



CTC Laboratories, Inc.

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TEST REPORT

Report No.: **CTC20231665E05**

FCC ID.....: **2AR24-AIBOX500**

Applicant: **Shenzhen Absen Optoelectronic Co.,Ltd**

Address.....: 18-20/F, Tower A, Building 3, Phase I, Tian An Cloud Park, NO.2018, Xuegang Rd, Bantian, Longgang District, Shenzhen, Guangdong, P.R. China

Manufacturer.....: Shenzhen Absen Optoelectronic Co.,Ltd

Address.....: 18-20/F, Tower A, Building 3, Phase I, Tian An Cloud Park, NO.2018, Xuegang Rd, Bantian, Longgang District, Shenzhen, Guangdong, P.R. China

Product Name: **LED Multimedia Processor**

Trade Mark: **Abjen**

Model/Type reference.....: AiBox 500

Listed Model(s): /


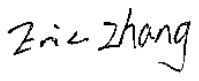

Standard: **FCC CFR Title 47 Part 15 Subpart C Section 15.247**

Date of receipt of test sample.....: Aug. 18, 2023

Date of testing.....: Aug. 19, 2023 ~ Dec. 11, 2023

Date of issue.....: Jul. 3, 2024

Result.....: **PASS**

Compiled by: (Printed name+signature)	Lucy Lan	
Supervised by: (Printed name+signature)	Eric Zhang	
Approved by: (Printed name+signature)	Totti Zhao	

Testing Laboratory Name: **CTC Laboratories, Inc.**

Address.....: Room 101 Building B, No. 7, Lanqing 1st Road, Luh Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China

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1. TEST SUMMARY

1.1. Test Standards

The tests were performed according to following standards:

[FCC Rules Part 15.247](#): Operation within the bands 902–928MHz, 2400–2483.5MHz, and 5725–5850MHz.

[ANSI C63.10-2013](#): American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

1.2. Report Version

Revised No.	Report No.	Date of issue	Description
01	CTC20231665E05	Jul. 3, 2024	Original

1.3. Test Description

FCC Part 15 Subpart C (15.247)			
Test Item	Standard Section	Result	Test Engineer
Antenna Requirement	15.203	Pass	Lucy Lan
Conducted Emission	15.207	Pass	Lucy Lan
Conducted Band Edge and Spurious Emissions	15.247(d)	Pass	Lucy Lan
Radiated Band Edge and Spurious Emissions	15.205&15.209&15.247(d)	Pass	Lucy Lan
6dB Bandwidth	15.247(a)(2)	Pass	Lucy Lan
Conducted Max Output Power	15.247(b)(3)	Pass	Lucy Lan
Power Spectral Density	15.247(e)	Pass	Lucy Lan
Transmitter Radiated Spurious	15.209&15.247(d)	Pass	Lucy Lan

Note:

- The measurement uncertainty is not included in the test result.
- N/A: means this test item is not applicable for this device according to the technology characteristic of device.



1.4. Test Facility

Address of the report laboratory

CTC Laboratories, Inc.

Add: Room 101 Building B, Room 107, 108, 207, 208, 303 Building A, No. 7, Lanqing 1st Road, Luhuhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China (formerly 2/F., Building 1 and 1-2/F., Building 2, Jiaquan Building, High-Tech Park, Guanlan Sub-District, Longhua New District, Shenzhen, Guangdong, China)

Laboratory accreditation

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

A2LA-Lab Cert. No.: 4340.01

CTC Laboratories, Inc. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

Industry Canada (Registration No.: 9783A, CAB Identifier: CN0029)

CTC Laboratories, Inc. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 9783A on Jan, 2016.

FCC (Registration No.: 951311, Designation Number CN1208)

CTC Laboratories, Inc. 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 our files. Registration 951311, Aug 26, 2017.



1.5. Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 2" and is documented in the CTC Laboratories, Inc. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Below is the best measurement capability for CTC Laboratories, Inc.

Test Items	Measurement Uncertainty	Notes
DTS Bandwidth	±0.0196%	(1)
Maximum Conducted Output Power	±0.686 dB	(1)
Maximum Power Spectral Density Level	±0.743 dB	(1)
Band-edge Compliance	±1.328 dB	(1)
Unwanted Emissions In Non-restricted Freq Bands	9kHz-1GHz: ±0.746dB 1GHz-26GHz: ±1.328dB	(1)
Conducted Emissions 9kHz~30MHz	±3.08 dB	(1)
Radiated Emissions 30~1000MHz	±4.51 dB	(1)
Radiated Emissions 1~18GHz	±5.84 dB	(1)
Radiated Emissions 18~40GHz	±6.12 dB	(1)

Note (1): This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

1.6. Environmental Conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15 °C to 35 °C
Relative Humidity:	20 % to 75 %
Air Pressure:	101 kPa




2. GENERAL INFORMATION

2.1. Client Information

Applicant:	Shenzhen Absen Optoelectronic Co.,Ltd
Address:	18-20/F, Tower A, Building 3, Phase I, Tian An Cloud Park, N0.2018, Xuegang Rd, Bantian, Longgang District, Shenzhen, Guangdong, P.R. China
Manufacturer:	Shenzhen Absen Optoelectronic Co.,Ltd
Address:	18-20/F, Tower A, Building 3, Phase I, Tian An Cloud Park, N0.2018, Xuegang Rd, Bantian, Longgang District, Shenzhen, Guangdong, P.R. China
Factory:	Huizhou Absen Optoelectronic Limited.
Address:	No. 03, Donghua South road, Dongjiang Hi-tech Industry Park, Huizhou. Guangdong, China

2.2. General Description of EUT

Product Name:	LED Multimedia Processor
Trade Mark:	
Model/Type reference:	AiBox 500
Listed Model(s):	/
Model Difference:	/
Power Supply:	AC 100-240V~2.5A 50/60Hz
RF Module Model:	BL-M8811CU2
Hardware Version:	/
Software Version:	/
2.4G Wi-Fi	
Modulation:	802.11b: DSSS (CCK, DQPSK, DBPSK) 802.11g/n: OFDM (BPSK, QPSK, 16QAM, 64QAM)
Operation Frequency:	802.11b/ g/ n(HT20): 2412MHz~2462MHz 802.11n(HT40): 2422MHz~2452MHz
Channel Number:	802.11b/ g/ n(HT20): 11 channels 802.11n(HT40): 7 channels
Channel Separation:	5MHz
Antenna Type:	External Antenna
Antenna Gain:	3.55dBi



2.3. Accessory Equipment Information

Equipment Information			
Name	Model	S/N	Manufacturer
Notebook	ThinkPad T460s	/	Lenovo
Cable Information			
Name	Shielded Type	Ferrite Core	Length
USB Cable	Unshielded	NO	150cm
Test Software Information			
Name	Version	/	/
adb.exe	/	/	/



2.4. Operation State

Operation Frequency List: The EUT has been tested under typical operating condition. The Applicant provides communication tools software to control the EUT for staying in continuous transmitting and receiving mode for testing.

Operation Frequency List:

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

Note: CH 01~CH 11 for 802.11b/g/n(HT20), CH 03~CH 09 for 802.11n(HT40)

Data Rated:

Preliminary tests were performed in different data rate, and found which the below bit rate is worst case mode, so only show data which it is a worst case mode.

Test Mode	Data Rate (worst mode)
802.11b	1Mbps
802.11g	6Mbps
802.11n(HT20)/n(HT40)	HT-MCS0

Test Mode:

For RF test items:
The engineering test program was provided and enabled to make EUT continuous transmit.
For AC power line conducted emissions:
The EUT was set to connect with the WLAN AP under large package sizes transmission.
For Radiated spurious emissions test item:
The engineering test program was provided and enabled to make EUT continuous transmit. The EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.



2.5. Measurement Instruments List

RF Test System					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until
1	MXA Signal Analyzer	Keysight	N9020A	MY46471737	Dec. 16, 2023
2	High and low temperature test chamber	ESPEC	MT3035	/	Mar. 24, 2024
3	Test Software	WCS	WCS-WCN	2023.08.04	/

Radiated Emission (3m chamber 3)					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until
1	Trilog-Broadband Antenna	Schwarzbeck	VULB 9163	01026	Dec. 18, 2024
2	Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-647	Dec. 01, 2024
3	Test Receiver	Keysight	N9038A	MY56400071	Dec. 16, 2023
4	Broadband Amplifier	SCHWARZBECK	BBV9743B	259	Dec. 16, 2023
5	Mirowave Broadband Amplifier	SCHWARZBECK	BBV9718C	111	Dec. 16, 2023
6	3m chamber 3	YIHENG	EE106	/	Aug. 28, 2026
7	Test Software	FARA	EZ-EMC	FA-03A2	/

Conducted Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until
1	LISN	R&S	ENV216	101112	Dec. 16, 2023
2	LISN	R&S	ENV216	101113	Dec. 16, 2023
3	EMI Test Receiver	R&S	ESCS30	100353	Dec. 16, 2023
4	ISN CAT6	Schwarzbeck	NTFM 8158	CAT6-8158-0046	Dec. 16, 2023
5	ISN CAT5	Schwarzbeck	NTFM 8158	CAT5-8158-0046	Dec. 16, 2023
6	Test Software	R&S	EMC32	6.10.10	/

Note: 1. The Cal. Interval was one year.

2. The Cal. Interval was three years of the antenna.

3. The cable loss has been calculated in test result which connection between each test instruments.

3. TEST ITEM AND RESULTS

3.1. Conducted Emission

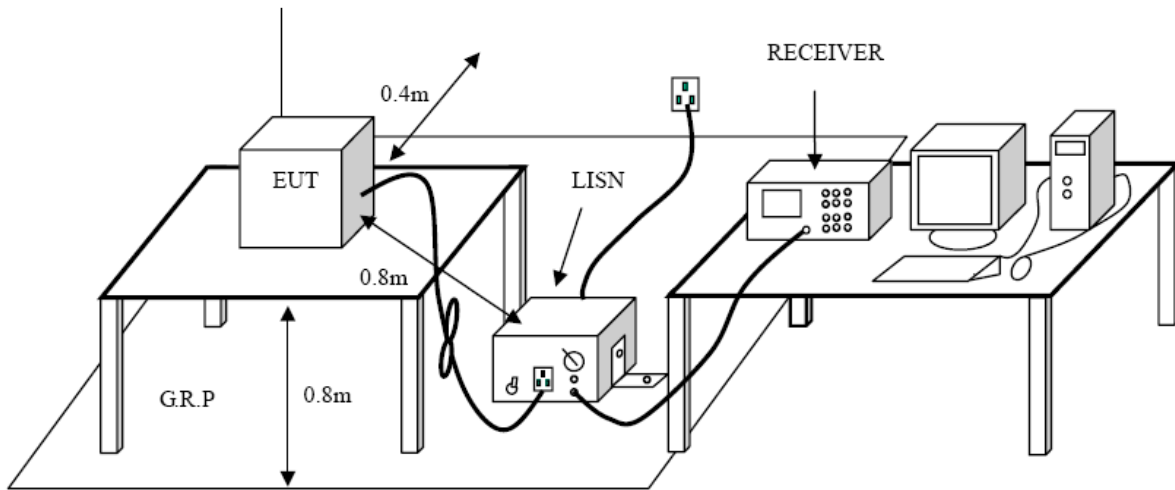
Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.207

Frequency (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46 *
0.5 - 5	56	46
5 - 30	60	50

* Decreases with the logarithm of the frequency.

Test Configuration



Test Procedure

1. The EUT was setup according to ANSI C63.10:2013 requirements.
2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface.
3. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm / 50 μH coupling impedance for the measuring equipment.
4. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)
5. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
6. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
7. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.
8. During the above scans, the emissions were maximized by cable manipulation.

Test Mode

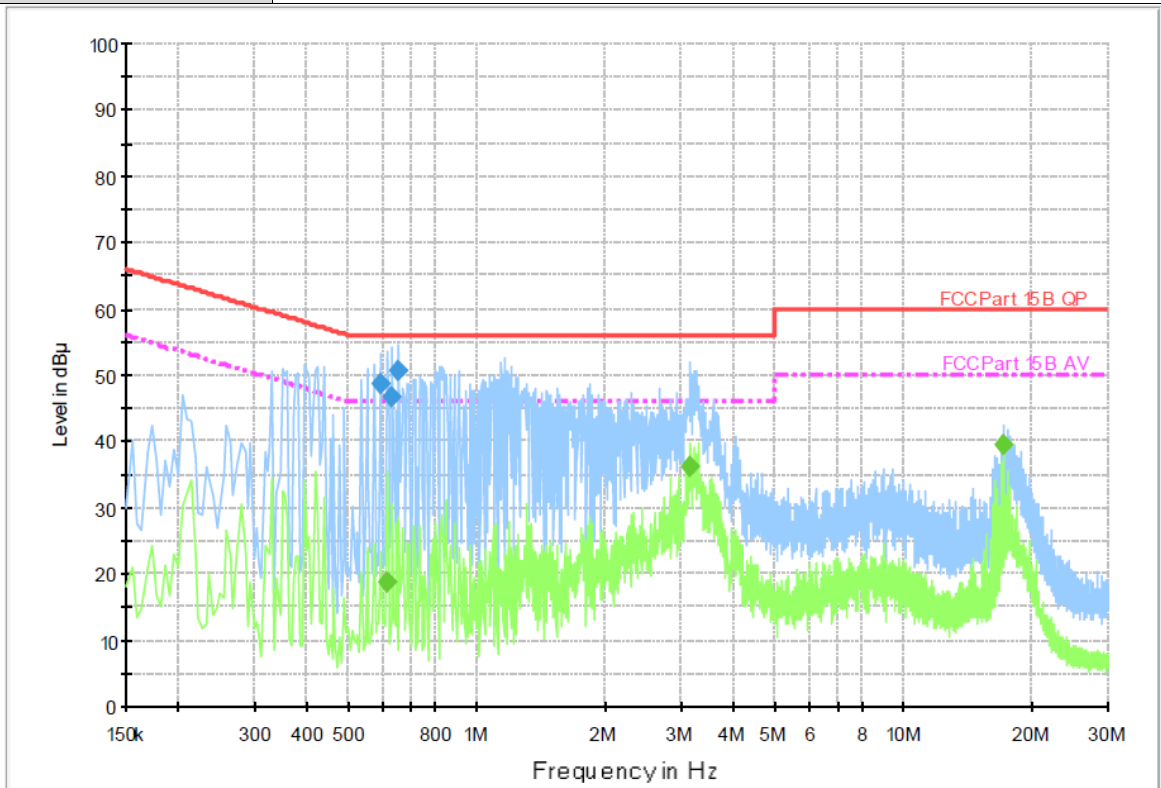
Please refer to the clause 2.4.





Test Result

Test Voltage:	AC 120V/60Hz
Terminal:	Line
Remark:	Only worse case is reported



Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dB μV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μV)	Comment
0.591000	48.7	1000.00	9.000	On	L1	9.5	7.3	56.0	
0.631500	46.8	1000.00	9.000	On	L1	9.5	9.2	56.0	
0.654000	50.7	1000.00	9.000	On	L1	9.5	5.3	56.0	

Final Measurement Detector 2

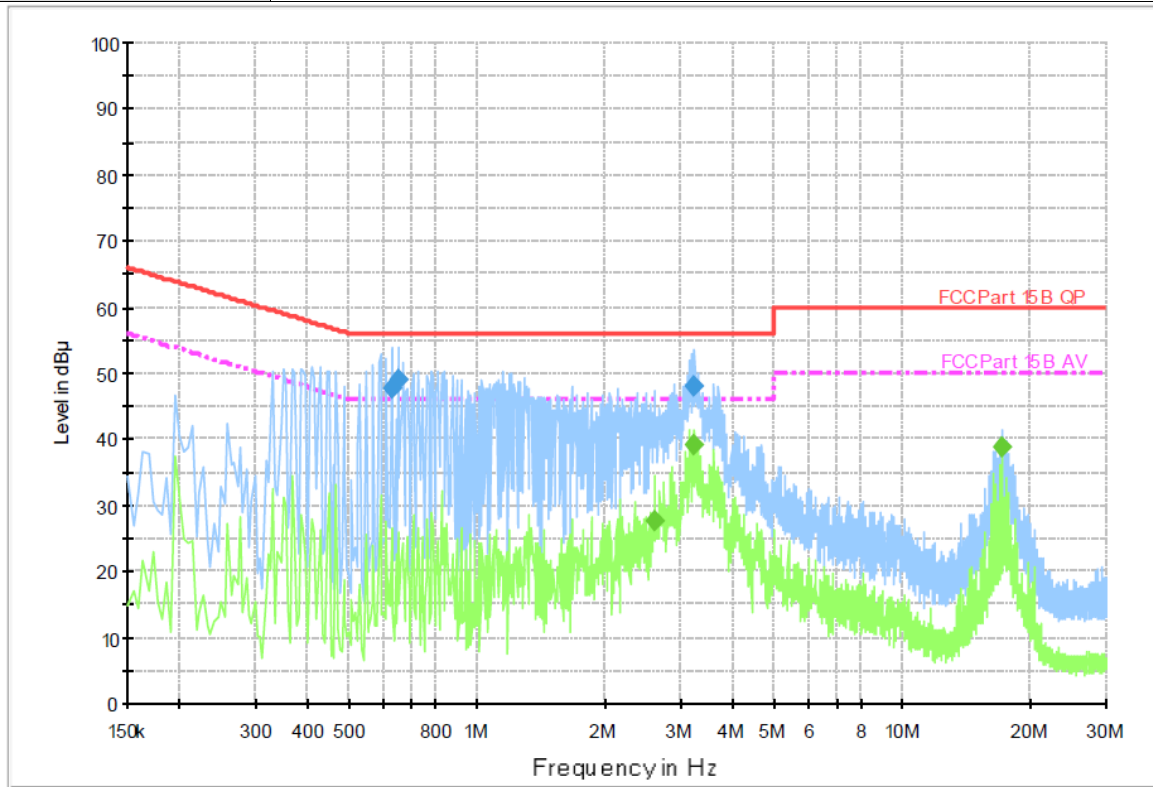
Frequency (MHz)	Average (dB μV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μV)	Comment
0.613500	18.6	1000.00	9.000	On	L1	9.5	27.4	46.0	
3.160500	36.1	1000.00	9.000	On	L1	9.5	9.9	46.0	
17.083500	39.6	1000.00	9.000	On	L1	9.7	10.4	50.0	

Emission Level = Read Level + Correct Factor





Test Voltage:	AC 120V/60Hz
Terminal:	Neutral
Remark:	Only worse case is reported



Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dB µV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB µV)	Comment
0.627000	47.6	1000.00	9.000	On	N	9.4	8.4	56.0	
0.649500	49.2	1000.00	9.000	On	N	9.4	6.8	56.0	
3.237000	48.2	1000.00	9.000	On	N	9.4	7.8	56.0	

Final Measurement Detector 2

Frequency (MHz)	Average (dB µV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB µV)	Comment
2.616000	27.7	1000.00	9.000	On	N	9.4	18.3	46.0	
3.237000	39.0	1000.00	9.000	On	N	9.4	7.0	46.0	
17.083500	38.9	1000.00	9.000	On	N	9.5	11.1	50.0	

Emission Level = Read Level + Correct Factor

3.2. Radiated Emission

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.209

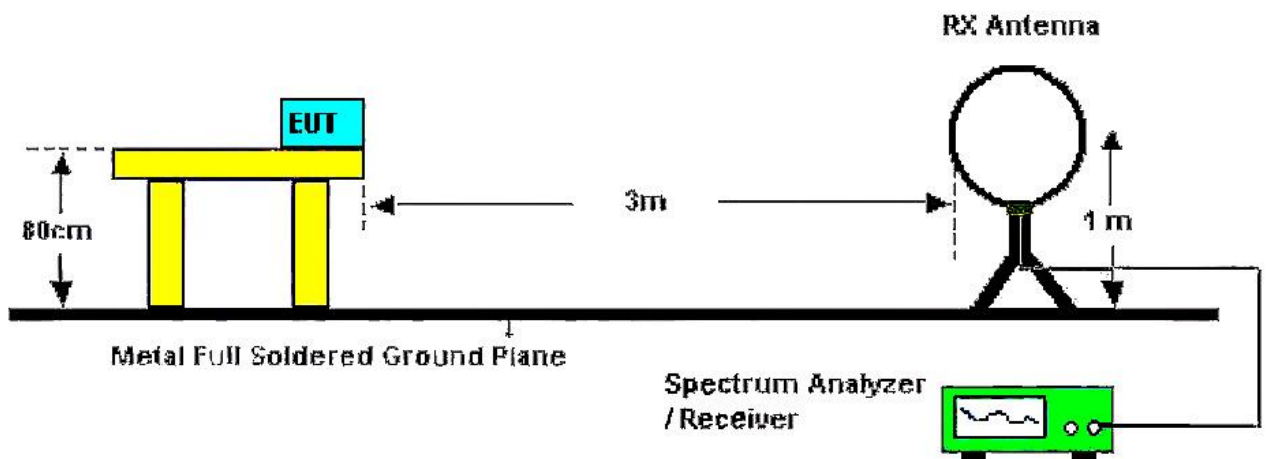
Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F (kHz)	300
0.490~1.705	24000/F (kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

Frequency Range (MHz)	dBµV/m (at 3 meters)	
	Peak	Average
Above 1000	74	54

Note:

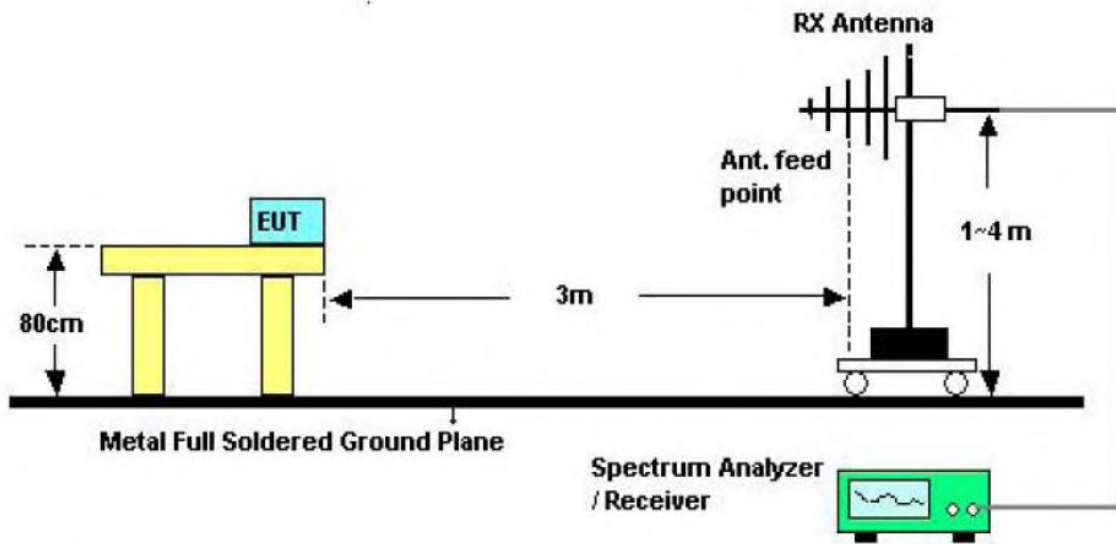
- (1) The tighter limit applies at the band edges.
- (2) Emission Level (dBµV/m)=20log Emission Level (µV/m).

Test Configuration

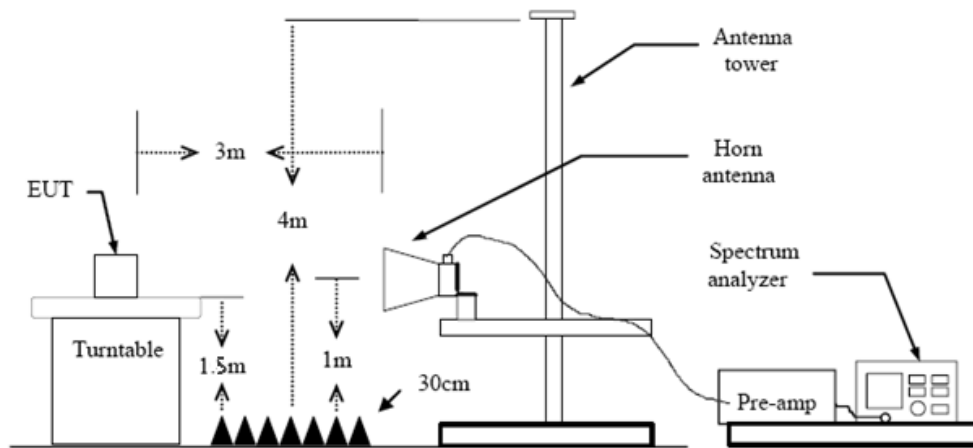


Below 30MHz Test Setup





30-1000MHz Test Setup



Above 1GHz Test Setup

Test Procedure

1. The EUT was setup and tested according to ANSI C63.10:2013.
 2. The EUT is placed on a turn table which is 0.8 meter above ground for below 1 GHz, and 1.5 m for above 1 GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
 3. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower.
 4. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
 5. Set to the maximum power setting and enable the EUT transmit continuously.
 6. Use the following spectrum analyzer settings
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) 9k – 150kHz:
RBW=300 Hz, VBW=1 kHz, Sweep=auto, Detector function=peak, Trace=max hold
 - (3) 0.15M – 30MHz:
RBW=10 kHz, VBW=30 kHz, Sweep=auto, Detector function=peak, Trace=max hold
 - (4) 30M - 1 GHz:
RBW=120 kHz, VBW=300 kHz, Sweep=auto, Detector function=peak, Trace=max hold
- If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the



peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

(5) From 1 GHz to 10th harmonic:

RBW=1MHz, VBW=3MHz Peak detector for Peak value.

RBW=1MHz, VBW see note 1 with Peak Detector for Average Value.

Note 1: For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 3.8 Duty Cycle.

Test Mode

Please refer to the clause 2.4.

Test Result

9 kHz~30 MHz

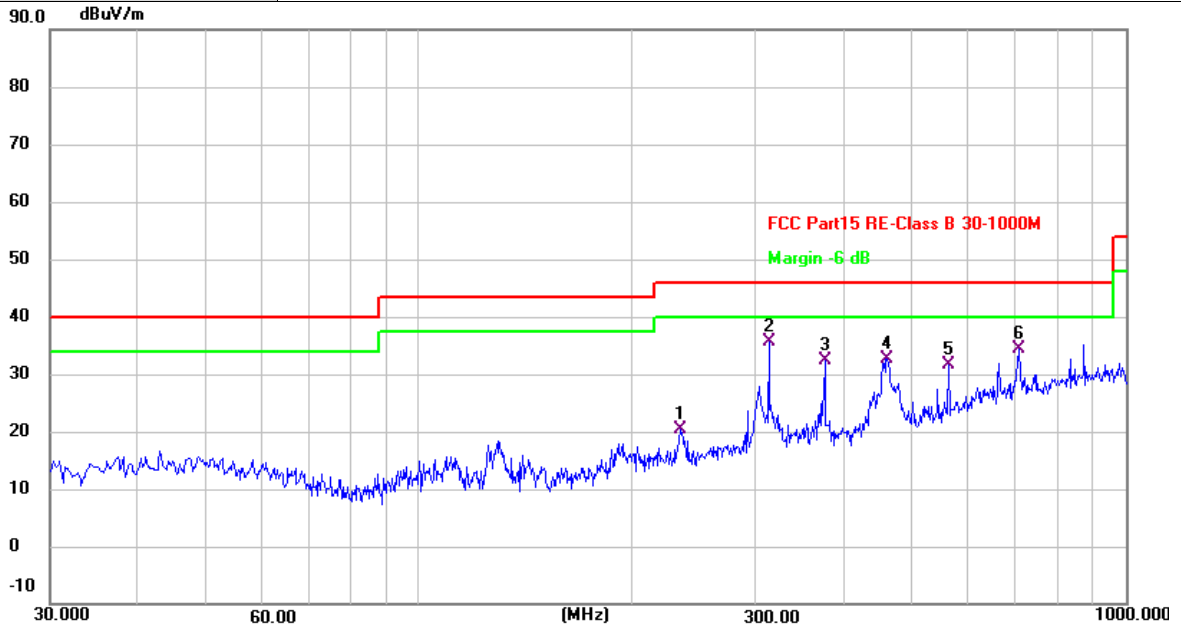
From 9 kHz to 30 MHz: The conclusion is PASS.

Note: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



30MHz-1GHz

Ant. No.	Ant 0
Ant. Pol.	Horizontal
Test Mode:	TX 802.11b Mode 2412MHz
Remark:	Only worse case is reported.



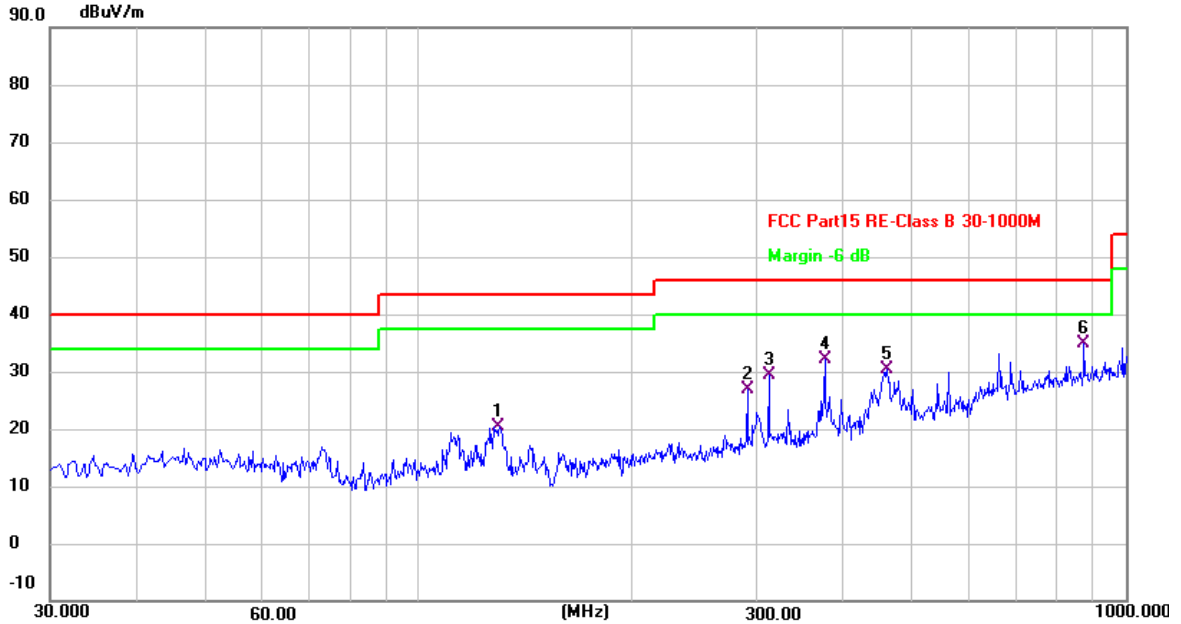
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	234.6700	35.49	-15.08	20.41	46.00	-25.59	QP
2 *	312.5933	48.82	-13.22	35.60	46.00	-10.40	QP
3	374.9967	43.95	-11.68	32.27	46.00	-13.73	QP
4	460.0333	42.56	-9.93	32.63	46.00	-13.37	QP
5	562.5300	39.25	-7.63	31.62	46.00	-14.38	QP
6	707.3832	39.90	-5.43	34.47	46.00	-11.53	QP

Remarks:

- Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
- Margin value = Level -Limit value



Ant. No.	Ant 0
Ant. Pol.	Vertical
Test Mode:	TX 802.11b Mode 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	130.2332	39.96	-19.55	20.41	43.50	-23.09	QP
2	291.5767	40.55	-13.73	26.82	46.00	-19.18	QP
3	312.5933	42.57	-13.22	29.35	46.00	-16.65	QP
4	374.9967	43.84	-11.68	32.16	46.00	-13.84	QP
5	460.0333	40.40	-9.93	30.47	46.00	-15.53	QP
6 *	874.8700	37.82	-2.99	34.83	46.00	-11.17	QP

Remarks:

1. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2. Margin value = Level -Limit value





Above 1GHz

Ant. No.	Ant 0																														
Ant. Pol.	Horizontal																														
Test Mode:	TX 802.11b Mode 2412MHz																														
Remark:	No report for the emission which more than 20 dB below the prescribed limit.																														
<table border="1"> <thead> <tr> <th>No.</th> <th>Frequency (MHz)</th> <th>Reading (dBuV)</th> <th>Factor (dB/m)</th> <th>Level (dBuV/m)</th> <th>Limit (dBuV/m)</th> <th>Margin (dB)</th> <th>Detector</th> </tr> </thead> <tbody> <tr> <td>1 *</td> <td>4823.934</td> <td>30.89</td> <td>2.06</td> <td>32.95</td> <td>54.00</td> <td>-21.05</td> <td>AVG</td> </tr> <tr> <td>2</td> <td>4823.996</td> <td>41.68</td> <td>2.06</td> <td>43.74</td> <td>74.00</td> <td>-30.26</td> <td>peak</td> </tr> </tbody> </table>								No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	1 *	4823.934	30.89	2.06	32.95	54.00	-21.05	AVG	2	4823.996	41.68	2.06	43.74	74.00	-30.26	peak
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector																								
1 *	4823.934	30.89	2.06	32.95	54.00	-21.05	AVG																								
2	4823.996	41.68	2.06	43.74	74.00	-30.26	peak																								
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value																															

Ant. No.	Ant 0																														
Ant. Pol.	Vertical																														
Test Mode:	TX 802.11b Mode 2412MHz																														
Remark:	No report for the emission which more than 20 dB below the prescribed limit.																														
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No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector																								
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No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector																								
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No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector																								
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No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector																								
1	4924.141	39.97	2.24	42.21	74.00	-31.79	peak																								
2 *	4924.222	23.97	2.24	26.21	54.00	-27.79	AVG																								
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No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector																								
1 *	4873.608	24.38	2.15	26.53	54.00	-27.47	AVG																								
2	4873.918	39.35	2.15	41.50	74.00	-32.50	peak																								
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value																															

Ant. No.	Ant 0																														
Ant. Pol.	Vertical																														
Test Mode:	TX 802.11n(HT20) Mode 2437MHz																														
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No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector																								
1 *	4874.326	24.37	2.15	26.52	54.00	-27.48	AVG																								
2	4874.404	40.04	2.15	42.19	74.00	-31.81	peak																								
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value																															



Ant. No.	Ant 0																														
Ant. Pol.	Horizontal																														
Test Mode:	TX 802.11n(HT20) Mode 2462MHz																														
Remark:	No report for the emission which more than 20 dB below the prescribed limit.																														
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No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector																								
1 *	4923.964	24.31	2.24	26.55	54.00	-27.45	AVG																								
2	4924.007	39.28	2.24	41.52	74.00	-32.48	peak																								
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Ant. No.	Ant 0																														
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No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector																								
1 *	4923.731	24.40	2.24	26.64	54.00	-27.36	AVG																								
2	4923.830	39.14	2.24	41.38	74.00	-32.62	peak																								
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value																															



Ant. No.	Ant 0																														
Ant. Pol.	Horizontal																														
Test Mode:	TX 802.11n(HT40) Mode 2422MHz																														
Remark:	No report for the emission which more than 20 dB below the prescribed limit.																														
<table border="1"> <thead> <tr> <th>No.</th> <th>Frequency (MHz)</th> <th>Reading (dBUV)</th> <th>Factor (dB/m)</th> <th>Level (dBUV/m)</th> <th>Limit (dBUV/m)</th> <th>Margin (dB)</th> <th>Detector</th> </tr> </thead> <tbody> <tr> <td>1 *</td> <td>4843.996</td> <td>25.34</td> <td>2.09</td> <td>27.43</td> <td>54.00</td> <td>-26.57</td> <td>AVG</td> </tr> <tr> <td>2</td> <td>4844.037</td> <td>40.15</td> <td>2.09</td> <td>42.24</td> <td>74.00</td> <td>-31.76</td> <td>peak</td> </tr> </tbody> </table>								No.	Frequency (MHz)	Reading (dBUV)	Factor (dB/m)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector	1 *	4843.996	25.34	2.09	27.43	54.00	-26.57	AVG	2	4844.037	40.15	2.09	42.24	74.00	-31.76	peak
No.	Frequency (MHz)	Reading (dBUV)	Factor (dB/m)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector																								
1 *	4843.996	25.34	2.09	27.43	54.00	-26.57	AVG																								
2	4844.037	40.15	2.09	42.24	74.00	-31.76	peak																								
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Ant. No.	Ant 0																														
Ant. Pol.	Vertical																														
Test Mode:	TX 802.11n(HT40) Mode 2422MHz																														
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No.	Frequency (MHz)	Reading (dBUV)	Factor (dB/m)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector																								
1	4843.900	40.05	2.09	42.14	74.00	-31.86	peak																								
2 *	4844.471	25.21	2.09	27.30	54.00	-26.70	AVG																								
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value																															



Ant. No.	Ant 0																														
Ant. Pol.	Horizontal																														
Test Mode:	TX 802.11n(HT40) Mode 2437MHz																														
Remark:	No report for the emission which more than 20 dB below the prescribed limit.																														
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No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector																								
1 *	4873.931	24.27	2.15	26.42	54.00	-27.58	AVG																								
2	4874.115	39.76	2.15	41.91	74.00	-32.09	peak																								
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value																															

Ant. No.	Ant 0																														
Ant. Pol.	Vertical																														
Test Mode:	TX 802.11n(HT40) Mode 2437MHz																														
Remark:	No report for the emission which more than 20 dB below the prescribed limit.																														
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No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector																								
1	4873.873	39.37	2.15	41.52	74.00	-32.48	peak																								
2 *	4874.158	24.34	2.15	26.49	54.00	-27.51	AVG																								
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value																															



Ant. No.	Ant 0																														
Ant. Pol.	Horizontal																														
Test Mode:	TX 802.11n(HT40) Mode 2452MHz																														
Remark:	No report for the emission which more than 20 dB below the prescribed limit.																														
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No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector																								
1 *	4904.176	24.74	2.19	26.93	54.00	-27.07	AVG																								
2	4904.219	39.72	2.19	41.91	74.00	-32.09	peak																								
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value																															

Ant. No.	Ant 0																														
Ant. Pol.	Vertical																														
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No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector																								
1 *	4903.649	24.79	2.19	26.98	54.00	-27.02	AVG																								
2	4904.275	40.45	2.19	42.64	74.00	-31.36	peak																								
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value																															

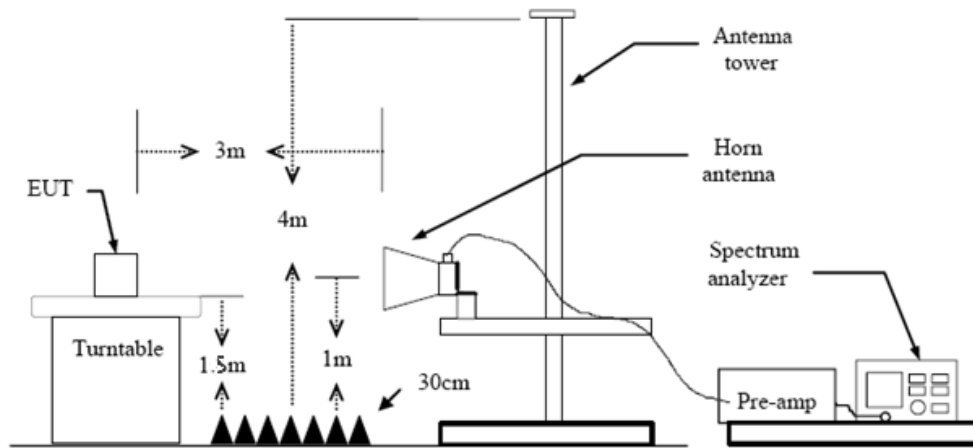
3.3. Band Edge Emissions (Radiated)

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (d)

Restricted Frequency Band (MHz)	(dBµV/m) (at 3m)	
	Peak	Average
2310 ~ 2390	74	54
2483.5 ~ 2500	74	54

Test Configuration



Test Procedure

1. The EUT was setup and tested according to ANSI C63.10:2013 requirements.
2. 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.
3. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
4. 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.
5. The receiver set as follow:
 RBW=1MHz, VBW=3MHz Peak detector for Peak value.
 RBW=1MHz, VBW see note 1 with Peak Detector for Average Value.

Note 1: For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 3.8 Duty Cycle.

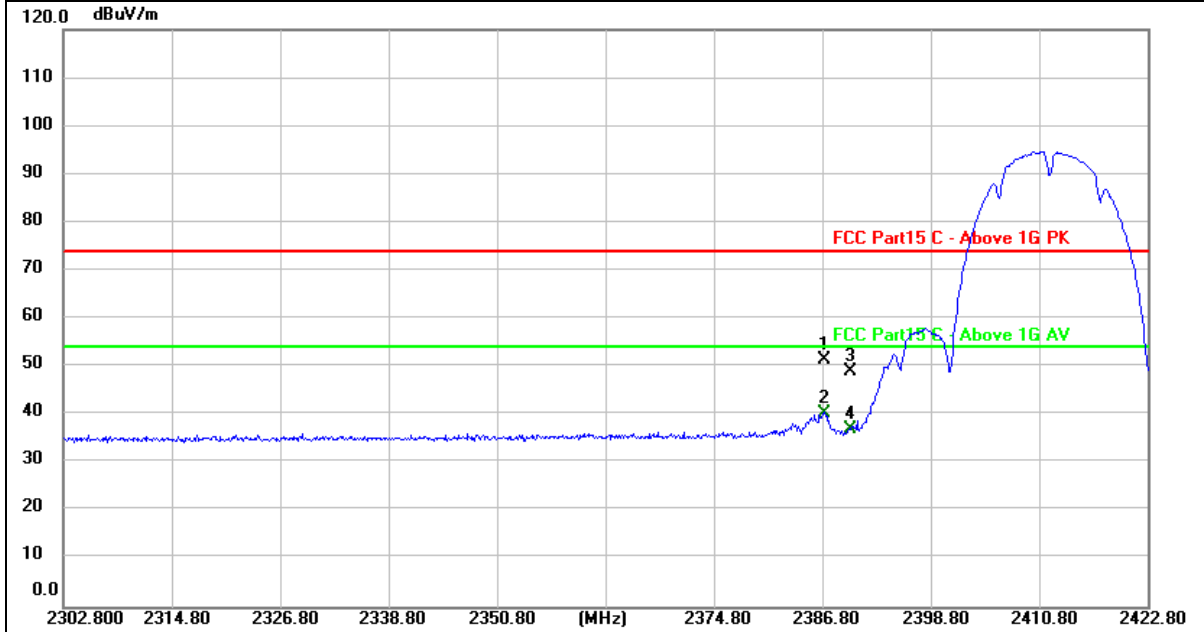
Test Mode

Please refer to the clause 2.4.



Test Result

Ant. No.	Ant 0
Ant. Pol.	Horizontal
Test Mode:	TX 802.11b Mode 2412MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2387.120	20.45	30.87	51.32	74.00	-22.68	peak
2 *	2387.120	9.63	30.87	40.50	54.00	-13.50	AVG
3	2390.000	18.27	30.88	49.15	74.00	-24.85	peak
4	2390.000	6.07	30.88	36.95	54.00	-17.05	AVG

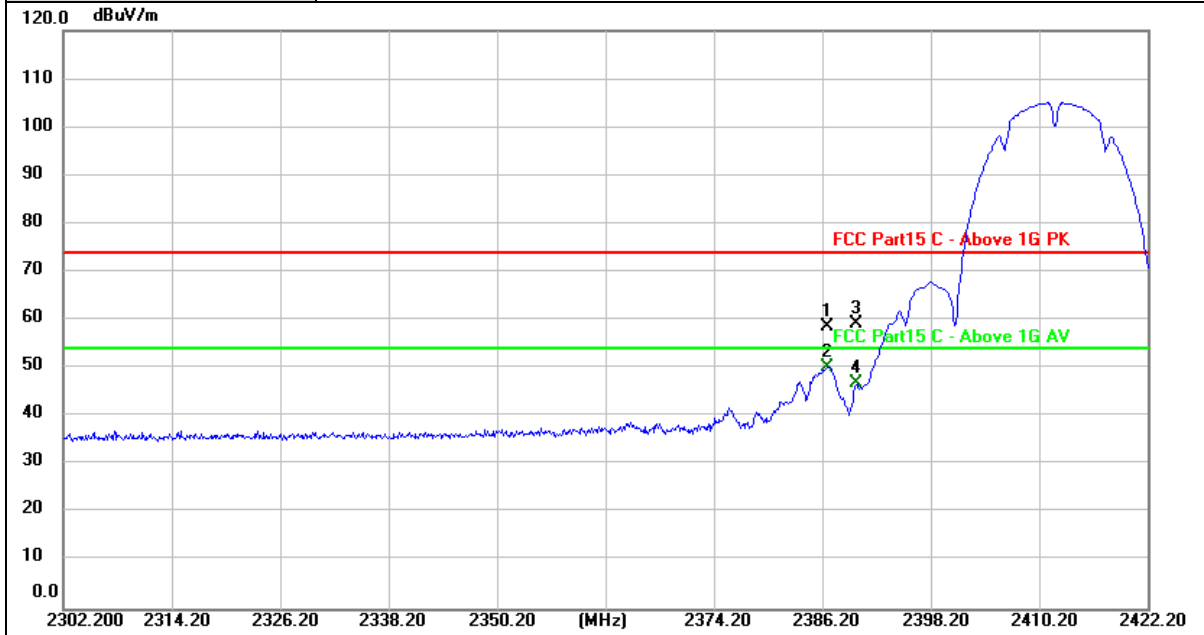
Remarks:

1. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2. Margin value = Level -Limit value





Ant. No.	Ant 0
Ant. Pol.	Vertical
Test Mode:	TX 802.11b Mode 2412MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2386.760	27.88	30.87	58.75	74.00	-15.25	peak
2 *	2386.760	19.49	30.87	50.36	54.00	-3.64	AVG
3	2390.000	28.51	30.88	59.39	74.00	-14.61	peak
4	2390.000	16.11	30.88	46.99	54.00	-7.01	AVG

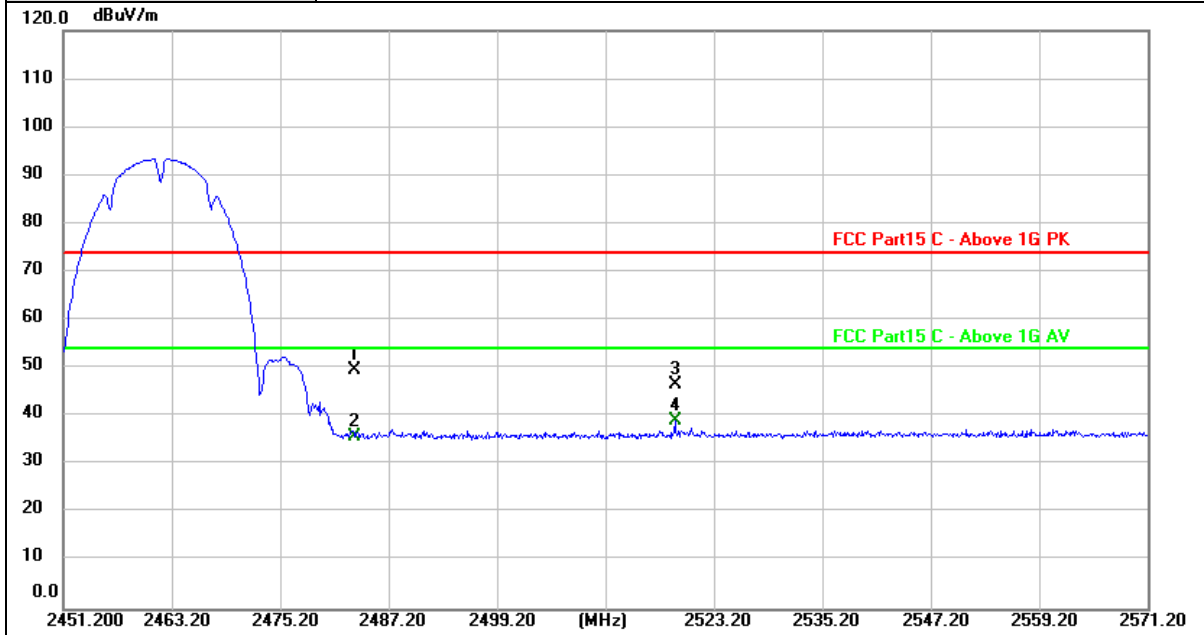
Remarks:

- Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
- Margin value = Level -Limit value





Ant. No.	Ant 0
Ant. Pol.	Horizontal
Test Mode:	TX 802.11b Mode 2462MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	18.54	31.25	49.79	74.00	-24.21	peak
2	2483.500	4.67	31.25	35.92	54.00	-18.08	AVG
3	2518.920	15.36	31.38	46.74	74.00	-27.26	peak
4 *	2518.920	7.69	31.38	39.07	54.00	-14.93	AVG

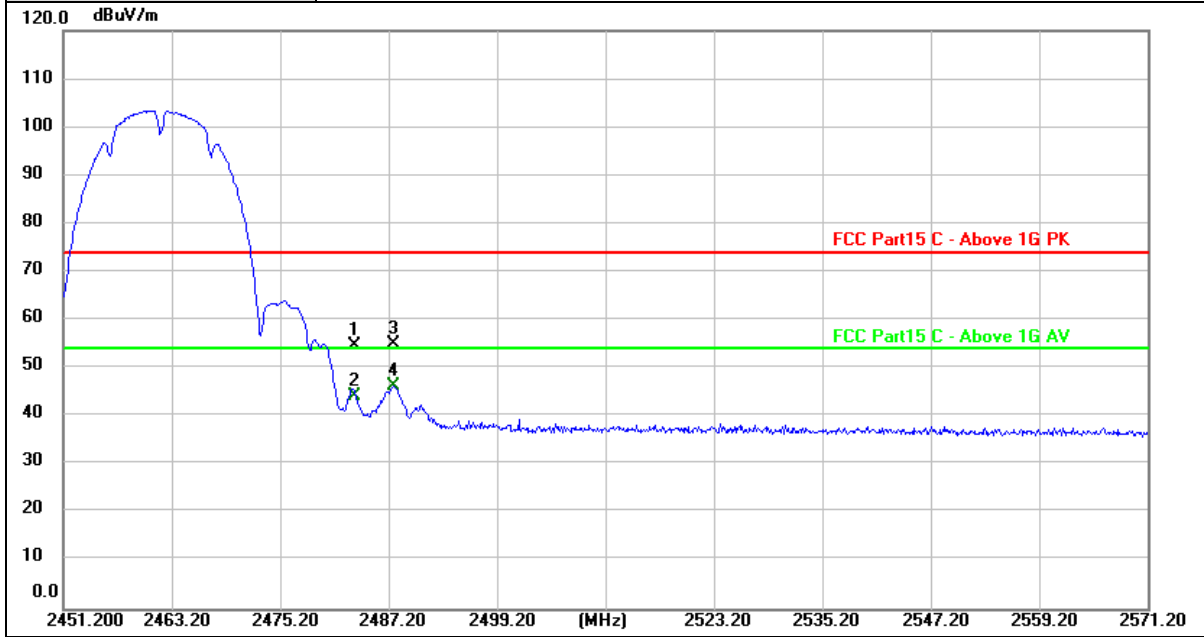
Remarks:

- 1. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
- 2. Margin value = Level -Limit value





Ant. No.	Ant 0
Ant. Pol.	Vertical
Test Mode:	TX 802.11b Mode 2462MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	23.61	31.25	54.86	74.00	-19.14	peak
2	2483.500	13.08	31.25	44.33	54.00	-9.67	AVG
3	2487.680	23.69	31.26	54.95	74.00	-19.05	peak
4 *	2487.680	15.05	31.26	46.31	54.00	-7.69	AVG

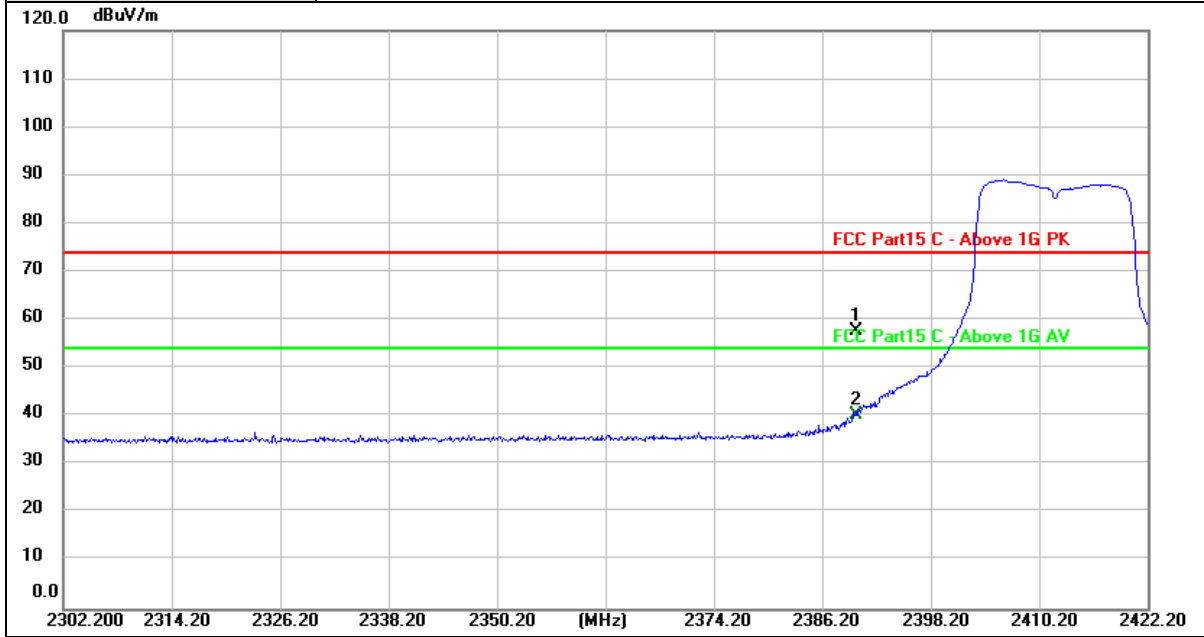
Remarks:

- 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
- 2.Margin value = Level -Limit value





Ant. No.	Ant 0
Ant. Pol.	Horizontal
Test Mode:	TX 802.11g Mode 2412MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	26.92	30.88	57.80	74.00	-16.20	peak
2 *	2390.000	9.39	30.88	40.27	54.00	-13.73	AVG

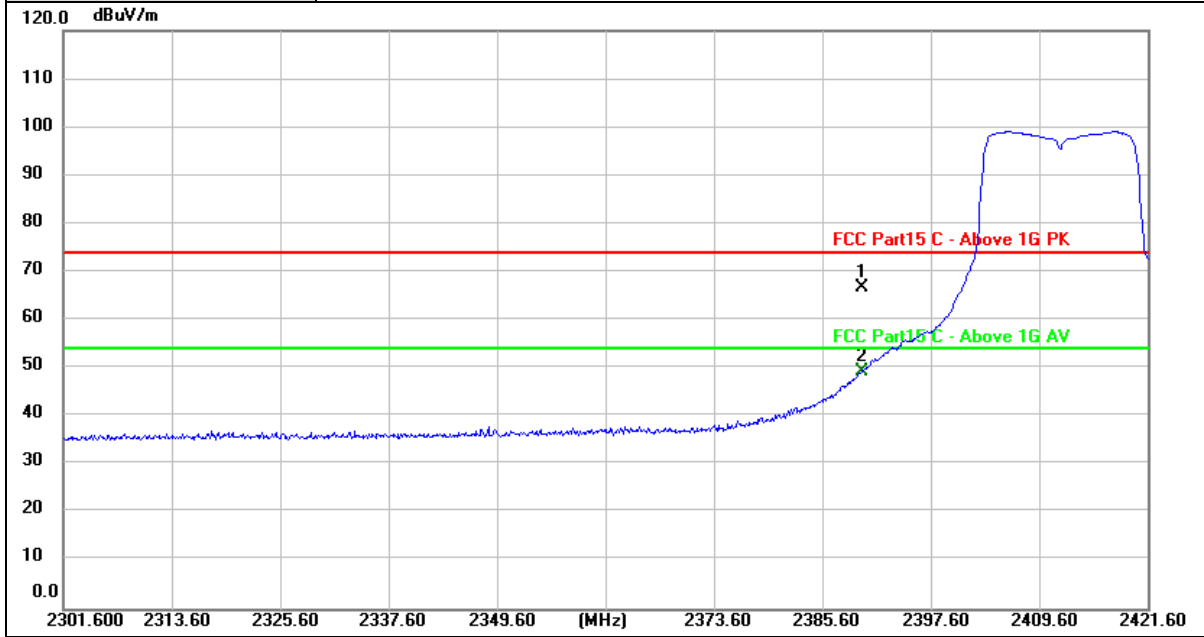
Remarks:

- 1. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
- 2. Margin value = Level -Limit value





Ant. No.	Ant 0
Ant. Pol.	Vertical
Test Mode:	TX 802.11g Mode 2412MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	35.74	30.88	66.62	74.00	-7.38	peak
2 *	2390.000	18.41	30.88	49.29	54.00	-4.71	AVG

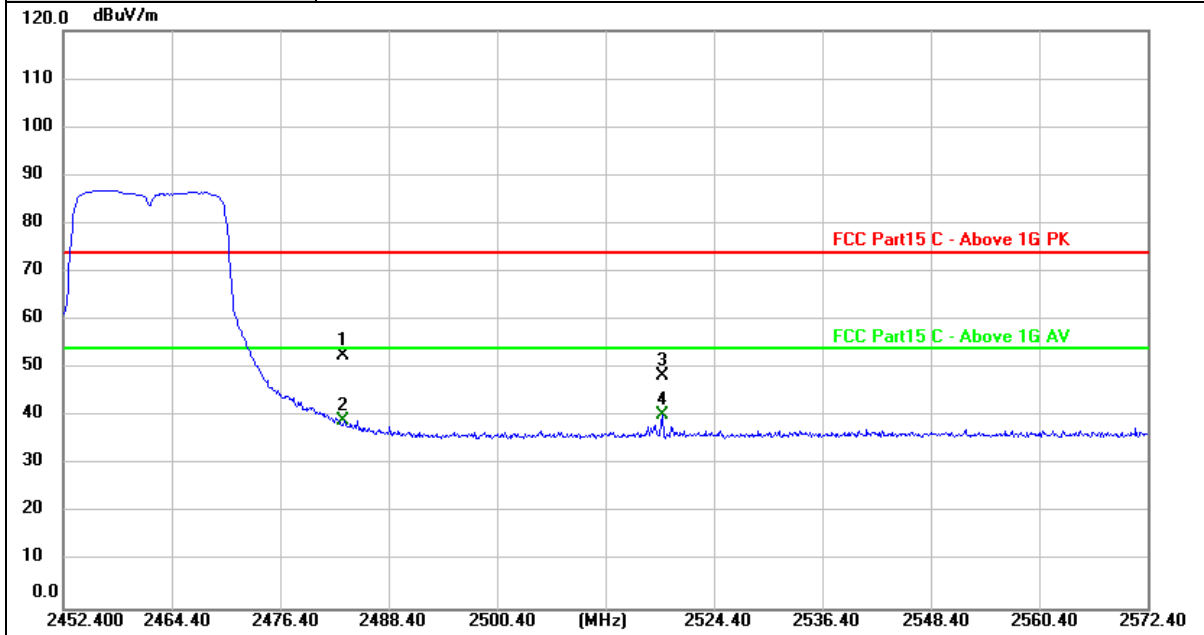
Remarks:

1. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2. Margin value = Level -Limit value





Ant. No.	Ant 0
Ant. Pol.	Horizontal
Test Mode:	TX 802.11g Mode 2462MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	21.42	31.25	52.67	74.00	-21.33	peak
2	2483.500	7.99	31.25	39.24	54.00	-14.76	AVG
3	2518.760	17.22	31.38	48.60	74.00	-25.40	peak
4 *	2518.760	8.84	31.38	40.22	54.00	-13.78	AVG

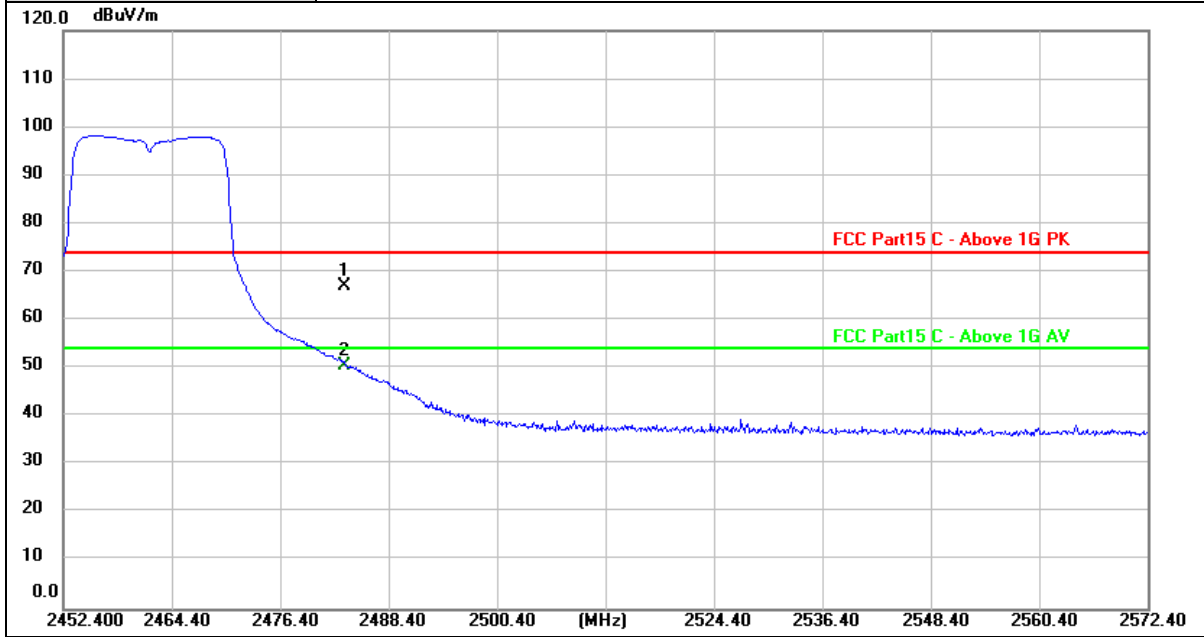
Remarks:

1. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2. Margin value = Level -Limit value





Ant. No.	Ant 0
Ant. Pol.	Vertical
Test Mode:	TX 802.11g Mode 2462MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	35.84	31.25	67.09	74.00	-6.91	peak
2 *	2483.500	19.40	31.25	50.65	54.00	-3.35	AVG

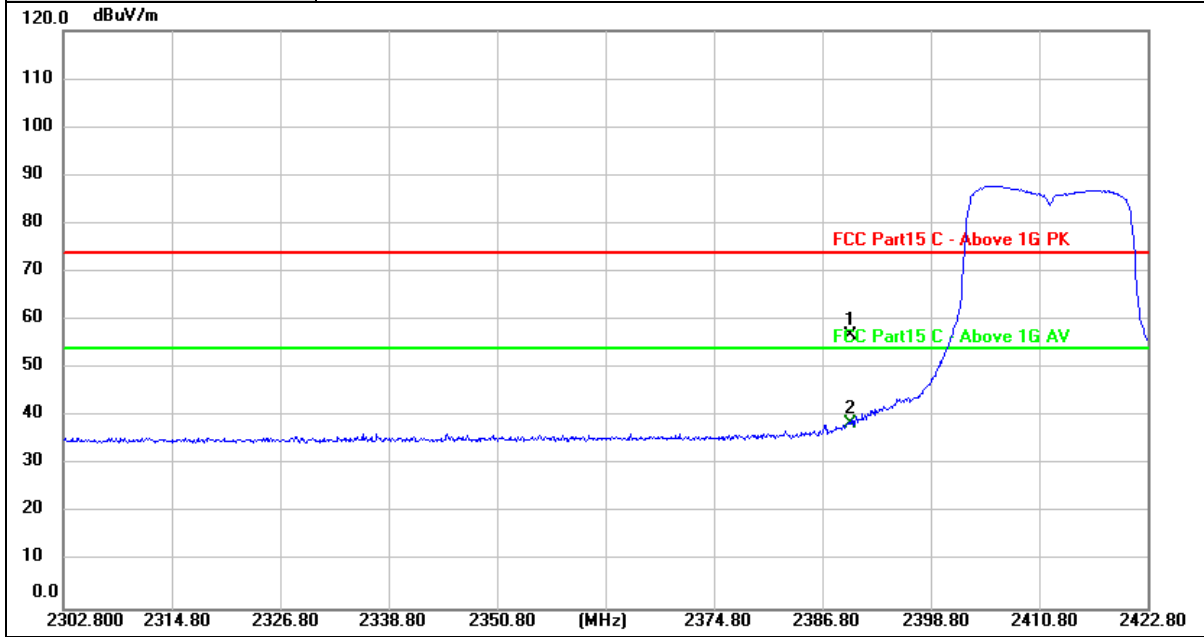
Remarks:

- 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
- 2.Margin value = Level -Limit value





Ant. No.	Ant 0
Ant. Pol.	Horizontal
Test Mode:	TX 802.11n(HT20) Mode 2412MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	25.94	30.88	56.82	74.00	-17.18	peak
2 *	2390.000	7.63	30.88	38.51	54.00	-15.49	AVG

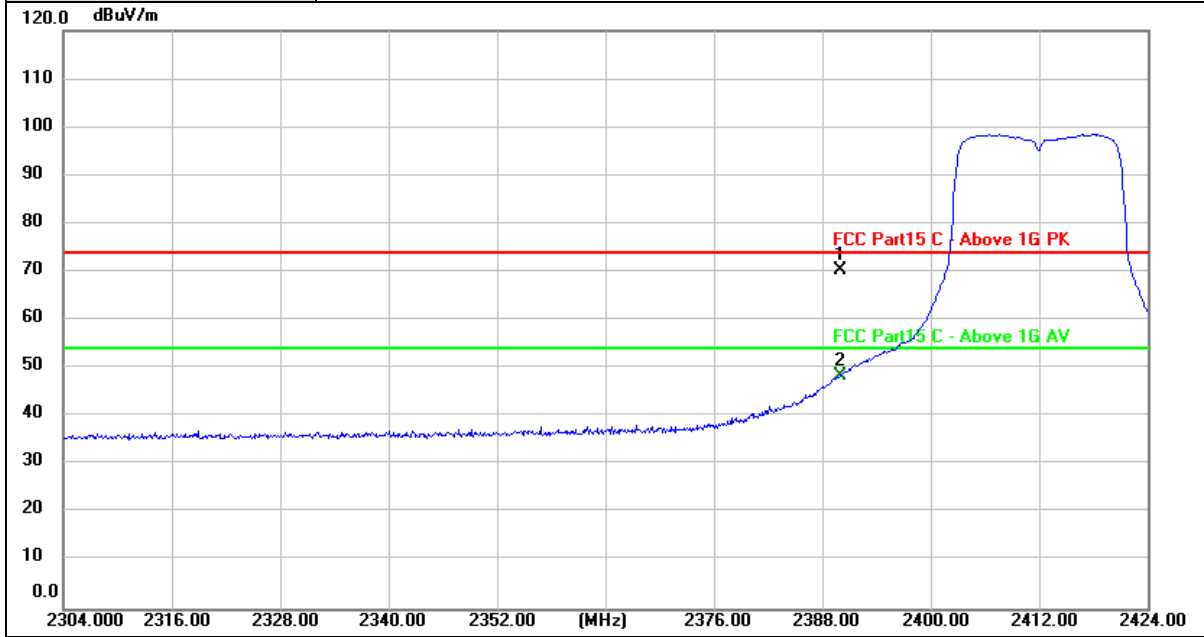
Remarks:

- 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
- 2.Margin value = Level -Limit value





Ant. No.	Ant 0
Ant. Pol.	Vertical
Test Mode:	TX 802.11n(HT20) Mode 2412MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	2390.000	39.36	30.88	70.24	74.00	-3.76	peak
2	2390.000	17.56	30.88	48.44	54.00	-5.56	AVG

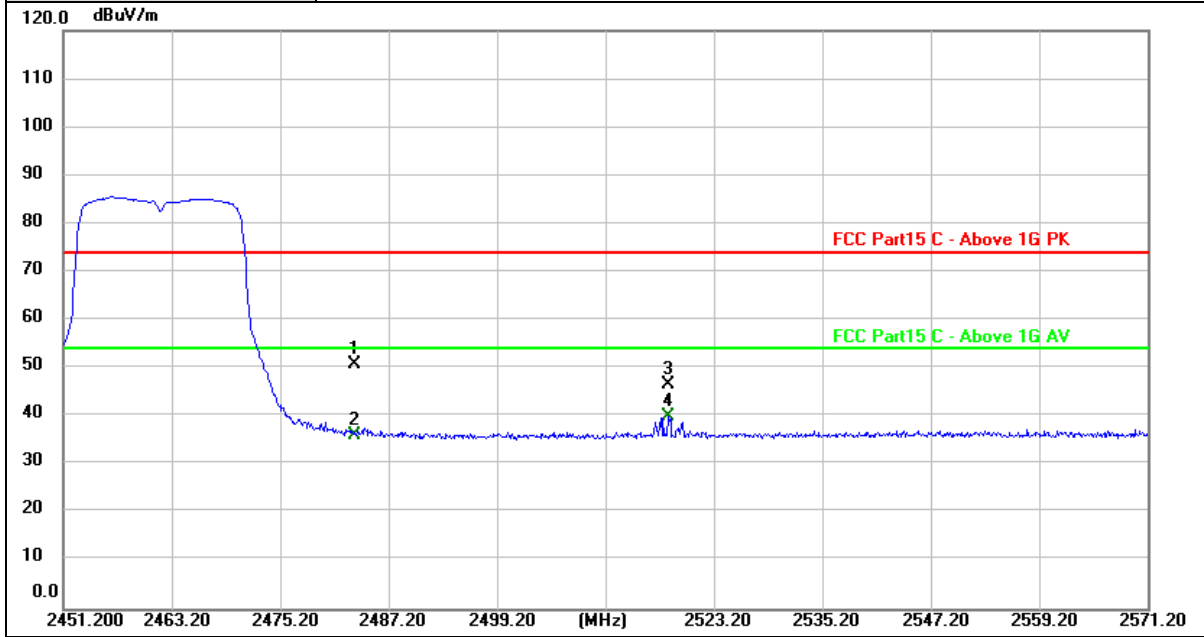
Remarks:

- Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
- Margin value = Level -Limit value





Ant. No.	Ant 0
Ant. Pol.	Horizontal
Test Mode:	TX 802.11n(HT20) Mode 2462MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	19.74	31.25	50.99	74.00	-23.01	peak
2	2483.500	4.96	31.25	36.21	54.00	-17.79	AVG
3	2518.240	15.26	31.37	46.63	74.00	-27.37	peak
4 *	2518.240	8.63	31.37	40.00	54.00	-14.00	AVG

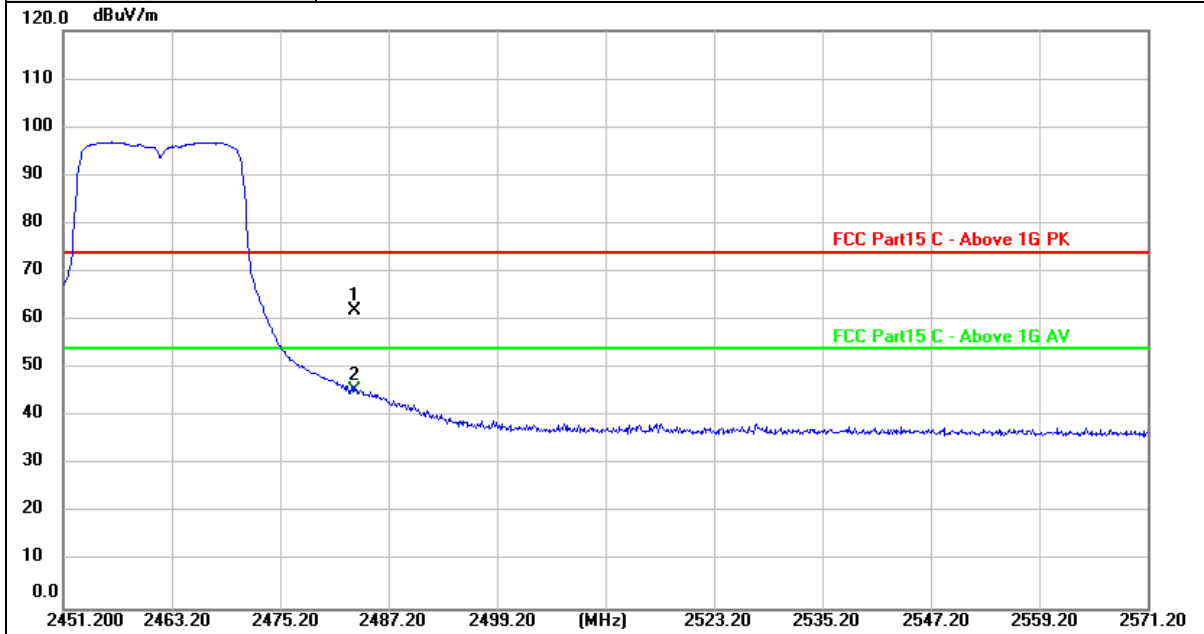
Remarks:

1. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2. Margin value = Level -Limit value





Ant. No.	Ant 0
Ant. Pol.	Vertical
Test Mode:	TX 802.11n(HT20) Mode 2462MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	30.84	31.25	62.09	74.00	-11.91	peak
2 *	2483.500	14.10	31.25	45.35	54.00	-8.65	AVG

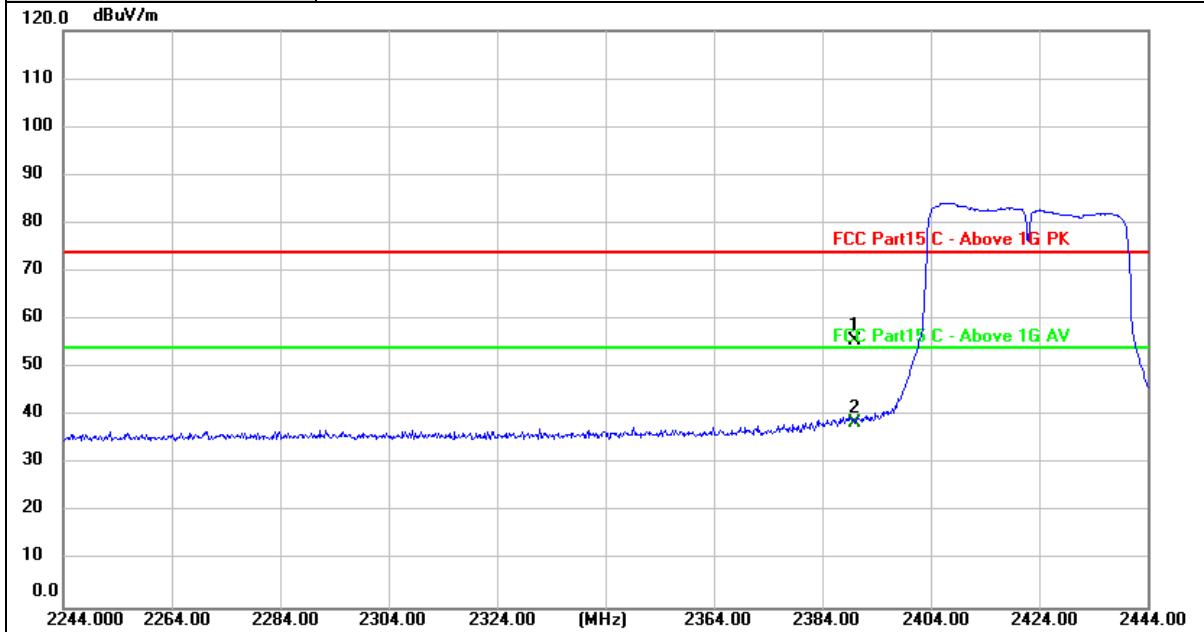
Remarks:

- 1. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
- 2. Margin value = Level -Limit value





Ant. No.	Ant 0
Ant. Pol.	Horizontal
Test Mode:	TX 802.11n(HT40) Mode 2422MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	24.88	30.88	55.76	74.00	-18.24	peak
2 *	2390.000	7.60	30.88	38.48	54.00	-15.52	AVG

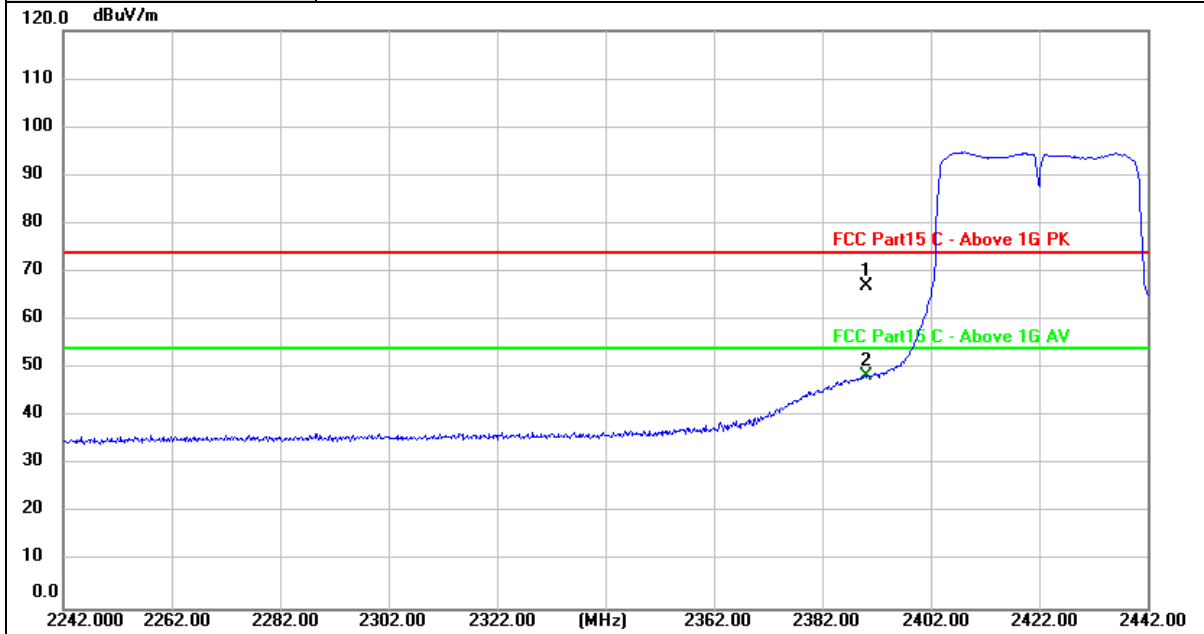
Remarks:

- 1. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
- 2. Margin value = Level -Limit value





Ant. No.	Ant 0
Ant. Pol.	Vertical
Test Mode:	TX 802.11n(HT40) Mode 2422MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	36.21	30.88	67.09	74.00	-6.91	peak
2 *	2390.000	17.67	30.88	48.55	54.00	-5.45	AVG

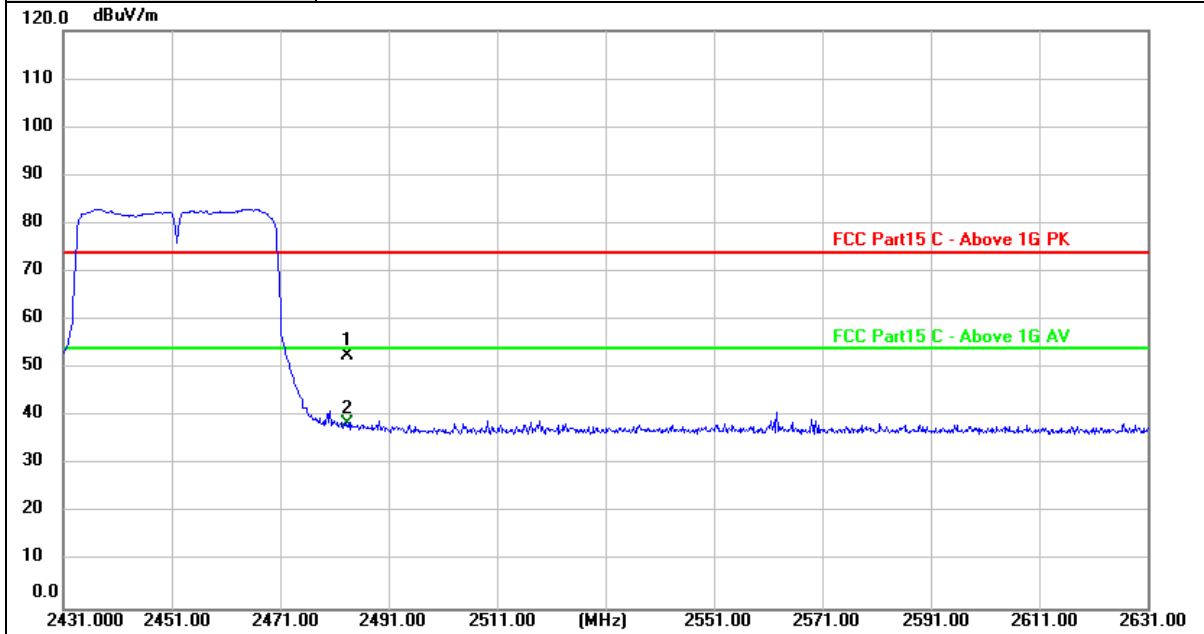
Remarks:

1. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2. Margin value = Level -Limit value





Ant. No.	Ant 0
Ant. Pol.	Horizontal
Test Mode:	TX 802.11n(HT40) Mode 2452MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	21.45	31.25	52.70	74.00	-21.30	peak
2 *	2483.500	7.29	31.25	38.54	54.00	-15.46	AVG

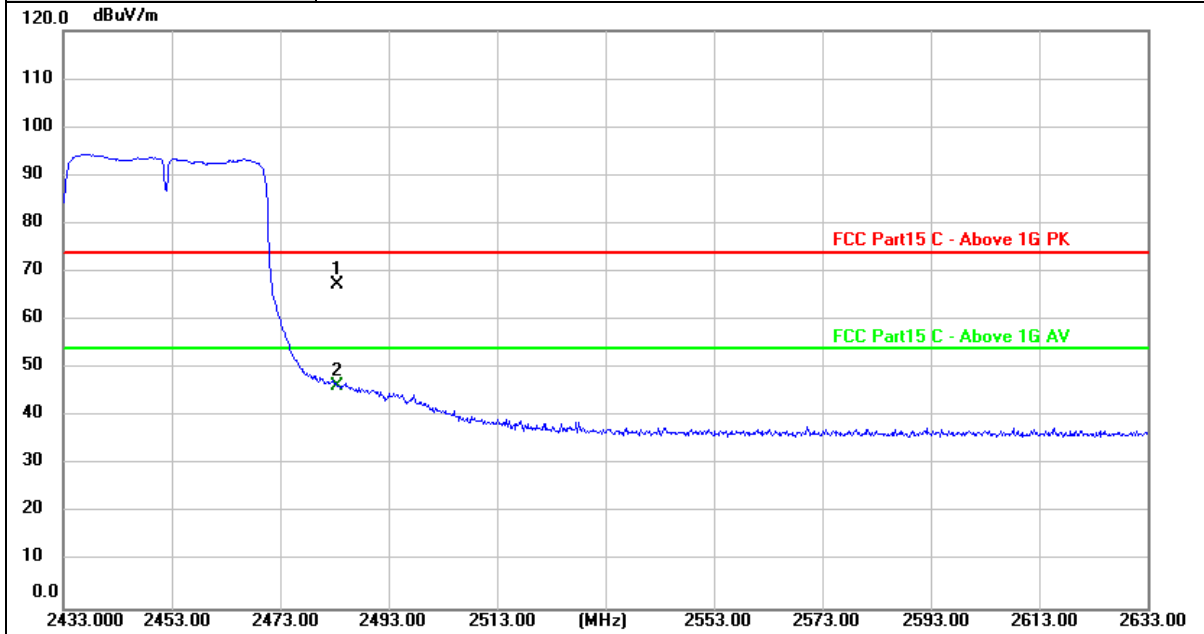
Remarks:

- 1. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
- 2. Margin value = Level -Limit value





Ant. No.	Ant 0
Ant. Pol.	Vertical
Test Mode:	TX 802.11n(HT40) Mode 2452MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	2483.500	36.19	31.25	67.44	74.00	-6.56	peak
2	2483.500	15.24	31.25	46.49	54.00	-7.51	AVG

Remarks:

- 1. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
- 2. Margin value = Level -Limit value





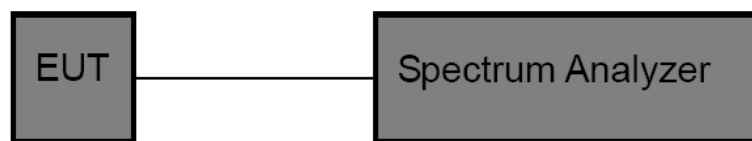
3.4. Band Edge and Spurious Emissions (Conducted)

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (d)

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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

Test Configuration



Test Procedure

1. The transmitter output was connected to the spectrum analyzer through an attenuator, the path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously.
3. Use the following spectrum analyzer settings:
RBW = 100 kHz, VBW \geq RBW, scan up through 10th harmonic.
Sweep = auto, Detector function = peak, Trace = max hold.
4. Measure and record the results in the test report.

Test Mode

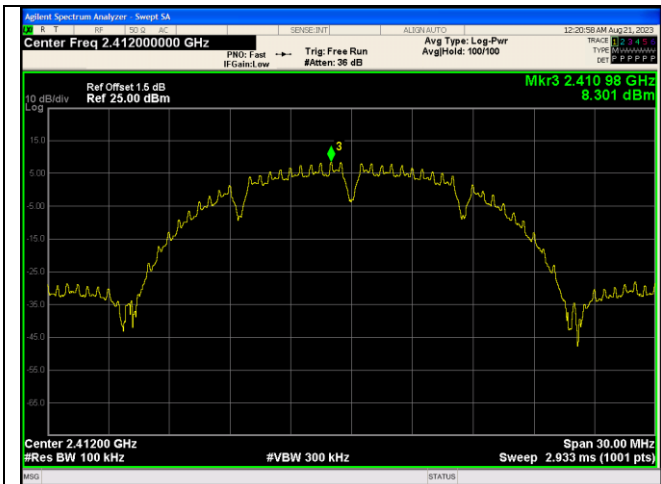
Please refer to the clause 2.4.

**Test Result****(1) Band Edge Conducted Test & Conducted Spurious Emissions Test**

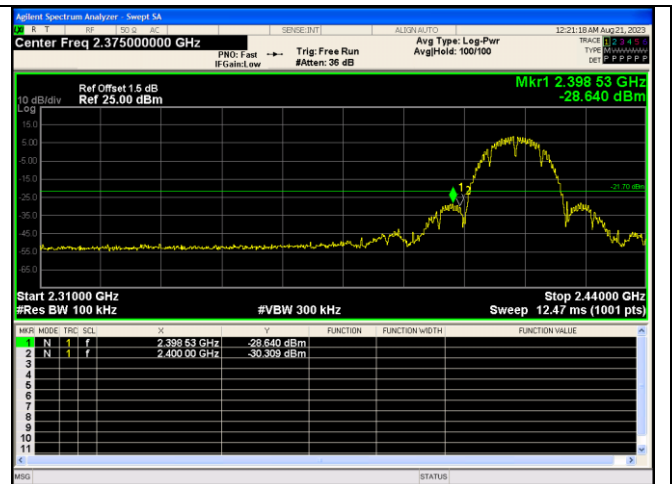
Mode	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Result
IEEE 802.11b	1	2400.00	-30.309	-21.7	PASS
		2398.53	-28.640	-21.7	PASS
		21250.0	-43.102	-21.7	PASS
	6	23680.3	-41.854	-21.4	PASS
		2483.50	-47.478	-21.8	PASS
	11	24862.0	-43.232	-21.8	PASS
IEEE 802.11g	1	2400.00	-29.369	-25.6	PASS
		2397.49	-28.773	-25.6	PASS
		23273.3	-42.884	-25.6	PASS
	6	23587.3	-42.924	-25.47	PASS
		2483.50	-42.773	-25.83	PASS
	11	23729.0	-42.766	-25.83	PASS
IEEE 802.11n_20	1	2400.00	-33.273	-27.05	PASS
		2398.27	-32.356	-27.05	PASS
		24812.1	-42.564	-27.05	PASS
	6	5785.73	-41.114	-27.03	PASS
		2483.50	-39.384	-26.84	PASS
	11	5784.48	-40.549	-26.84	PASS
IEEE 802.11n_40	3	2400.00	-34.251	-29.84	PASS
		2398.40	-33.442	-29.84	PASS
		5791.30	-42.377	-29.84	PASS
	6	24842.7	-43.007	-29.69	PASS
		2483.50	-42.765	-29.72	PASS
	9	24840.8	-42.235	-29.72	PASS



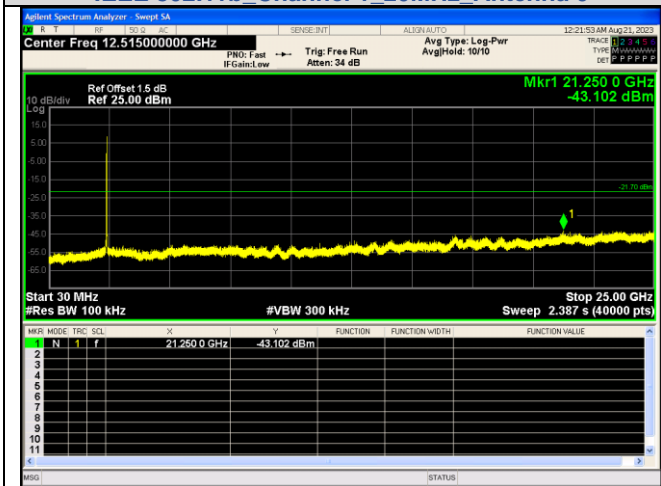
Test plot as follows:



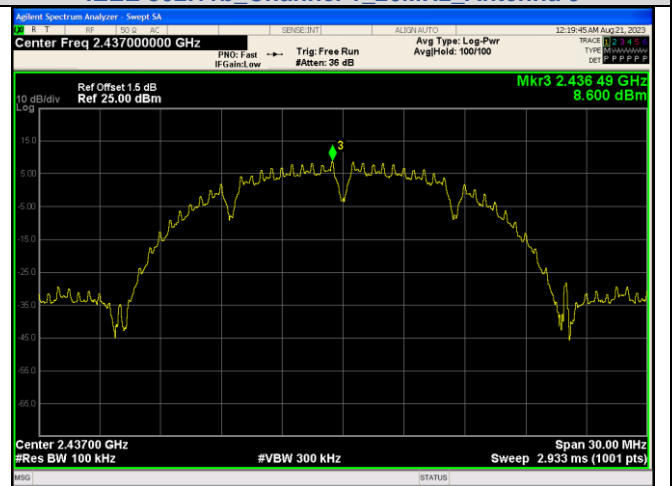
In-Band Reference Level IEEE 802.11b Channel 1 20MHz Antenna 0



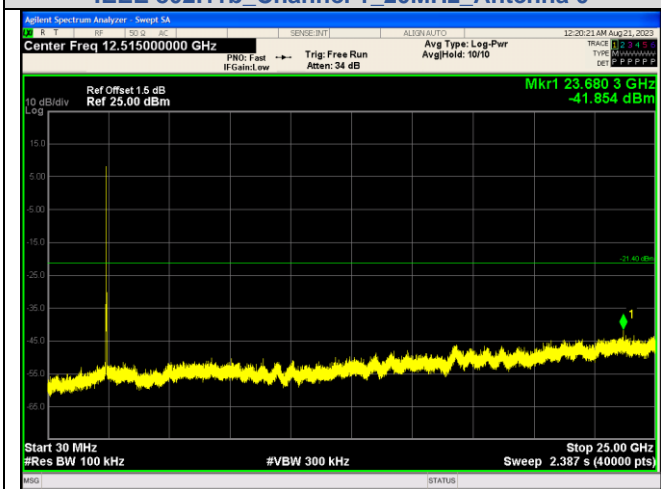
Out Of Band Emission IEEE 802.11b Channel 1 20MHz Antenna 0



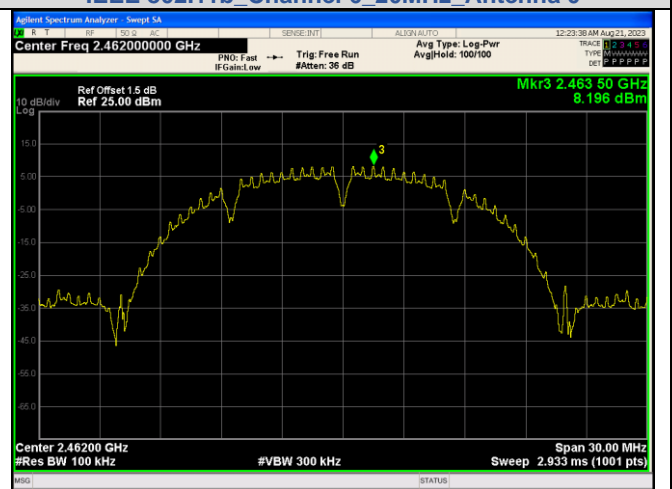
Spurious Emission IEEE 802.11b Channel 1 20MHz Antenna 0



In-Band Reference Level IEEE 802.11b Channel 6 20MHz Antenna 0



Spurious Emissions IEEE 802.11b Channel 6 20MHz Antenna 0



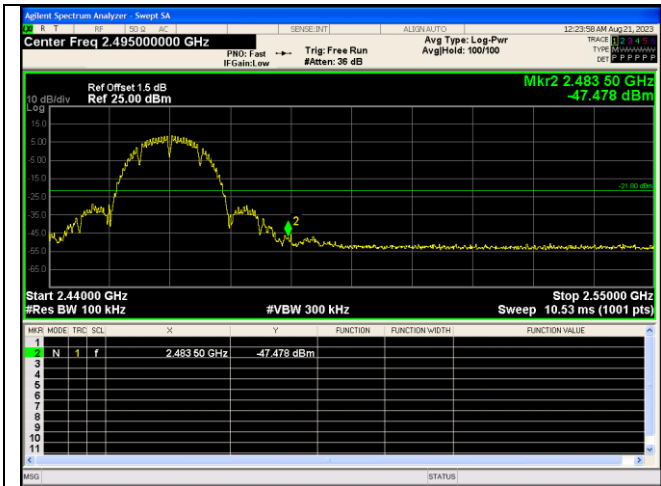
In-Band Reference Level IEEE 802.11b Channel 11 20MHz Antenna 0

CTC Laboratories, Inc.

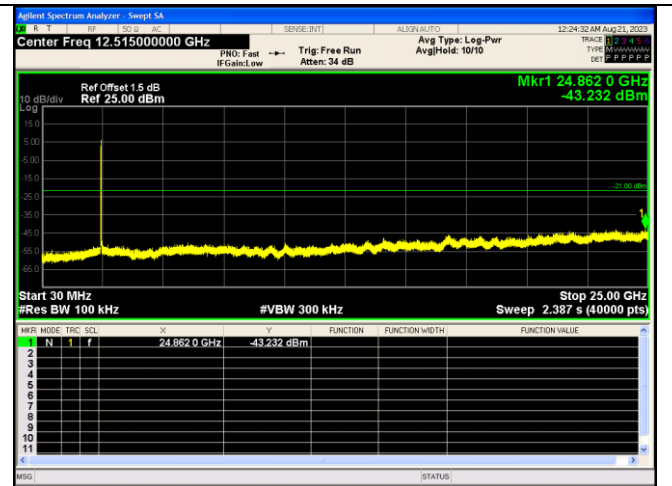
Room 101 Building B, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China
Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn



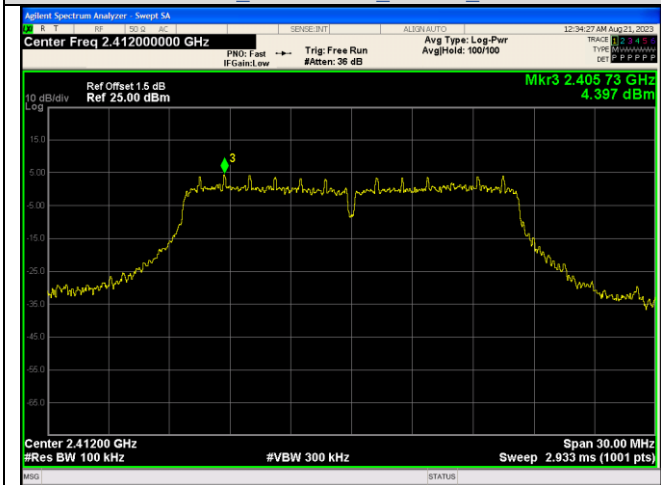
For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : <http://yz.cnca.cn>



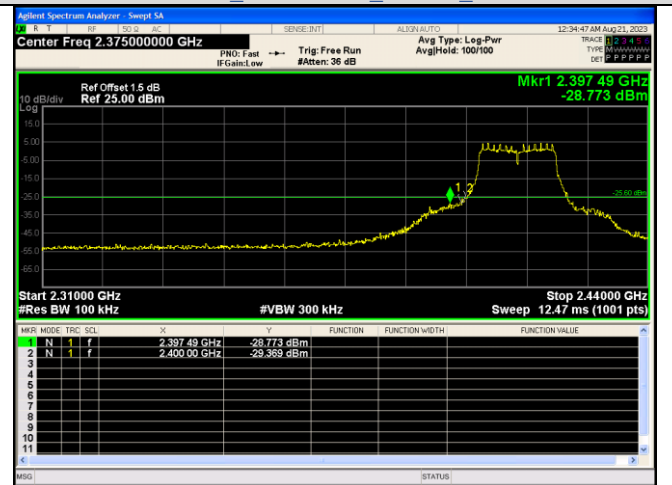
Out Of Band Emission
IEEE 802.11b Channel 11 20MHz Antenna 0



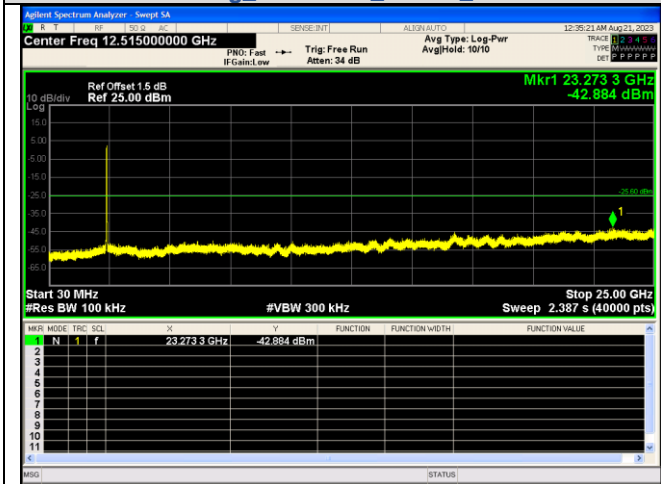
Spurious Emission
IEEE 802.11b Channel 11 20MHz Antenna 0



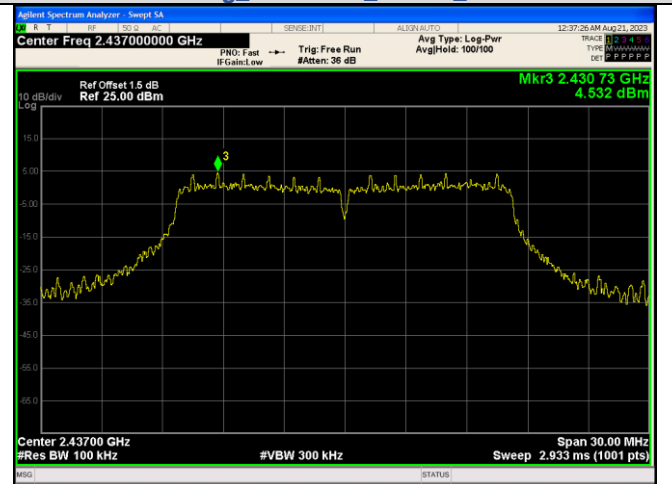
In-Band Reference Level
IEEE 802.11g Channel 1 20MHz Antenna 0



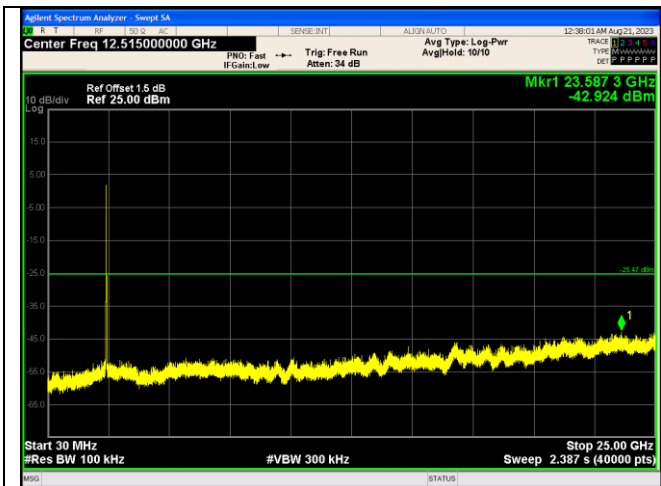
Out Of Band Emission
IEEE 802.11g Channel 1 20MHz Antenna 0



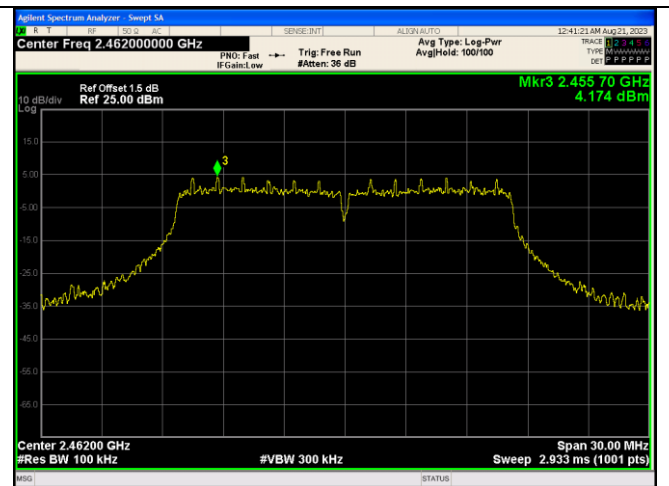
Spurious Emission
IEEE 802.11g Channel 1 20MHz Antenna 0



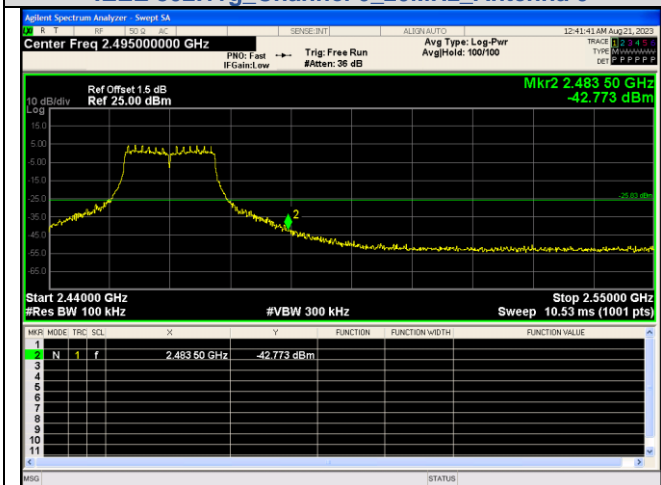
In-Band Reference Level
IEEE 802.11g Channel 6 20MHz Antenna 0



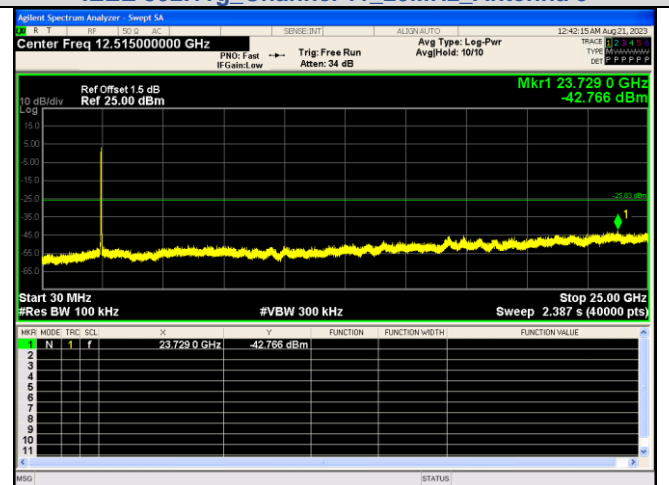
Spurious Emissions
IEEE 802.11g Channel 6 20MHz Antenna 0



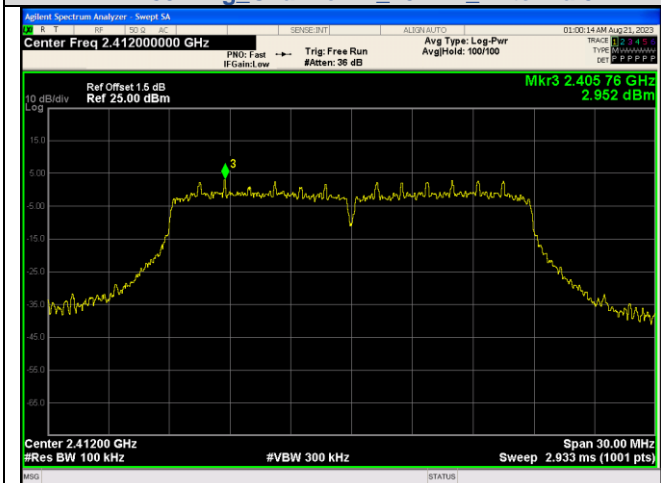
In-Band Reference Level
IEEE 802.11g Channel 11 20MHz Antenna 0



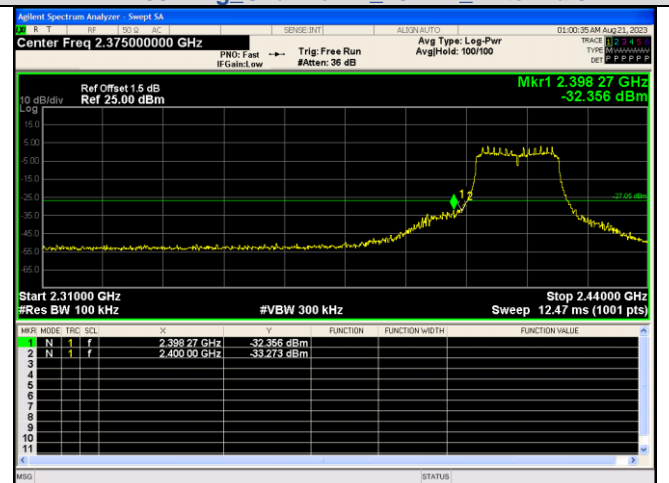
Out Of Band Emission
IEEE 802.11g Channel 11 20MHz Antenna 0



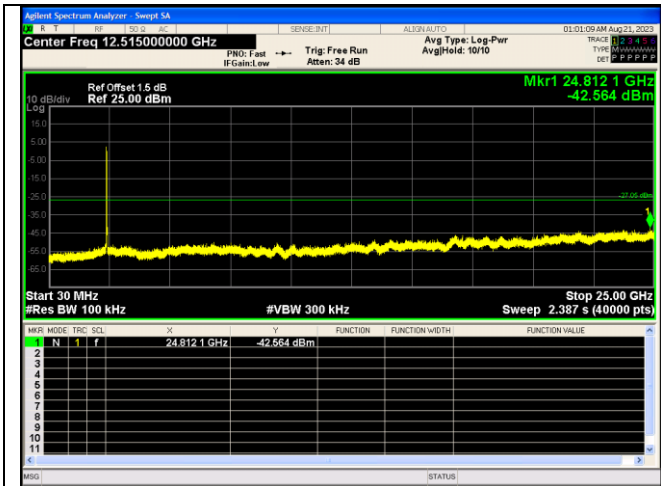
Spurious Emission
IEEE 802.11g Channel 11 20MHz Antenna 0



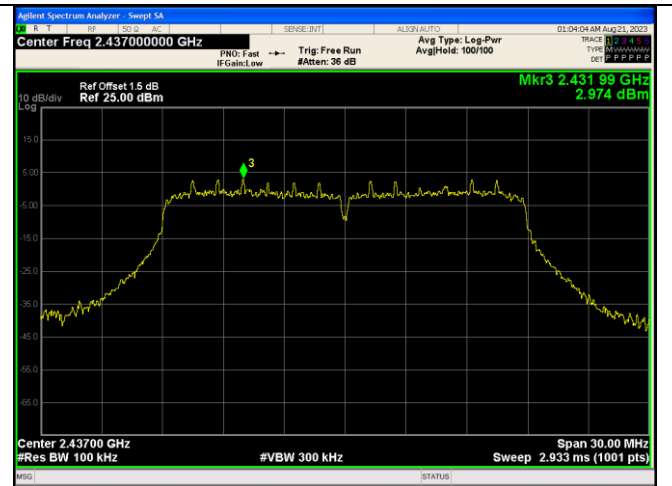
In-Band Reference Level
IEEE 802.11n Channel 1 20MHz Antenna 0



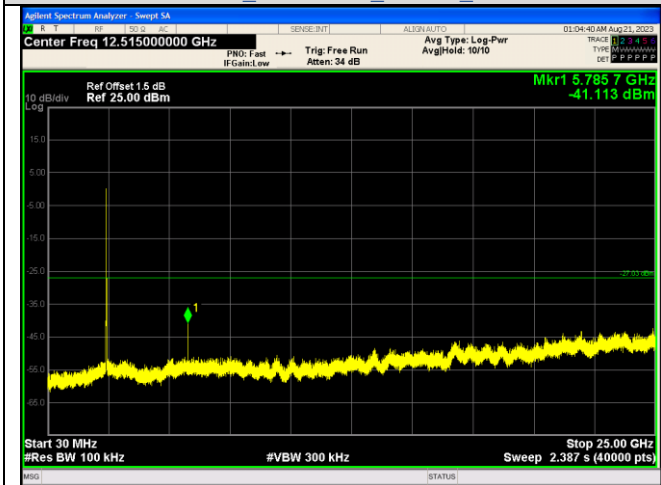
Out Of Band Emission
IEEE 802.11n Channel 1 20MHz Antenna 0



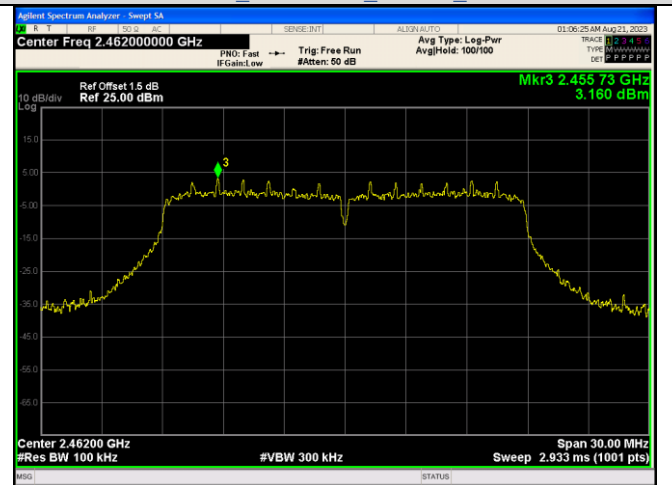
Spurious Emission
IEEE 802.11n Channel 1 20MHz Antenna 0



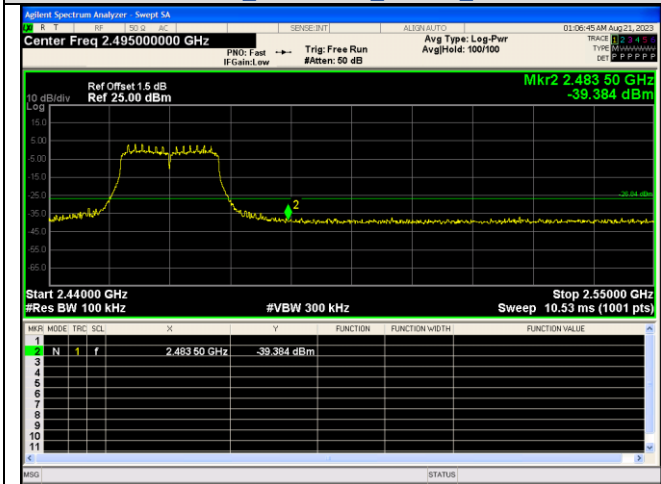
In-Band Reference Level
IEEE 802.11n Channel 6 20MHz Antenna 0



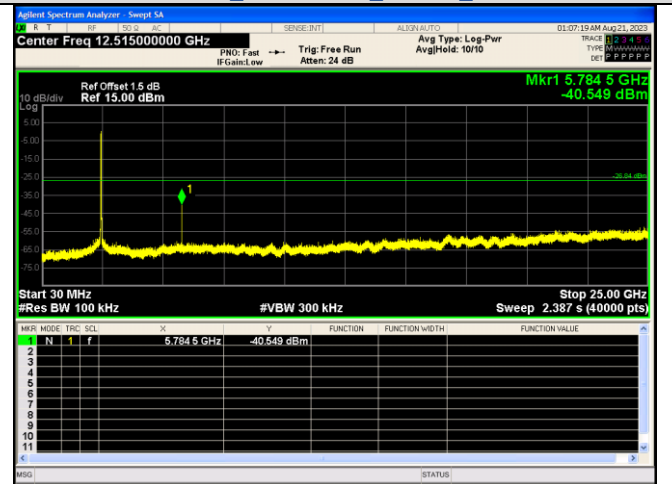
Spurious Emissions
IEEE 802.11n Channel 6 20MHz Antenna 0



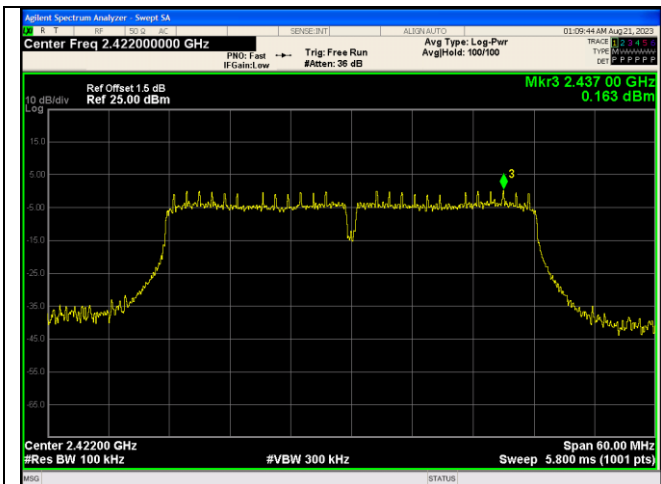
In-Band Reference Level
IEEE 802.11n Channel 11 20MHz Antenna 0



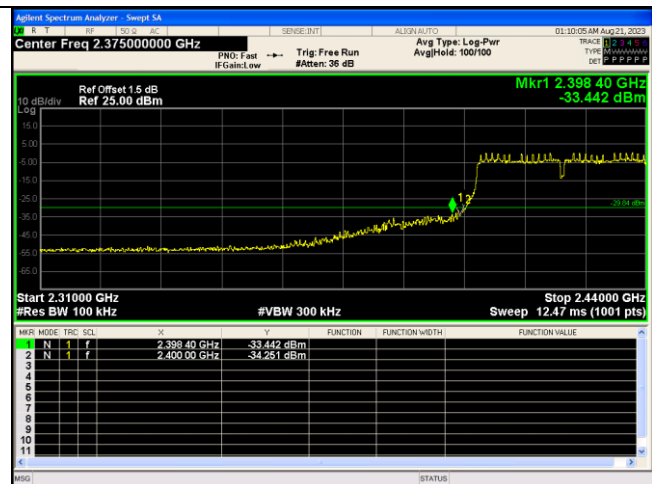
Out Of Band Emission
IEEE 802.11n Channel 11 20MHz Antenna 0



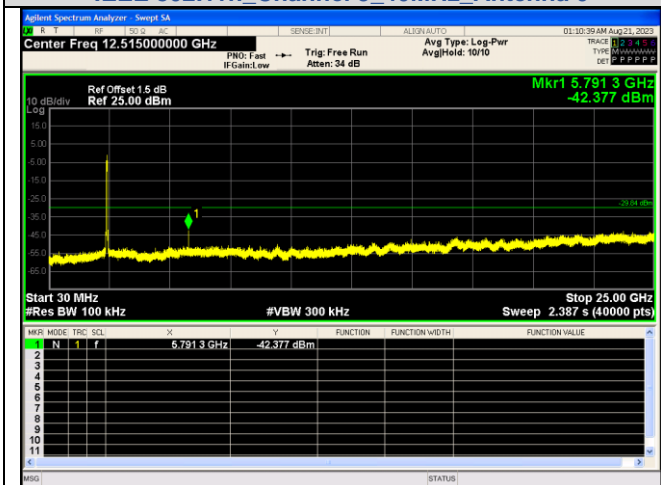
Spurious Emission
IEEE 802.11n Channel 11 20MHz Antenna 0



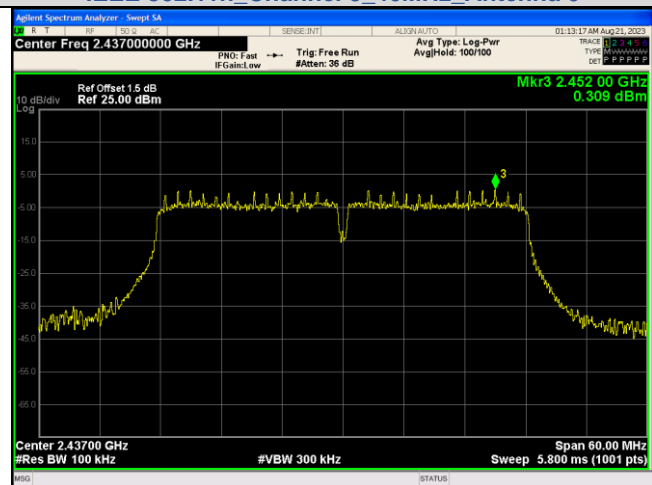
In-Band Reference Level
IEEE 802.11n Channel 3 40MHz Antenna 0



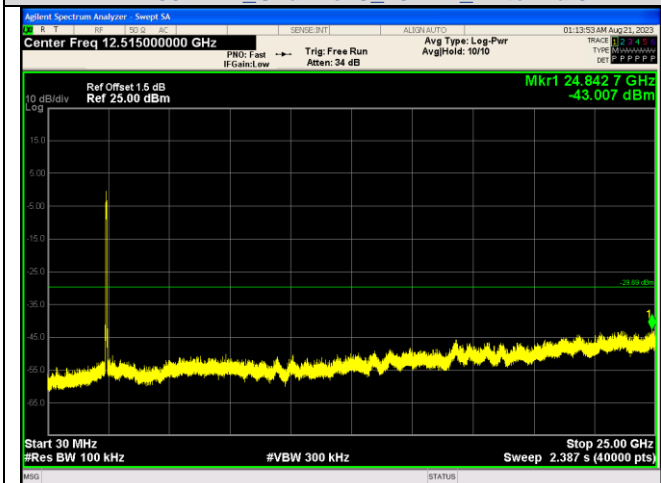
Out Of Band Emission
IEEE 802.11n Channel 3 40MHz Antenna 0



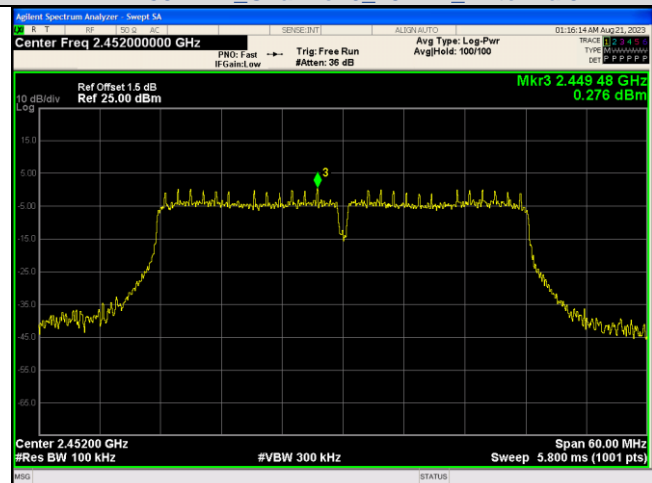
Spurious Emission
IEEE 802.11n Channel 3 40MHz Antenna 0



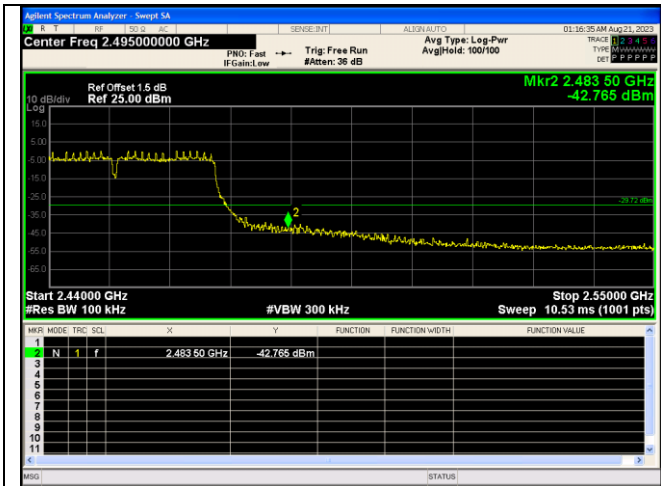
In-Band Reference Level
IEEE 802.11n Channel 6 40MHz Antenna 0



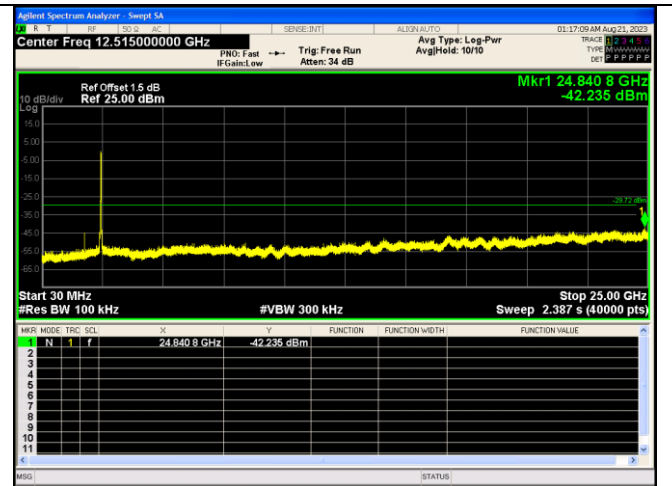
Spurious Emissions
IEEE 802.11n Channel 6 40MHz Antenna 0



In-Band Reference Level
IEEE 802.11n Channel 9 40MHz Antenna 0



Out Of Band Emission
IEEE 802.11n Channel 9 40MHz Antenna 0



Spurious Emission
IEEE 802.11n Channel 9 40MHz Antenna 0





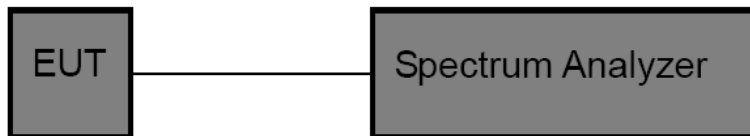
3.5. DTS Bandwidth

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (a)(2)

Test Item	Limit	Frequency Range (MHz)
DTS Bandwidth	≥500 kHz (6dB bandwidth)	2400~2483.5

Test Configuration



Test Procedure

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- DTS Spectrum Setting:
 - Set RBW = 100 kHz.
 - Set the video bandwidth (VBW) ≥ 3 RBW.
 - Detector = Peak.
 - Trace mode = Max hold.
 - Sweep = Auto couple.
- OCB Spectrum Setting:
 - Set RBW = 1% ~ 5% occupied bandwidth.
 - Set the video bandwidth (VBW) ≥ 3 RBW.
 - Detector = Peak.
 - Trace mode = Max hold.
 - Sweep = Auto couple.

NOTE: The EUT was set to continuously transmitting in each mode and low, Middle and high channel for the test.

Test Mode

Please refer to the clause 2.4.



**Test Result**

Mode	Channel	99% BW (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)	Result
IEEE 802.11b	1	15.155	10.09	0.5	PASS
	6	15.120	10.07	0.5	PASS
	11	15.142	10.08	0.5	PASS
IEEE 802.11g	1	16.783	16.34	0.5	PASS
	6	16.817	16.32	0.5	PASS
	11	16.757	16.33	0.5	PASS
IEEE 802.11n_20	1	17.801	17.54	0.5	PASS
	6	17.801	17.30	0.5	PASS
	11	17.828	17.28	0.5	PASS
IEEE 802.11n_40	3	36.325	35.79	0.5	PASS
	6	36.377	35.79	0.5	PASS
	9	36.275	35.67	0.5	PASS

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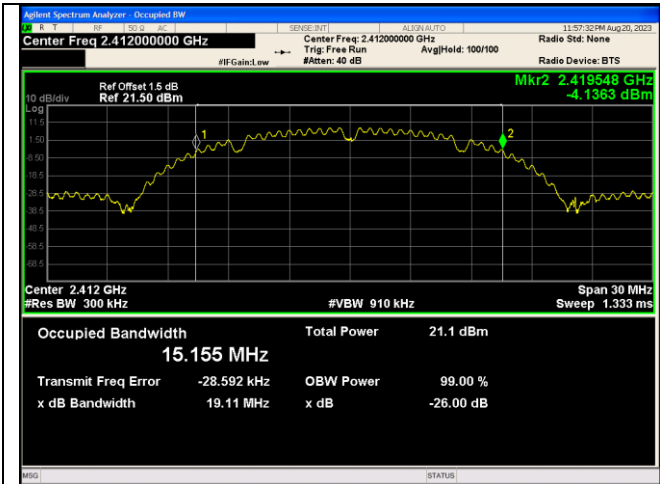
Room 101 Building B, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China
Tel.: (86)755-27521059

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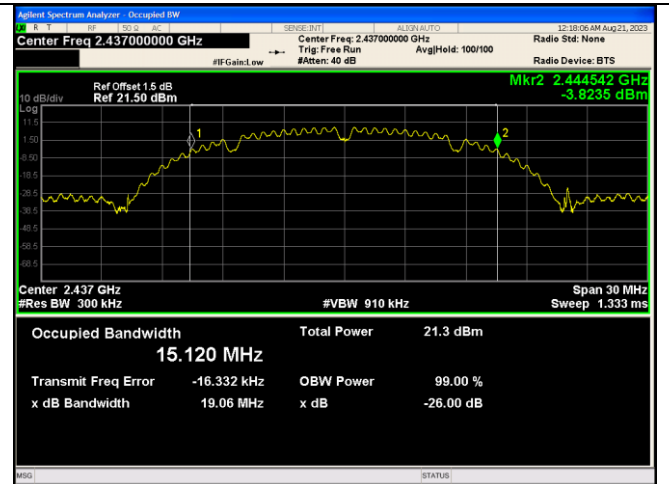
For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : <http://yz.cnca.cn>



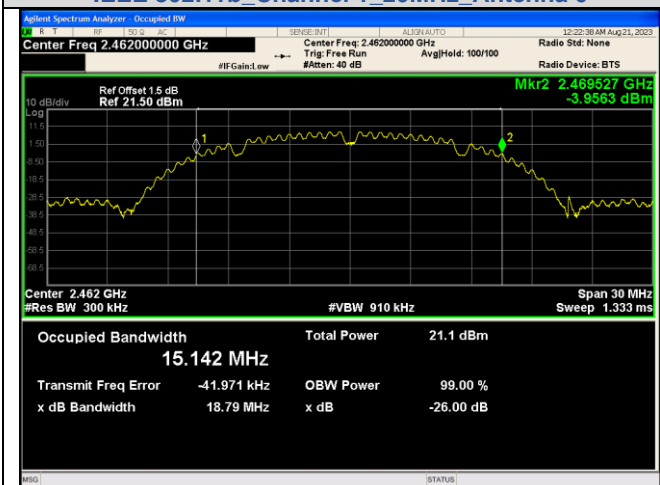
99% Bandwidth:



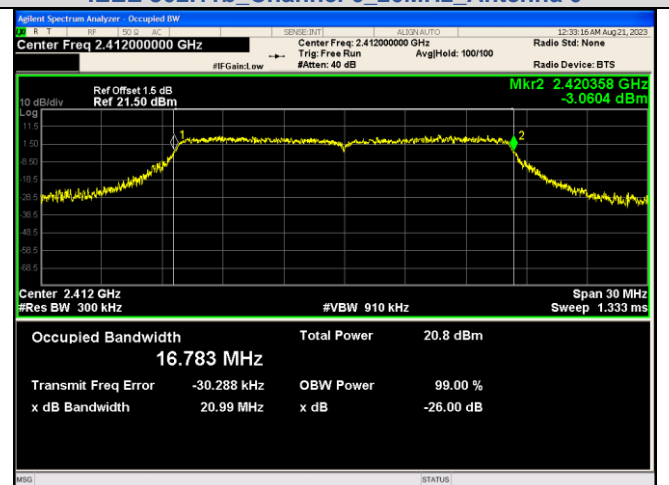
IEEE 802.11b Channel 1 20MHz Antenna 0



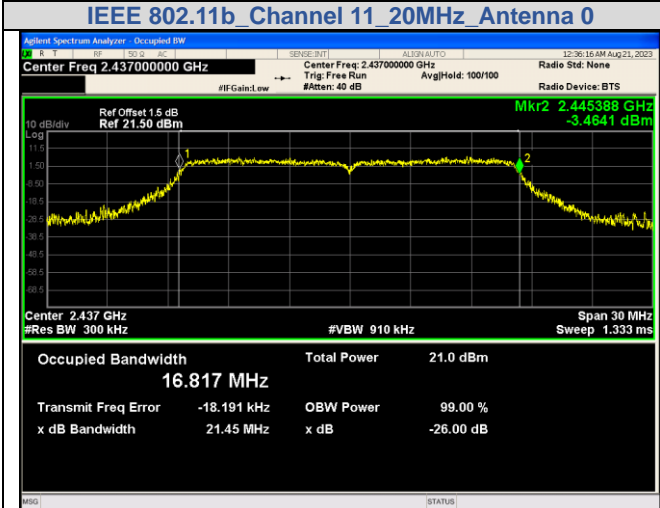
IEEE 802.11b Channel 6 20MHz Antenna 0



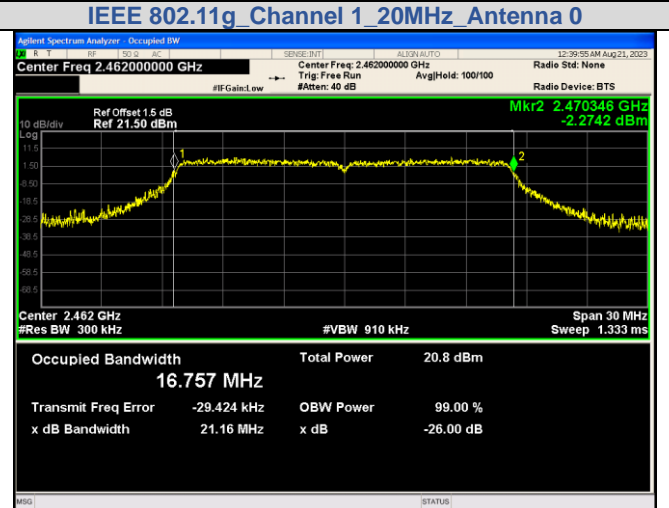
IEEE 802.11b Channel 11 20MHz Antenna 0



IEEE 802.11g Channel 1 20MHz Antenna 0



IEEE 802.11g Channel 6 20MHz Antenna 0



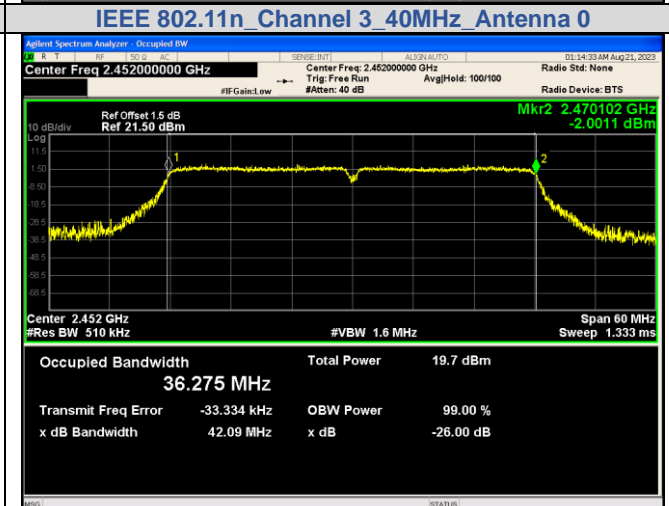
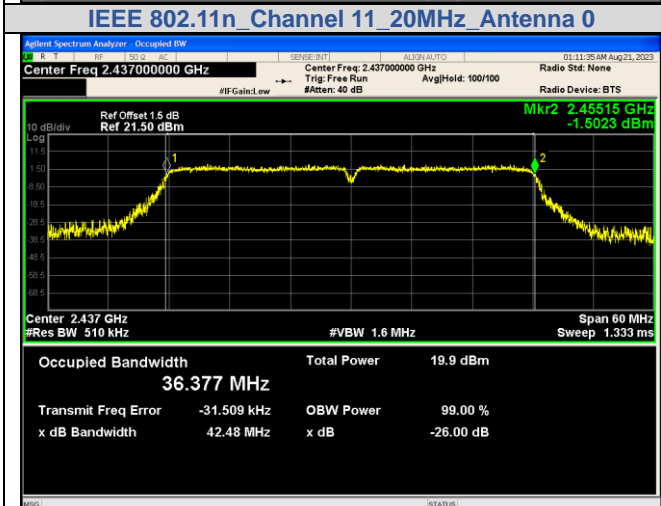
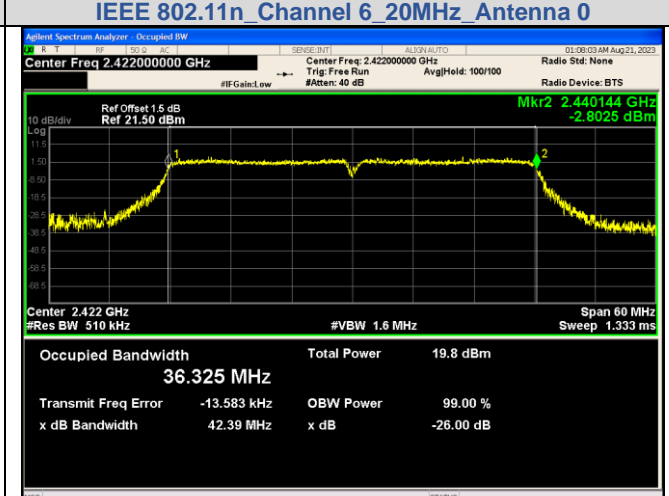
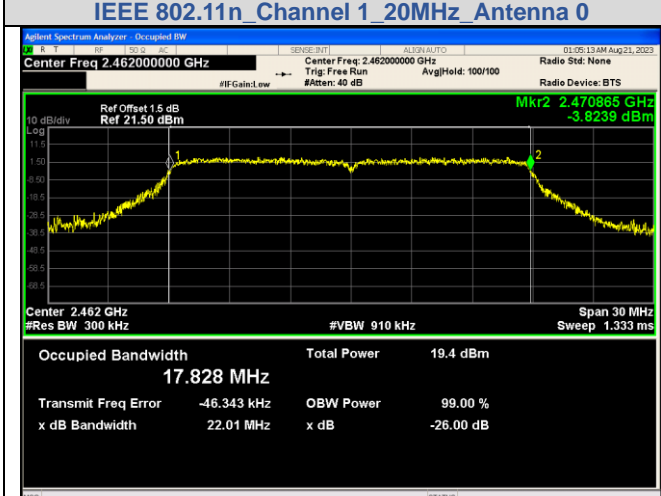
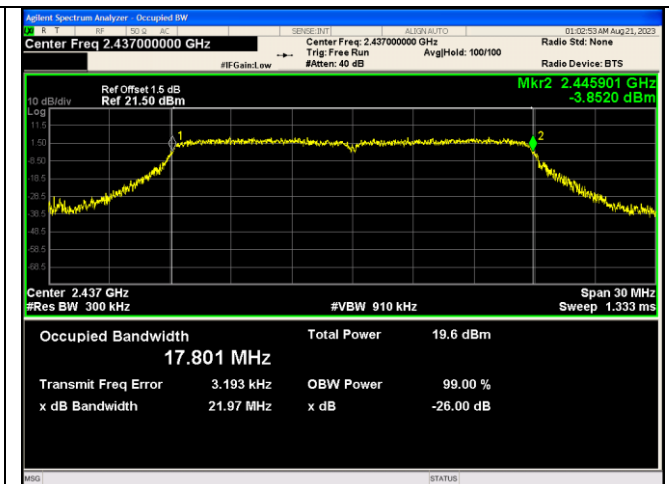
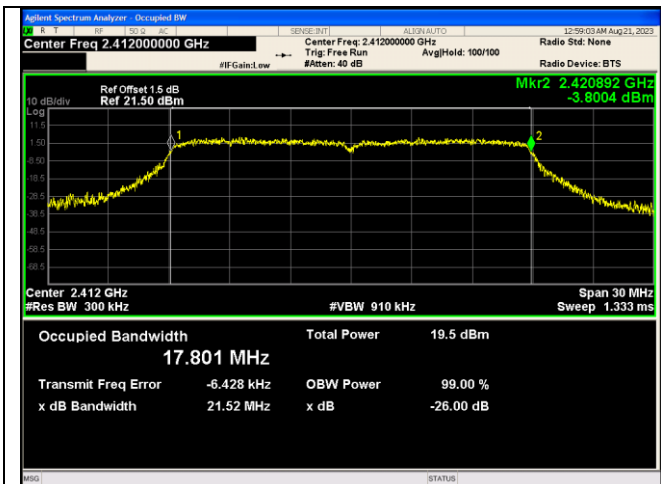
IEEE 802.11g Channel 11 20MHz Antenna 0

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IEEE 802.11n Channel 6 40MHz Antenna 0

IEEE 802.11n Channel 9 40MHz Antenna 0

