FCC PART 15C TEST REPORT FOR CERTIFICATION

On Behalf of

ARTIKA FOR LIVING INC
****

FCC ID：2AUHGOUT-STW

Report Type：	**Product Type：**
Original report	Stark

Test Engineer: Clint Chen

Report Number: STDNB-221157F-001

Report Date: 2022-12-22

Reviewed By: Philip Guo

Prepared By: STANDARD-TECH TESTING SERVICES
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The device described above is tested by STANDARD-TECH TESTING SERVICES. to confirm comply with all the FCC Part 15 Subpart C requirements. The test results are contained in this test report and STANDARD-TECH TESTING SERVICES is assumed full responsibility for the accuracy and completeness of these tests. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements. This Report is made under FCC Part 2.1074. No modifications were required during testing to bring this product into compliance. This report applies to above tested sample only. This report shall not be reproduced in part without written approval of STANDARD-TECH TESTING SERVICES. The result of this report is only responsible for the feature and antenna system information in 2.2 provided by client.

TABLE OF CONTENTS

1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

The EUT has been tested according to the applicable standards as referenced below.

EMISSION		
Description of Test Item	**Standard**	**Results**
Power Line Conducted Emission	FCC Part 15: 15.207	PASS
Radiated Emission	FCC Part 15: 15.209 FCC Part 15: 15.205	PASS
Band Edge Compliance	FCC Part 15: 15.247(d)	PASS
Conducted spurious emissions	FCC Part 15: 15.247(d)	PASS
6dB Bandwidth Test	FCC Part 15: 15.247(a)(2)	PASS
Peak Output Power	FCC Part 15: 15.247(b)(3)	PASS
Power Spectral Density	FCC Part 15: 15.247(e)	PASS
Antenna requirement	FCC Part 15: 15.203	PASS

2. GENERAL INFORMATION

2.1.Description of Equipment Under Test

Applicant:	ARTIKA FOR LIVING INC
Address:	1756 50th avenue, Lachine, Québec, Canada H8T 2V5
Manufacturer:	Ningbo Shenghe Lighting Co.,LTD.
Address:	No.311 Penglai Road,Xiangshan Economic development Zone, Ningbo, Zhejiang, 315700
Factory:	Ningbo Shenghe Lighting Co.,LTD.
Address:	No.311 Penglai Road,Xiangshan Economic development Zone, Ningbo, Zhejiang, 315700
Product:	Stark
Model No.	OUT-STW-C, OUT-STW-C1, OUT-STW-C2, OUT-STW-C3, OUT-STW-C4, OUT-STW-C5, OUT-STW-C6, OUT-STW-C7, OUT-STW-C8, OUT-STW-C9, OUT-STW-C10, OUT-STW-C11, OUT-STW-C12, OUT-STW-C13, OUT-STW-C14, OUT-STW-C15, OUT-STW-C16, OUT-STW-C17, OUT-STW-C18, OUT-STW-C19.
Remark:	OUT-STW-XXXXXX Suffix "XXXXXX" can be A to Z and/or 0 to 9 and or/blank(commercial code)
Parameter:	Input: AC 120V, 60Hz, 9W
Hardware	/
Software version:	V1.6.0
Sample Type	Prototype production
Date of Receipt	2022/12/10
Date of Test	2022/12/10-2022/12/20

2.2.Feature of Equipment Under Test

Product Feature & Specification	
2.4GHz Wi-Fi	
Support Modes	802.11b/g/n
Frequency Range	2412-2462MHz
Type of Modulation	802.11b for DSSS 802.11g/n for OFDM
Data Rate	802.11b: 11/5.5/2/1 Mbps; 802.11g: 54/48/36/24/18/12/9/6 Mbps; 802.11n: up to 150Mbps
Channel Separation	5MHz

Antenna System

Wi-Fi	
Type of Antenna	PCB Antenna
Antenna number	1
Antenna Peak Gain	DTS Band (2400-2483.5MHz) Peak Gain: 2.4dBi

* Information in this section is provided by client.

2.3.Tested Supporting System Details

RF Test Tool: Wifi Test Tool v1.6.0 release
1. Use the UART serial board to connect the Wifi correctly; RX —>TX; TX—>RX; 3.3V —>VCC; GND —>GND;
2. Connect the UART serial board to the computer
3. Click Wifi Test Tool v1.6.0 release to enter the fixed frequency test

Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Lenovo	Notebook	X220i	428632C
Lenovo	Adapter	42T4420	N322
N/A	USB adaptor	94V-0	932

External I/O Cable

Cable Description	Length (m)	From Port	To
Data Cable	0.1	EUT	Debug Board

2.4.Test Information

A special test software(The developer mode that comes with the device) was used to control EUT work in Continuous TX mode(The duty cycle of the test signal is 100%), and select test channel, wireless mode and data rate.

Tested mode, channel, and data rate information			
Mode	data rate (Mbps)(see Note)	Channel	Frequency (MHz)
IEEE 802.11b	1	Low :CH1	2412
	1	Middle: CH6	2437
	1	High: CH11	2462
IEEE 802.11g	6	Low :CH1	2412
	6	Middle: CH6	2437
	6	High: CH11	2462
IEEE 802.11n HT20	MCS0	Low :CH1	2412
	MCS0	Middle: CH6	2437
	MCS0	High: CH11	2462
IEEE 802.11n HT40	MCS0	Low :CH3	2422
	MCS0	Middle: CH6	2437
	MCS0	High: CH9	2452
Note: According exploratory test, EUT will have maximum output power in those data rate, so those data rate were used for all test.			

2.5.Equipments Used during the Test

Conducted Emissions

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Shielding Room	AUDIX	N/A	N/A	2021/07/27	3 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESR7	101487	2022/04/01	2 Year
3.	V-LISN	Rohde & Schwarz	NNLK 8122	8122-00128	2022/03/31	2 Year
4.	RF Cable	YuanDao	RG223	N/A	2022/04/14	1 Year
5.	Test Software	AUDIX	e3	N/A	N/A	N/A
Note: N/A means Not applicable.						

For frequency range 30MHz~1000MHz (In 3m Anechoic Chamber)

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Semi-anechoic chamber	AUDIX	N/A	N/A	2021/07/27	3 Year
2.	EMI Test Receiver	R&S	ESR7	101487	2022/04/01	2 Year
3.	Biconical Logarithmic Antenna	SCHWARDZBECK	VULB 9162	9162-104	2022/04/10	2 Year
4.	Cable Line	PEWC	CFD400NL	N/A	2022/04/14	1 Year
5.	Loop Antenna	Beijing Daze	ZN30900C	1062	2022/01/20	1 Year
6.	Test Software	AUDIX	e3	N/A	N/A	1 Year
Note: N/A means Not applicable.						

For frequency range 1GHz~25GHz (In 3m Anechoic Chamber)

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Semi-anechoic chamber	AUDIX	N/A	N/A	2021/07/27	3 Year
2	Spectrum Analyzer	R&S	FSP	100615	2022/04/01	2 Year
3	Horn Antenna	SCHWARDZBECK	BBHA 9170	895	2022/01/20	1 Year
4	Horn Antenna	SCHWARDZBECK	BBHA 9120 D	9120D-1515	2022/04/06	2 Year
5	Broadband Preamplifier	SCHWARDZBECK	BBV9718	9718-269	2022/01/14	2 Year
6	Broadband Preamplifier	SKET	LNPA-1840	SK2019121201	2022/01/20	2 Year
7	RF Cable	SKET	RC-40G-K-M/K-M-0.6M	N/A	2022/07/05	1 Year
8	RF Cable	SKET	RC-40G-K-M/K-M-0.6M	N/A	2022/07/05	1 Year
9	Test Software	AUDIX	e3	N/A	N/A	N/A
Note: N/A means Not applicable.						

RF Conducted Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	R&S	FSP	100615	2022/04/01	2 Year
2.	RF Cable	STD	/	/	/	/

2.6. Test Facility

Site Description

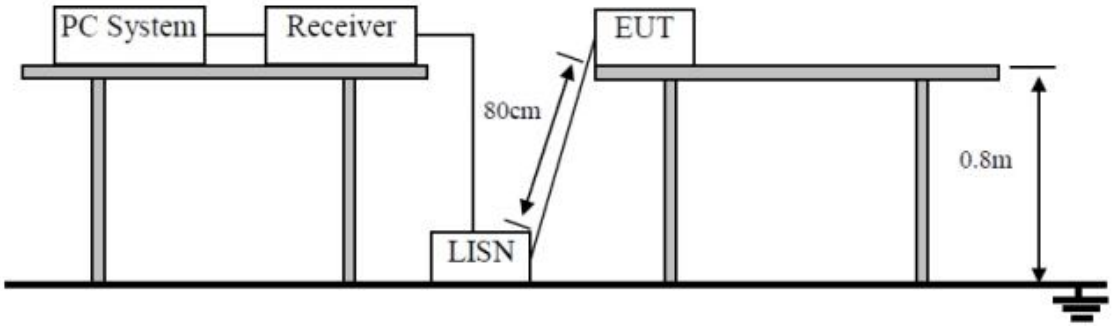
Name of Firm	:	STANDARD-TECH TESTING SERVICES Standard-Tech Building, No. 6 Guanhong Road Guangzhou Science City, Guangzhou City, Guangdong Province, Guangzhou 510663, People's Republic of China
A2LA	:	Certificate No.: 4703.01
EMC Lab.	:	Certificated by Industry Canada Registration Number: 20901 Valid Date: 2024/02/29
	:	Certificated by FCC USA. Designation No.: CN1222 Valid Date: 2024/02/29

2.7.Measurement Uncertainty (95% confidence levels, k=2)

Test Item	Uncertainty
Uncertainty for Conduction emission test in No. 1 Conduction	2.90dB(150KHz to 30MHz)
Uncertainty for Radiation Emission test in 3m chamber	5.34dB(30M~1GHz, Distance: 3m)
Uncertainty for Radiation Emission test in 3m chamber(1GHz-40GHz)	4.14dB(1~6GHz, Distance: 3m)
	4.60dB(6~18GHz, Distance: 3m)
	4.94dB(18~40GHz, Distance: 3m)
Uncertainty for Output power test	1.34dB
Uncertainty for Bandwidth test	92.3kHz

3. POWER LINE CONDUCTED EMISSION TEST

3.1.Block Diagram of Test Setup



3.2.Power Line Conducted Emission Test Limits

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Notes: 1. * Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

3.3.Test Procedure

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power Via PC connected to the power mains through a line impedance stabilization network (V-LISN). This provides a 50 ohm coupling impedance for the EUT (Please refer the block diagram of the test setup and photographs). The AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10: 2013 on Conducted Emission Test.

The bandwidth of test receiver (R & S ESR7) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

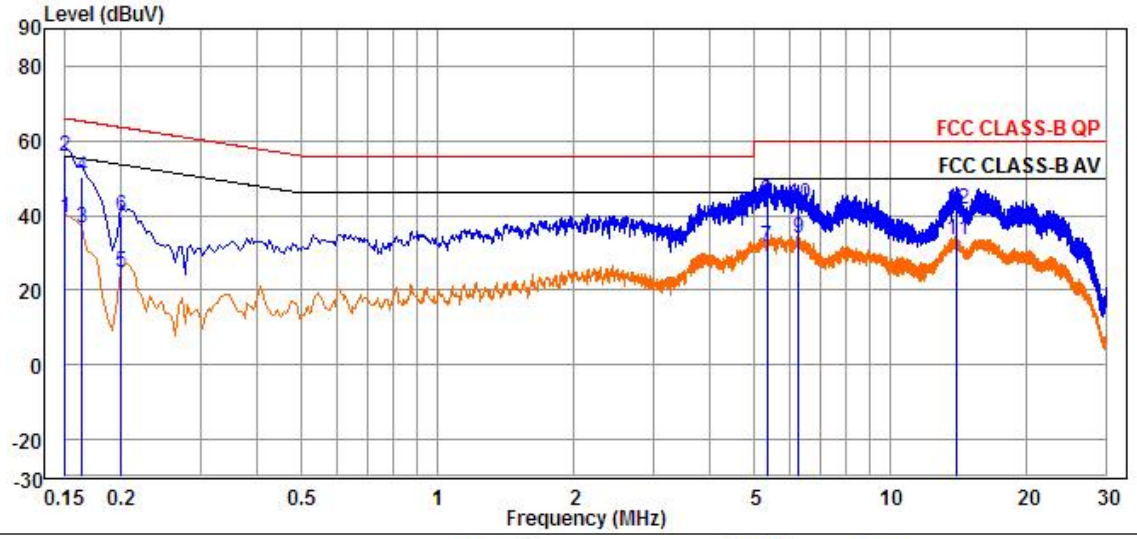
3.4.Power Line Conducted Emission Test Result

Pass

Corrected Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + Transient Limiter Attenuation (dB)
Margin (dB) = Limit (dBμV) – Corrected Amplitude (dBμV)

Test Line: Line	OUT-STW-C

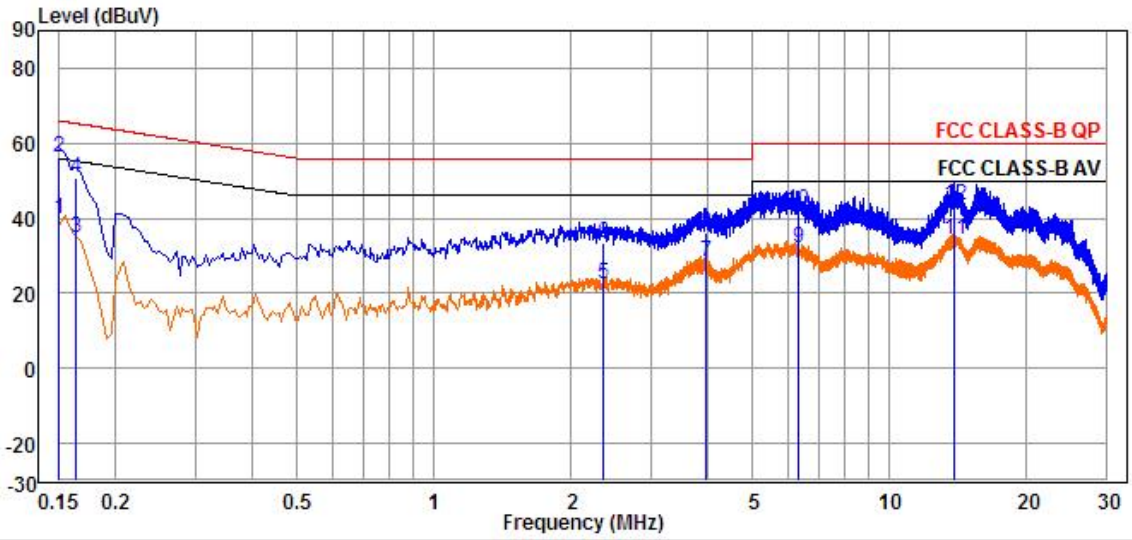
EUT operation mode: Transmitting in 802.11b mode low channel(worst case)



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	
1	0.15	39.42	39.30	0.12	56.00	-16.58	Average
2	0.15	55.92	55.80	0.12	66.00	-10.08	QP
3	0.16	36.41	36.29	0.12	55.28	-18.87	Average
4	0.16	50.41	50.29	0.12	65.28	-14.87	QP
5	0.20	24.96	24.84	0.12	53.63	-28.67	Average
6	0.20	39.96	39.84	0.12	63.63	-23.67	QP
7	5.34	31.74	31.46	0.28	50.00	-18.26	Average
8	5.34	43.74	43.46	0.28	60.00	-16.26	QP
9	6.28	33.91	33.65	0.26	50.00	-16.09	Average
10	6.28	42.91	42.65	0.26	60.00	-17.09	QP
11	14.00	33.52	33.02	0.50	50.00	-16.48	Average
12	14.00	41.52	41.02	0.50	60.00	-18.48	QP

Test Line: Neutral	OUT-STW-C

EUT operation mode: Transmitting in 802.11b mode low channel(worst case)

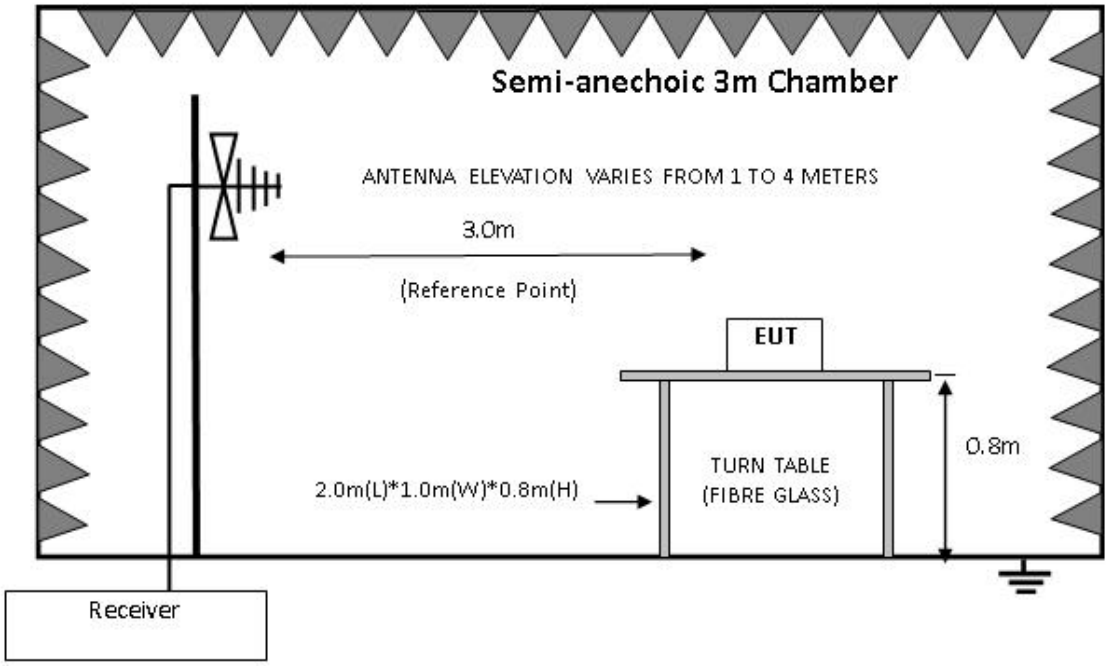


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	
1	0.15	39.62	39.40	0.22	56.00	-16.38	Average
2	0.15	56.22	56.00	0.22	66.00	-9.78	QP
3	0.16	34.59	34.37	0.22	55.28	-20.69	Average
4	0.16	50.59	50.37	0.22	65.28	-14.69	QP
5	2.35	22.51	22.13	0.38	46.00	-23.49	Average
6	2.35	33.51	33.13	0.38	56.00	-22.49	QP
7	3.96	28.35	27.90	0.45	46.00	-17.65	Average
8	3.96	36.35	35.90	0.45	56.00	-19.65	QP
9	6.30	32.21	31.75	0.46	50.00	-17.79	Average
10	6.30	42.21	41.75	0.46	60.00	-17.79	QP
11	13.92	34.49	33.88	0.61	50.00	-15.51	Average
12	13.92	43.49	42.88	0.61	60.00	-16.51	QP

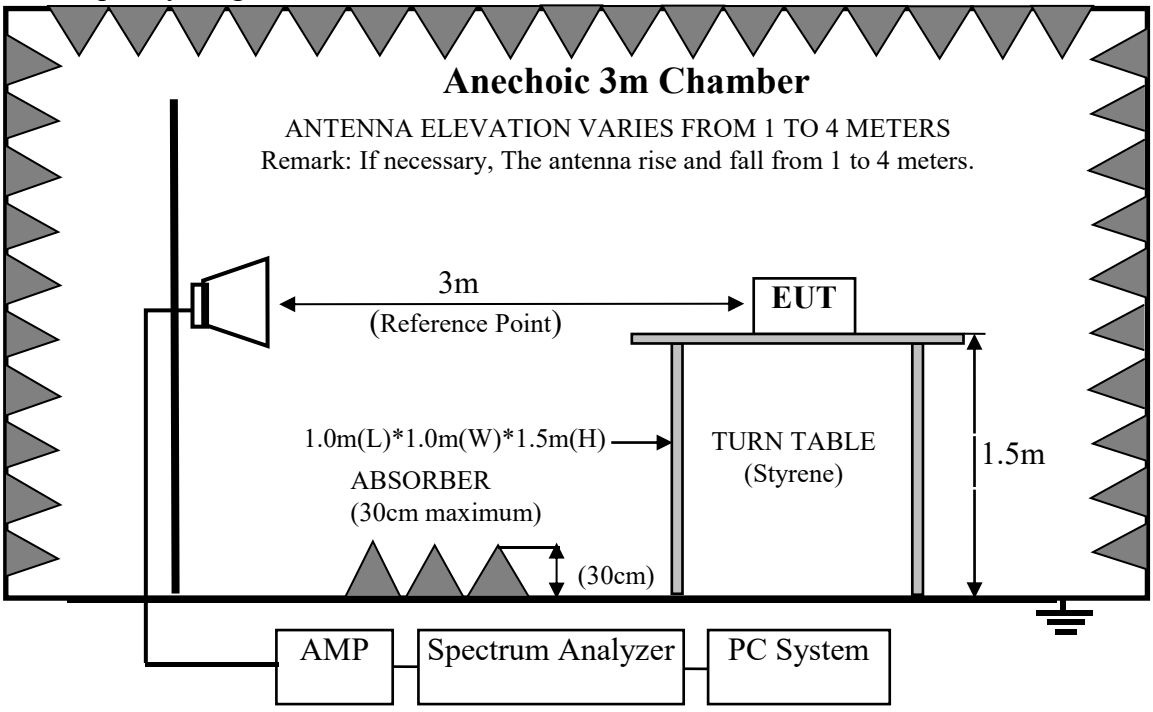
4. RADIATED EMISSION TEST

4.1. Block Diagram of Test Setup

For frequency range below 1GHz



For frequency range above 1GHz



4.2.Radiated Emission Limit

15.247&209 limits

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

Remark: (1) Emission level dBμV = 20 log Emission level μV/m

(2) The smaller limit shall apply at the cross point between two frequency bands.

(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

15.205 Restricted bands of operation

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

4.3.Test Procedure

Frequency below 30MHz:

The EUT setup on the turn table which has 0.8 m height to the ground. The turn table rotated 360 degrees and antenna fixed to 1 m to find the maximum emission level. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2013 regulation.

EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground for frequency 30MHz~1000MHz, 1.5 meter high above ground for frequency above 1GHz and put the absorbing with 2.4m(L)*2.4m(W)*0.3m(H) on the ground . The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it.EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna

(calibrated bilog antenna) is used as receiving antenna for frequency 30MHz~1000MHz, and the Horm antenna is used as receiving antenna for frequency above 1GHz. Both horizontal and vertical polarization of the antenna is set on Test. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.10-2013 on radiated emission Test.

The bandwidth of the EMI test receiver (R&S ESR7) is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The bandwidth of the Spectrum's VBW is set at 3MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure above 1GHz

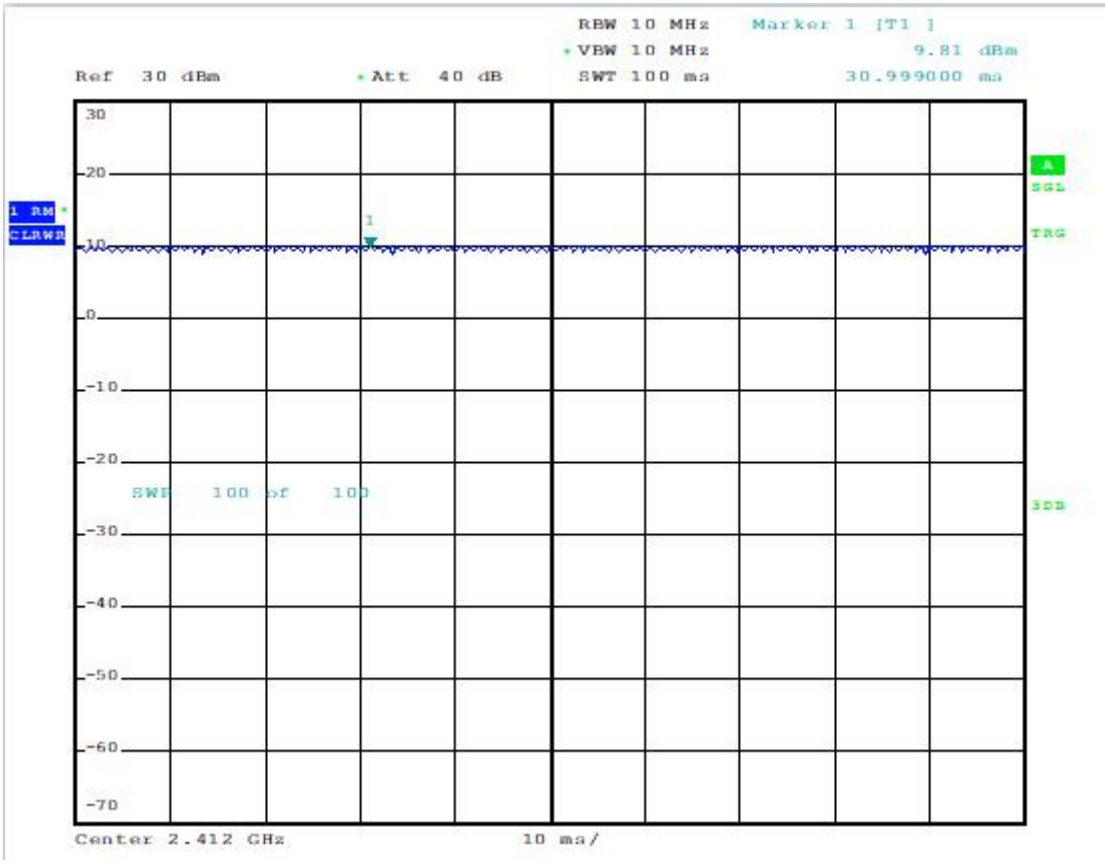
4.4. Radiated Emission Test Results

PASS.

All the emissions from 30MHz to 25 GHz were comply with 15.209 limits.

Note 1: Final Level= Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
Note 2: The emissions (9kHz~30MHz) not reported for there is no emission be found.
Note 3: The emission levels of other frequencies(test frequency bang is 1GHz to 25GHz) are very lower than the limit and not show in test report.

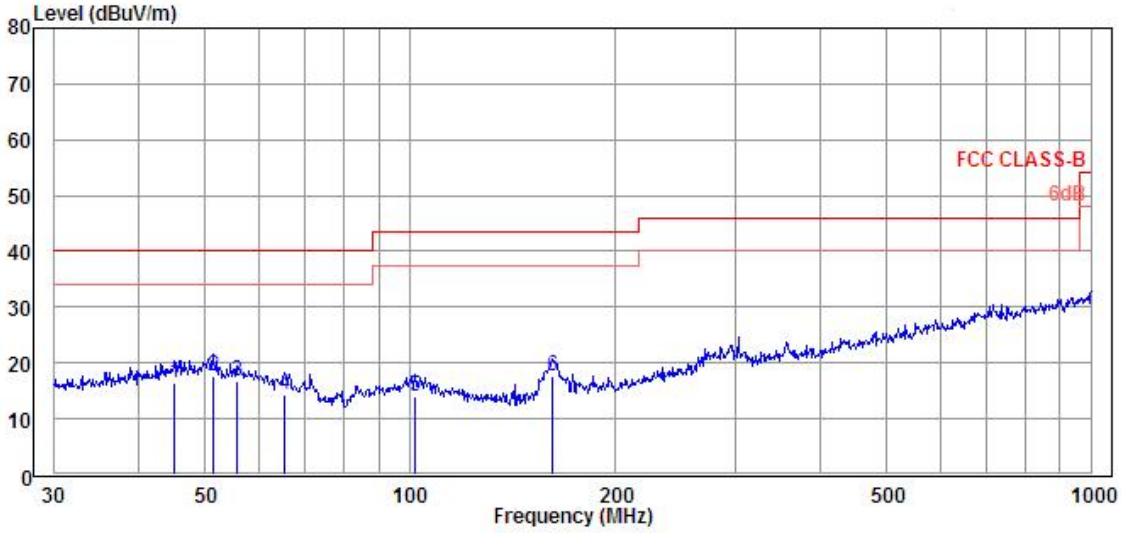
Duty cycle



Note: The duty cycle of the test signal is 100%.

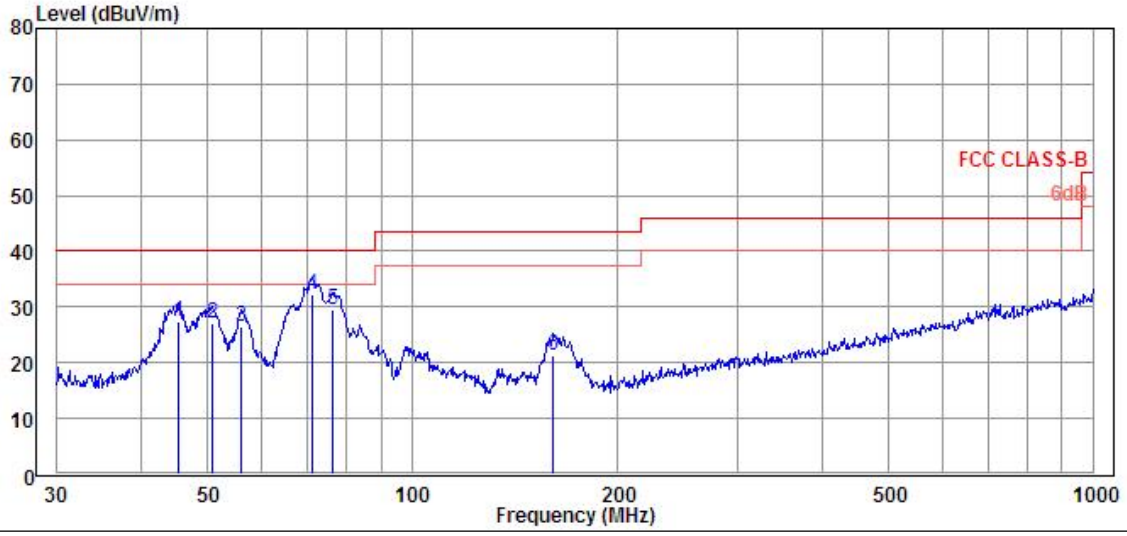
Frequency: 30MHz~1GHz

Polarization: Horizontal	OUT-STW-C
EUT operation mode: Transmitting in 802.11b mode low channel(worst case)	



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	45.06	16.43	-2.93	19.36	40.00	-23.57	QP
2	51.30	17.72	-2.00	19.72	40.00	-22.28	QP
3	55.61	16.59	-2.65	19.24	40.00	-23.41	QP
4	65.34	14.18	-2.87	17.05	40.00	-25.82	QP
5	101.64	14.08	-3.60	17.68	43.50	-29.42	QP
6	162.04	17.76	2.63	15.13	43.50	-25.74	QP

Polarization: Vertical	OUT-STW-C
EUT operation mode: Transmitting in 802.11b mode low channel(worst case)	



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	45.22	27.33	7.95	19.38	40.00	-12.67	QP
2	50.76	27.20	7.40	19.80	40.00	-12.80	QP
3	56.00	26.56	7.38	19.18	40.00	-13.44	QP
4	71.08	32.15	16.72	15.43	40.00	-7.85	QP
5	76.24	29.60	15.11	14.49	40.00	-10.40	QP
6	160.91	21.26	6.19	15.07	43.50	-22.24	QP

Frequency: Above 1GHz

Test Model:	**OUT-STW-C**
802.11b	**CH01**

Horizontal

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1986.00	43.55	47.63	-4.08	74.00	-30.45	Peak
2	4842.00	53.60	52.08	1.52	74.00	-20.40	Peak
3	7222.00	44.38	35.31	9.07	74.00	-29.62	Peak
4	10316.00	48.32	34.77	13.55	74.00	-25.68	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1918.00	21.77	26.11	-4.34	54.00	-32.23	Average
2	4060.00	25.00	25.19	-0.19	54.00	-29.00	Average
3	7630.00	32.07	22.15	9.92	54.00	-21.93	Average
4	9364.00	35.30	22.79	12.51	54.00	-18.70	Average

Vertical

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1816.00	48.16	52.91	-4.75	74.00	-25.84	Peak
2	4808.00	58.89	57.45	1.44	74.00	-15.11	Peak
3	6542.00	42.28	35.33	6.95	74.00	-31.72	Peak
4	8820.00	46.69	35.18	11.51	74.00	-27.31	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1816.00	23.12	27.87	-4.75	54.00	-30.88	Average
2	4808.00	30.61	29.17	1.44	54.00	-23.39	Average
3	7834.00	32.58	22.41	10.17	54.00	-21.42	Average
4	10690.00	36.41	21.86	14.55	54.00	-17.59	Average

Test Model:	OUT-STW-C
802.11b	CH06

Horizontal

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2122.00	43.58	47.54	-3.96	74.00	-30.42	Peak
2	4842.00	59.87	58.35	1.52	74.00	-14.13	Peak
3	7324.00	51.67	42.35	9.32	74.00	-22.33	Peak
4	9874.00	48.25	35.53	12.72	74.00	-25.75	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1918.00	22.13	26.47	-4.34	54.00	-31.87	Average
2	4876.00	32.14	30.54	1.60	54.00	-21.86	Average
3	8004.00	32.77	22.40	10.37	54.00	-21.23	Average
4	11200.00	37.18	21.85	15.33	54.00	-16.82	Average

Vertical

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2156.00	47.76	51.71	-3.95	74.00	-26.24	Peak
2	4876.00	59.20	57.60	1.60	74.00	-14.80	Peak
3	7664.00	44.78	34.83	9.95	74.00	-29.22	Peak
4	10554.00	49.71	35.52	14.19	74.00	-24.29	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2054.00	22.73	26.72	-3.99	54.00	-31.27	Average
2	4876.00	37.65	36.05	1.60	54.00	-16.35	Average
3	7630.00	32.06	22.14	9.92	54.00	-21.94	Average
4	9364.00	35.62	23.11	12.51	54.00	-18.38	Average

Test Model:	OUT-STW-C
802.11b	CH11

Horizontal

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1952.00	43.26	47.46	-4.20	74.00	-30.74	Peak
2	4944.00	51.95	50.20	1.75	74.00	-22.05	Peak
3	7392.00	52.92	43.44	9.48	74.00	-21.08	Peak
4	9840.00	47.04	34.32	12.72	74.00	-26.96	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1918.00	21.84	26.18	-4.34	54.00	-32.16	Average
2	4910.00	29.22	27.54	1.68	54.00	-24.78	Average
3	7188.00	31.00	22.02	8.98	54.00	-23.00	Average
4	9364.00	35.05	22.54	12.51	54.00	-18.95	Average

Vertical

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1986.00	46.95	51.03	-4.08	74.00	-27.05	Peak
2	4910.00	64.82	63.14	1.68	74.00	-9.18	Peak
3	7188.00	44.47	35.49	8.98	74.00	-29.53	Peak
4	9364.00	47.73	35.22	12.51	74.00	-26.27	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1816.00	22.76	27.51	-4.75	54.00	-31.24	Average
2	4910.00	36.64	34.96	1.68	54.00	-17.36	Average
3	7392.00	31.40	21.92	9.48	54.00	-22.60	Average
4	10316.00	35.96	22.41	13.55	54.00	-18.04	Average

Test Model:	OUT-STW-C
802.11g	CH01

Horizontal

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2020.00	43.14	47.14	-4.00	74.00	-30.86	Peak
2	4808.00	63.38	61.94	1.44	74.00	-10.62	Peak
3	7222.00	49.40	40.33	9.07	74.00	-24.60	Peak
4	10316.00	48.86	35.31	13.55	74.00	-25.14	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1918.00	22.02	26.36	-4.34	54.00	-31.98	Average
2	4060.00	25.26	25.45	-0.19	54.00	-28.74	Average
3	6712.00	30.02	22.49	7.53	54.00	-23.98	Average
4	9364.00	35.31	22.80	12.51	54.00	-18.69	Average

Vertical

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1986.00	49.40	53.48	-4.08	74.00	-24.60	Peak
2	4808.00	53.92	52.48	1.44	74.00	-20.08	Peak
3	7868.00	44.81	34.61	10.20	74.00	-29.19	Peak
4	10350.00	48.33	34.68	13.65	74.00	-25.67	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1816.00	22.96	27.71	-4.75	54.00	-31.04	Average
2	4808.00	31.36	29.92	1.44	54.00	-22.64	Average
3	6916.00	30.39	22.15	8.24	54.00	-23.61	Average
4	9432.00	35.44	22.82	12.62	54.00	-18.56	Average

Test Model:	OUT-STW-C
802.11g	CH06

Horizontal

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1918.00	46.34	50.68	-4.34	74.00	-27.66	Peak
2	4842.00	64.13	62.61	1.52	74.00	-9.87	Peak
3	7324.00	53.68	44.36	9.32	74.00	-20.32	Peak
4	9636.00	47.32	34.60	12.72	74.00	-26.68	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1918.00	21.80	26.14	-4.34	54.00	-32.20	Average
2	4876.00	32.36	30.76	1.60	54.00	-21.64	Average
3	7188.00	31.08	22.10	8.98	54.00	-22.92	Average
4	9364.00	35.09	22.58	12.51	54.00	-18.91	Average

Vertical

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2020.00	48.48	52.48	-4.00	74.00	-25.52	Peak
2	4876.00	59.45	57.85	1.60	74.00	-14.55	Peak
3	7290.00	44.41	35.17	9.24	74.00	-29.59	Peak
4	9398.00	47.23	34.67	12.56	74.00	-26.77	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1918.00	22.48	26.82	-4.34	54.00	-31.52	Average
2	4876.00	38.57	36.97	1.60	54.00	-15.43	Average
3	8242.00	33.13	22.63	10.50	54.00	-20.87	Average
4	10282.00	35.92	22.45	13.47	54.00	-18.08	Average

Test Model:	OUT-STW-C
802.11g	CH11

Horizontal

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1918.00	37.81	42.15	-4.34	74.00	-36.19	Peak
2	4910.00	41.29	39.61	1.68	74.00	-32.71	Peak
3	8072.00	44.36	33.96	10.40	74.00	-29.64	Peak
4	10758.00	47.34	32.61	14.73	74.00	-26.66	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2054.00	21.69	25.68	-3.99	54.00	-32.31	Average
2	4910.00	29.30	27.62	1.68	54.00	-24.70	Average
3	7834.00	32.55	22.38	10.17	54.00	-21.45	Average
4	10554.00	36.07	21.88	14.19	54.00	-17.93	Average

Vertical

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1986.00	48.98	53.06	-4.08	74.00	-25.02	Peak
2	4910.00	60.77	59.09	1.68	74.00	-13.23	Peak
3	8242.00	45.37	34.87	10.50	74.00	-28.63	Peak
4	10724.00	48.71	34.07	14.64	74.00	-25.29	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1918.00	22.50	26.84	-4.34	54.00	-31.50	Average
2	4910.00	36.62	34.94	1.68	54.00	-17.38	Average
3	7630.00	31.66	21.74	9.92	54.00	-22.34	Average
4	10588.00	36.41	22.12	14.29	54.00	-17.59	Average

Test Model:	OUT-STW-C
802.11n(HT20)	CH01

Horizontal

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2054.00	42.62	46.61	-3.99	74.00	-31.38	Peak
2	4808.00	58.36	56.92	1.44	74.00	-15.64	Peak
3	6984.00	43.39	34.92	8.47	74.00	-30.61	Peak
4	9942.00	47.44	34.72	12.72	74.00	-26.56	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1918.00	21.87	26.21	-4.34	54.00	-32.13	Average
2	4060.00	24.86	25.05	-0.19	54.00	-29.14	Average
3	7120.00	30.85	22.03	8.82	54.00	-23.15	Average
4	9432.00	35.06	22.44	12.62	54.00	-18.94	Average

Vertical

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1986.00	48.30	52.38	-4.08	74.00	-25.70	Peak
2	4808.00	50.36	48.92	1.44	74.00	-23.64	Peak
3	7664.00	43.70	33.75	9.95	74.00	-30.30	Peak
4	9330.00	46.89	34.42	12.47	74.00	-27.11	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1816.00	22.60	27.35	-4.75	54.00	-31.40	Average
2	4808.00	29.18	27.74	1.44	54.00	-24.82	Average
3	7868.00	32.45	22.25	10.20	54.00	-21.55	Average
4	11030.00	36.77	21.40	15.37	54.00	-17.23	Average

Test Model:	OUT-STW-C
802.11n(HT20)	CH06

Horizontal

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1986.00	42.84	46.92	-4.08	74.00	-31.16	Peak
2	4842.00	60.68	59.16	1.52	74.00	-13.32	Peak
3	7290.00	49.07	39.83	9.24	74.00	-24.93	Peak
4	9704.00	47.44	34.73	12.71	74.00	-26.56	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1918.00	21.78	26.12	-4.34	54.00	-32.22	Average
2	4876.00	29.60	28.00	1.60	54.00	-24.40	Average
3	6576.00	29.54	22.47	7.07	54.00	-24.46	Average
4	9398.00	34.75	22.19	12.56	54.00	-19.25	Average

Vertical

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1884.00	49.05	53.52	-4.47	74.00	-24.95	Peak
2	4876.00	55.95	54.35	1.60	74.00	-18.05	Peak
3	7494.00	44.20	34.46	9.74	74.00	-29.80	Peak
4	10384.00	48.63	34.89	13.74	74.00	-25.37	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1918.00	22.40	26.74	-4.34	54.00	-31.60	Average
2	4876.00	36.23	34.63	1.60	54.00	-17.77	Average
3	7460.00	31.24	21.59	9.65	54.00	-22.76	Average
4	9364.00	35.32	22.81	12.51	54.00	-18.68	Average

Test Model:	OUT-STW-C
802.11n(HT20)	CH11

Horizontal

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1952.00	42.49	46.69	-4.20	74.00	-31.51	Peak
2	4944.00	58.25	56.50	1.75	74.00	-15.75	Peak
3	7392.00	53.49	44.01	9.48	74.00	-20.51	Peak
4	9840.00	48.16	35.44	12.72	74.00	-25.84	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1918.00	21.55	25.89	-4.34	54.00	-32.45	Average
2	4910.00	28.53	26.85	1.68	54.00	-25.47	Average
3	7630.00	31.77	21.85	9.92	54.00	-22.23	Average
4	9840.00	35.16	22.44	12.72	54.00	-18.84	Average

Vertical

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1884.00	48.42	52.89	-4.47	74.00	-25.58	Peak
2	4910.00	58.64	56.96	1.68	74.00	-15.36	Peak
3	7426.00	43.80	34.23	9.57	74.00	-30.20	Peak
4	9738.00	47.40	34.68	12.72	74.00	-26.60	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1816.00	22.57	27.32	-4.75	54.00	-31.43	Average
2	4910.00	34.45	32.77	1.68	54.00	-19.55	Average
3	7834.00	32.14	21.97	10.17	54.00	-21.86	Average
4	10350.00	35.65	22.00	13.65	54.00	-18.35	Average

Test Model:	OUT-STW-C
802.11n(HT40)	CH03

Horizontal

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2088.00	43.82	47.79	-3.97	74.00	-30.18	Peak
2	4842.00	59.08	57.56	1.52	74.00	-14.92	Peak
3	8242.00	45.18	34.68	10.50	74.00	-28.82	Peak
4	10622.00	48.69	34.33	14.36	74.00	-25.31	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1918.00	21.88	26.22	-4.34	54.00	-32.12	Average
2	4026.00	24.99	25.25	-0.26	54.00	-29.01	Average
3	7868.00	32.46	22.26	10.20	54.00	-21.54	Average
4	10554.00	36.25	22.06	14.19	54.00	-17.75	Average

Vertical

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2156.00	48.15	52.10	-3.95	74.00	-25.85	Peak
2	4842.00	48.76	47.24	1.52	74.00	-25.24	Peak
3	7494.00	43.47	33.73	9.74	74.00	-30.53	Peak
4	9398.00	47.40	34.84	12.56	74.00	-26.60	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1816.00	22.81	27.56	-4.75	54.00	-31.19	Average
2	4842.00	33.12	31.60	1.52	54.00	-20.88	Average
3	8242.00	33.04	22.54	10.50	54.00	-20.96	Average
4	10928.00	36.33	21.14	15.19	54.00	-17.67	Average

Test Model:	OUT-STW-C
802.11n(HT40)	CH06

Horizontal

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2020.00	43.42	47.42	-4.00	74.00	-30.58	Peak
2	4876.00	59.02	57.42	1.60	74.00	-14.98	Peak
3	7290.00	46.27	37.03	9.24	74.00	-27.73	Peak
4	10316.00	48.21	34.66	13.55	74.00	-25.79	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1918.00	22.05	26.39	-4.34	54.00	-31.95	Average
2	4876.00	27.45	25.85	1.60	54.00	-26.55	Average
3	7868.00	32.33	22.13	10.20	54.00	-21.67	Average
4	9364.00	35.22	22.71	12.51	54.00	-18.78	Average

Vertical

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2020.00	50.56	54.56	-4.00	74.00	-23.44	Peak
2	4876.00	52.15	50.55	1.60	74.00	-21.85	Peak
3	7834.00	45.20	35.03	10.17	74.00	-28.80	Peak
4	10588.00	48.24	33.95	14.29	74.00	-25.76	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1918.00	22.46	26.80	-4.34	54.00	-31.54	Average
2	4876.00	34.46	32.86	1.60	54.00	-19.54	Average
3	7630.00	31.58	21.66	9.92	54.00	-22.42	Average
4	10282.00	35.47	22.00	13.47	54.00	-18.53	Average

Test Model:	OUT-STW-C
802.11n(HT40)	CH09

Horizontal

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1986.00	43.09	47.17	-4.08	74.00	-30.91	Peak
2	4910.00	59.62	57.94	1.68	74.00	-14.38	Peak
3	7358.00	45.95	36.54	9.41	74.00	-28.05	Peak
4	9364.00	47.56	35.05	12.51	74.00	-26.44	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1816.00	21.49	26.24	-4.75	54.00	-32.51	Average
2	4876.00	27.16	25.56	1.60	54.00	-26.84	Average
3	8072.00	32.70	22.30	10.40	54.00	-21.30	Average
4	10316.00	36.12	22.57	13.55	54.00	-17.88	Average

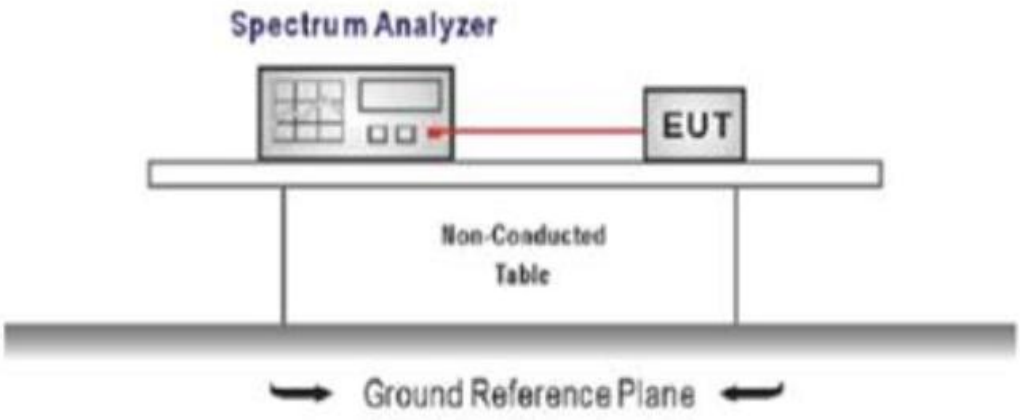
Vertical

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1884.00	48.45	52.92	-4.47	74.00	-25.55	Peak
2	4910.00	53.90	52.22	1.68	74.00	-20.10	Peak
3	7426.00	44.04	34.47	9.57	74.00	-29.96	Peak
4	10350.00	47.74	34.09	13.65	74.00	-26.26	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	1918.00	22.44	26.78	-4.34	54.00	-31.56	Average
2	4876.00	32.97	31.37	1.60	54.00	-21.03	Average
3	8242.00	33.22	22.72	10.50	54.00	-20.78	Average
4	11200.00	37.24	21.91	15.33	54.00	-16.76	Average

5. CONDUCTED SPURIOUS EMISSIONS

5.1. Block Diagram of Test Setup



5.2. Limit

In any 100kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.

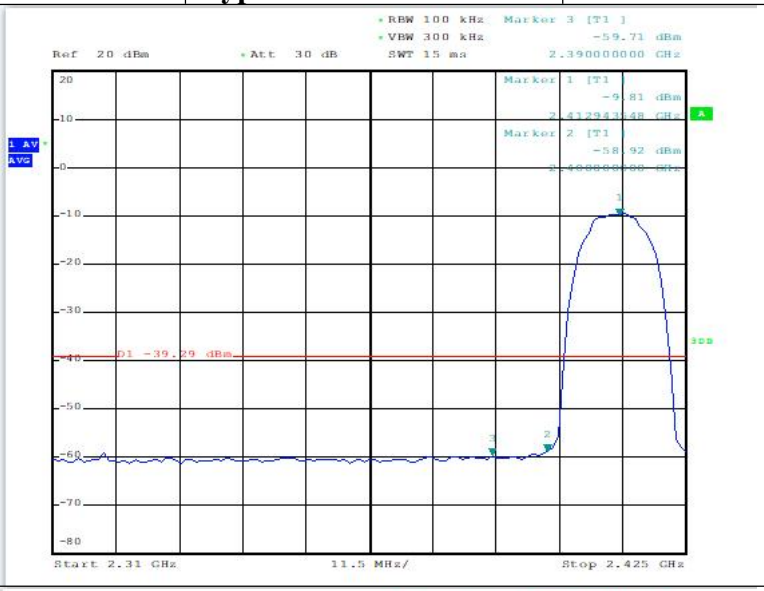
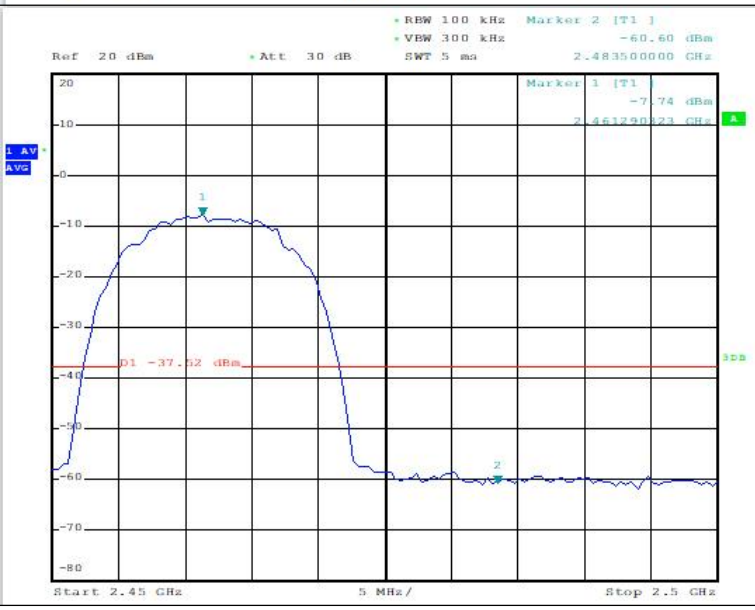
5.3. Test Procedure

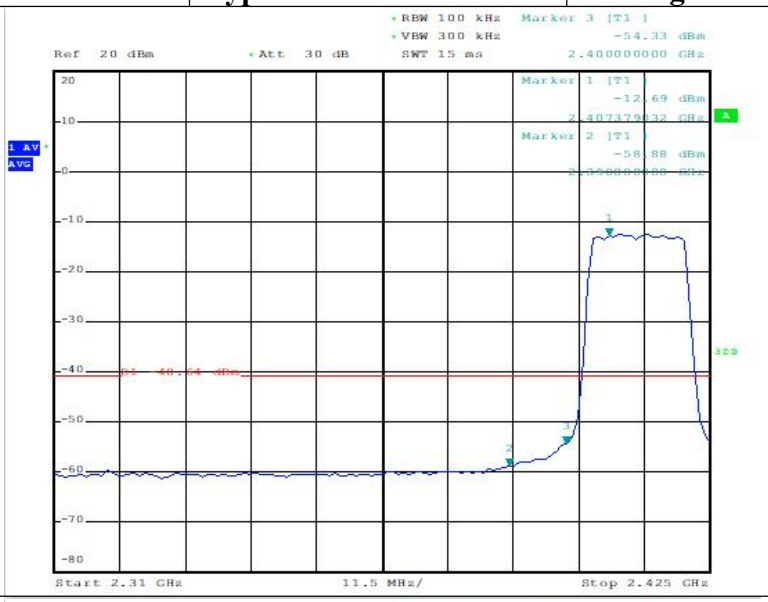
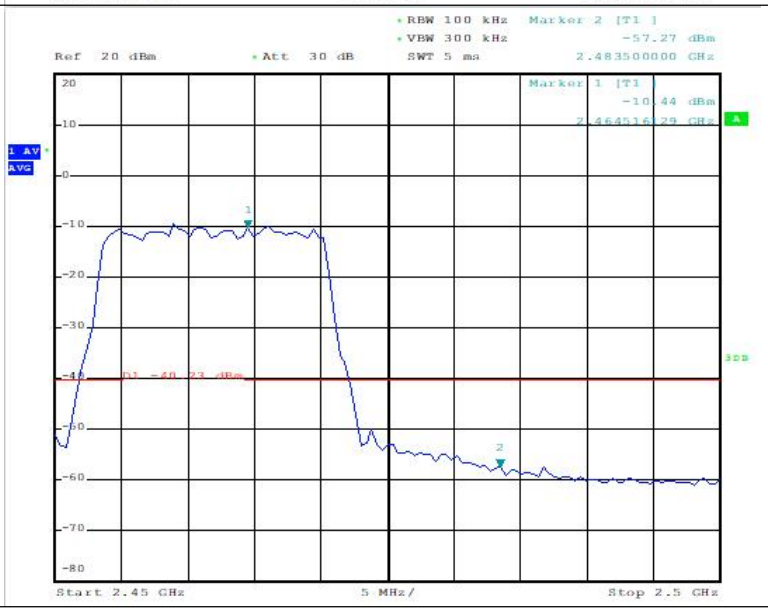
Use the test method descried in ANSI C63.10:
The transmitter output was connected to a spectrum analyzer, The resolution bandwidth is set
to 100 kHz, The video bandwidth is set to 300 kHz and measure all the emissions with peak detector.

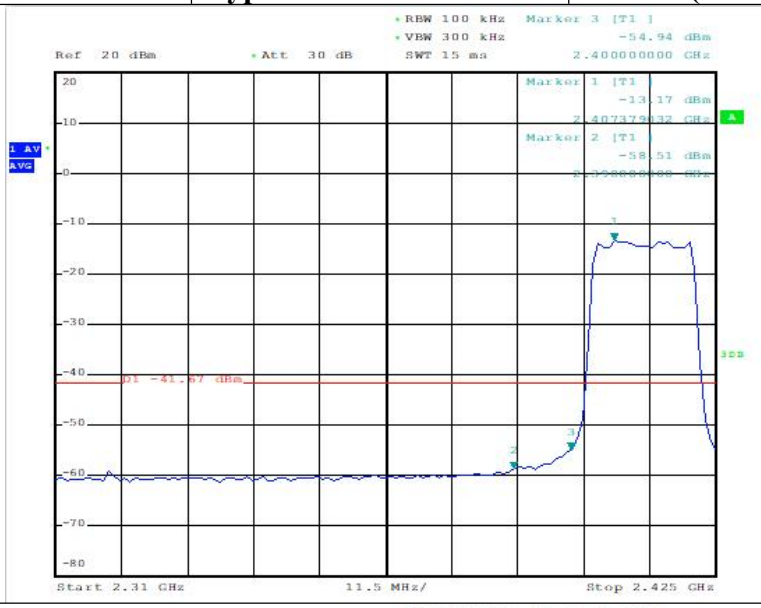
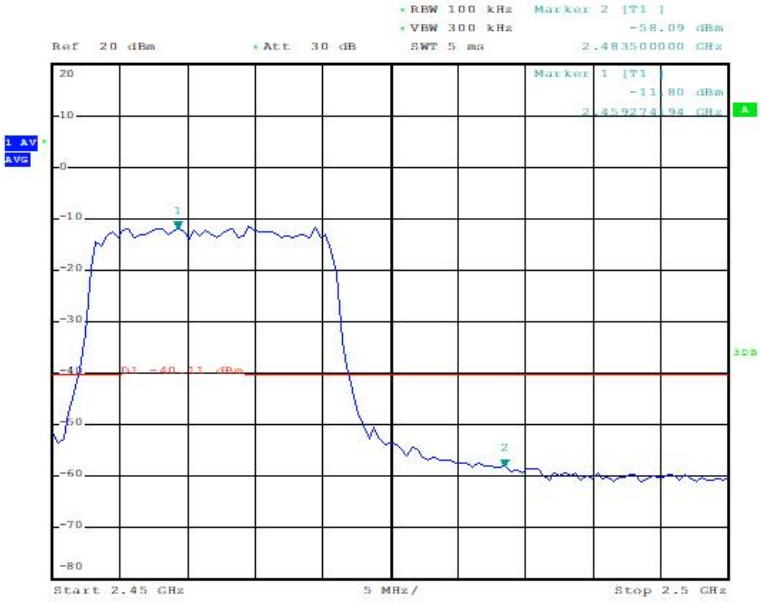
Note: The cable loss and attenuator loss were offset into spectrum analyzer as an amplitude offset.

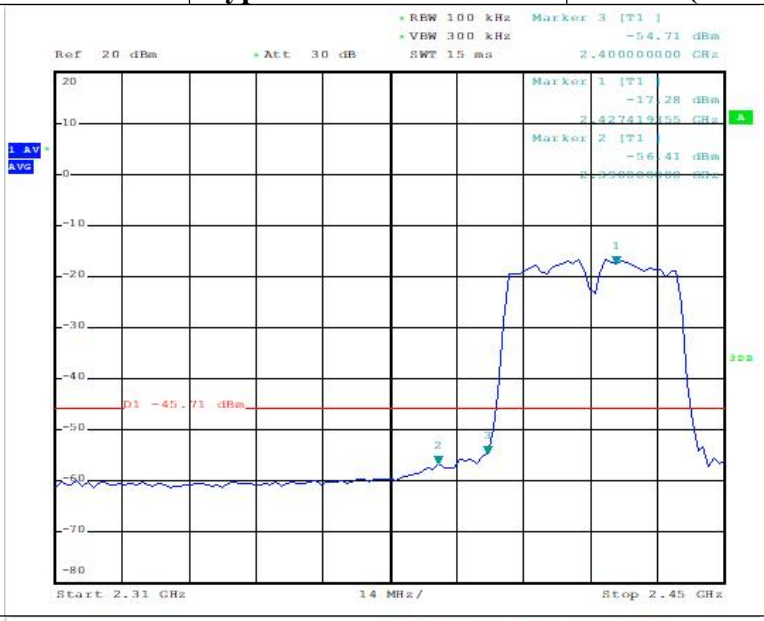
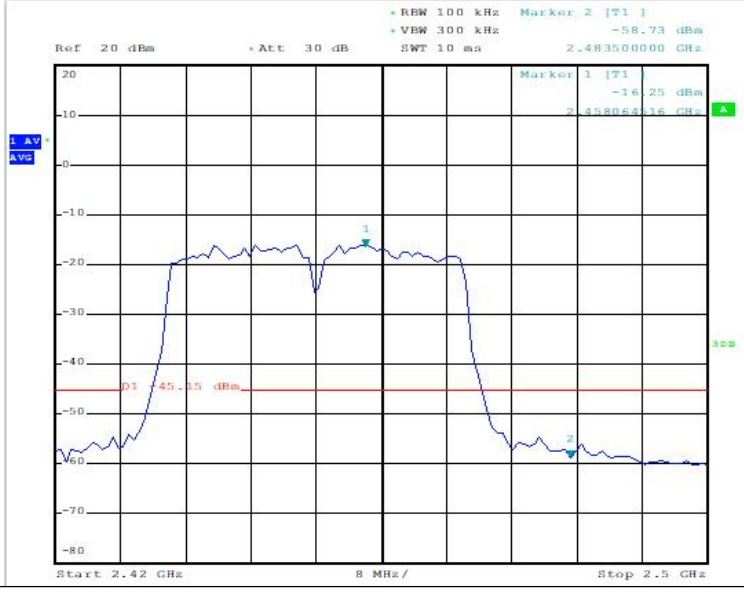
5.4. Test result

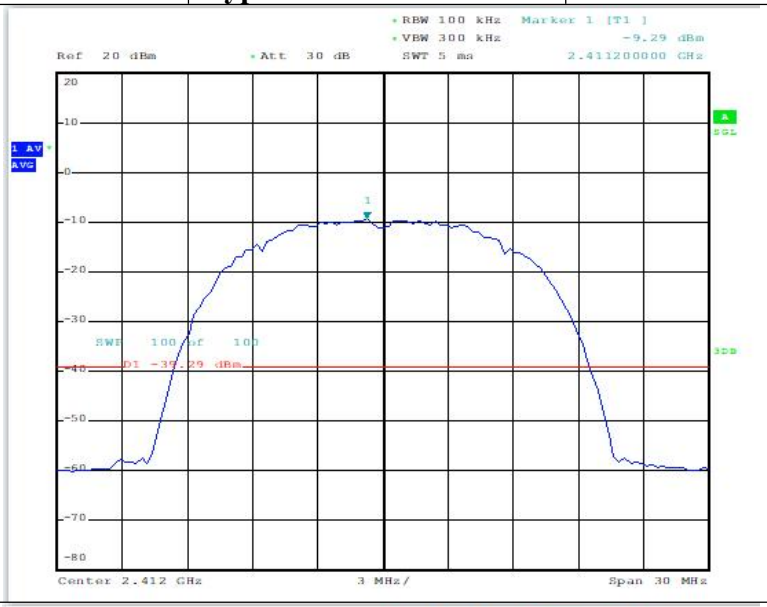
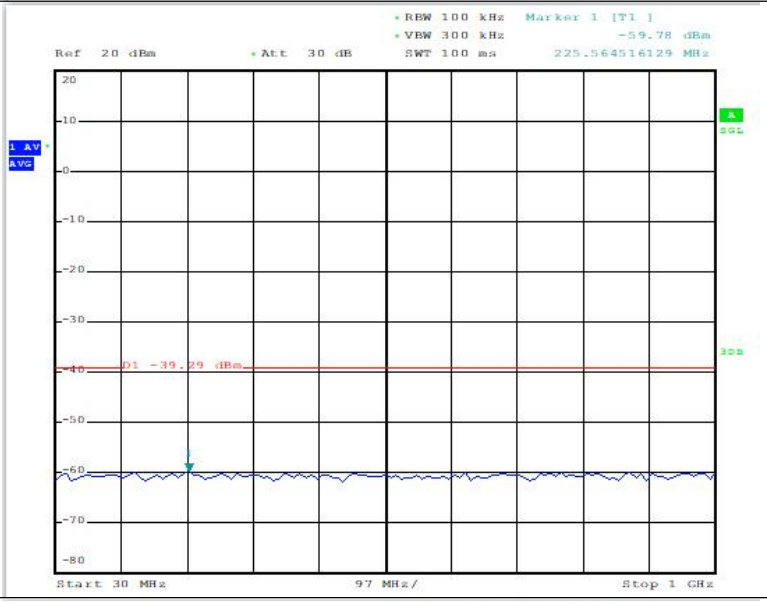
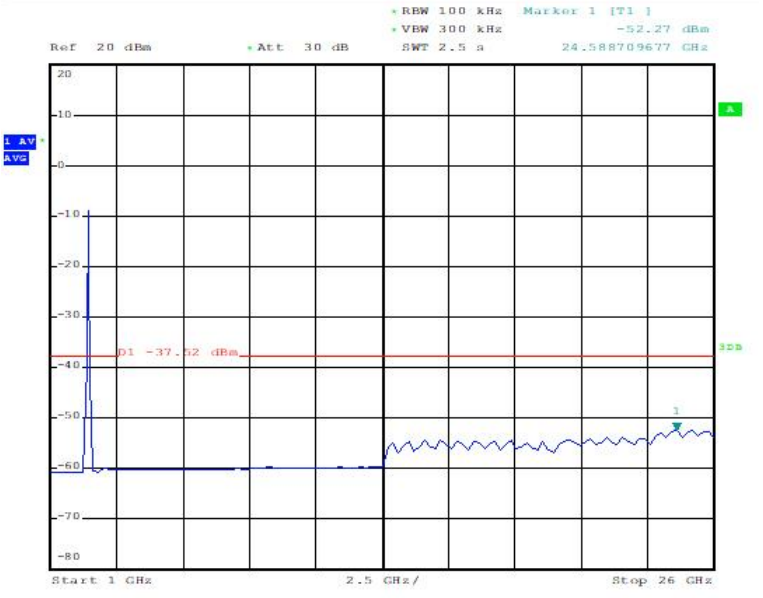
PASS (The testing data was attached in the next pages.)

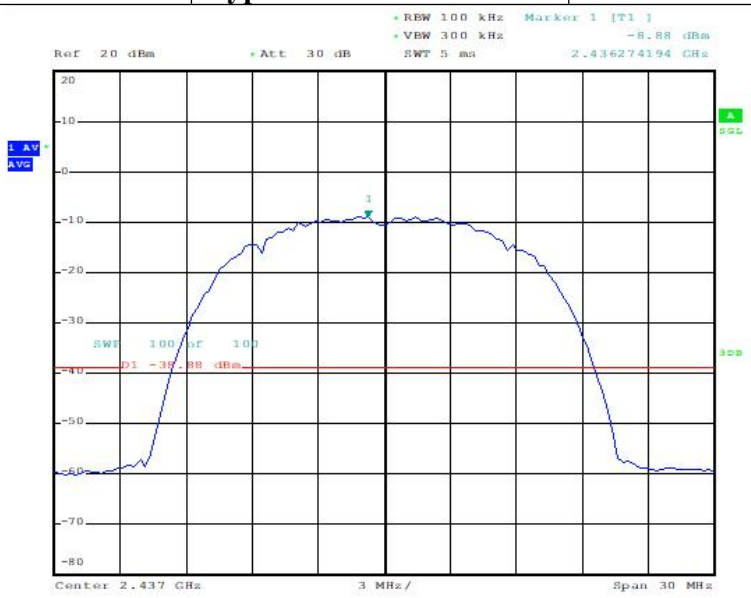
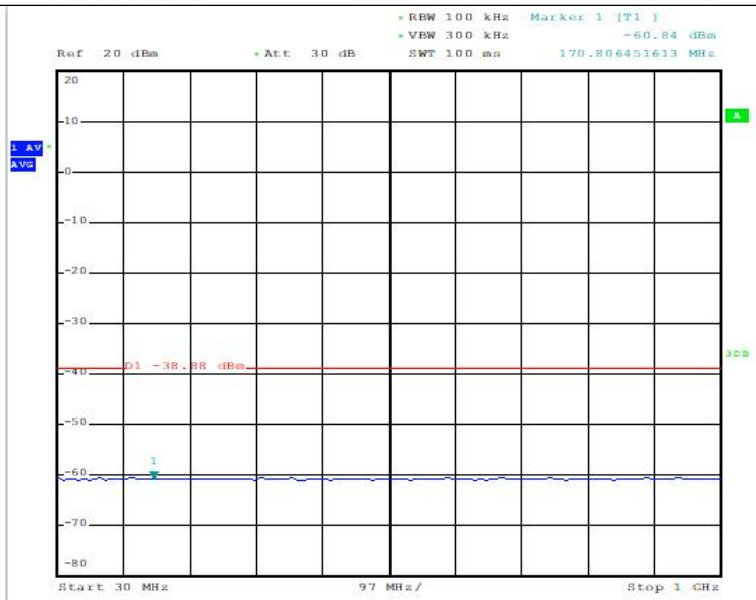
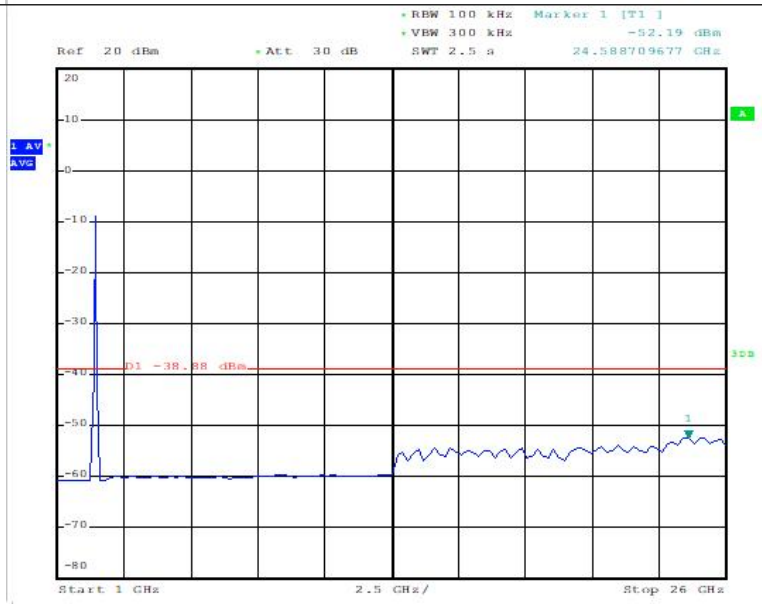
Test Item:	SE	Type:	802.11b
CH01			
CH11			

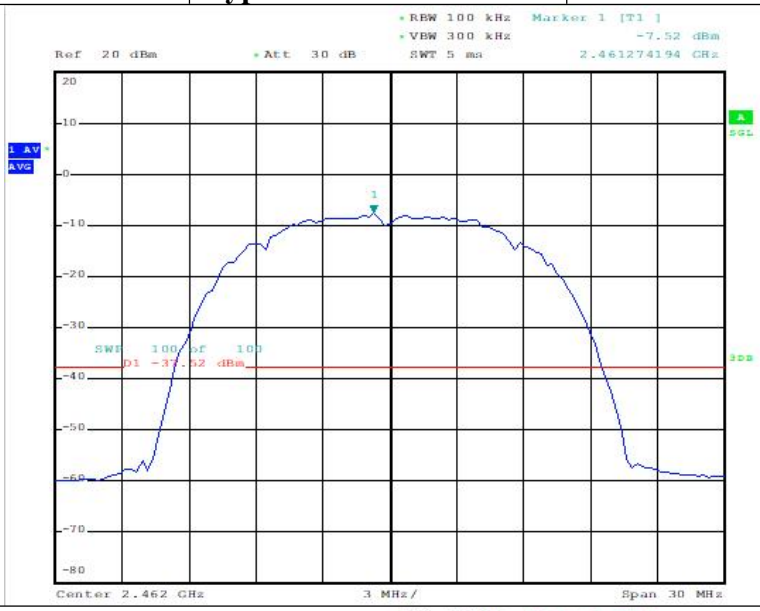
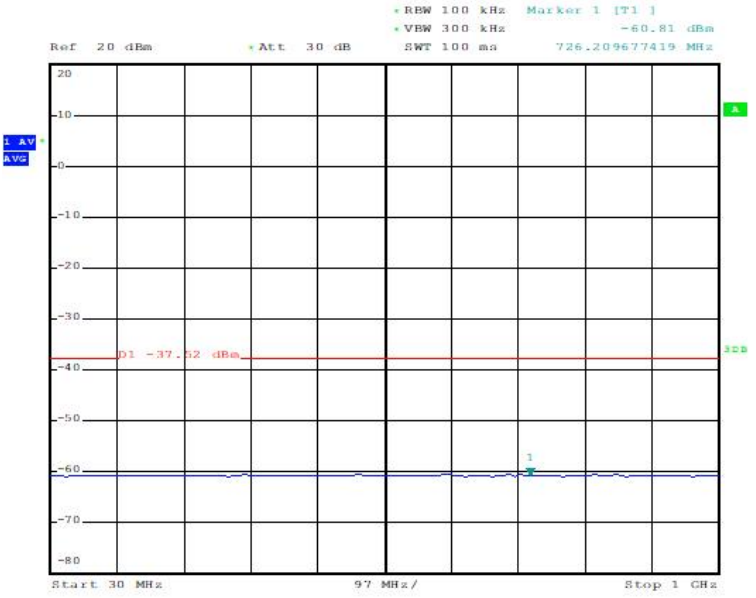
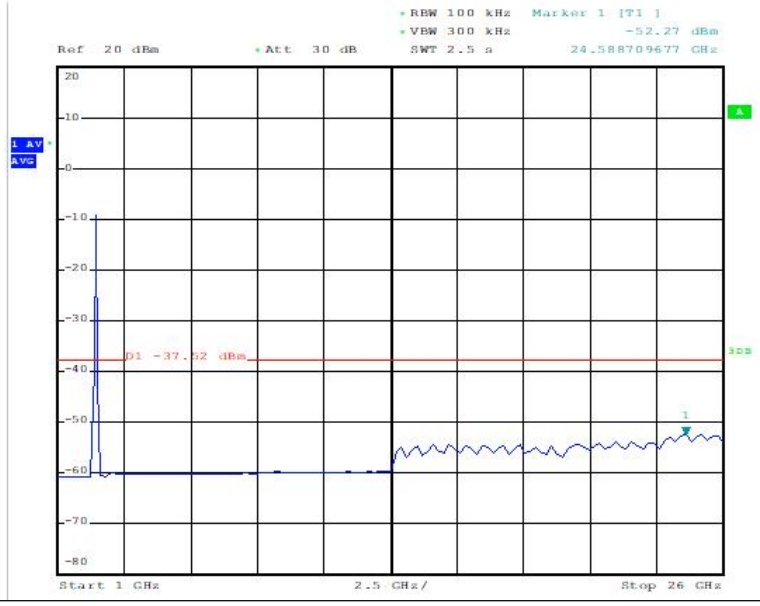
Test Item:	SE	Type:	802.11g
CH01			
CH11			

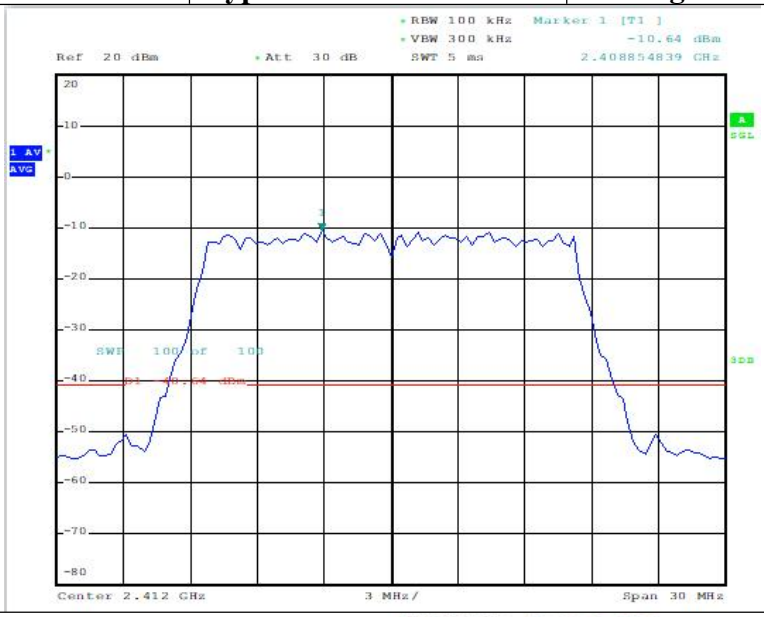
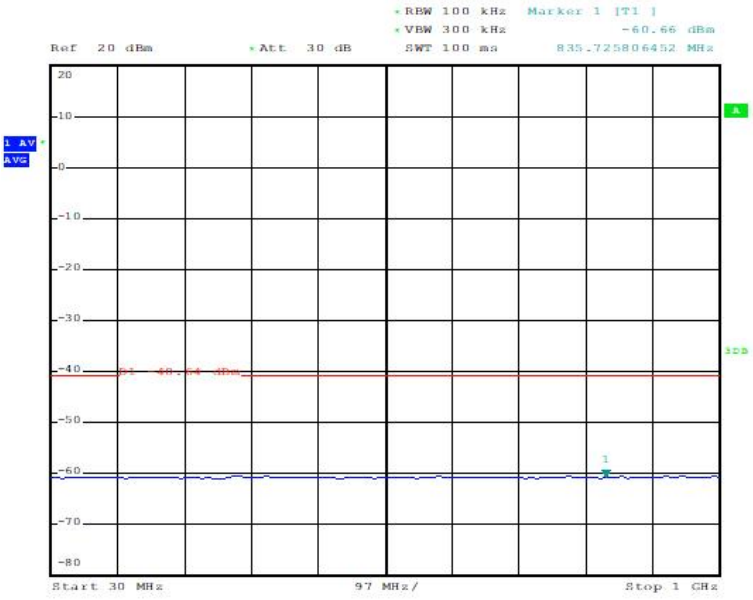
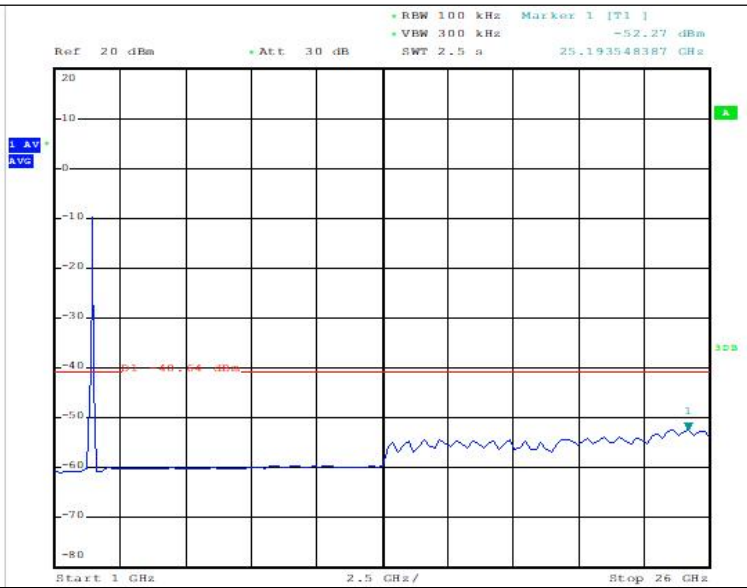
Test Item:	SE	Type:	802.11n(HT20)
CH01			
CH11			

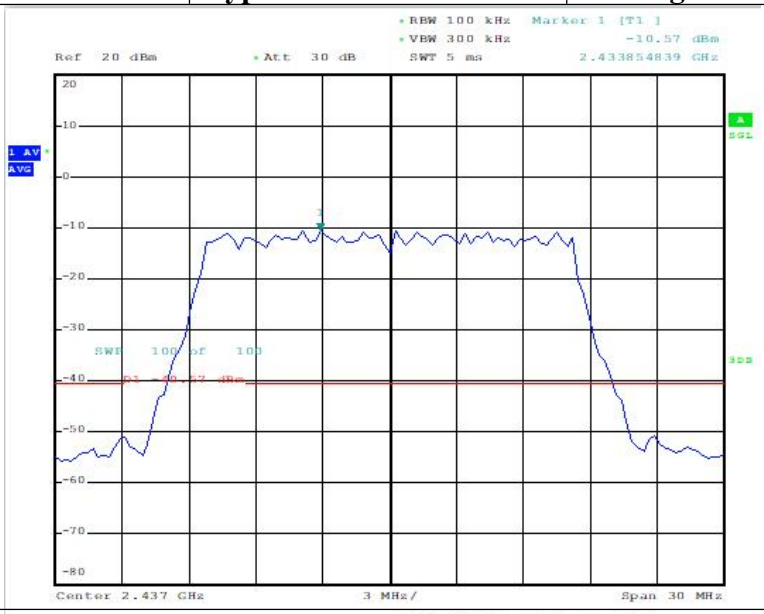
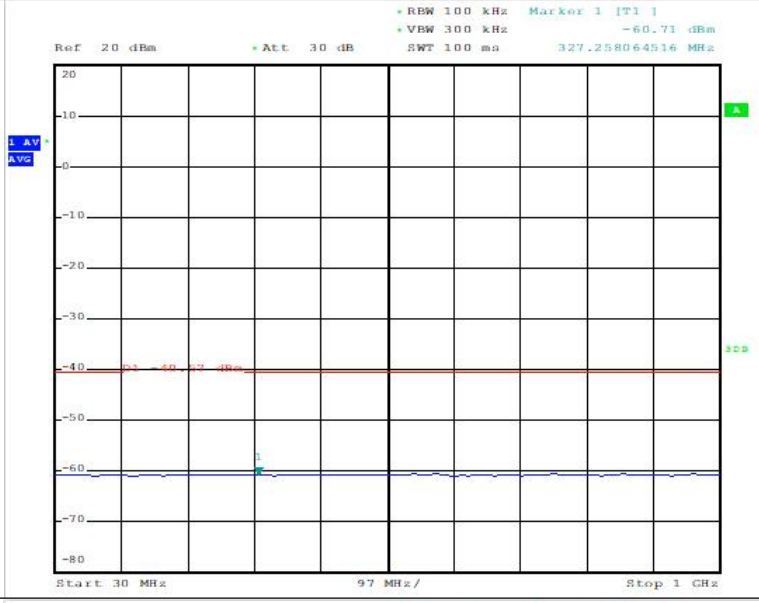
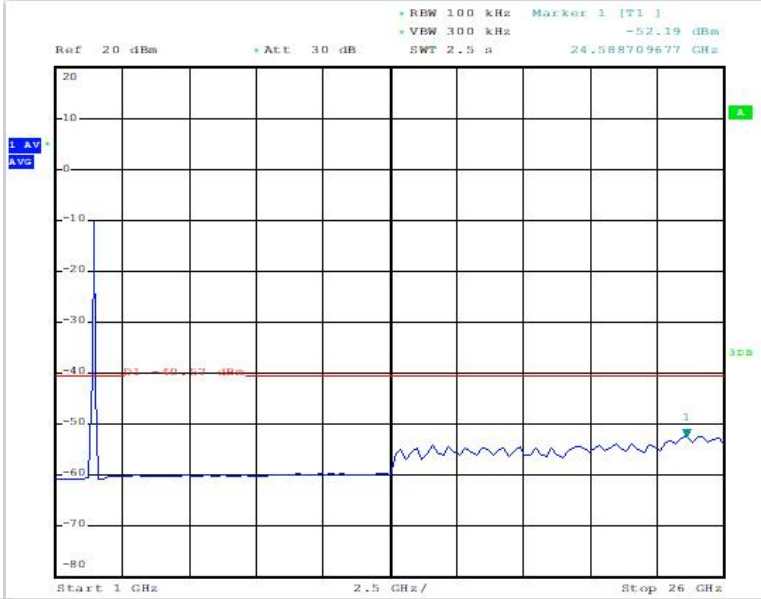
Test Item:	SE	Type:	802.11n(HT40)
CH03			
CH09			

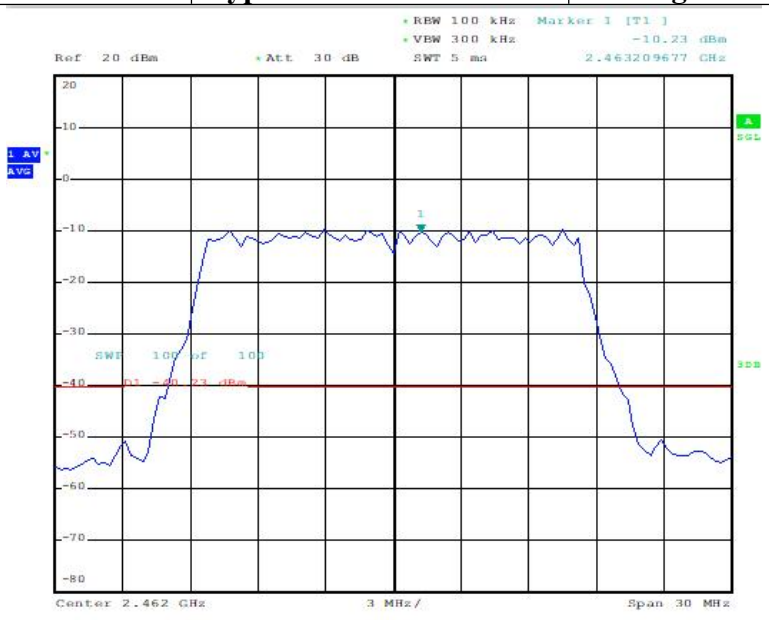
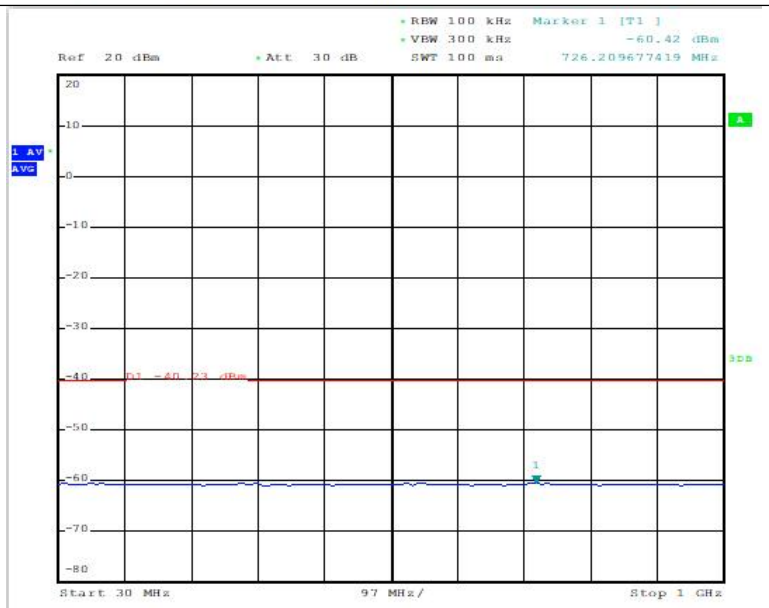
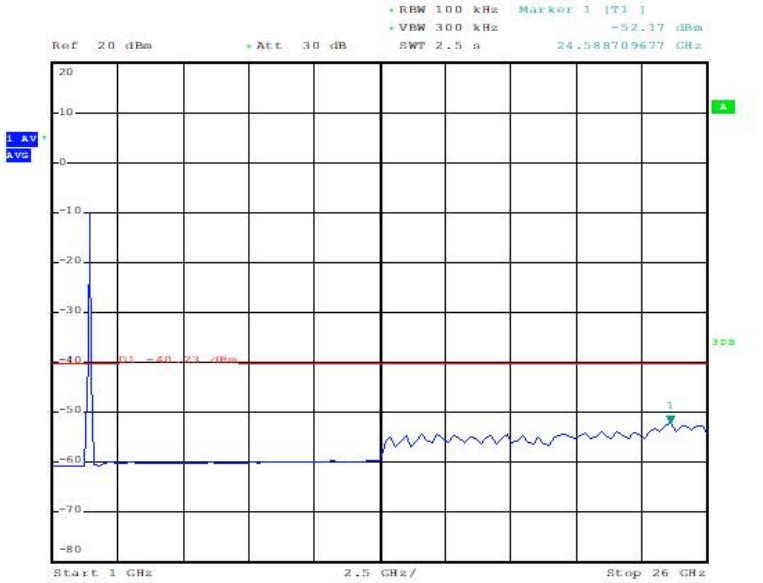
Test Item:	SE	Type:	802.11b
CH01 Reference level			
CH01 30MHz-1000MHz			
CH01 Above 1GHz			

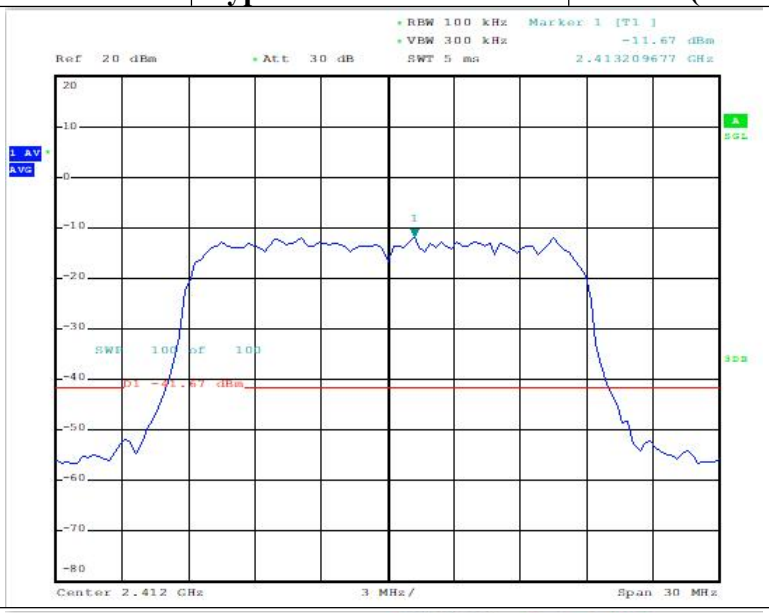
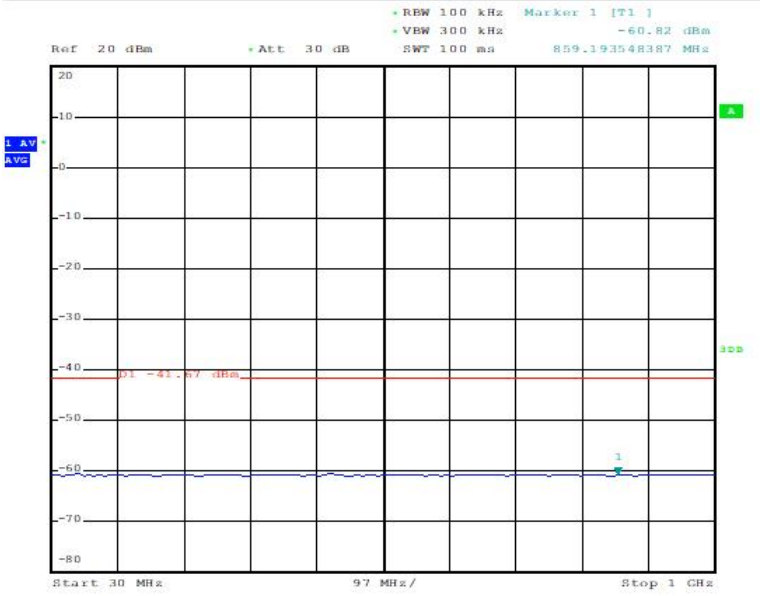
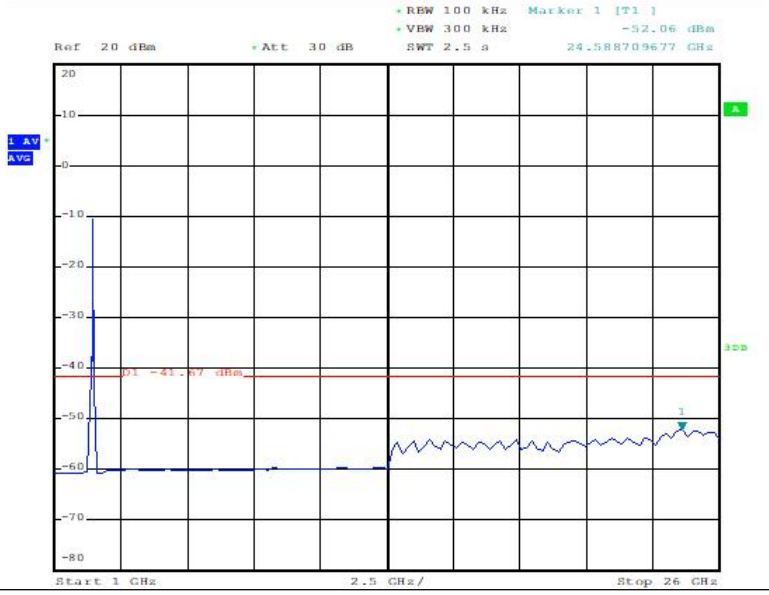
Test Item:	SE	Type:	802.11b
CH06 Reference level			
CH06 30MHz-1000MHz			
CH06 Above 1GHz			

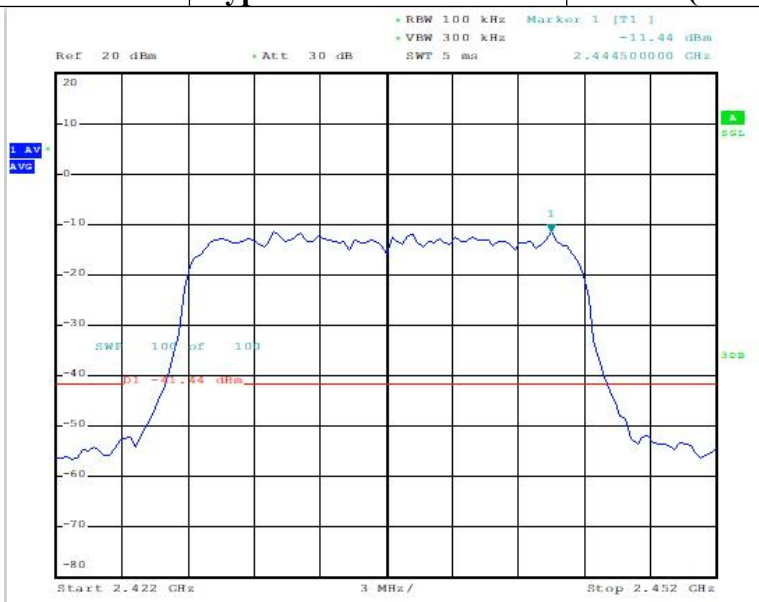
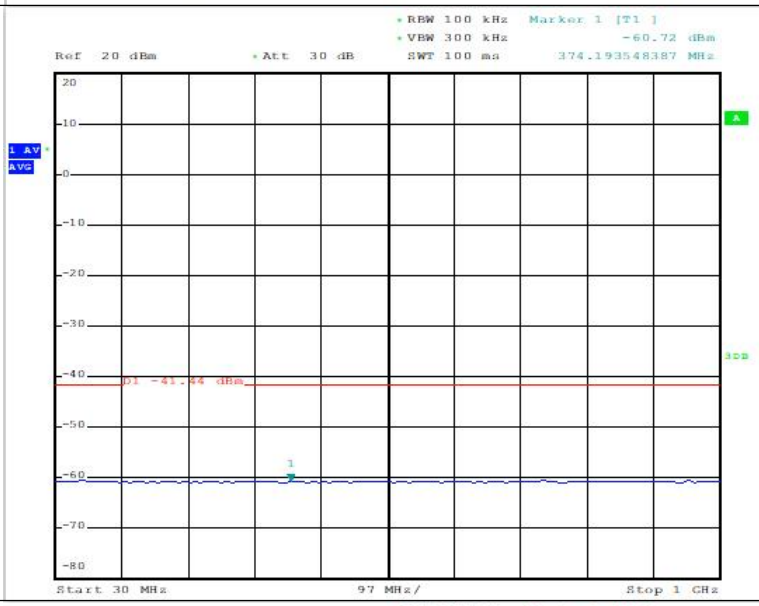
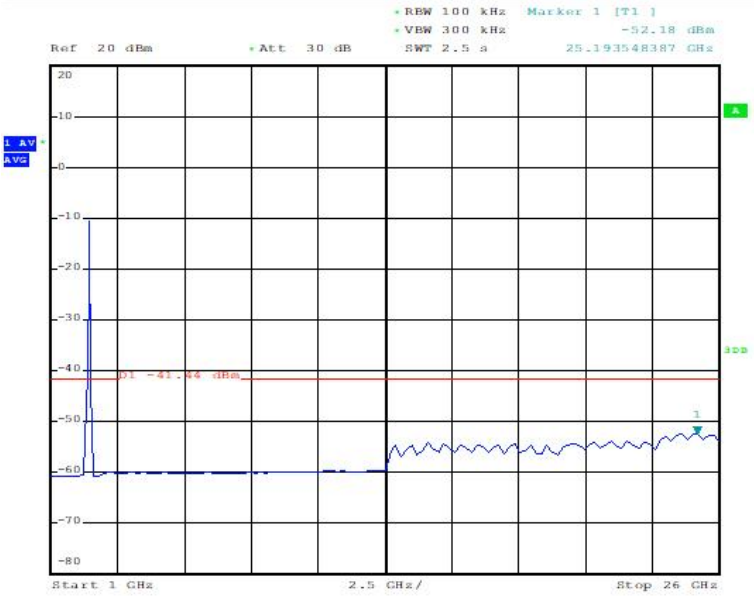
Test Item:	SE	Type:	802.11b
CH11 Reference level			
CH11 30MHz-1000MHz			
CH11 Above 1GHz			

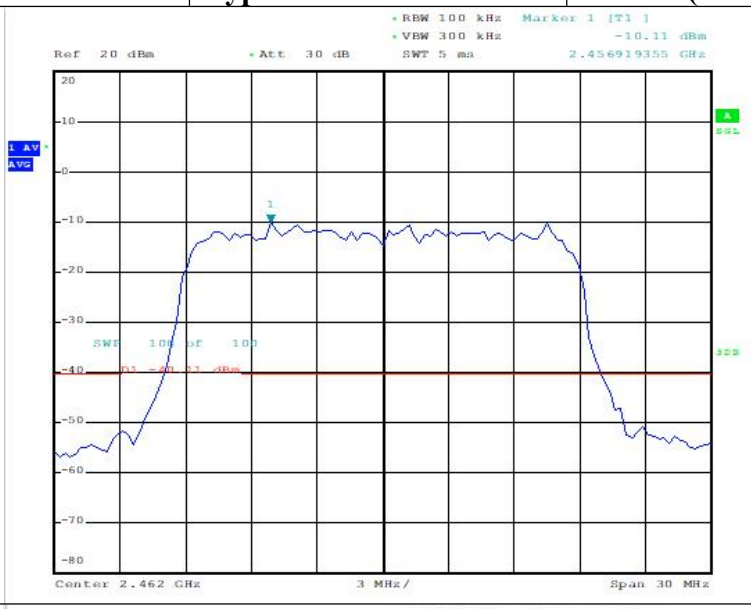
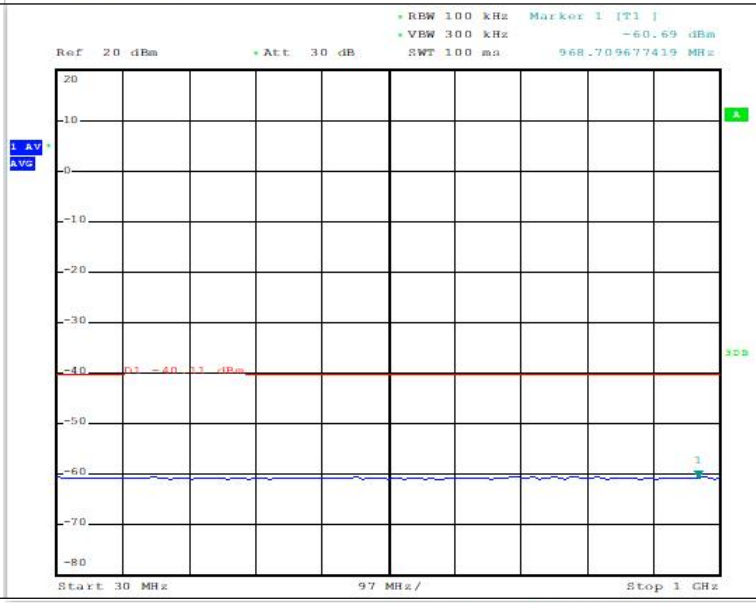
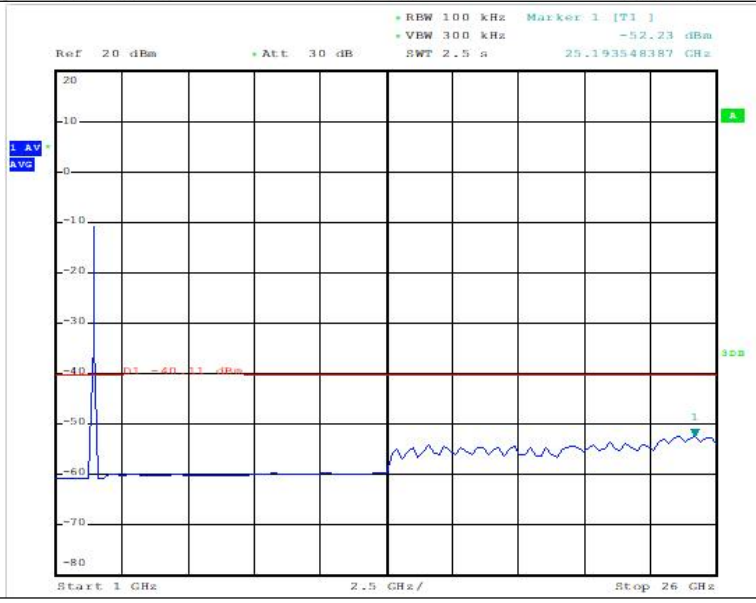
Test Item:	SE	Type:	802.11g
CH01 Reference level			
CH01 30MHz-1000MHz			
CH01 Above 1GHz			

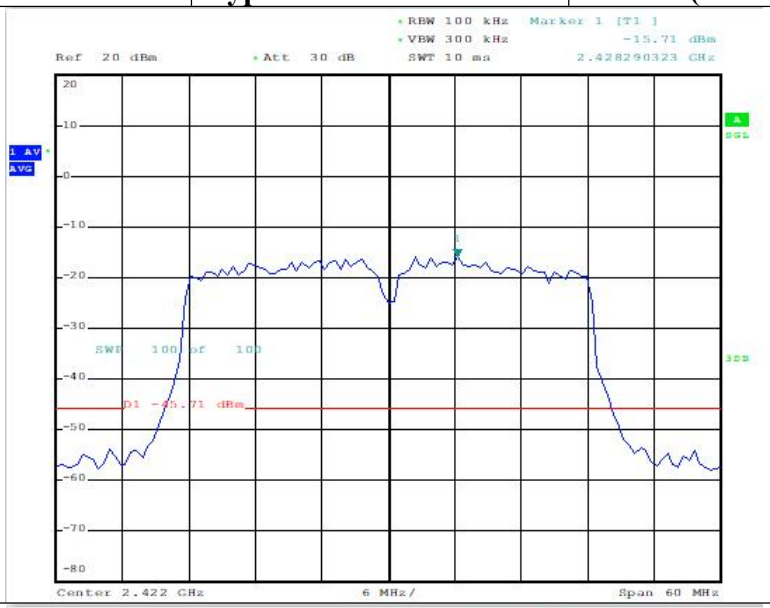
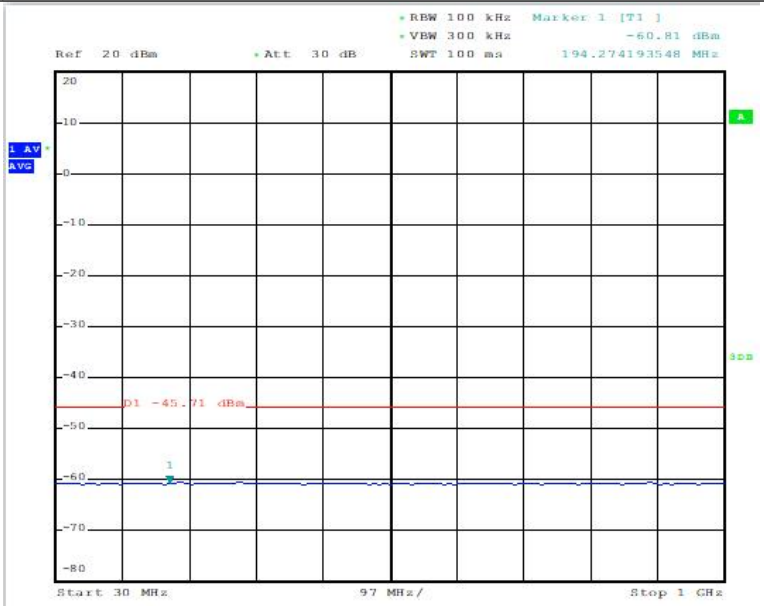
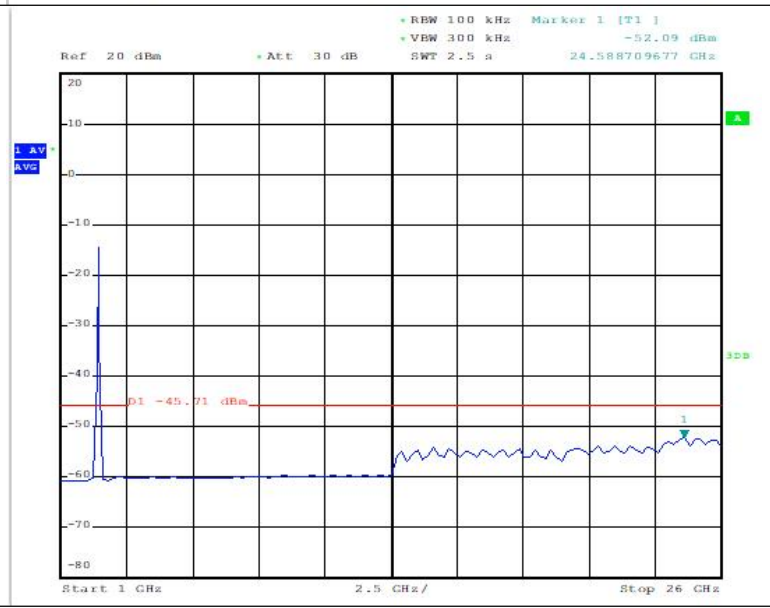
Test Item:	SE	Type:	802.11g
CH06 Reference level			
CH06 30MHz-1000MHz			
CH06 Above 1GHz			

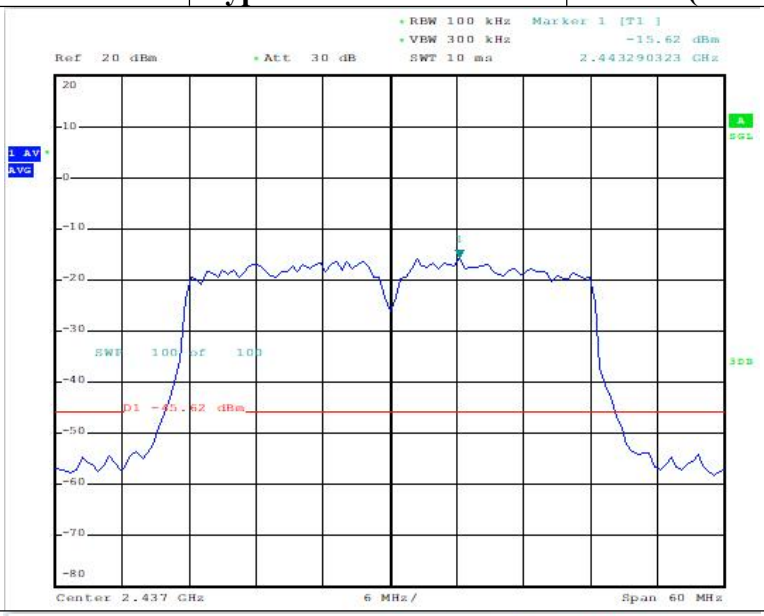
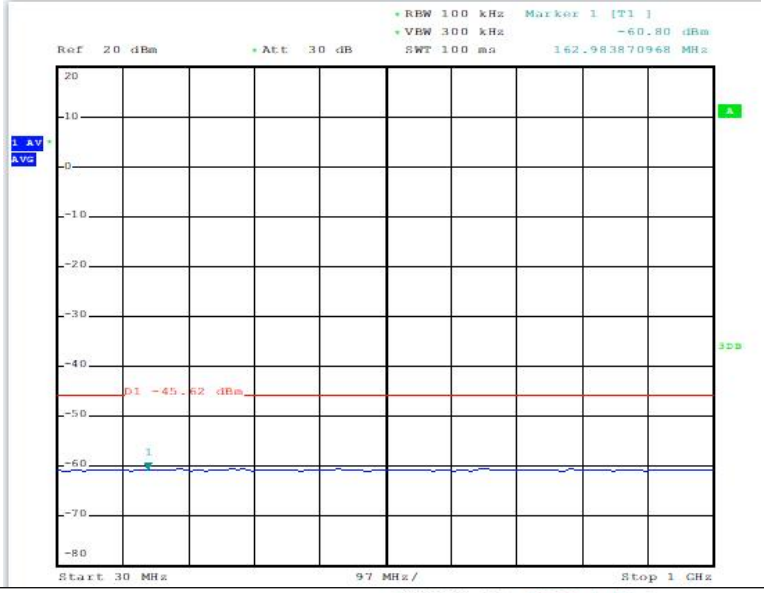
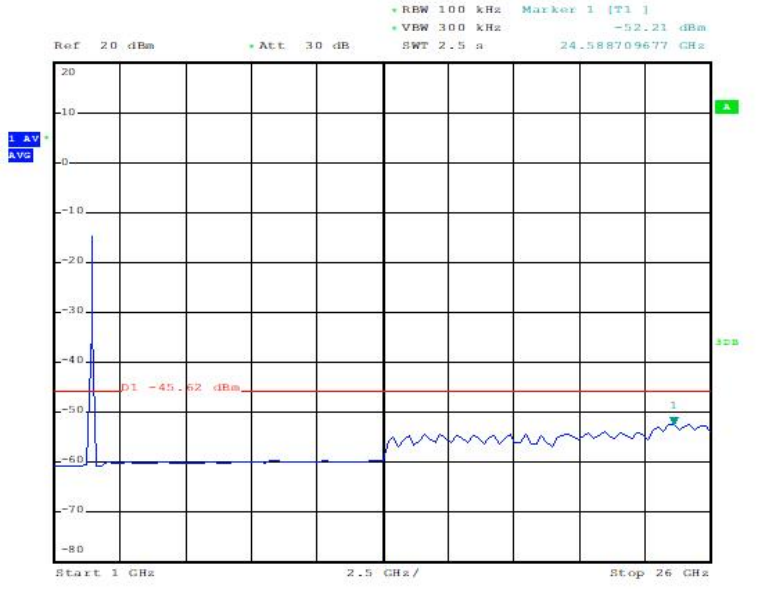
Test Item:	SE	Type:	802.11g
CH11 Reference level			
CH11 30MHz-1000MHz			
CH11 Above 1GHz			

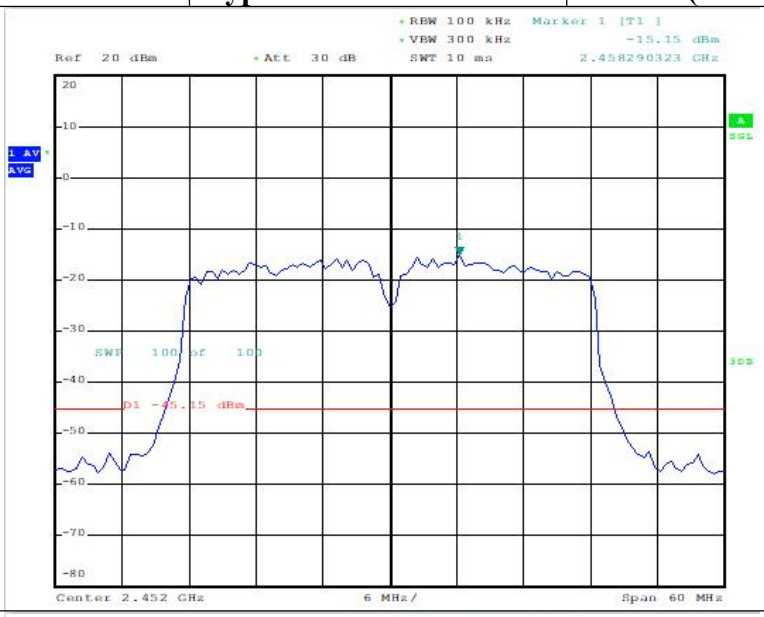
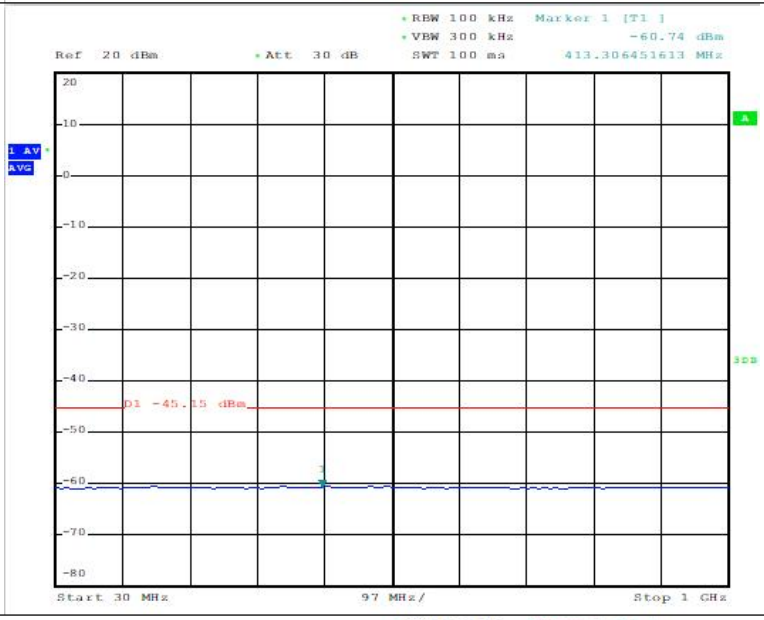
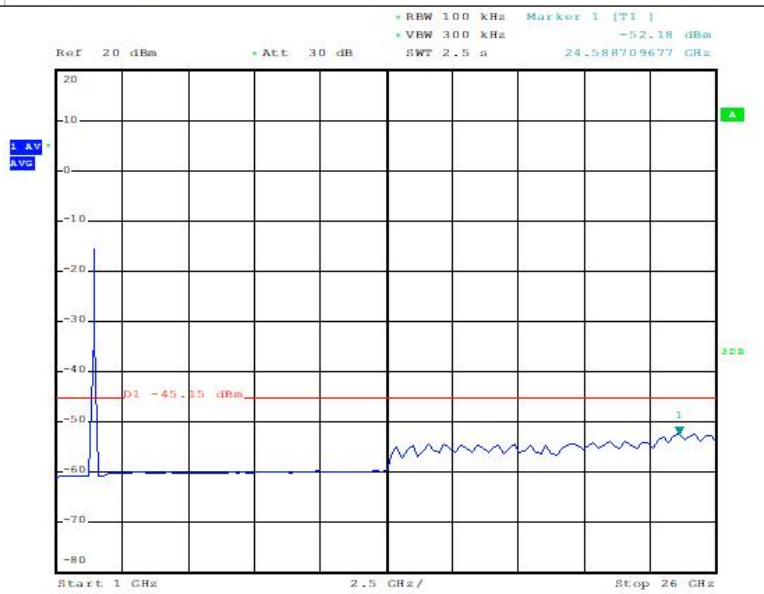
Test Item:	SE	Type:	802.11n(HT20)
CH01 Reference level			
CH01 30MHz-1000MHz			
CH01 Above 1GHz			

Test Item:	SE	Type:	802.11n(HT20)
CH06 Reference level			
CH06 30MHz-1000MHz			
CH06 Above 1GHz			

Test Item:	SE	Type:	802.11n(HT20)
CH11 Reference level			
CH11 30MHz-1000MHz			
CH11 Above 1GHz			

Test Item:	SE	Type:	802.11n(HT40)
CH03 Reference level			
CH03 30MHz-1000MHz			
CH03 Above 1GHz			

Test Item:	SE	Type:	802.11n(HT40)
CH06 Reference level			
CH06 30MHz-1000MHz			
CH06 Above 1GHz			

Test Item:	SE	Type:	802.11n(HT40)
CH09 Reference level			
CH09 30MHz-1000MHz			
CH09 Above 1GHz			

6. BAND EDGE COMPLIANCE TEST

6.1. Limit

All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

6.2. Test Procedure

Use the test method descried in ANSI C63.10 clause 6.10:

1. The EUT is placed on a turntable, which is 1.5m above the ground plane and worked at highest radiated power.

2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.

3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.

4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:

(a) PEAK: RBW=1MHz; VBW=3MHz; Sweep=AUTO
(b) AVERAGE: RBW=1MHz; VBW=10Hz; Sweep=AUTO

6.3. Test Results

Pass (The testing data was attached in the next pages.)

802.11b	CH01

Horizontal

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2310.00	37.69	41.55	-3.86	74.00	-36.31	Peak
2	2390.00	40.06	43.89	-3.83	74.00	-33.94	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2310.00	18.46	22.32	-3.86	54.00	-35.54	Average
2	2390.00	20.00	23.83	-3.83	54.00	-34.00	Average

802.11b	CH01

Vertical

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2310.00	37.38	41.24	-3.86	74.00	-36.62	Peak
2	2390.00	37.05	40.88	-3.83	74.00	-36.95	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2310.00	19.40	23.26	-3.86	54.00	-34.60	Average
2	2390.00	21.39	25.22	-3.83	54.00	-32.61	Average

802.11b	CH11

Horizontal

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2483.50	49.26	53.04	-3.78	74.00	-24.74	Peak
2	2500.00	38.05	41.82	-3.77	74.00	-35.95	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2483.50	25.07	28.85	-3.78	54.00	-28.93	Average
2	2500.00	22.00	25.77	-3.77	54.00	-32.00	Average

802.11b	CH11

Vertical

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2483.50	43.55	47.33	-3.78	74.00	-30.45	Peak
2	2500.00	51.53	55.30	-3.77	74.00	-22.47	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2483.50	29.79	33.57	-3.78	54.00	-24.21	Average
2	2500.00	25.20	28.97	-3.77	54.00	-28.80	Average

802.11g	CH01

Horizontal

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2310.00	35.28	39.14	-3.86	74.00	-38.72	Peak
2	2390.00	46.50	50.33	-3.83	74.00	-27.50	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2310.00	20.92	24.78	-3.86	54.00	-33.08	Average
2	2390.00	27.29	31.12	-3.83	54.00	-26.71	Average

802.11g	CH01

Vertical

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2310.00	37.39	41.25	-3.86	74.00	-36.61	Peak
2	2390.00	45.10	48.93	-3.83	74.00	-28.90	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2310.00	21.66	25.52	-3.86	54.00	-32.34	Average
2	2390.00	24.56	28.39	-3.83	54.00	-29.44	Average

802.11g	CH11

Horizontal

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2483.50	62.89	66.67	-3.78	74.00	-11.11	Peak
2	2500.00	48.23	52.00	-3.77	74.00	-25.77	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2483.50	33.00	36.78	-3.78	54.00	-21.00	Average
2	2500.00	22.96	26.73	-3.77	54.00	-31.04	Average

802.11g	CH11

Vertical

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2483.50	58.56	62.34	-3.78	74.00	-15.44	Peak
2	2500.00	39.95	43.72	-3.77	74.00	-34.05	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2483.50	34.53	38.31	-3.78	54.00	-19.47	Average
2	2500.00	29.86	33.63	-3.77	54.00	-24.14	Average

802.11n(HT20)	CH01

Horizontal

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2310.00	35.25	39.11	-3.86	74.00	-38.75	Peak
2	2390.00	45.46	49.29	-3.83	74.00	-28.54	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2310.00	20.49	24.35	-3.86	54.00	-33.51	Average
2	2390.00	25.03	28.86	-3.83	54.00	-28.97	Average

802.11n(HT20)	CH01

Vertical

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2310.00	38.07	41.93	-3.86	74.00	-35.93	Peak
2	2390.00	43.39	47.22	-3.83	74.00	-30.61	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2310.00	21.24	25.10	-3.86	54.00	-32.76	Average
2	2390.00	24.66	28.49	-3.83	54.00	-29.34	Average

802.11n(HT20)	CH11

Horizontal

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2483.50	59.22	63.00	-3.78	74.00	-14.78	Peak
2	2500.00	41.88	45.65	-3.77	74.00	-32.12	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2483.50	29.51	33.29	-3.78	54.00	-24.49	Average
2	2500.00	21.67	25.44	-3.77	54.00	-32.33	Average

802.11n(HT20)	CH11

Vertical

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2483.50	55.03	58.81	-3.78	74.00	-18.97	Peak
2	2500.00	39.44	43.21	-3.77	74.00	-34.56	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2483.50	39.29	43.07	-3.78	54.00	-14.71	Average
2	2500.00	28.01	31.78	-3.77	54.00	-25.99	Average

802.11n(HT40)	CH03

Horizontal

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2310.00	34.13	37.99	-3.86	74.00	-39.87	Peak
2	2390.00	52.75	56.58	-3.83	74.00	-21.25	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2310.00	19.81	23.67	-3.86	54.00	-34.19	Average
2	2390.00	32.59	36.42	-3.83	54.00	-21.41	Average

802.11n(HT40)	CH03

Vertical

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2310.00	36.71	40.57	-3.86	74.00	-37.29	Peak
2	2390.00	51.84	55.67	-3.83	74.00	-22.16	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2310.00	20.83	24.69	-3.86	54.00	-33.17	Average
2	2390.00	31.27	35.10	-3.83	54.00	-22.73	Average

802.11n(HT40)	CH09

Horizontal

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2483.50	59.09	62.87	-3.78	74.00	-14.91	Peak
2	2500.00	47.94	51.71	-3.77	74.00	-26.06	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2483.50	31.48	35.26	-3.78	54.00	-22.52	Average
2	2500.00	24.12	27.89	-3.77	54.00	-29.88	Average

802.11n(HT40)	CH09

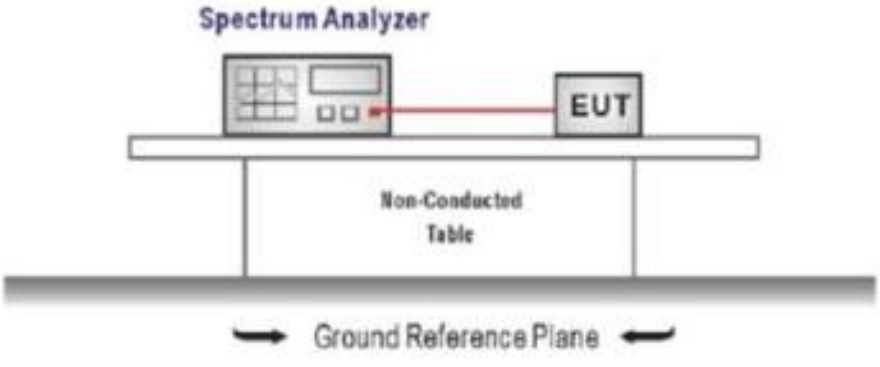
Vertical

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2483.50	56.03	59.81	-3.78	74.00	-17.97	Peak
2	2500.00	43.43	47.20	-3.77	74.00	-30.57	Peak

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	
1	2483.50	37.56	41.34	-3.78	54.00	-16.44	Average
2	2500.00	30.49	34.26	-3.77	54.00	-23.51	Average

7. 6dB Bandwidth Test

7.1.Block Diagram of Test Setup



7.2.Limit

For direct sequence systems, the minimum 6dB bandwidth shall be at least 500kHz

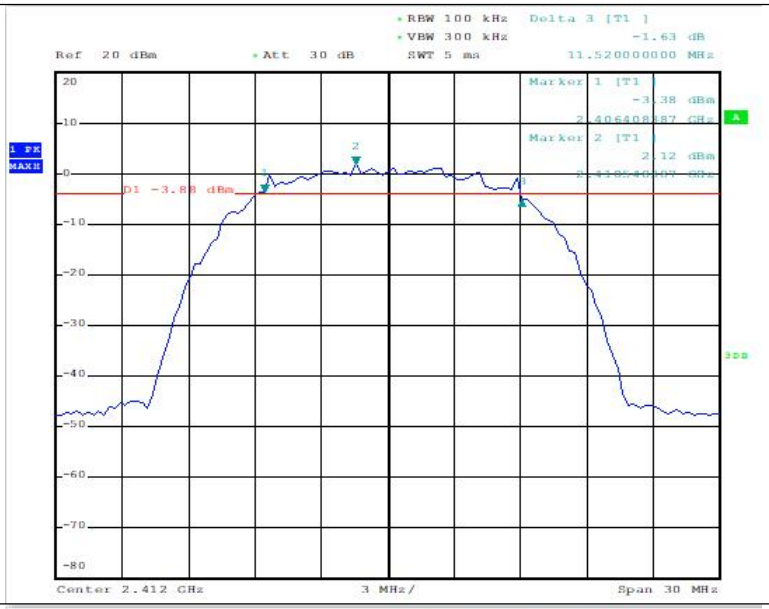
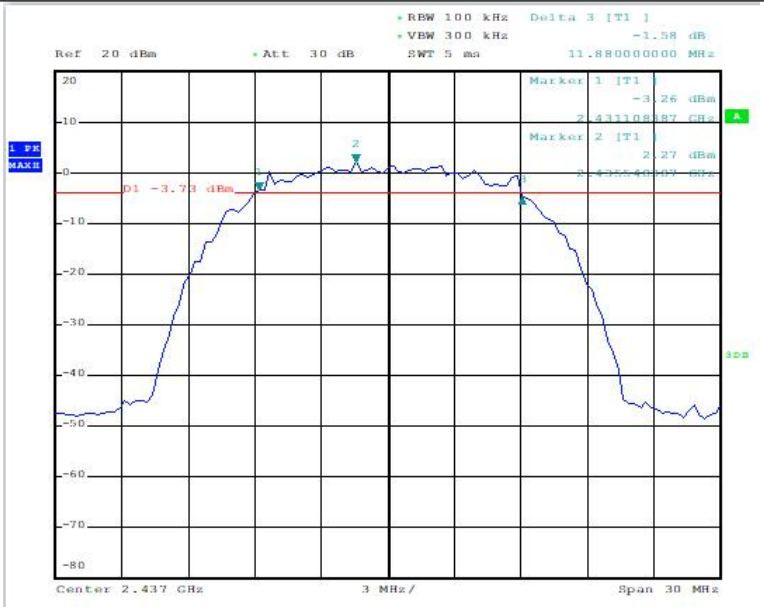
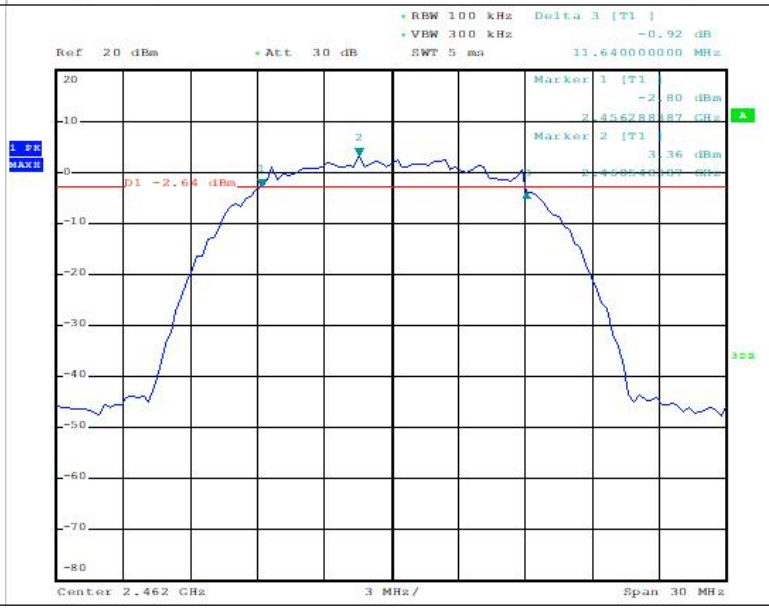
7.3.Test Procedure

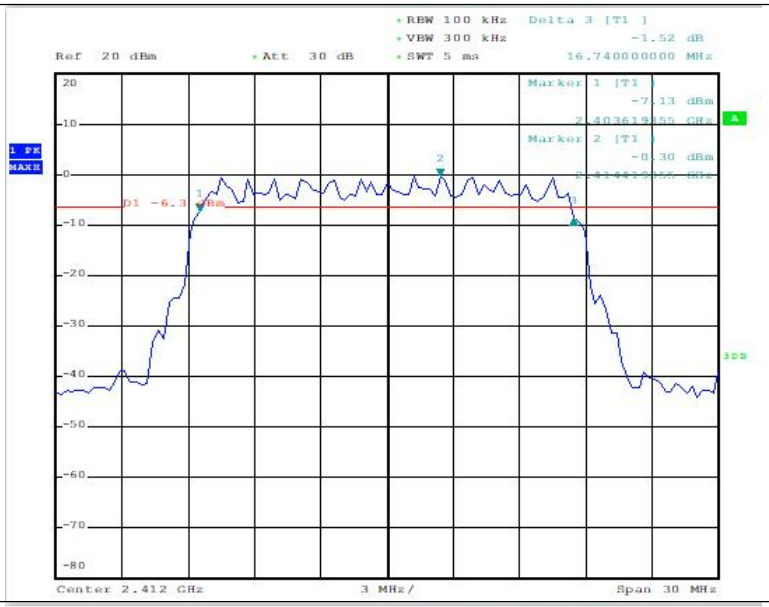
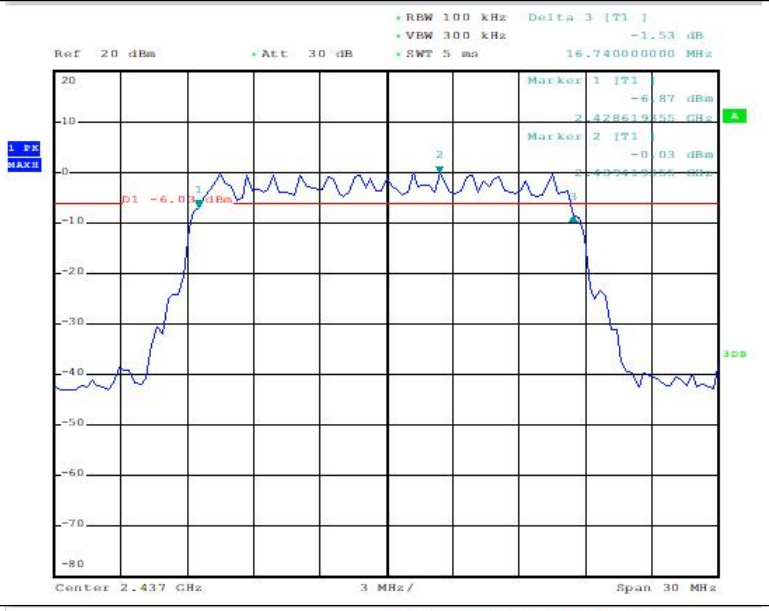
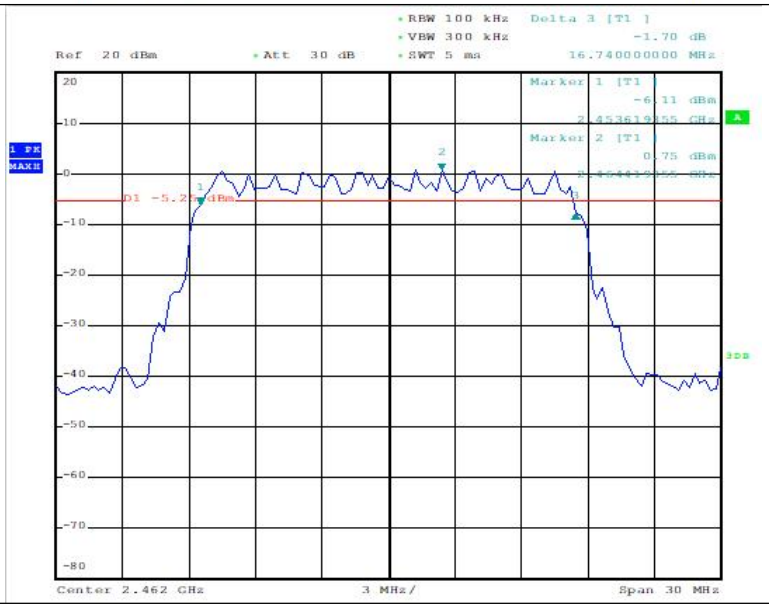
Use the test method descried in ANSI C63.10 Section 11.8.2:
1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) ≥ 3 x RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

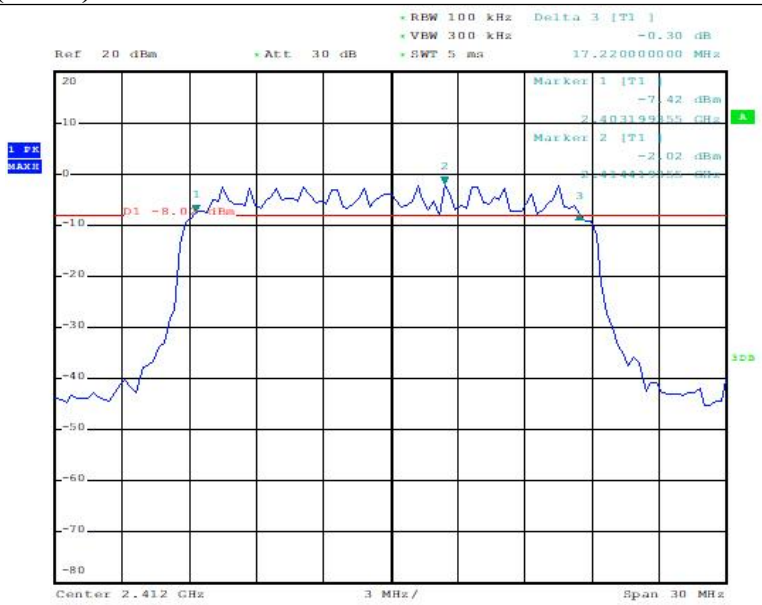
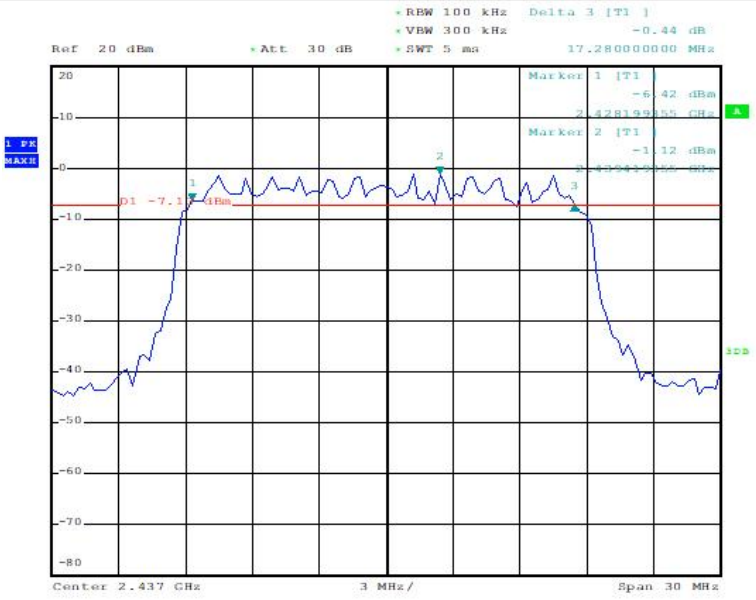
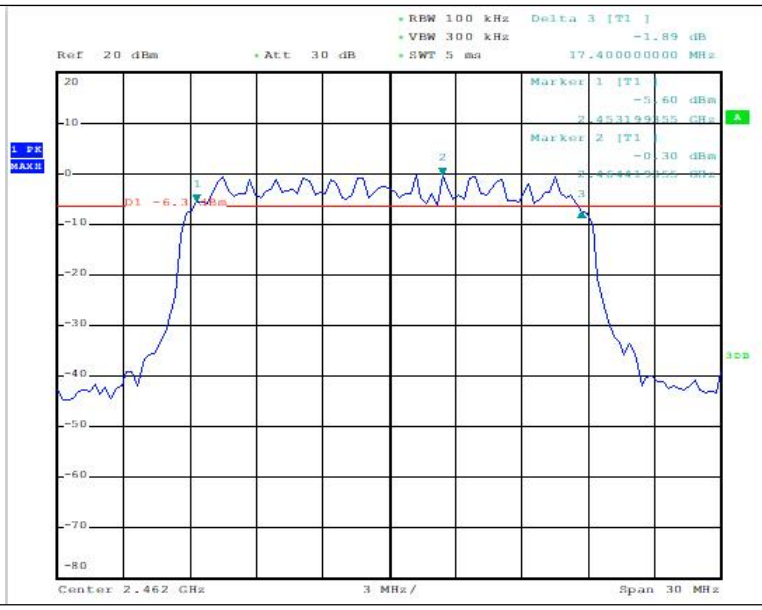
7.4.Test Results

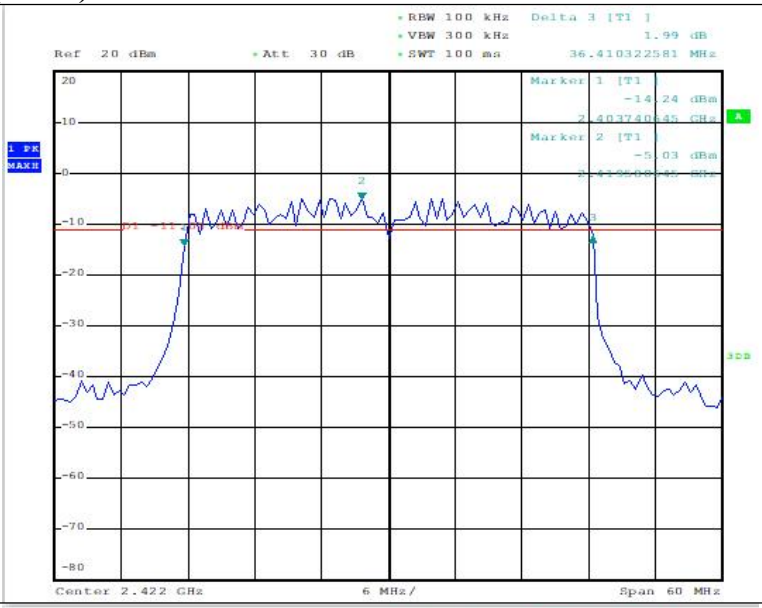
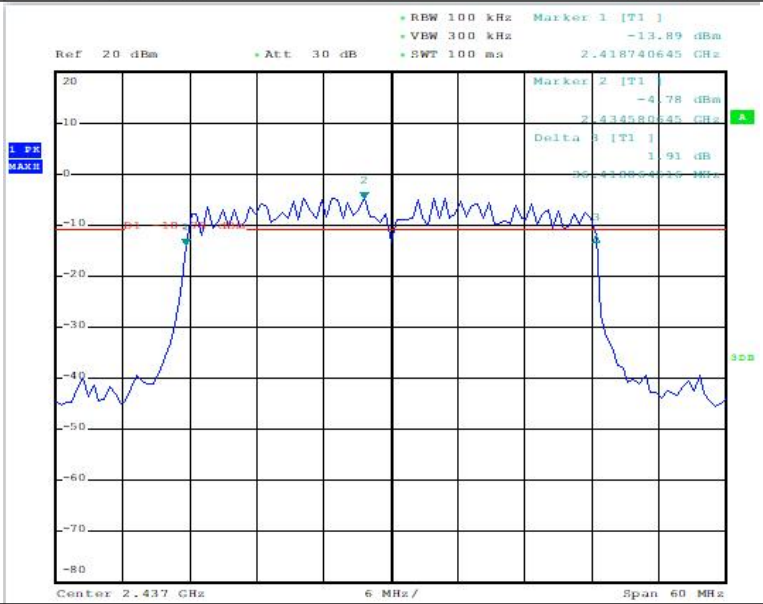
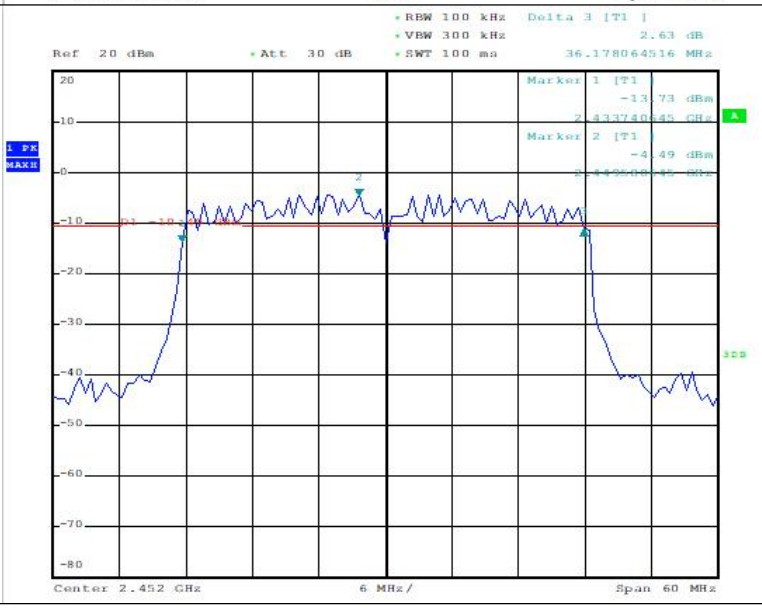
Pass

Test Mode	CH	-6dB bandwidth (MHz)	Limit (KHz)
11b	CH01	11.52	≧500
	CH06	11.88	
	CH11	11.64	
11g	CH01	16.74	≧500
	CH06	16.74	
	CH11	16.74	
11n HT20	CH01	17.22	≧500
	CH06	17.28	
	CH11	17.40	
11n HT40	CH03	36.41	≧500
	CH06	36.41	
	CH09	36.18	
Conclusion：PASS			

Type:	802.11b
CH01	
CH06	
CH11	

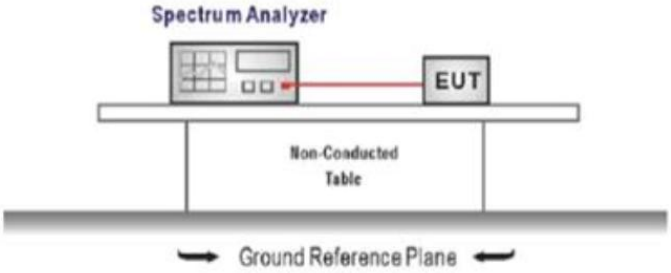
Type:	802.11g
CH01	
CH06	
CH11	

Type:	802.11n(HT20)
CH01	
CH06	
CH11	

Type:	802.11n(HT40)
CH03	
CH06	
CH09	

8. OUTPUT POWER TEST

8.1. Block Diagram of Test Setup



8.2. Limit (FCC Part 15C 15.247 b(3))

For systems using digital modulation in the 2400—2483.5MHz, The Peak output Power shall not exceed 1W(30dBm), As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level.

8.3. Test Procedure

1, Connected the EUT's antenna port to Spectrum Analyzer.
2, Use the test method descried in ANSI C63.10 clause 11.9.2.2.2:

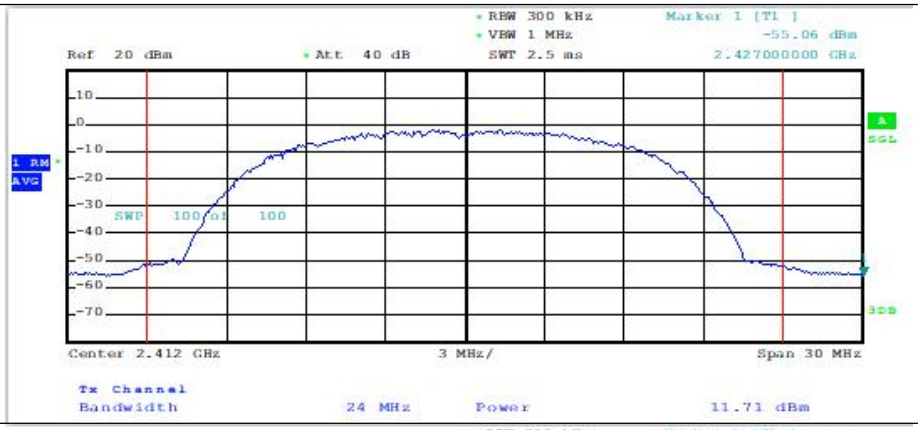
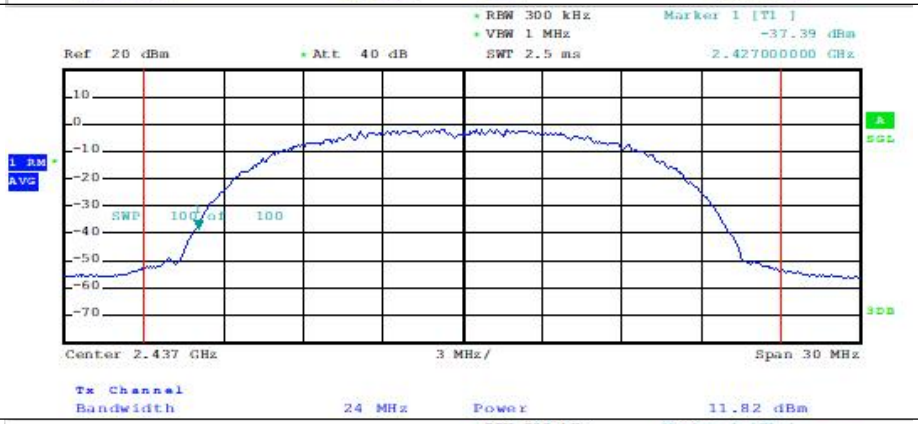
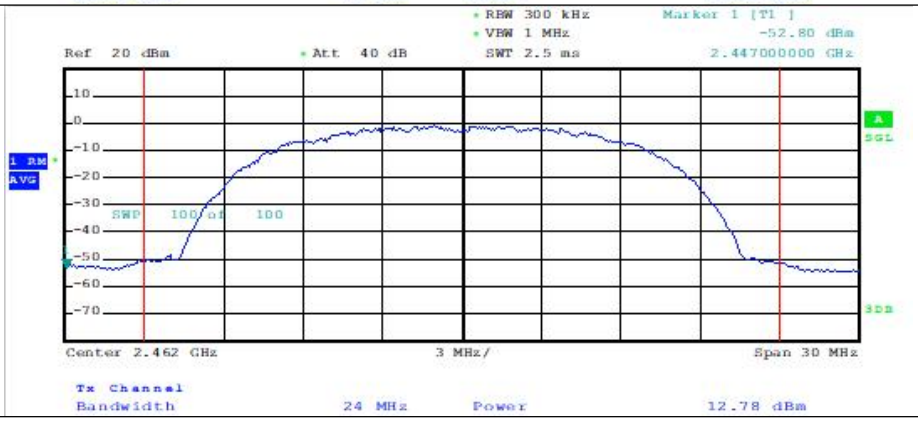
1) Set span to at least 1.5 times the OBW.
2) Set RBW = 1% to 5% of the OBW, not to exceed 1 MHz.
3) Set VBW ≥ [3 × RBW].
4) Number of points in sweep ≥ [2 × span / RBW]. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.).
5) Sweep time = auto.
6) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
7) If transmit duty cycle < 98%, use a sweep trigger with the level set to enable triggering only on full power pulses. The transmitter shall operate at the maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no OFF intervals) or at duty cycle ≥ 98%, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run.".
8) Trace average at least 100 traces in power averaging (rms) mode.
9) Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function, with band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

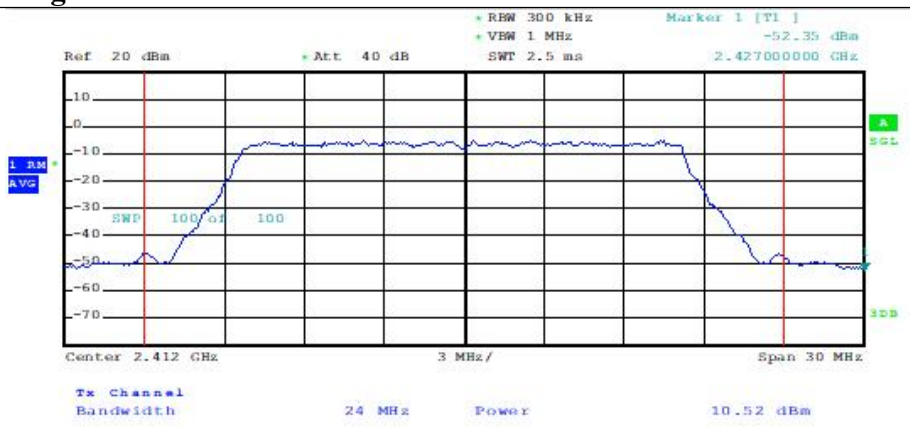
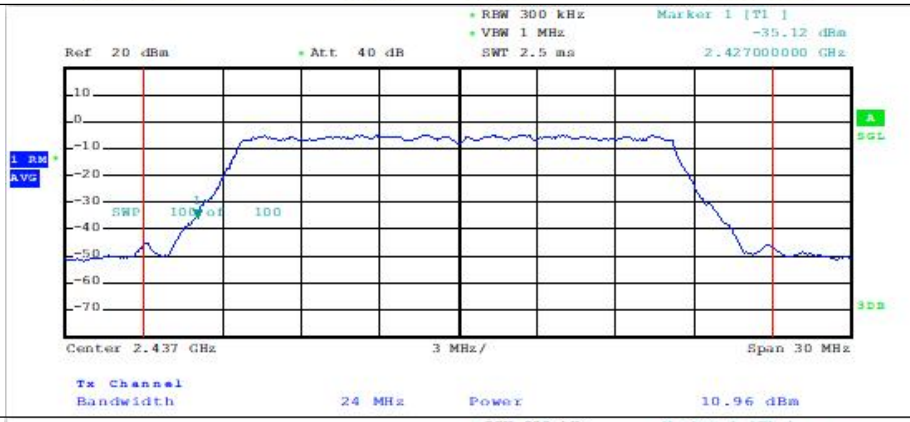
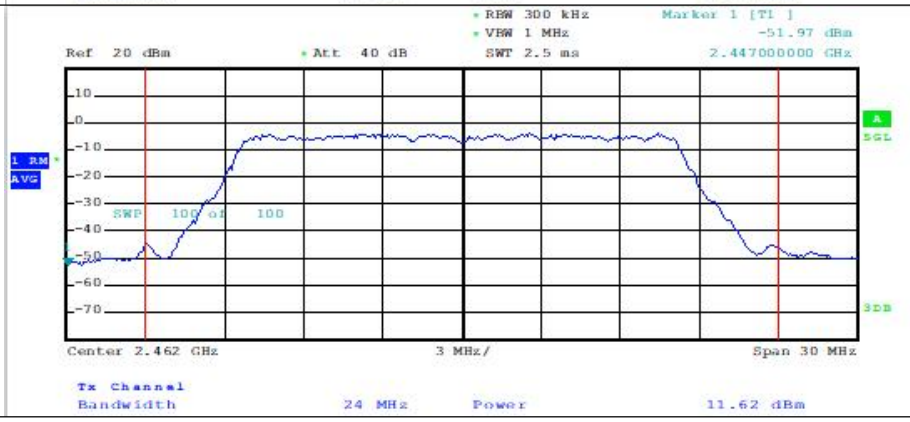
Note: The cable loss needs to be compensated into the data.

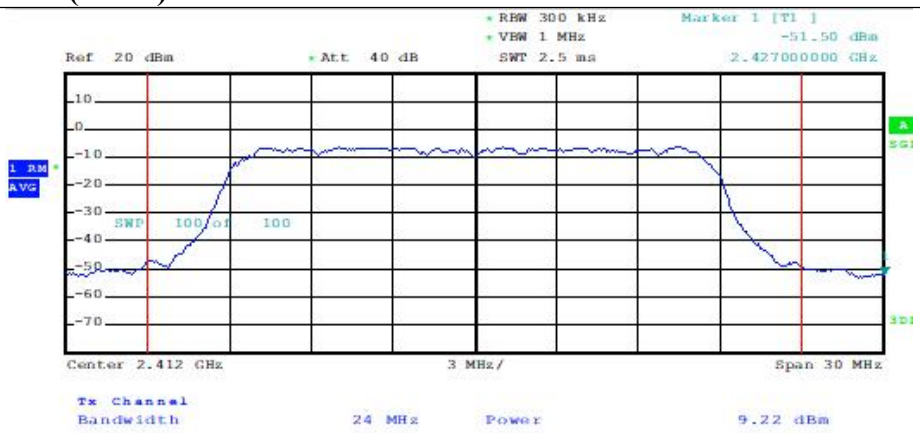
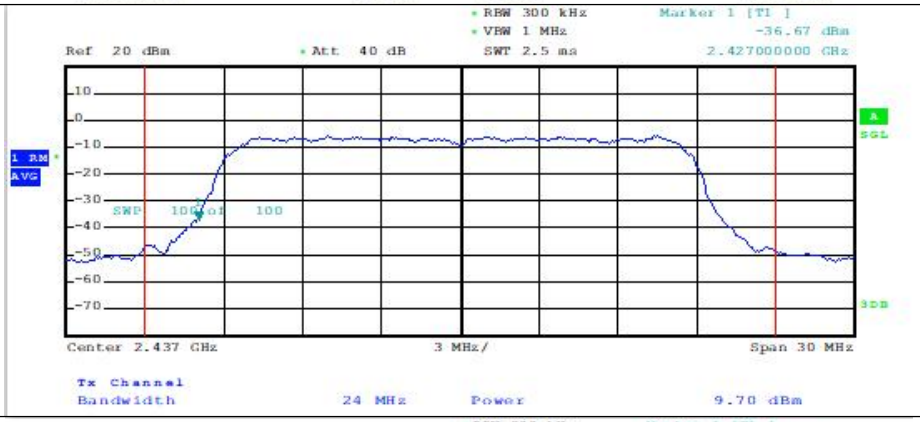
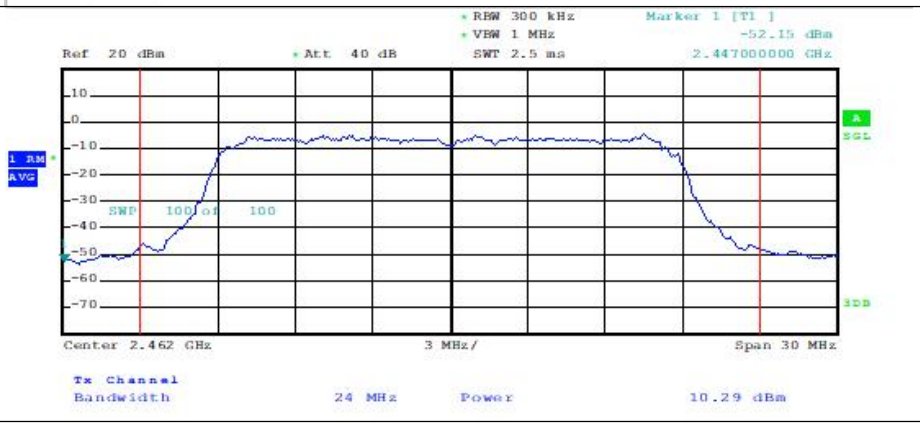
8.4. Test Results

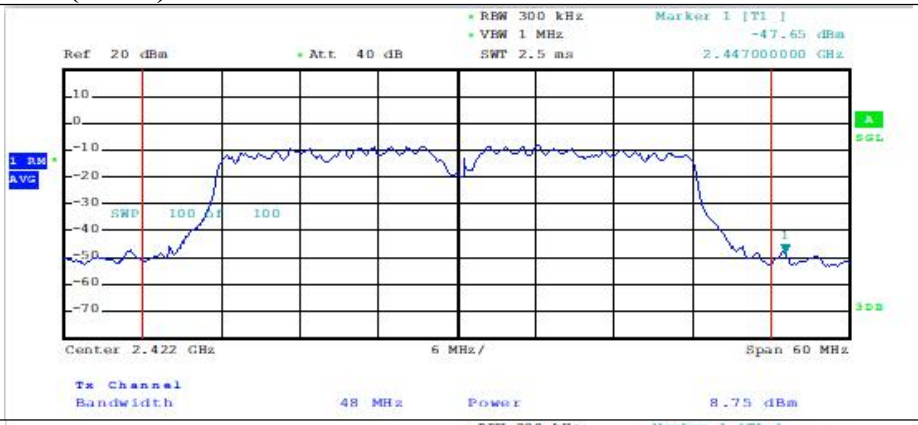
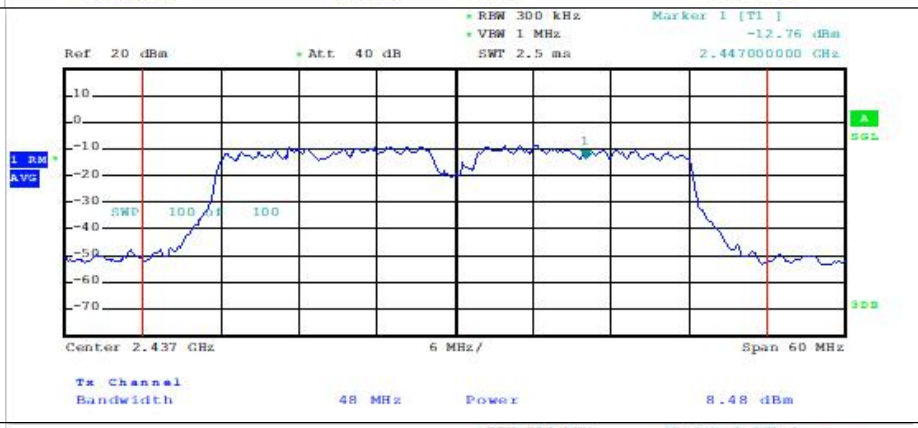
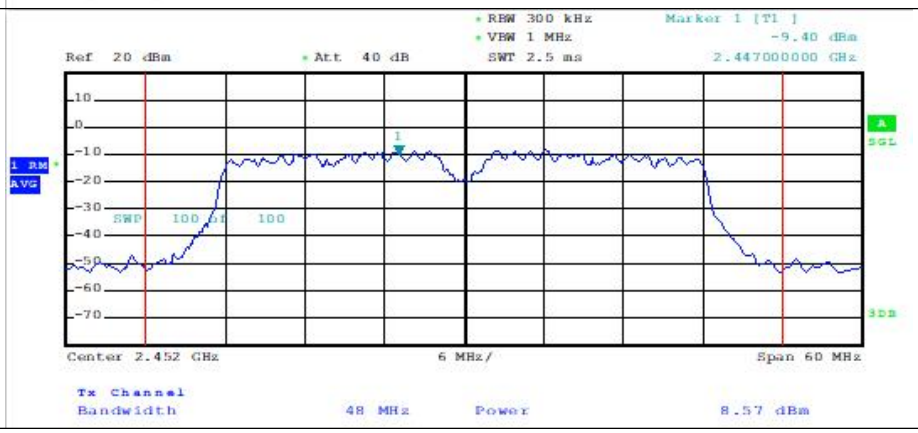
Pass

Test Mode	CH	Output power (dBm)	Limit (dBm)
11b	CH01	11.71	≤30
	CH06	11.82	
	CH11	12.78	
11g	CH01	10.52	≤30
	CH06	10.96	
	CH11	11.62	
11n HT20	CH01	9.22	≤30
	CH06	9.70	
	CH11	10.29	
11n HT40	CH03	8.75	≤30
	CH06	8.48	
	CH09	8.57	

Type:	802.11b
CH01	
CH06	
CH11	

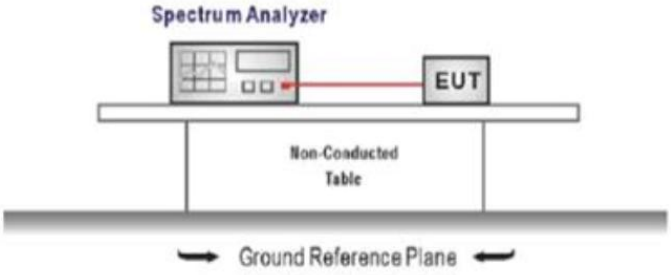
Type:	802.11g
CH01	
CH06	
CH11	

Type:	802.11n(HT20)
CH01	
CH06	
CH11	

Type:	802.11n(HT40)
CH03	
CH06	
CH09	

9. POWER SPECTRAL DENSITY TEST

9.1. Block Diagram of Test Setup



9.2. Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

9.3. Test Procedure

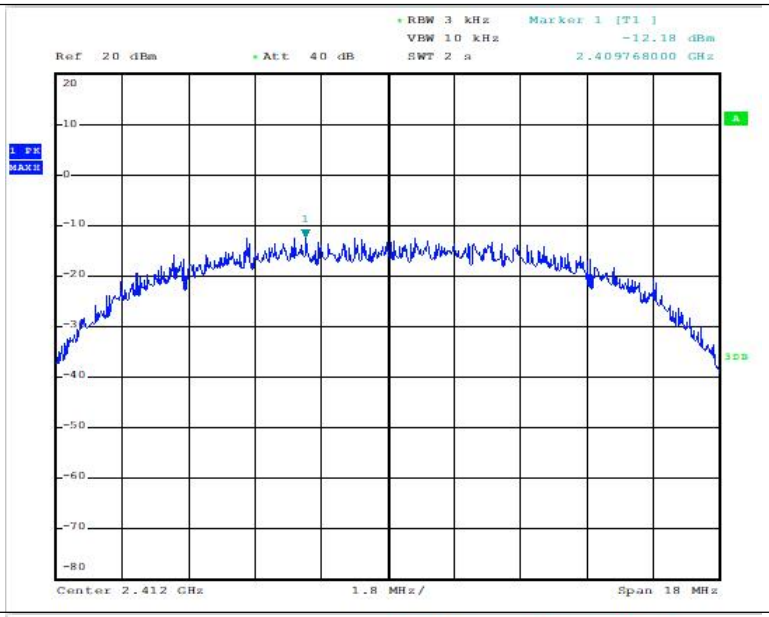
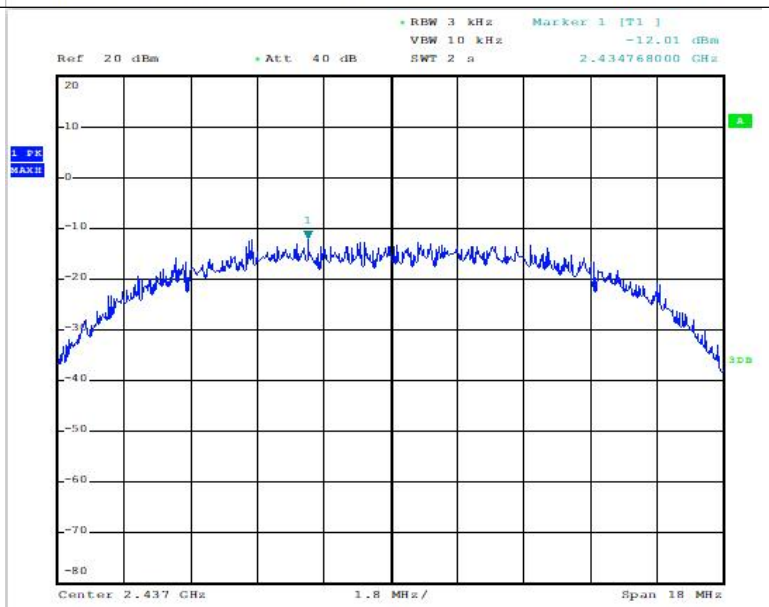
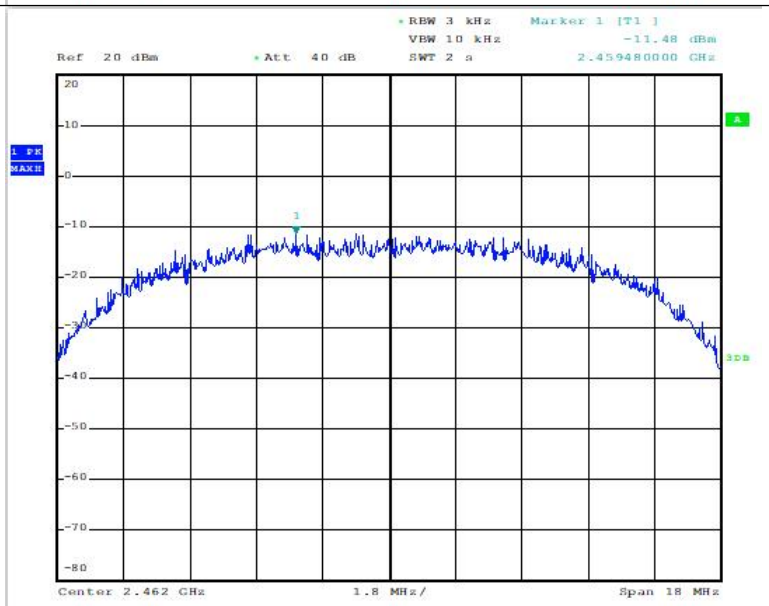
Use the test method descried in ANSI C63.10 clause 11.10.2:

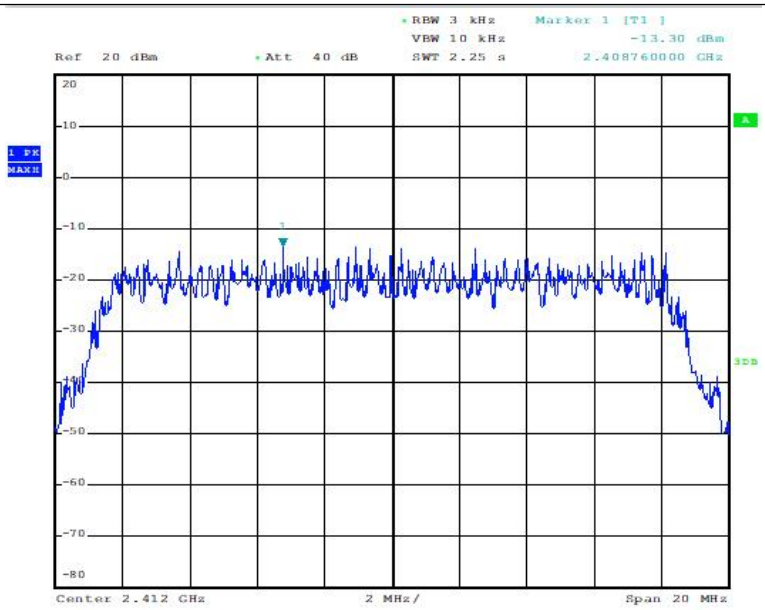
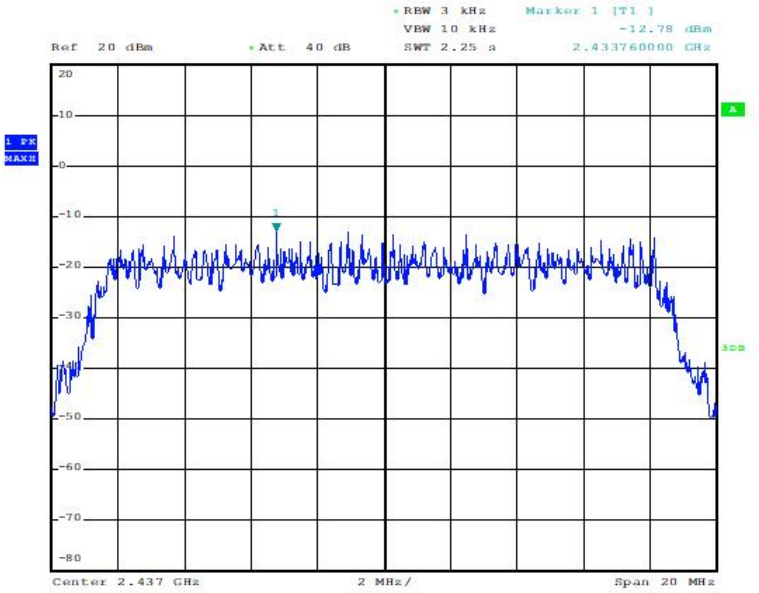
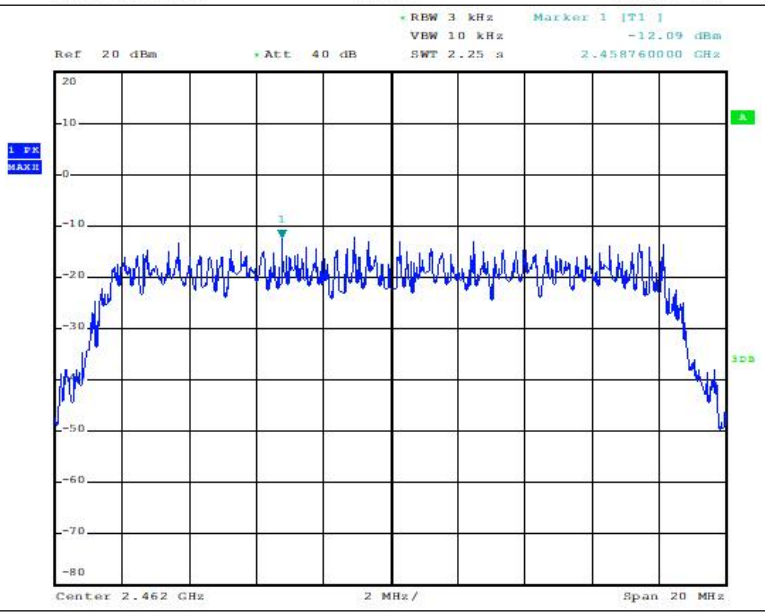
a) Set analyzer center frequency to DTS channel center frequency.
b) Set the span to 1.5 times the DTS bandwidth.
c) Set the RBW to 3 kHz ≤ RBW ≤ 100 kHz.
d) Set the VBW ≥ [3 × RBW].
e) Detector = peak.
f) Sweep time = auto couple.
g) Trace mode = max hold.
h) Allow trace to fully stabilize.
i) Use the peak marker function to determine the maximum amplitude level within the RBW.
j) If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.

9.4. Test Results

Pass

Test Mode	CH	Power density (dBm/3KHz)	Limit (dBm/3KHz)
11b	CH01	-12.18	8
	CH06	-12.01	
	CH11	-11.48	
11g	CH01	-13.30	8
	CH06	-12.78	
	CH11	-12.09	
11n HT20	CH01	-13.49	8
	CH06	-13.10	
	CH11	-12.51	
11n HT40	CH03	-15.32	8
	CH06	-15.58	
	CH09	-15.15	
Conclusion： PASS			

Type:	802.11b
CH01	
CH06	
CH11	

Type:	802.11g
CH01	
CH06	
CH11	

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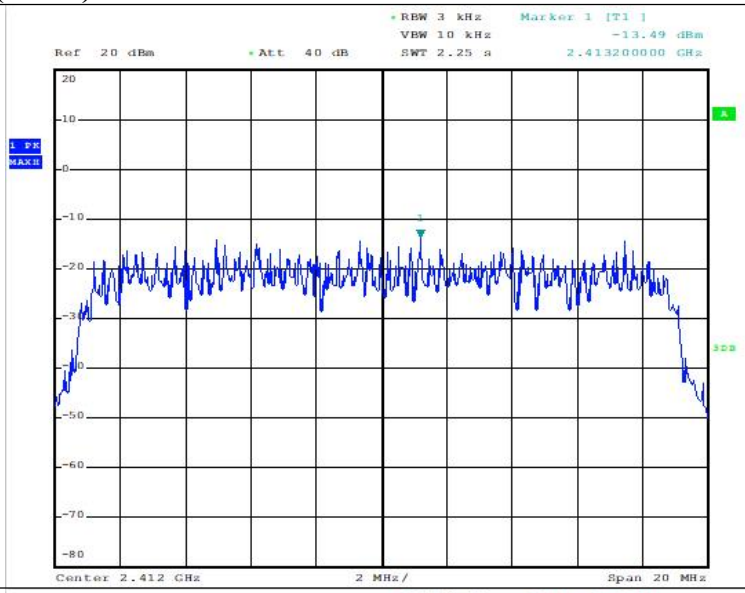
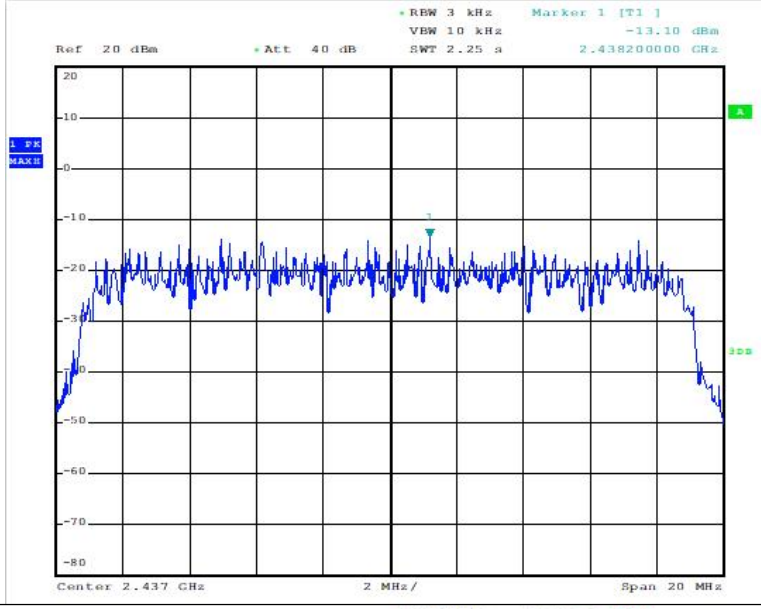
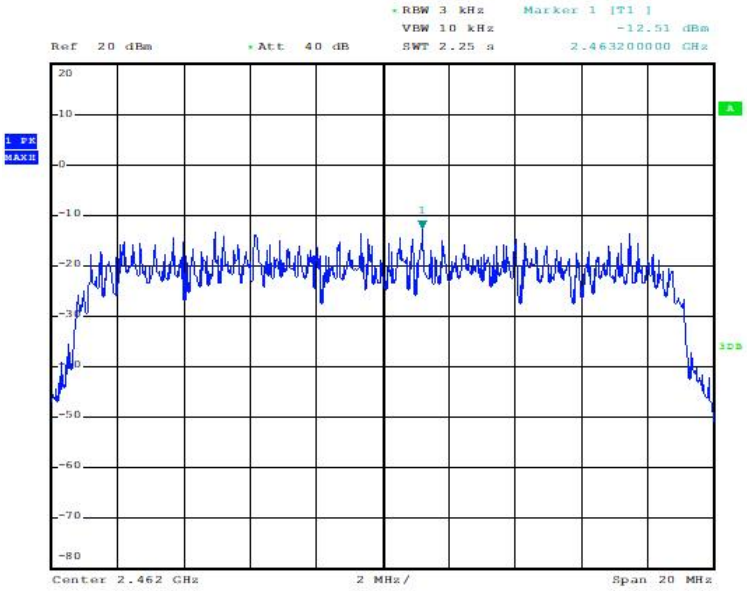
CH01	
CH06	
CH11	

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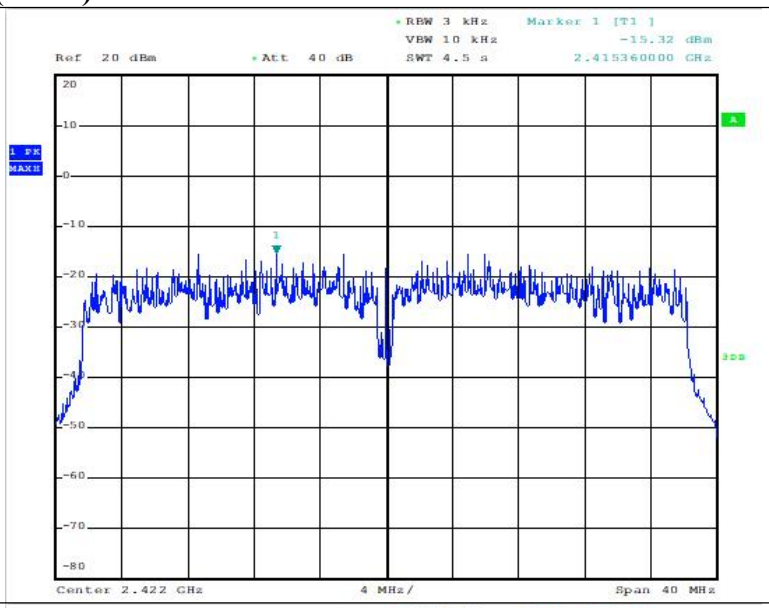
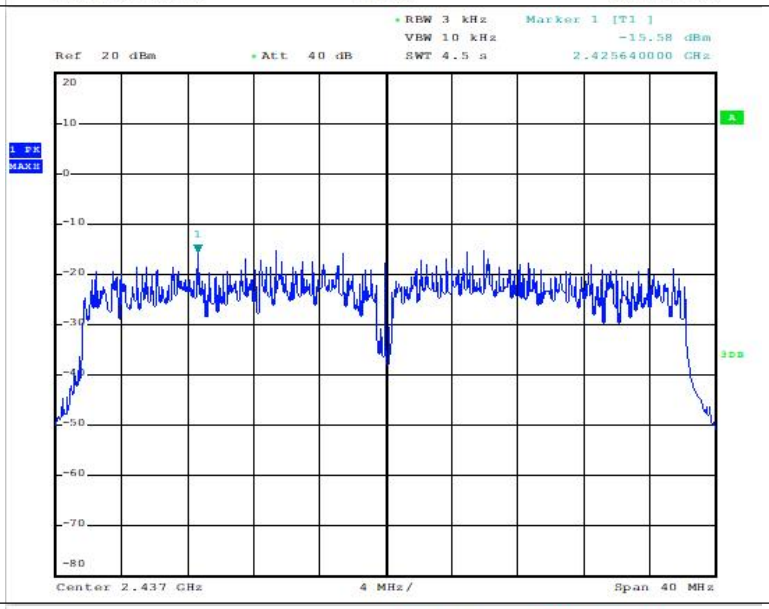
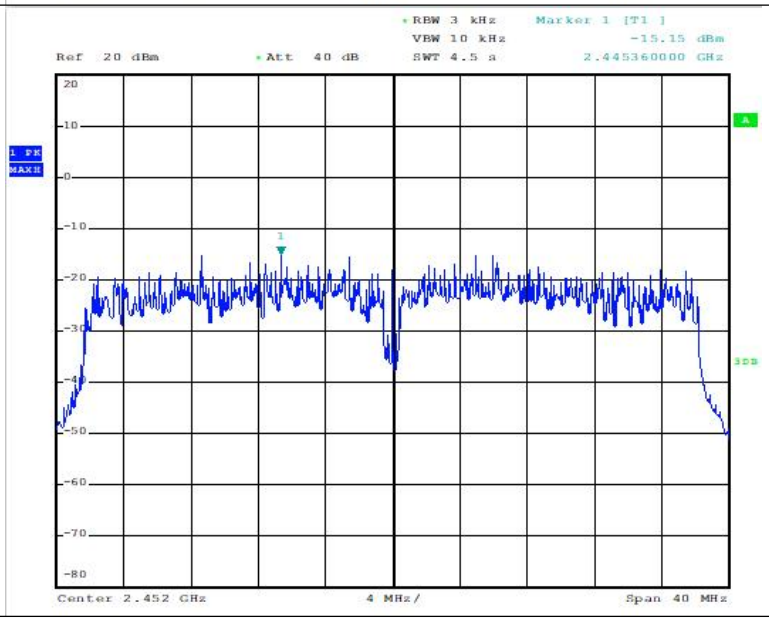
CH03	
CH06	
CH09	

Antenna requirement

Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, 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. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

Antenna Connected Construction

The antennas used for this product are Monopole Antenna that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is 2.4dBi.

End of Report