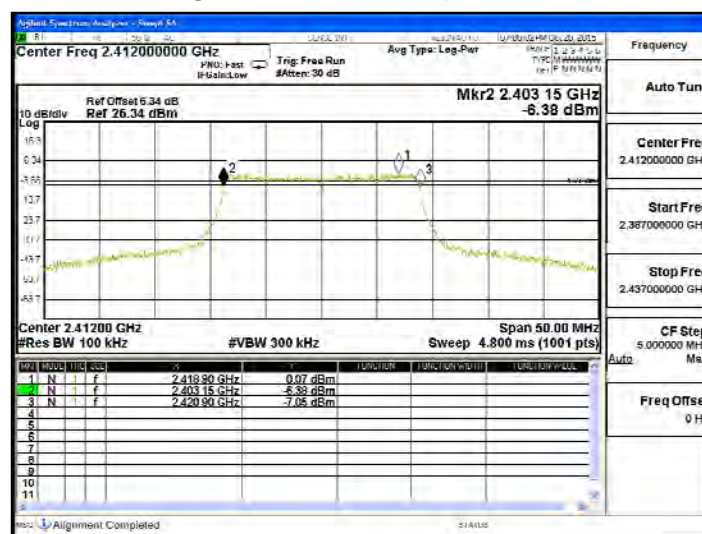
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	17800	>500	Pass

Figure Channel 1: (Chain A)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	17750	>500	Pass

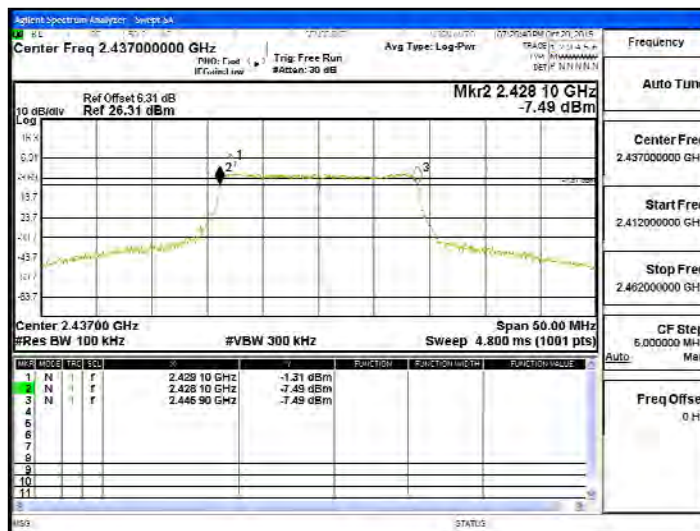
Figure Channel 1: (Chain B)



Product : Wireless Storage Drive
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band) (2437MHz)

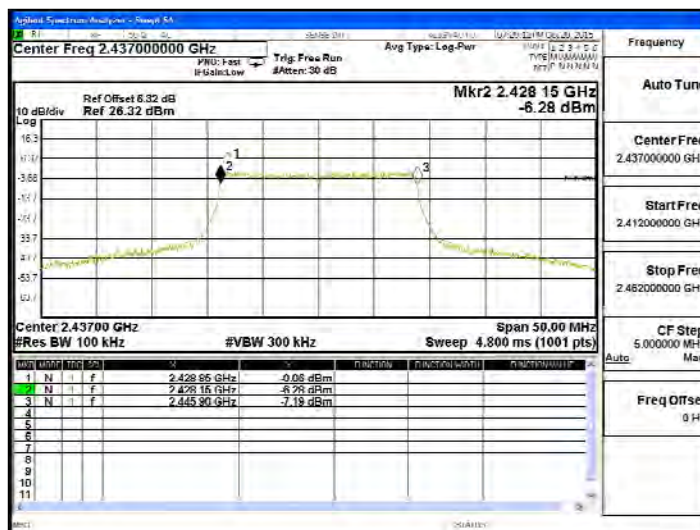
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	17800	>500	Pass

Figure Channel 6: (Chain A)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	17750	>500	Pass

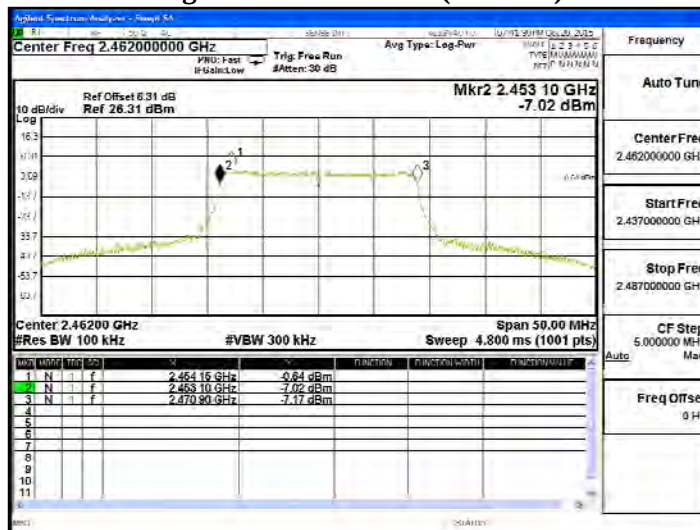
Figure Channel 6: (Chain B)



Product : Wireless Storage Drive
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band) (2462MHz)

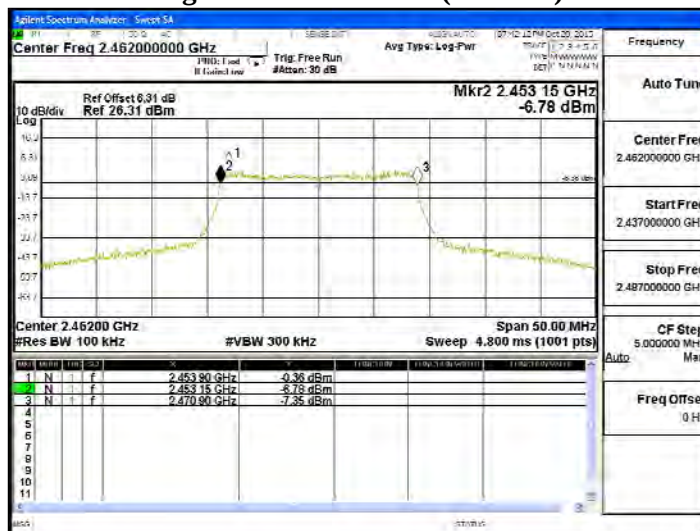
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	17800	>500	Pass

Figure Channel 11: (Chain A)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	17750	>500	Pass

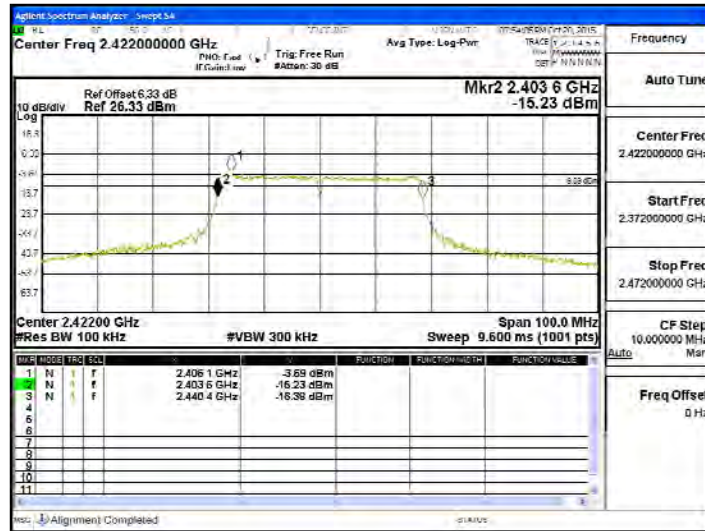
Figure Channel 11: (Chain B)



Product : Wireless Storage Drive
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit - 802.11n-40BW_30Mbps(2.4G Band) (2422MHz)

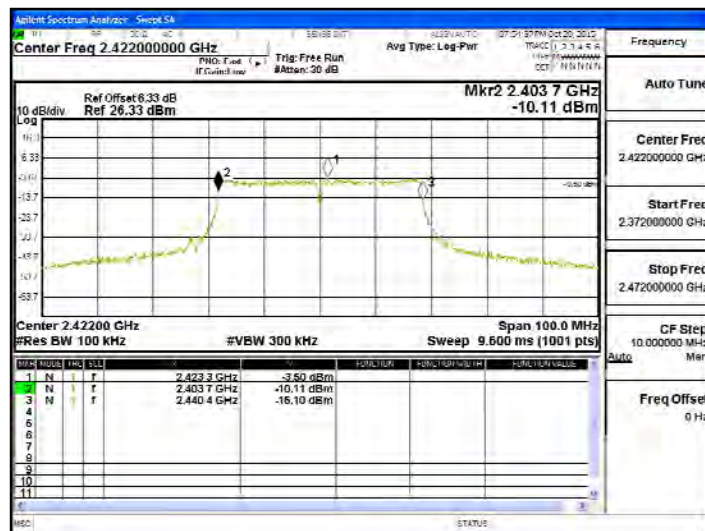
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2422.00	36800	>500	Pass

Figure Channel 1: (Chain A)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2422.00	36700	>500	Pass

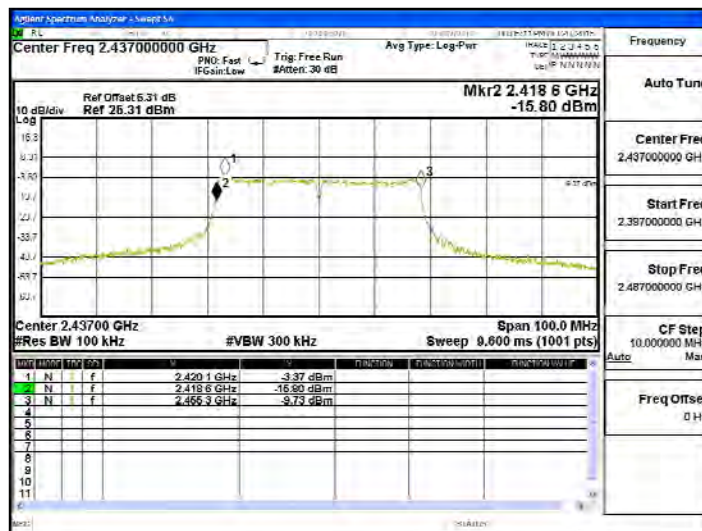
Figure Channel 1: (Chain B)



Product : Wireless Storage Drive
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit - 802.11n-40BW_30Mbps(2.4G Band) (2437MHz)

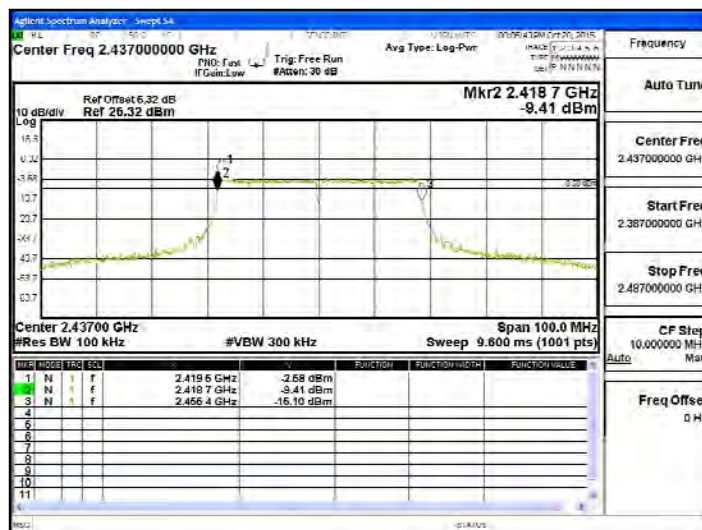
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
4	2437.00	36700	>500	Pass

Figure Channel 4: (Chain A)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
4	2437.00	36700	>500	Pass

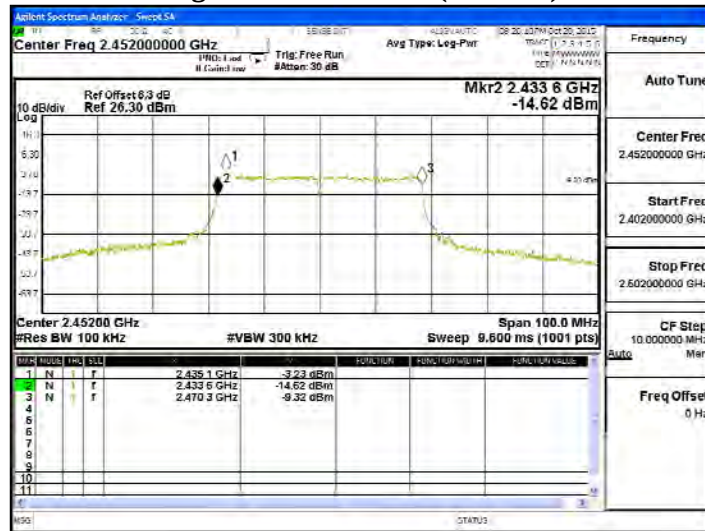
Figure Channel 4: (Chain B)



Product : Wireless Storage Drive
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit - 802.11n-40BW_30Mbps(2.4G Band) (2452MHz)

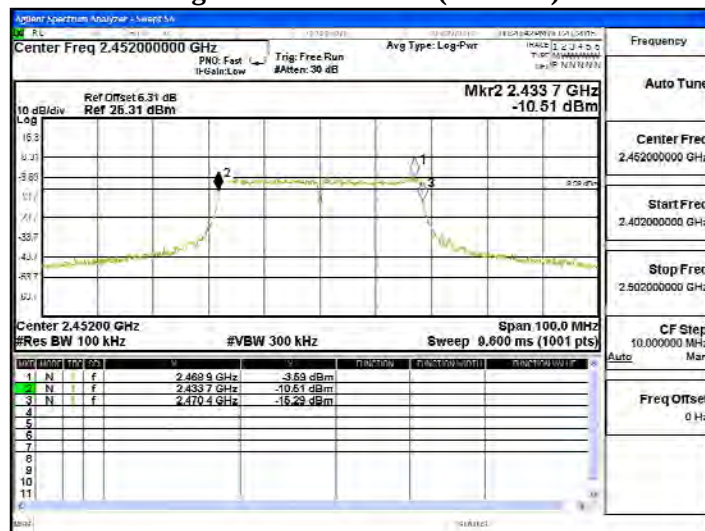
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
7	2452.00	36700	>500	Pass

Figure Channel 7: (Chain A)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
7	2452.00	36700	>500	Pass

Figure Channel 7: (Chain B)



8. Power Density

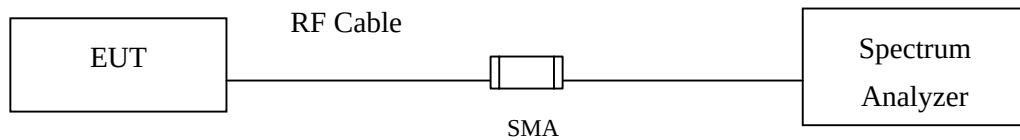
8.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2015
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2015
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

8.2. Test Setup



8.3. Limits

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

8.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2013; tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

The maximum power spectral density using KDB 558074 section 10.2 PKPSD (peak PSD) method.

8.5. Uncertainty

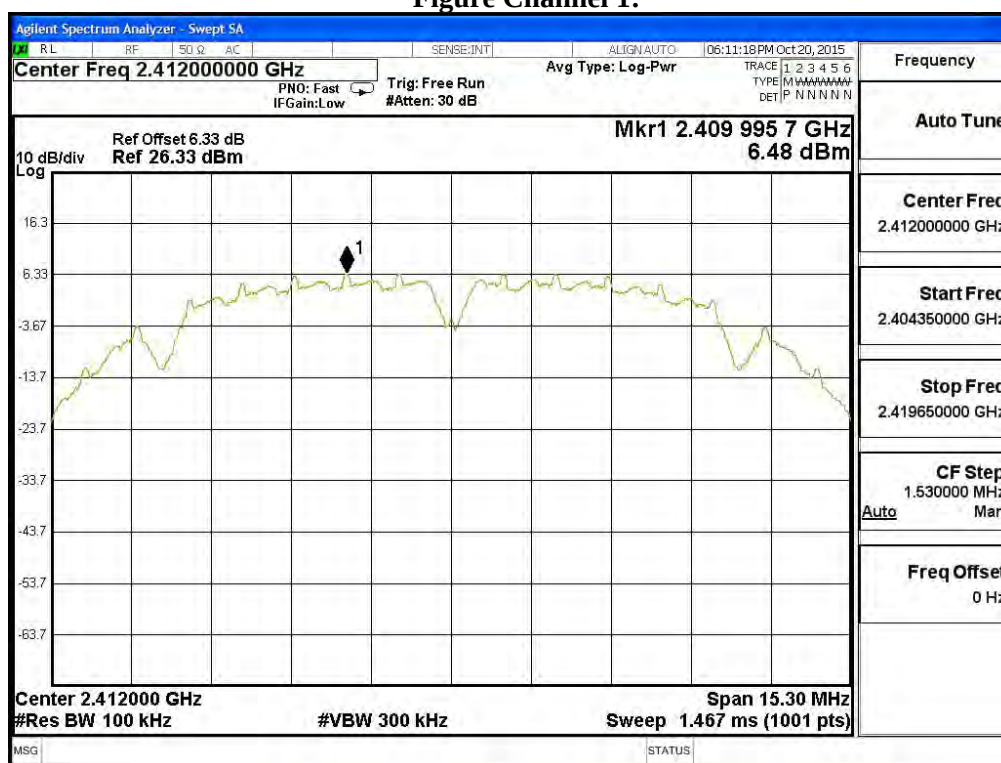
± 1.27 dB

8.6. Test Result of Power Density

Product : Wireless Storage Drive
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	6.48	< 8dBm	Pass

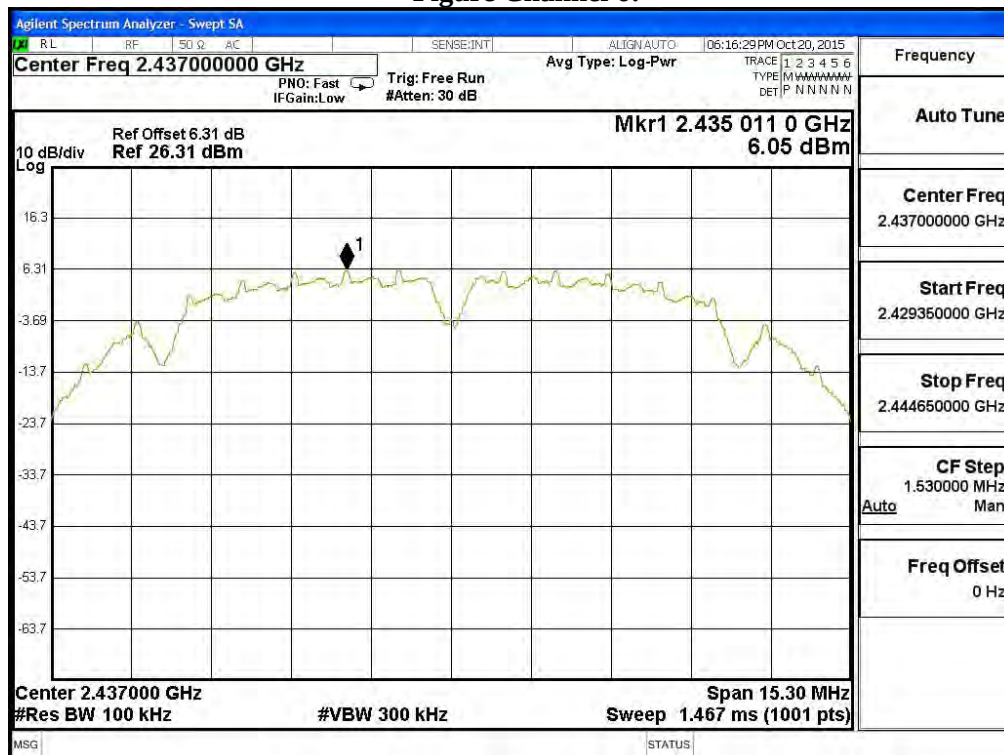
Figure Channel 1:



Product : Wireless Storage Drive
 Test Item : Power Density Data
 Test Site : No.3OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
6	2437	6.05	< 8dBm	Pass

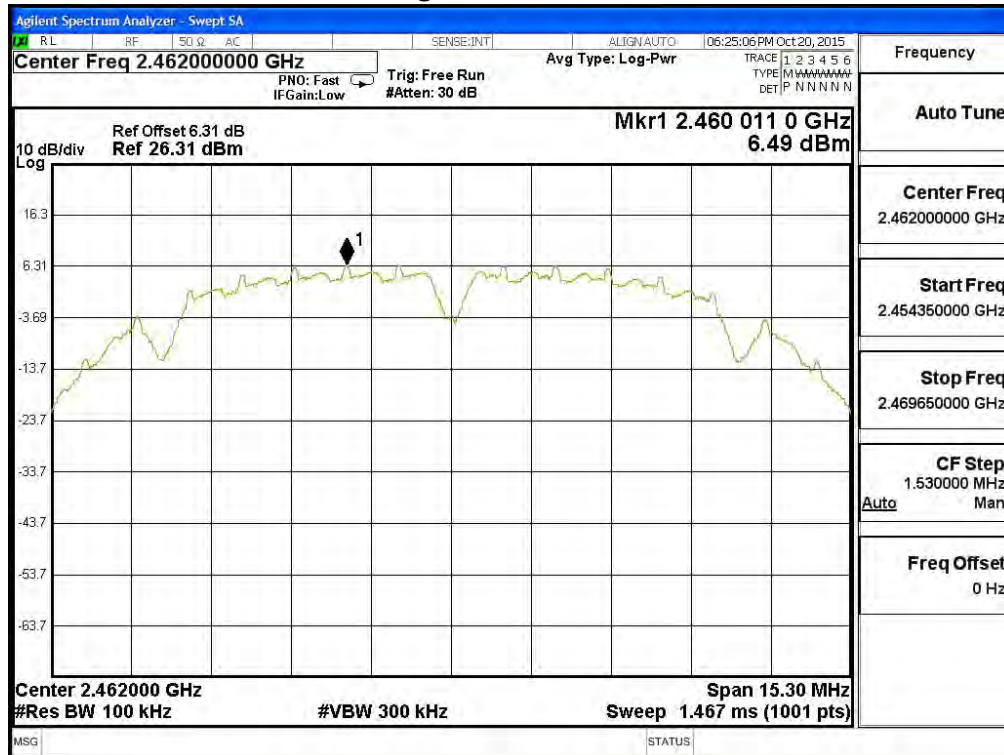
Figure Channel 6:



Product : Wireless Storage Drive
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
11	2462	6.49	< 8dBm	Pass

Figure Channel 11:



Product : Wireless Storage Drive
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	-0.11	< 8dBm	Pass

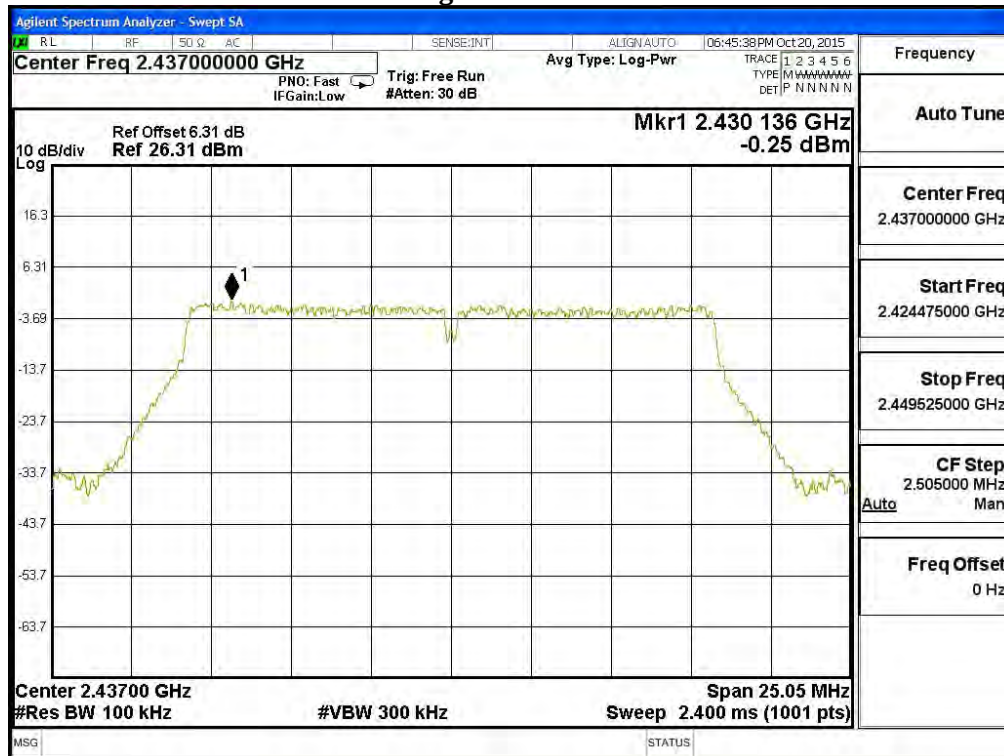
Figure Channel 1:



Product : Wireless Storage Drive
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
6	2437	-0.25	< 8dBm	Pass

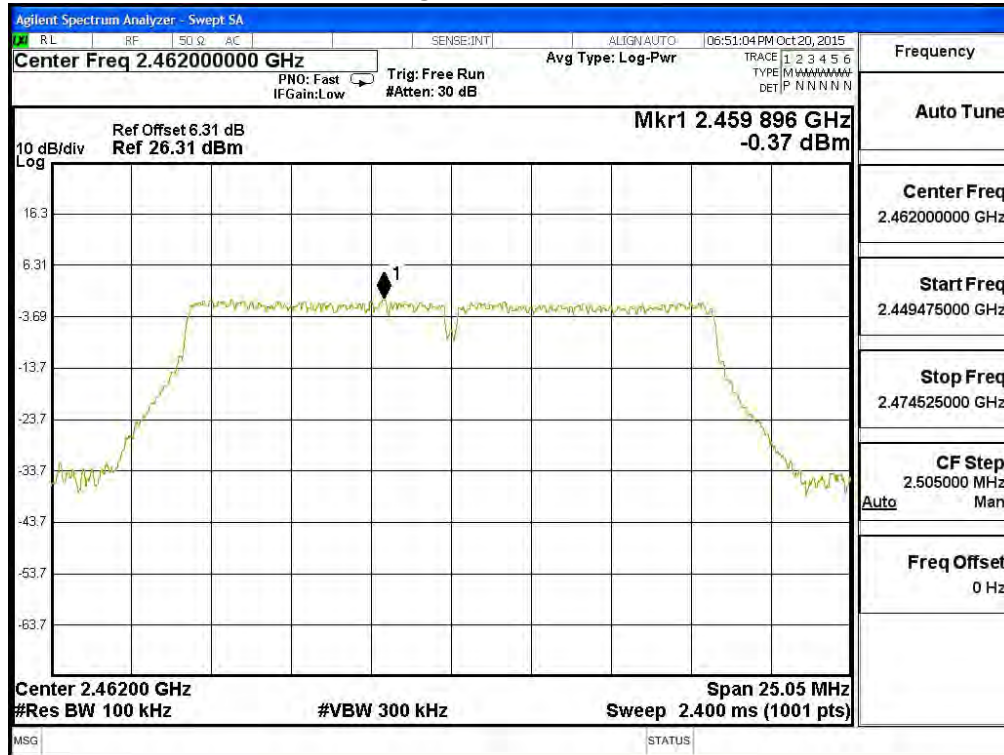
Figure Channel 6:



Product : Wireless Storage Drive
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
11	2462	-0.37	< 8dBm	Pass

Figure Channel 11:



Product : Wireless Storage Drive
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band) (2412MHz)

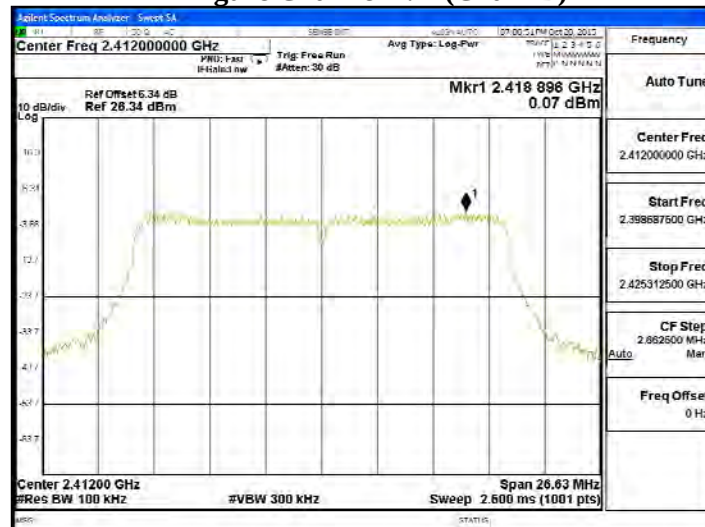
CHAIN	PPSD/MHz (dBm)	Total PPSD/MHz (dBm)1	Limit	Result
A	-0.610	2.40	< 8dBm	Pass
B	0.070	3.08	< 8dBm	Pass

Note 1: The quantity $10 \cdot \log 2$ (two antennas) is added to the spectrum peak value according to document 662911 D01.

Figure Channel 1: (Chain A)



Figure Channel 1: (Chain B)



Product : Wireless Storage Drive
 Test Item : Power Density Data
 Test Site : No.3OATS
 Test Mode : Mode 3: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band) (2437MHz)

CHAIN	PPSD/MHz (dBm)	Total PPSD/MHz (dBm)1	Limit	Result
A	-1.37	1.64	< 8dBm	Pass
B	0.09	3.1	< 8dBm	Pass

Note 1: The quantity $10 \cdot \log 2$ (two antennas) is added to the spectrum peak value according to document 662911 D01.

Figure Channel 6: (Chain A)



Figure Channel 6: (Chain B)



Product : Wireless Storage Drive
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band) (2462MHz)

CHAIN	PPSD/MHz (dBm)	Total PPSD/MHz (dBm) ¹	Limit	Result
A	-0.67	2.34	< 8dBm	Pass
B	-0.30	2.71	< 8dBm	Pass

Note 1: The quantity $10 \cdot \log 2$ (two antennas) is added to the spectrum peak value according to document 662911 D01.

Figure Channel 11: (Chain A)

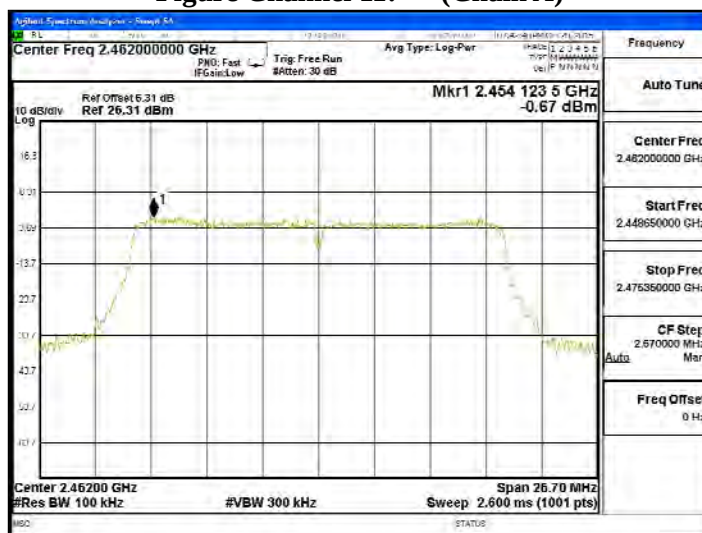


Figure Channel 11: (Chain B)



Product : Wireless Storage Drive
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit - 802.11n-40BW_30Mbps(2.4G Band) (2422MHz)

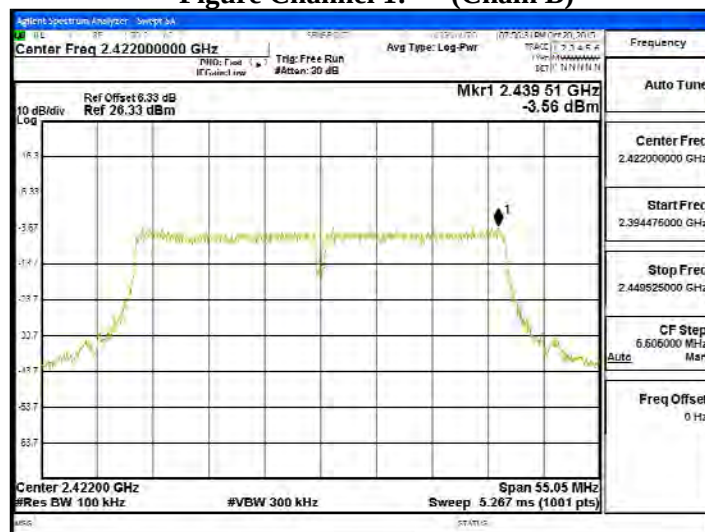
CHAIN	PPSD/MHz (dBm)	Total PPSD/MHz (dBm)1	Limit	Result
A	-3.56	-0.55	< 8dBm	Pass
B	-3.56	-0.55	< 8dBm	Pass

Note 1: The quantity $10 \cdot \log 2$ (two antennas) is added to the spectrum peak value according to document 662911 D01.

Figure Channel 1: (Chain A)



Figure Channel 1: (Chain B)



Product : Wireless Storage Drive
 Test Item : Power Density Data
 Test Site : No.3OATS
 Test Mode : Mode 4: Transmit - 802.11n-40BW_30Mbps(2.4G Band) (2437MHz)

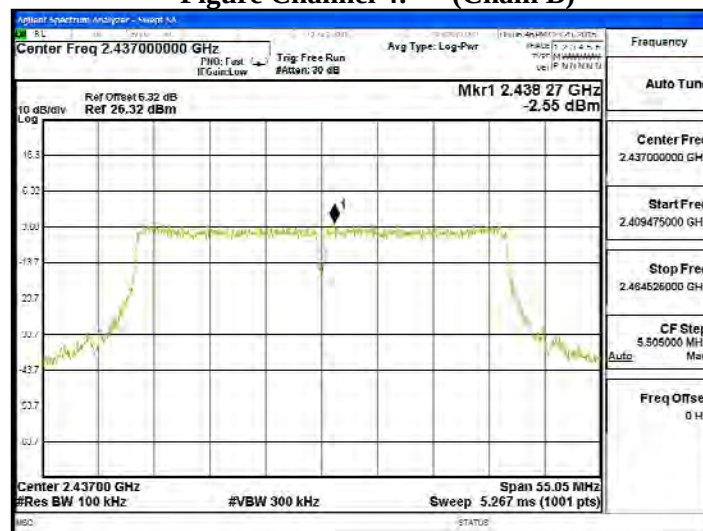
CHAIN	PPSD/MHz (dBm)	Total PPSD/MHz (dBm)1	Limit	Result
A	-3.59	-0.58	< 8dBm	Pass
B	-2.55	0.46	< 8dBm	Pass

Note 1: The quantity $10 \cdot \log 2$ (two antennas) is added to the spectrum peak value according to document 662911 D01.

Figure Channel 4: (Chain A)



Figure Channel 4: (Chain B)



Product : Wireless Storage Drive
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit - 802.11n-40BW_30Mbps(2.4G Band) (2452MHz)

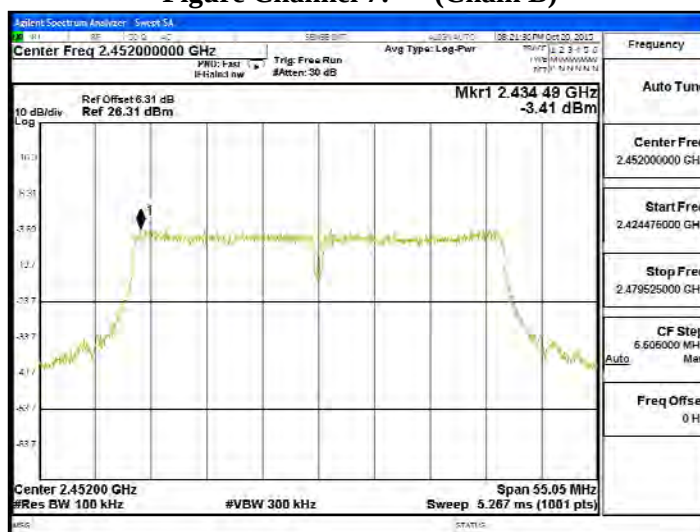
CHAIN	PPSD/MHz (dBm)	Total PPSD/MHz (dBm)1	Limit	Result
A	-3.02	-0.01	< 8dBm	Pass
B	-3.41	-0.40	< 8dBm	Pass

Note 1: The quantity $10 \cdot \log 2$ (two antennas) is added to the spectrum peak value according to document 662911 D01.

Figure Channel 7: (Chain A)



Figure Channel 7: (Chain B)



9. EMI Reduction Method During Compliance Testing

No modification was made during testing.

Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs