7. CHANNEL BANDWIDTH

Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	KDB558074 D0115.247 Meas Guidance v05r02

7.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	>= 500KHz (6dB bandwidth)	2400-2483.5	PASS

7.2 TEST PROCEDURE

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) ≥ 3 xRBW.
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.

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP

7.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

7.6 TEST RESULT

Temperature :	26℃	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX Mode-ANT1-Worst mode		

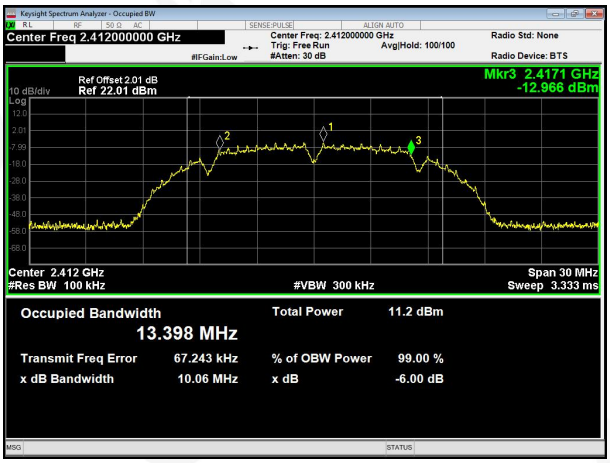
	Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
802.11b	2412	10.065	>500	Pass
	2437	10.091	>500	Pass
	2462	10.106	>500	Pass
802.11g	2412	13.82	>500	Pass
	2437	11.943	>500	Pass
	2462	13.206	>500	Pass
802.11n20	2412	11.334	>500	Pass
	2437	16.292	>500	Pass
	2462	13.809	>500	Pass
802.11n40	2422	33.858	>500	Pass
	2437	32.542	>500	Pass
	2452	33.691	>500	Pass

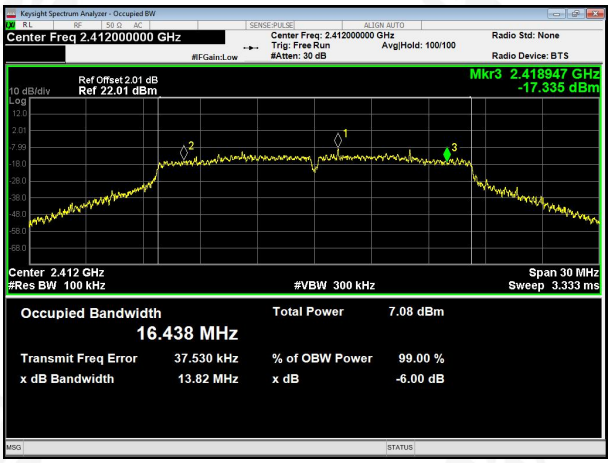
Test plot as follows:

802.11b

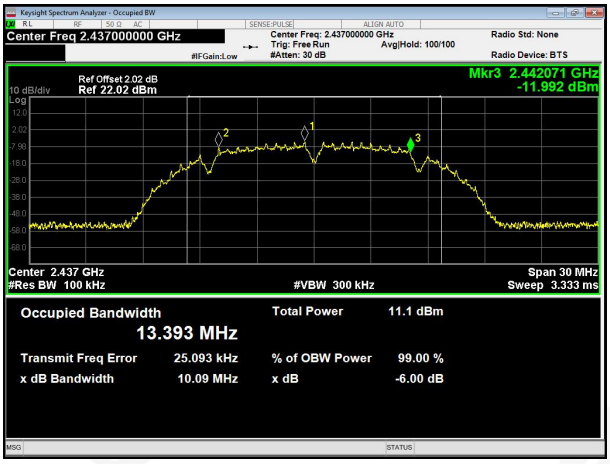
802.11g

Lowest channel

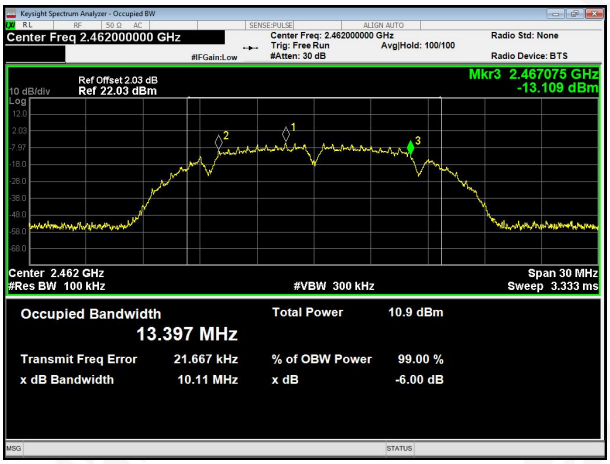




Middle channel

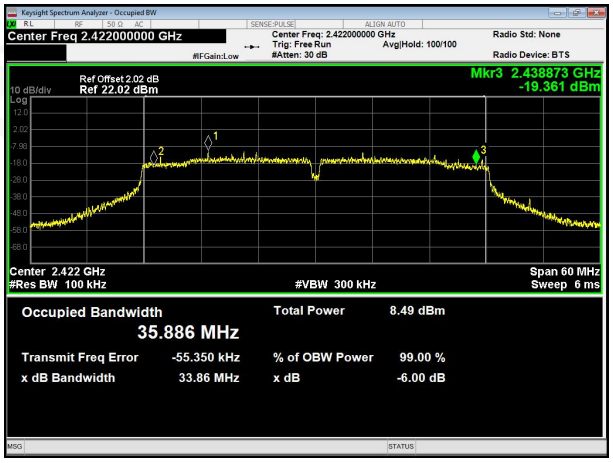


Highest channel

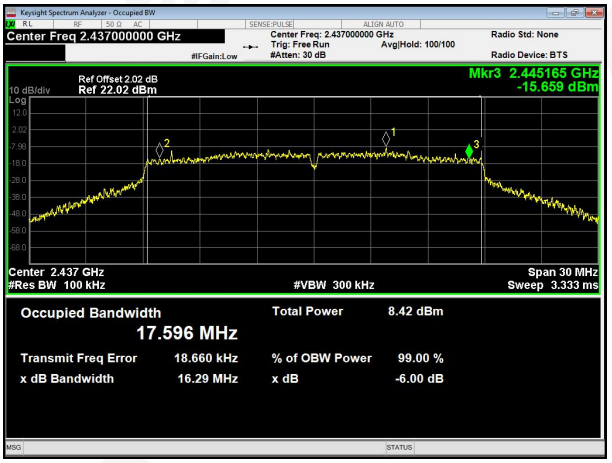


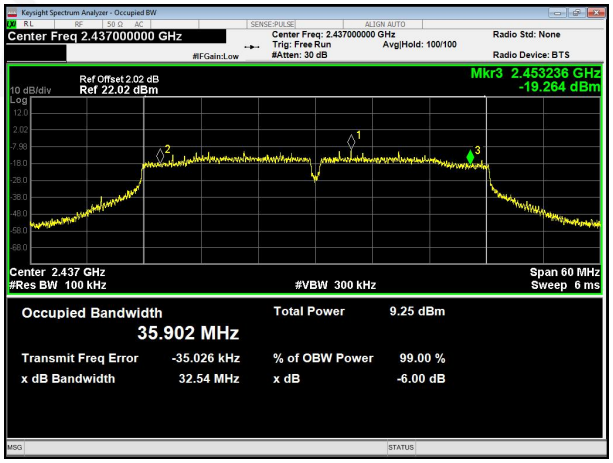
802.11n20 801.11n40

Lowest channel

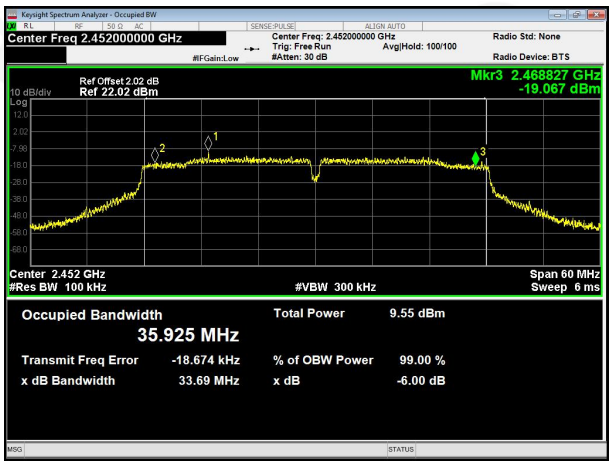


Middle channel





Highest channel



8.PEAK OUTPUT POWER TEST

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	KDB558074 D0115.247 Meas Guidance v05r02

8.1 APPLIED PROCEDURES/LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS

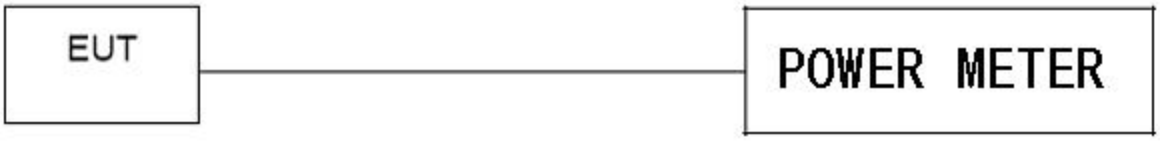
8.2 TEST PROCEDURE

a. The EUT was directly connected to the Power meter

8.3 DEVIATION FROM STANDARD

No deviation.

8.4 TEST SETUP



8.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

8.6 TEST RESULT

Temperature：	26℃	Relative Humidity：	54%
Pressure：	101kPa	Test Voltage ：	AC 120V/60Hz

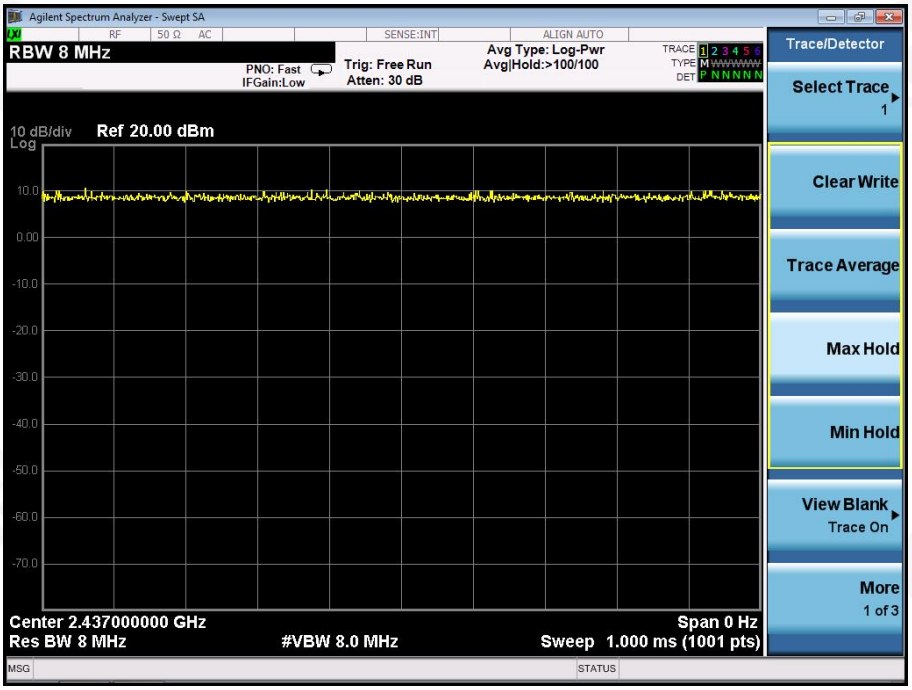
Test CH	Peak Output Power (dBm)				Limit(dBm)	Result
	802.11b		802.11g			
	ANT1	ANT2	ANT1	ANT2		
Lowest	9.307	9.187	10.626	10.084	30.00	Pass
Middle	9.487	9.026	10.578	10.117		
Highest	9.399	9.149	10.386	10.126		

Test CH	Peak Output Power (dBm)								Total power(dBm)	
	802.11n(HT20) (dBm)		802.11n(HT40) (dBm)		802.11n(HT20) (mW)		802.11n(HT40) (mW)		802.11n (HT20) (dBm)	802.11n (HT40) (dBm)
/	ANT1	ANT2	ANT1	ANT2	ANT1	ANT2	ANT1	ANT2	/	/
Lowest	8.493	9.302	8.572	9.436	7.068	8.515	7.198	8.782	11.926	12.035
Middle	8.442	9.348	8.553	9.557	6.986	8.606	7.166	9.030	11.929	12.094
Highest	8.587	9.316	8.568	9.498	7.223	8.543	7.191	8.908	11.977	12.068

	Frequency	Output Power	Antenna gain	EIRP
	(MHz)	(dBm)	(dBi)	(dBm)
802.11b	Lowest	9.307	2.5	11.807
	Middle	9.487	2.5	11.987
	Highest	9.399	2.5	11.899
802.11g	Lowest	10.626	2.5	13.126
	Middle	10.578	2.5	13.078
	Highest	10.386	2.5	12.886
802.11n20	Lowest	11.926	5.51	17.436
	Middle	11.929	5.51	17.439
	Highest	11.977	5.51	17.487
802.11n40	Lowest	12.035	5.51	17.545
	Middle	12.094	5.51	17.604
	Highest	12.068	5.51	17.578

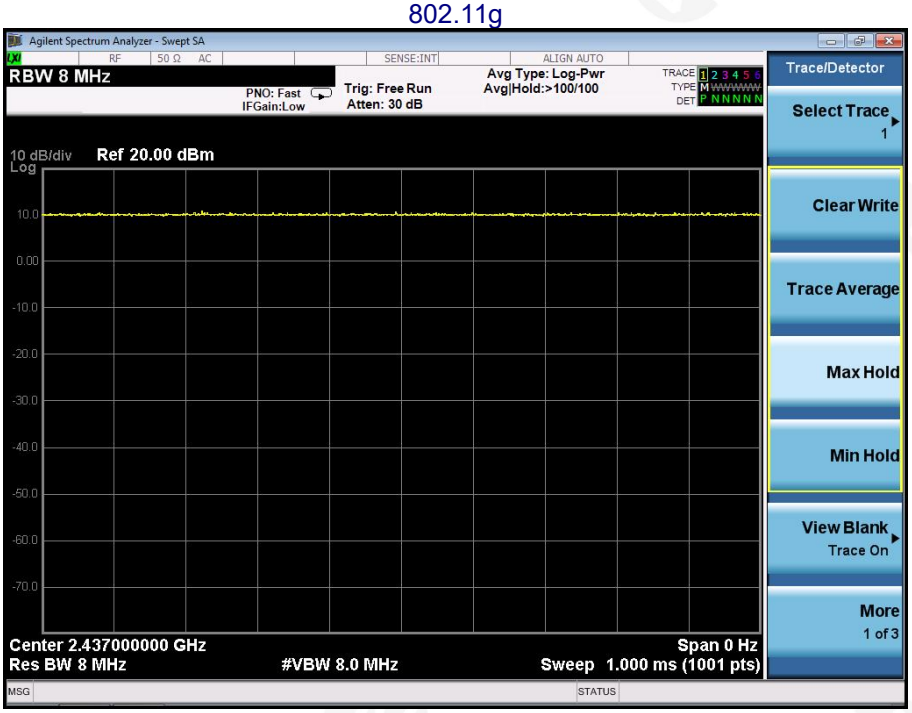
Duty Cycly:

802.11b



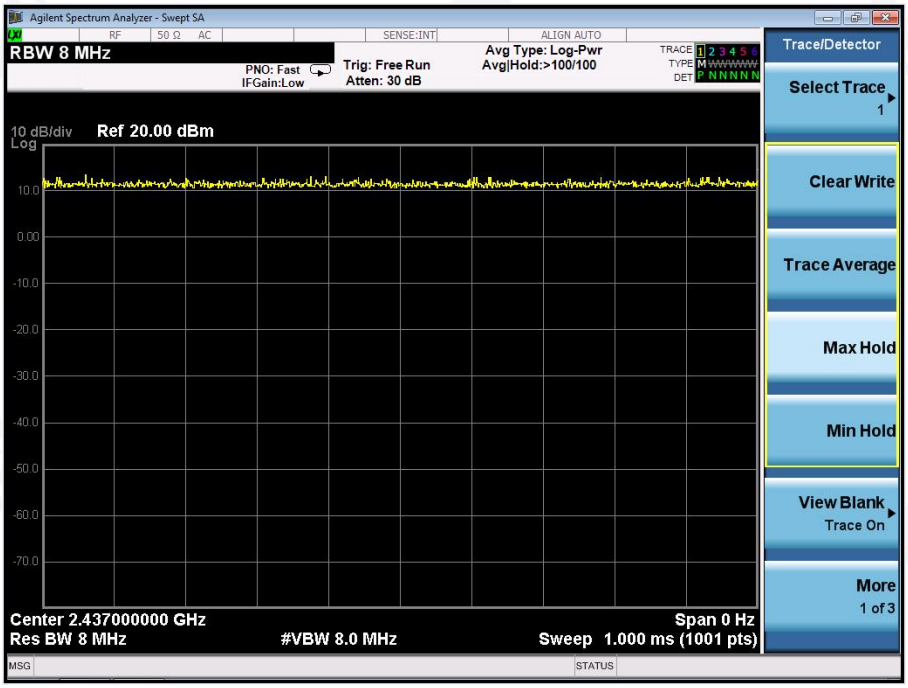
Ton	Tp	Duty cycly(%)	Duty factor(dB)
100.00	100.00	100.00%	0.00

802.11g



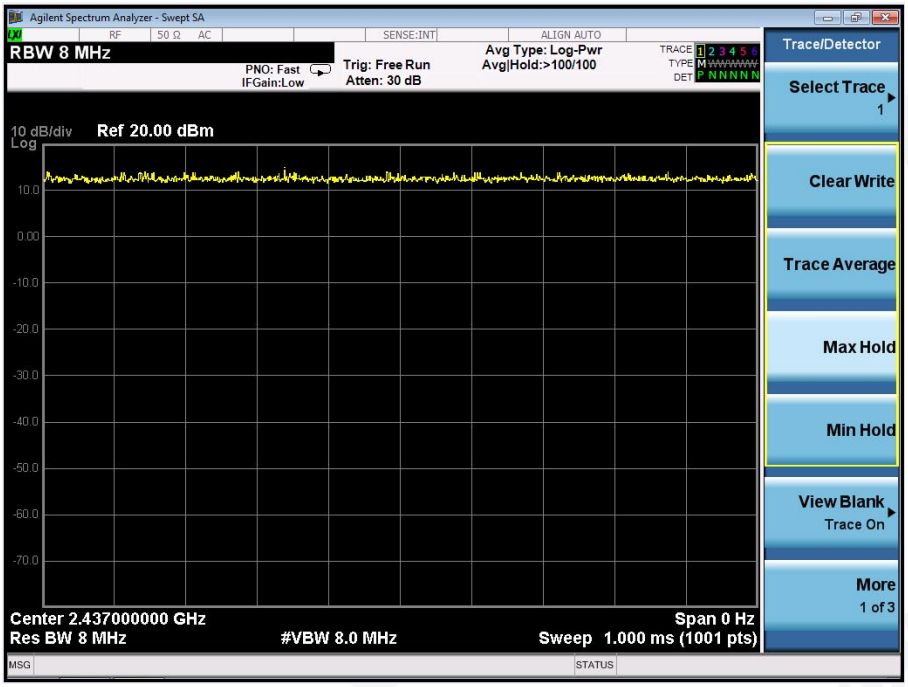
Ton	Tp	Duty cycly(%)	Duty factor(dB)
100.00	100.00	100.00%	0.00

802.11n20



Ton	Tp	Duty cycly(%)	Duty factor(dB)
100.00	100.00	100.00%	0.00

802.11n40



Ton	Tp	Duty cycly(%)	Duty factor(dB)
100.00	100.00	100.00%	0.00

9. CONDUCTED BAND EDGE AND SPURIOUS EMISSION

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	KDB558074 D0115.247 Meas Guidance v05r02

9.1 APPLICABLE STANDARD

in any 100 kHz 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, 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 in15.209(a).

9.2 TEST PROCEDURE

Using the following spectrum analyzer setting:

A) Set the RBW = 100KHz.
B) Set the VBW = 300KHz.
C) Sweep time = auto couple.
D) Detector function = peak.
E) Trace mode = max hold.
F) Allow trace to fully stabilize.

9.3 DEVIATION FROM STANDARD

No deviation.

9.4 TEST SETUP

9.5 EUT OPERATION CONDITIONS

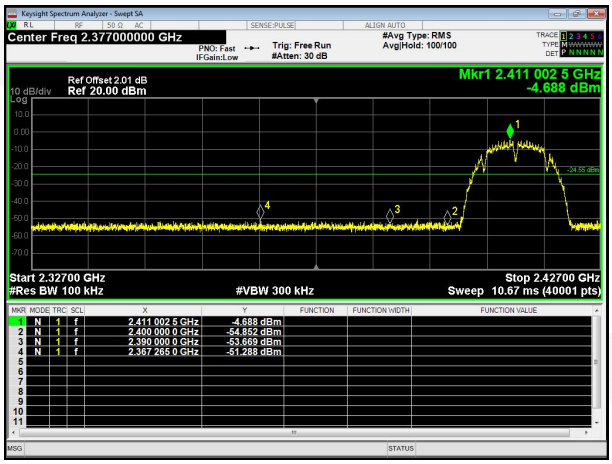
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

9.6 TEST RESULTS

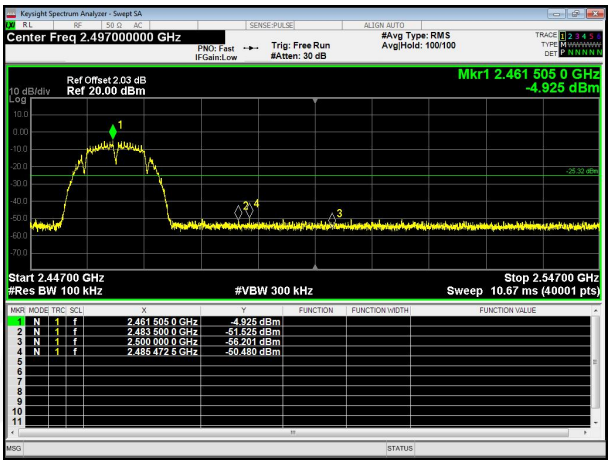
Pre-test the EUT in continuous transmitting mode with setup as stand-alone in only ANT1 transmits and only ANT2 transmits, found the worst case is ANT1 transmit and report the data.

Test plot as follows:

Test mode:	802.11b

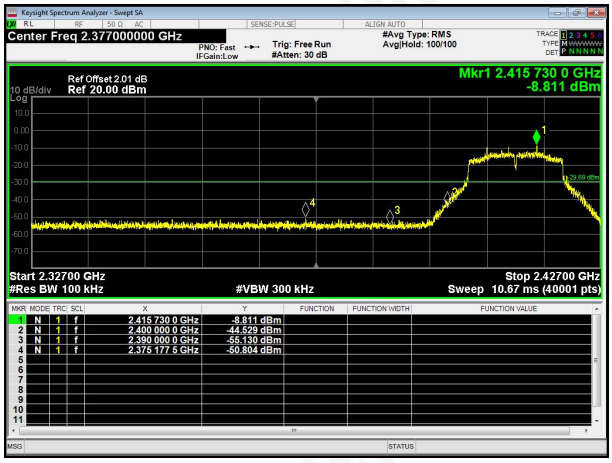


Lowest channel

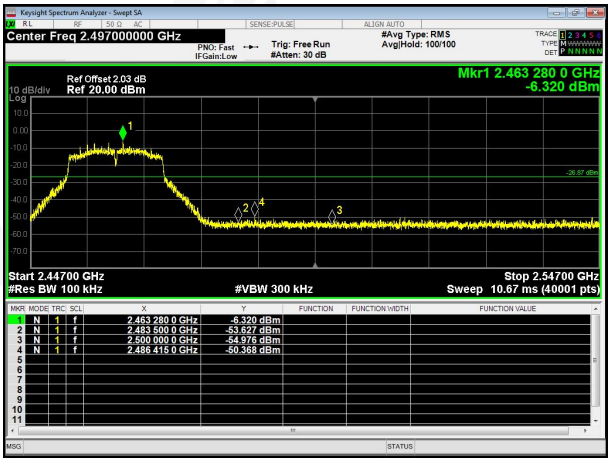


Highest channel

Test mode:	802.11g

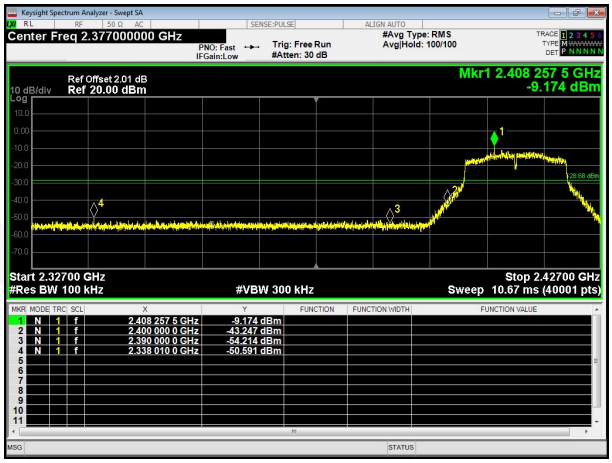


Lowest channel

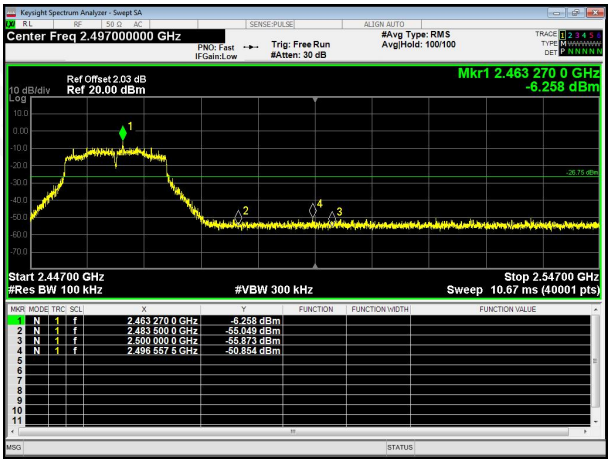


Highest channel

Test mode:	802.11n(HT20)

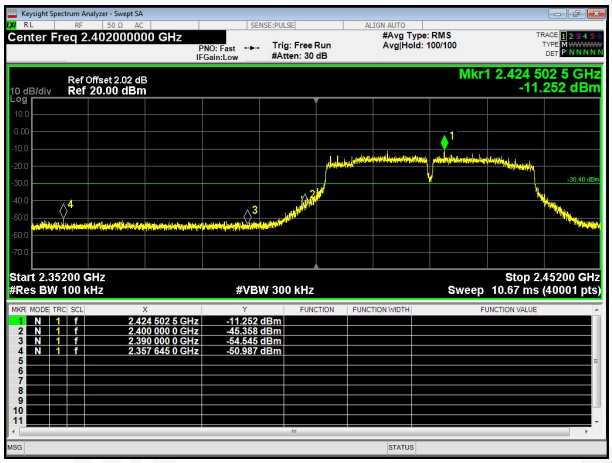


Lowest channel

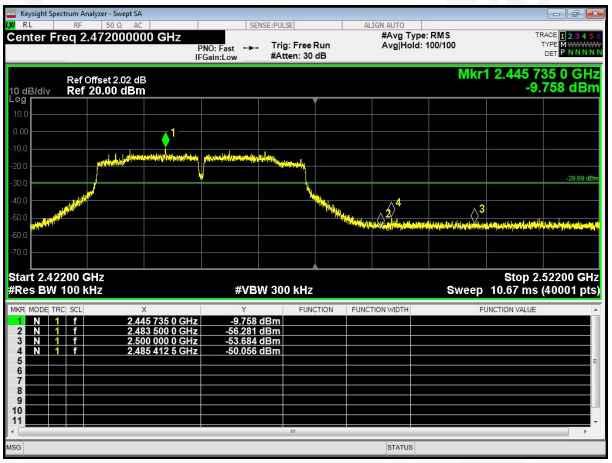


Highest channel

Test mode:	802.11n(HT40)



Lowest channel



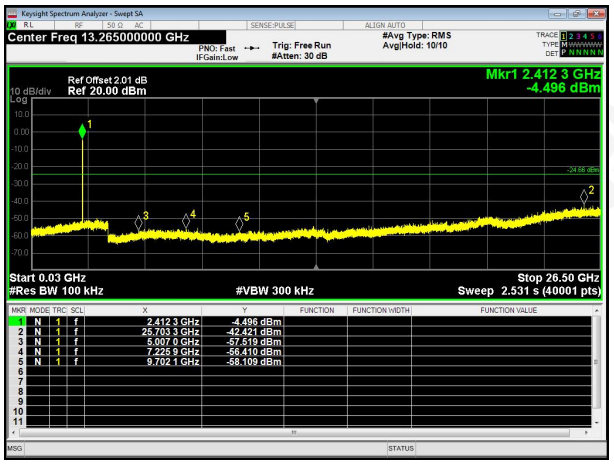
Highest channel

Pre-test the EUT in continuous transmitting mode with setup as stand-alone in only ANT1 transmits and only ANT2 transmits, found the worst case is ANT1 transmit and report the data.

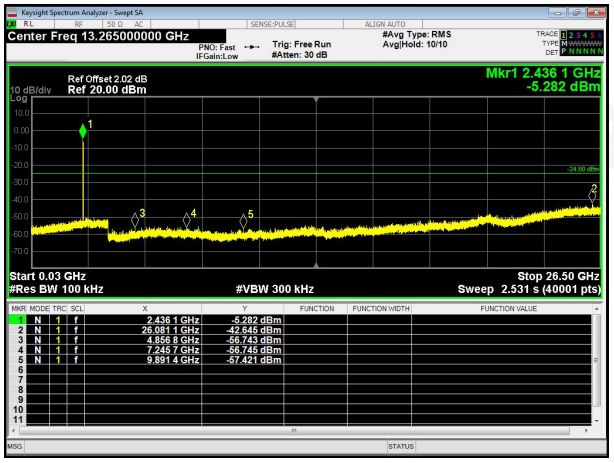
Test plot as follows:

802.11b

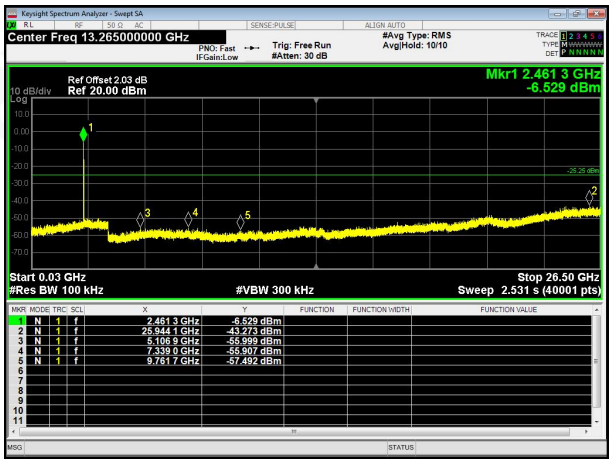
Lowest channel



Middle channel

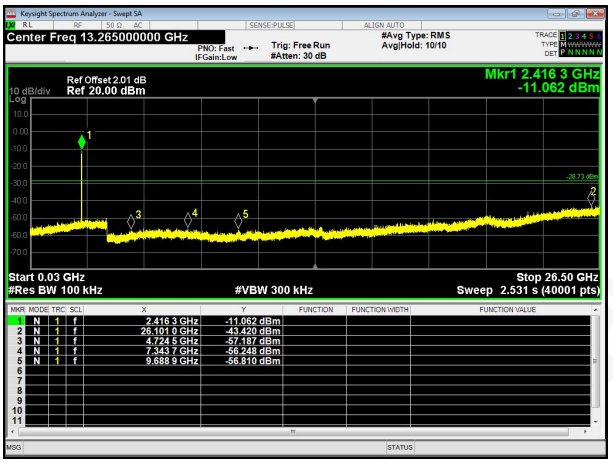


Highest channel

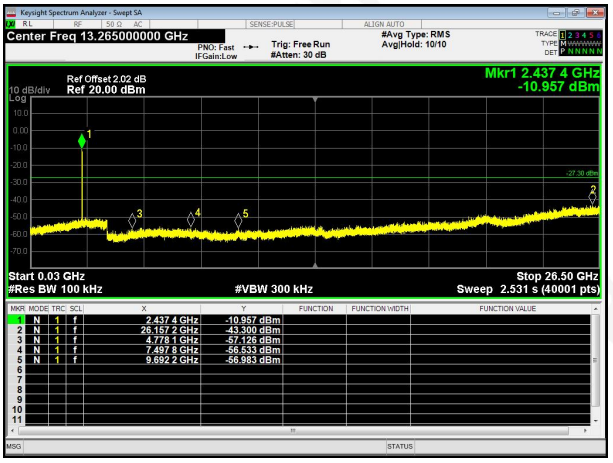


802.11g

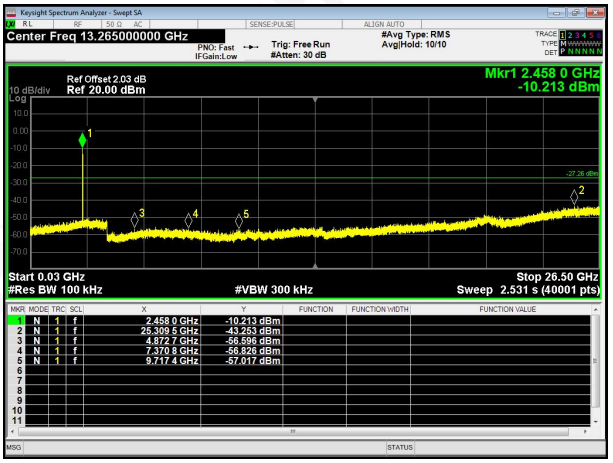
Lowest channel



Middle channel

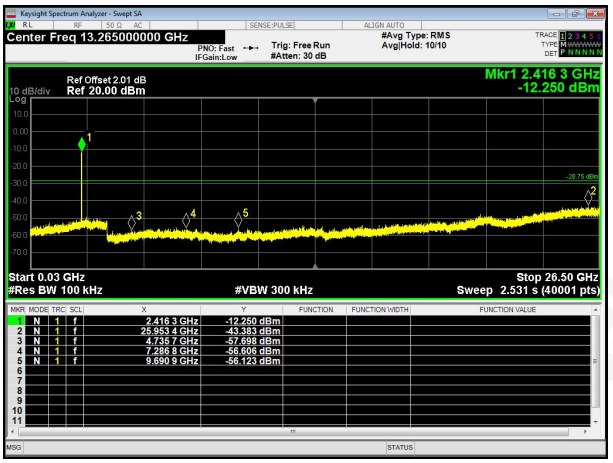


Highest channel

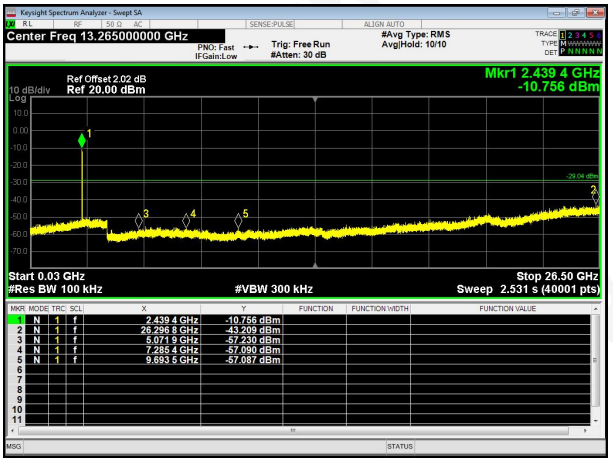


802.11n(HT20)

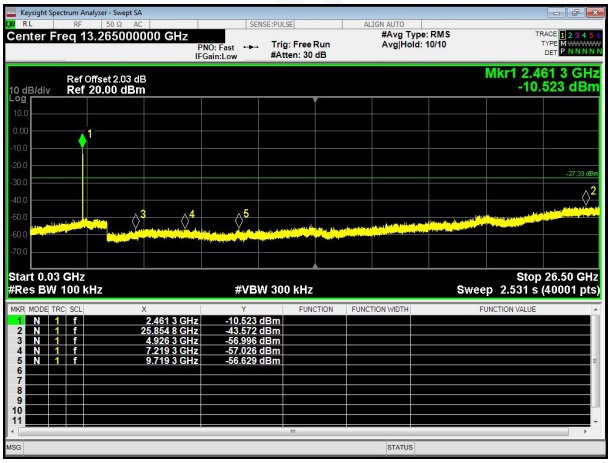
Lowest channel



Middle channel

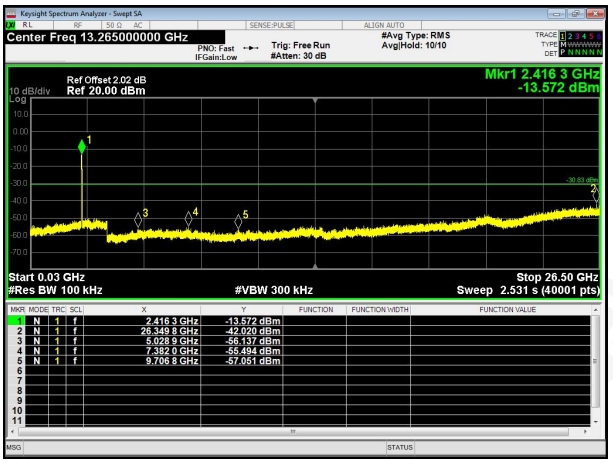


Highest channel

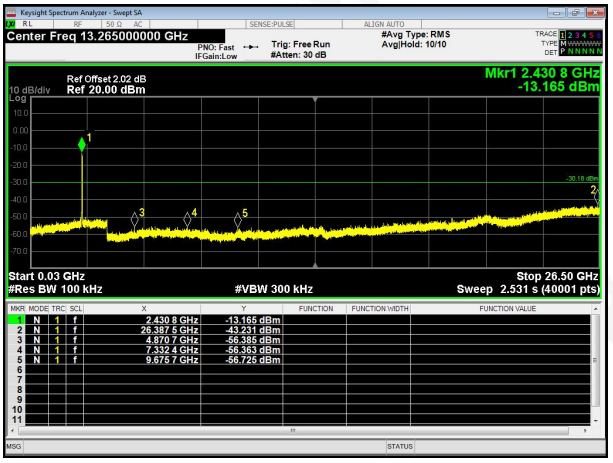


802.11n(HT40)

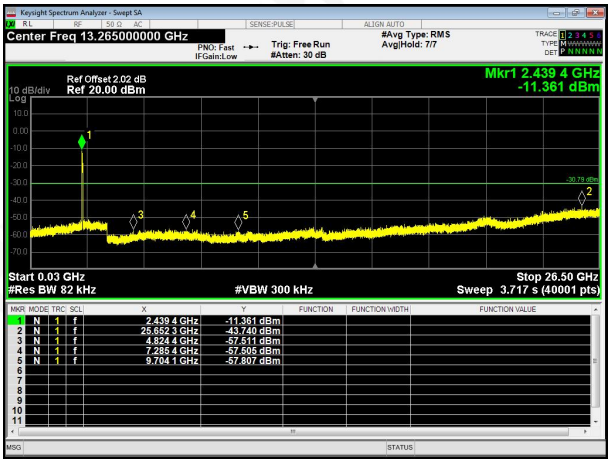
Lowest channel



Middle channel



Highest channel



10. ANTENNA REQUIREMENT

Standard requirement:	FCC Part15 C Section 15.203 /247(c)
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 15.247(c) (1)(i) requirement: (i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.	
EUT Antenna:	
The antennas are Integral antenna, the best case gain of the antennas are 2.5dBi, reference to the appendix II for details	

11. TEST SETUP PHOTO

Reference to the appendix I for details.

12. EUT CONSTRUCTIONAL DETAILS

Reference to the appendix II for details.

※※※※※ END OF REPORT ※※※※※