

APPENDIX REPORT

Project No.	SHT2103006601EW	Radio Specification	WIFI 2.4G
Test sample No.	YPHT21030066004	Model No.	X60
Start test date	2021-03-09	Finish date	2021-03-09
Temperature	24.8°C	Humidity	43%
Test Engineer	Hailey Chen	Auditor	Xiaodong Zhao

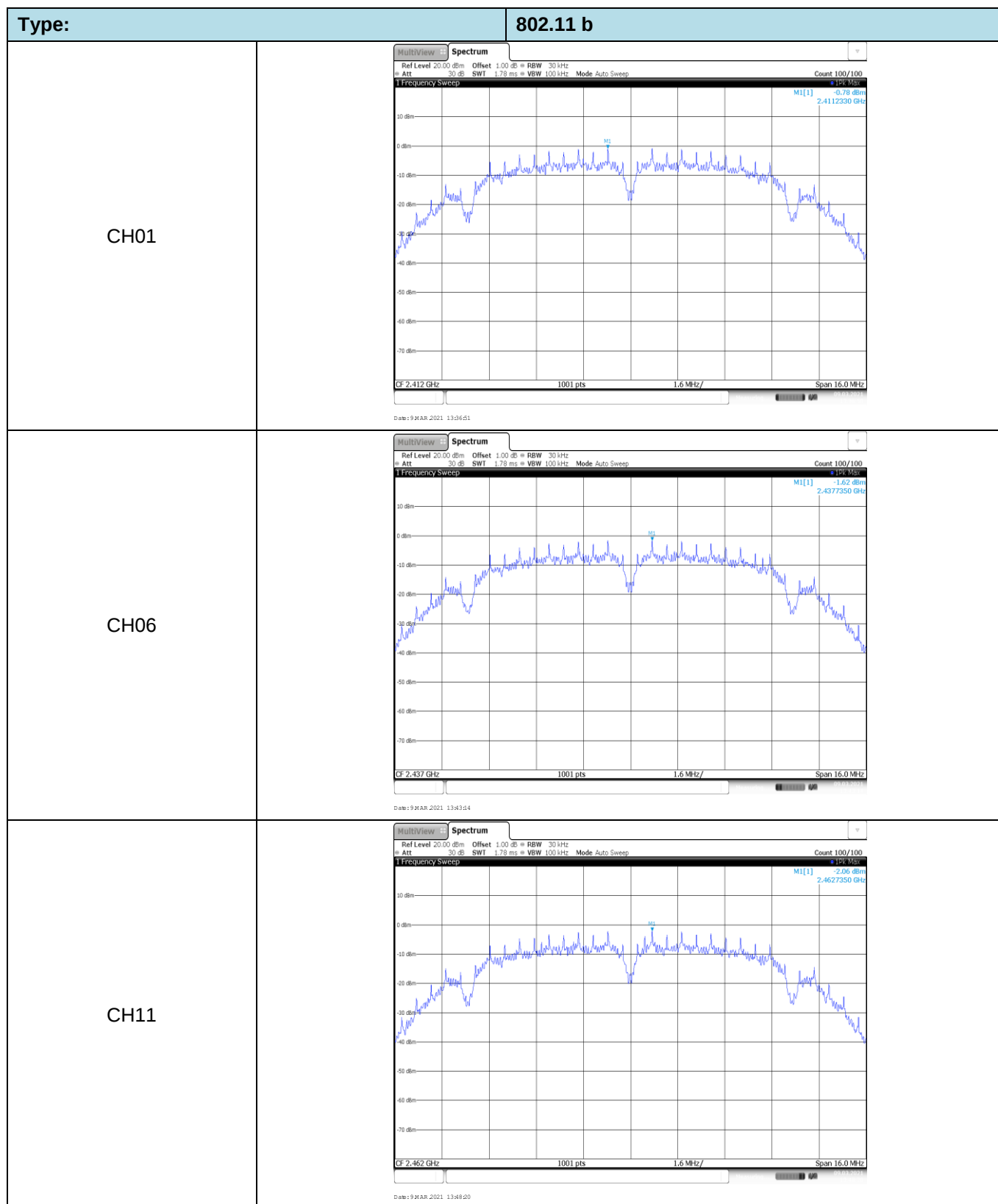
Appendix clause	Test item	Result
A	Conducted Peak Output Power	PASS
B	Power Spectral Density	PASS
C	6 dB Bandwidth	PASS
D	99% Occupied Bandwidth	PASS
E	Duty Cycle	PASS
F	Band edge and Spurious Emissions (conducted)	PASS

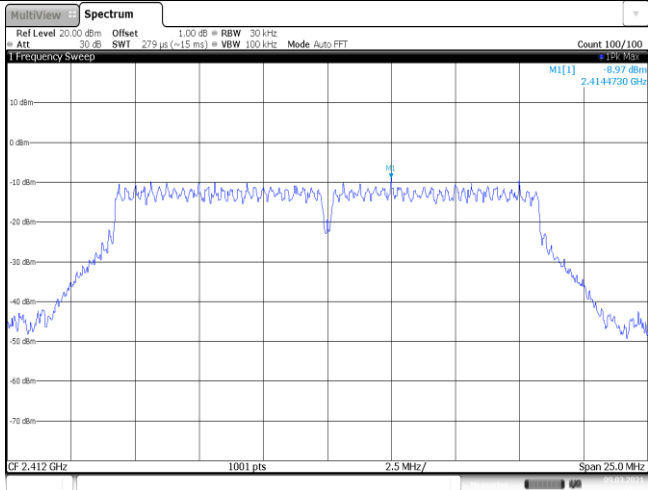
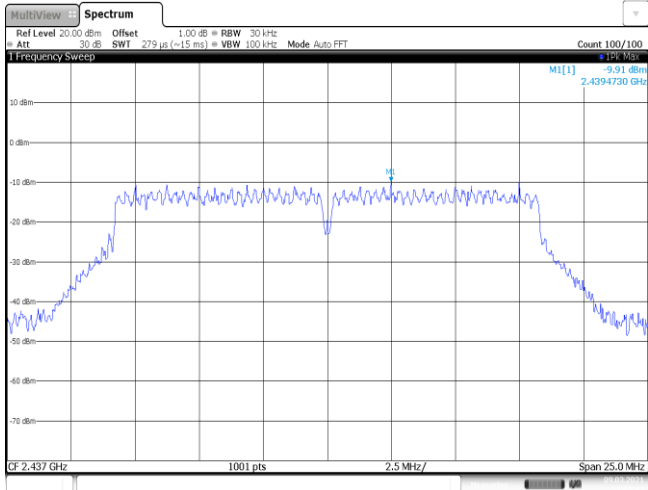
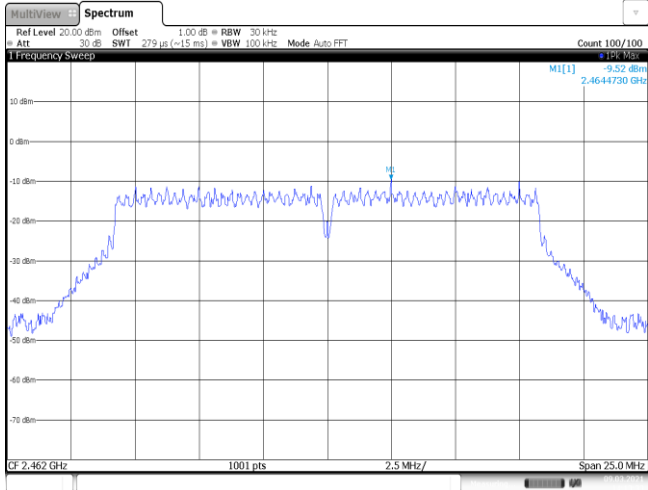
Appendix A: Conducted Peak Output Power

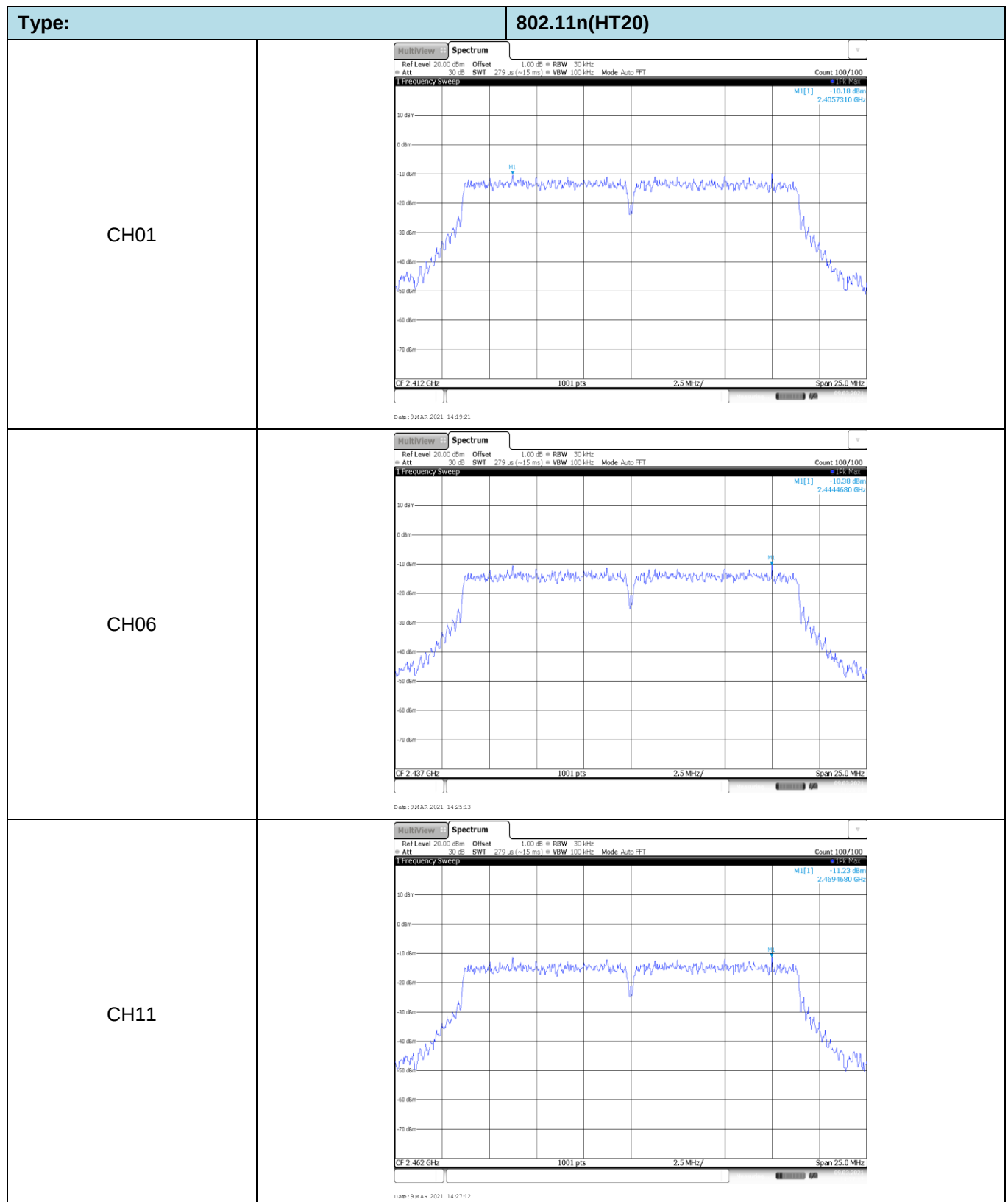
Type	Channel	Peak Output power (dBm)	Average Output power (dBm)	Limit (dBm)	Result
802.11b	01	13.52	10.78	≤ 30.00	Pass
	06	13.03	10.31		
	11	11.86	9.34		
802.11g	01	15.76	13.14	≤ 30.00	Pass
	06	15.21	12.55		
	11	14.22	11.54		
802.11n (HT20)	01	15.83	13.81	≤ 30.00	Pass
	06	15.22	13.23		
	11	14.21	12.45		

Appendix B: Power Spectral Density

Type	Channel	Power Spectral Density (dBm/30KHz)	Limit (dBm/3KHz)	Result
802.11b	01	-0.78	≤8.00	Pass
	06	-1.62		
	11	-2.06		
802.11g	01	-8.97	≤8.00	Pass
	06	-9.91		
	11	-9.52		
802.11n(HT20)	01	-10.18	≤8.00	Pass
	06	-10.38		
	11	-11.23		

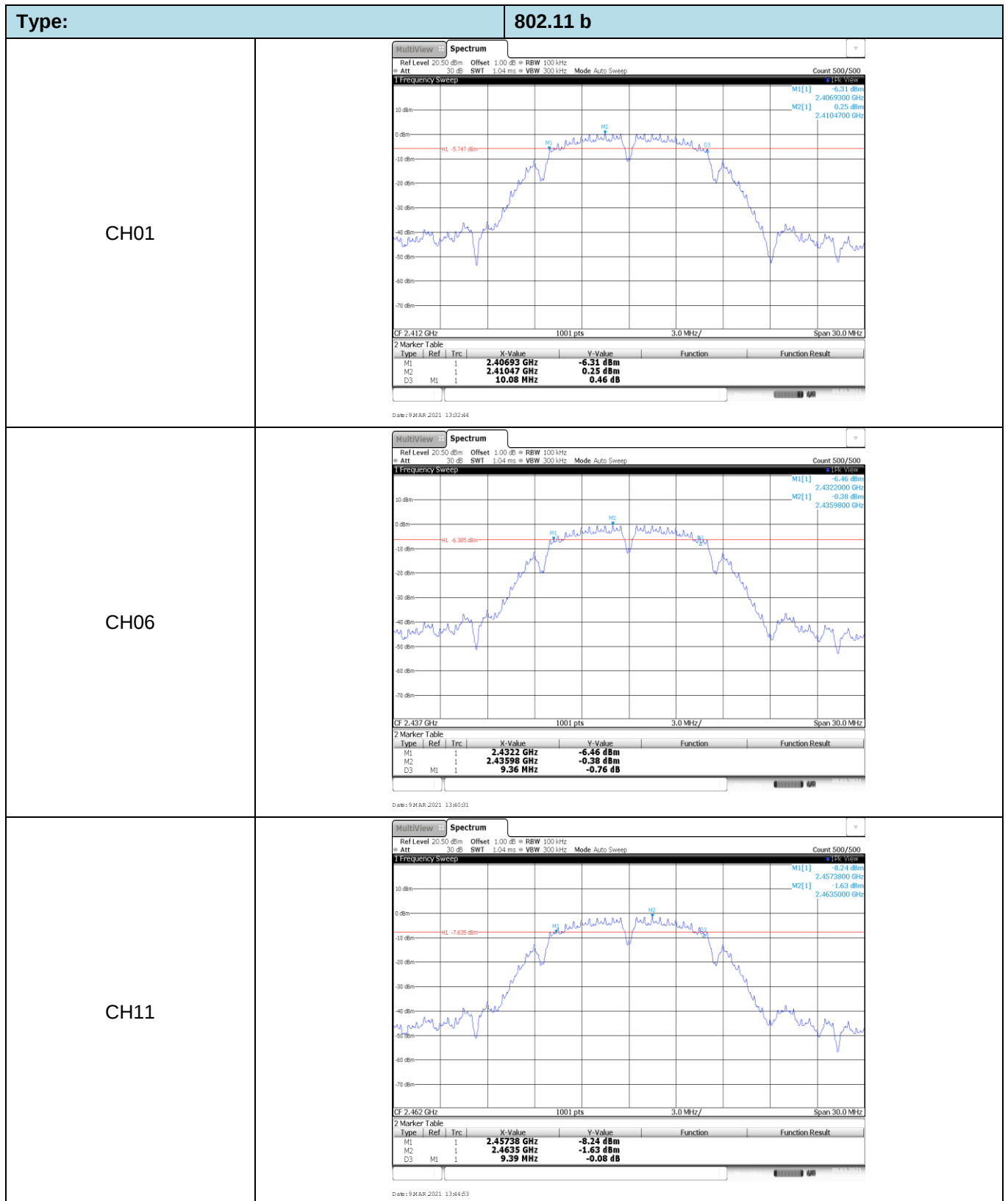


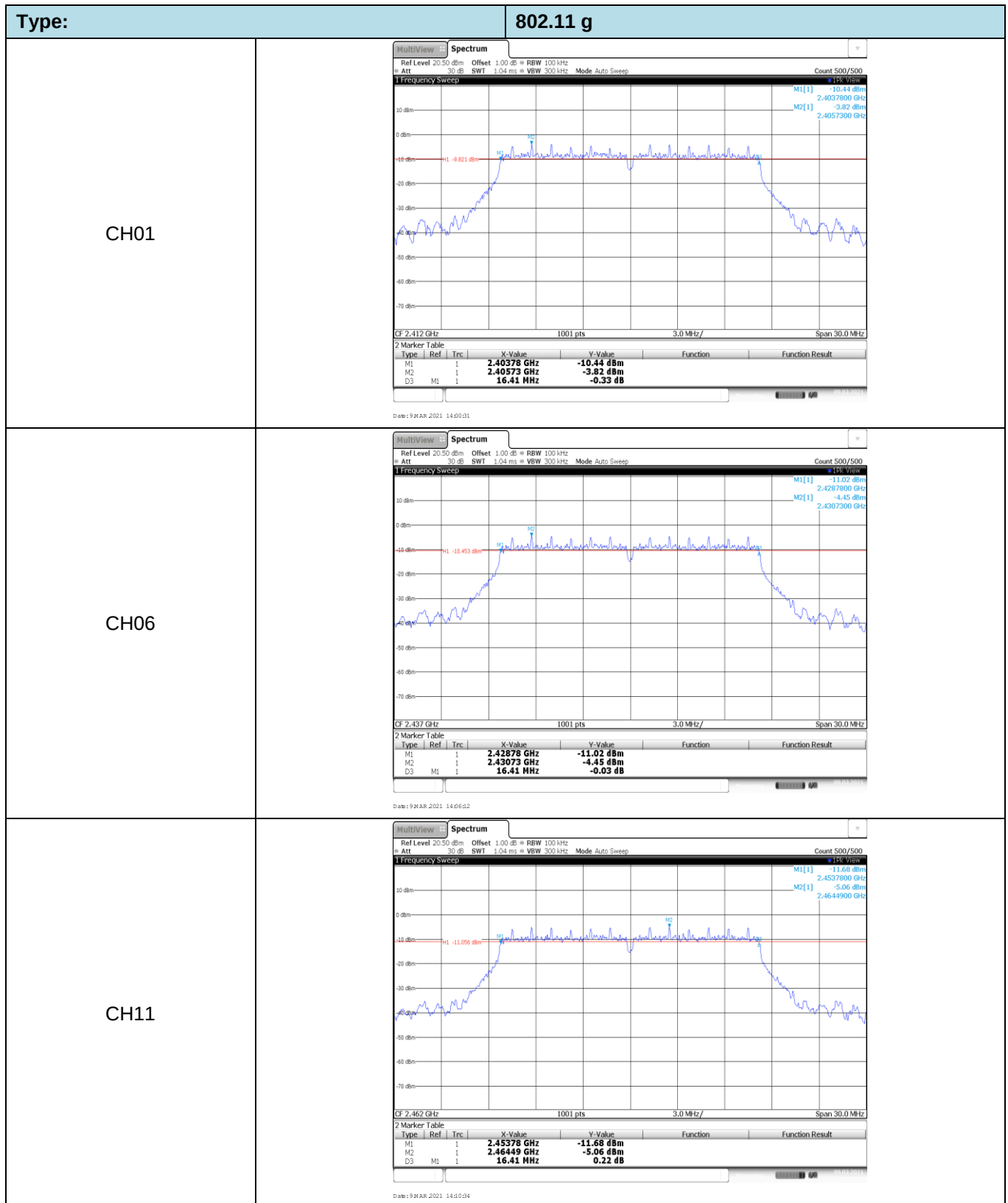
Type:		802.11 g
CH01	 Count 100/100 MI[1] -8.97 dBm 2.4144730 GHz Ref Level 20.00 dBm Att 30 dB SWI 279 us (~1.5 ms) VBW 100 kHz Mode Auto FFT 1 Frequency Sweep 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm CF 2.412 GHz 1001 pts 2.5 MHz/ Span 25.0 MHz Date: 9 MAR 2021 14:03:52	
CH06	 Count 100/100 MI[1] -9.91 dBm 2.4394730 GHz Ref Level 20.00 dBm Att 30 dB SWI 279 us (~1.5 ms) VBW 100 kHz Mode Auto FFT 1 Frequency Sweep 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm CF 2.437 GHz 1001 pts 2.5 MHz/ Span 25.0 MHz Date: 9 MAR 2021 14:08:13	
CH11	 Count 100/100 MI[1] -9.52 dBm 2.4644730 GHz Ref Level 20.00 dBm Att 30 dB SWI 279 us (~1.5 ms) VBW 100 kHz Mode Auto FFT 1 Frequency Sweep 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm CF 2.462 GHz 1001 pts 2.5 MHz/ Span 25.0 MHz Date: 9 MAR 2021 14:13:02	

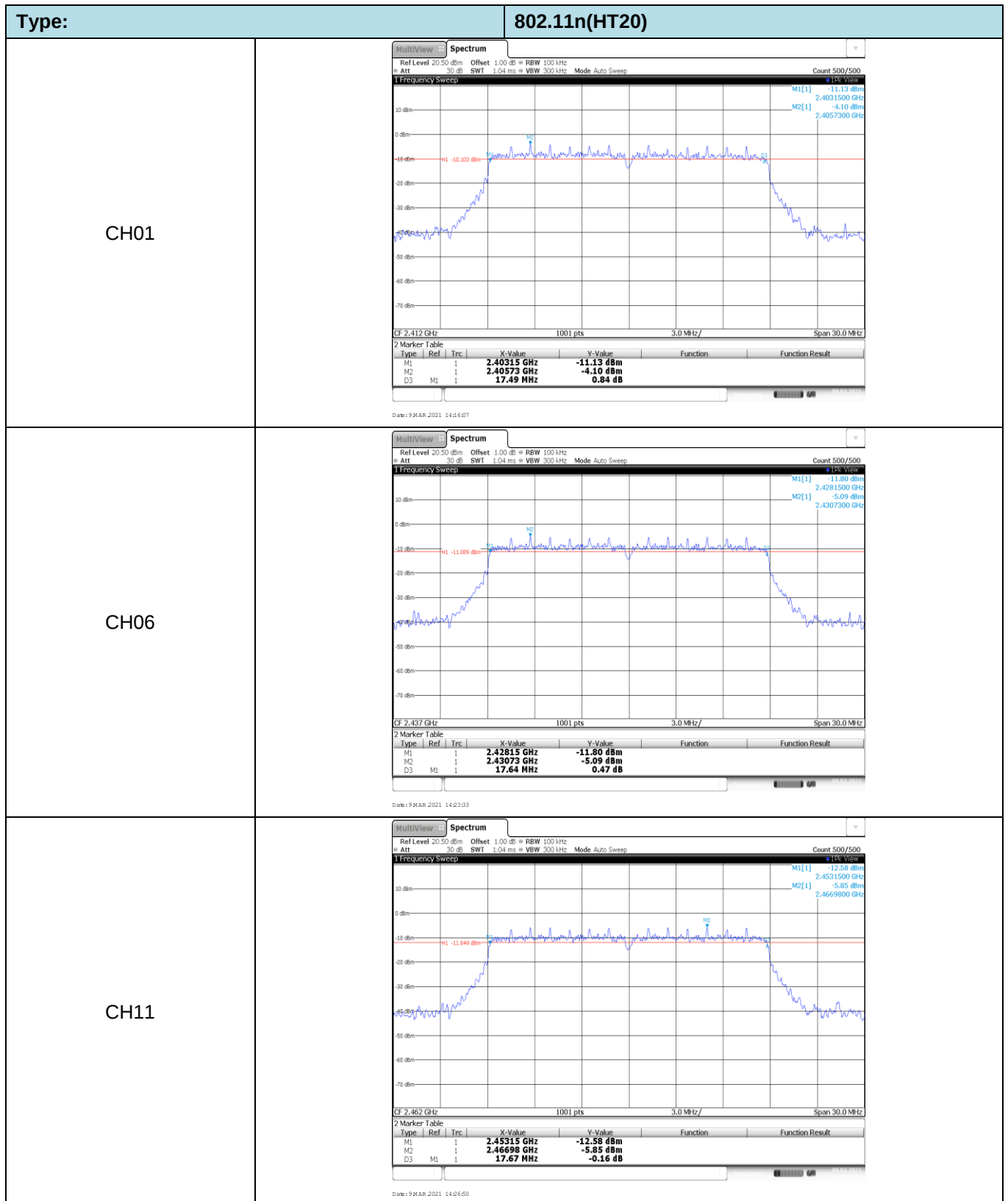


Appendix C: 6dB bandwidth

Type	Channel	6dB Bandwidth (MHz)	Limit (MHz)	Result
802.11b	01	10.08	≥0.5	Pass
	06	9.36		
	11	9.39		
802.11g	01	16.41	≥0.5	Pass
	06	16.41		
	11	16.41		
802.11n(HT20)	01	17.49	≥0.5	Pass
	06	17.64		
	11	17.67		

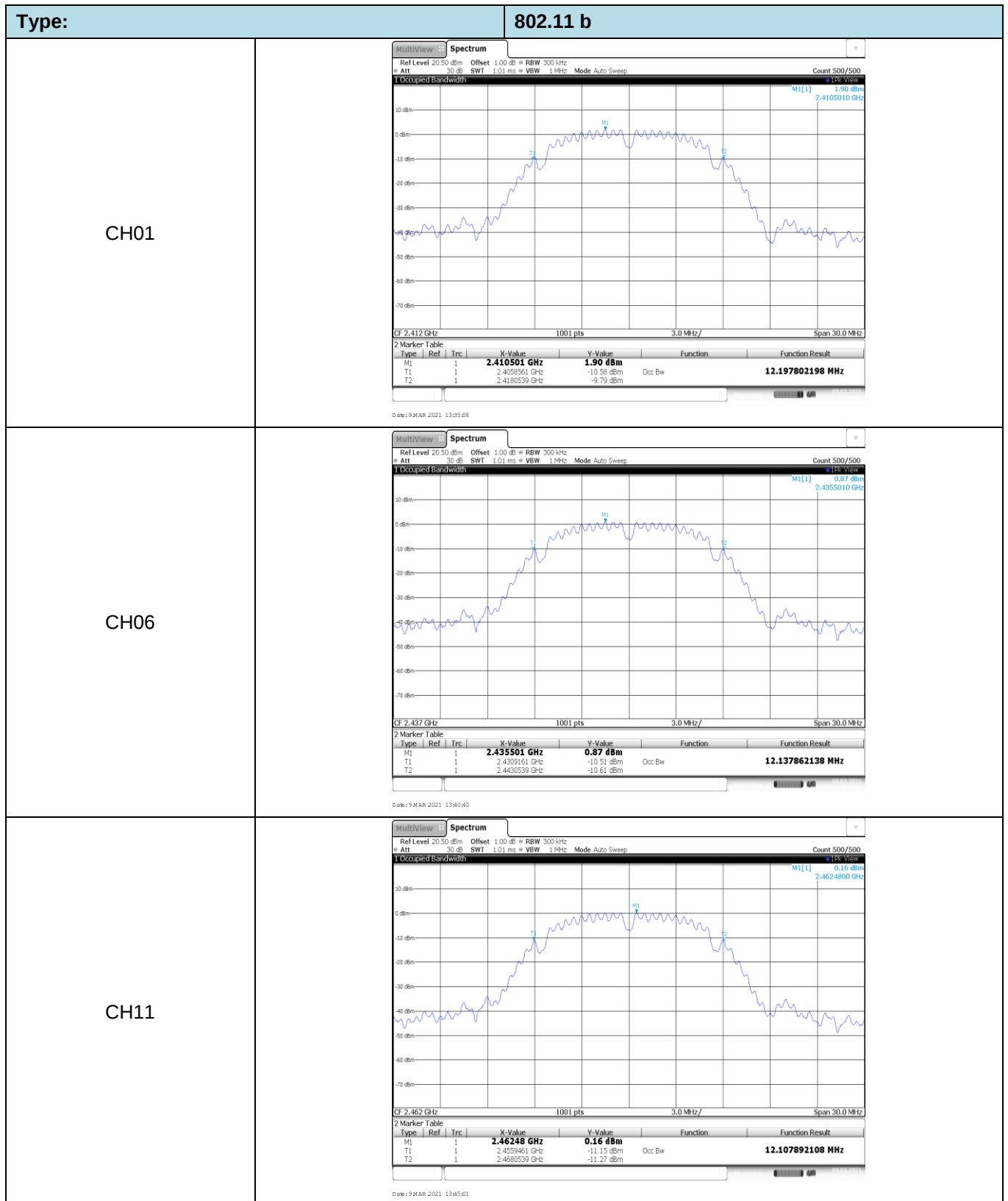


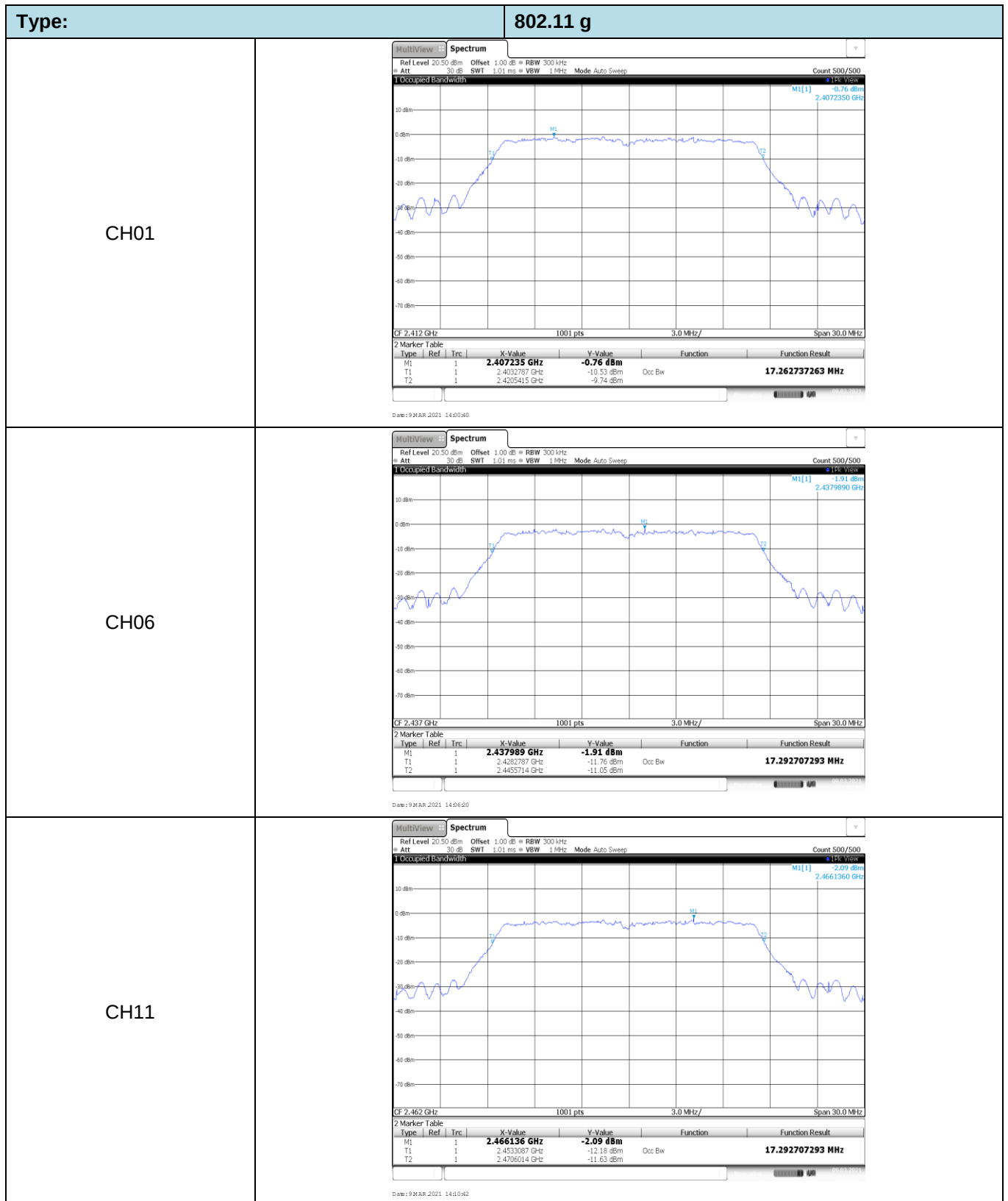


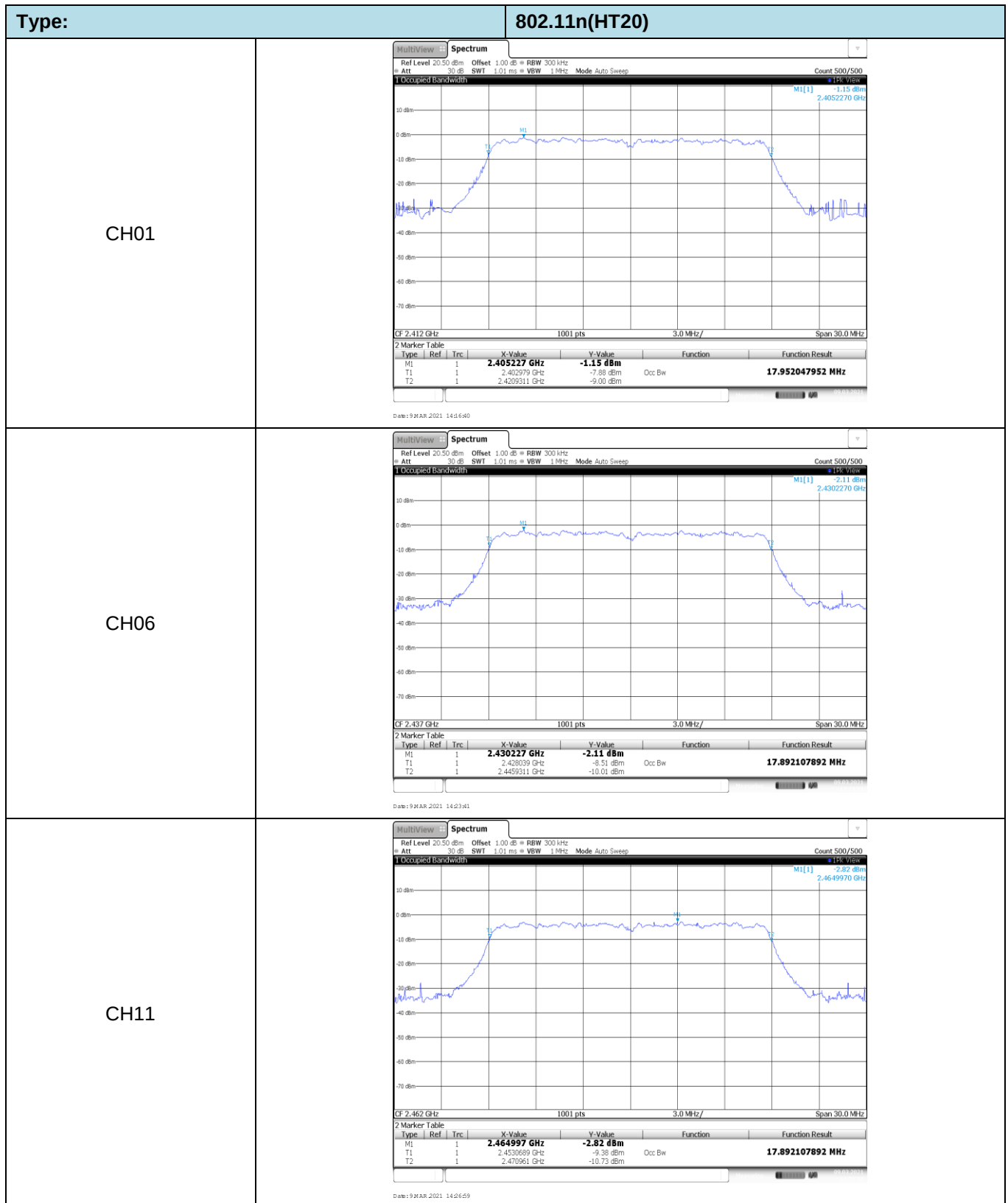


Appendix D: 99% Occupied Bandwidth

Type	Channel	99% Bandwidth (MHz)	Limit (MHz)	Result
802.11b	01	12.20	-	Pass
	06	12.14		
	11	12.11		
802.11g	01	17.26	-	Pass
	06	17.29		
	11	17.29		
802.11n(HT20)	01	17.95	-	Pass
	06	17.89		
	11	17.89		

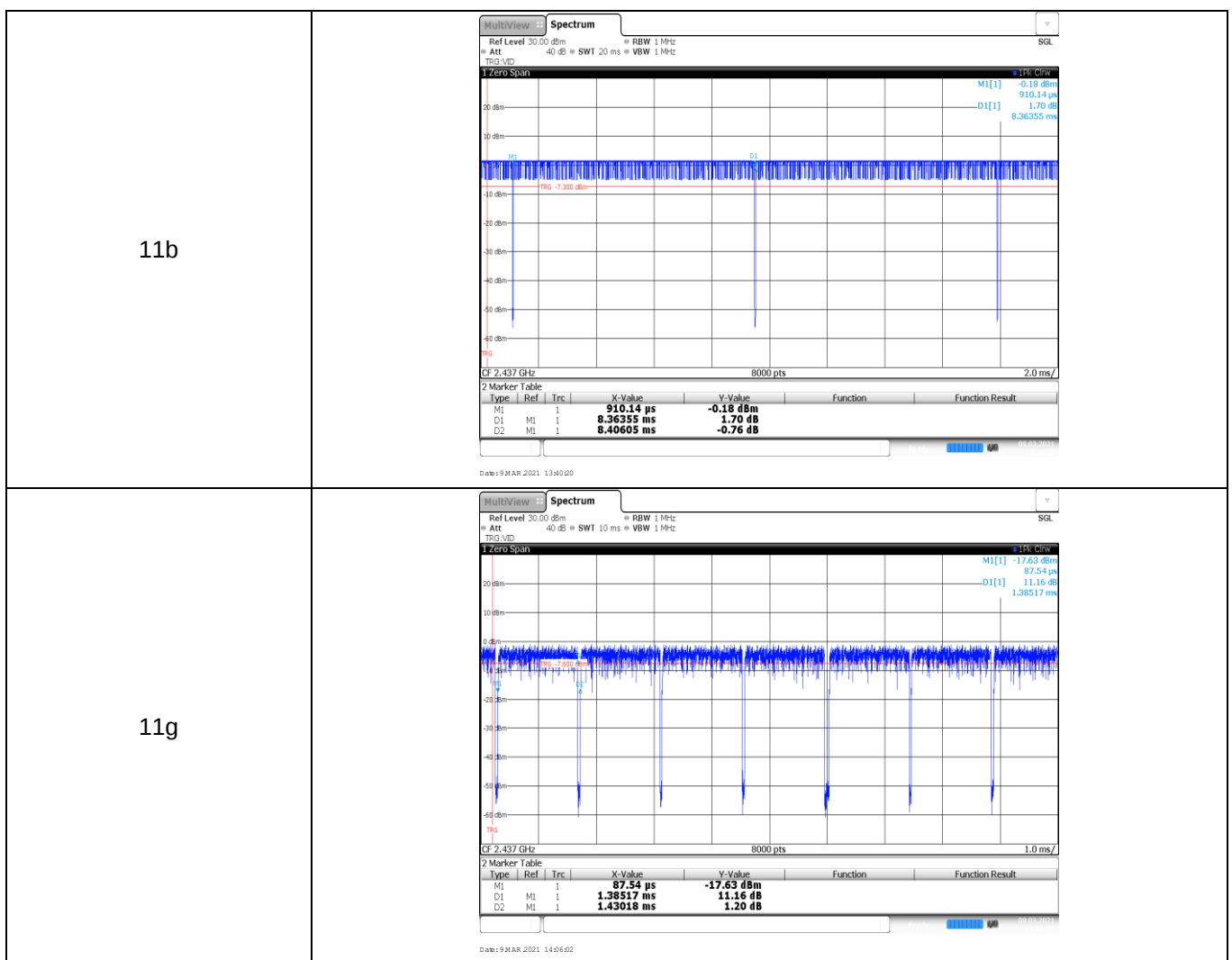


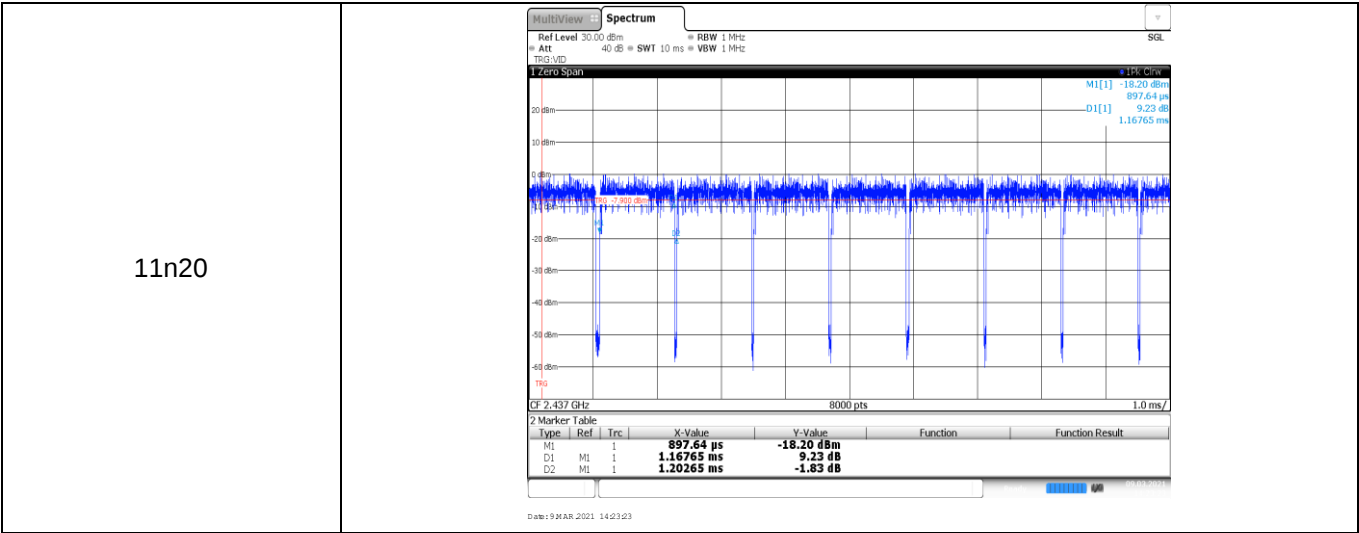




Appendix E: Duty Cycle

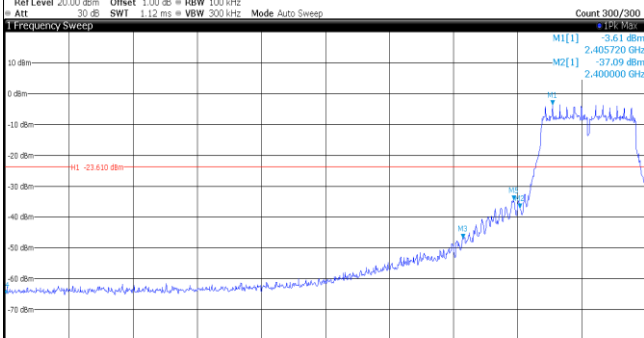
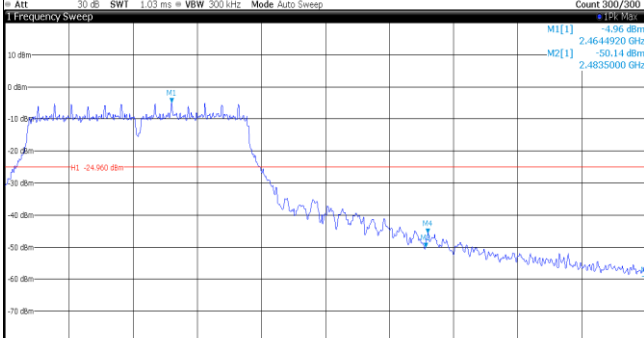
Modulation Type	Test Frequency (MHz)	T _{on time} for single burst (ms)	T _{period} (ms)	Duty cycle	1/T _{on time} (kHz)
11b	2437	8.36	8.41	99.4%	0.1
11g	2437	1.39	1.43	97.2%	0.7
11n20	2437	1.17	1.20	97.5%	0.9

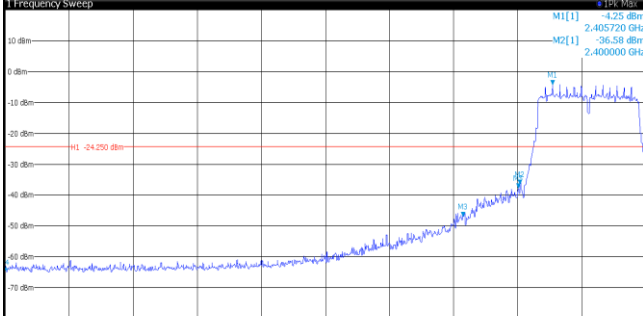
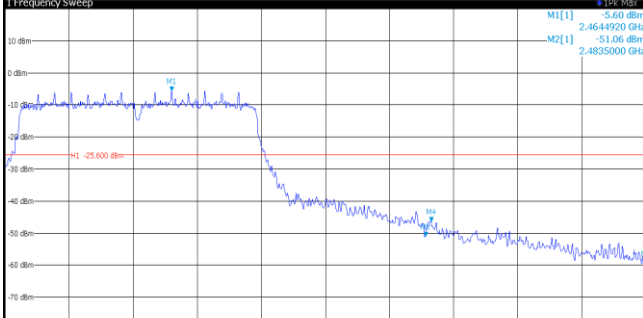




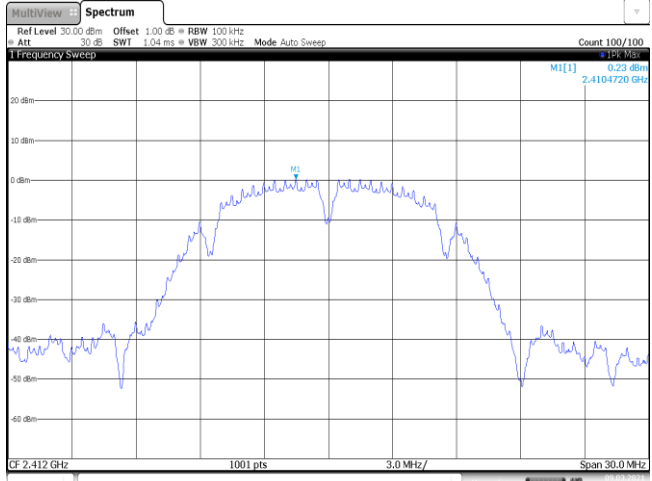
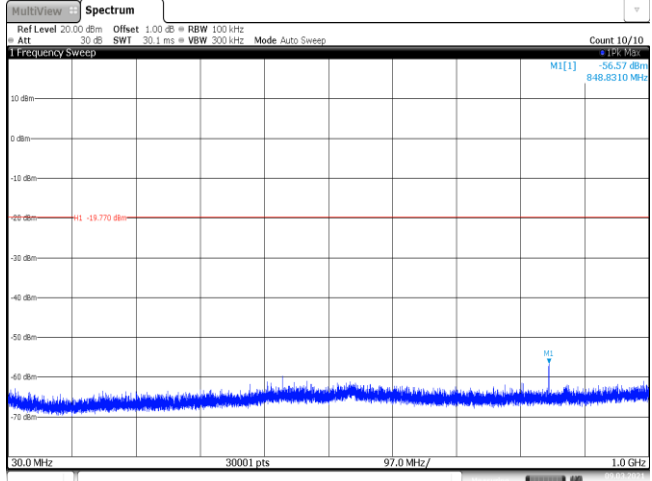
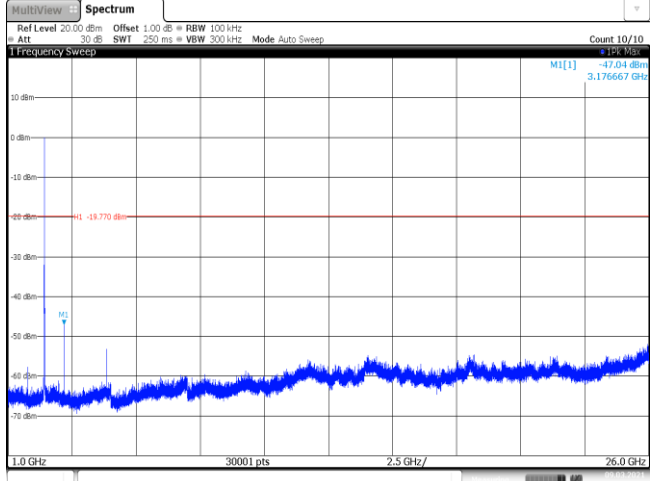
Appendix F: Band edge and Spurious Emissions (conducted)

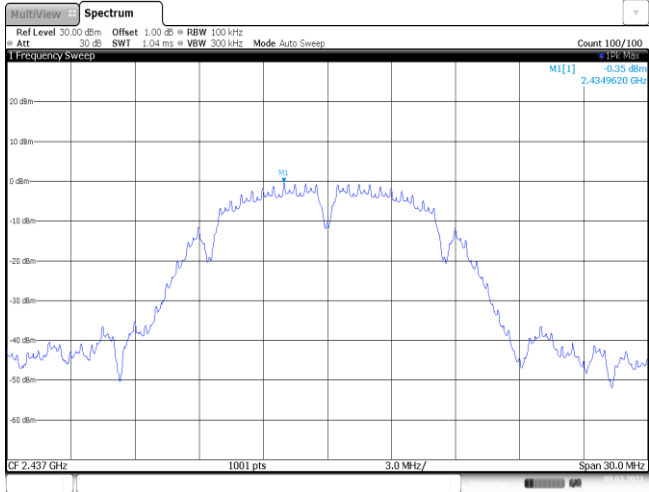
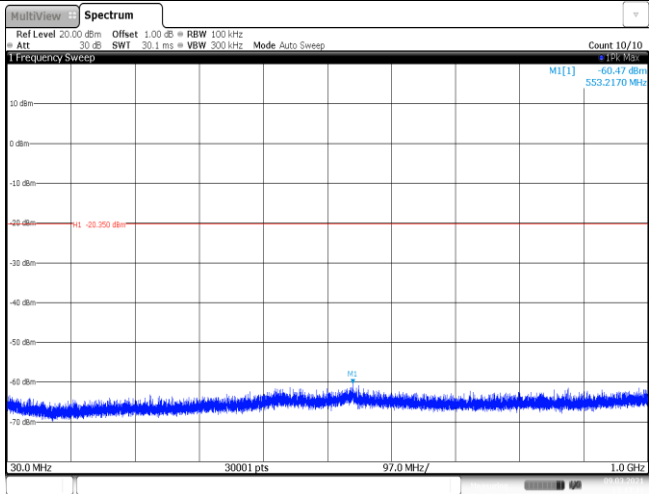
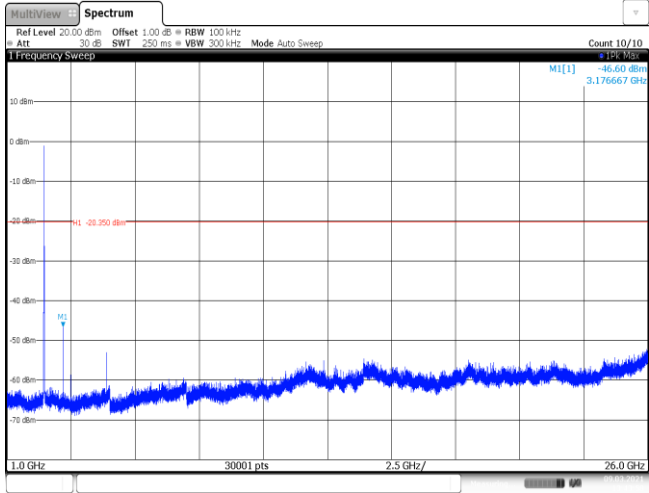
Test Item:	Bandedge	Type:	802.11 b																																										
CH01	MultiView Spectrum Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWT 1.12 ms VBW 300 kHz Mode Auto Sweep Count 300/300 Frequency Sweep 0.152 MHz M1[1] 0.13 dBm M2[1] 2.410420 GHz M2[1] -43.32 dBm M2[1] 2.400000 GHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm 2.31 GHz 1001 pts 11.2 MHz/ 2.422 GHz <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>2.41042 GHz</td><td>0.13 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-43.32 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-56.76 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-63.70 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.398928 GHz</td><td>-38.88 dBm</td><td></td><td></td></tr></table> Date: 9 MAR 2021 13:07:01			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.41042 GHz	0.13 dBm			M2	1		2.4 GHz	-43.32 dBm			M3	1		2.39 GHz	-56.76 dBm			M4	1		2.31 GHz	-63.70 dBm			M5	1		2.398928 GHz	-38.88 dBm		
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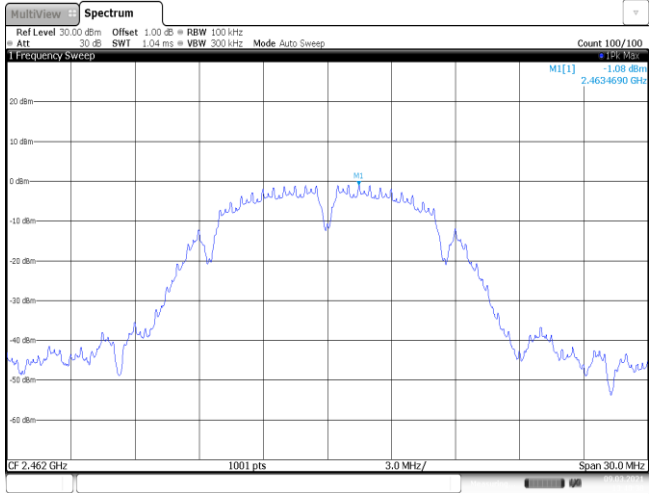
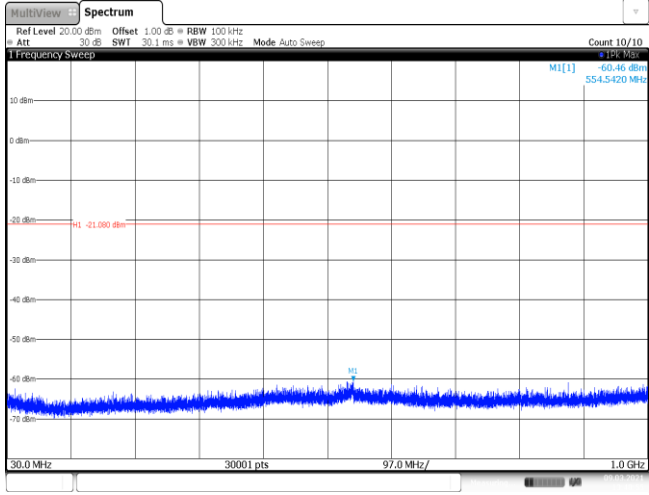
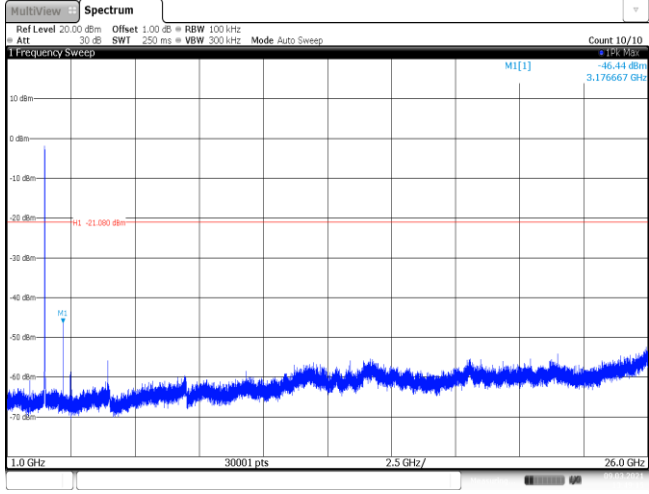
Test Item:	Bandedge	Type:	802.11 g																																										
CH01	MultiViewSpectrum Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWI 1.12 ms VBW 300 kHz Mode Auto Sweep Count 300/300 1 Frequency Sweep  2.31 GHz 1001 pts 11.2 MHz/ 2.422 GHz 2 Marker Table <table><tr><th>Type</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>2.40572 GHz</td><td>-3.61 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-37.09 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-46.93 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-64.13 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.398928 GHz</td><td>-34.42 dBm</td><td></td><td></td></tr></table> Date: 9 MAR 2021 14:04:06			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.40572 GHz	-3.61 dBm			M2	1		2.4 GHz	-37.09 dBm			M3	1		2.39 GHz	-46.93 dBm			M4	1		2.31 GHz	-64.13 dBm			M5	1		2.398928 GHz	-34.42 dBm		
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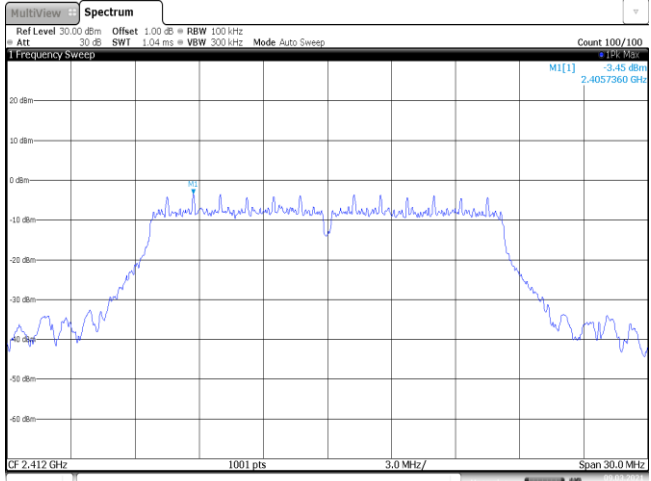
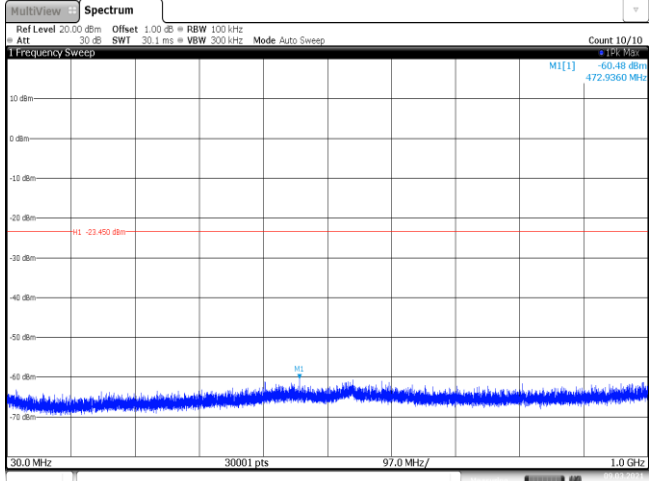
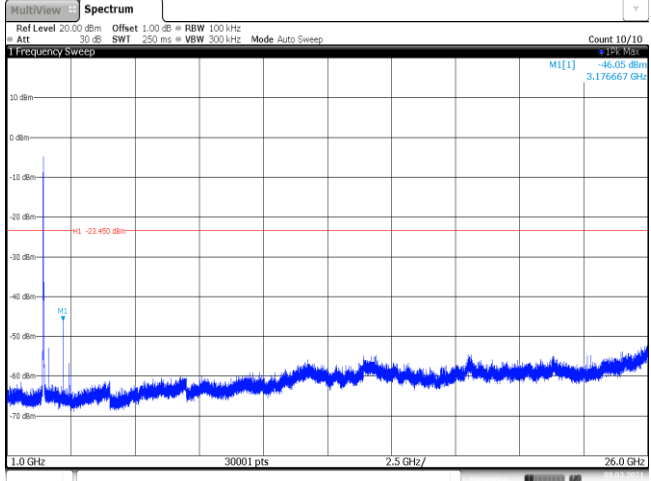
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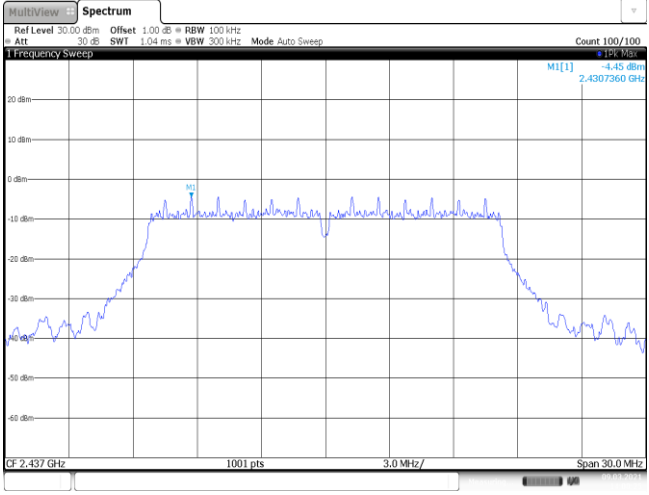
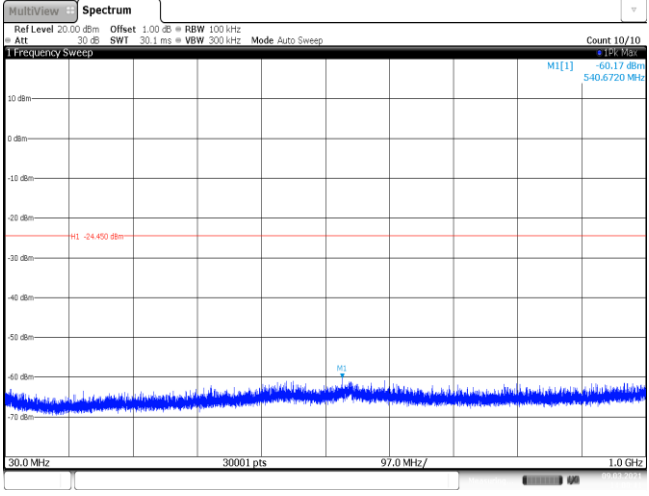
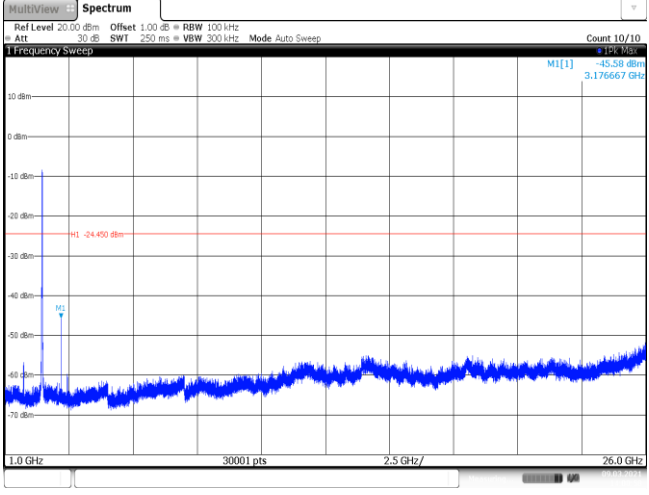
Date: 9 MAR 2021 14:27:22

Test Item:	SE	Type:	802.11 b
CH01 Reference level		 Ref Level 30.00 dBm Offset 1.00 dB BW 100 kHz Att 30 dB SWI 1.04 ms VBW 300 kHz Mode Auto Sweep Count 100/100 M1[1] 0.23 dBm 2.4104720 GHz 20 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm CF 2.412 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 9 MAR 2021 13:37:10	
CH01 30MHz~1000MHz		 Ref Level 20.00 dBm Offset 1.00 dB BW 100 kHz Att 30 dB SWI 30.1 ms VBW 300 kHz Mode Auto Sweep Count 10/10 M1[1] -56.57 dBm 948.8310 MHz 20 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm 30.0 MHz 30001 pts 97.0 MHz/ 1.0 GHz Date: 9 MAR 2021 13:37:26	
CH01 1GHz~26GHz		 Ref Level 20.00 dBm Offset 1.00 dB BW 100 kHz Att 30 dB SWI 250 ms VBW 300 kHz Mode Auto Sweep Count 10/10 M1[1] -47.04 dBm 3.176667 GHz 20 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm 1.0 GHz 30001 pts 2.5 GHz/ 26.0 GHz Date: 9 MAR 2021 13:37:42	

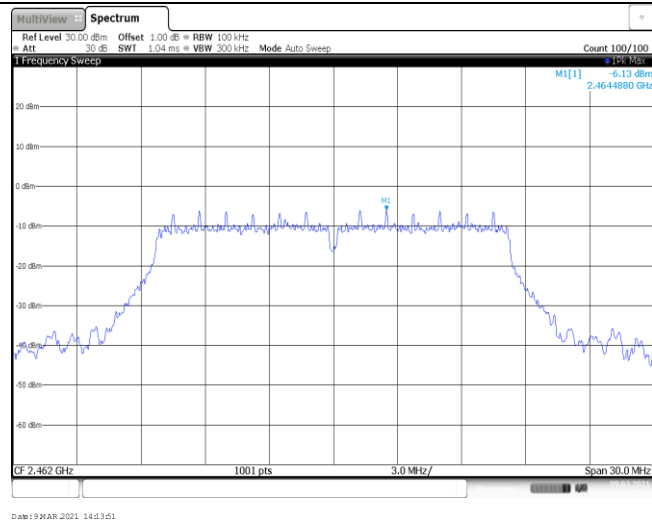
CH06 Reference level	 The spectrum plot shows a frequency sweep from 2.437 GHz to 2.439620 GHz. The y-axis represents power in dBm, ranging from -60 to 20. The plot shows a signal with a peak around 2.438 GHz. The x-axis is labeled with 1001 pts and 3.0 MHz. The bottom status bar indicates a date of 9 MAR 2021 13:43:25.
CH06 30MHz~1000MHz	 The spectrum plot shows a frequency sweep from 30.0 MHz to 1.0 GHz. The y-axis represents power in dBm, ranging from -70 to 10. The plot shows a noisy baseline with a peak around 553.2170 MHz. The x-axis is labeled with 30001 pts and 97.0 MHz. The bottom status bar indicates a date of 9 MAR 2021 13:43:42.
CH06 1GHz~26GHz	 The spectrum plot shows a frequency sweep from 1.0 GHz to 26.0 GHz. The y-axis represents power in dBm, ranging from -70 to 10. The plot shows a noisy baseline with a peak around 3.176667 GHz. The x-axis is labeled with 30001 pts and 2.5 GHz. The bottom status bar indicates a date of 9 MAR 2021 13:43:58.

CH11 Reference level	 Ref Level 30.00 dBm Offset 1.00 dB BW 100 kHz Att 30.0 dB SWF 1.04 ms VBW 300 kHz Mode Auto Sweep Count 100/100 M1[1] -1.08 dBm 2.4634690 GHz Date: 9 MAR 2021 13:48:19
CH11 30MHz~1000MHz	 Ref Level 20.00 dBm Offset 1.00 dB BW 100 kHz Att 30.0 dB SWF 30.1 ms VBW 300 kHz Mode Auto Sweep Count 10/10 M1[1] -60.46 dBm 554.5420 MHz Date: 9 MAR 2021 13:48:55
CH11 1GHz~26GHz	 Ref Level 20.00 dBm Offset 1.00 dB BW 100 kHz Att 30.0 dB SWF 250 ms VBW 300 kHz Mode Auto Sweep Count 10/10 M1[1] -46.44 dBm 3.176667 GHz Date: 9 MAR 2021 13:49:05

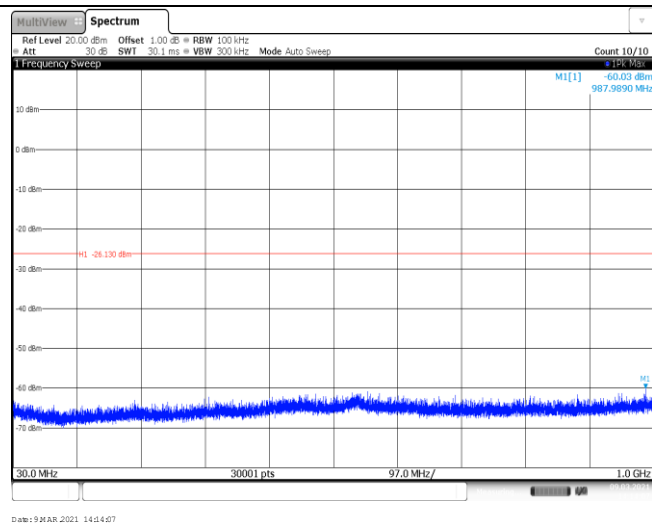
Test Item:	SE	Type:	802.11 g
CH01 Reference level			
CH01 30MHz~1000MHz			
CH01 1GHz~26GHz			

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

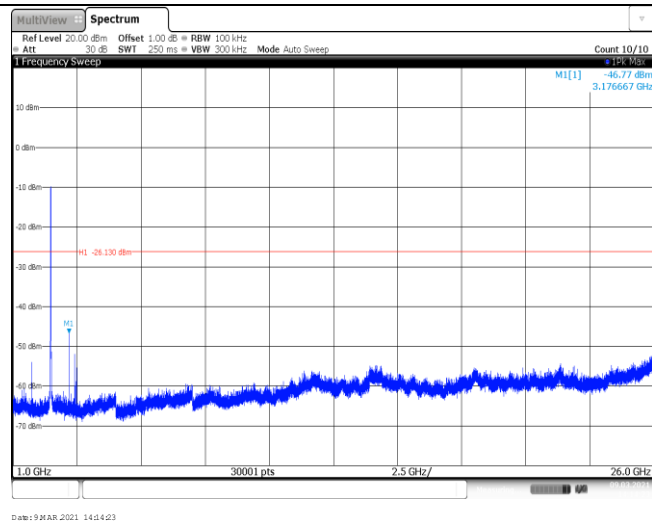
CH11
Reference level

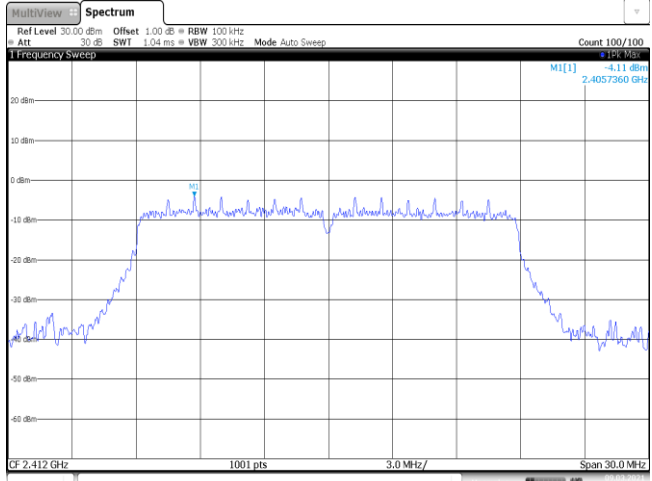
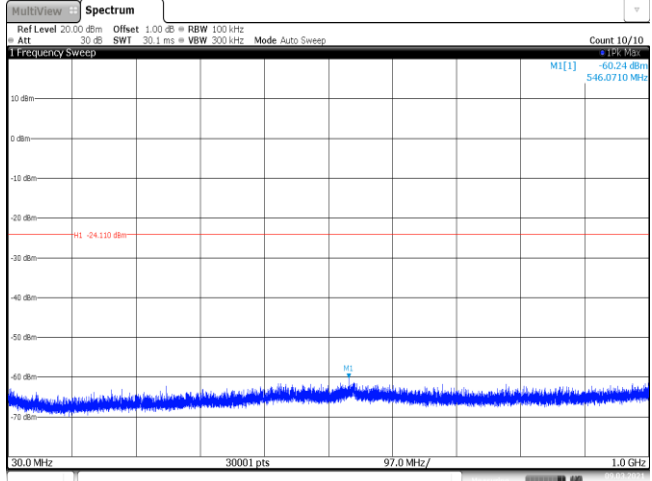
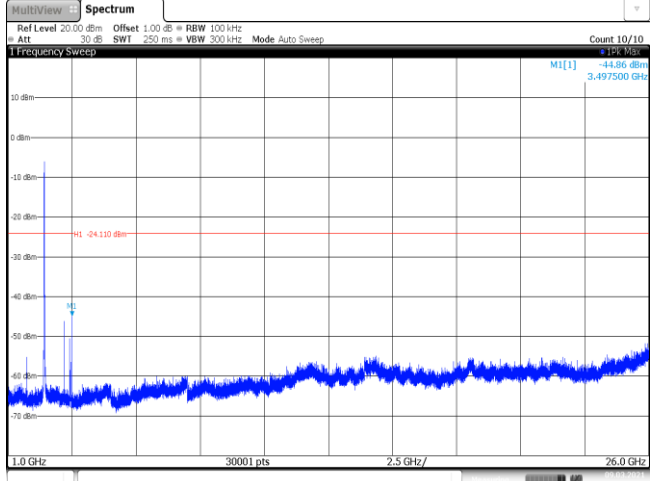


CH11
30MHz~1000MHz

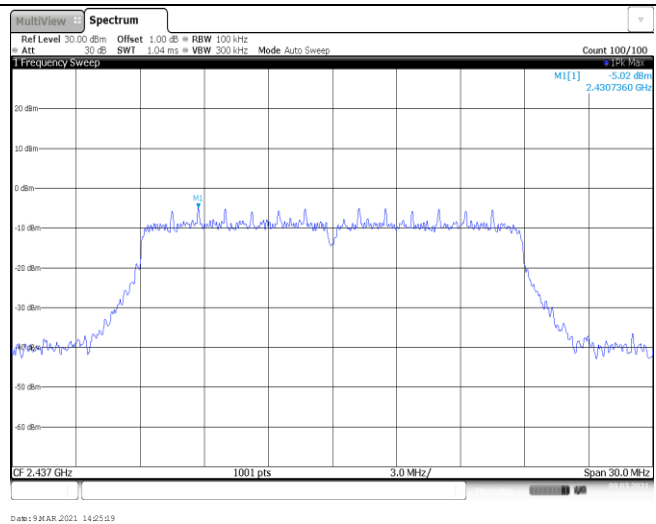


CH11
1GHz~26GHz

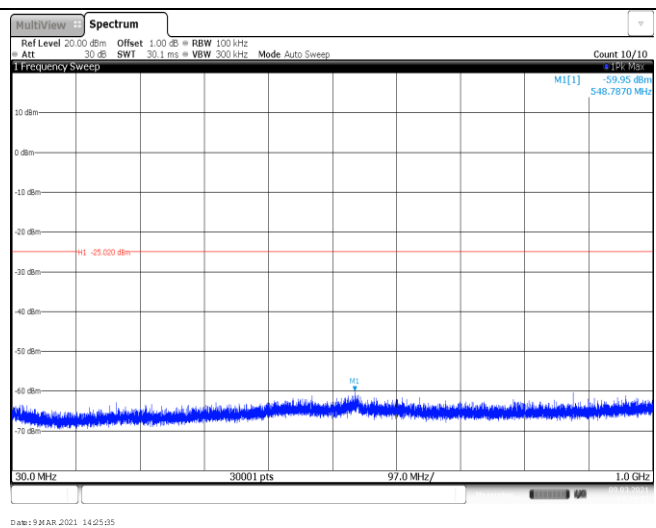


Test Item:	SE	Type:	802.11 n(HT20)
CH01 Reference level		 Count 100/100 M1[1] -4.11 dBm 2.457360 GHz Ref Level 30.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWI 1.04 ms VBW 300 kHz Mode Auto Sweep 2.412 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 9 MAR 2021 14:21:07	
CH01 30MHz~1000MHz		 Count 10/10 M1[1] -60.24 dBm 546.0710 MHz 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 30.0 MHz 30001 pts 97.0 MHz/ 1.0 GHz Date: 9 MAR 2021 14:21:23	
CH01 1GHz~26GHz		 Count 10/10 M1[1] -41.06 dBm 3.497500 GHz Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWI 250 ms VBW 300 kHz Mode Auto Sweep 1.0 GHz 30001 pts 2.5 GHz/ 26.0 GHz Date: 9 MAR 2021 14:21:40	

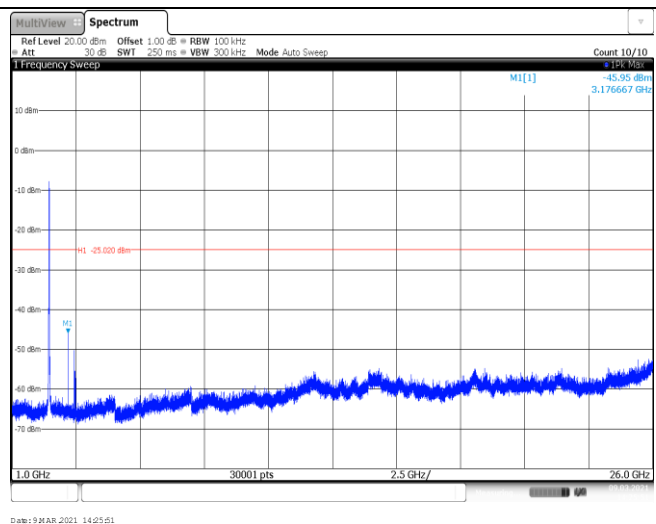
CH06
Reference level



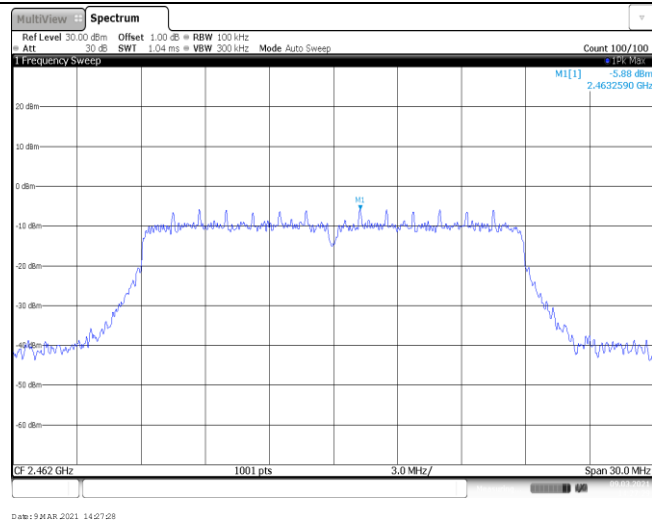
CH06
30MHz~1000MHz



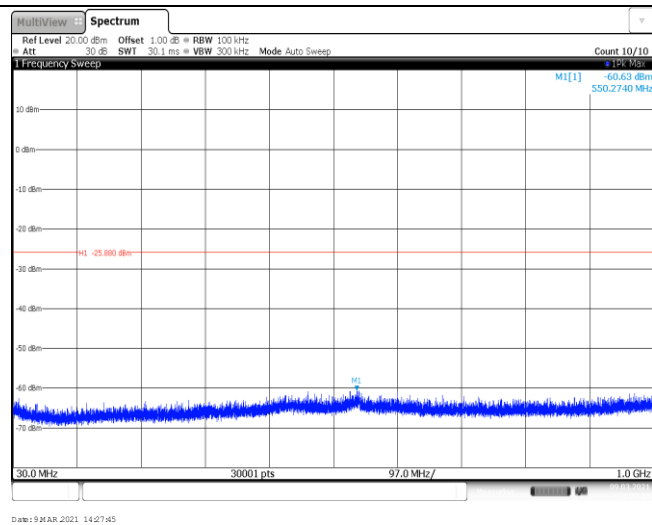
CH06
1GHz~26GHz



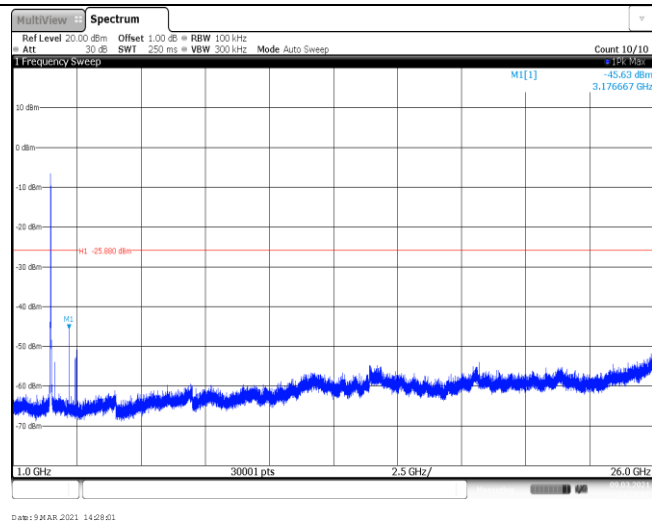
CH11
Reference level



CH11
30MHz~1000MHz



CH11
1GHz~26GHz



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