TEST REPORT

Applicant:	Shenzhen Golden Vision Technology Development Co., Ltd
Address of Applicant:	No.6 Bao Fu Road，Bao Lai industrial Park, Shang Mu Gu Villiage，Pinghu Street, Longgang District, Shenzhen City, Guangdong Province, 518000, China
Manufacturer:	Shenzhen Golden Vision Technology Development Co., Ltd
Address of Manufacturer:	No.6 Bao Fu Road，Bao Lai industrial Park, Shang Mu Gu Villiage，Pinghu Street, Longgang District, Shenzhen City, Guangdong Province, 518000, China
Factory:	Shenzhen Golden Vision Technology Development Co., Ltd
Address of Factory:	No.6 Bao Fu Road，Bao Lai industrial Park, Shang Mu Gu Villiage，Pinghu Street, Longgang District, Shenzhen City, Guangdong Province, 518000, China

Equipment Under Test (EUT)

Product Name:	Smart camera
Model No.:	B2, S8A, B1, B3, B4, B5, B6, B7, B8, B9, B10, B1C, B2C, B3C, B4C, B5C, B6C, B7C, B8C, B9C, B10C, B11,P6,P8
Trade Mark:	N/A
FCC ID:	2APD7-B2
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.247
Date of sample receipt:	2024-10-25
Date of Test:	2024-11-15 to 2024-11-21
Date of report issued:	2024-12-02
Test Result :	PASS *

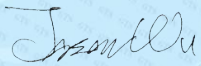
* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

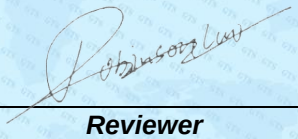
Robinson Luo
Laboratory Manager

2 Version

Version No.	Date	Description
GTSL2024120047F01-1	2024-12-02	*Original*

Prepared By:  ***Date:*** *2024-12-02*

Project Engineer

Check By:  ***Date:*** *2024-12-02*

Reviewer

3 Contents

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4 Test Summary

Test Item	Section	Result
Antenna requirement	FCC part 15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	FCC part 15.207	N/A The EUT is DC power supply
Conducted Output Power	FCC part 15.247 (b)(3)	Pass
Channel Bandwidth & 99% OCB	FCC part 15.247 (a)(2)	Pass
Power Spectral Density	FCC part 15.247 (e)	Pass
Band Edge	FCC part 15.247(d)	Pass
Spurious Emission	FCC part 15.205/15.209	Pass

Remark: Test according to ANSI C63.10:2013

Pass: The EUT complies with the essential requirements in the standard.

N/A: In this whole report not applicable.

Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	$\pm 7.25\times10^{-8}$
2	Duty cycle	±0.37%
3	Occupied Bandwidth	±3%
4	RF conducted power	±0.75dB
5	RF power density	±3dB
6	Conducted Spurious emissions	±2.58dB
7	AC Power Line Conducted Emission	±3.44dB (0.15MHz ~ 30MHz)
8	Radiated Spurious Emission Test	±3.1dB (9kHz-30MHz)
		±3.8039dB (30MHz-200MHz)
		±3.9679dB (200MHz-1GHz)
		±4.29dB (1GHz-18GHz)
		±3.30dB (18GHz-40GHz)
9	Temperature test	±1°C
10	Humidity test	±3%
11	Time	±3%

5 General Information

5.1 General Description of EUT

Product Name:	Smart camera
Model No.:	B2, S8A, B1, B3, B4, B5, B6, B7, B8, B9, B10, B1C, B2C, B3C, B4C, B5C, B6C, B7C, B8C, B9C, B10C, B11,P6,P8
Test sample(s) ID:	GTSL2024120047F01-1
Sample(s) Status:	Engineer sample
S/N:	N/A
Operation Frequency:	802.11b/802.11g/802.11n(HT20): 2412MHz~2462MHz
Channel numbers:	802.11b/802.11g /802.11n(HT20): 11
Channel separation:	5MHz
Modulation technology:	802.11b: Direct Sequence Spread Spectrum (DSSS) 802.11g/802.11n(HT20): Orthogonal Frequency Division Multiplexing (OFDM)
Antenna Type:	PCB Antenna
Antenna gain:	2.04 dBi
Power supply:	DC power modules DC5V
Note: The product (Smart camera) Models (B2) and models (B2, S8A, B1, B3, B4, B5, B6, B7, B8, B9, B10, B1C, B2C, B3C, B4C, B5C, B6C, B7C, B8C, B9C, B10C, B11,P6,P8) the difference is only to distinguish different sales areas of different customers, the model name is different, and the products are exactly the same.	

Remark:
1. Antenna gain information provided by the customer
2. The relevant information of the sample is provided by the entrusting company, and the laboratory is not responsible for its authenticity.

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Test channel	Frequency (MHz)
	802.11b/802.11g/802.11n(HT20)
Lowest channel	2412MHz
Middle channel	2437MHz
Highest channel	2462MHz

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Pre-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.

Mode	802.11b	802.11g	802.11n(HT20)
Data rate	1Mbps	6Mbps	6.5Mbps

5.3 Description of Support Units

Manufacturer	Description	Model	Serial Number
. Shenzhen Golden Vision Technology Development Co., Ltd	DC power modules	UL050100CU	N/A

5.4 Deviation from Standards

None.

5.5 Abnormalities from Standard Conditions

None.

5.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC—Registration No.: 381383**

Designation Number: CN5029

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files.

● **ISED—Registration No.: 9079A**

CAB identifier: CN0091

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of ISED for radio equipment testing

● **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

5.7 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.
Address: No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102
Tel: 0755-27798480
Fax: 0755-27798960

5.8 Additional Instructions

Test Software	Special test command provided by manufacturer
Power level setup	Default

6 Test Instruments list

Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	June 23, 2024	June 22, 2025
					June 22, 2024	June 21, 2027
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	April 11, 2024	April 10, 2025
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9168	GTS640	March 19, 2024	March 18, 2025
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	April 17, 2024	April 16, 2025
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	April 11, 2024	April 10, 2025
8	Loop Antenna	ZHINAN	ZN30900A	GTS534	Nov. 13, 2023	Nov.12, 2024
9	Broadband Preamplifier	SCHWARZBECK	BBV9718	GTS535	April 11, 2024	April 10, 2025
10	Amplifier(1GHz-26.5GHz)	HP	8449B	GTS601	April 11, 2024	April 10, 2025
11	Horn Antenna (18-26.5GHz)	/	UG-598A/U	GTS664	Oct. 29, 2024	Oct. 28, 2025
12	Horn Antenna (26.5-40GHz)	A.H Systems	SAS-573	GTS665	Oct. 29, 2024	Oct. 28, 2025
13	FSV·Signal Analyzer (10Hz-40GHz)	Keysight	FSV-40-N	GTS666	March 12, 2024	March 11, 2025
14	Amplifier	/	LNA-1000-30S	GTS650	April 11, 2024	April 10, 2025
15	CDNE M2+M3-16A	HCT	30MHz-300MHz	GTS692	Nov. 08, 2024	Nov.07, 2025
16	Wideband Amplifier	/	WDA-01004000-15P35	GTS602	April 11, 2024	April 10, 2025
17	Thermo meter	JINCHUANG	GSP-8A	GTS643	April 18, 2024	April 17, 2025
18	RE cable 1	GTS	N/A	GTS675	July 31. 2024	July 30. 2025
19	RE cable 2	GTS	N/A	GTS676	July 31. 2024	July 30. 2025
20	RE cable 3	GTS	N/A	GTS677	July 31. 2024	July 30. 2025
21	RE cable 4	GTS	N/A	GTS678	July 31. 2024	July 30. 2025
22	RE cable 5	GTS	N/A	GTS679	July 31. 2024	July 30. 2025
23	RE cable 6	GTS	N/A	GTS680	July 31. 2024	July 30. 2025
24	RE cable 7	GTS	N/A	GTS681	July 31. 2024	July 30. 2025
25	RE cable 8	GTS	N/A	GTS682	July 31. 2024	July 30. 2025

RF Conducted Test:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	April 11, 2024	April 10, 2025
2	EMI Test Receiver	R&S	ESCI 7	GTS552	April 11, 2024	April 10, 2025
3	PSA Series Spectrum Analyzer	Agilent	E4440A	GTS536	April 11, 2024	April 10, 2025
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	April 11, 2024	April 10, 2025
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	April 11, 2024	April 10, 2025
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	April 11, 2024	April 10, 2025
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	April 11, 2024	April 10, 2025
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	April 11, 2024	April 10, 2025
9	Thermo meter	JINCHUANG	GSP-8A	GTS641	April 18, 2024	April 17, 2025

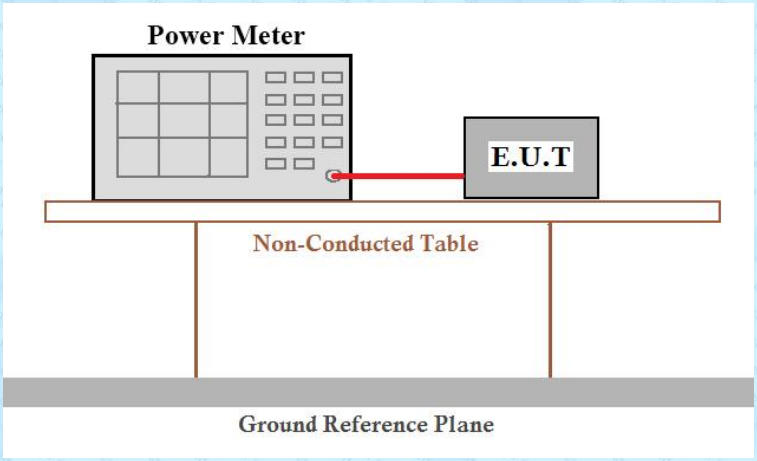
General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Barometer	KUMAO	SF132	GTS647	April 18, 2024	April 17, 2025

7 Test results and Measurement Data

7.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203 /247(c)
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. **15.247(c) (1)(i) requirement:** (i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.	
EUT Antenna:	
The antennas are PCB Antenna, the best case gain of the antennas are 2.04dBi, reference to the appendix II for details	

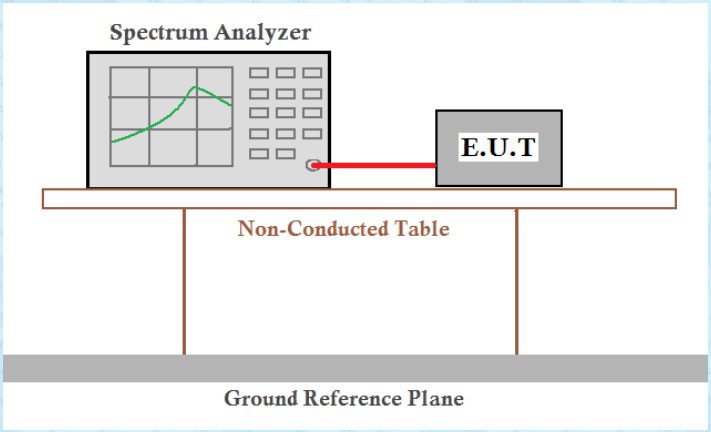
7.2 Conducted Output Power

Test Requirement :	FCC Part15 C Section 15.247 (b)(3)
Test Method :	ANSI C63.10:2013 11.9 1.3
Limit:	30dBm
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

Test CH	Output Power (dBm)			Limit(dBm)	Result
	802.11b	802.11g	802.11n(HT20)		
Lowest	15.79	13.66	12.85	30.00	Pass
Middle	14.91	12.80	11.88		
Highest	14.93	12.85	12.18		

7.3 Channel Bandwidth

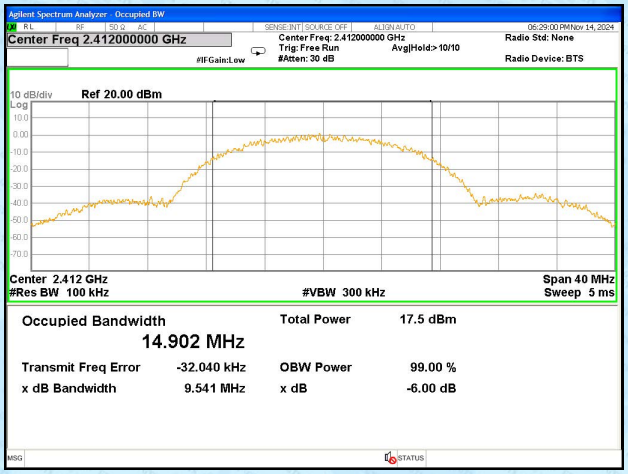
Test Requirement :	FCC Part15 C Section 15.247 (a)(2)
Test Method :	ANSI C63.10:2013 11.8
Limit:	>500KHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

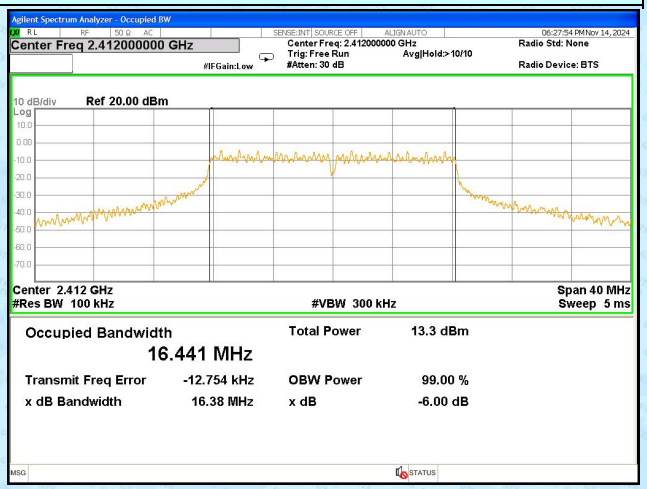
Measurement Data

Test CH	Channel Bandwidth (MHz)			Limit(KHz)	Result
	802.11b	802.11g	802.11n(HT20)		
Lowest	9.541	16.38	17.72	>500	Pass
Middle	9.536	16.38	17.73		
Highest	9.939	16.36	17.72		

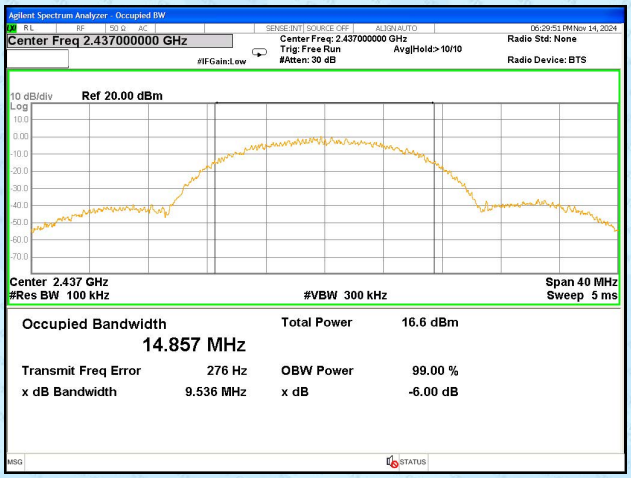
Test plot as follows:

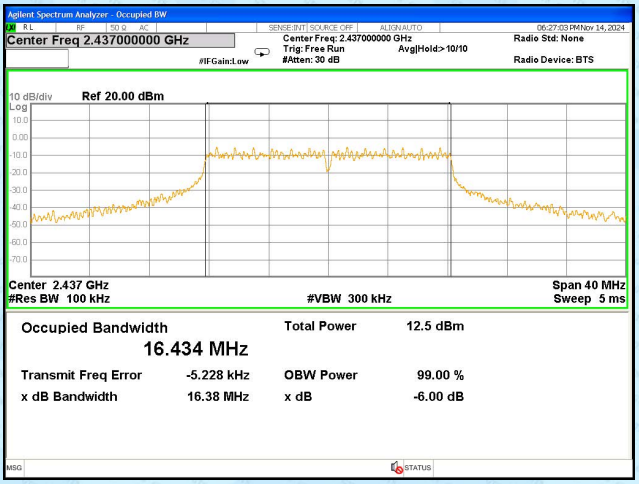
802.11b	802.11g



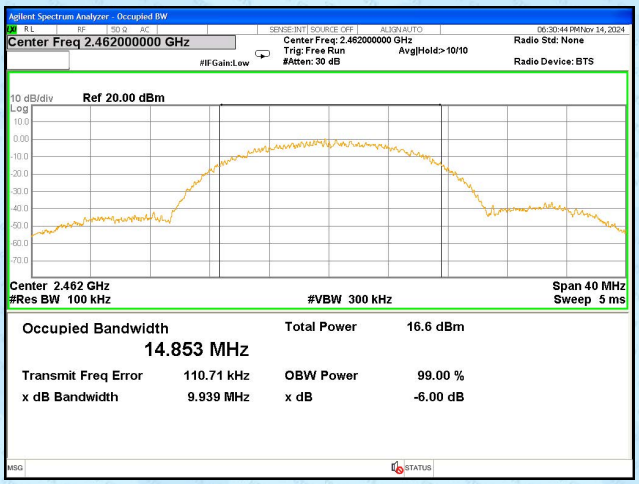


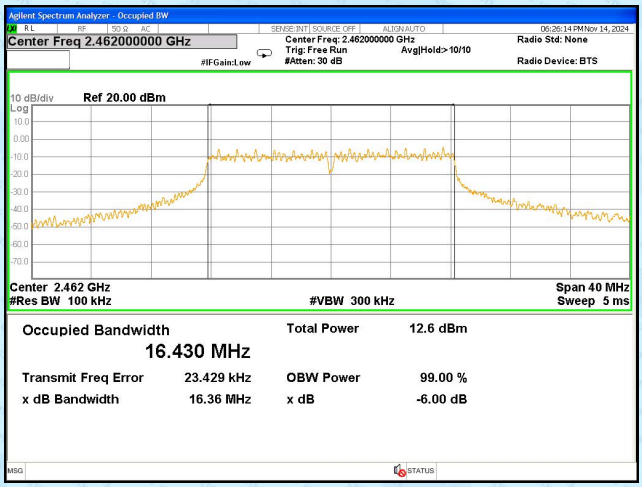
Lowest channel





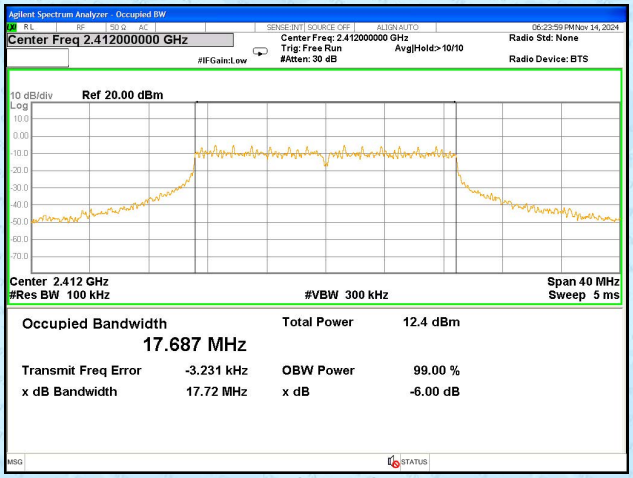
Middle channel



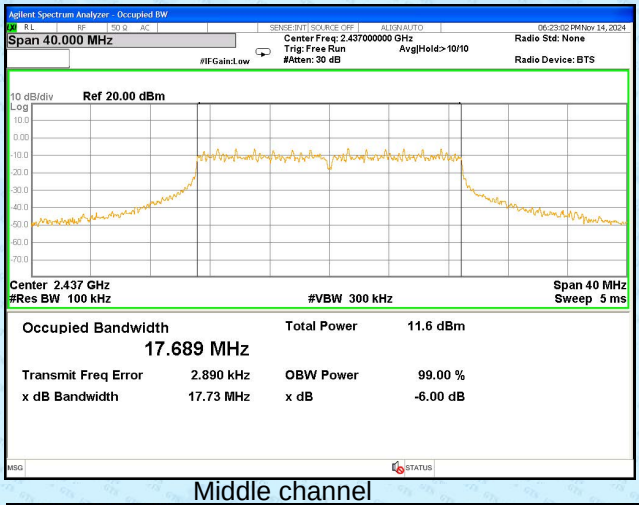


Highest channel

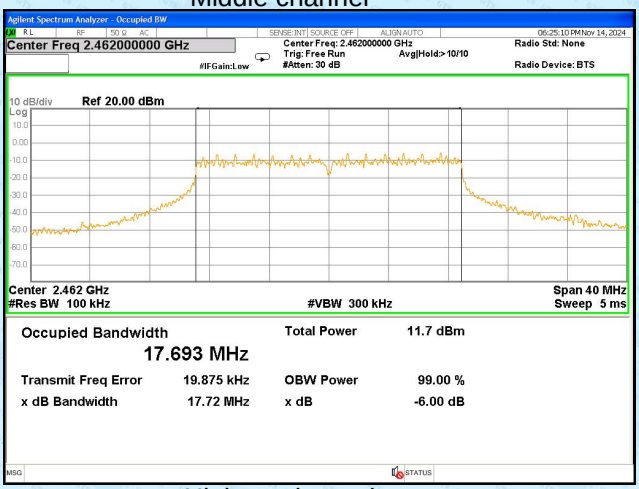
802.11n(HT20)



Lowest channel

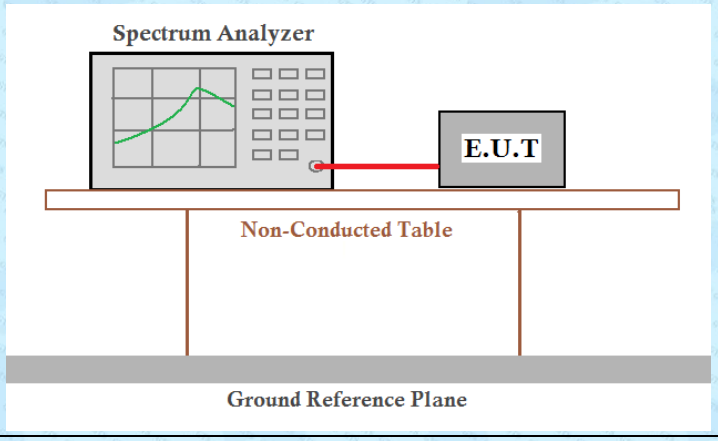


Middle channel



Highest channel

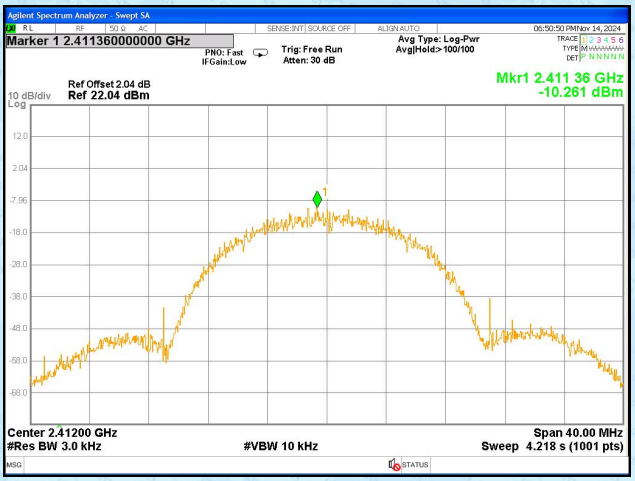
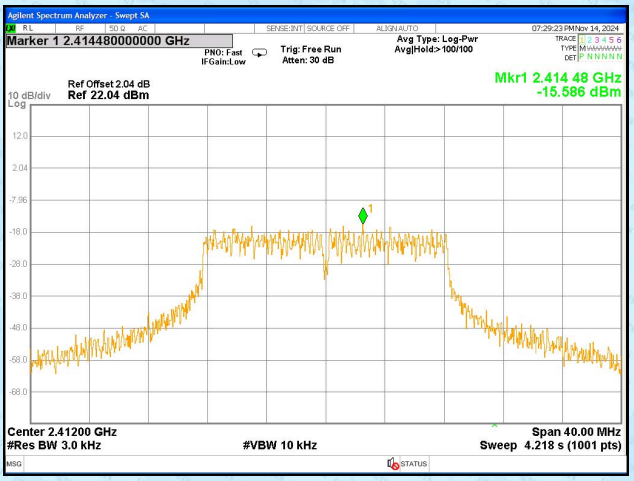
7.4 Power Spectral Density

Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	ANSI C63.10:2013 11.0
Limit:	8dBm/3kHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

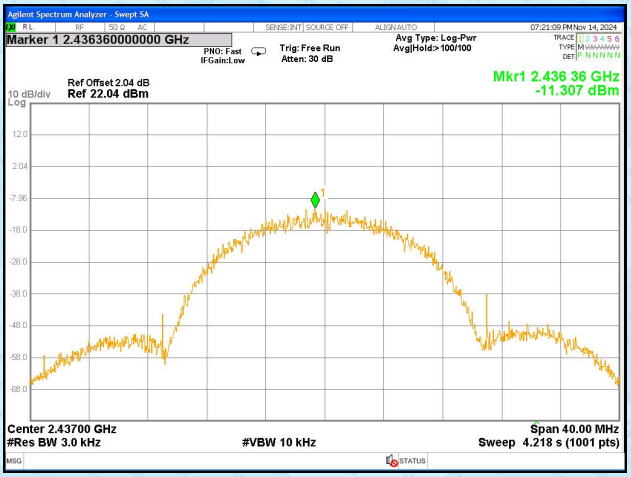
Measurement Data

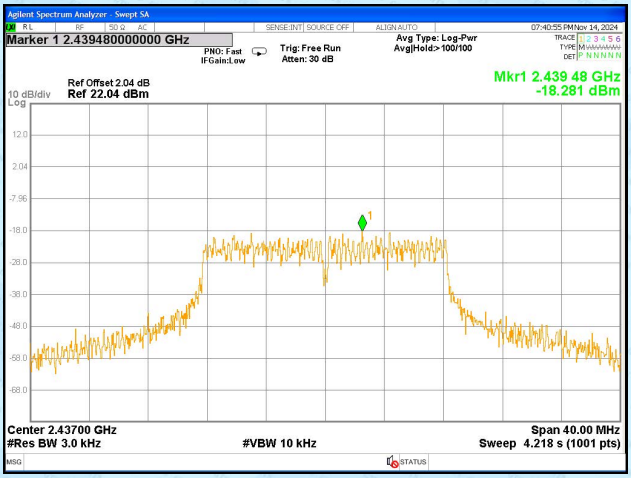
Test CH	Power Spectral Density (dBm/3kHz)			Limit (dBm/3kHz)	Result
	802.11b	802.11g	802.11n(HT20)		
Lowest	-10.261	-15.586	-18.538	8.00	Pass
Middle	-11.307	-18.281	-16.275		
Highest	-11.072	-18.733	-18.403		

Test plot as follows:

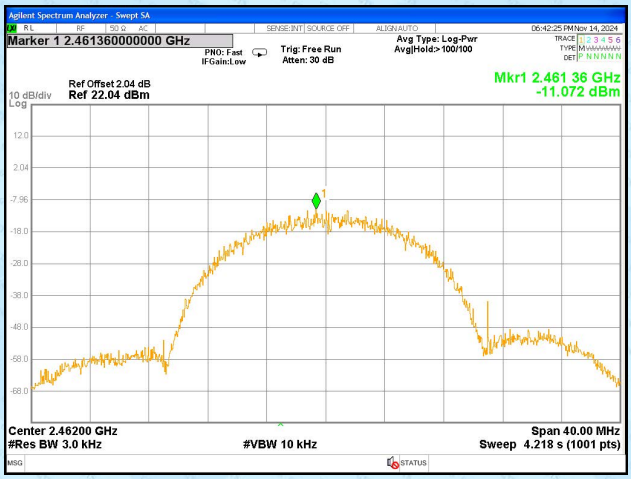
802.11b	802.11g
	

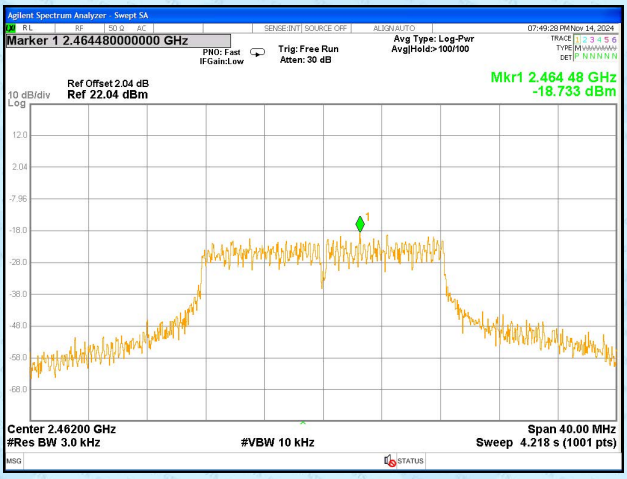
Lowest channel





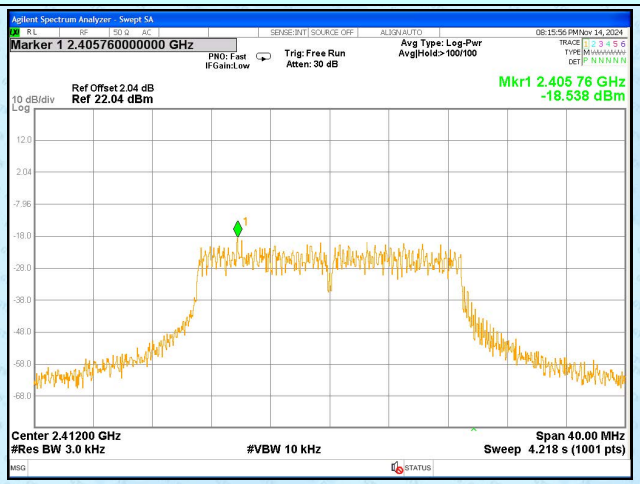
Middle channel



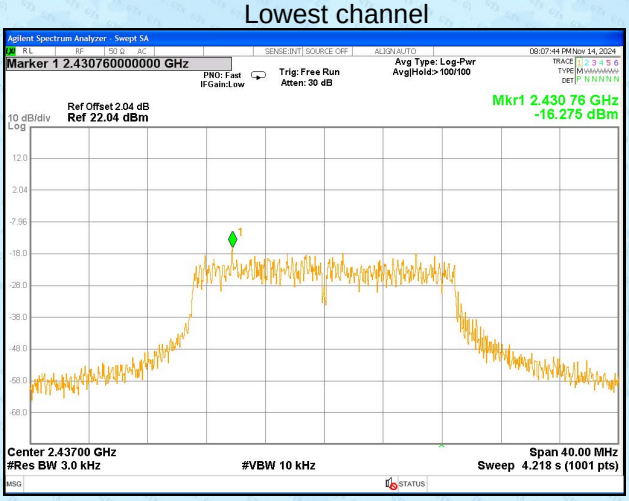


Highest channel

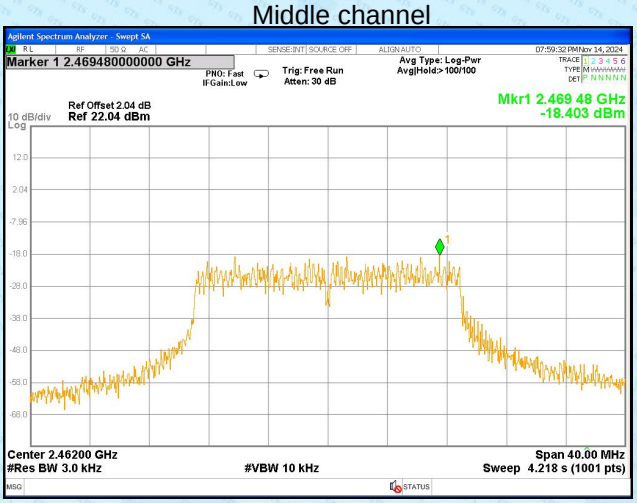
802.11n(HT20)



Lowest channel



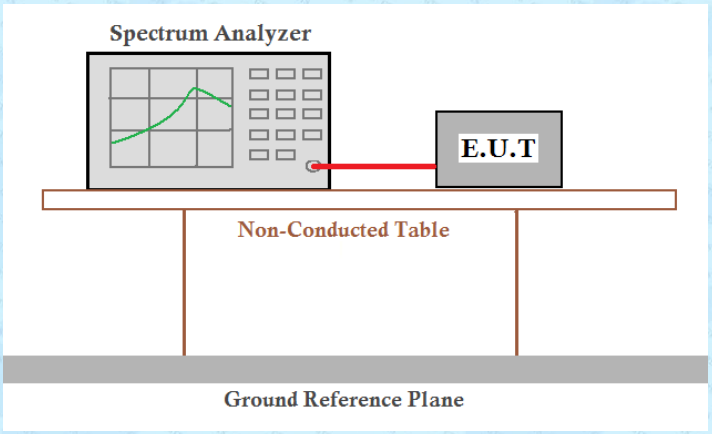
Middle channel



Highest channel

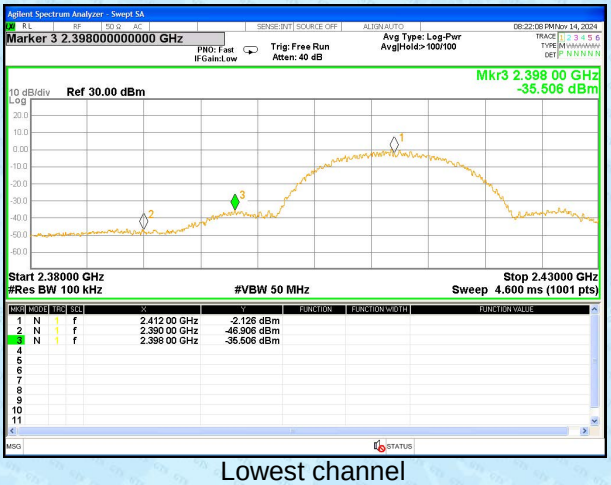
7.5 Band edges

7.5.1 Conducted Emission Method

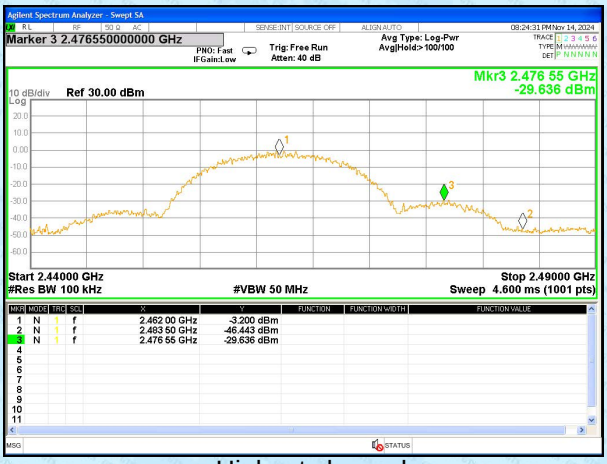
Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.10:2013 11.11
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 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.
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Test plot as follows:

Test mode:	802.11b

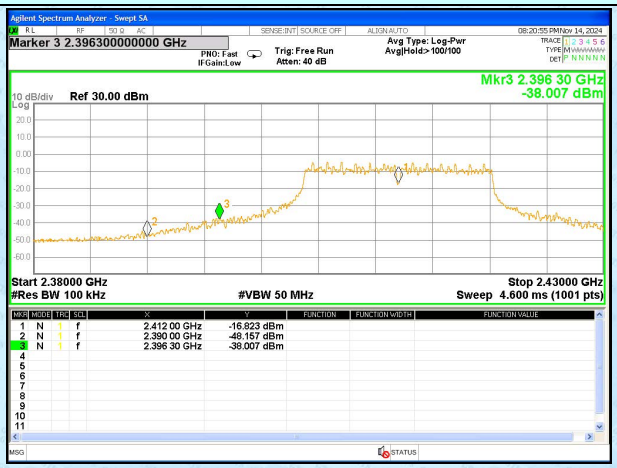


Lowest channel

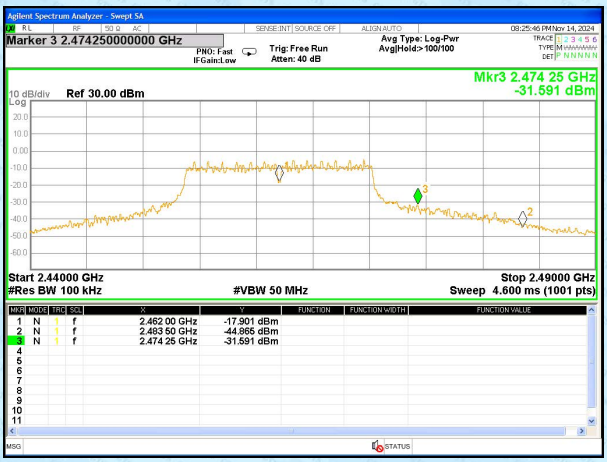


Highest channel

Test mode:	802.11g

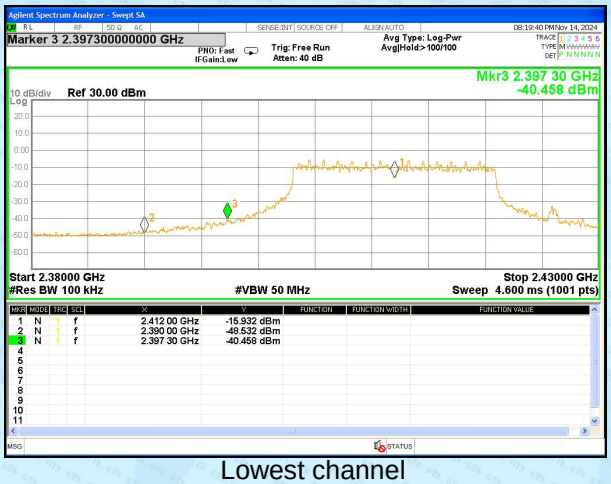


Lowest channel

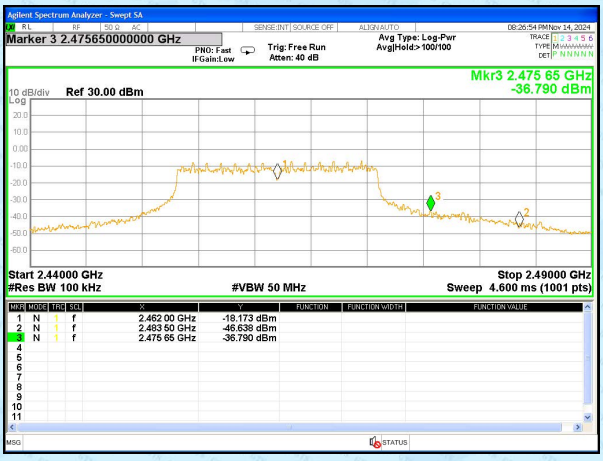


Highest channel

Test mode:	802.11n(HT20)



Lowest channel



Highest channel

7.5.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209 and 15.205
Test Method:	ANSI C63.10: 2013 6.10
Test Frequency Range:	All of the restrict bands were tested, only the worst band's (2310MHz to 2500MHz) data was showed.
Test site:	Measurement Distance: 3m

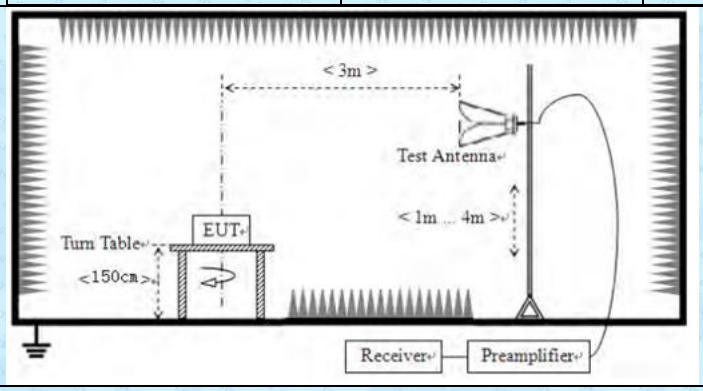
Receiver setup:

Frequency	Detector	RBW	VBW	Value
Above 1GHz	Peak	1MHz	3MHz	Peak
	Average	1MHz	3MHz	Average

Limit:

Frequency	Limit (dBuV/m @3m)	Value
Above 1GHz	54.00	Average
	74.00	Peak

Test setup:



Test Procedure:

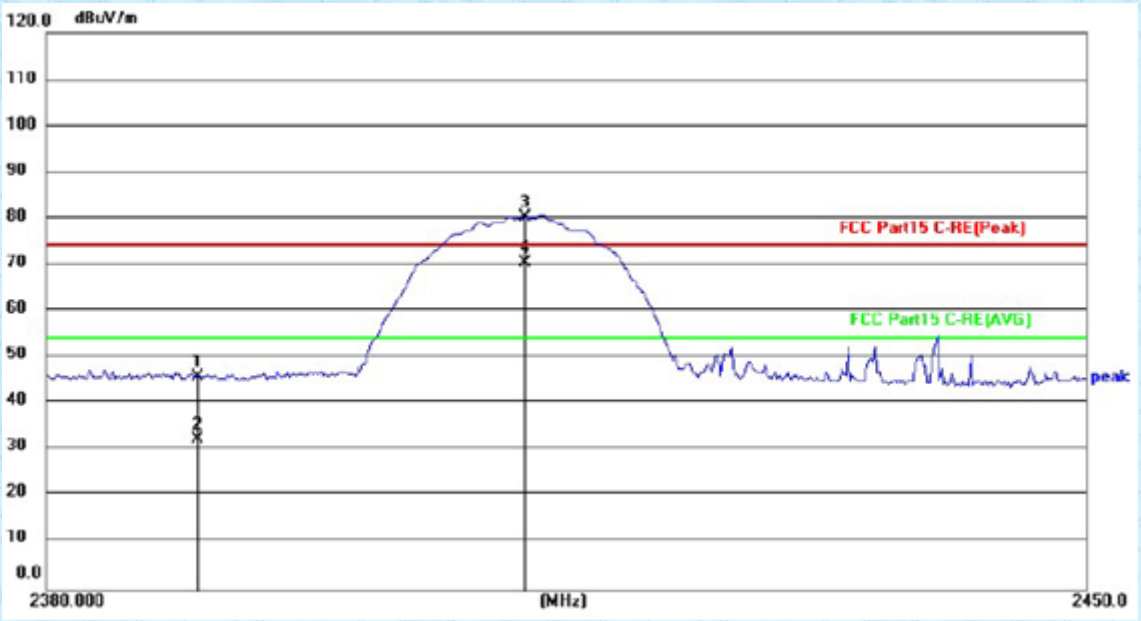
1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
7. The radiation measurements are performed in X, Y, Z axis positioning. And found the Y axis positioning which it is worse case, only the test worst case mode is recorded in the report.

Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement data:

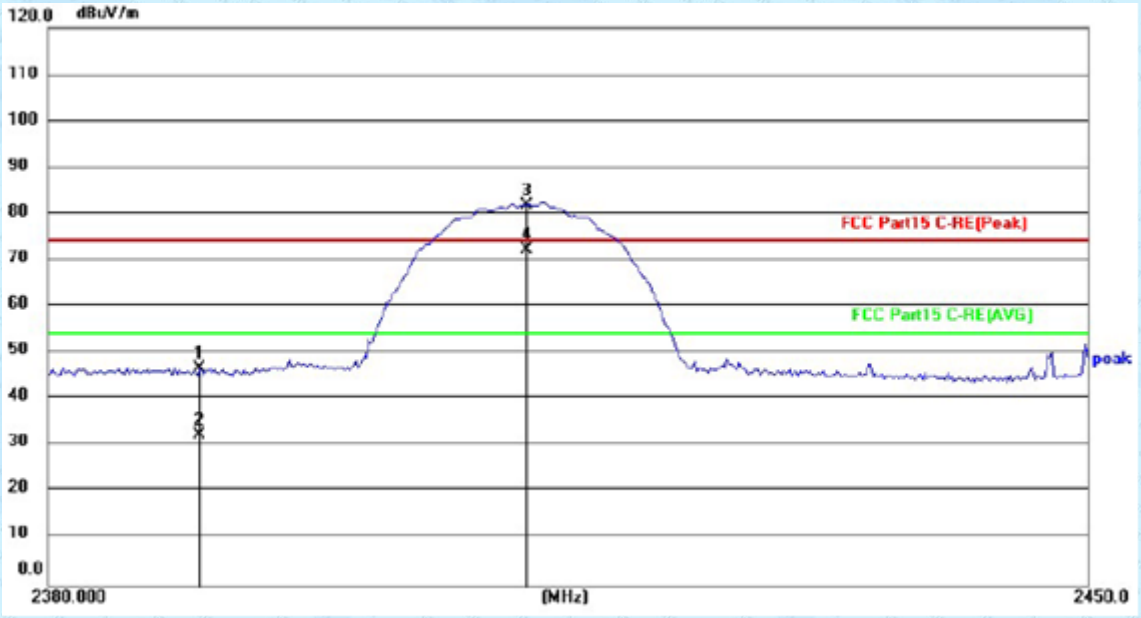
Test mode:	802.11b 2412MHz	Test channel:	Lowest

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	19.49	26.32	45.81	74.00	-28.19	peak
2	2390.000	5.94	26.32	32.26	54.00	-21.74	AVG
3	2412.000	53.81	26.36	80.17	74.00	6.17	peak
4	2412.000	43.93	26.36	70.29	54.00	16.29	AVG

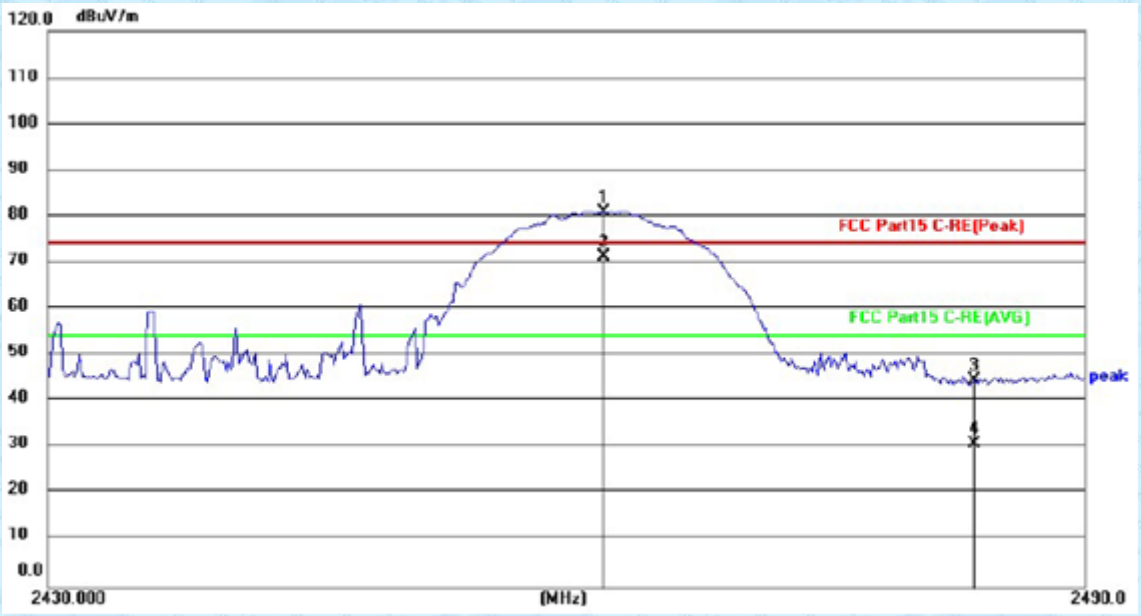
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	20.33	26.32	46.65	74.00	-27.35	peak
2	2390.000	6.01	26.32	32.33	54.00	-21.67	AVG
3	2412.000	55.44	26.36	81.80	74.00	7.80	peak
4	2412.000	45.86	26.36	72.22	54.00	18.22	AVG

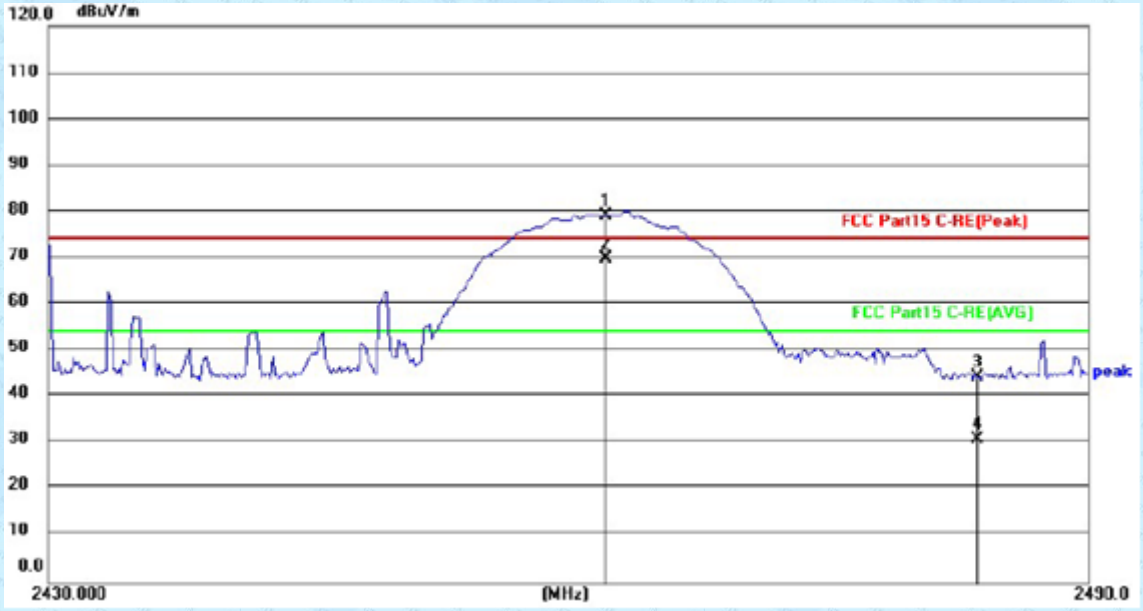
Test mode:	802.11b 2462MHz	Test channel:	Highest

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2462.000	54.43	26.44	80.87	74.00	6.87	peak
2	2462.000	44.86	26.44	71.30	54.00	17.30	AVG
3	2483.500	18.12	26.47	44.59	74.00	-29.41	peak
4	2483.500	4.27	26.47	30.74	54.00	-23.26	AVG

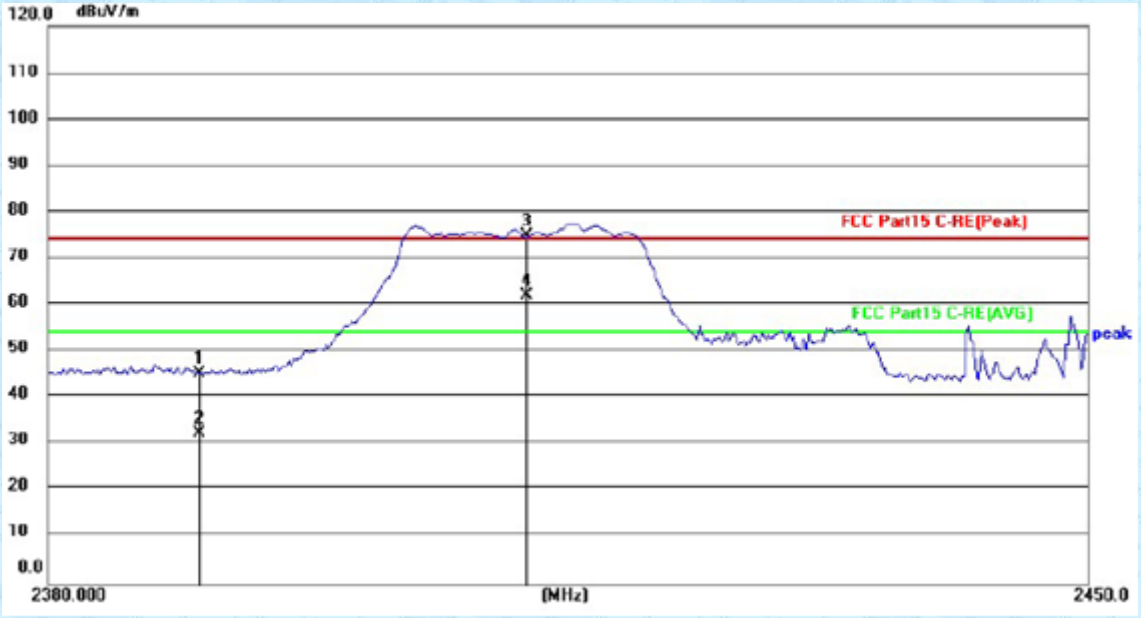
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)
1	2462.000	52.74	26.44	79.18	74.00	5.18	peak	
2	2462.000	43.27	26.44	69.71	54.00	15.71	AVG	
3	2483.500	17.66	26.47	44.13	74.00	-29.87	peak	
4	2483.500	4.23	26.47	30.70	54.00	-23.30	AVG	

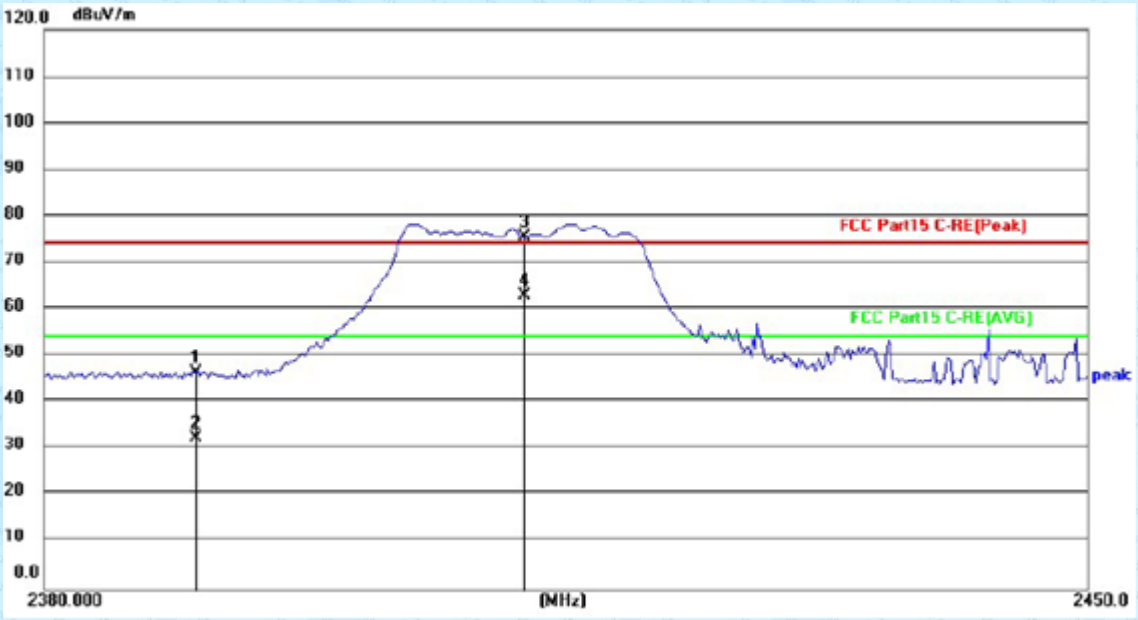
Test mode:	802.11g 2412MHz	Test channel:	Lowest

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	18.76	26.32	45.08	74.00	-28.92	peak
2	2390.000	5.90	26.32	32.22	54.00	-21.78	AVG
3	2412.000	48.36	26.36	74.72	74.00	0.72	peak
4	2412.000	35.56	26.36	61.92	54.00	7.92	AVG

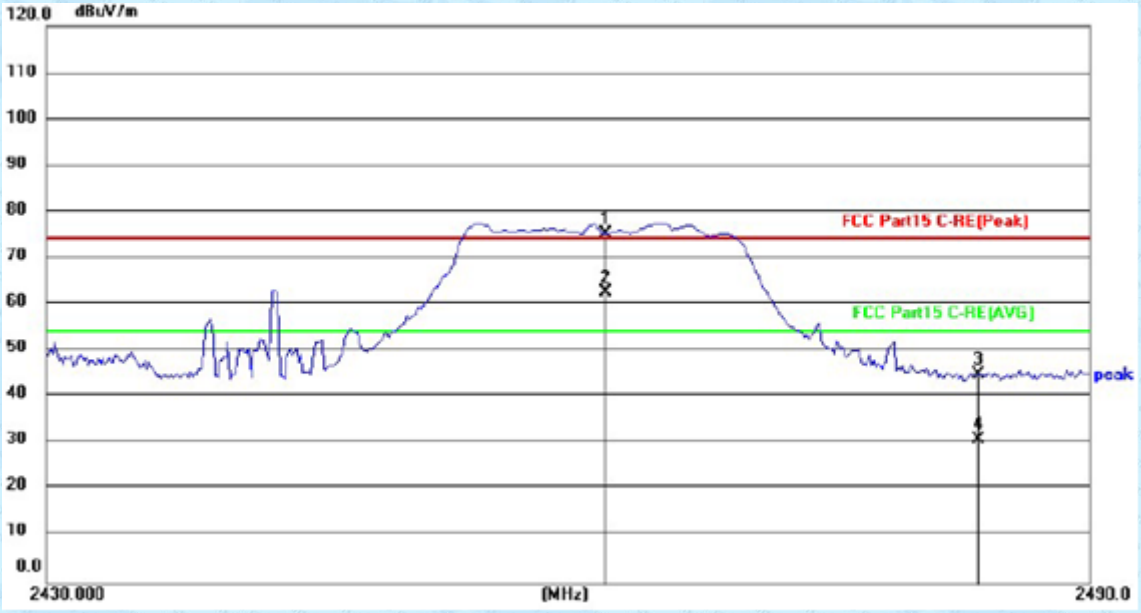
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	20.12	26.32	46.44	74.00	-27.56	peak
2	2390.000	6.01	26.32	32.33	54.00	-21.67	AVG
3	2412.000	49.13	26.36	75.49	74.00	1.49	peak
4	2412.000	36.57	26.36	62.93	54.00	8.93	AVG

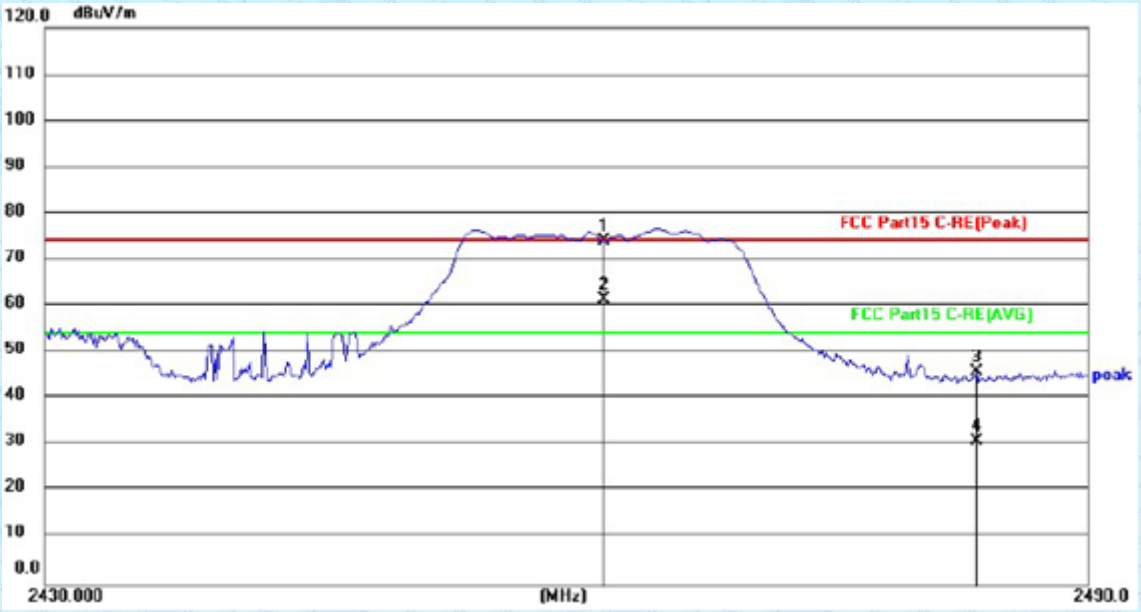
Test mode:	802.11g 2462MHz	Test channel:	Highest

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2462.000	48.65	26.44	75.09	74.00	1.09	peak
2	2462.000	36.05	26.44	62.49	54.00	8.49	AVG
3	2483.500	18.40	26.47	44.87	74.00	-29.13	peak
4	2483.500	4.34	26.47	30.81	54.00	-23.19	AVG

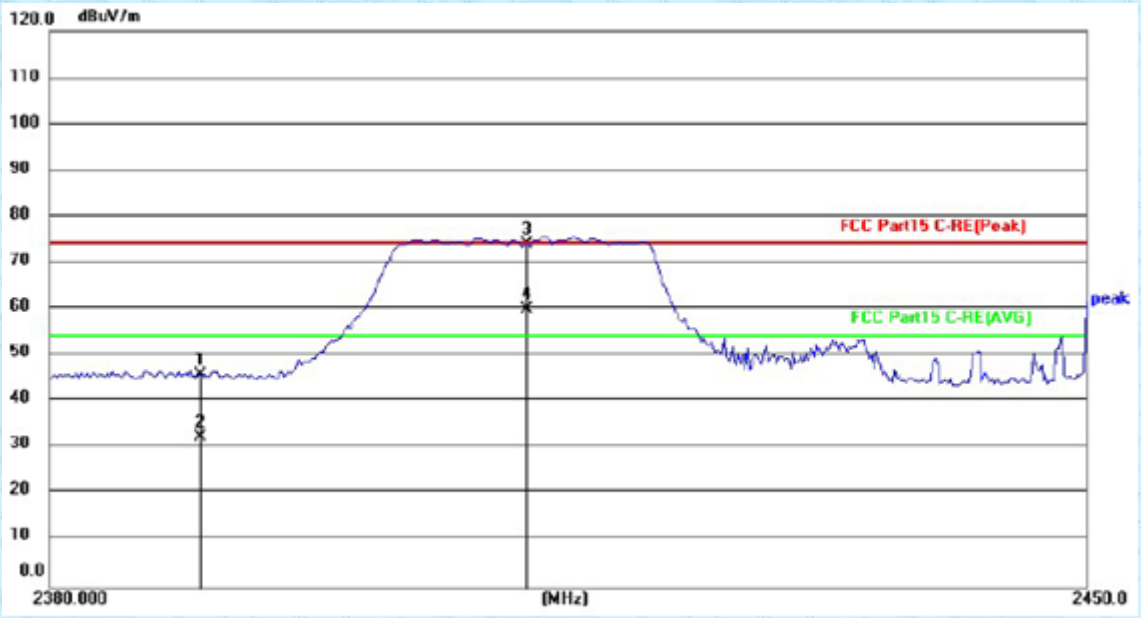
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2462.000	47.60	26.44	74.04	74.00	0.04	peak
2	2462.000	34.99	26.44	61.43	54.00	7.43	AVG
3	2483.500	19.41	26.47	45.88	74.00	-28.12	peak
4	2483.500	4.25	26.47	30.72	54.00	-23.28	AVG

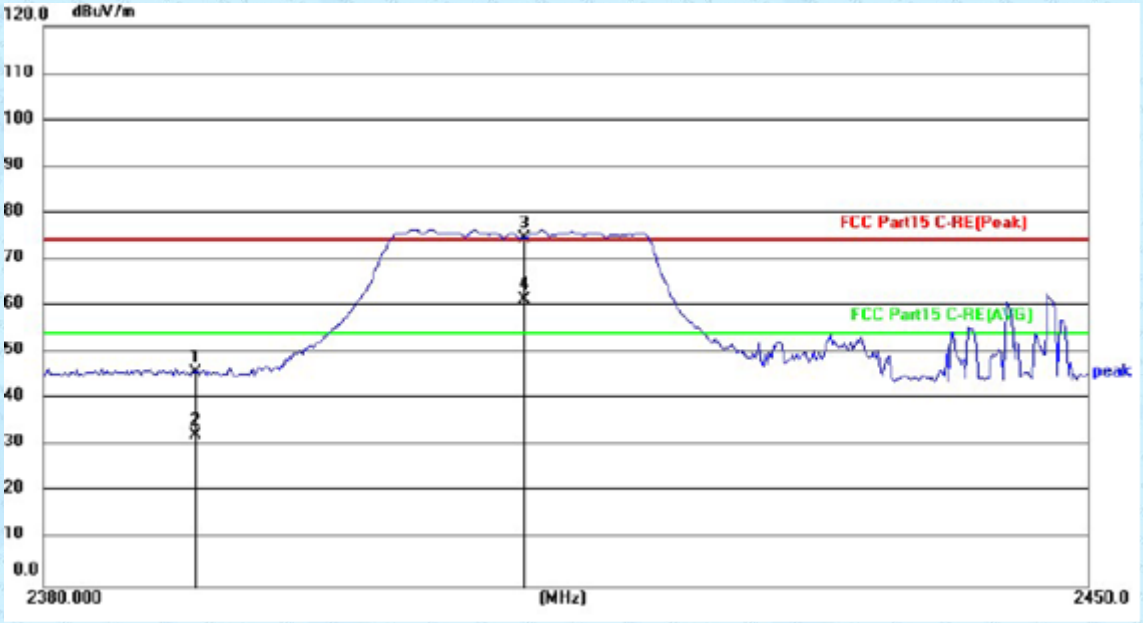
Test mode:	802.11n(HT20) 2412MHz	Test channel:	Lowest

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	19.37	26.32	45.69	74.00	-28.31	peak
2	2390.000	5.88	26.32	32.20	54.00	-21.80	AVG
3	2412.000	47.57	26.36	73.93	74.00	-0.07	peak
4	2412.000	33.58	26.36	59.94	54.00	5.94	AVG

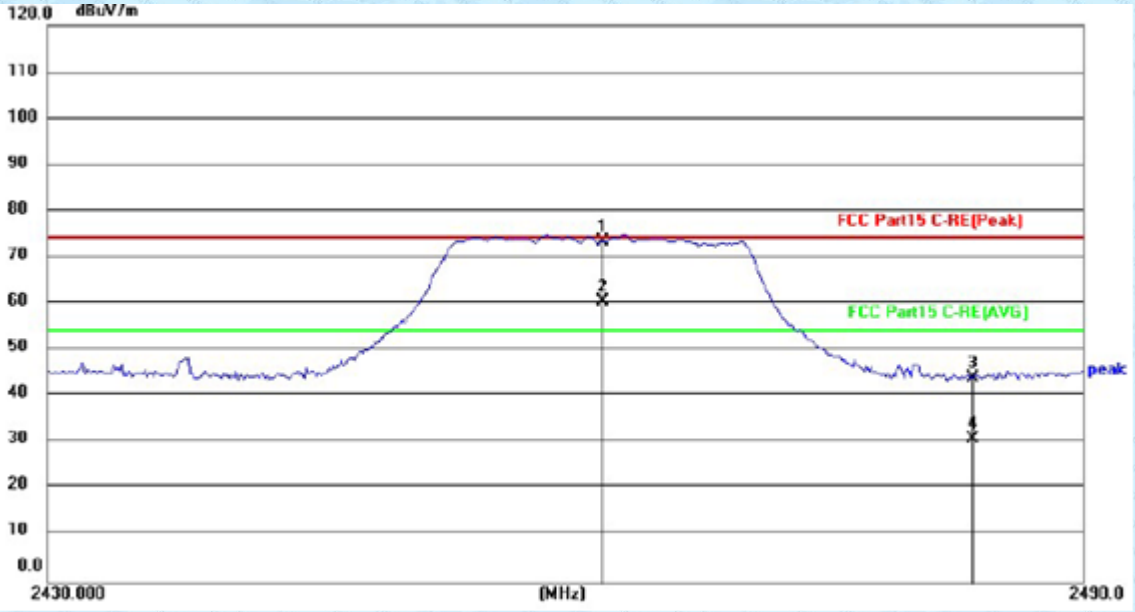
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	19.36	26.32	45.68	74.00	-28.32	peak
2	2390.000	5.97	26.32	32.29	54.00	-21.71	AVG
3	2412.000	48.21	26.36	74.57	74.00	0.57	peak
4	2412.000	35.14	26.36	61.50	54.00	7.50	AVG

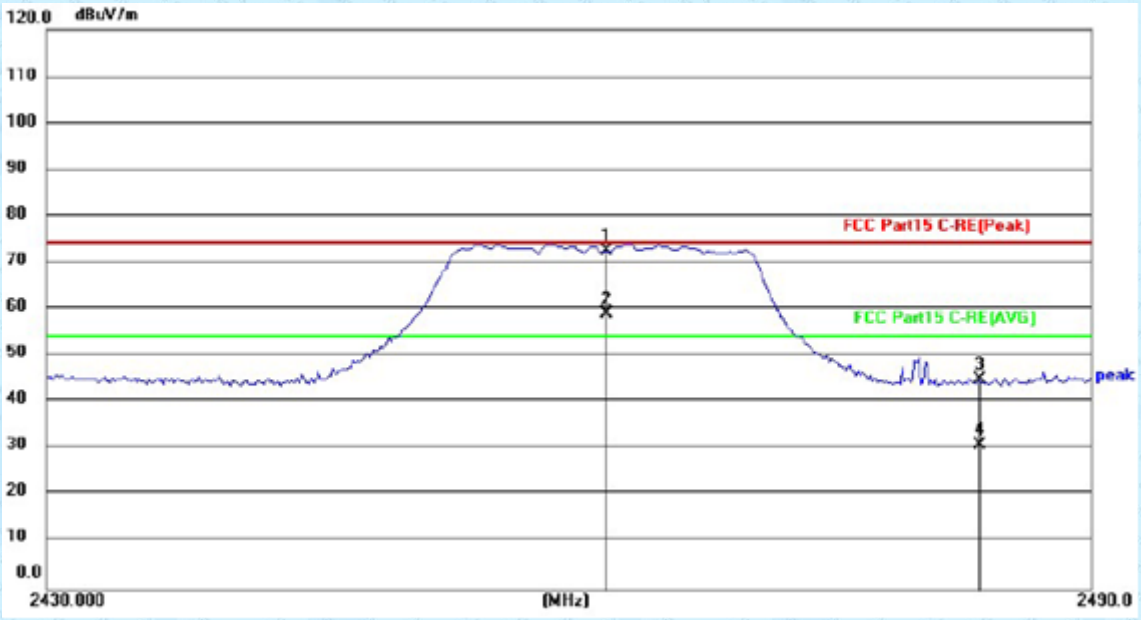
Test mode:	802.11n(HT20 2462MHz	Test channel:	Highest

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2462.000	46.91	26.44	73.35	74.00	-0.65	peak
2	2462.000	33.92	26.44	60.36	54.00	6.36	AVG
3	2483.500	17.61	26.47	44.08	74.00	-29.92	peak
4	2483.500	4.24	26.47	30.71	54.00	-23.29	AVG

Vertical



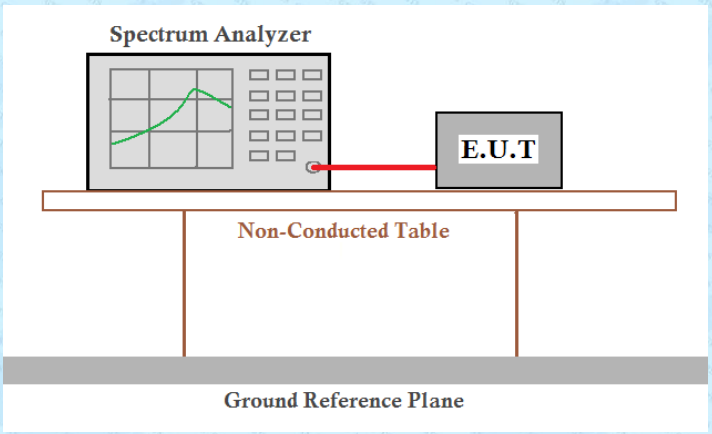
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2462.000	45.99	26.44	72.43	74.00	-1.57	peak
2	2462.000	32.41	26.44	58.85	54.00	4.85	AVG
3	2483.500	18.48	26.47	44.95	74.00	-29.05	peak
4	2483.500	4.18	26.47	30.65	54.00	-23.35	AVG

Remarks:

1. *Only the worst case Main Antenna test data.*
2. *The pre-test were performed on lowest, middle and highest frequencies, only the worst case's (lowest and highest frequencies) data was showed.*
3. *Final Level =Receiver Read level + Antenna Factor*
4. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

7.6 Spurious Emission

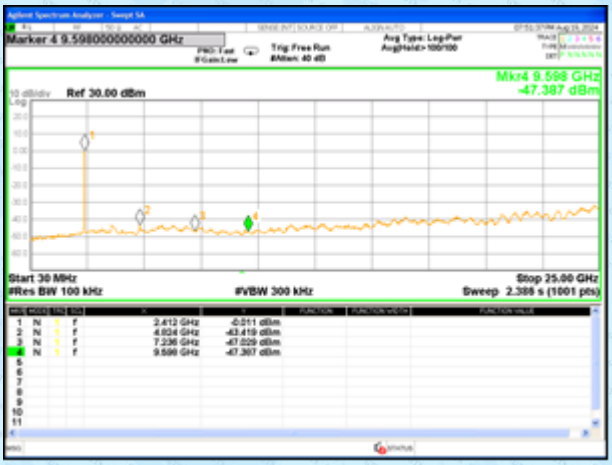
7.6.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.10:2013 11.11
Limit:	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 20 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.
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Test plot as follows:

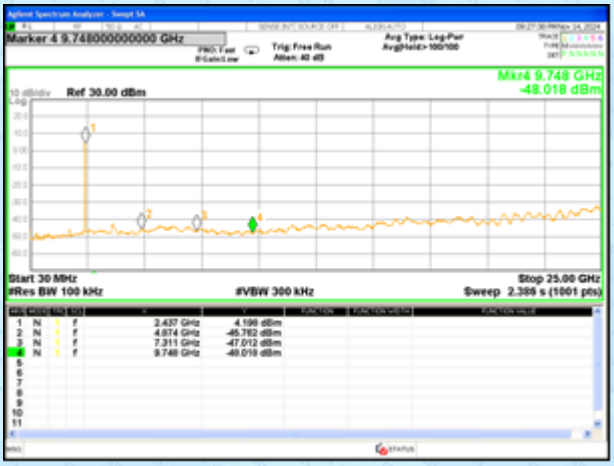
802.11b	802.11g

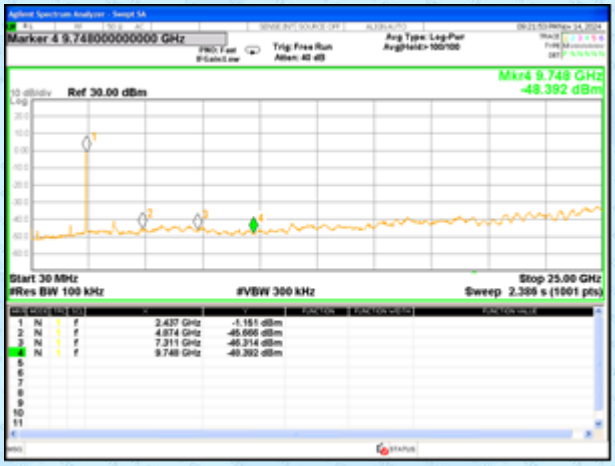
Lowest channel



30MHz~25GHz

Middle channel





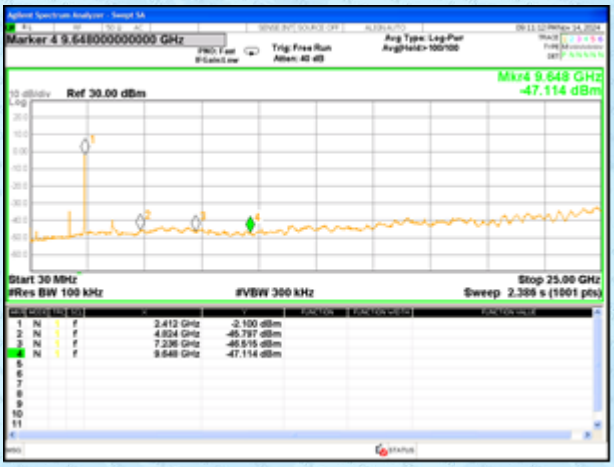
30MHz~25GHz

Highest channel

30MHz~25GHz

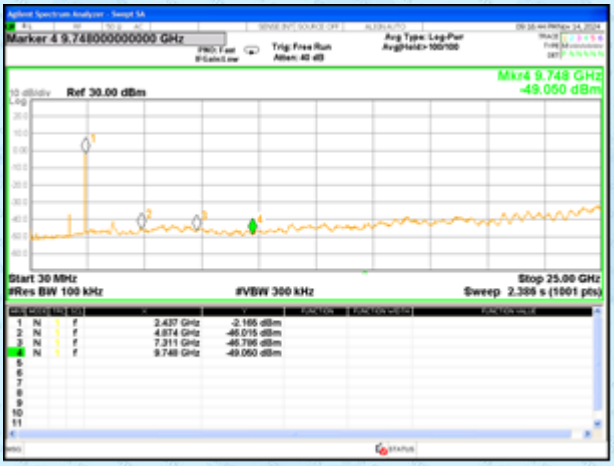
802.11n(HT20)__

Lowest channel



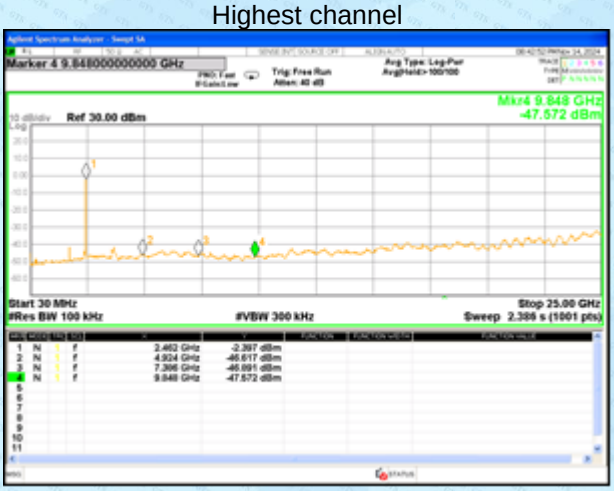
30MHz~25GHz

Middle channel



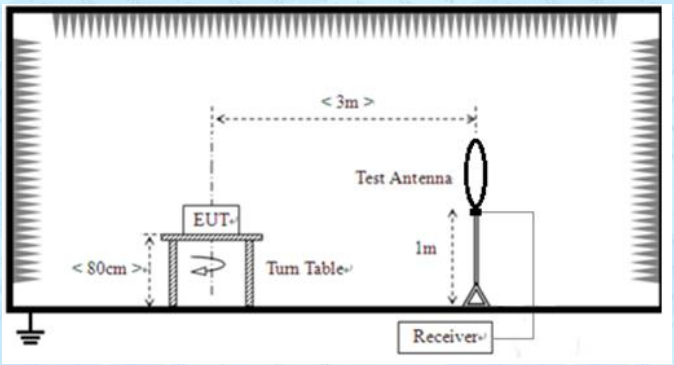
30MHz~25GHz

Highest channel

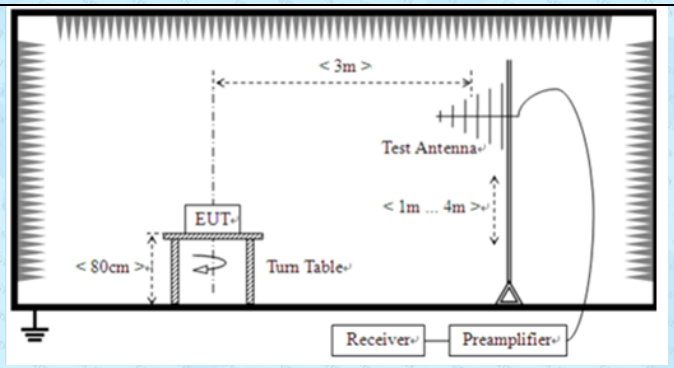


30MHz~25GHz

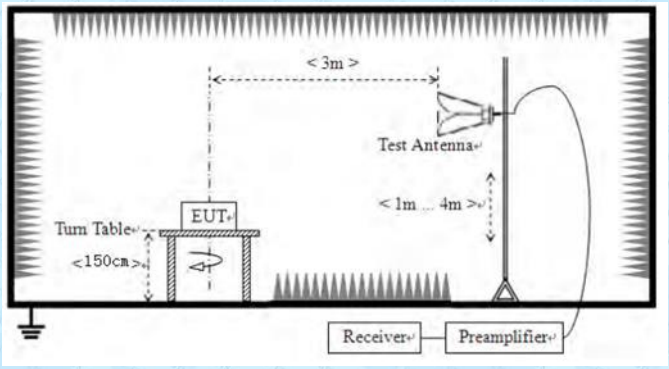
7.6.2 Radiated Emission Method

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013 6.6.4</td></tr>
<tr><td>Test Frequency Range:</td><td>9kHz to 25GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Value</th></tr>
<tr><td>9KHz-150KHz</td><td>Quasi-peak</td><td>200Hz</td><td>600Hz</td><td>Quasi-peak</td></tr>
<tr><td>150KHz-30MHz</td><td>Quasi-peak</td><td>9KHz</td><td>30KHz</td><td>Quasi-peak</td></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120KHz</td><td>300KHz</td><td>Quasi-peak</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak</td></tr>
<tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average</td></tr>
<tr><td colspan="5">Note: For Duty cycle ⩾ 98%, average detector set as above For Duty cycle < 98%, average detector set as below: VBW ⩾ 1 / T</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th>Frequency</th><th>Limit (uV/m)</th><th>Value</th><th>Measurement Distance</th></tr>
<tr><td>0.009MHz-0.490MHz</td><td>2400/F(KHz)</td><td>PK/QP/AV</td><td>300m</td></tr>
<tr><td>0.490MHz-1.705MHz</td><td>24000/F(KHz)</td><td>QP</td><td>30m</td></tr>
<tr><td>1.705MHz-30MHz</td><td>30</td><td>QP</td><td>30m</td></tr>
<tr><td>30MHz-88MHz</td><td>100</td><td>QP</td><td rowspan="6">3m</td></tr>
<tr><td>88MHz-216MHz</td><td>150</td><td>QP</td></tr>
<tr><td>216MHz-960MHz</td><td>200</td><td>QP</td></tr>
<tr><td>960MHz-1GHz</td><td>500</td><td>QP</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>500</td><td>Average</td></tr>
<tr><td>5000</td><td>Peak</td></tr>
</table>
</td></tr>
<tr><td>Test setup:</td><td>For radiated emissions from 9kHz to 30MHz
 

For radiated emissions from 30MHz to1GHz</td></tr>
</table>



For radiated emissions above 1GHz



Test Procedure:	1. The EUT was placed on the top of a rotating table (0.8m for below 1G and 1.5m for above 1G) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test environment:	Temp.: 24.4°C Humid.: 51% Press.: 1010mbar
Test voltage:	DC power modules DC5V1A

Test results:	Pass

Remarks:

1. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.

Measurement data:

- **9kHz~30MHz**

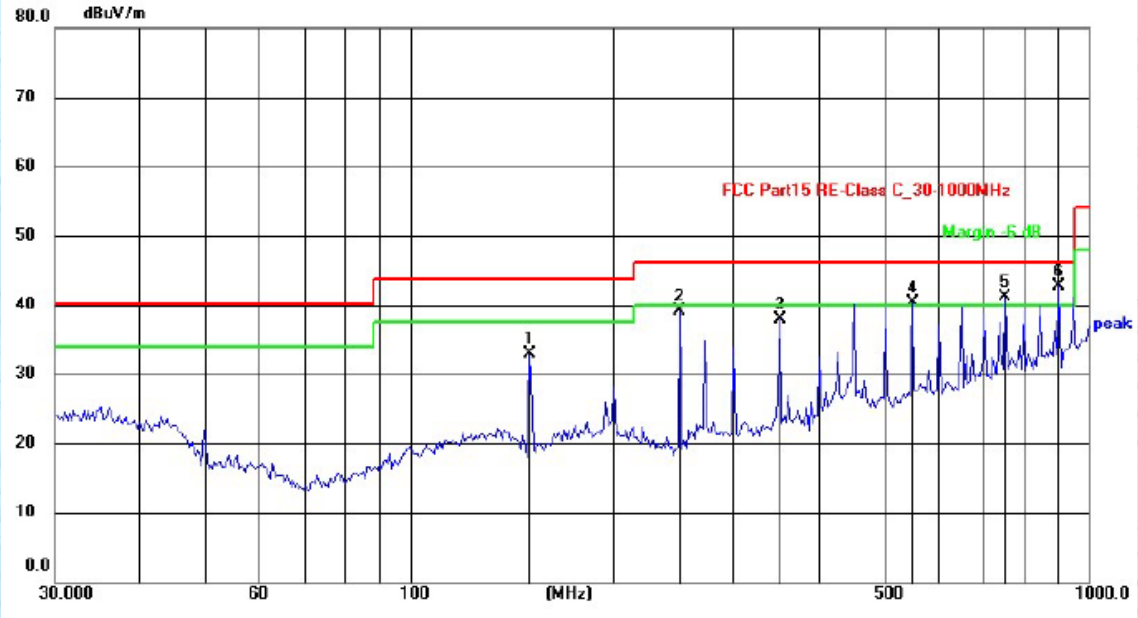
  The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o), the test result no need to reported.

- **Above 18GHz**

  The emission from Above 18GHz was pre-tested and found the result was 20dB lower than the limit, the test result no need to reported.

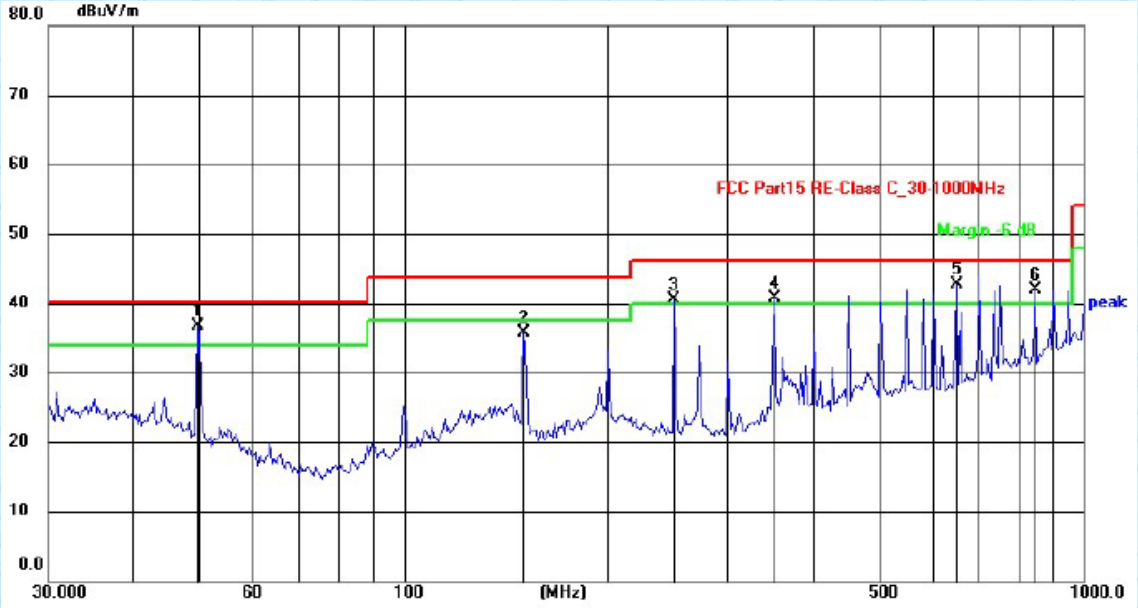
Below 1GHz

Ant. Pol.	Horizontal
Test Mode:	802.11b 2412MHz
Remark:	Only worse case is reported



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	149.9676	41.62	-8.77	32.85	43.50	-10.65	QP
2	250.4858	45.32	-6.21	39.11	46.00	-6.89	QP
3	350.9721	41.94	-4.02	37.92	46.00	-8.08	QP
4	550.2902	39.92	0.47	40.39	46.00	-5.61	QP
5	754.9627	38.77	2.31	41.08	46.00	-4.92	QP
6	906.3039	37.95	4.72	42.67	46.00	-3.33	QP

Ant. Pol.	Vertical
Test Mode:	802.11b 2412MHz
Remark:	Only worse case is reported

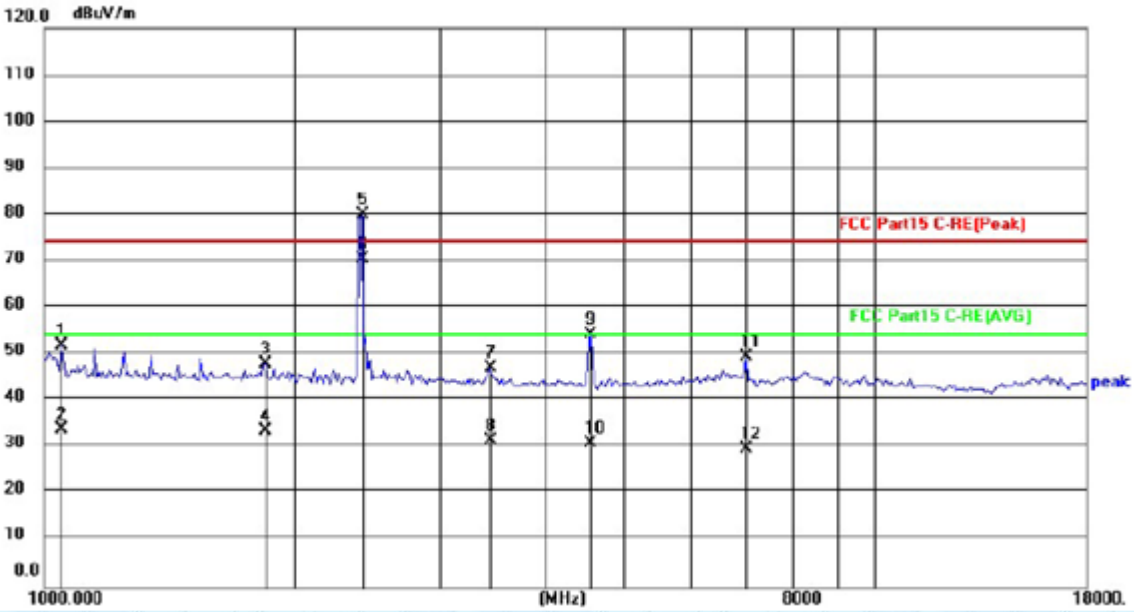


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	49.7571	45.61	-8.81	36.80	40.00	-3.20	QP
2	149.9676	44.48	-8.77	35.71	43.50	-7.79	QP
3	250.4858	45.71	-5.22	40.49	46.00	-5.51	QP
4	350.9721	44.59	-3.98	40.61	46.00	-5.39	QP
5	651.3830	42.17	0.44	42.61	46.00	-3.39	QP
6	850.7602	38.55	3.45	42.00	46.00	-4.00	QP

Above 1GHz

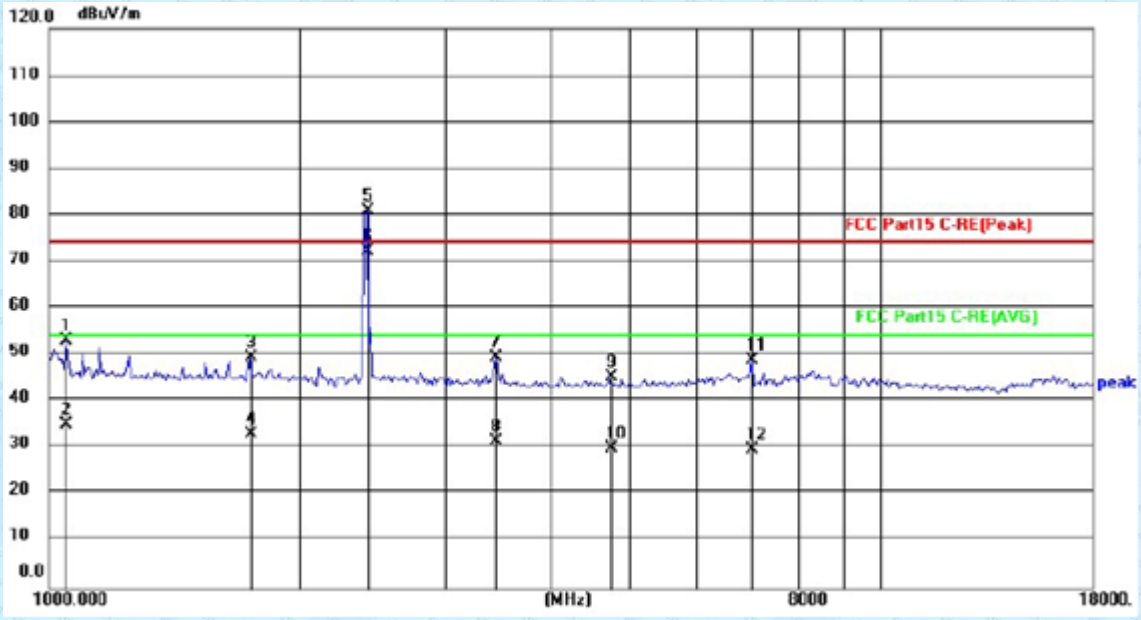
Test mode:	802.11b 2412MHz	Test channel:	Lowest

Horizontal:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1047.429	28.13	23.64	51.77	74.00	-22.23	peak
2	1047.429	10.10	23.64	33.74	54.00	-20.26	AVG
3	1847.783	22.49	25.24	47.73	74.00	-26.27	peak
4	1847.783	8.34	25.24	33.58	54.00	-20.42	AVG
5	2412.000	53.54	26.36	79.90	74.00	5.90	peak
6	2412.000	44.04	26.36	70.40	54.00	16.40	AVG
7	3434.138	18.78	28.18	46.96	74.00	-27.04	peak
8	3434.138	3.28	28.18	31.46	54.00	-22.54	AVG
9	4561.219	24.63	29.53	54.16	74.00	-19.84	peak
10	4561.219	1.26	29.53	30.79	54.00	-23.21	AVG
11	7002.185	13.54	35.80	49.34	74.00	-24.66	peak
12	7002.185	-6.25	35.80	29.55	54.00	-24.45	AVG

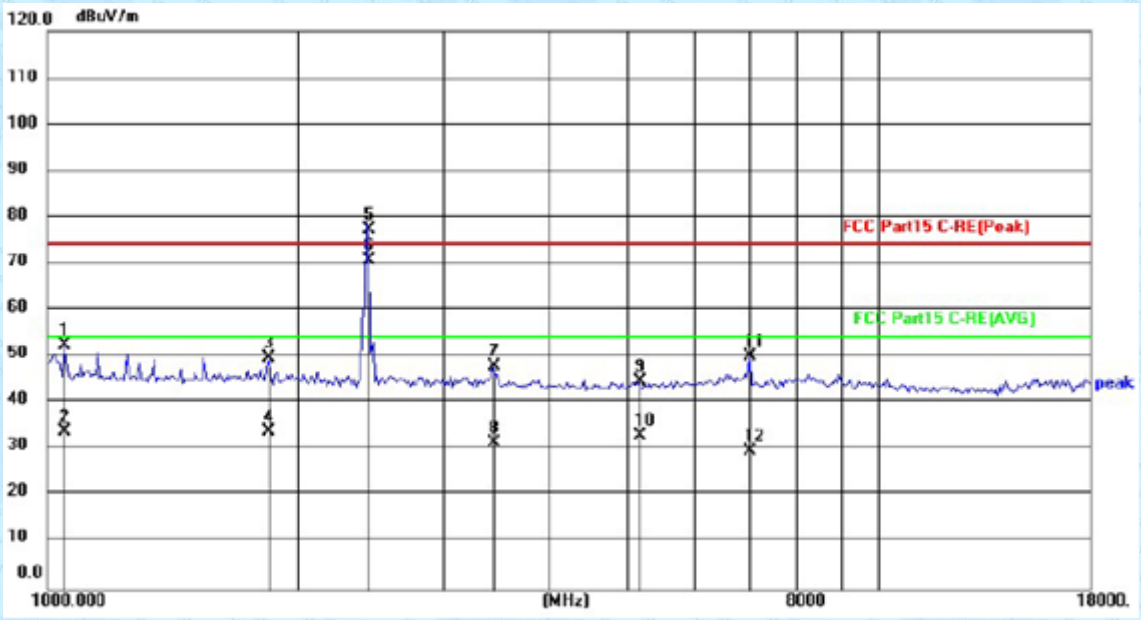
Vertical:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1047.429	29.30	23.64	52.94	74.00	-21.06	peak
2	1047.429	11.35	23.64	34.99	54.00	-19.01	AVG
3	1743.795	24.54	24.93	49.47	74.00	-24.53	peak
4	1743.795	7.96	24.93	32.89	54.00	-21.11	AVG
5	2412.000	54.42	26.36	80.78	74.00	6.78	peak
6	2412.000	45.79	26.36	72.15	54.00	18.15	AVG
7	3454.087	21.20	28.22	49.42	74.00	-24.58	peak
8	3454.087	3.06	28.22	31.28	54.00	-22.72	AVG
9	4722.527	15.29	29.89	45.18	74.00	-28.82	peak
10	4722.527	0.05	29.89	29.94	54.00	-24.06	AVG
11	7002.185	12.88	35.80	48.68	74.00	-25.32	peak
12	7002.185	-6.22	35.80	29.58	54.00	-24.42	AVG

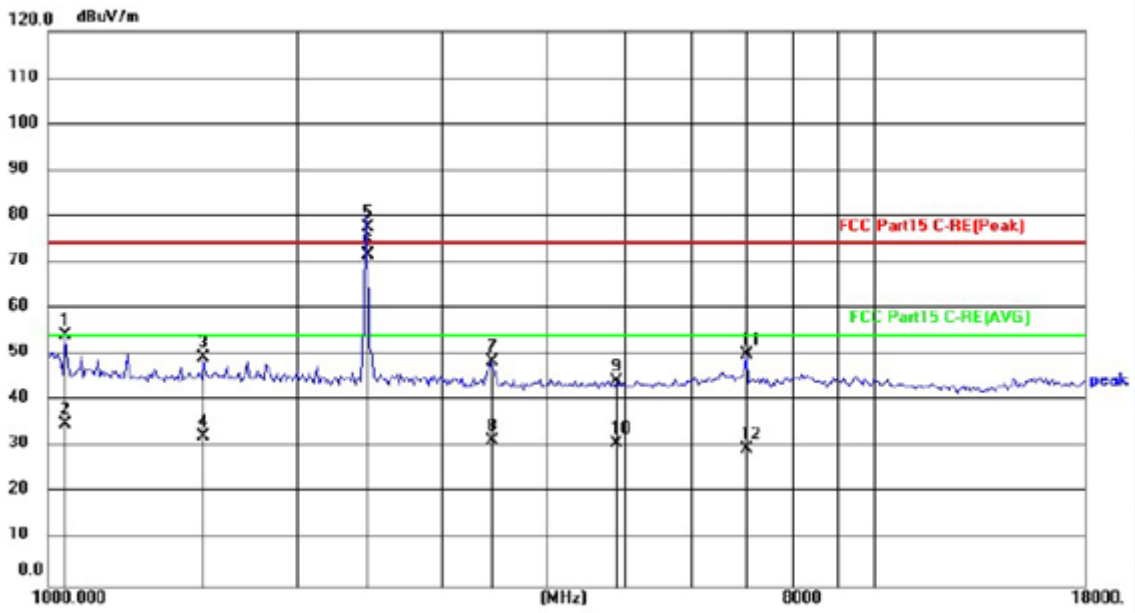
Test mode:	802.11b 2437MHz	Test channel:	Middle

Horizontal:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1047.429	28.81	23.64	52.45	74.00	-21.55	peak
2	1047.429	10.06	23.64	33.70	54.00	-20.30	AVG
3	1847.783	24.30	25.24	49.54	74.00	-24.46	peak
4	1847.783	8.39	25.24	33.63	54.00	-20.37	AVG
5	2437.000	50.73	26.40	77.13	74.00	3.13	peak
6	2437.000	44.26	26.40	70.66	54.00	16.66	AVG
7	3434.138	19.59	28.18	47.77	74.00	-26.23	peak
8	3434.138	3.18	28.18	31.36	54.00	-22.64	AVG
9	5151.196	13.91	30.71	44.62	74.00	-29.38	peak
10	5151.196	2.28	30.71	32.99	54.00	-21.01	AVG
11	7002.185	14.09	35.80	49.89	74.00	-24.11	peak
12	7002.185	-6.30	35.80	29.50	54.00	-24.50	AVG

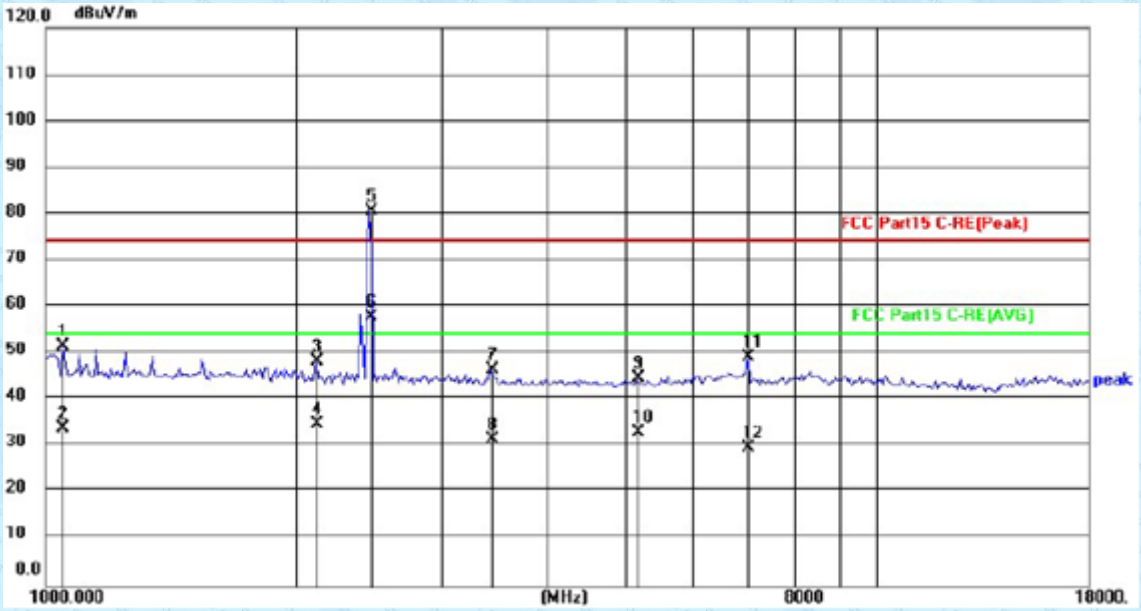
Vertical:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1047.429	30.39	23.64	54.03	74.00	-19.97	peak
2	1047.429	11.30	23.64	34.94	54.00	-19.06	AVG
3	1544.074	24.76	24.44	49.20	74.00	-24.80	peak
4	1544.074	7.69	24.44	32.13	54.00	-21.87	AVG
5	2437.000	51.05	26.40	77.45	74.00	3.45	peak
6	2437.000	45.05	26.40	71.45	54.00	17.45	AVG
7	3434.138	20.38	28.18	48.56	74.00	-25.44	peak
8	3434.138	3.13	28.18	31.31	54.00	-22.69	AVG
9	4889.538	14.12	30.26	44.38	74.00	-29.62	peak
10	4889.538	0.48	30.26	30.74	54.00	-23.26	AVG
11	7002.185	14.03	35.80	49.83	74.00	-24.17	peak
12	7002.185	-6.28	35.80	29.52	54.00	-24.48	AVG

Test mode:	802.11b 2462MHz	Test channel:	Highest

Horizontal:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1047.429	27.68	23.64	51.32	74.00	-22.68	peak
2	1047.429	10.12	23.64	33.76	54.00	-20.24	AVG
3	2123.366	22.40	25.90	48.30	74.00	-25.70	peak
4	2123.366	8.71	25.90	34.61	54.00	-19.39	AVG
5	2462.000	53.98	26.44	80.42	74.00	6.42	peak
6	2462.000	31.25	26.44	57.69	54.00	3.69	AVG
7	3434.138	18.14	28.18	46.32	74.00	-27.68	peak
8	3434.138	3.11	28.18	31.29	54.00	-22.71	AVG
9	5151.196	13.81	30.71	44.52	74.00	-29.48	peak
10	5151.196	2.28	30.71	32.99	54.00	-21.01	AVG
11	7002.185	13.28	35.80	49.08	74.00	-24.92	peak
12	7002.185	-6.32	35.80	29.48	54.00	-24.52	AVG