

APPENDIX REPORT

Project No.	SHT2109010913EW	Radio Specification	WIFI 2.4G
Test sample No.	YPHT21090109006	Model No.	ABX00046
Start test date	2021-10-08	Finish date	2021-10-08
Temperature	26.3℃	Humidity	34%
Test Engineer	Xiaoqin Li	Auditor	Xiaodong Zhu

Appendix clause	Test item	Result
A	Conducted Peak Output Power	PASS
B	Power Spectral Density	PASS
C	6 dB Bandwidth	PASS
D	99% Occupied Bandwidth	PASS
E	Duty Cycle	PASS
F	Band edge and Spurious Emissions (conducted)	PASS

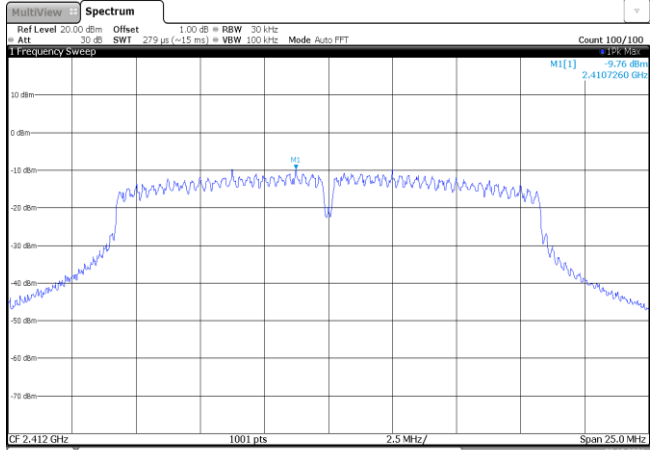
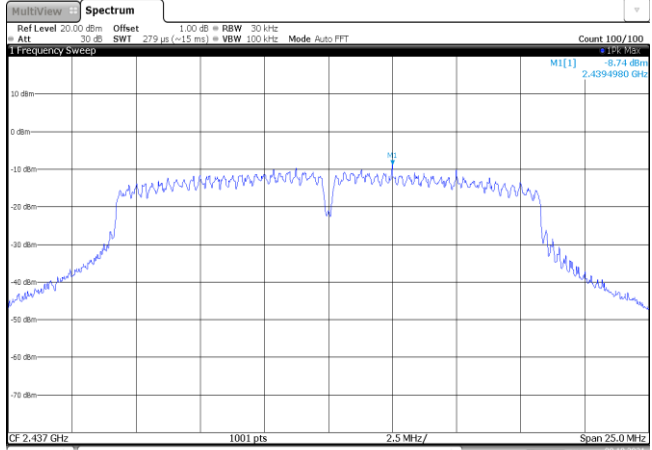
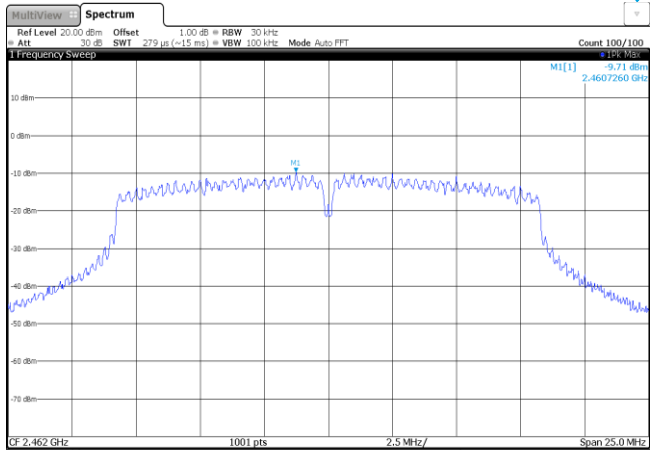
Appendix A: Conducted Peak Output Power

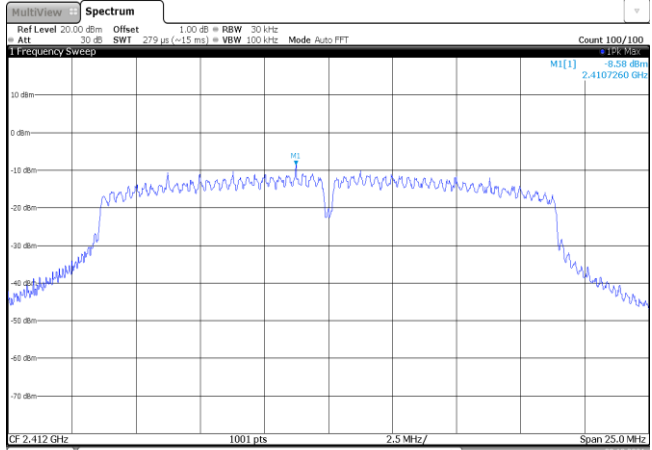
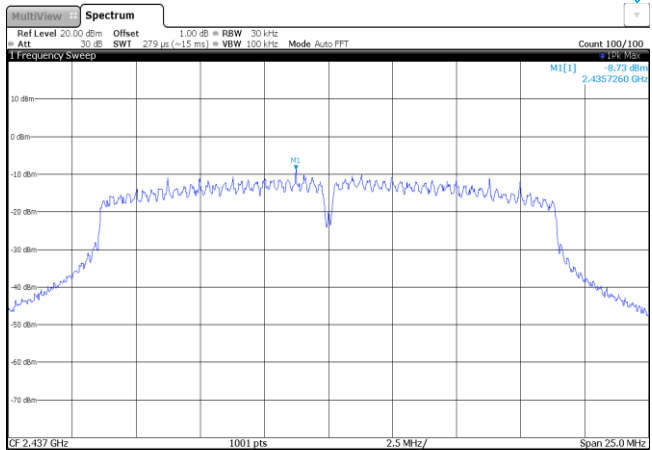
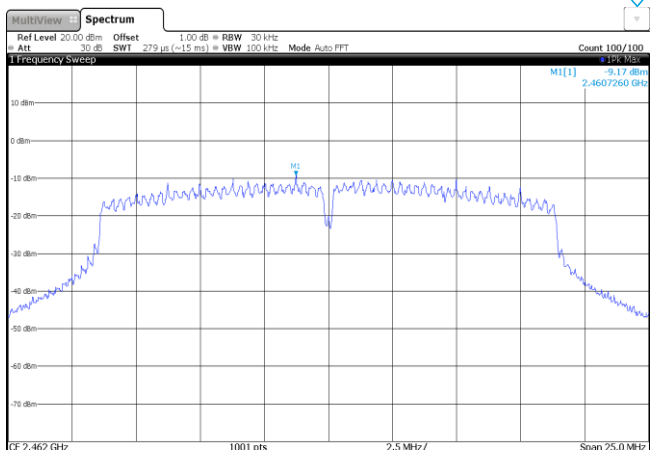
Type	Channel	Peak Output power (dBm)	Average Output power (dBm)	Limit (dBm)	Result
802.11b	01	14.99	11.80	≤ 30.00	Pass
	06	15.18	12.00		
	11	14.80	11.70		
802.11g	01	14.67	12.54	≤ 30.00	Pass
	06	14.89	12.36		
	11	14.47	12.12		
802.11n (HT20)	01	14.56	12.04	≤ 30.00	Pass
	06	14.67	12.36		
	11	14.05	11.96		

Appendix B: Power Spectral Density

Type	Channel	Power Spectral Density (dBm/30KHz)	Limit (dBm/3KHz)	Result
802.11b	01	2.31	≤8.00	Pass
	06	0.61		
	11	1.31		
802.11g	01	-9.76	≤8.00	Pass
	06	-8.74		
	11	-9.71		
802.11n(HT20)	01	-8.58	≤8.00	Pass
	06	-8.73		
	11	-9.17		

Appendix report page: 4 of 28

Type:	802.11 g
CH01	 15/09/07
CH06	 16/02/08
CH11	 16/02/06

Type:	802.11n(HT20)
CH01	 Ref Level 20.00 dBm Offset 1.00 dB BW 30 kHz Att 30 dB SWI 279 μs (~15 ms) VBW 100 kHz Mode Auto FFT Count 100/100 M1[1] 5.20 dBm 2.4107260 GHz CF 2.412 GHz 1001 pts 2.5 MHz/ Span 25.0 MHz Date: 8.OCT.2021 16d2.04
CH06	 Ref Level 20.00 dBm Offset 1.00 dB BW 30 kHz Att 30 dB SWI 279 μs (~15 ms) VBW 100 kHz Mode Auto FFT Count 100/100 M1[1] 5.73 dBm 2.4357260 GHz CF 2.437 GHz 1001 pts 2.5 MHz/ Span 25.0 MHz Date: 8.OCT.2021 16d3.00
CH11	 Ref Level 20.00 dBm Offset 1.00 dB BW 30 kHz Att 30 dB SWI 279 μs (~15 ms) VBW 100 kHz Mode Auto FFT Count 100/100 M1[1] 5.17 dBm 2.4607260 GHz CF 2.462 GHz 1001 pts 2.5 MHz/ Span 25.0 MHz Date: 8.OCT.2021 16d7.06

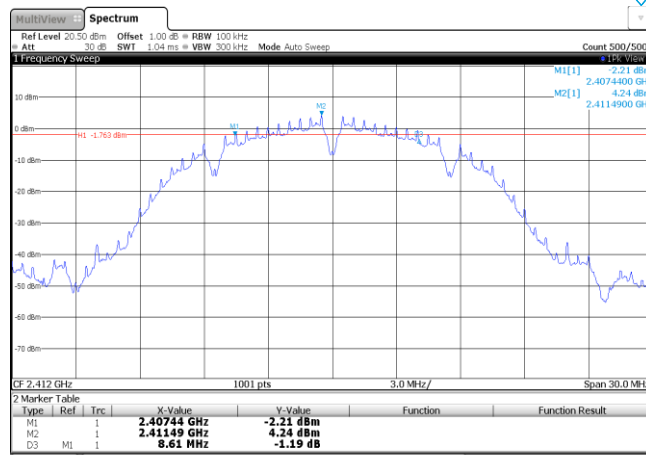
Appendix C: 6dB bandwidth

Type	Channel	6dB Bandwidth (MHz)	Limit (MHz)	Result
802.11b	01	8.61	≥0.5	Pass
	06	8.61		
	11	9.09		
802.11g	01	15.18	≥0.5	Pass
	06	15.18		
	11	15.18		
802.11n(HT20)	01	15.18	≥0.5	Pass
	06	15.18		
	11	15.18		

Type:

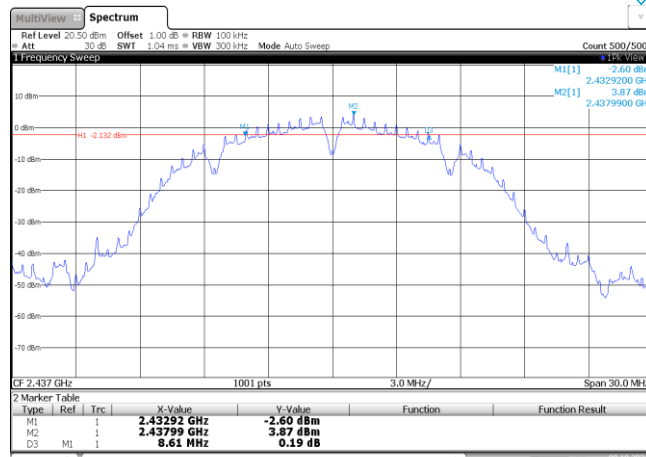
802.11 b

CH01



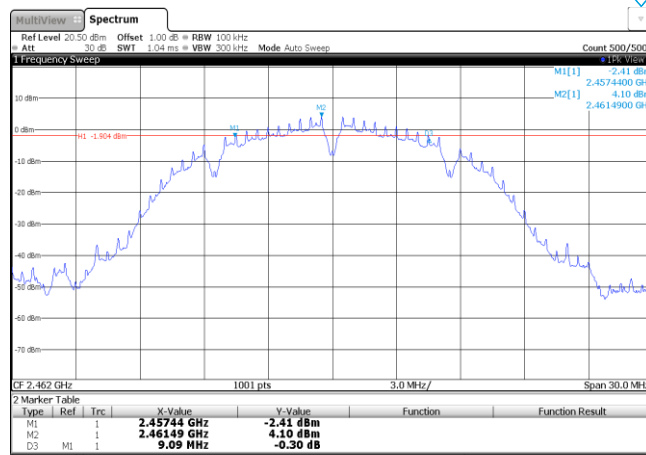
Date: 8/10/2021 15:41:45

CH06



Date: 8/10/2021 15:44:46

CH11

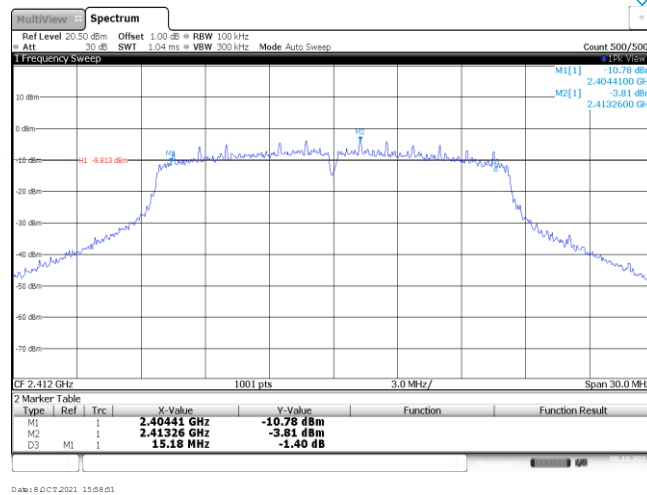


Date: 8/10/2021 15:48:04

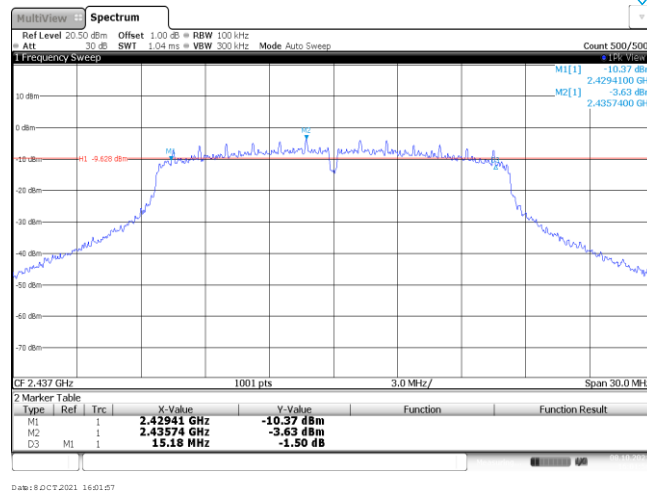
Type:

802.11 g

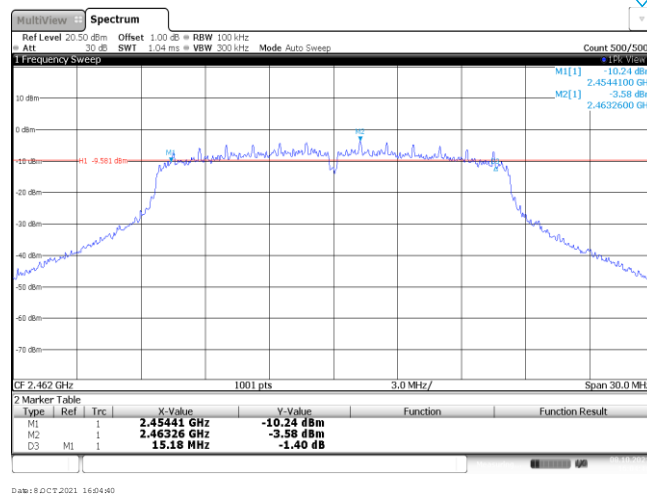
CH01



CH06



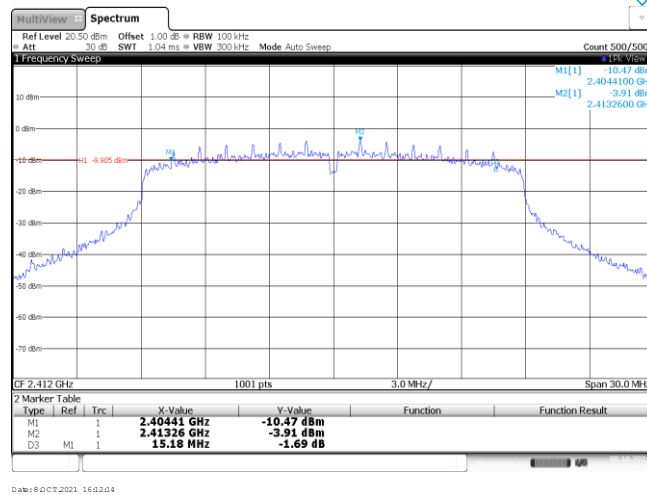
CH11



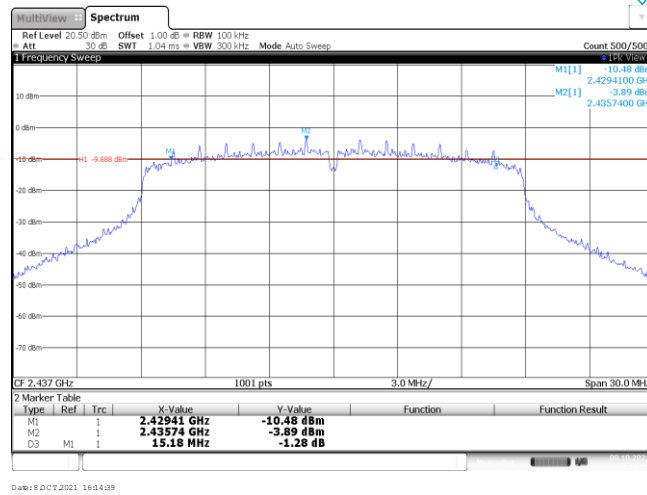
Type:

802.11n(HT20)

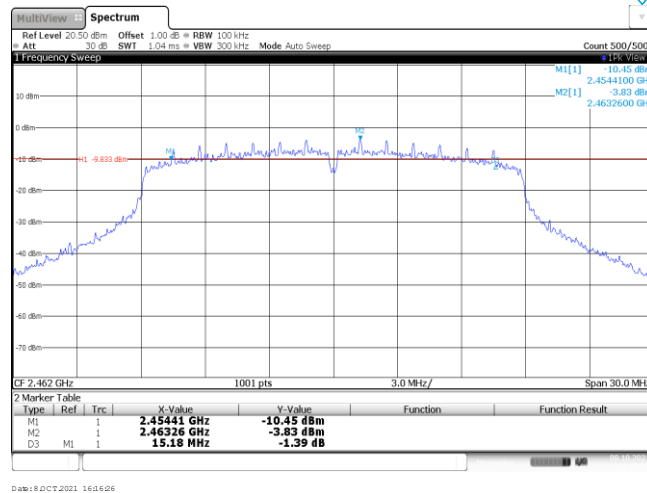
CH01



CH06



CH11



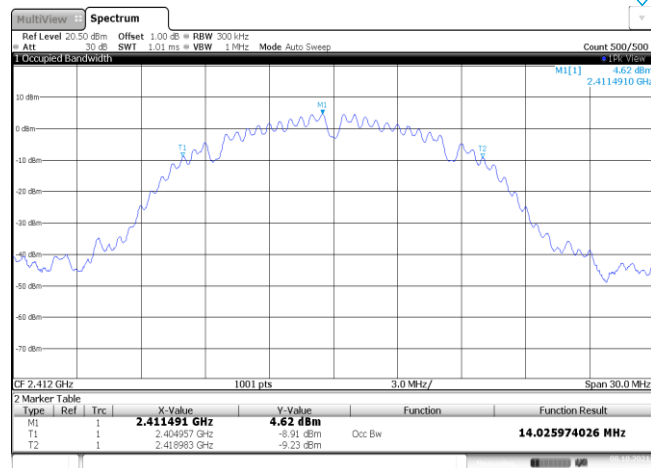
Appendix D: 99% Occupied Bandwidth

Type	Channel	99% Bandwidth (MHz)	Limit (MHz)	Result
802.11b	01	14.03	-	Pass
	06	14.03		
	11	14.03		
802.11g	01	16.48	-	Pass
	06	16.48		
	11	16.48		
802.11n(HT20)	01	17.56	-	Pass
	06	17.59		
	11	17.56		

Type:

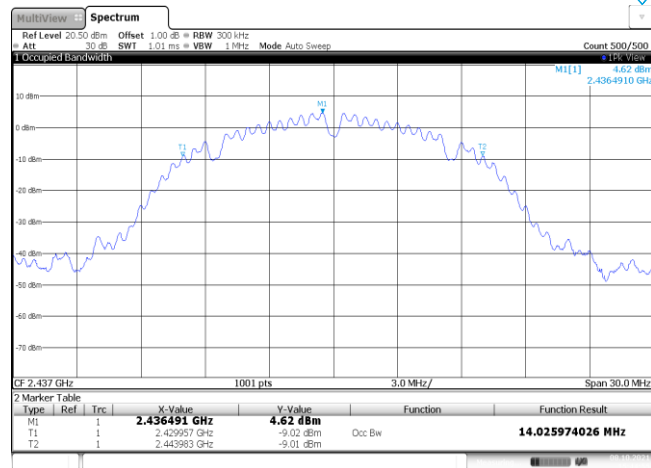
802.11 b

CH01



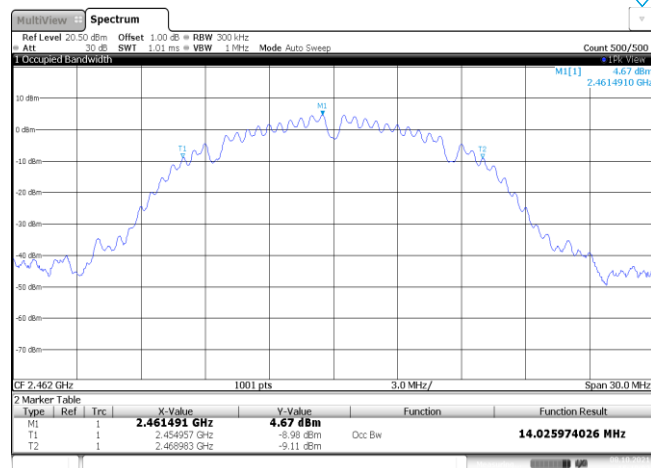
Date: 8/10/2021 15:41:04

CH06



Date: 8/10/2021 15:44:05

CH11



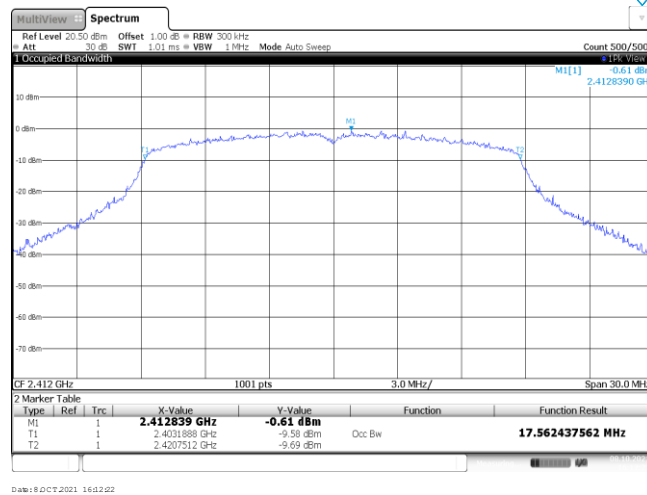
Date: 8/10/2021 15:49:03

Appendix report page: 13 of 28

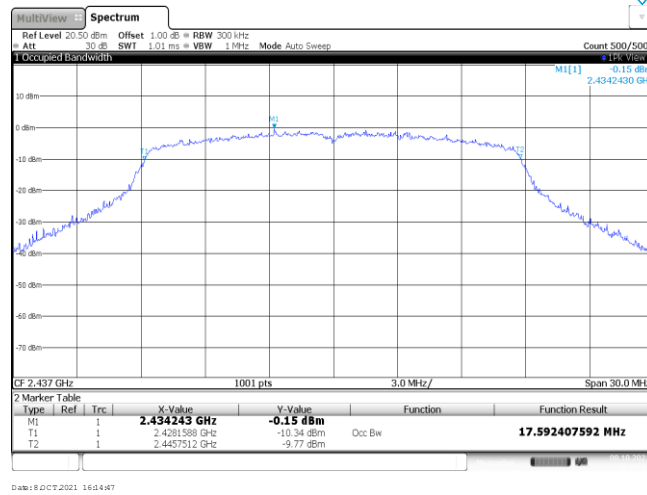
Type:

802.11n(HT20)

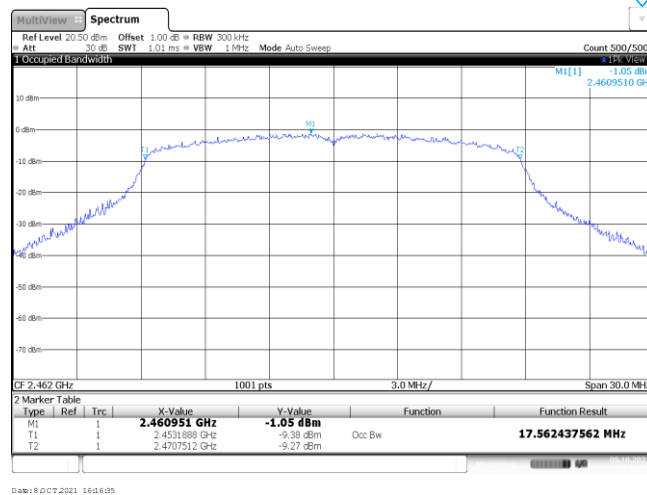
CH01



CH06



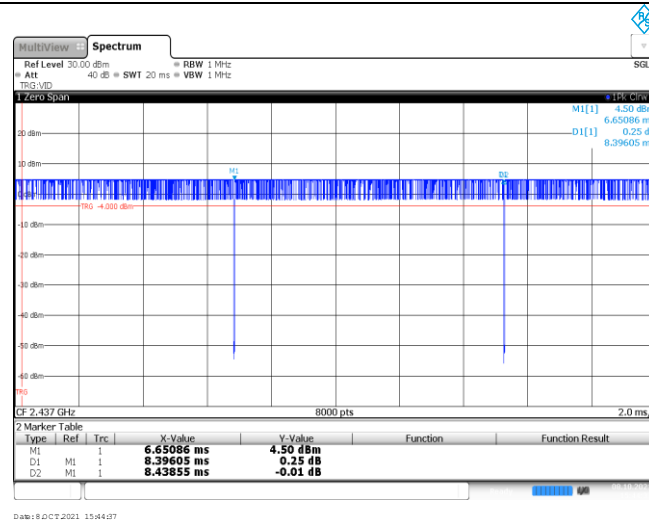
CH11



Appendix E: Duty Cycle

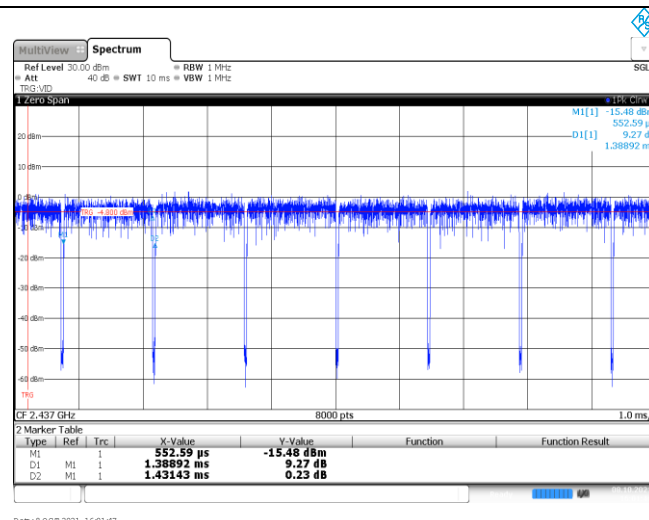
Modulation Type	Test Frequency (MHz)	T _{on time} for single burst (ms)	T _{period} (ms)	Duty cycle	1/T _{on time} (kHz)
11b	2437	8.40	8.44	99.5%	0.1
11g	2437	1.39	1.43	97.2%	0.7
11n20	2437	1.30	1.34	97.0%	0.8

11b

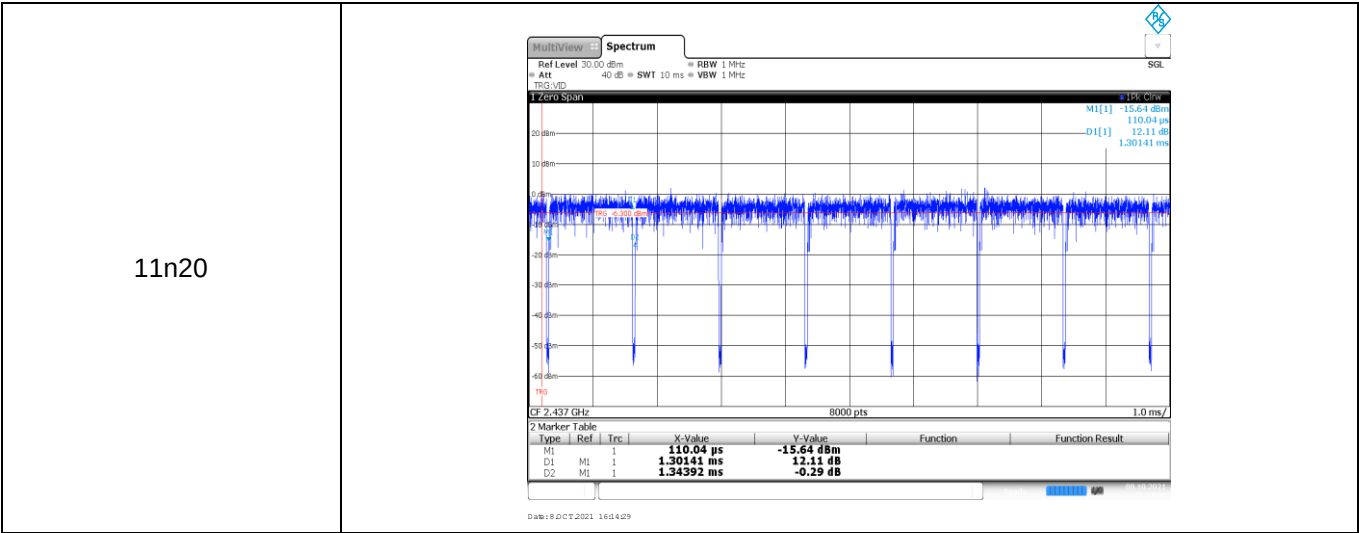


Date: 15 OCT 2021 15:44:07

11g



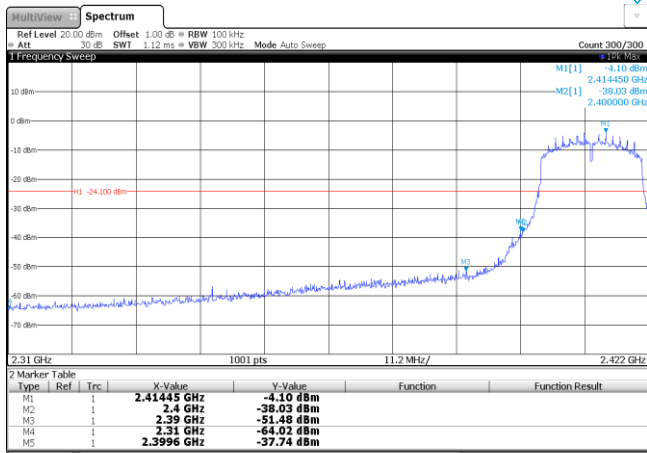
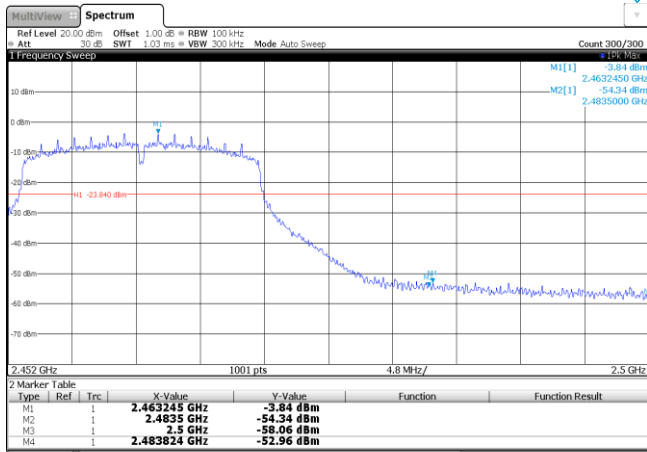
Date: 15 OCT 2021 16:01:47

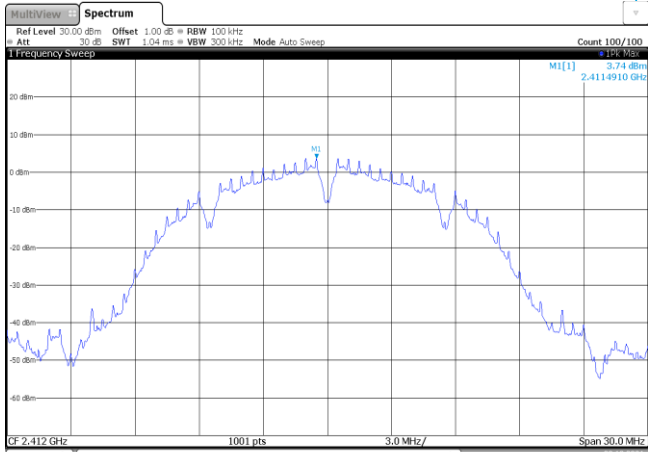
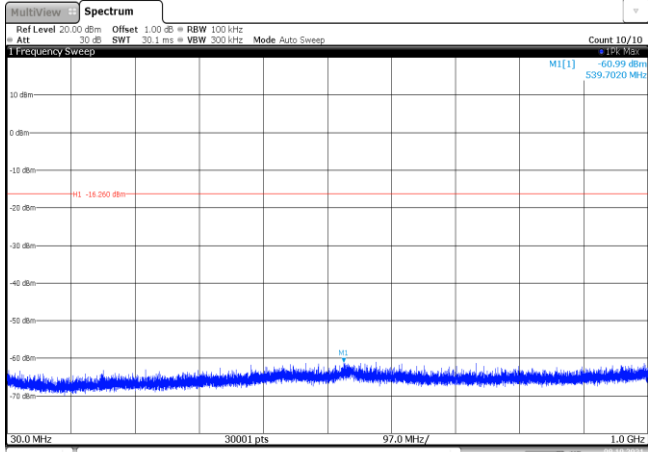
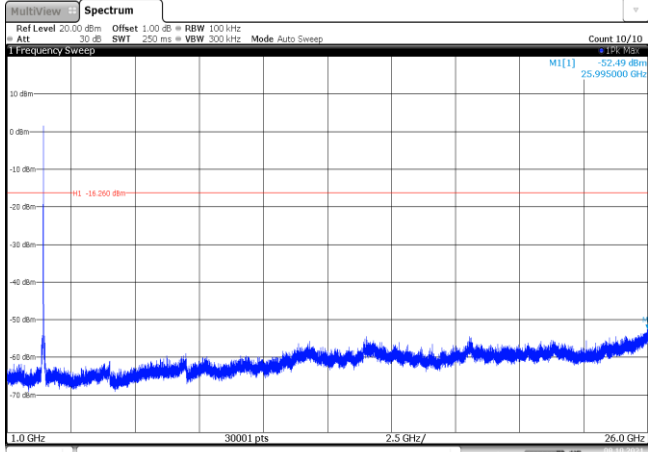


Appendix F: Band edge and Spurious Emissions (conducted)

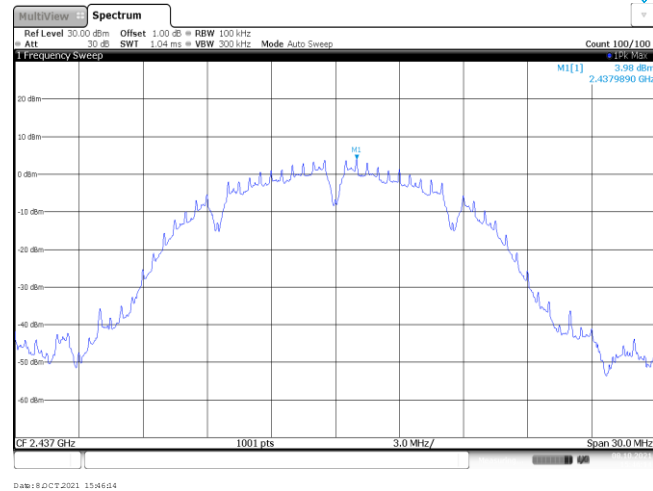
Test Item:	Bandedge	Type:	802.11 b																																										
CH01	MultiView Spectrum Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWT 1.12 ms VBW 300 kHz Mode Auto Sweep Count 300/300 1 Frequency Sweep 3.1 GHz 1001 pts 11.2 MHz/ 2.422 GHz M1[1] 2.412430 GHz 3.88 dBm M2[1] 2.412430 GHz -49.99 dBm 2 Marker Table <table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-Value</th><th>Y-Value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td>1</td><td></td><td>2.41243 GHz</td><td>3.88 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-49.99 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-55.49 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-63.27 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.399488 GHz</td><td>-41.93 dBm</td><td></td><td></td></tr></table> Date: 8 OCT 2021 15:42:17			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.41243 GHz	3.88 dBm			M2	1		2.4 GHz	-49.99 dBm			M3	1		2.39 GHz	-55.49 dBm			M4	1		2.31 GHz	-63.27 dBm			M5	1		2.399488 GHz	-41.93 dBm		
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																																							
M1	1		2.41243 GHz	3.88 dBm																																									
M2	1		2.4 GHz	-49.99 dBm																																									
M3	1		2.39 GHz	-55.49 dBm																																									
M4	1		2.31 GHz	-63.27 dBm																																									
M5	1		2.399488 GHz	-41.93 dBm																																									
CH11	MultiView Spectrum Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWT 1.03 ms VBW 300 kHz Mode Auto Sweep Count 300/300 1 Frequency Sweep 2.452 GHz 1001 pts 4.8 MHz/ 2.5 GHz M1[1] 2.461471 GHz 4.14 dBm M2[1] 2.461471 GHz -57.11 dBm M3[1] 2.4835000 GHz -55.76 dBm 2 Marker Table <table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-Value</th><th>Y-Value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td>1</td><td></td><td>2.461471 GHz</td><td>4.14 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4835 GHz</td><td>-57.11 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.5 GHz</td><td>-55.76 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.486992 GHz</td><td>-52.76 dBm</td><td></td><td></td></tr></table> Date: 8 OCT 2021 15:00:04			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.461471 GHz	4.14 dBm			M2	1		2.4835 GHz	-57.11 dBm			M3	1		2.5 GHz	-55.76 dBm			M4	1		2.486992 GHz	-52.76 dBm									
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																																							
M1	1		2.461471 GHz	4.14 dBm																																									
M2	1		2.4835 GHz	-57.11 dBm																																									
M3	1		2.5 GHz	-55.76 dBm																																									
M4	1		2.486992 GHz	-52.76 dBm																																									

Appendix report page: 18 of 28

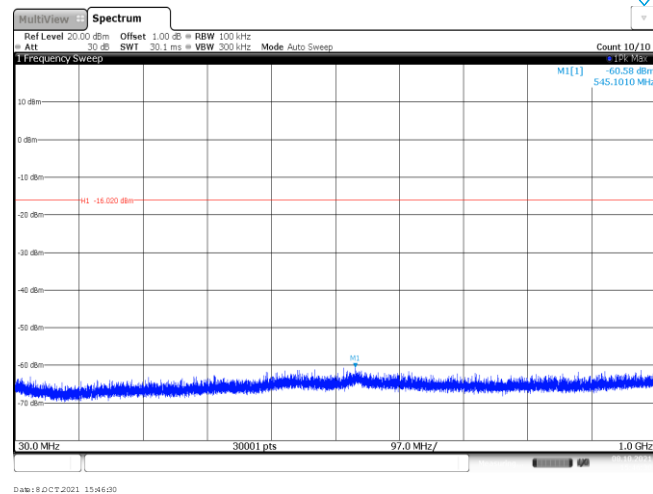
Test Item:	Bandedge	Type:	802.11 n(HT20)																																										
CH01	 2 Marker Table <table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-Value</th><th>Y-Value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td>1</td><td></td><td>2.41445 GHz</td><td>-4.10 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-38.03 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-51.48 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-64.02 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.3996 GHz</td><td>-37.74 dBm</td><td></td><td></td></tr></table>	Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.41445 GHz	-4.10 dBm			M2	1		2.4 GHz	-38.03 dBm			M3	1		2.39 GHz	-51.48 dBm			M4	1		2.31 GHz	-64.02 dBm			M5	1		2.3996 GHz	-37.74 dBm				
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																																							
M1	1		2.41445 GHz	-4.10 dBm																																									
M2	1		2.4 GHz	-38.03 dBm																																									
M3	1		2.39 GHz	-51.48 dBm																																									
M4	1		2.31 GHz	-64.02 dBm																																									
M5	1		2.3996 GHz	-37.74 dBm																																									
CH11	 2 Marker Table <table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-Value</th><th>Y-Value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td>1</td><td></td><td>2.463245 GHz</td><td>-3.84 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4835 GHz</td><td>-54.34 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.5 GHz</td><td>-58.06 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.483824 GHz</td><td>-52.96 dBm</td><td></td><td></td></tr></table>	Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.463245 GHz	-3.84 dBm			M2	1		2.4835 GHz	-54.34 dBm			M3	1		2.5 GHz	-58.06 dBm			M4	1		2.483824 GHz	-52.96 dBm											
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																																							
M1	1		2.463245 GHz	-3.84 dBm																																									
M2	1		2.4835 GHz	-54.34 dBm																																									
M3	1		2.5 GHz	-58.06 dBm																																									
M4	1		2.483824 GHz	-52.96 dBm																																									

Test Item:	Spurious Emissions	Type:	802.11 b
CH01 Reference level	 CH01 Reference level		
CH01 30MHz~1000MHz	 CH01 30MHz~1000MHz		
CH01 1GHz~26GHz	 CH01 1GHz~26GHz		

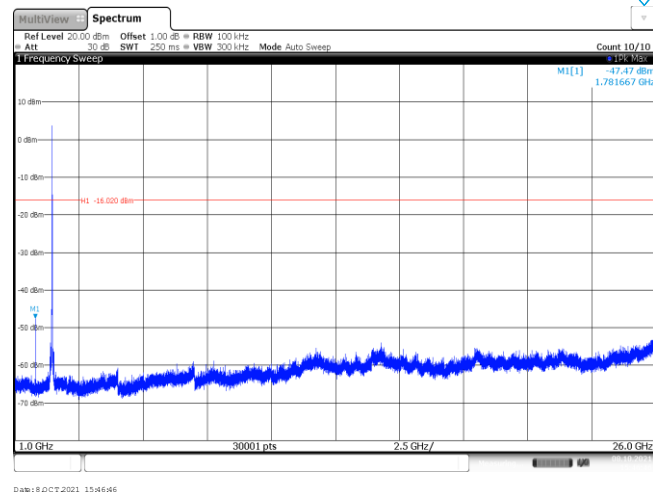
CH06
Reference level



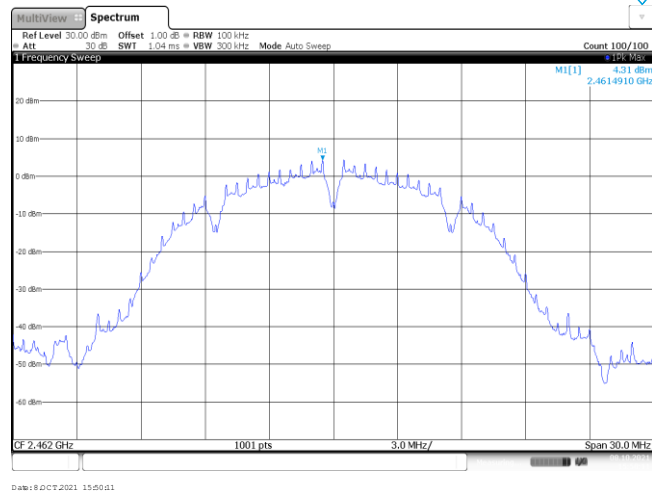
CH06
30MHz~1000MHz



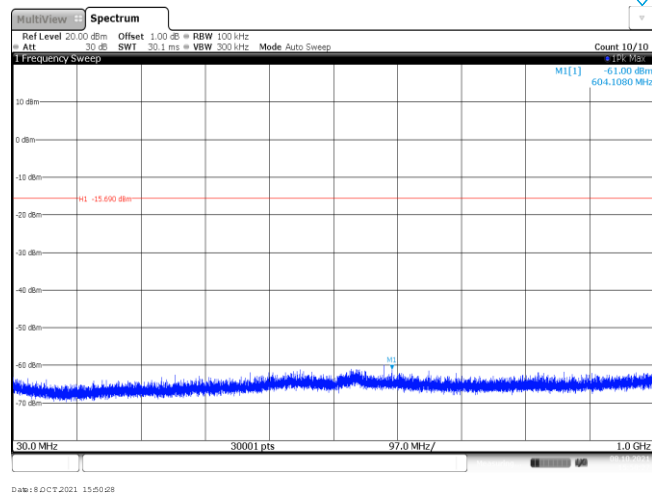
CH06
1GHz~26GHz



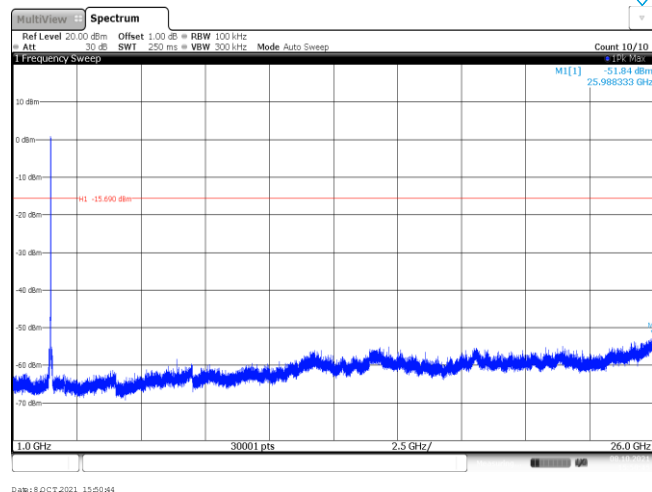
CH11
Reference level

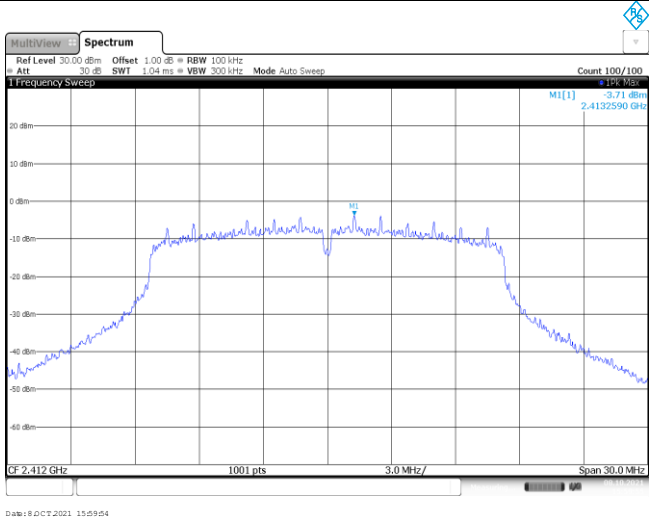
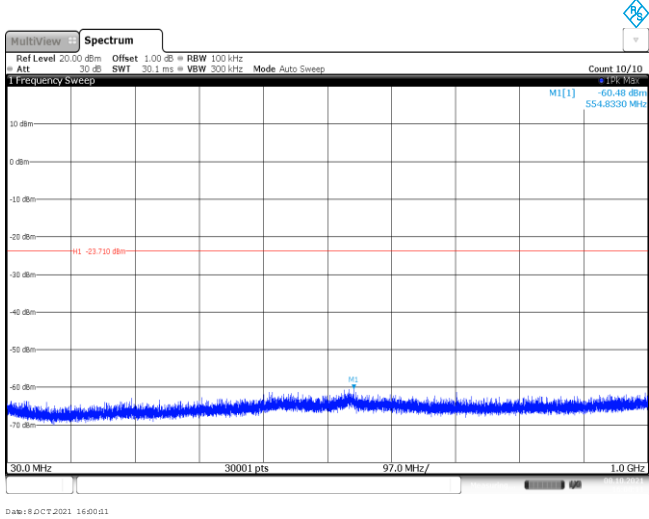
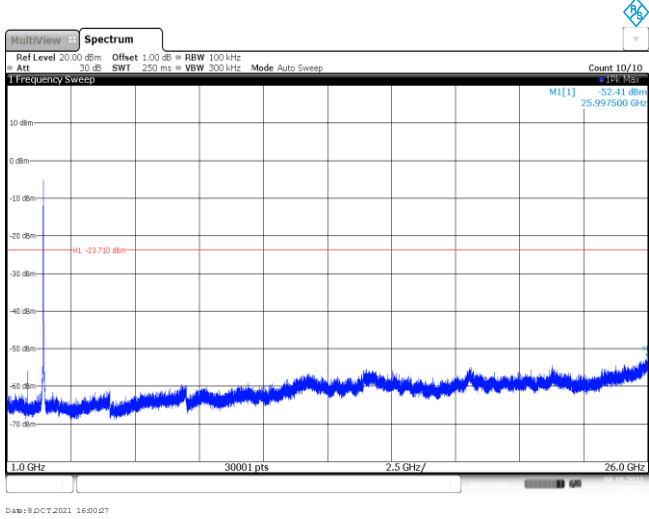


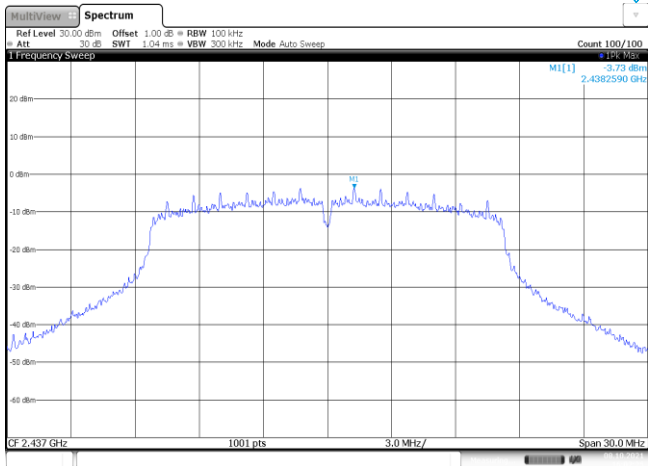
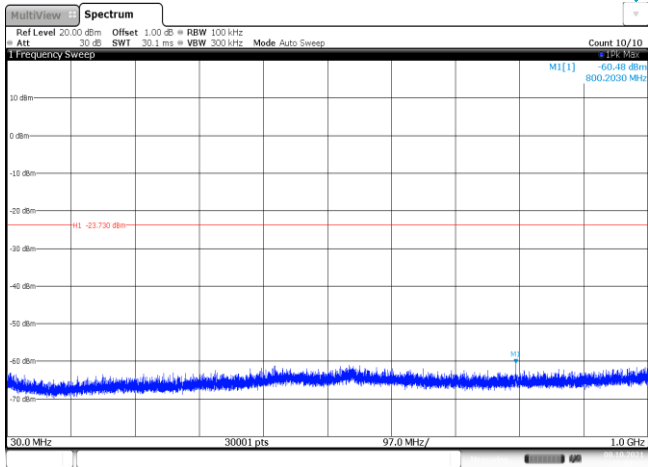
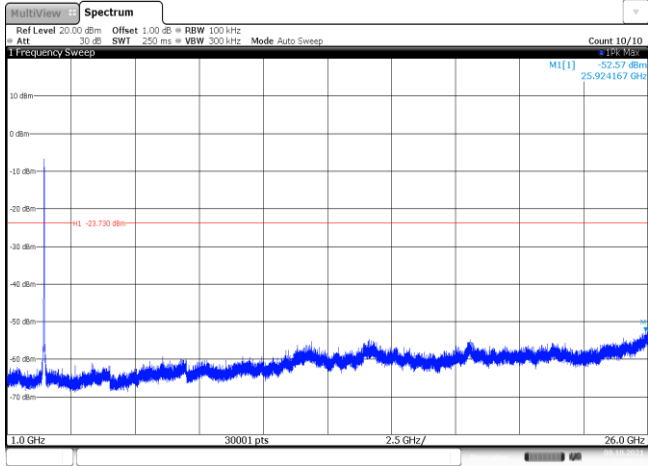
CH11
30MHz~1000MHz



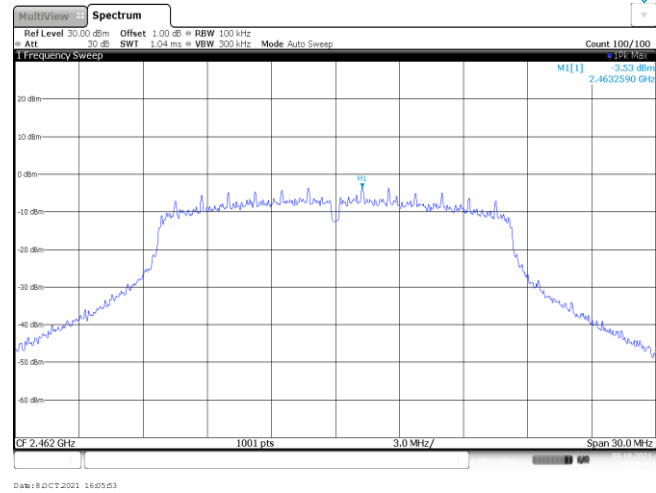
CH11
1GHz~26GHz



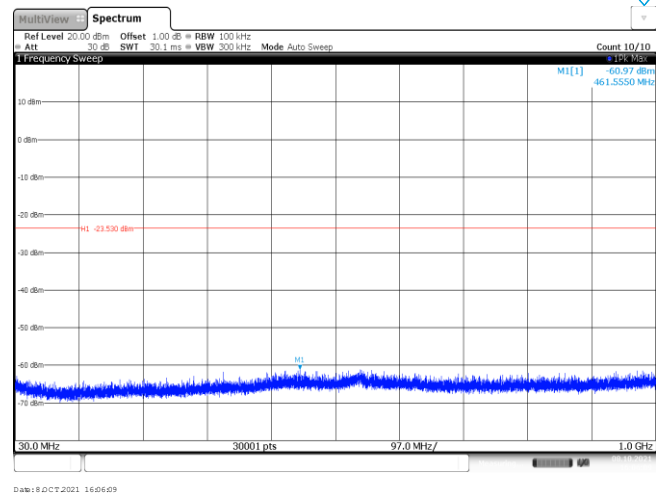
Test Item:	Spurious Emissions	Type:	802.11 g
CH01 Reference level			
CH01 30MHz~1000MHz			
CH01 1GHz~26GHz			

CH06 Reference level	 CH06 Reference level
CH06 30MHz~1000MHz	 CH06 30MHz~1000MHz
CH06 1GHz~26GHz	 CH06 1GHz~26GHz

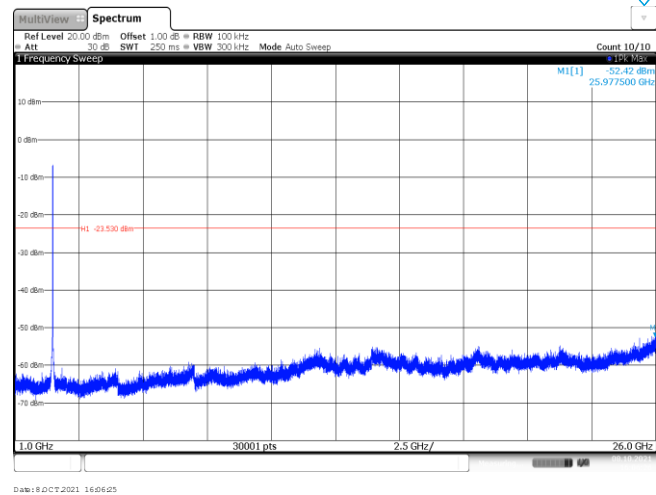
CH11
Reference level

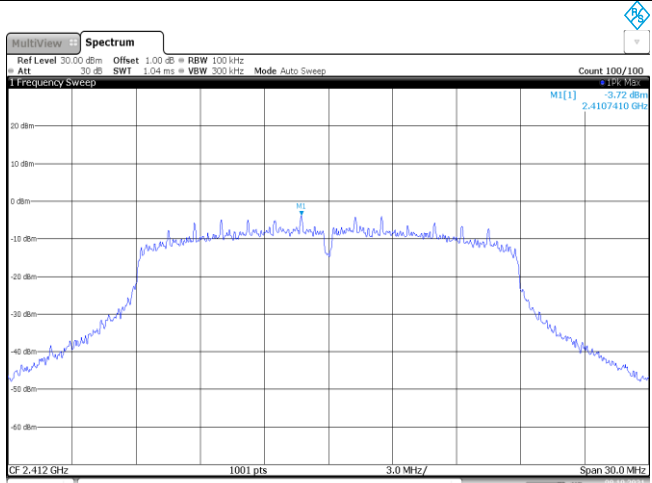
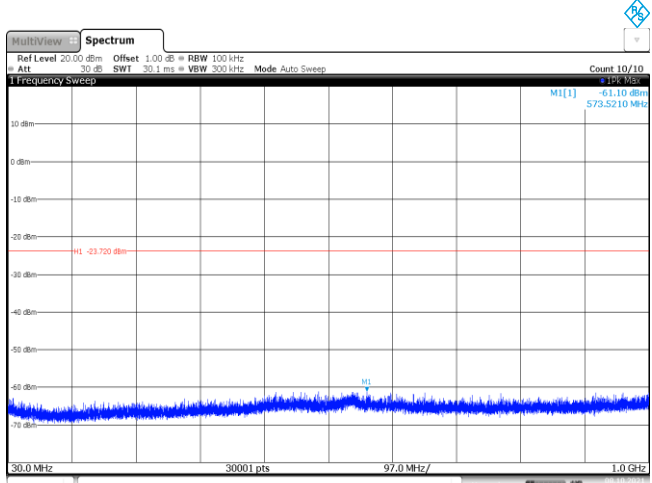
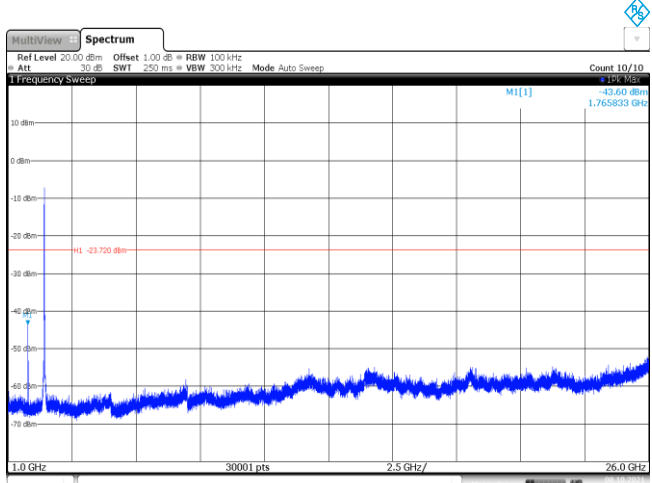


CH11
30MHz~1000MHz

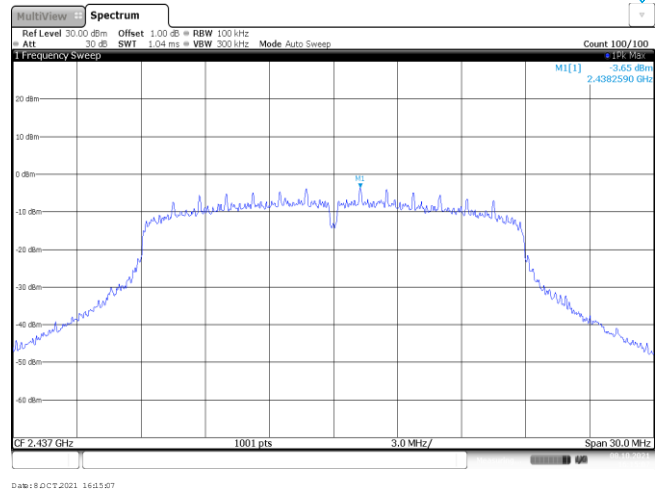


CH11
1GHz~26GHz

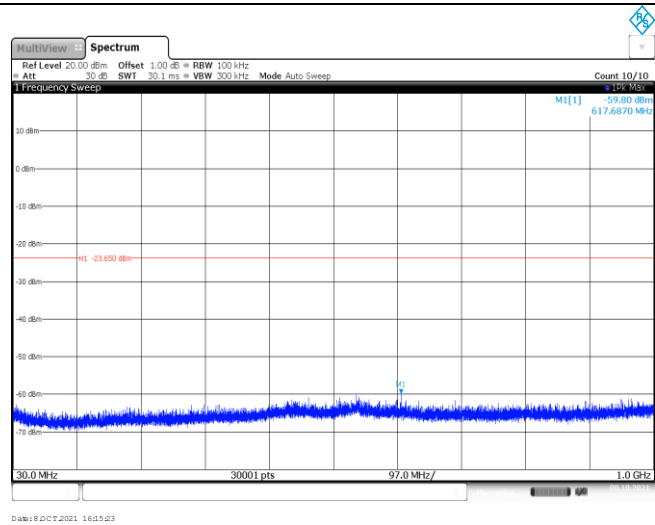


Test Item:	Spurious Emissions	Type:	802.11 n(HT20)
CH01 Reference level	 CH01 Reference level		
CH01 30MHz~1000MHz	 CH01 30MHz~1000MHz		
CH01 1GHz~26GHz	 CH01 1GHz~26GHz		

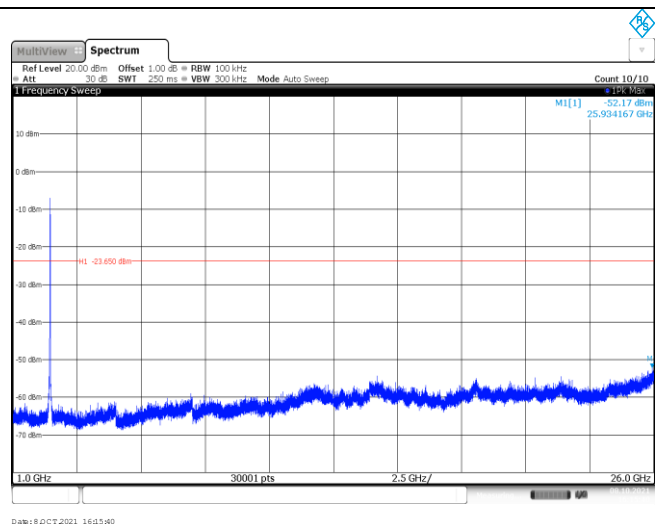
CH06
Reference level

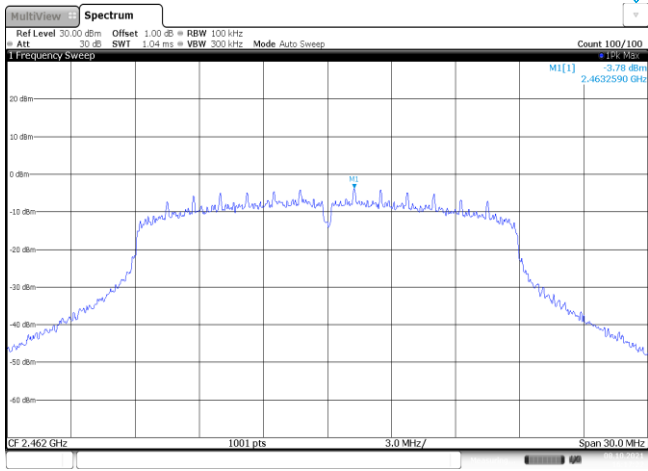
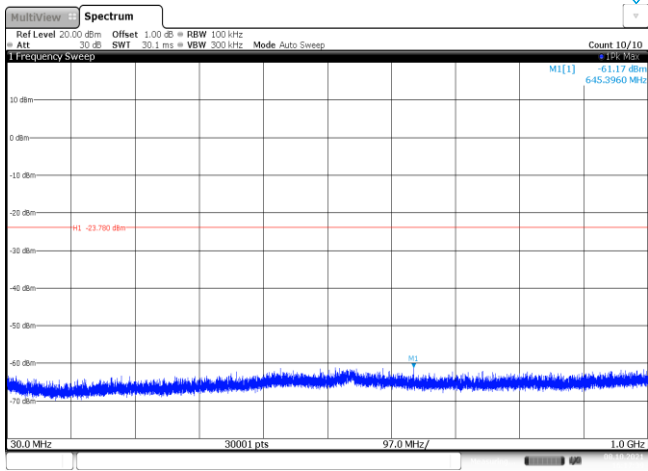
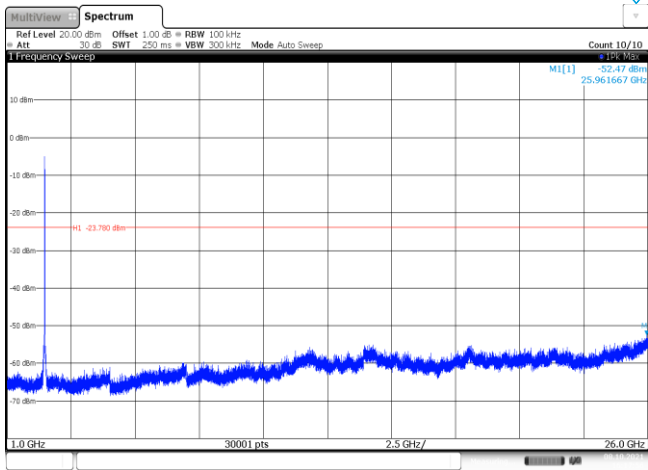


CH06
30MHz~1000MHz



CH06
1GHz~26GHz



CH11 Reference level	 Ref Level 30.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWI 1.04 ms VBW 300 kHz Mode Auto Sweep Count 100/100 M1[1] -3.78 dBm 2.462290 GHz CF 2.462 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 8/OCT/2021 16:17:23
CH11 30MHz~1000MHz	 Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWI 30.1 ms VBW 300 kHz Mode Auto Sweep Count 10/10 M1[1] -61.17 dBm 645.2960 MHz 30.0 MHz 30001 pts 97.0 MHz/ 1.0 GHz Date: 8/OCT/2021 16:17:39
CH11 1GHz~26GHz	 Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWI 250 ms VBW 300 kHz Mode Auto Sweep Count 10/10 M1[1] -32.47 dBm 25.961667 GHz 1.0 GHz 30001 pts 2.5 GHz/ 26.0 GHz Date: 8/OCT/2021 16:17:55

-----End of Report-----