FCC TEST REPORT

FCC ID: 2AKWJG3604B1080PH

Product	:	Full VR / Panoramic Camera
Model Name	:	FV-G3601B-1080PH;FV-G3601H-1080PH;FV-G3601Y-1080PH; FV-G3601R-1080PH;FV-G3601J-1080PH;FV-G3602B-1080PH; FV-G3602H-1080PH;FV-G3602Y-1080PH;FV-G3603B-960PH; FV-G3604B-1080PH;FV-G3604Y-1080PH;FV-G3605B-1080PH; FV-A3601B-960PH;FV-A3601H-960PH;FV-A3601Y-960PH; FV-A3601R-960PH;FV-A3601J-960PH;FV-A3602B-960PH; FV-A3602H-960PH;FV-A3602Y-960PH;FV-A3603B-960PH; FV-A3604B-960PH;FV-A3604Y-960PH;FV-A3605B-960PH; FV-A1801B-720PH;FV-A1802B-720PH;FV-G1801B-1080PH; FV-G1802B-1080PH
Brand	:	Golden Vision
Report No.	:	PTCDQ01161212302E-FC01

Prepared for

Shenzhen Golden Vision Technology Developing Co.,LTD

202, 2/F, Building G, NO.8, East of Shangxue Science and Technology Park,

Shenzhen, China

Prepared by

DongGuan Precise Testing Service Co.,Ltd.

Building D, Baoding Technology Park, Guangming Road 2, Guangming Community

Dongcheng District, Dongguan, Guangdong, China

TEST RESULT CERTIFICATION

Applicant's name	:	Shenzhen Golden Vision Technology Developing Co.,LTD
Address	:	202 ,2/F, Building G, NO.8, East of Shangxue Science and Technology Park, Shenzhen, China
Manufacture's name	:	Shenzhen Golden Vision Technology Developing Co.,LTD
Address	:	202, 2/F, Building G, NO.8, East of Shangxue Science and Technology Park, Shenzhen, China
Product name	:	Full VR / Panoramic Camera
Model name	:	FV-G3601B-1080PH;FV-G3601H-1080PH;FV-G3601Y-1080PH; FV-G3601R-1080PH;FV-G3601J-1080PH;FV-G3602B-1080PH;FV-G3602H-1080PH;FV-G3602Y-1080PH;FV-G3603B-960PH;FV-G3604B-1080PH;FV-G3604Y-1080PH;FV-G3605B-1080PH;FV-A3601B-960PH;FV-A3601H-960PH;FV-A3601Y-960PH;FV-A3601R-960PH;FV-A3601J-960PH;FV-A3602B-960PH;FV-A3602H-960PH;FV-A3602Y-960PH;FV-A3603B-960PH;FV-A3604B-960PH;FV-A3604Y-960PH;FV-A3605B-960PH;FV-A1801B-720PH;FV-A1802B-720PH;FV-G1801B-1080PH;FV-G1802B-1080PH
Standards	:	FCC CFR47 Part 15 Section 15.247
Test procedure	:	ANSI C63.10:2013, KDB 558074 D01 DTS MEAS GUIDANCE V03R05
Test Date	:	Dec.29. 2016 ~ Dec.30. 2016
Date of Issue	:	Dec.31. 2016
Test Result	:	Pass

This device described above has been tested by PTC, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Testing Engineer

August Qiu

TechnicalManager

Hack Ye

AuthorizedSignatory

Chris Du

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2 Test Summary

Test Items	Test Requirement	Result
Conduct Emission	15.207	PASS
Radiated Spurious Emissions	15.205(a) 15.209 15.247(d)	PASS
Conducted Spurious Emission	15.247(d)	PASS
Band edge	15.247(d) 15.205(a)	PASS
6dB Bandwidth	15.247(a)(2)	PASS
Maximum Peak Output Power	15.247(b)(1)	PASS
Power Spectral Density	15.247(e)	PASS
Antenna Requirement	15.203	PASS
Remark: Test according to ANSI C63.4-2014 ; ANSI C63.10-2013 N/A: Not Applicable		

3 General Information

3.1 General Description of E.U.T.

Product Name	:	Full VR / Panoramic Camera
Model Name	:	FV-G3601B-1080PH;FV-G3601H-1080PH;FV-G3601Y-1080PH; FV-G3601R-1080PH;FV-G3601J-1080PH;FV-G3602B-1080PH; FV-G3602H-1080PH;FV-G3602Y-1080PH;FV-G3603B-960PH; FV-G3604B-1080PH;FV-G3604Y-1080PH;FV-G3605B-1080PH; FV-A3601B-960PH;FV-A3601H-960PH;FV-A3601Y-960PH; FV-A3601R-960PH;FV-A3601J-960PH;FV-A3602B-960PH; FV-A3602H-960PH;FV-A3602Y-960PH;FV-A3603B-960PH; FV-A3604B-960PH;FV-A3604Y-960PH;FV-A3605B-960PH; FV-A1801B-720PH;FV-A1802B-720PH;FV-G1801B-1080PH; FV-G1802B-1080PH
Model Description	:	Only different in model name and appearance
Operating frequency	:	802.11b/g/n 20: 2412~2462 MHz, 11channels 802.11n 40: 2422~2452MHz, 7channels
Antenna installation:	:	Integral Antenna
Antenna Gain:	:	0dBi
The lowest oscillator:	:	32.768KHz
Type of Modulation		CCK/BPSK/QPSK/16QAM
Power supply	:	DC 5V 1.6A charging by AC adapter
Adapter	:	Input: AC 100-240V 50/60Hz 0.3A max Output: DC 5V 1.6A
Hardware Version	:	HwGMS_WF1_PCARD_PV
Software Version	:	AppGMS_PCARD_PV_V3.2.2.1

3.2 Channel List

Channel List for 802.11b/g/n(20MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452		

Channel List for 802.11n(40MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
03	2422	06	2437	09	2452		
04	2427	07	2442				
05	2432	08	2447				

3.3 Test Mode

All test mode(s) and condition(s) mentioned were considered and evaluated respectively by performing full tests, the worst data were recorded and reported.

Modulation	Test mode	Low channel	Middle channel	High channel
802.11b/g/n-HT20	Transmitting	2412MHz	2437MHz	2462MHz
802.11n-HT40	Transmitting	2422MHz	2437MHz	2452MHz
Tests Carried Out Under FCC part 15.207				
Test Item		Test Mode		
Conduction Emission 0.15MHz to 30MHz		WIFI Communication		

3.4 Test Site

Dongguan Precise Testing Service Co., Ltd.

Building D,Baoding Technology Park,Guangming Road2, Dongcheng District, Dongguan, Guangdong, China, Dongguan, 523129

China

FCC Registration Number: 371540

IC Registration Number: 12191A-1

4 Equipment During Test

4.1 Equipments List

RF Conducted Test							
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	EMC Analyzer (9k~26.5GHz)	Agilent	E4407B	MY45109572	Aug.04, 2016	Aug.03, 2017	1 year
2	EXA Signal Analyzer	Keysight	N9010A	MY50520207526B25MPBW7X	Aug.04, 2016	Aug.03, 2017	1 year
3	EMI Test Receiver	R&S	ESCI	101155	July 15, 2016	July 14, 2017	1 year
4	Humidity Chamber	GF	GTH-225-40-1P	IAA061225	July 15, 2016	July 14, 2017	1 year
5	USB RF power sensor	DARE	RPR3006W	15I00041SNO01	July 15, 2016	July 14, 2017	1 year
Radiated Emissions							
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	EMC Analyzer (9k~26.5GHz)	Agilent	E4407B	MY45109572	Aug.04, 2016	Aug.03, 2017	1 year
2	Trilog Broadband Antenna	SCHWARZBECK	VULB9160	9160-3355	July 15, 2016	July 14, 2017	1 year
3	Amplifier	EM	EM-30180	060538	July 15, 2016	July 14, 2017	1 year
4	Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1246	July 15, 2016	July 14, 2017	1 year
5	Coaxial Cable(below 1GHz)	LARGE	CALB1	-	July 15, 2016	July 14, 2017	1 year
6	Coaxial Cable(above 1GHz)	LARGE	CALB2	-	July 15, 2016	July 14, 2017	1 year
Conducted Emissions							
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	EMI Test Receiver	R&S	ESCI	101155	July 15, 2016	July 14, 2017	1 year
2	LISN	SCHWARZBECK	NSLK 8128	8128-289	July 15, 2016	July 14, 2017	1 year
3	Cable	LARGE	RF300	-	July 15, 2016	July 14, 2017	1 year

4.2 Measurement Uncertainty

Parameter	Uncertainty
RF output power, conducted	±1.0dB
Power Spectral Density, conducted	±2.2dB
Radio Frequency	± 1 x 10^{-6}
Bandwidth	± 1.5 x 10^{-6}
Time	±2%
Duty Cycle	±2%
Temperature	±1°C
Humidity	±5%
DC and low frequency voltages	±3%
Conducted Emissions(150kHz~30MHz)	±3.64dB
Radiated Emission(30MHz~1GHz)	±5.03dB
Radiated Emission(1GHz~25GHz)	±4.74dB

5 Conducted Emission

Test Requirement:	:	FCC CFR 47 Part 15 Section 15.207
Test Method:	:	ANSI C63.4:2014
Test Result:	:	PASS
FrequencyRange:	:	150kHz to 30MHz
Class/Severity:	:	Class B
Limit:	:	66-56 dBμV between 0.15MHz & 0.5MHz
	:	56 dBμV between 0.5MHz & 5MHz
	:	60 dBμV between 5MHz & 30MHz
Detector:	:	Peak for pre-scan(9kHz Resolution Bandwidth)

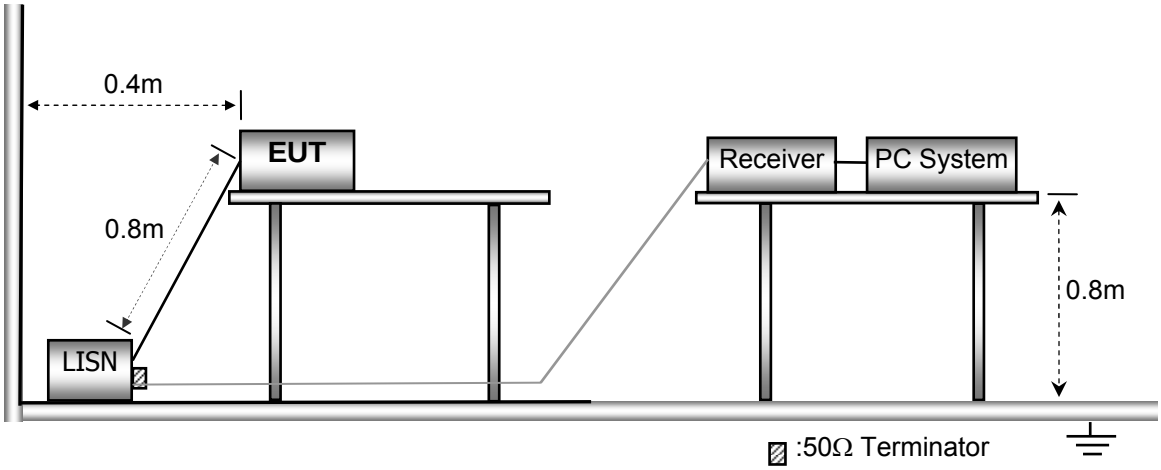
5.1 E.U.T. Operation

Operating Environment:

Temperature:	:	25.5 °C
Humidity:	:	51 % RH
Atmospheric Pressure:	:	101.2kPa
EUT Operation:	:	Refer to section 3.3

5.2 EUT Setup

The conducted emission tests were performed using the setup accordance with the ANSI C63.10:2013.

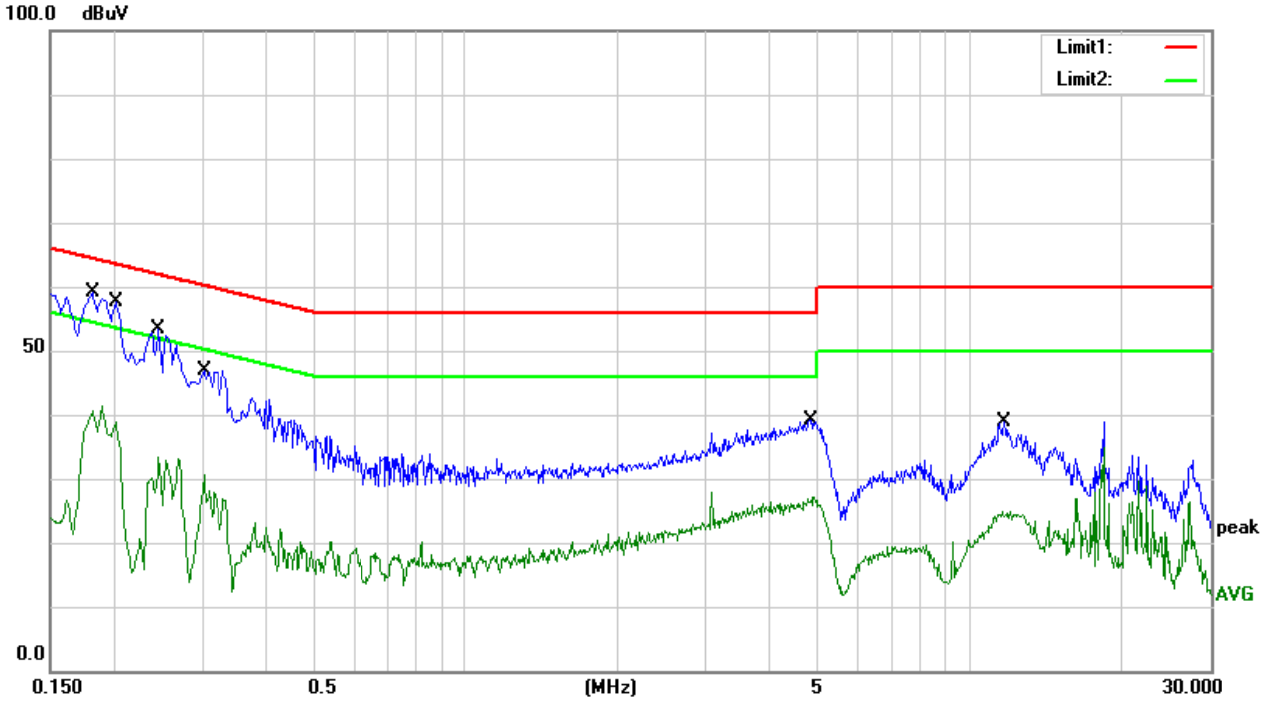


5.3 Measurement Description

The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

5.4 Conducted Emission Test Result

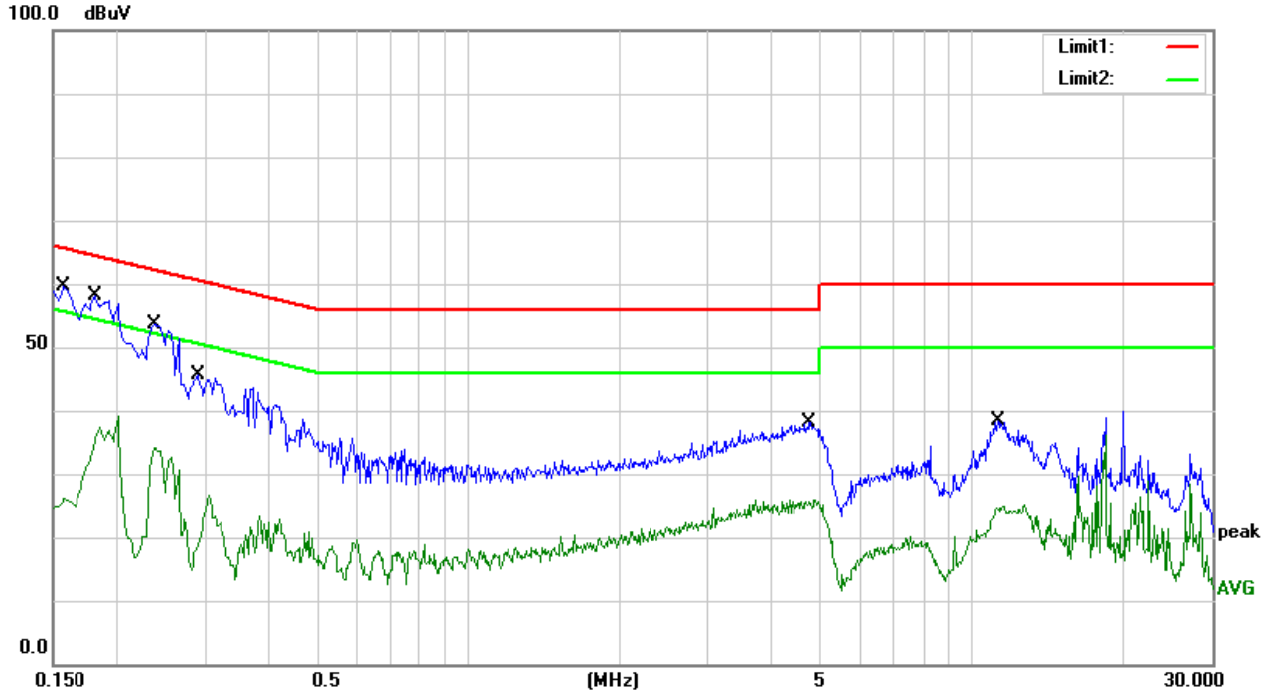
Live line:



Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
0.1820	47.08	10.00	57.08	64.39	-7.31	QP
0.1820	30.50	10.00	40.50	54.39	-13.89	AVG
0.2020	45.60	10.00	55.60	63.53	-7.93	QP
0.2020	28.83	10.00	38.83	53.53	-14.70	AVG
0.2460	43.39	9.95	53.34	61.89	-8.55	QP
0.2460	23.49	9.95	33.44	51.89	-18.45	AVG
0.3020	36.95	9.91	46.86	60.19	-13.33	QP
0.3020	20.83	9.91	30.74	50.19	-19.45	AVG
4.8340	28.94	10.20	39.14	56.00	-16.86	QP
4.8340	16.99	10.20	27.19	46.00	-18.81	AVG
11.6940	28.48	10.37	38.85	60.00	-21.15	QP
11.6940	14.50	10.37	24.87	50.00	-25.13	AVG

Remark:Emission Level=Receiver Reading+Cable Loss+AMN Factor

Neutral line:



Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
0.1580	45.48	10.24	55.72	65.57	-9.85	QP
0.1580	15.82	10.24	26.06	55.57	-29.51	AVG
0.1820	48.11	10.00	58.11	64.39	-6.28	QP
0.1820	27.46	10.00	37.46	54.39	-16.93	AVG
0.2380	43.61	9.96	53.57	62.17	-8.60	QP
0.2380	24.21	9.96	34.17	52.17	-18.00	AVG
0.2900	35.72	9.91	45.63	60.52	-14.89	QP
0.2900	15.83	9.91	25.74	50.52	-24.78	AVG
4.7860	27.98	10.20	38.18	56.00	-17.82	QP
4.7860	15.70	10.20	25.90	46.00	-20.10	AVG
11.3020	28.12	10.30	38.42	60.00	-21.58	QP
11.3020	14.47	10.30	24.77	50.00	-25.23	AVG

Remark:Emission Level=Receiver Reading+Cable Loss+AMN Factor

6 Radiated Spurious Emissions

Test Requirement: : FCC CFR47 Part 15 Section 15.209 & 15.247

Test Method: : ANSI C63.10:2013,KDB 558074 D01 DTS MEAS GUIDANCE V03R03

Test Result: : PASS

Measurement Distance: : 3m

Limit: : See the follow table

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	$20\log^{(2400/F(kHz))} + 80$
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	$20\log^{(24000/F(kHz))} + 40$
1.705 ~ 30	30	30	100 * 30	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

6.1 EUT Operation

Operating Environment :

Temperature: : 23.5 °C

Humidity: : 51.1 % RH

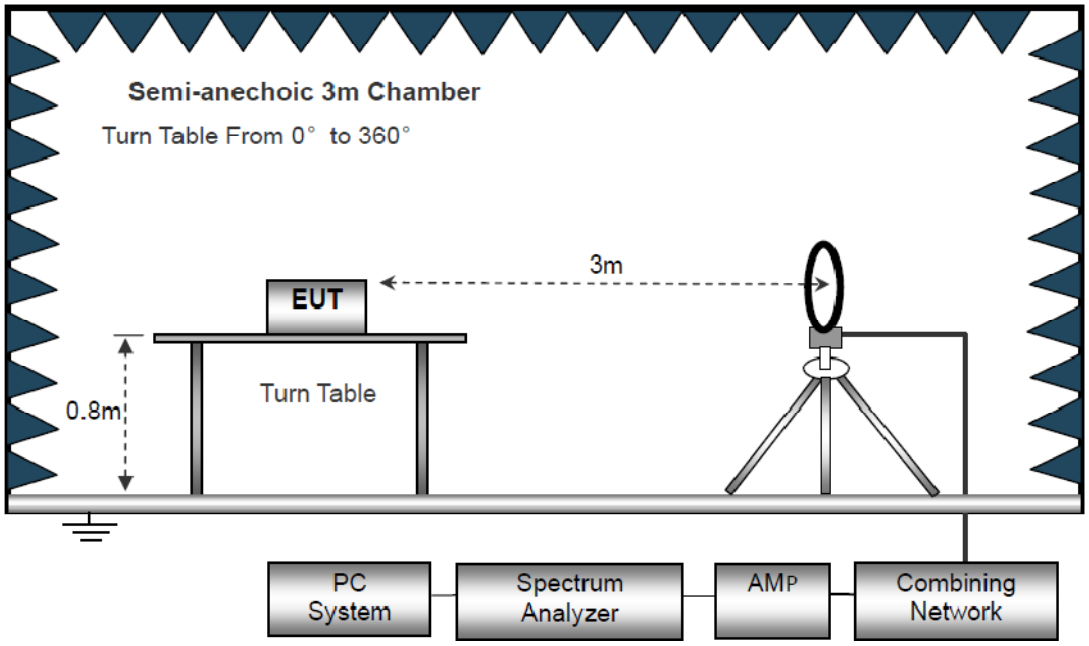
Atmospheric Pressure: : 101.2kPa

EUT Operation : : Refer to section 3.3

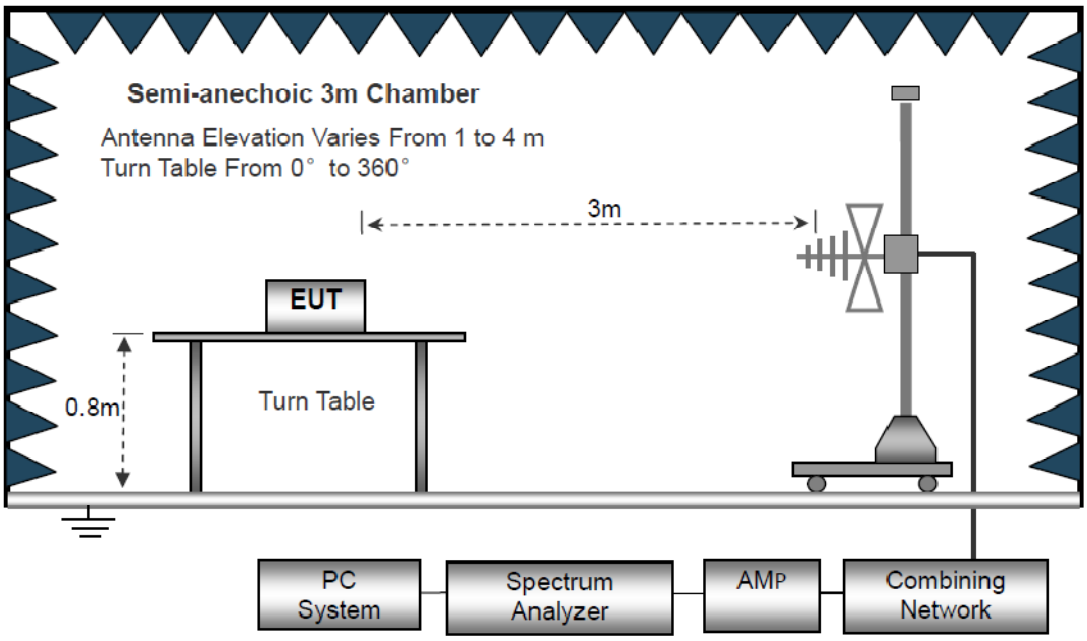
6.2 Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber testsite

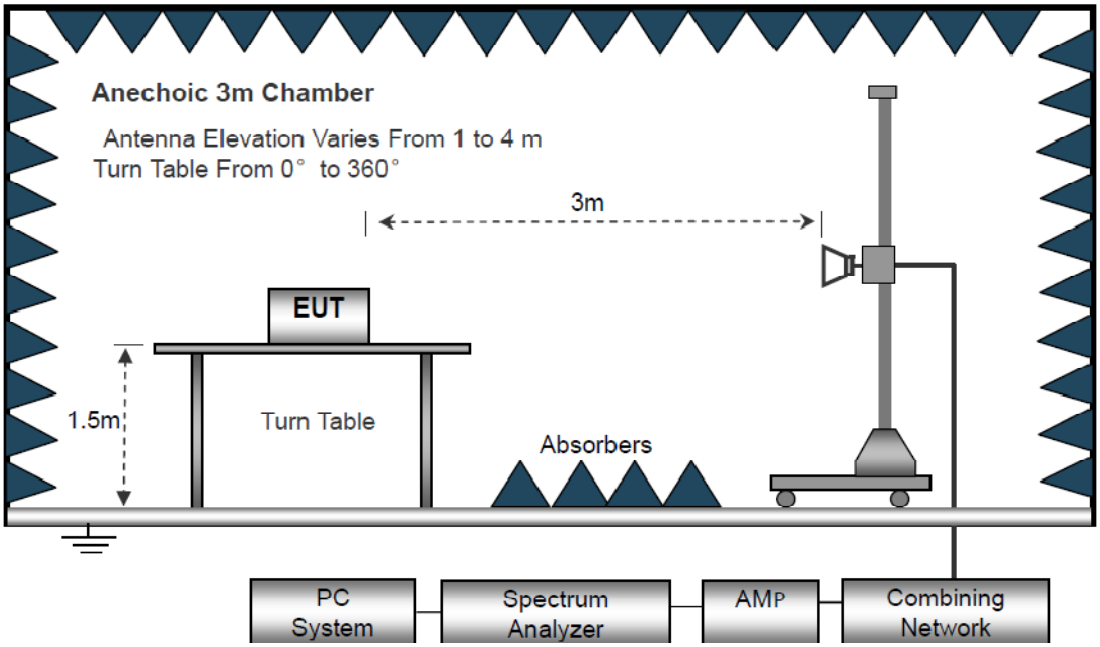
The test setup for emission measurement below 30MHz



The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz



6.3 Spectrum Analyzer Setup

Below 30MHz

IF Bandwidth		10kHz
Resolution Bandwidth		10kHz
Video Bandwidth		10kHz

30MHz ~ 1GHz

Detector	:	PK
Resolution Bandwidth	:	100kHz
Video Bandwidth	:	300kHz
Detector	:	QP
Resolution Bandwidth	:	120kHz
Video Bandwidth	:	300kHz

Above 1GHz

Detector	:	PK
Resolution Bandwidth	:	1MHz
Video Bandwidth	:	3MHz
Detector	:	PK for AV value
Resolution Bandwidth	:	1MHz
Video Bandwidth	:	10Hz

6.4 Test Procedure

1. The EUT is placed on a turntable, which is 0.8m above ground plane for below 1GHz and 1.5m for above 1GHz.

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

3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions. The spectrum was investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.

5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

6. Repeat above procedures until the measurements for all frequencies are complete.

7. The radiation measurements are tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the X position. So the data shown was the X position only.

8.The test above 1GHz must be use the fully anechoic room and the test below 1GHz use the half anechoic room

6.5 Summary of Test Results

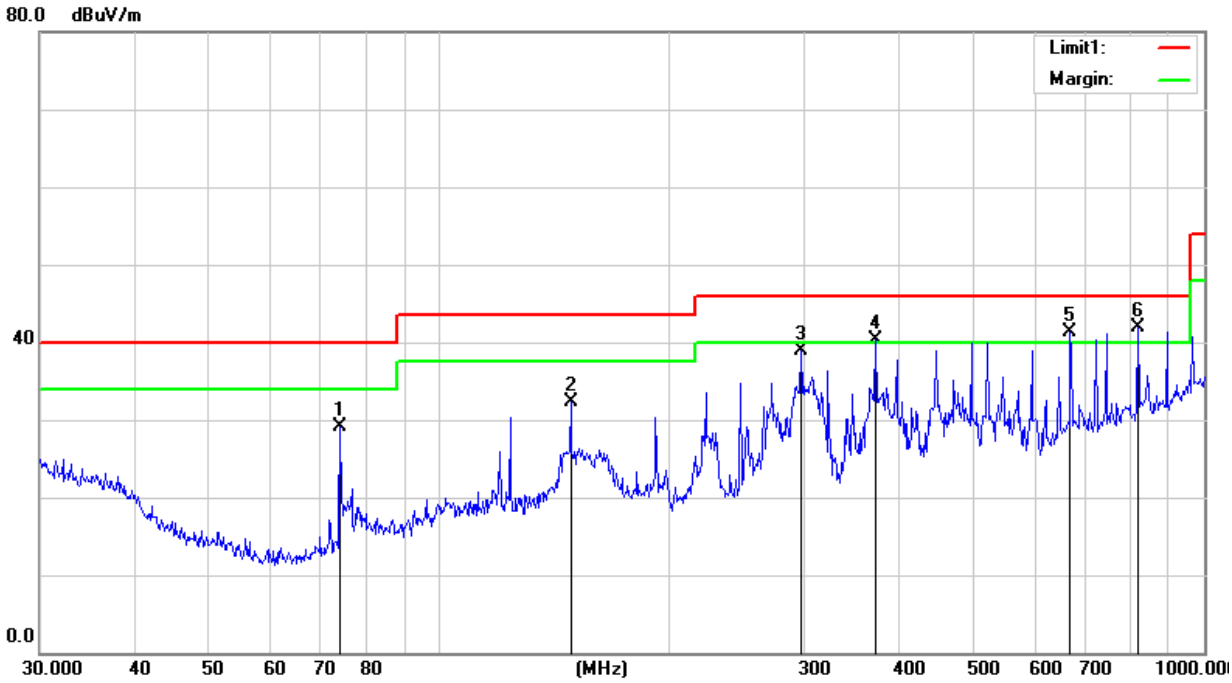
Test Frequency: Below 30MHz

The measurements were more than 20 dB below the limit and not reported.

Test Frequency: 30MHz ~ 1GHz

All applicable test modes have been tested and only the worst case (802.11b TX in middle channel) is recorded.

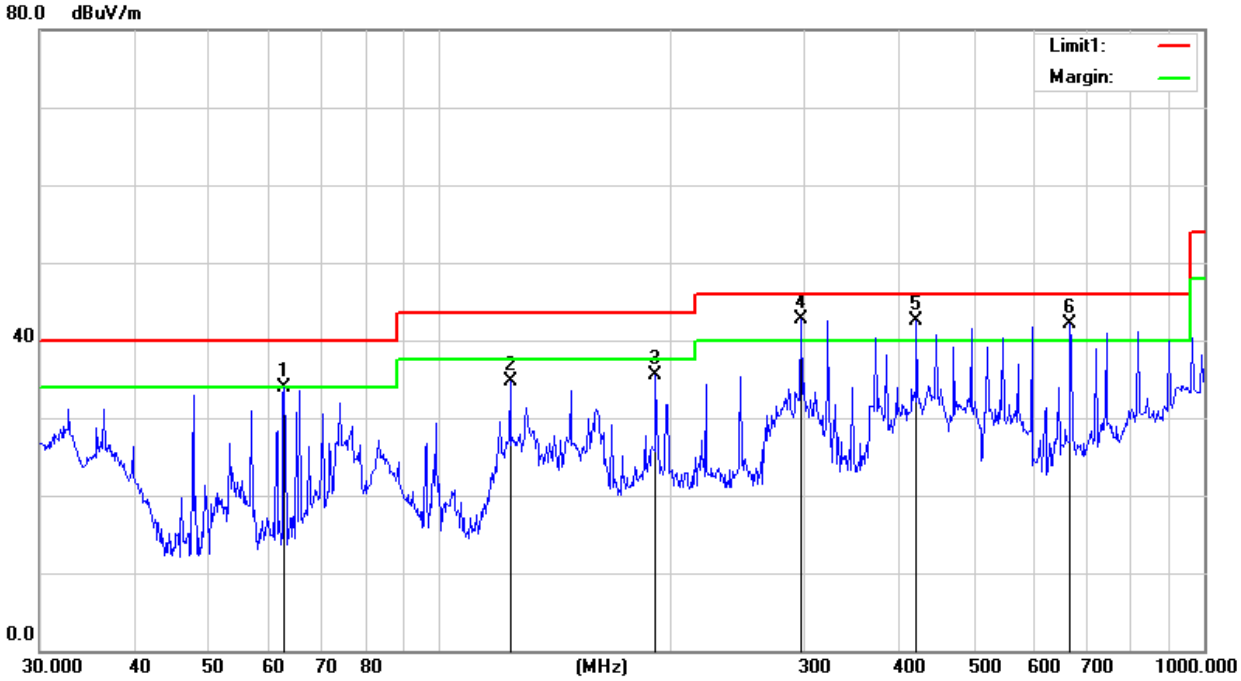
Antenna Polarization: Horizontal



Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
74.1350	56.16	-27.15	29.01	40.00	-10.99	QP
148.4410	54.33	-22.05	32.28	43.50	-11.22	QP
297.2241	58.09	-19.13	38.96	46.00	-7.04	QP
372.0045	57.34	-17.03	40.31	46.00	-5.69	QP
668.1422	51.24	-9.94	41.30	46.00	-4.70	QP
818.8341	49.05	-7.20	41.85	46.00	-4.15	QP

Remark:Emission Level=Receiver Reading+Cable Loss+ANT Factor-AMP Factor

Antenna Polarization: Vertical



Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
62.6507	62.73	-28.73	34.00	40.00	-6.00	QP
123.6984	56.47	-21.70	34.77	43.50	-8.73	QP
191.7450	60.26	-24.75	35.51	43.50	-7.99	QP
297.2241	61.91	-19.13	42.78	46.00	-3.22	QP
420.5803	57.35	-14.87	42.48	46.00	-3.52	QP
668.1422	51.97	-9.94	42.03	46.00	-3.97	QP

Remark:Emission Level=Receiver Reading+Cable Loss+ANT Factor-AMP Factor

Test Frequency: 1GHz ~ 18GHz

Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBμV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
Low Channel (802.11b/2412 MHz)							
4824.20	67.20	-3.58	63.62	74	-10.38	PK	Vertical
4824.22	48.12	-3.58	44.54	54	-9.46	AV	Vertical
7236.14	63.05	-0.8	62.25	74	-11.75	PK	Vertical
7236.12	42.45	-0.8	41.65	54	-12.35	AV	Vertical
4824.20	63.09	-3.58	59.51	74	-14.49	PK	Horizontal
4824.21	45.14	-3.58	41.56	54	-12.44	AV	Horizontal
Mid Channel (802.11b/2437 MHz)							
4874.08	66.02	-3.56	62.46	74	-11.54	PK	Vertical
4874.06	50.03	-3.56	46.47	54	-7.53	AV	Vertical
7311.21	61.98	-0.78	61.20	74	-12.80	PK	Vertical
7311.21	45.12	-0.78	44.34	54	-9.66	AV	Vertical
4874.18	62.33	-3.56	58.77	74	-15.23	PK	Horizontal
4874.15	46.00	-3.56	42.44	54	-11.56	AV	Horizontal
High Channel (802.11b/2462 MHz)							
4944.26	62.11	-3.54	58.57	74	-15.43	PK	Vertical
4944.30	46.31	-3.54	42.77	54	-11.23	AV	Vertical
7416.33	62.07	-0.75	61.32	74	-12.68	PK	Vertical
7416.30	46.34	-0.75	45.59	54	-8.41	AV	Vertical
4944.26	62.13	-3.54	58.59	74	-15.41	PK	Horizontal
4944.30	46.34	-3.54	42.80	54	-11.20	AV	Horizontal

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Scan with 802.11b, 802.11g, 802.11n (HT-20), the worst case is 802.11b.

Radiated band edge:

Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBμV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
802.11 b							
2400.0	69.19	-12.99	56.20	74	-17.80	PK	Vertical
2400.0	54.98	-12.99	41.99	54	-12.01	AV	Vertical
2400.0	70.19	-12.99	57.20	74	-16.80	PK	Horizontal
2400.0	54.18	-12.99	41.19	54	-12.81	AV	Horizontal
2483.5	71.08	-12.78	58.30	74	-15.70	PK	Vertical
2483.5	54.09	-12.78	41.31	54	-12.69	AV	Vertical
2483.5	71.12	-12.78	58.34	74	-15.66	PK	Horizontal
2483.5	54.07	-12.78	41.29	54	-12.71	AV	Horizontal
802.11 g							
2400.0	68.97	-12.99	55.98	74	-18.02	PK	Vertical
2400.0	55.13	-12.99	42.14	54	-11.86	AV	Vertical
2400.0	70.18	-12.99	57.19	74	-16.81	PK	Horizontal
2400.0	53.98	-12.99	40.99	54	-13.01	AV	Horizontal
2483.5	71.08	-12.78	58.30	74	-15.70	PK	Vertical
2483.5	54.26	-12.78	41.48	54	-12.52	AV	Vertical
2483.5	71.05	-12.78	58.27	74	-15.73	PK	Horizontal
2483.5	54.18	-12.78	41.40	54	-12.60	AV	Horizontal

802.11 n20							
2400.0	69.18	-12.99	56.19	74	-17.81	PK	Vertical
2400.0	55.13	-12.99	42.14	54	-11.86	AV	Vertical
2400.0	70.12	-12.99	57.13	74	-16.87	PK	Horizontal
2400.0	54.15	-12.99	41.16	54	-12.84	AV	Horizontal
2483.5	71.25	-12.78	58.47	74	-15.53	PK	Vertical
2483.5	54.10	-12.78	41.32	54	-12.68	AV	Vertical
2483.5	71.11	-12.78	58.33	74	-15.67	PK	Horizontal
2483.5	54.10	-12.78	41.32	54	-12.68	AV	Horizontal
802.11 n40							
2400.0	59.27	-12.99	46.28	74	-27.72	PK	Vertical
2400.0	58.57	-12.99	45.58	54	-8.42	AV	Vertical
2400.0	57.89	-12.99	44.90	74	-29.10	PK	Horizontal
2400.0	57.32	-12.99	44.33	54	-9.67	AV	Horizontal
2483.5	56.65	-12.78	43.87	74	-30.13	PK	Vertical
2483.5	55.85	-12.78	43.07	54	-10.93	AV	Vertical
2483.5	55.29	-12.78	42.51	74	-31.49	PK	Horizontal
2483.5	54.48	-12.78	41.70	54	-12.30	AV	Horizontal

Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Low measurement frequencies is range from 2310 to 2400 MHz, high measurement frequencies is range from 2483.5 to 2500 MHz.
Only show the worst point data of the emissions in the frequency 2310-2400 MHz and 2483.5-2500 MHz.

Test Frequency :Above 18GHz

The measurements were more than 20 dB below the limit and not reported

Remark1.The testing has been conformed to 10*2480 =24800MHz.

2.All other emissions more than 30dB below the limit.

7 Conducted Spurious Emission

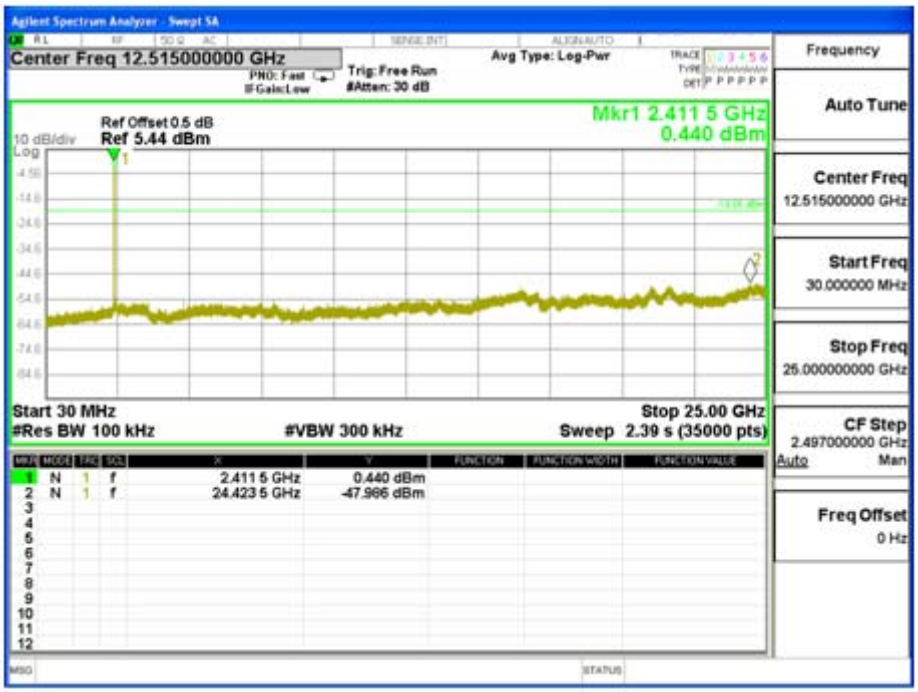
Test Requirement	:	FCC CFR47 Part 15 Section 15.247
Test Method	:	ANSI C63.10:2013,KDB 558074 D01 DTS MEAS GUIDANCE V03R05
Test Limit	:	Regulation 15.247 (d),In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the 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. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).
Test Mode	:	Refer to section 3.3

7.1 Test Procedure

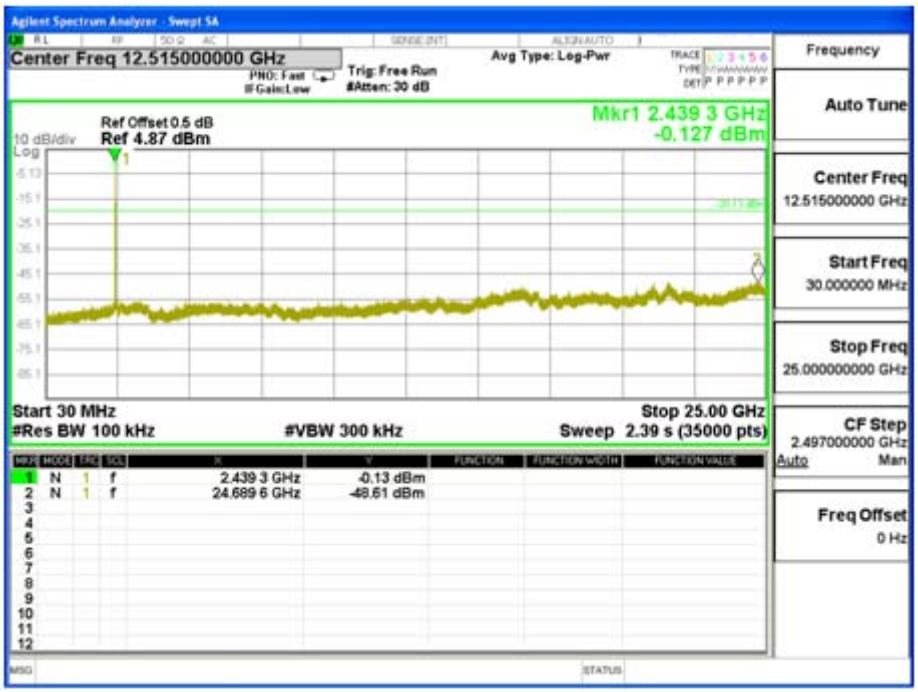
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to thespectrum;
2. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz, Sweep = auto
Detector function = peak, Trace = max hold

7.2 Test Result

802.11b Low Channel



802.11b Middle Channel



802.11b High Channel

NOTE: All modes have been tested， only worse case is reported

8 Band Edge Measurement

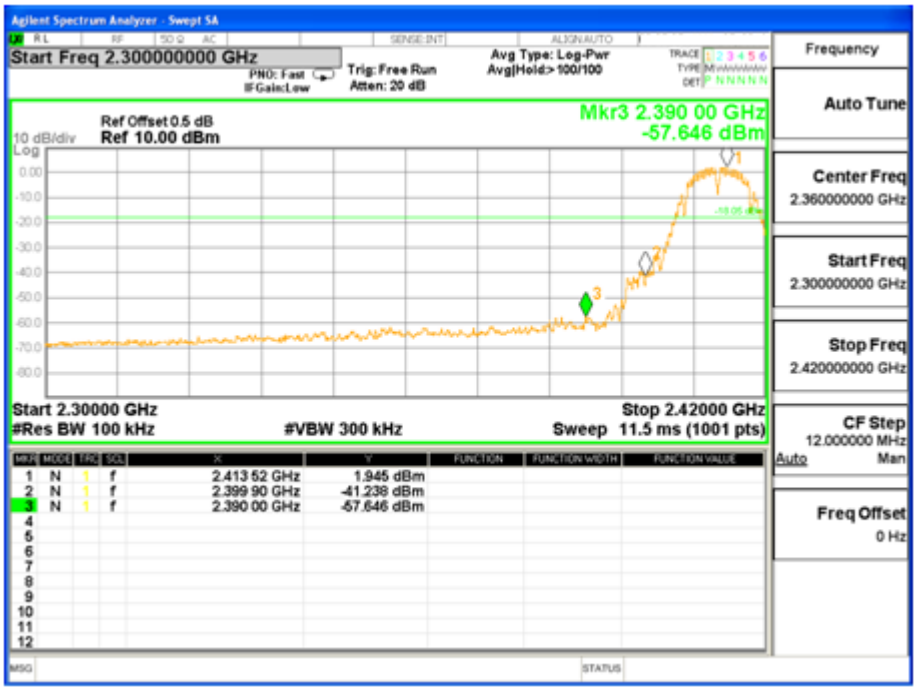
Test Requirement	:	Section 15.247(d) In addition, radiated emissions which fall in the restricted bands. as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).
Test Method	:	ANSI C63.10:2013,KDB 558074 D01 DTS MEAS GUIDANCE V03R03
Test Limit	:	Regulation 15.247 (d),In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).
Test Mode	:	Refer to section 3.3

8.1 Test Procedure

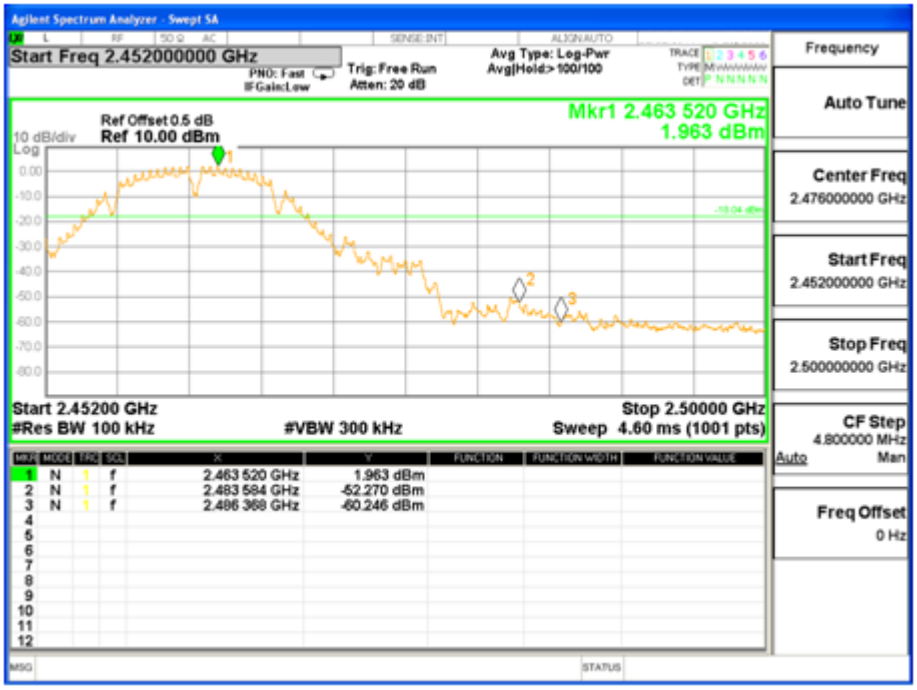
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz, Sweep = auto
Detector function = peak, Trace = max hold

8.2 Test Result

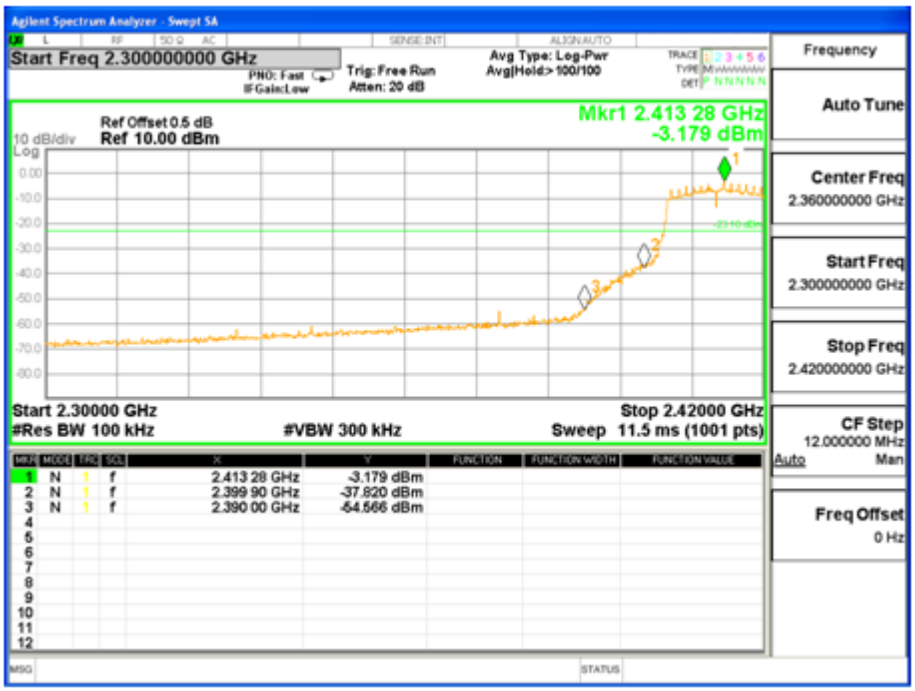
802.11b Band edge-left side



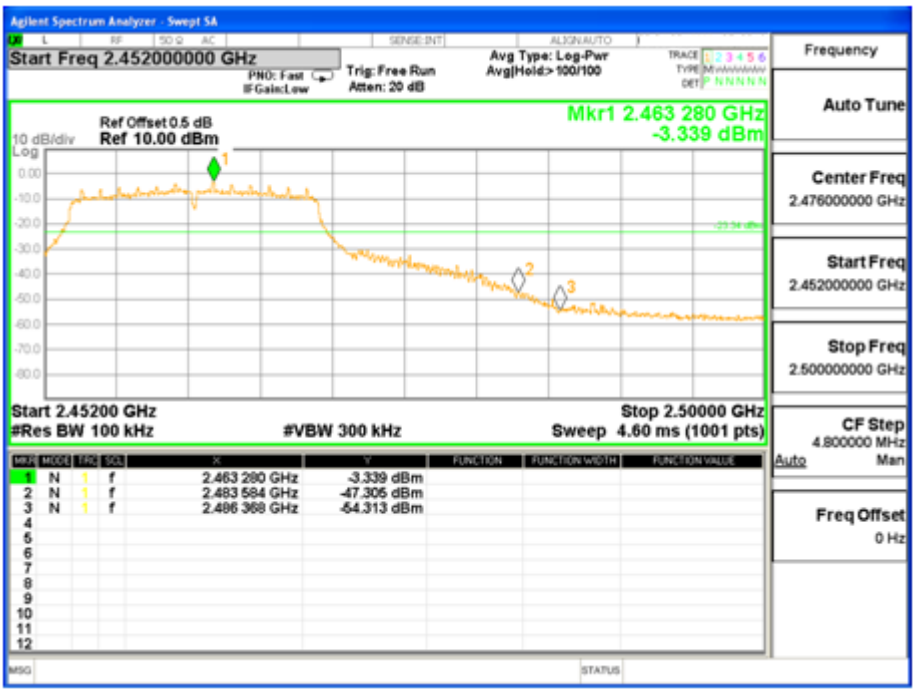
802.11b Band edge-right side



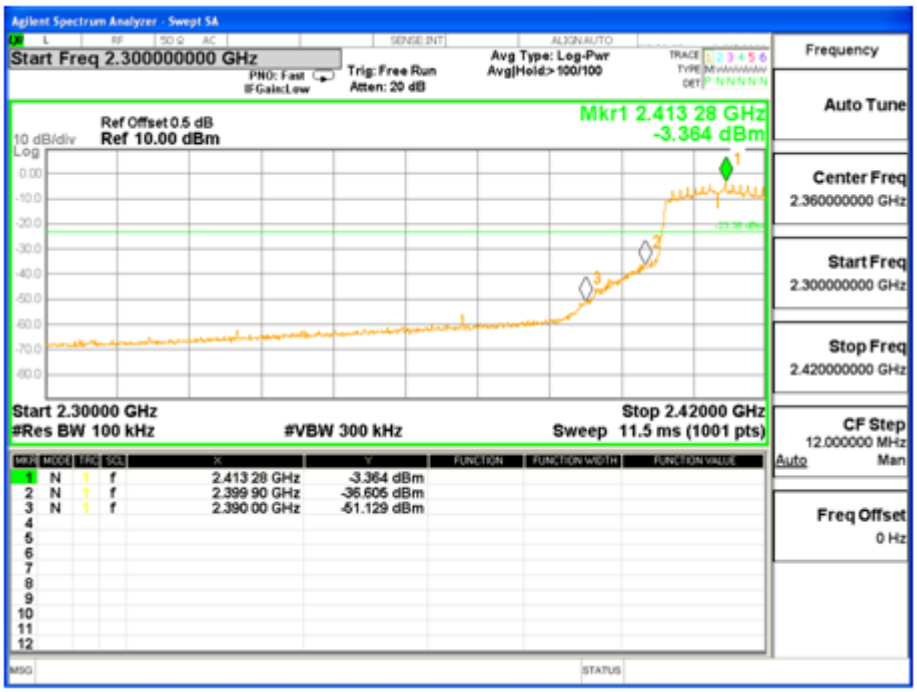
802.11g Band edge-left side



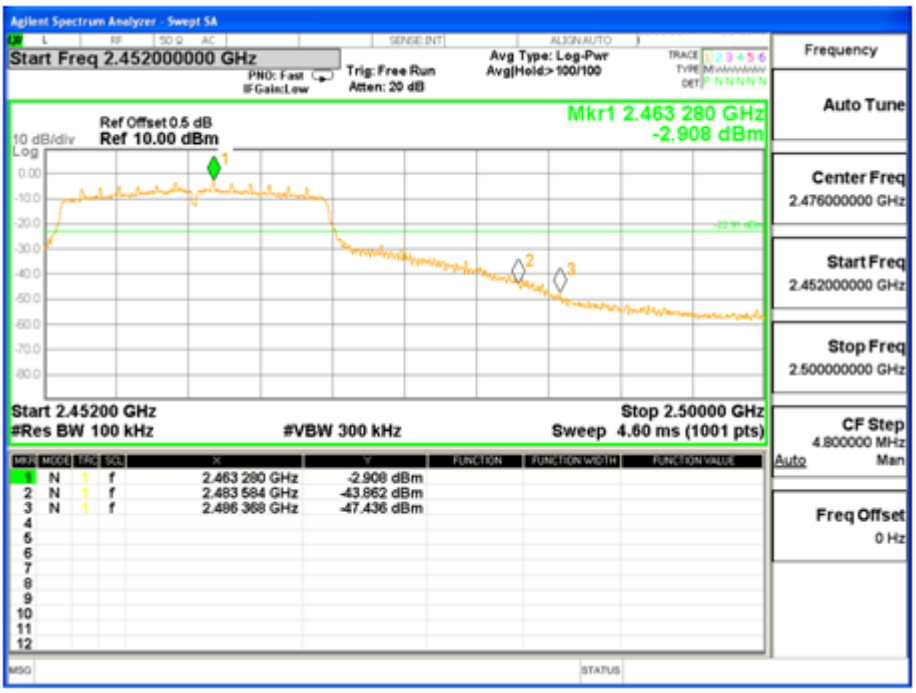
802.11g Band edge-right side



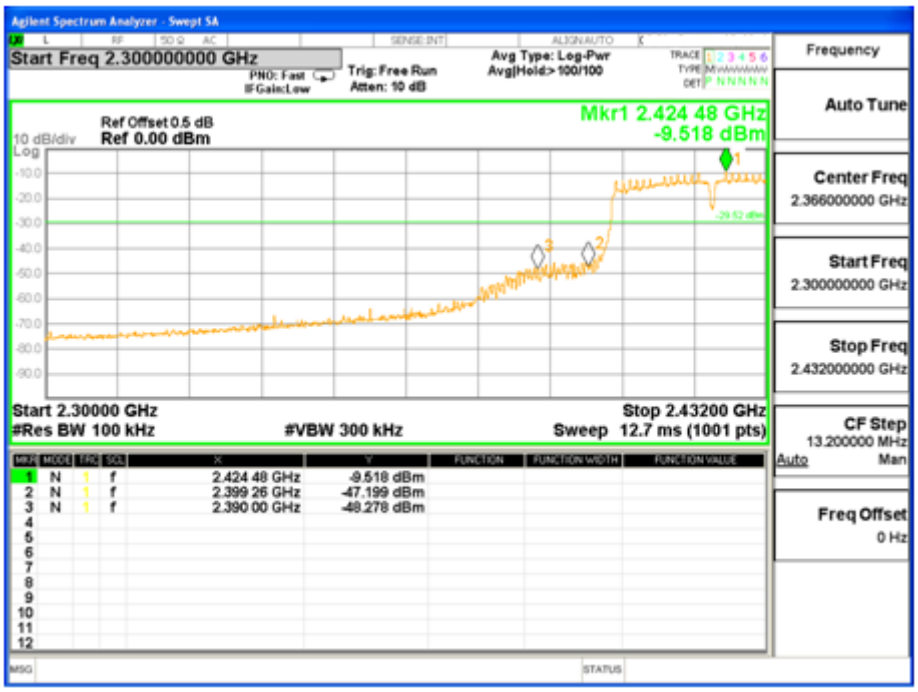
802.11 n-HT20 Band edge-left side



802.11 n-HT20 Band edge-right side



802.11n-HT40 Band edge-left side



802.11n-HT40 Band edge-right side

9 6dB Bandwidth Measurement

Test Requirement	:	FCC CFR47 Part 15 Section 15.247
Test Method	:	ANSI C63.10:2013,KDB 558074 D01 DTS MEAS GUIDANCE V03R03
Test Limit		Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.
Test Mode	:	Refer to section 3.3

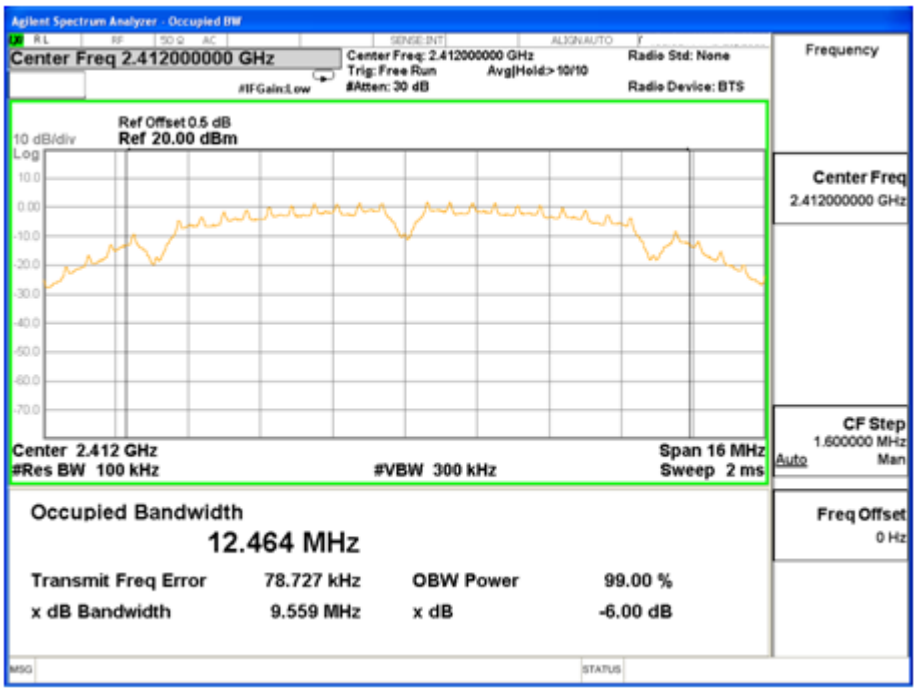
9.1 Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz

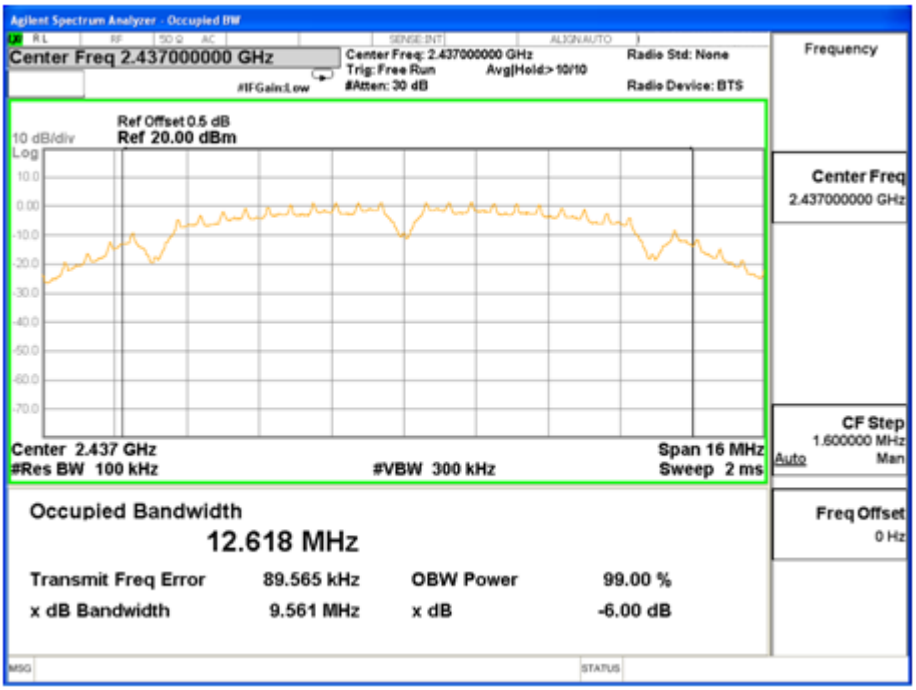
9.2 Test Result

Modulation	Bandwidth(MHz)			Limit
	Low Channel	Middle Channel	High Channel	
802.11b	9.559	9.561	9.563	≥500kHz
802.11g	15.41	15.32	15.31	≥500kHz
802.11n-HT20	16.05	16.06	15.13	≥500kHz
802.11n-HT40	35.44	35.34	35.17	≥500kHz

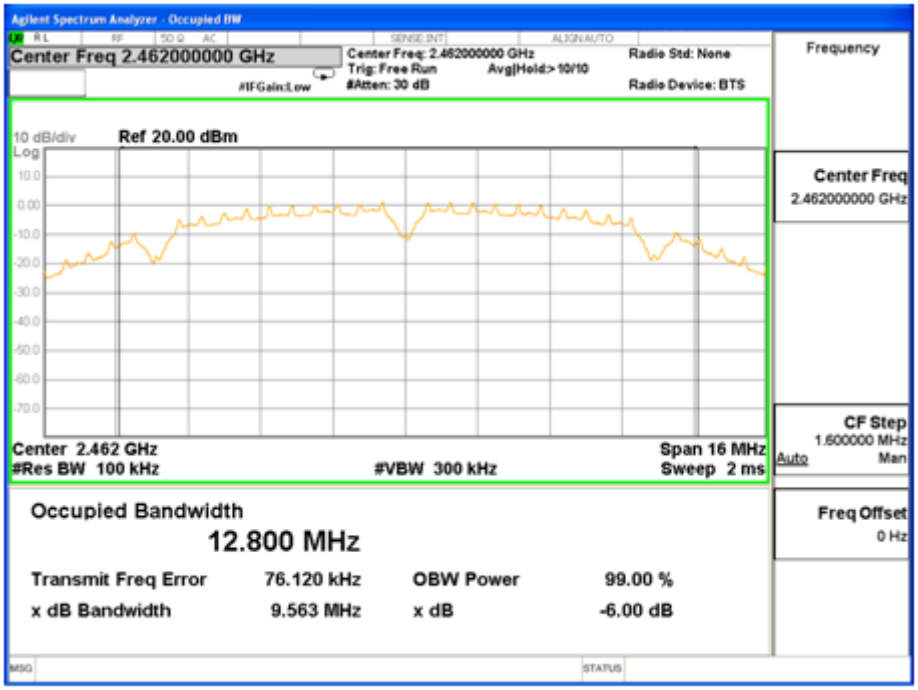
802.11b Low Channel



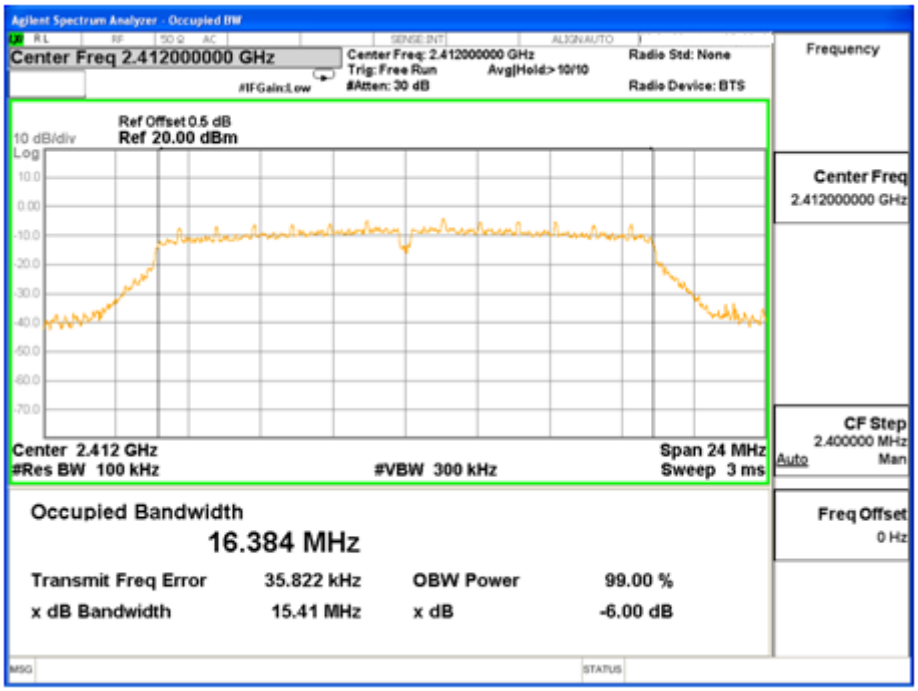
802.11b Middle Channel



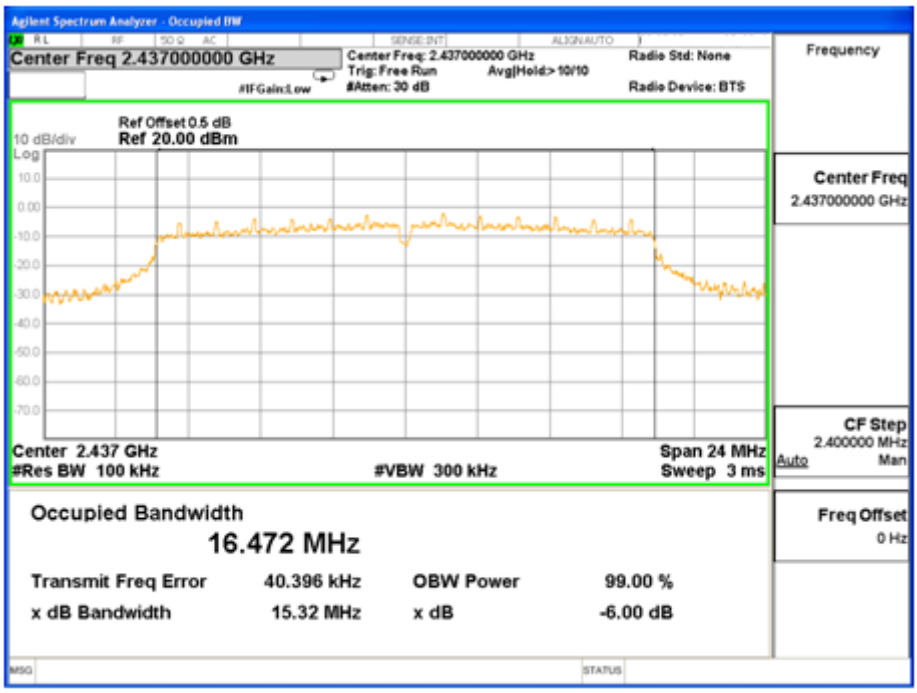
802.11b High Channel



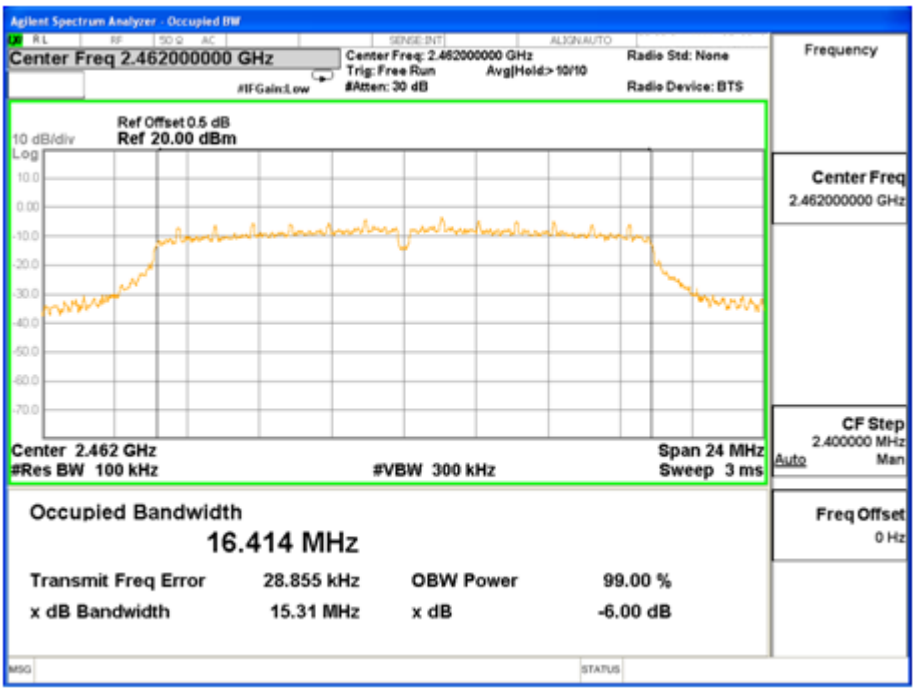
802.11g Low Channel



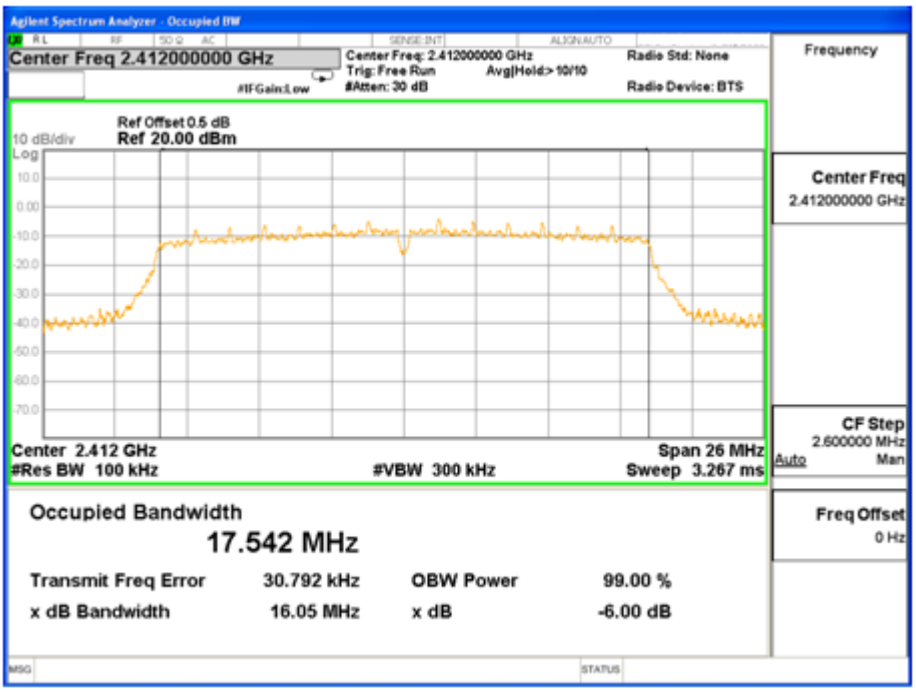
802.11g Middle Channel



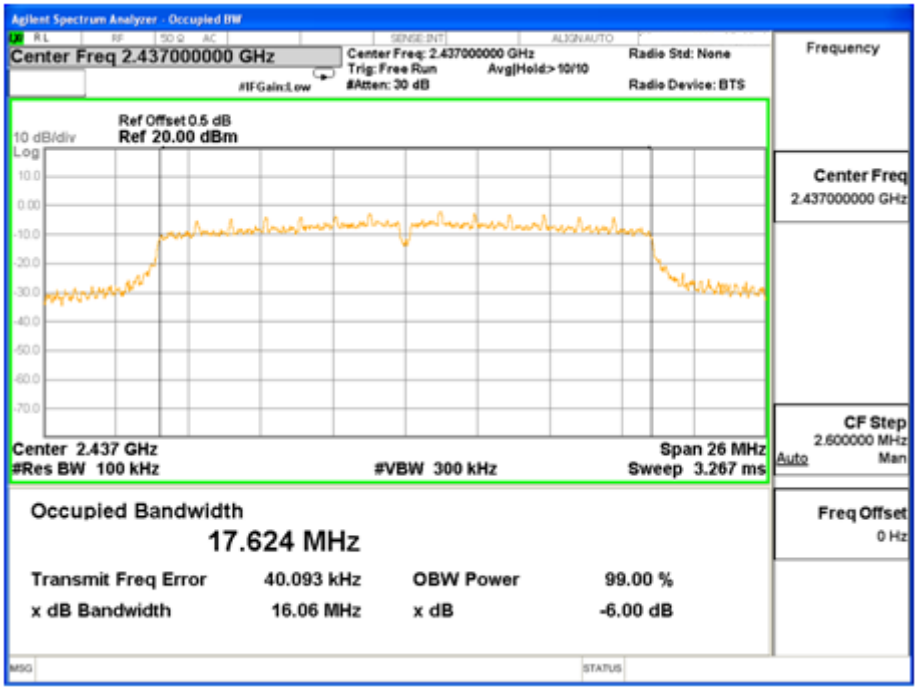
802.11g High Channel



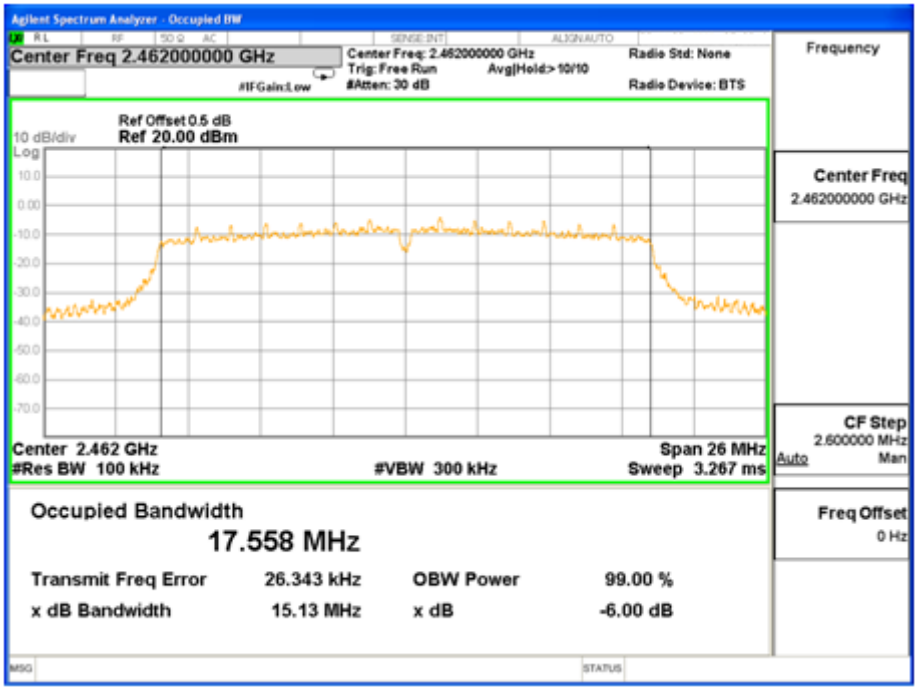
802.11n-HT20 Low Channel



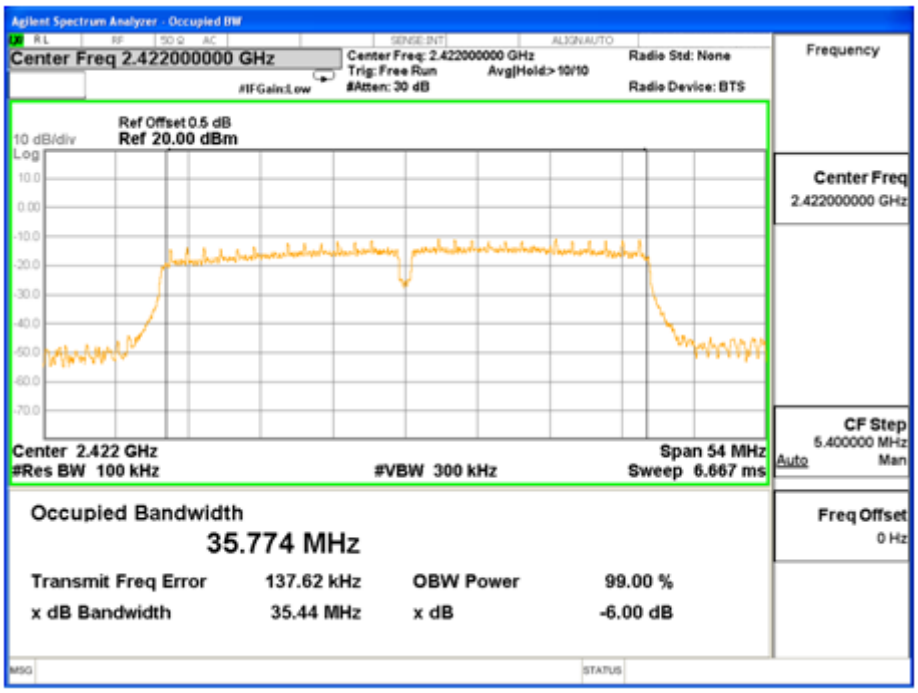
802.11n-HT20 Middle Channel



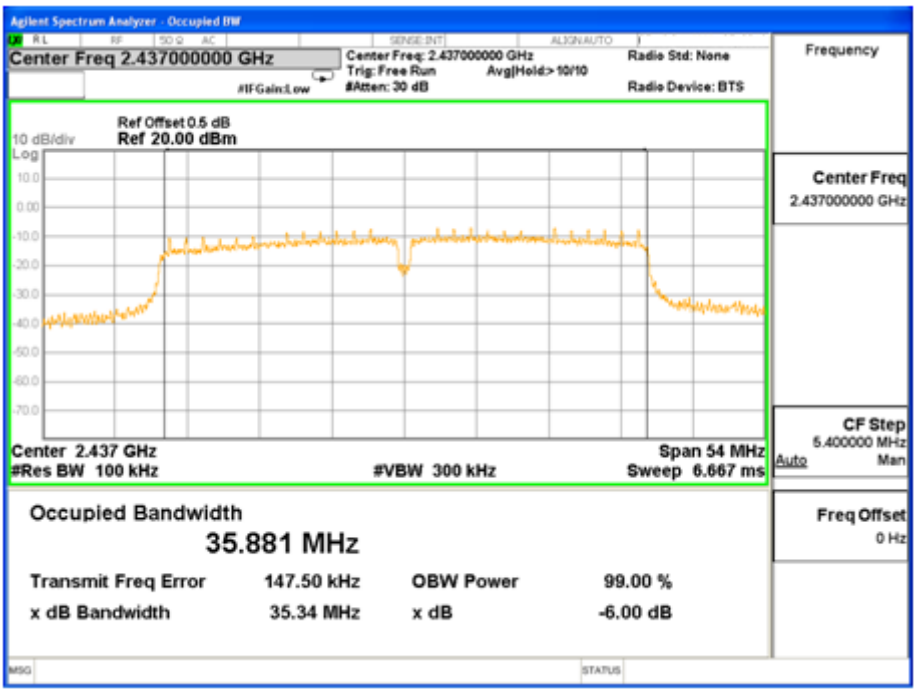
802.11n-HT20 High Channel



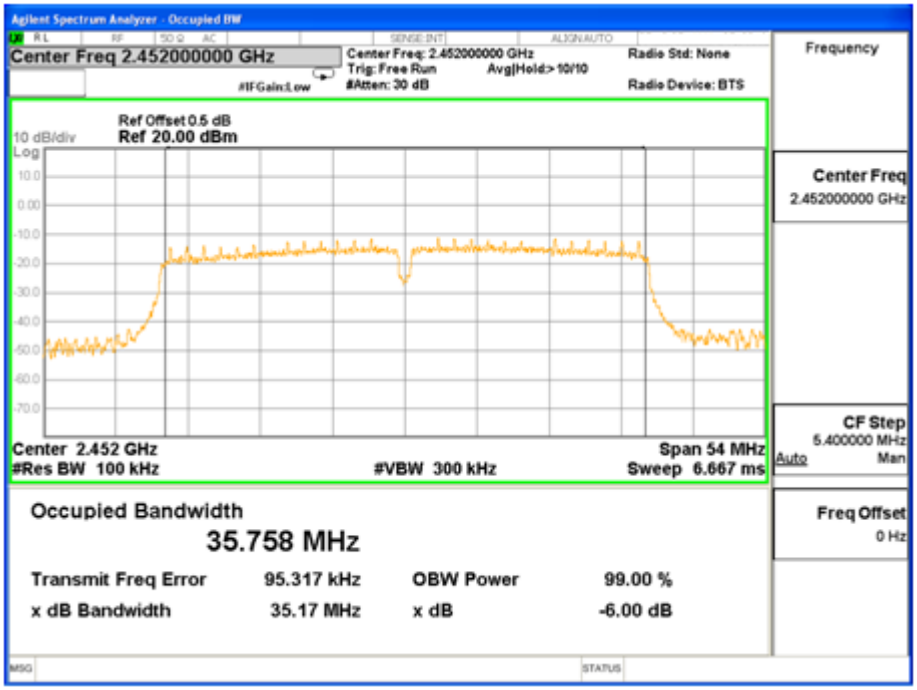
802.11n-HT40 Low Channel



802.11n-HT40 Middle Channel



802.11n-HT40 High Channel



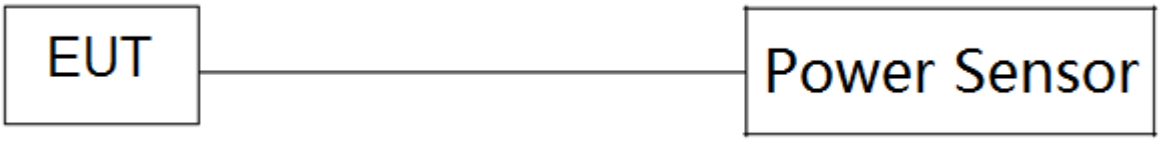
10 Maximum Peak Output Power

Test Requirement	:	FCC CFR47 Part 15 Section 15.247
Test Method	:	ANSI C63.10:2013,KDB 558074 D01 DTS MEAS GUIDANCE V03R03
Test Limit	:	Regulation 15.247 (b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. 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.
Test Mode	:	Refer to section 3.3

10.1 Test Procedure

KDB 558074 D01 DTS Meas Guidance v03r03

The maximum peak conducted output power measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall utilize a fast-responding diode detector.



10.2 Test Result

Modulation	Maximum Peak Output Power (dBm)			Limit
	Low Channel	Middle Channel	High Channel	
802.11b	9.02	9.21	9.35	1W(30dBm)
802.11g	7.45	8.01	8.06	1W(30dBm)
802.11n-HT20	7.42	7.86	8.02	1W(30dBm)
802.11n-HT40	5.24	5.23	5.24	1W(30dBm)

11 Power Spectral density

Test Requirement	:	FCC CFR47 Part 15 Section 15.247
Test Method	:	ANSI C63.10:2013,KDB 558074 D01 DTS MEAS GUIDANCE V03R03
Test Limit	:	Regulation 15.247(f)The power spectral density conducted from the intentional radiator to the antenna due to the digital modulation operation of the hybrid system, with the frequency hopping operation turned off, shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.
Test Mode	:	Refer to section 3.3

11.1 Test Procedure

KDB 558074 D01 DTS Meas Guidance V03R05

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna portto the spectrum.

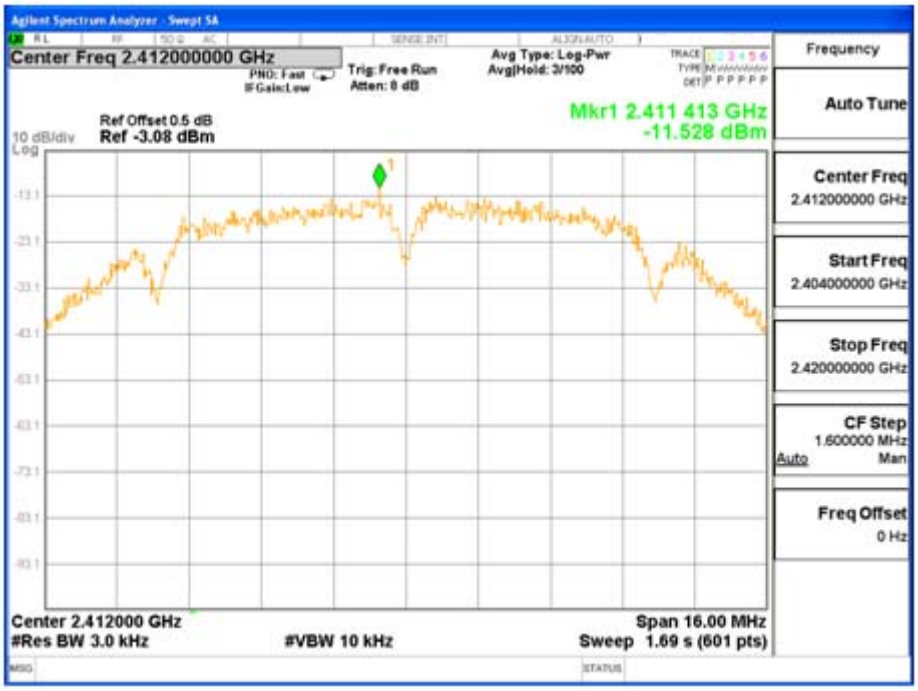
2. Set the spectrum analyzer: RBW = 3kHz. VBW = 10kHz , Span = 1.5 times the DTS channel bandwidth(6 dB bandwidth). Sweep = auto; Detector Function = Peak. Trace = Max hold.

3. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section Submit this plot.

11.2 Test Result

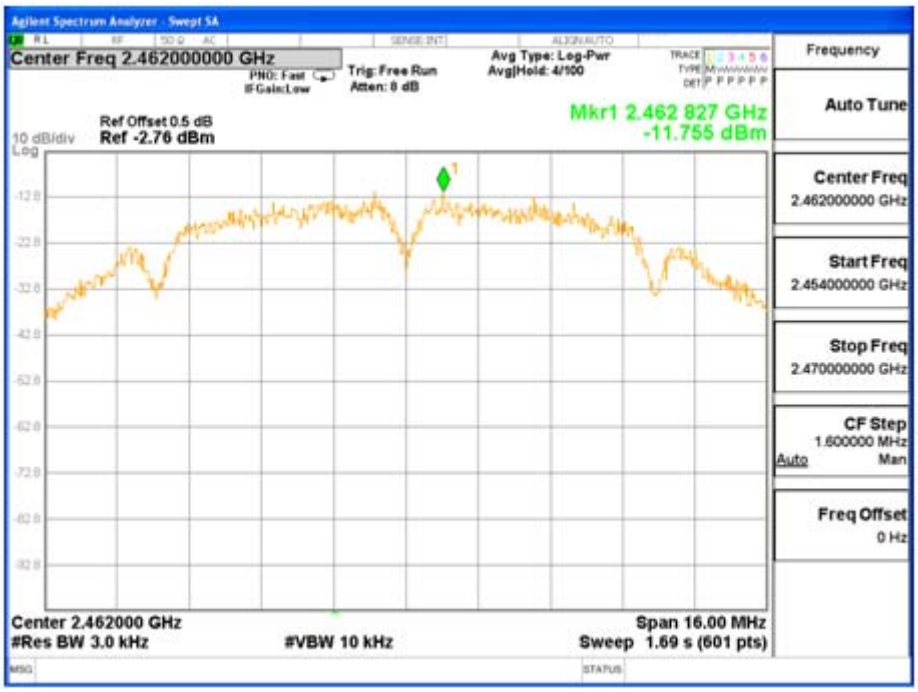
Modulation	Power Spectraldensity (dBm/3kHz)			Limit
	Low Channel	Middle Channel	High Channel	
802.11b	-11.528	-12.325	-11.755	8dBm/3kHz
802.11g	-19.337	-16.612	-18.715	8dBm/3kHz
802.11n-HT20	-19.373	-16.921	-19.886	8dBm/3kHz
802.11n-HT40	-24.251	-21.416	-24.796	8dBm/3kHz

802.11b Low Channel



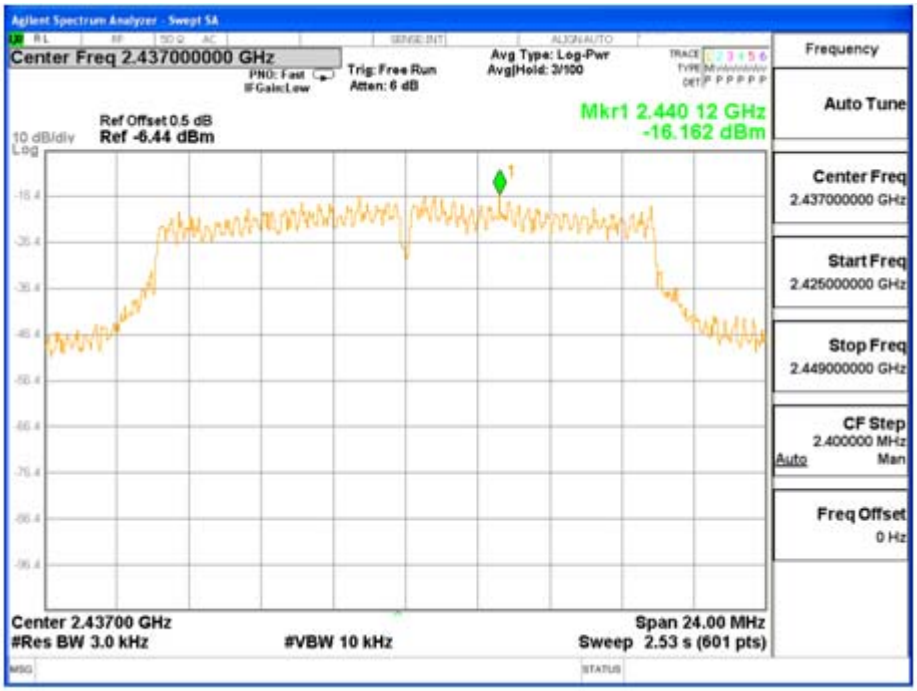
802.11b Middle Channel

802.11b High Channel

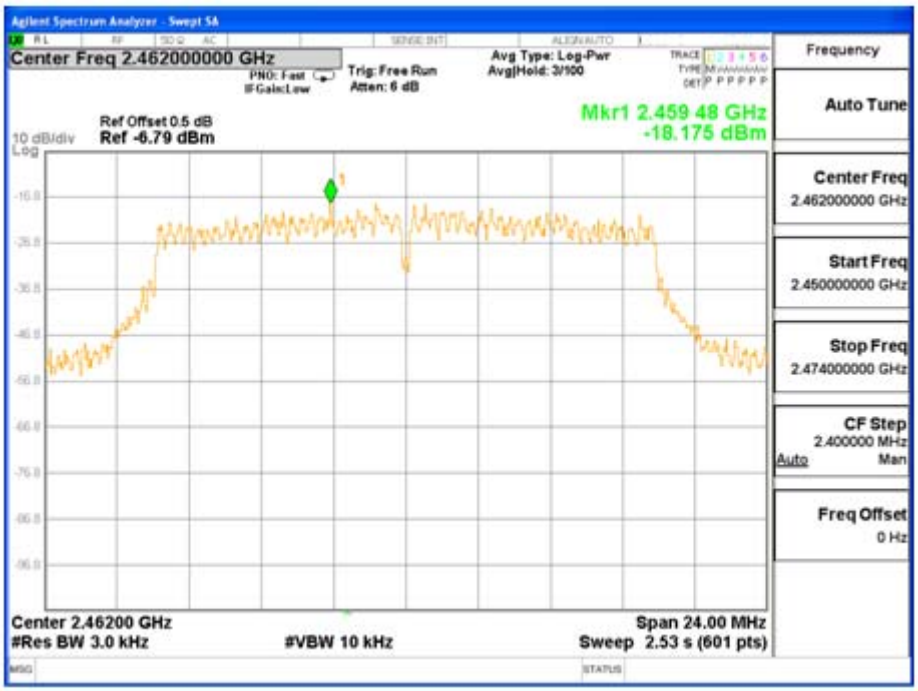


802.11g Low Channel

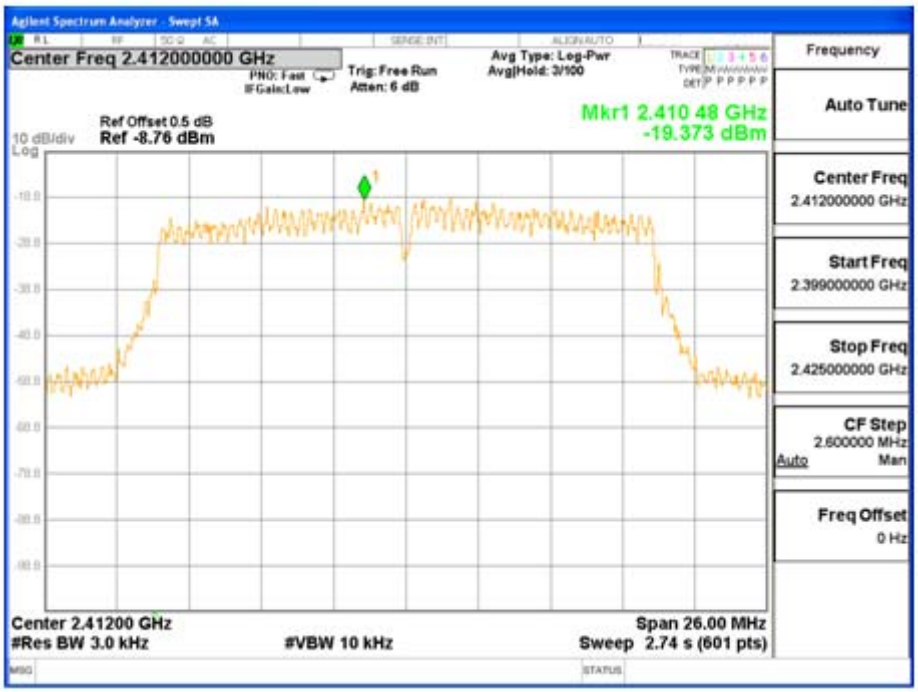
802.11g Middle Channel



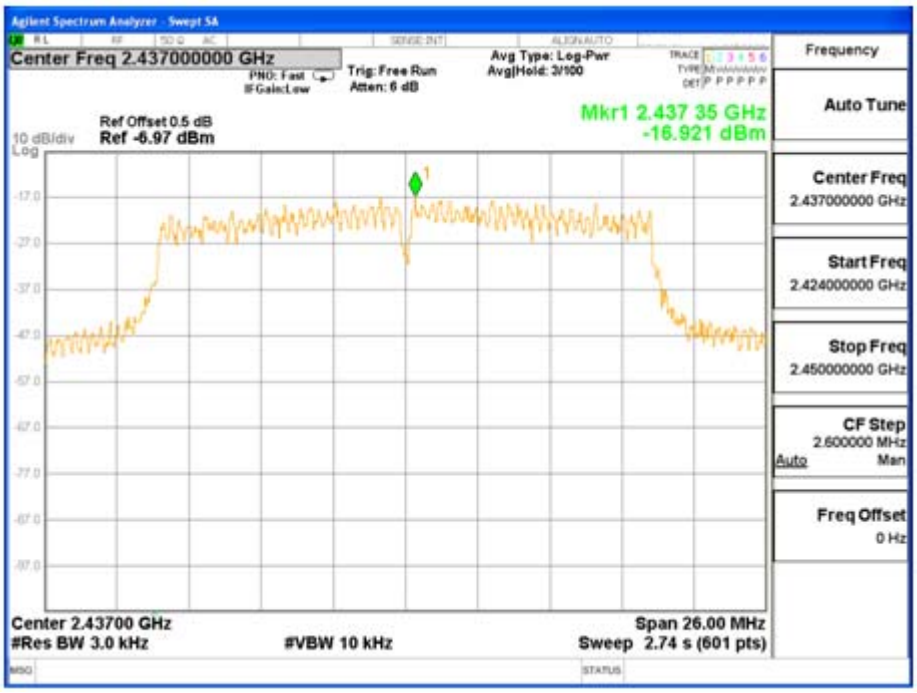
802.11g High Channel



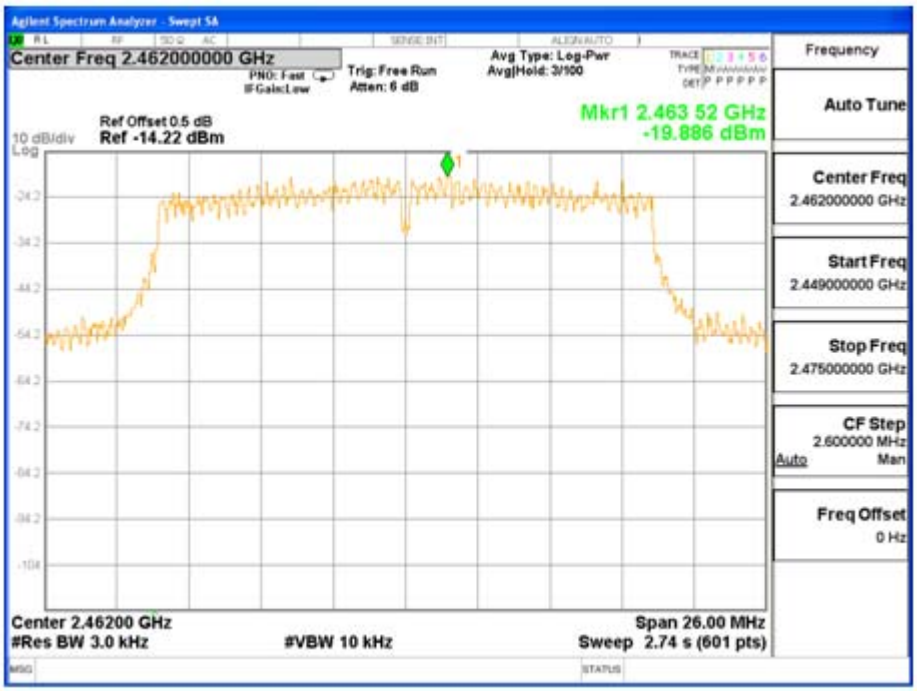
802.11n-HT20 Low Channel



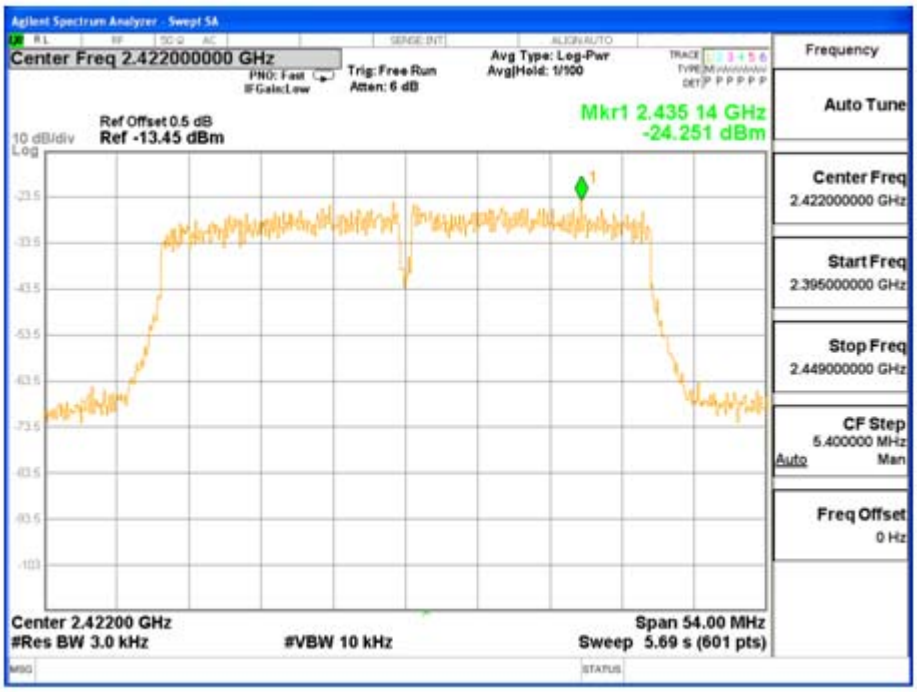
802.11n-HT20 Middle Channel



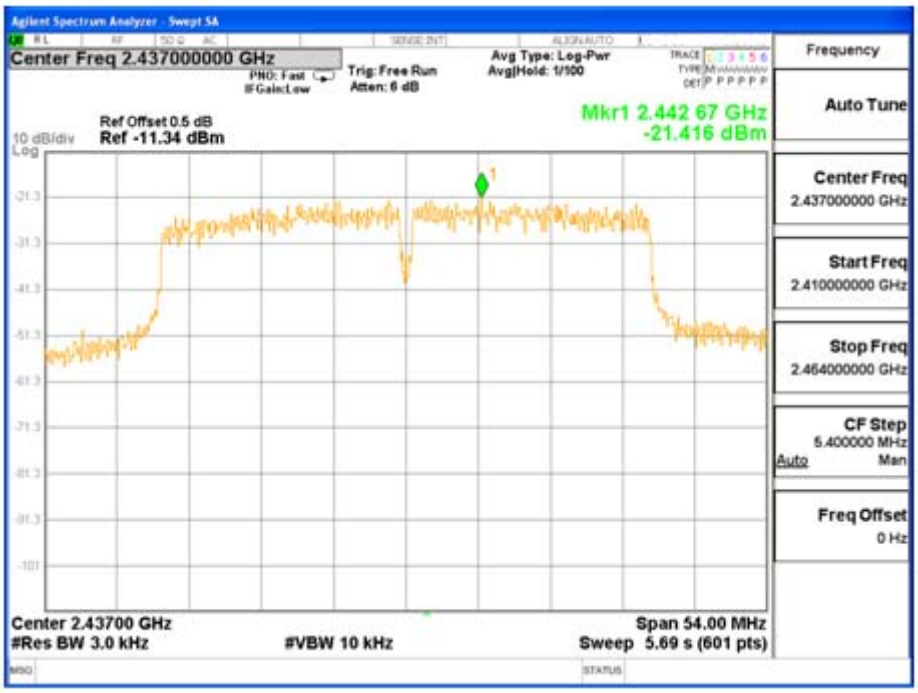
802.11n-HT20 High Channel



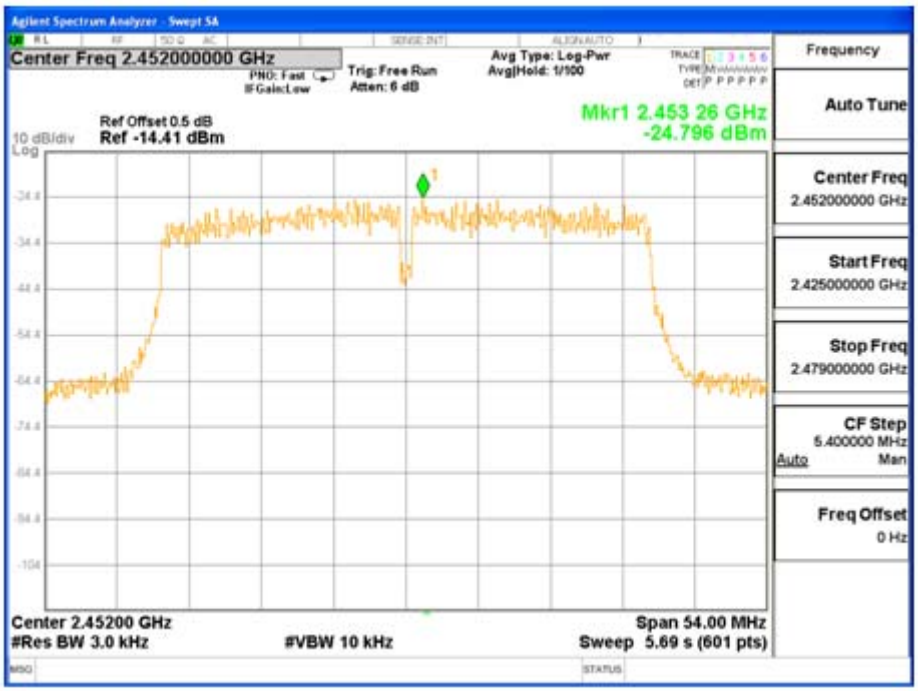
802.11n-HT40 Low Channel



802.11n-HT40 Middle Channel



802.11n-HT40 High Channel

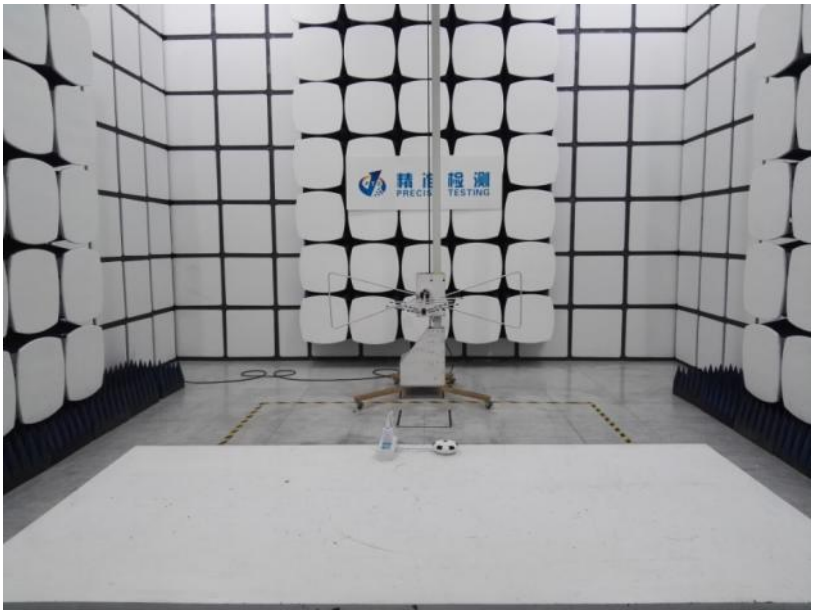


12 Antenna Requirement

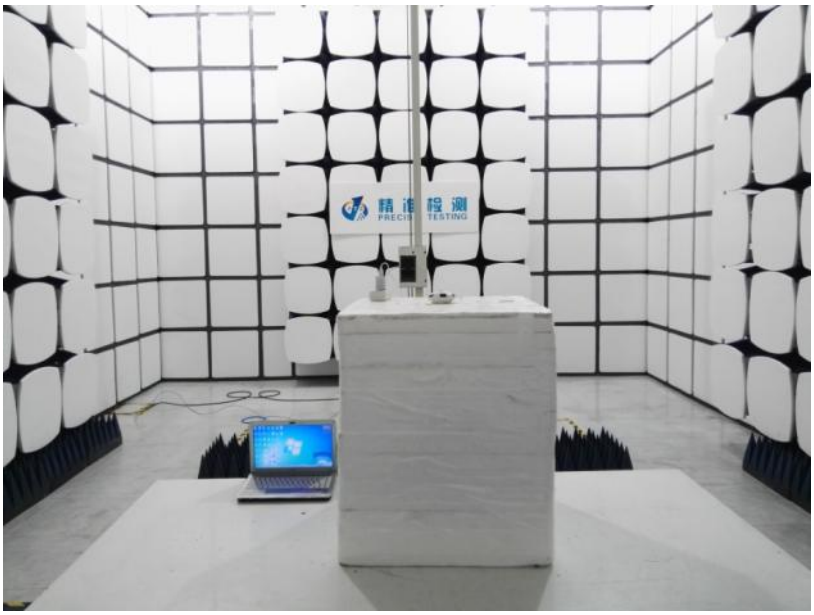
According to the FCC part15.203, a transmitter can only be sold or operated with antennas with which it was approved. This product has an integral antenna, it meet the requirement of this section.

13 Test Setup

Radiated Spurious Emissions
From 30MHz-1000MHz



Above 1GHz



Conducted Emissions