

APPENDIX REPORT

Project No.	SHT2105073301EW	Radio Specification	WIFI 2.4G
Test sample No.	YPHT21050733005	Model No.	S1
Start test date	2021-05-27	Finish date	2021-05-27
Temperature	26.5°C	Humidity	65%
Test Engineer	Qizhi Zhang	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

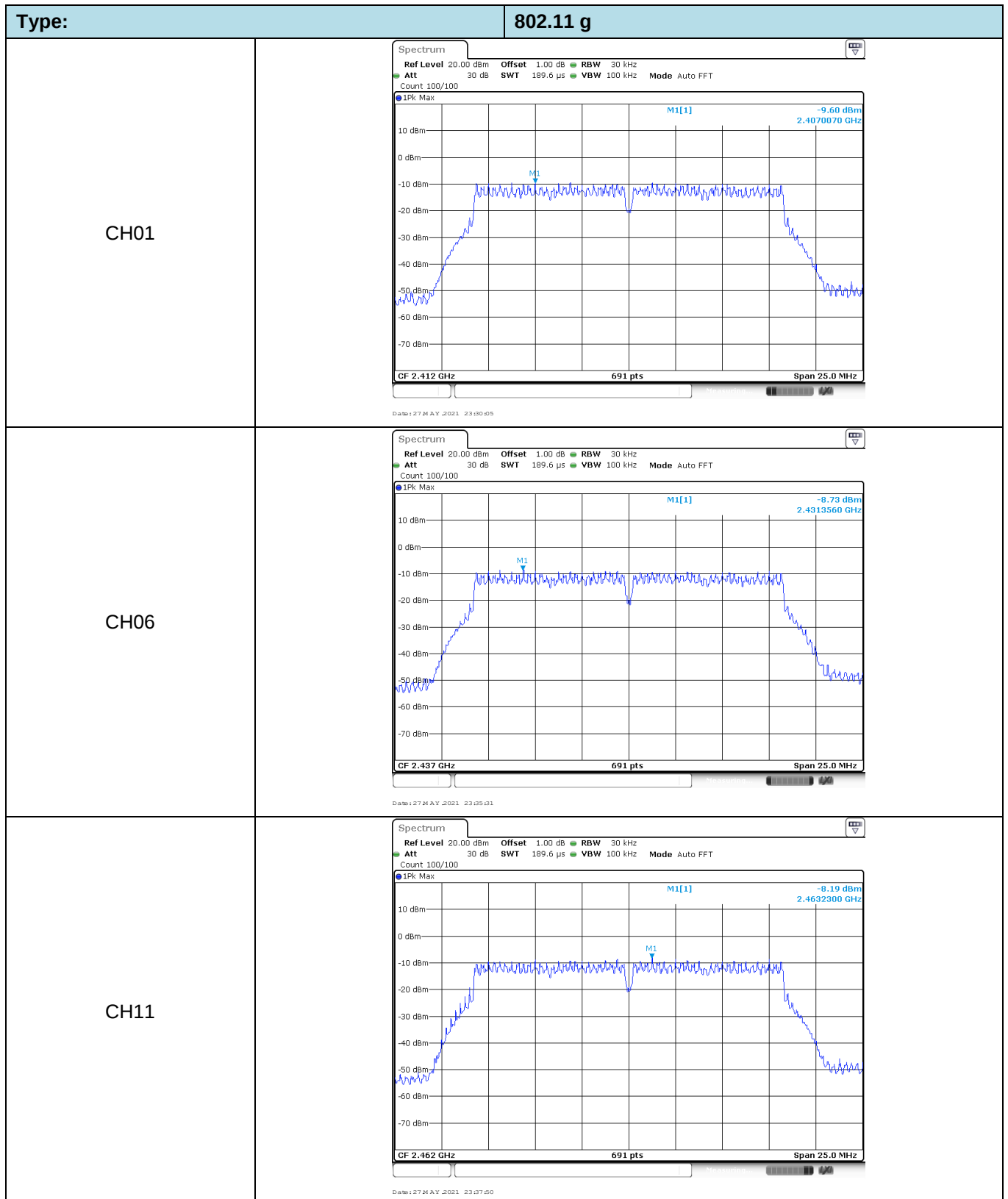
Appendix A: Conducted Peak Output Power

Type	Channel	Peak Output power (dBm)	Average Output power (dBm)	Limit (dBm)	Result
802.11b	01	15.42	13.38	≤ 30.00	Pass
	06	15.80	13.66		
	11	15.98	13.82		
802.11g	01	14.79	11.32	≤ 30.00	Pass
	06	14.97	11.49		
	11	15.40	11.83		
802.11n (HT20)	01	14.77	11.27	≤ 30.00	Pass
	06	14.97	11.55		
	11	15.37	11.79		

Appendix B: Power Spectral Density

Type	Channel	Power Spectral Density (dBm/30KHz)	Limit (dBm/3KHz)	Result
802.11b	01	3.77	≤8.00	Pass
	06	3.97		
	11	4.11		
802.11g	01	-9.60	≤8.00	Pass
	06	-8.73		
	11	-8.19		
802.11n(HT20)	01	-9.20	≤8.00	Pass
	06	-9.05		
	11	-8.73		

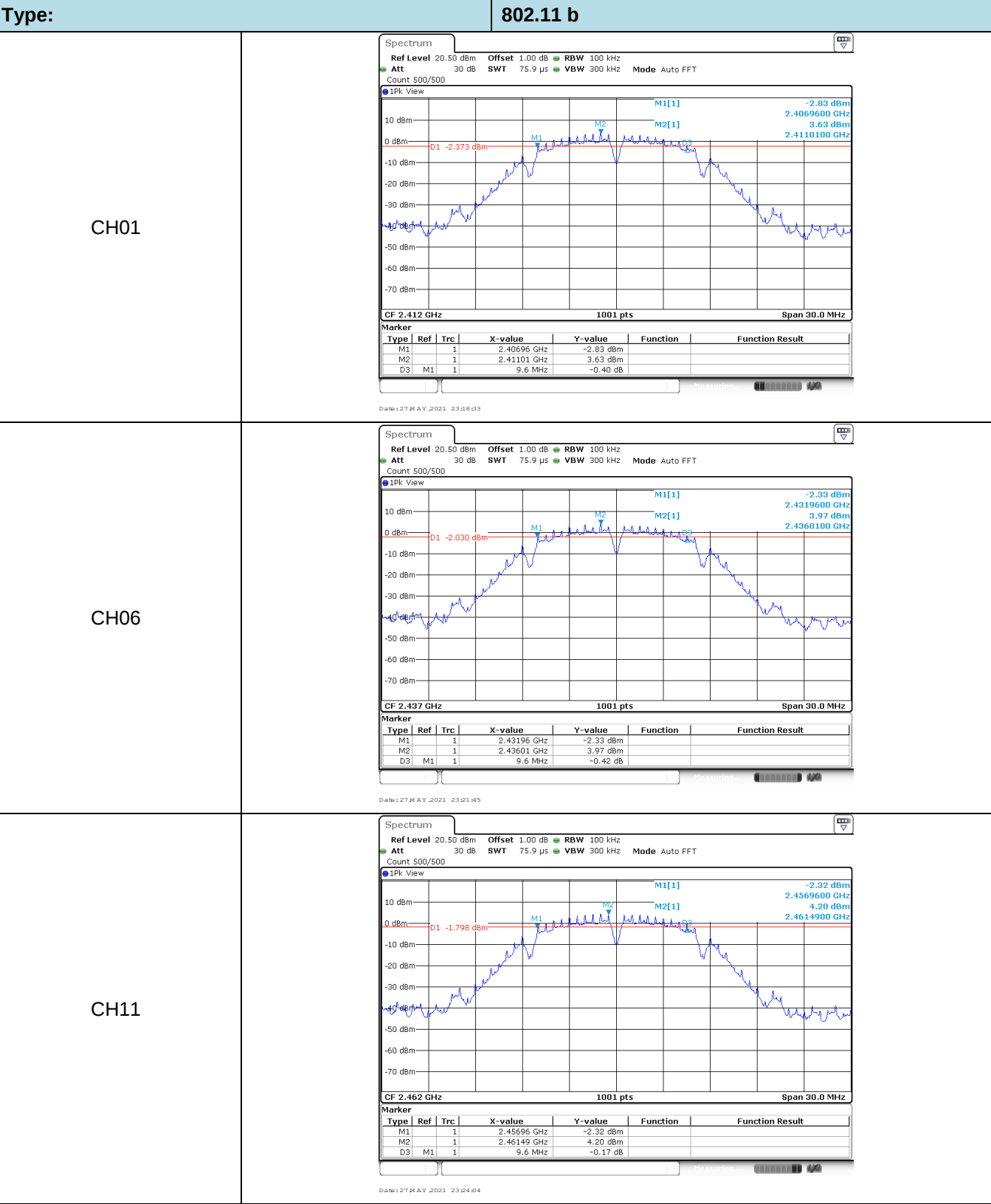
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CH01	Spectrum Ref Level 20.00 dBm Att 30 dB Count 100/100 Offset 1.00 dB SWT 126.4 μs RBW 30 kHz VBW 100 kHz Mode Auto FFT IPk Max 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1 M1[1] 3.77 dBm 2.4110040 GHz CF 2.412 GHz 691 pts Span 16.0 MHz Date: 27 MAY 2021 23:20:04	
CH06	Spectrum Ref Level 20.00 dBm Att 30 dB Count 100/100 Offset 1.00 dB SWT 126.4 μs RBW 30 kHz VBW 100 kHz Mode Auto FFT IPk Max 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1 M1[1] 3.97 dBm 2.4360040 GHz CF 2.437 GHz 691 pts Span 16.0 MHz Date: 27 MAY 2021 23:22:39	
CH11	Spectrum Ref Level 20.00 dBm Att 30 dB Count 100/100 Offset 1.00 dB SWT 126.4 μs RBW 30 kHz VBW 100 kHz Mode Auto FFT IPk Max 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1 M1[1] 4.11 dBm 2.4610040 GHz CF 2.462 GHz 691 pts Span 16.0 MHz Date: 27 MAY 2021 23:24:54	

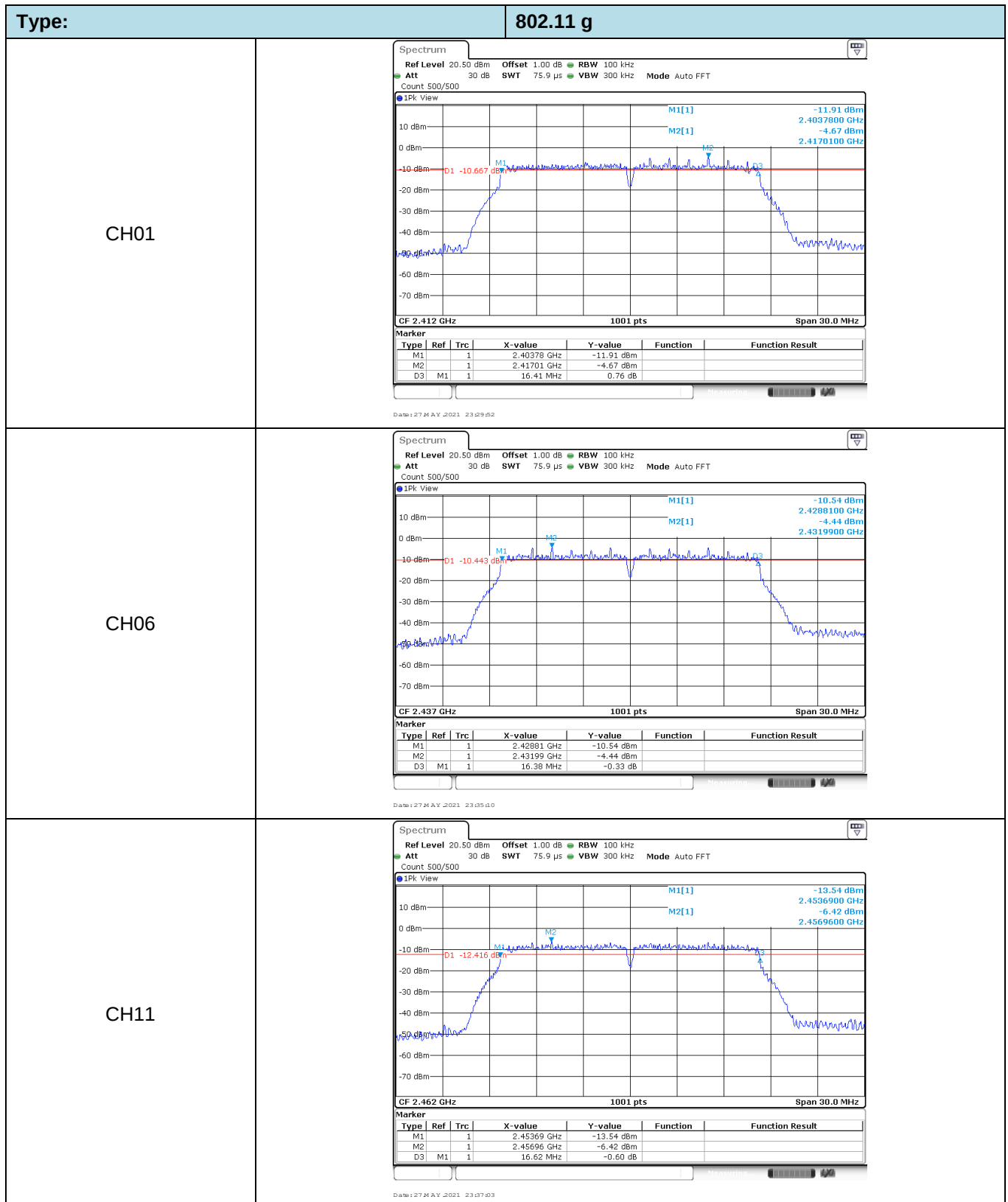


Appendix report page: 6 of 28

Appendix C: 6dB bandwidth

Type	Channel	6dB Bandwidth (MHz)	Limit (MHz)	Result
802.11b	01	9.60	≥0.5	Pass
	06	9.60		
	11	9.60		
802.11g	01	16.41	≥0.5	Pass
	06	16.38		
	11	16.62		
802.11n(HT20)	01	17.64	≥0.5	Pass
	06	17.64		
	11	17.67		

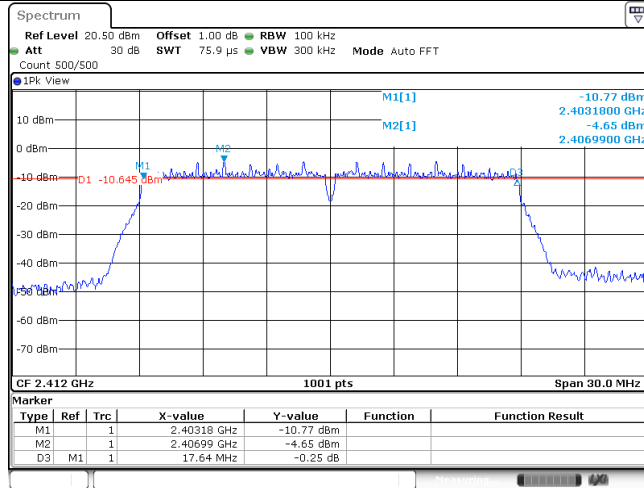




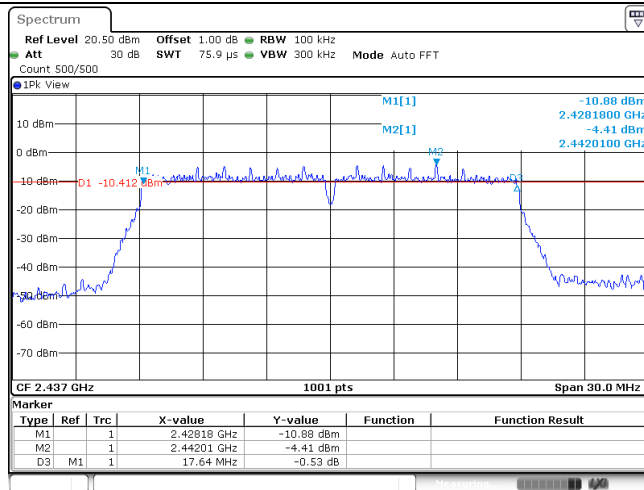
Type:

802.11n(HT20)

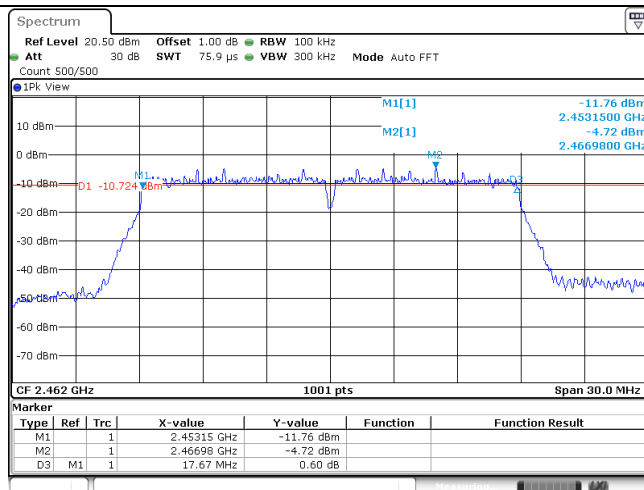
CH01



CH06

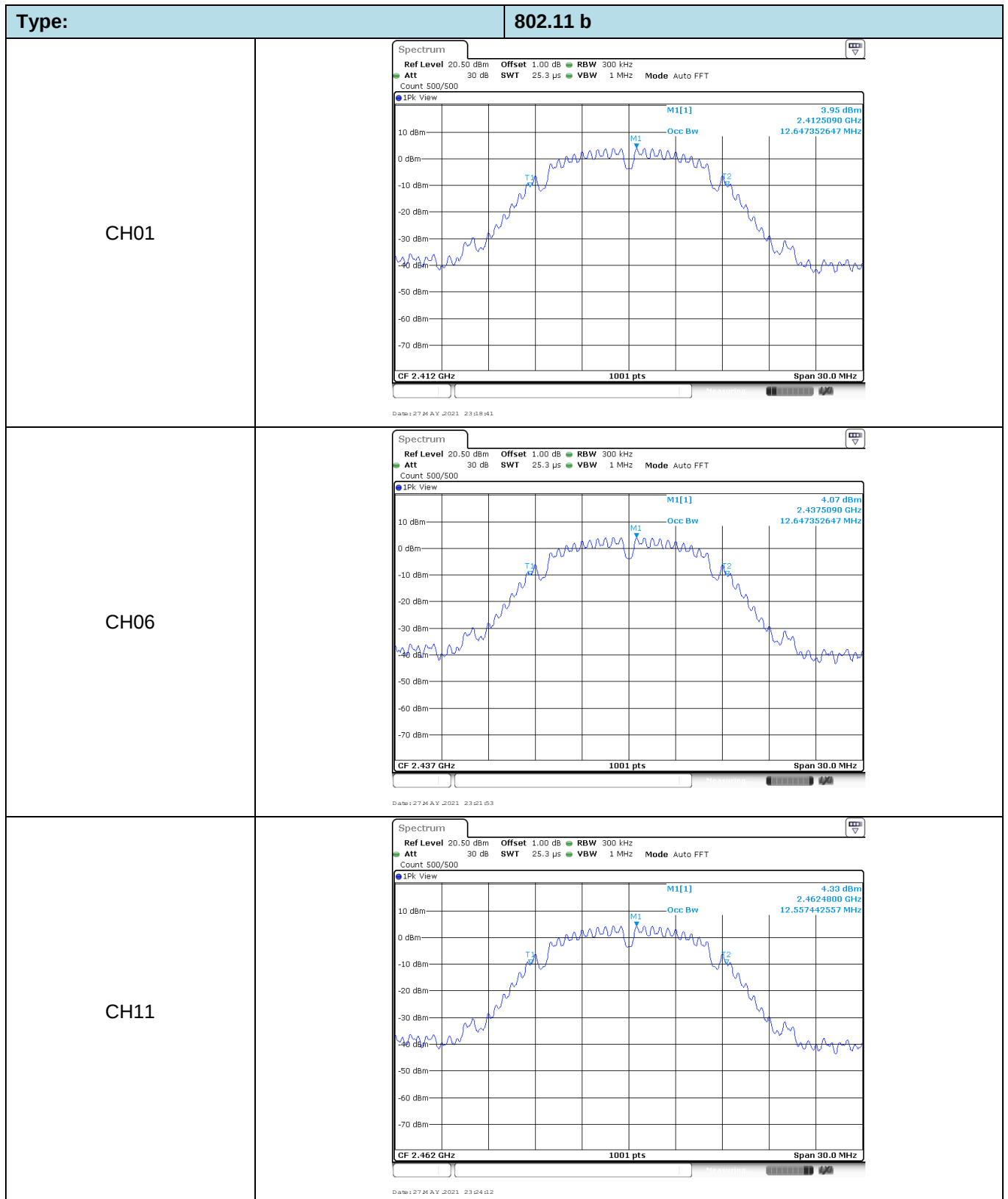


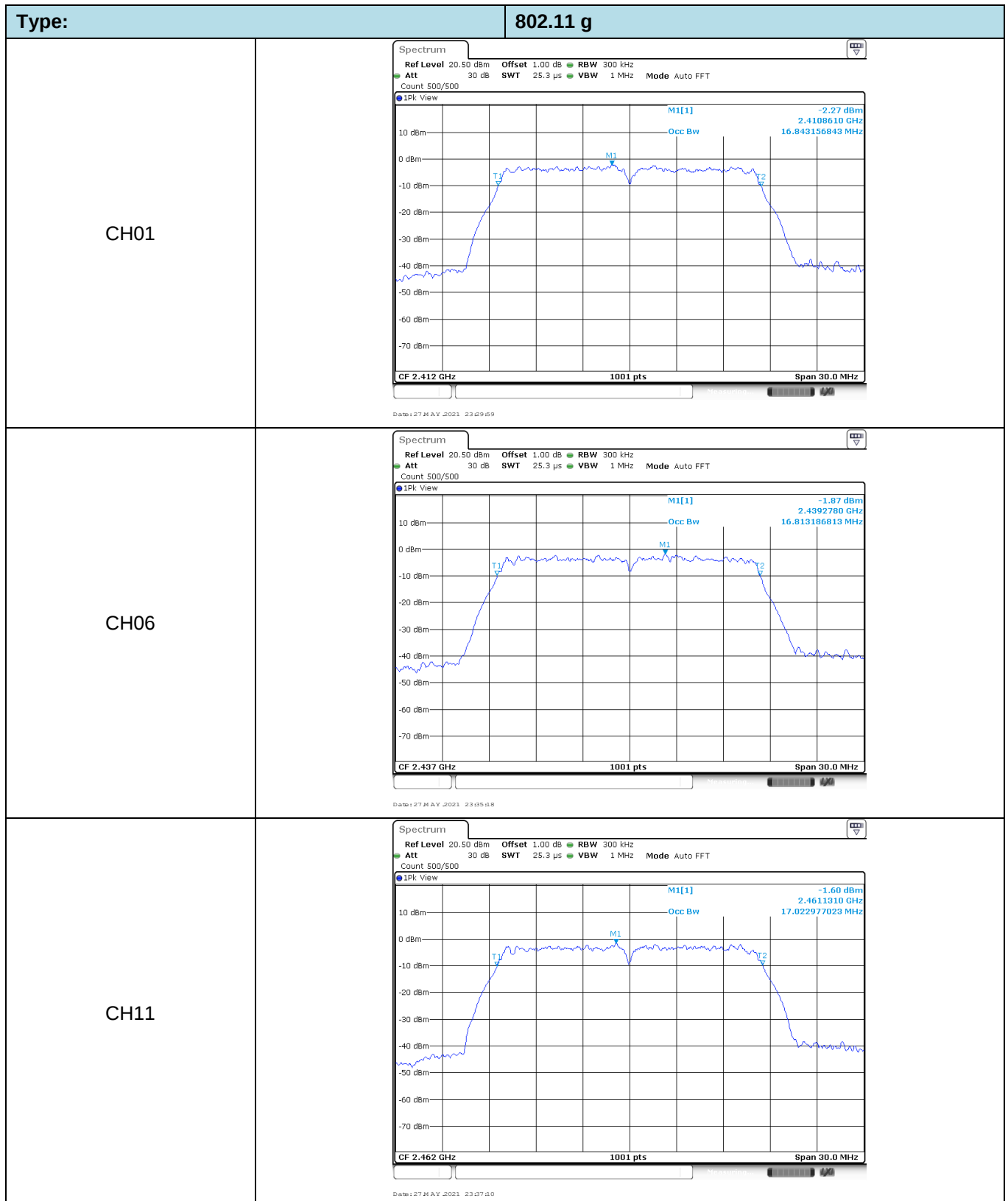
CH11

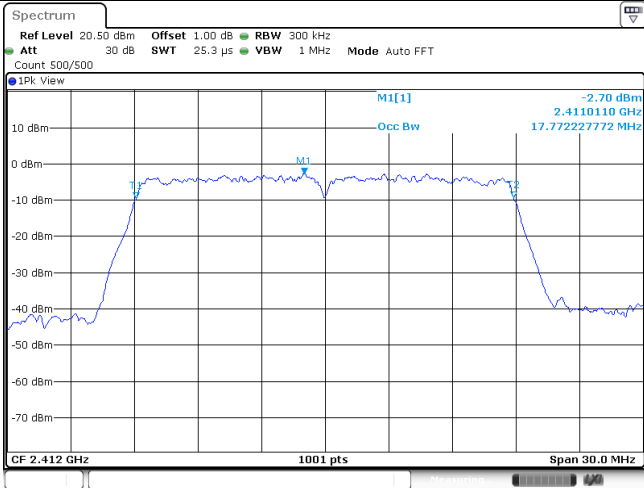
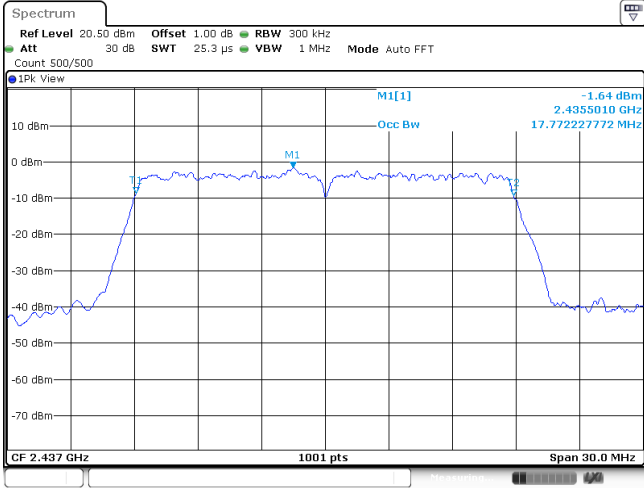
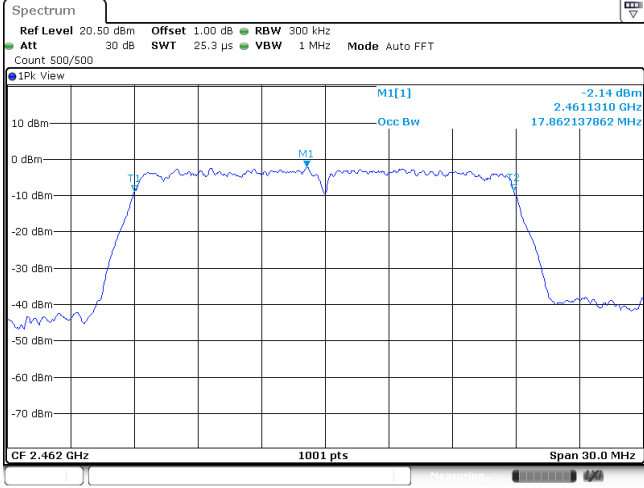


Appendix D: 99% Occupied Bandwidth

Type	Channel	99% Bandwidth (MHz)	Limit (MHz)	Result
802.11b	01	12.65	-	Pass
	06	12.65		
	11	12.56		
802.11g	01	16.84	-	Pass
	06	16.81		
	11	17.02		
802.11n(HT20)	01	17.77	-	Pass
	06	17.77		
	11	17.86		

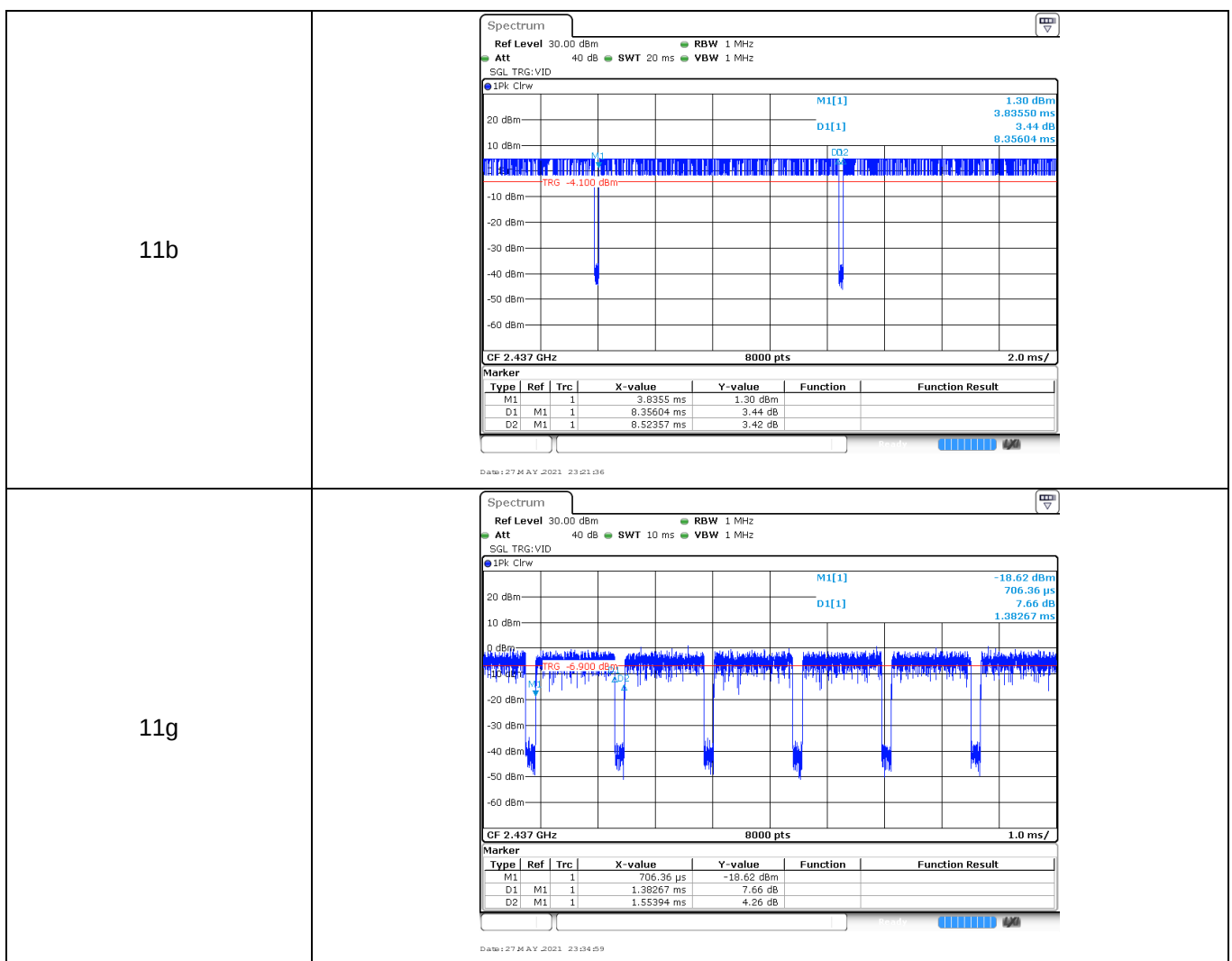


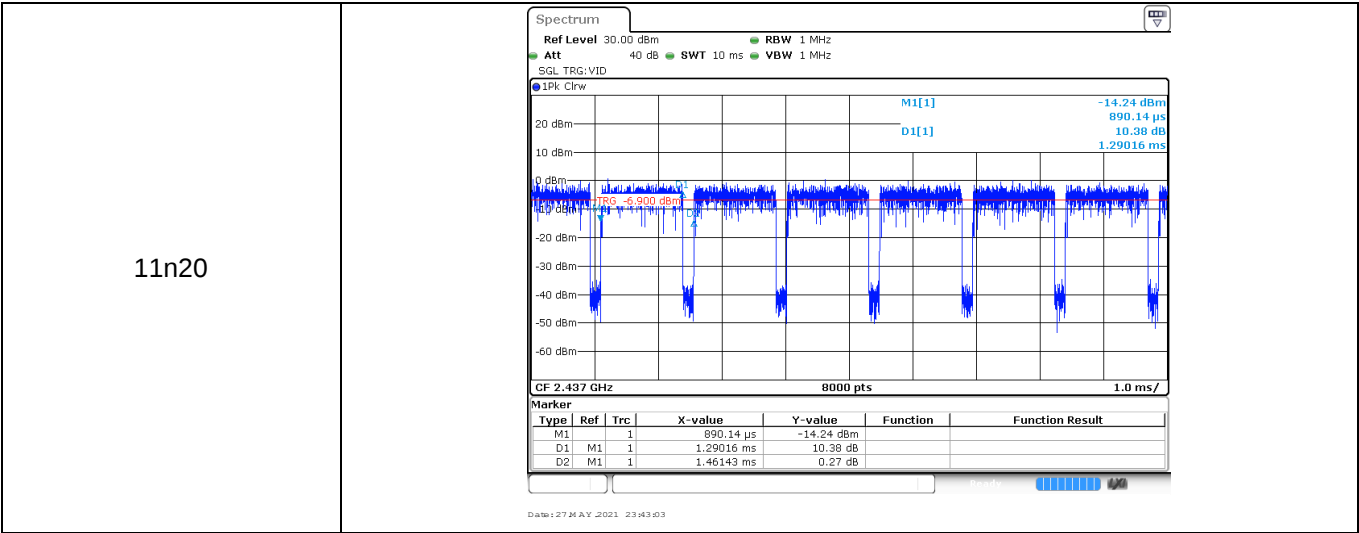


Type:		802.11n(HT20)
CH01		
CH06		
CH11		

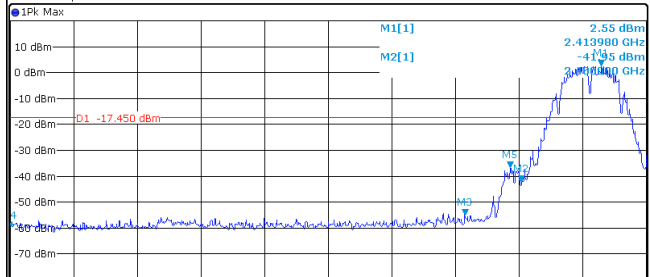
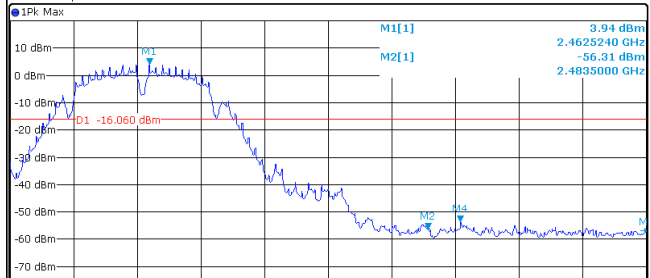
Appendix E: Duty Cycle

Modulation Type	Test Frequency (MHz)	T _{on time} for single burst (ms)	T _{period} (ms)	Duty cycle	1/T _{on time} (kHz)
11b	2437	8.36	8.52	98.1%	0.1
11g	2437	1.38	1.55	89.0%	0.7
11n20	2437	1.29	1.46	88.4%	0.8



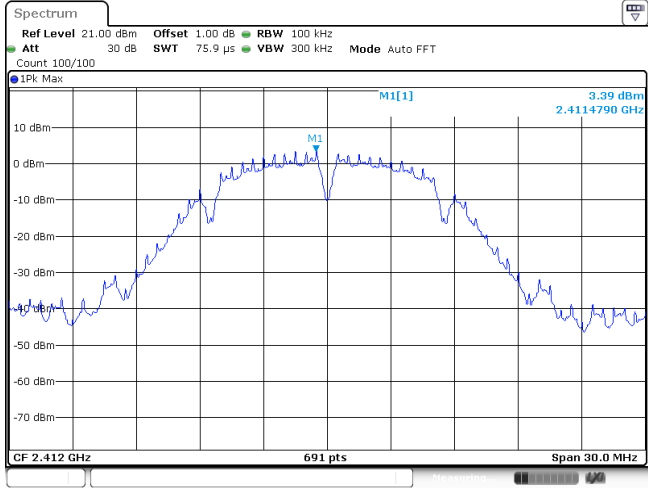
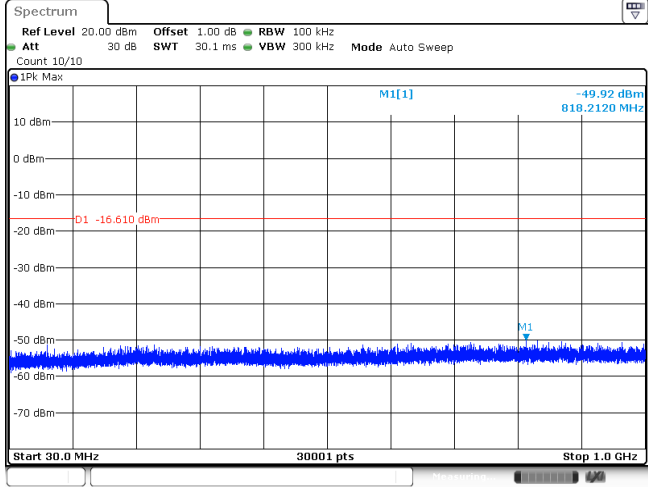
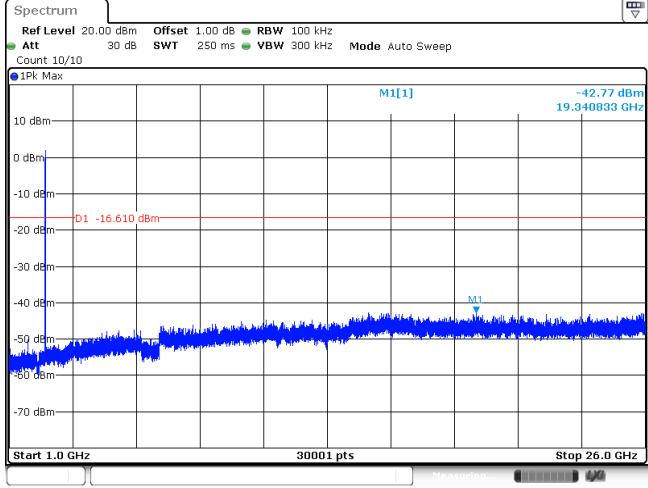


Appendix F: Band edge and Spurious Emissions (conducted)

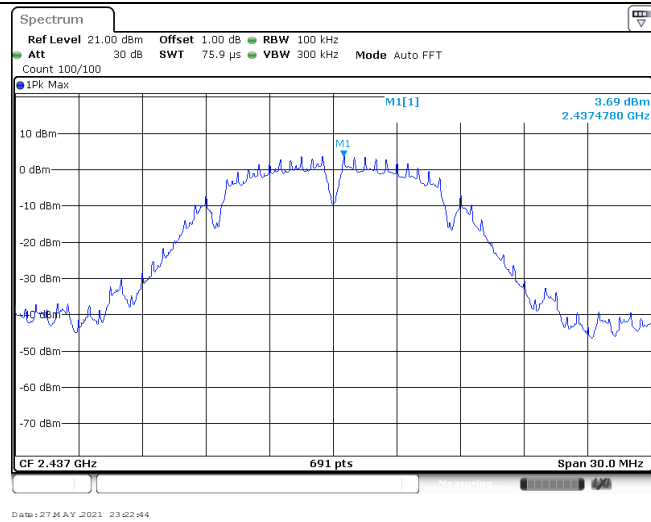
Test Item:	Bandedge	Type:	802.11 b																																																
CH01	Spectrum Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWT 246.5 μs VBW 300 kHz Mode Auto FFT Count 300/300 1Pk Max  Start 2.31 GHz 691 pts Stop 2.422 GHz <table><tr><th>Marker</th><th>Type</th><th>Ref</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></td><td>2.41398 GHz</td><td>2.55 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td></td><td>2.4 GHz</td><td>-41.95 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td></td><td>2.39 GHz</td><td>-55.12 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td></td><td>2.31 GHz</td><td>-58.64 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td></td><td>2.397977 GHz</td><td>-36.71 dBm</td><td></td><td></td></tr></table> Date: 127 MAY 2021 23:18:56			Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1			2.41398 GHz	2.55 dBm			M2	1			2.4 GHz	-41.95 dBm			M3	1			2.39 GHz	-55.12 dBm			M4	1			2.31 GHz	-58.64 dBm			M5	1			2.397977 GHz	-36.71 dBm		
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M3	1			2.5 GHz	-56.96 dBm																																														
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Test Item:	Bandedge	Type:	802.11 g																																										
CH01	Spectrum Ref Level 20.00 dBm Att 30 dB Offset 1.00 dB RBW 100 kHz SWT 246.5 μs VBW 300 kHz Mode Auto FFT Count 300/300 1Pk Max 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] M2[1] M1 M2 -5.51 dBm 2.404410 GHz -46.70 dBm 2.400000 GHz D1 -25.510 dBm Start 2.31 GHz 691 pts Stop 2.422 GHz Marker <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>2.40441 GHz</td><td>-5.51 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-46.70 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-54.61 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-58.72 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.399762 GHz</td><td>-46.93 dBm</td><td></td><td></td></tr></table> Date: 27 MAY 2021 23:30:14			Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		2.40441 GHz	-5.51 dBm			M2	1		2.4 GHz	-46.70 dBm			M3	1		2.39 GHz	-54.61 dBm			M4	1		2.31 GHz	-58.72 dBm			M5	1		2.399762 GHz	-46.93 dBm		
Type	Ref	Trc	X-value	Y-value	Function	Function Result																																							
M1	1		2.40441 GHz	-5.51 dBm																																									
M2	1		2.4 GHz	-46.70 dBm																																									
M3	1		2.39 GHz	-54.61 dBm																																									
M4	1		2.31 GHz	-58.72 dBm																																									
M5	1		2.399762 GHz	-46.93 dBm																																									
CH11	Spectrum Ref Level 20.00 dBm Att 30 dB Offset 1.00 dB RBW 100 kHz SWT 113.8 μs VBW 300 kHz Mode Auto FFT Count 300/300 1Pk Max 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] M2[1] -4.23 dBm 2.4669700 GHz -50.74 dBm 2.4835000 GHz D1 -24.230 dBm Start 2.452 GHz 691 pts Stop 2.5 GHz Marker <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>2.46697 GHz</td><td>-4.23 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4835 GHz</td><td>-50.74 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.5 GHz</td><td>-56.41 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.4836522 GHz</td><td>-49.31 dBm</td><td></td><td></td></tr></table> Date: 27 MAY 2021 23:37:59			Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		2.46697 GHz	-4.23 dBm			M2	1		2.4835 GHz	-50.74 dBm			M3	1		2.5 GHz	-56.41 dBm			M4	1		2.4836522 GHz	-49.31 dBm									
Type	Ref	Trc	X-value	Y-value	Function	Function Result																																							
M1	1		2.46697 GHz	-4.23 dBm																																									
M2	1		2.4835 GHz	-50.74 dBm																																									
M3	1		2.5 GHz	-56.41 dBm																																									
M4	1		2.4836522 GHz	-49.31 dBm																																									

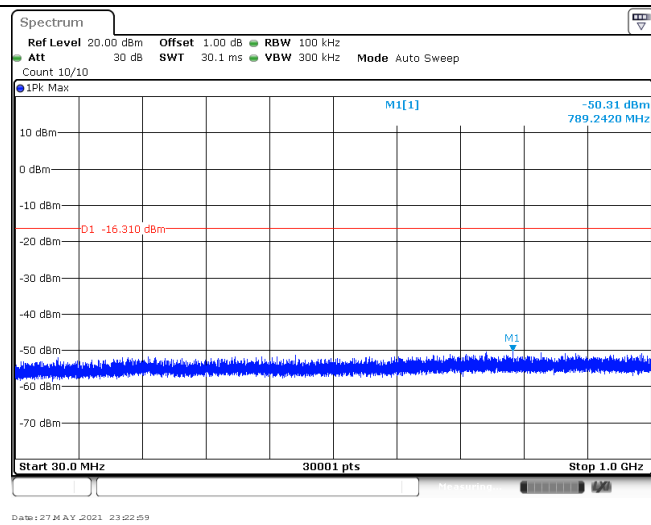
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Type	Ref	Trc	X-value	Y-value	Function	Function Result																																							
M1	1		2.41446 GHz	-4.79 dBm																																									
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Type	Ref	Trc	X-value	Y-value	Function	Function Result																																							
M1	1		2.456967 GHz	-4.10 dBm																																									
M2	1		2.4835 GHz	-48.69 dBm																																									
M3	1		2.5 GHz	-57.38 dBm																																									
M4	1		2.4842783 GHz	-48.42 dBm																																									

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

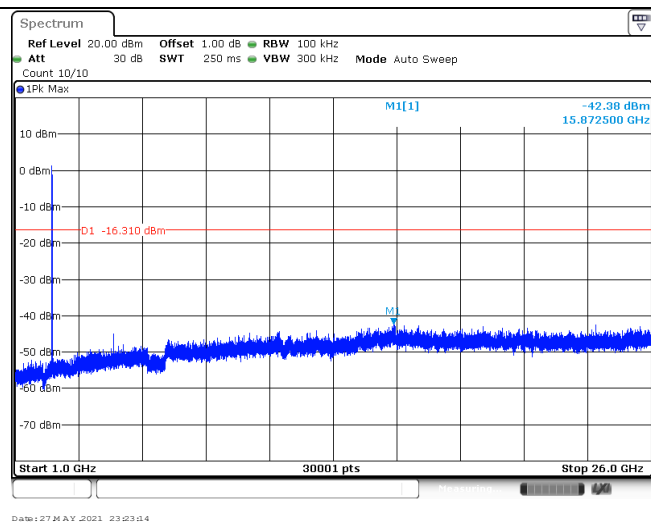
CH06
Reference level

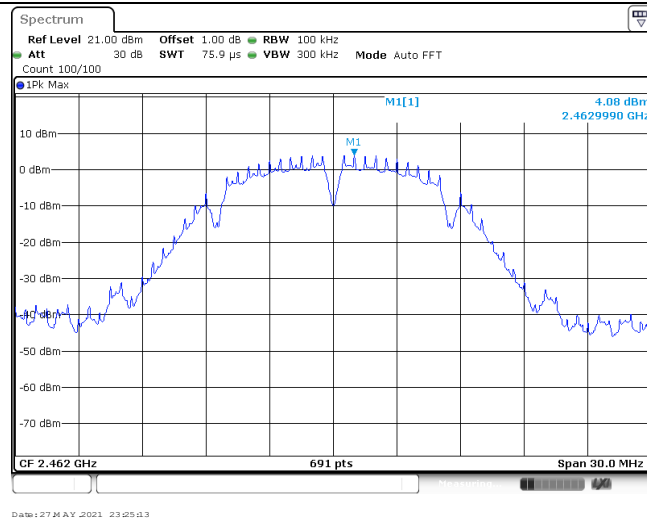
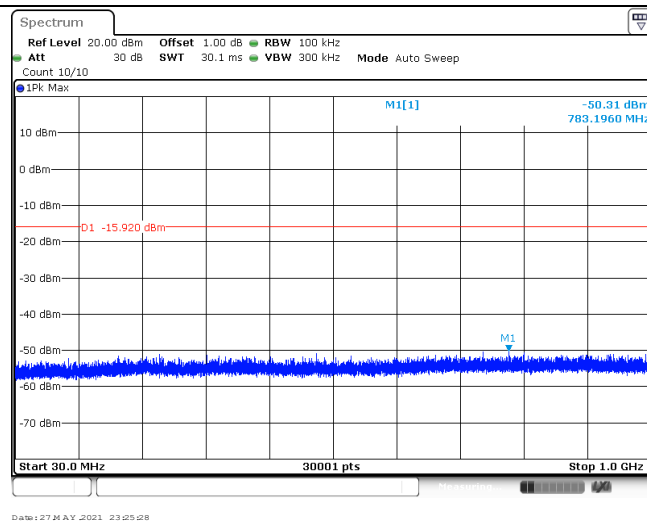
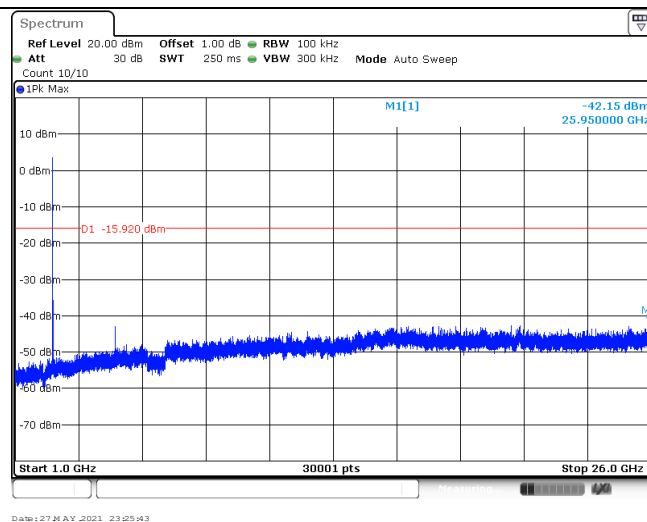


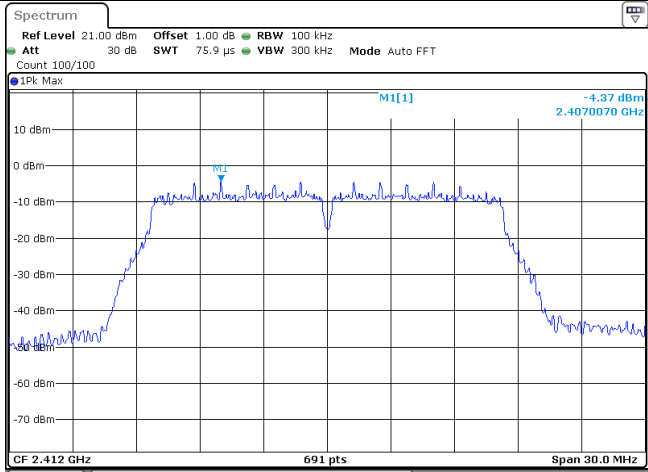
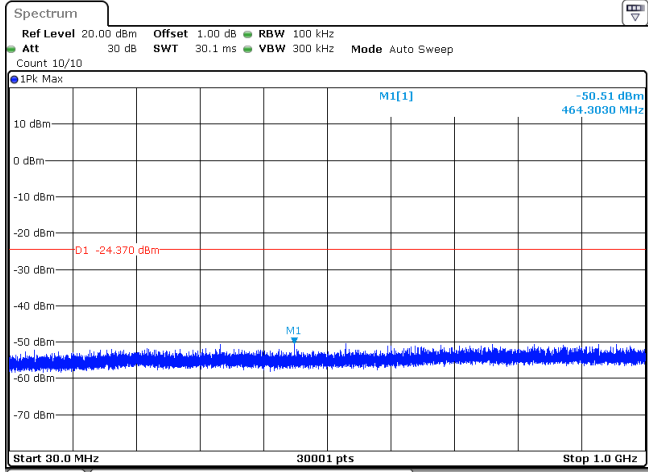
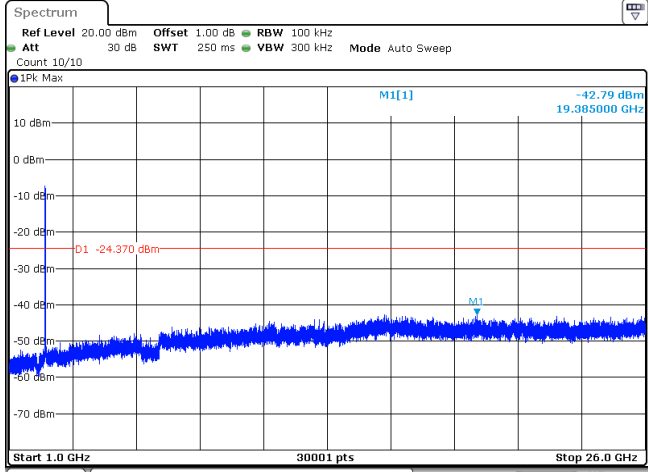
CH06
30MHz~1000MHz



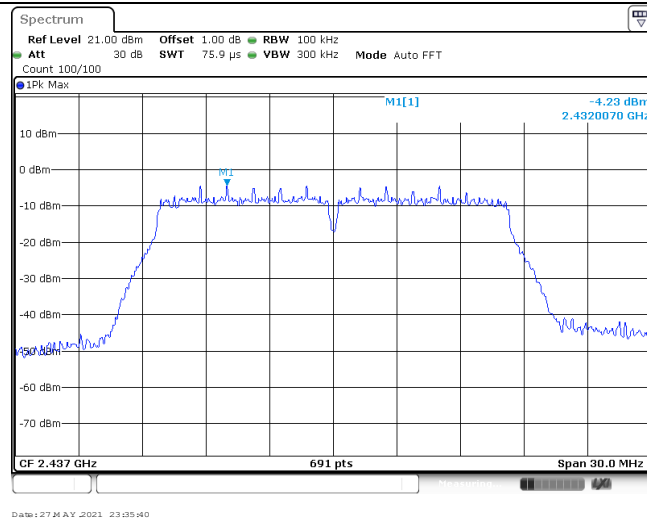
CH06
1GHz~26GHz



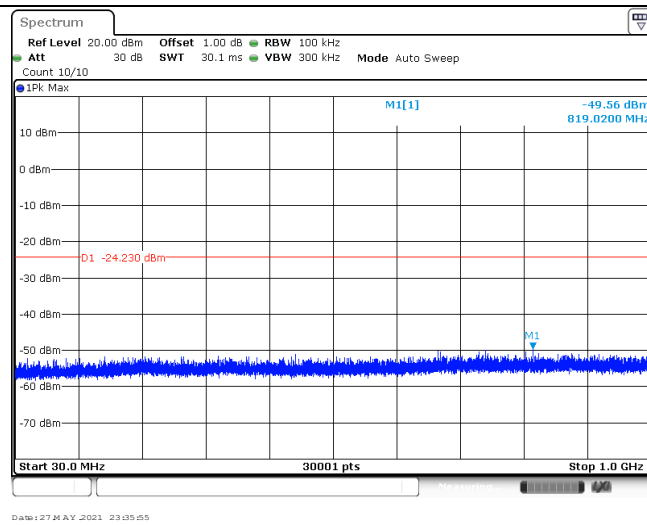
CH11
Reference levelCH11
30MHz~1000MHzCH11
1GHz~26GHz

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

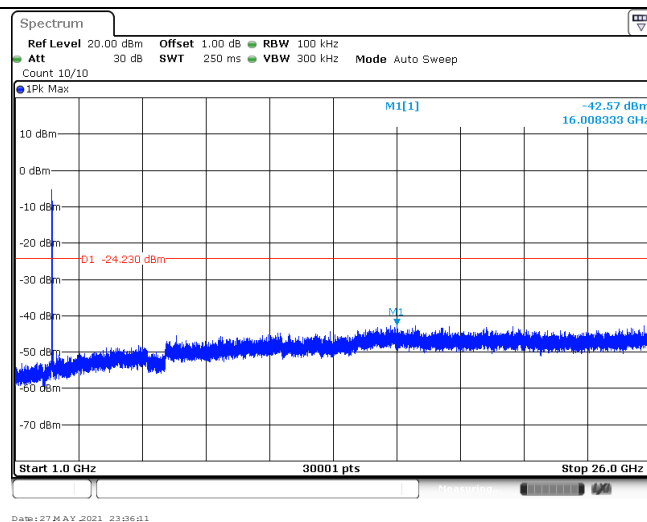
CH06
Reference level

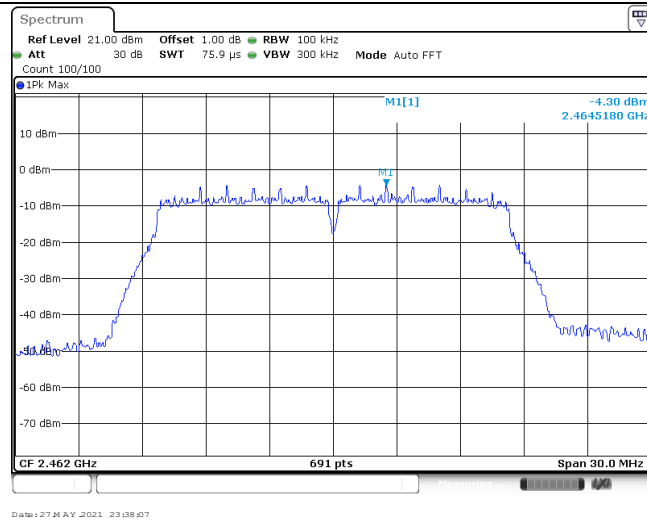
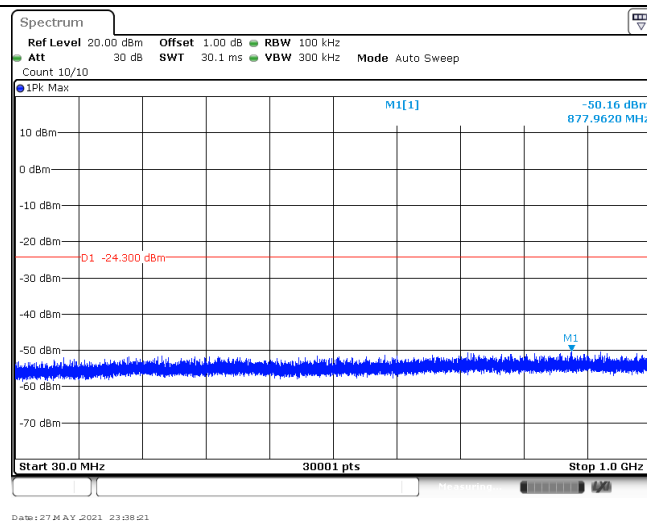
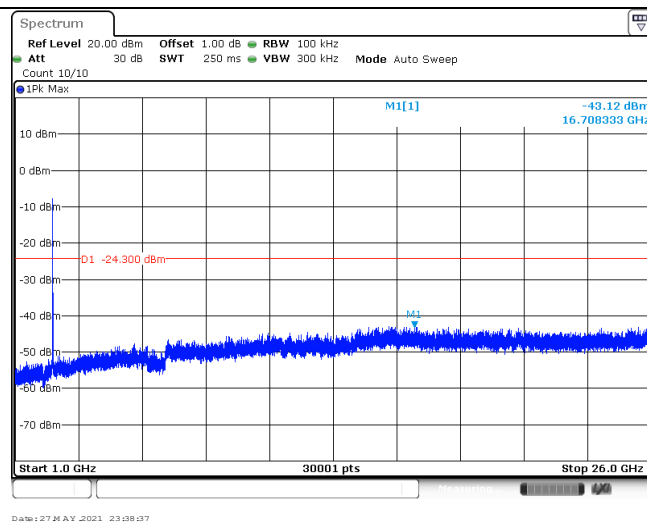


CH06
30MHz~1000MHz



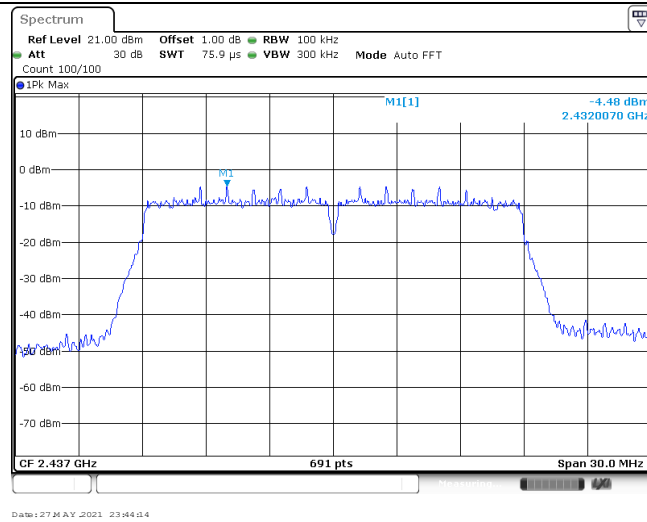
CH06
1GHz~26GHz



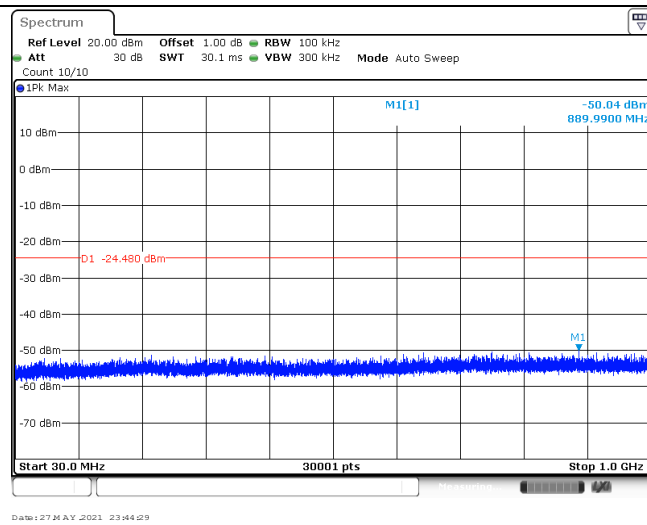
CH11
Reference levelCH11
30MHz~1000MHzCH11
1GHz~26GHz

Test Item:	SE	Type:	802.11 n(HT20)
CH01 Reference level	Spectrum Ref Level 21.00 dBm Att 30 dB Offset 1.00 dB SWT 75.9 μs RBW 100 kHz VBW 300 kHz Mode Auto FFT Count 100/100 1Pk Max -4.67 dBm 2.4070070 GHz M1[1] M1 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 2.412 GHz 691 pts Span 30.0 MHz Date: 27 MAY 2021 23:41:32		
CH01 30MHz~1000MHz	Spectrum Ref Level 20.00 dBm Att 30 dB Offset 1.00 dB SWT 30.1 ms RBW 100 kHz VBW 300 kHz Mode Auto Sweep Count 10/10 1Pk Max -50.09 dBm 823.1590 MHz M1[1] M1 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm Start 30.0 MHz 30001 pts Stop 1.0 GHz Date: 27 MAY 2021 23:41:46		
CH01 1GHz~26GHz	Spectrum Ref Level 20.00 dBm Att 30 dB Offset 1.00 dB SWT 250 ms RBW 100 kHz VBW 300 kHz Mode Auto Sweep Count 10/10 1Pk Max -42.62 dBm 19.385833 GHz M1[1] M1 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm Start 1.0 GHz 30001 pts Stop 26.0 GHz Date: 27 MAY 2021 23:42:02		

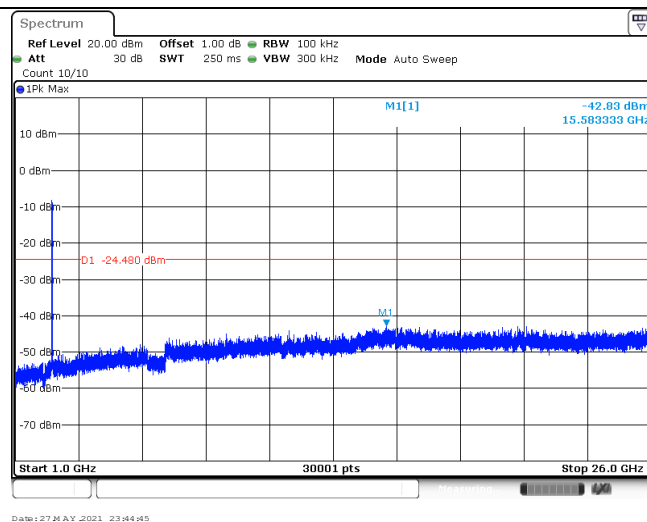
CH06
Reference level



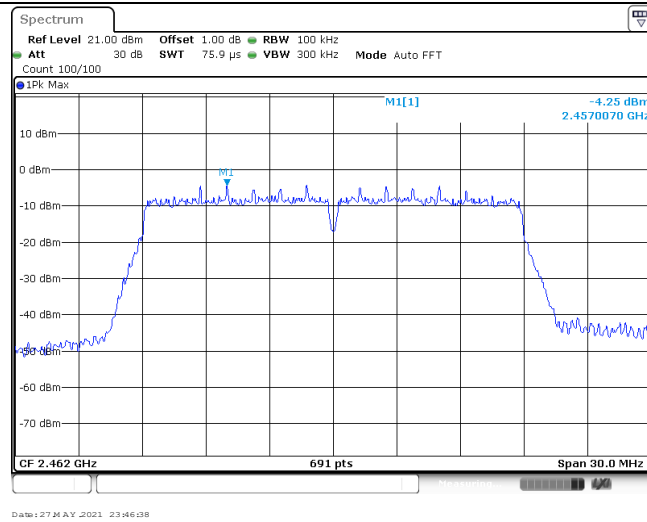
CH06
30MHz~1000MHz



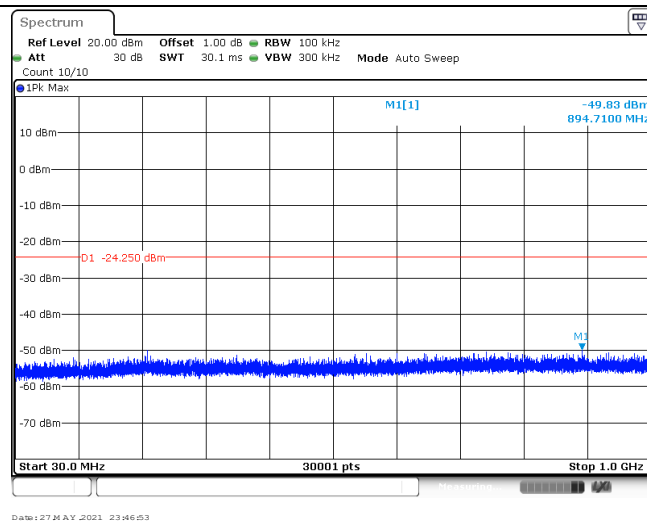
CH06
1GHz~26GHz



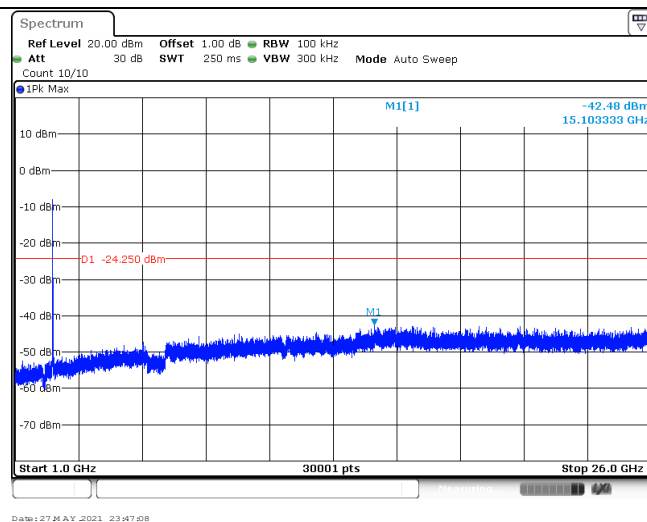
CH11
Reference level



CH11
30MHz~1000MHz



CH11
1GHz~26GHz



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