

APPENDIX REPORT

Project No.	SHT2207088501EW	Radio Specification	WIFI 2.4G
Test sample No.	YPHT22070885003	Model No.	Smart K
Start test date	2022-08-01	Finish date	2022-08-01
Temperature	26.6℃	Humidity	28%
Test Engineer	Xiaoxiao Li	Auditor	Xiaodong Zhu

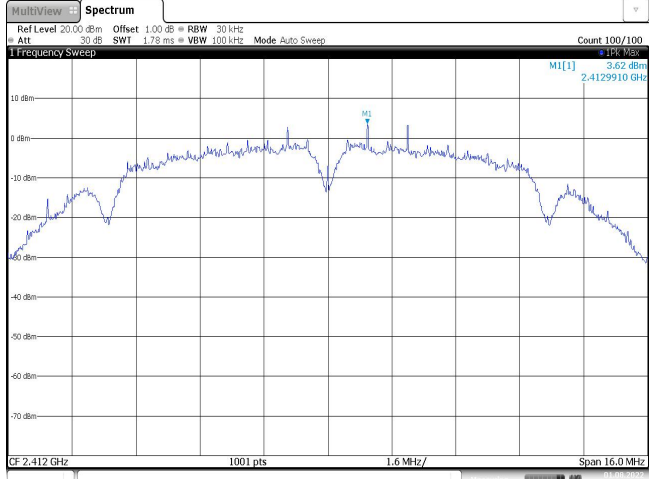
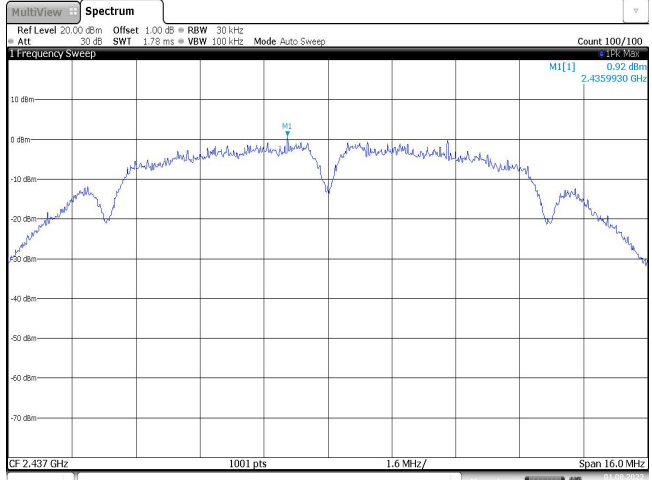
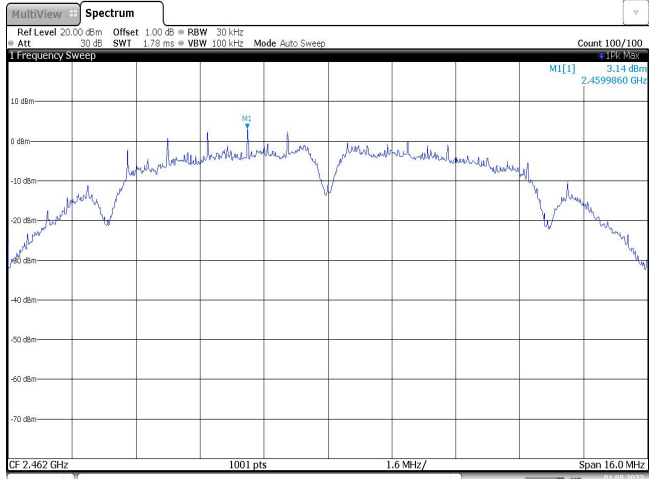
Appendix clause	Test item	Result
A	Conducted Peak Output Power	PASS
B	Power Spectral Density	PASS
C	6 dB Bandwidth	PASS
D	99% Occupied Bandwidth	PASS
E	Duty Cycle	PASS
F	Band edge and Spurious Emissions (conducted)	PASS

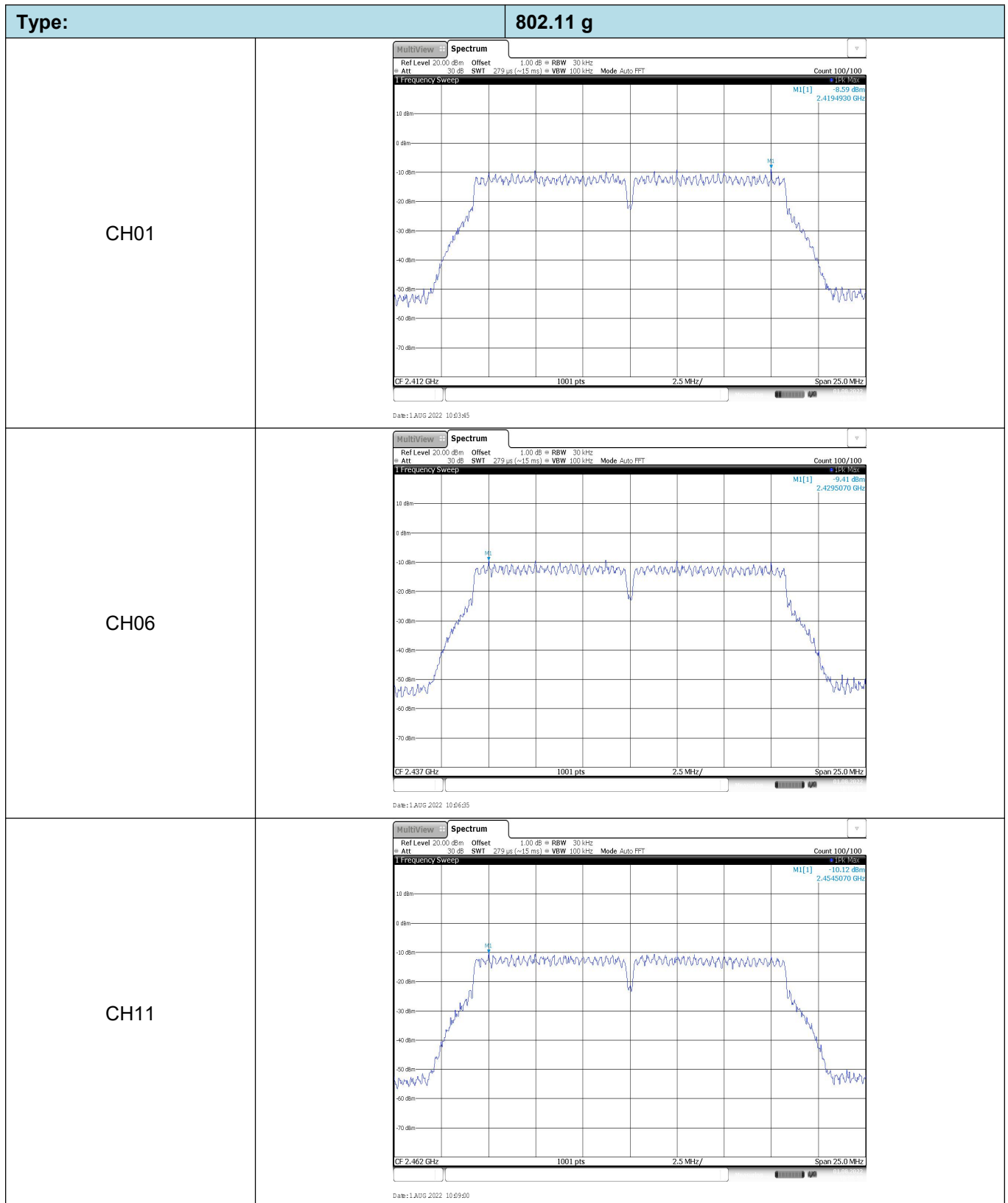
Appendix A: Conducted Peak Output Power

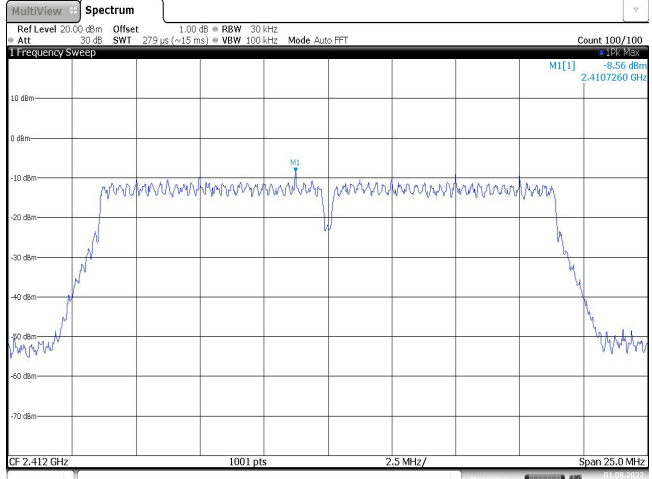
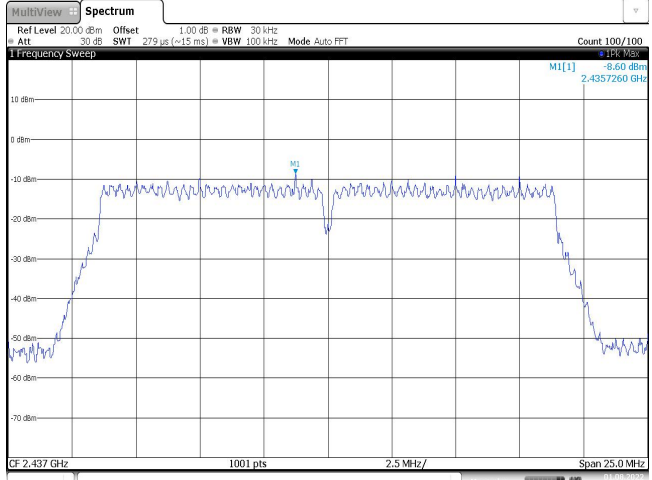
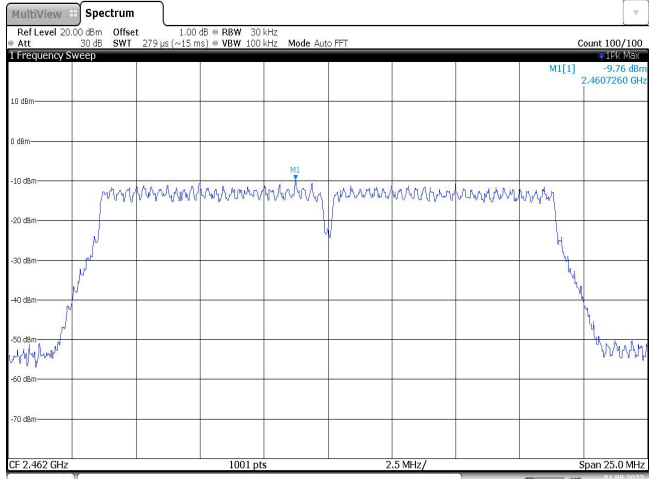
Type	Channel	Peak Output power (dBm)	Average Output power (dBm)	Limit (dBm)	Result
802.11b	01	14.97	12.52	≤ 30.00	Pass
	06	14.32	11.87		
	11	14.16	11.72		
802.11g	01	15.28	12.76	≤ 30.00	Pass
	06	14.66	11.95		
	11	14.87	12.32		
802.11n (HT20)	01	14.78	12.56	≤ 30.00	Pass
	06	14.66	11.83		
	11	14.49	11.65		

Appendix B: Power Spectral Density

Type	Channel	Power Spectral Density (dBm/30KHz)	Limit (dBm/3KHz)	Result
802.11b	01	3.62	≤8.00	Pass
	06	0.92		
	11	3.14		
802.11g	01	-8.59	≤8.00	Pass
	06	-9.41		
	11	-10.12		
802.11n(HT20)	01	-8.56	≤8.00	Pass
	06	-8.60		
	11	-9.76		

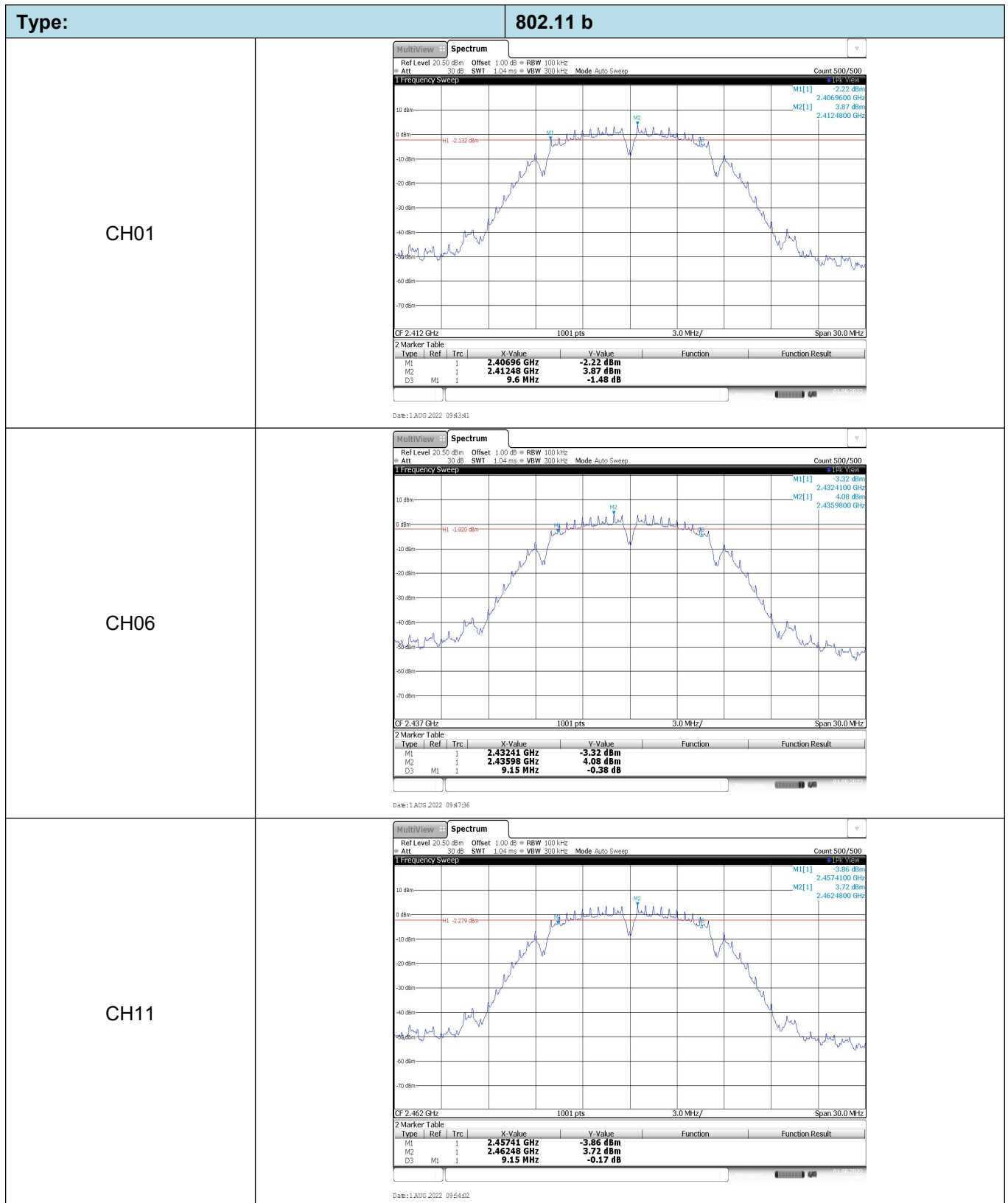
Type:	802.11 b
CH01	 Ref Level 20.00 dBm Offset 1.00 dB RBW 30 kHz Att 30 dB SWI 1.78 ms VBW 100 kHz Mode Auto Sweep Count 100/100 MI[1] 3.62 dBm 2.4129910 GHz CF 2.412 GHz 1001 pts 1.6 MHz/ Span 16.0 MHz Date: 1 AUG 2022 09:43:55
CH06	 Ref Level 20.00 dBm Offset 1.00 dB RBW 30 kHz Att 30 dB SWI 1.78 ms VBW 100 kHz Mode Auto Sweep Count 100/100 MI[1] 0.92 dBm 2.4359930 GHz CF 2.437 GHz 1001 pts 1.6 MHz/ Span 16.0 MHz Date: 1 AUG 2022 09:47:51
CH11	 Ref Level 20.00 dBm Offset 1.00 dB RBW 30 kHz Att 30 dB SWI 1.78 ms VBW 100 kHz Mode Auto Sweep Count 100/100 MI[1] 3.14 dBm 2.4599860 GHz CF 2.462 GHz 1001 pts 1.6 MHz/ Span 16.0 MHz Date: 1 AUG 2022 09:54:17

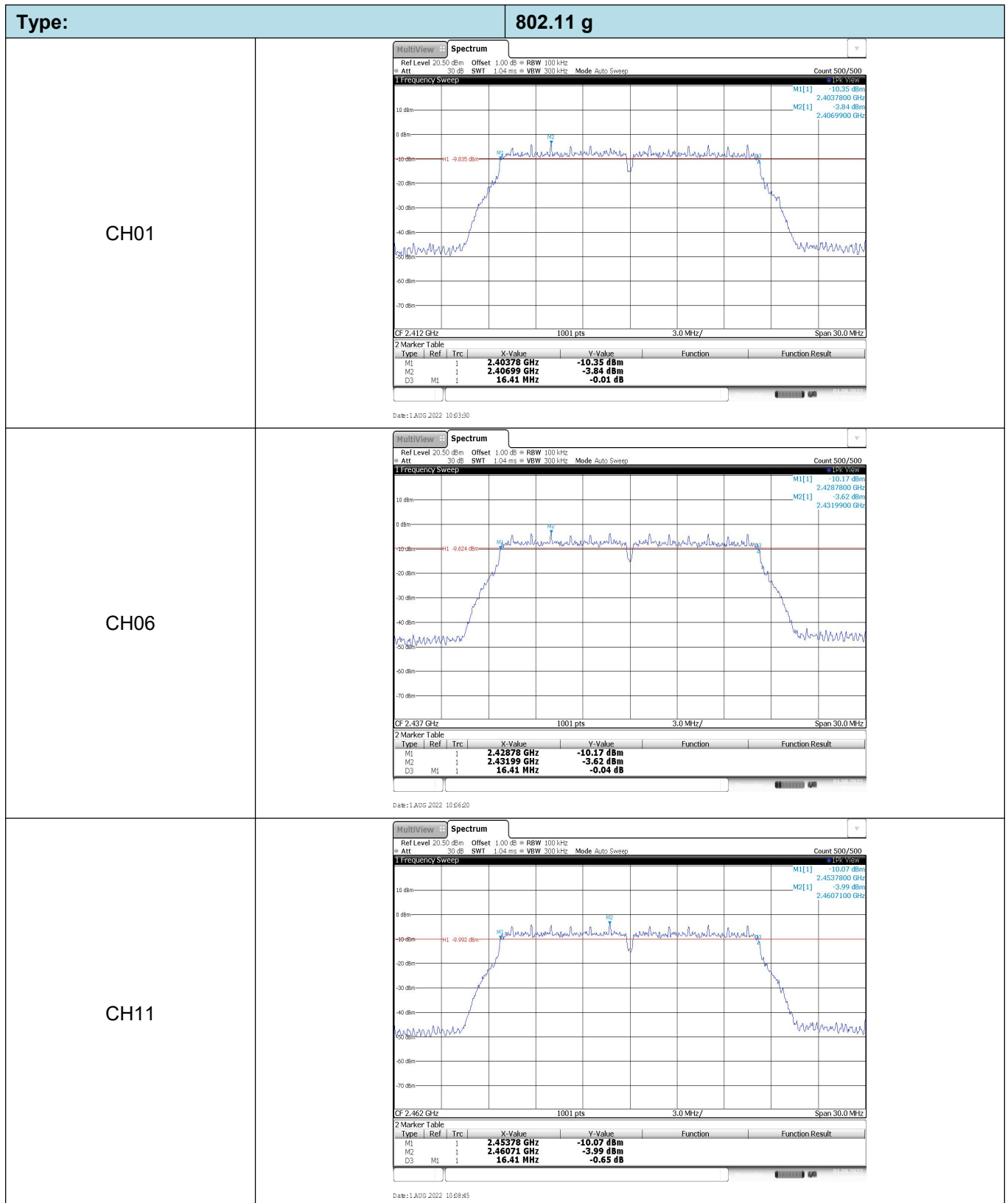


Type:	802.11n(HT20)
CH01	 MultiView Spectrum Ref Level 20.00 dBm Offset 1.00 dB BW 30 kHz Att 30 dB SWI 279 μs (~15 ms) VBW 100 kHz Mode Auto FFT Count 100/100 M1[1] -8.56 dBm 2.4107260 GHz CF 2.412 GHz 1001 pts 2.5 MHz/ Span 25.0 MHz Date: 1 AUG 2022 10:17:28
CH06	 MultiView Spectrum Ref Level 20.00 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] -8.60 dBm 2.4357260 GHz CF 2.437 GHz 1001 pts 2.5 MHz/ Span 25.0 MHz Date: 1 AUG 2022 10:19:34
CH11	 MultiView Spectrum 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] -9.76 dBm 2.4607260 GHz CF 2.462 GHz 1001 pts 2.5 MHz/ Span 25.0 MHz Date: 1 AUG 2022 10:22:17

Appendix C: 6dB bandwidth

Type	Channel	6dB Bandwidth (MHz)	Limit (MHz)	Result
802.11b	01	9.60	≥0.5	Pass
	06	9.15		
	11	9.15		
802.11g	01	16.41	≥0.5	Pass
	06	16.41		
	11	16.41		
802.11n(HT20)	01	17.67	≥0.5	Pass
	06	17.67		
	11	17.67		

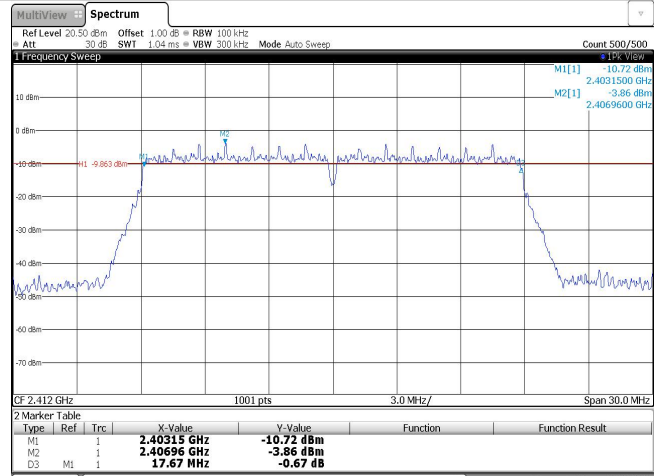




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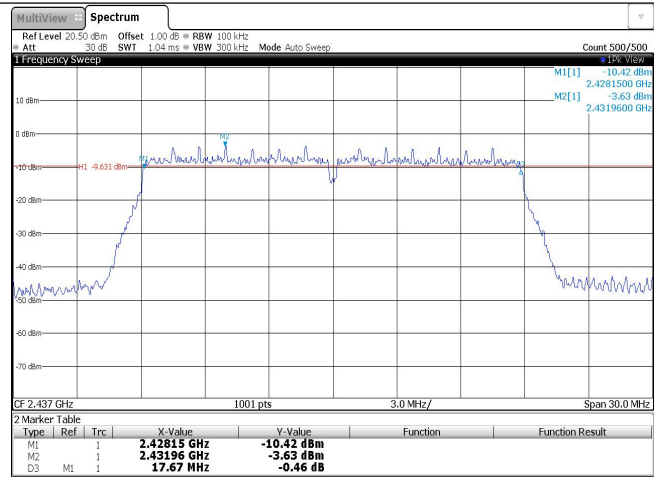
802.11n(HT20)

CH01



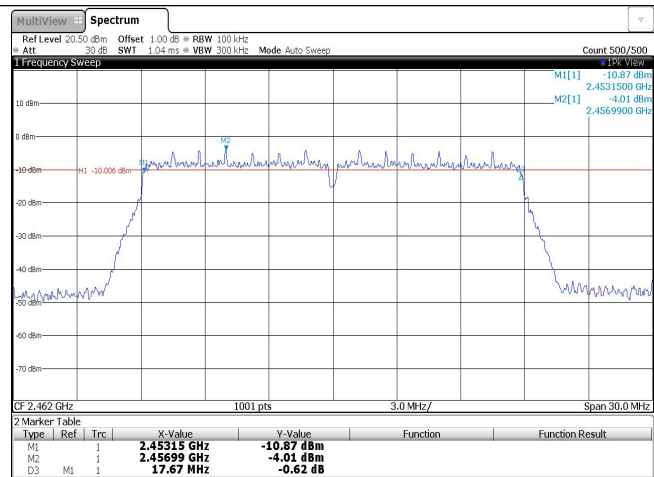
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CH06



Date: 1 AUG 2022 10:19:19

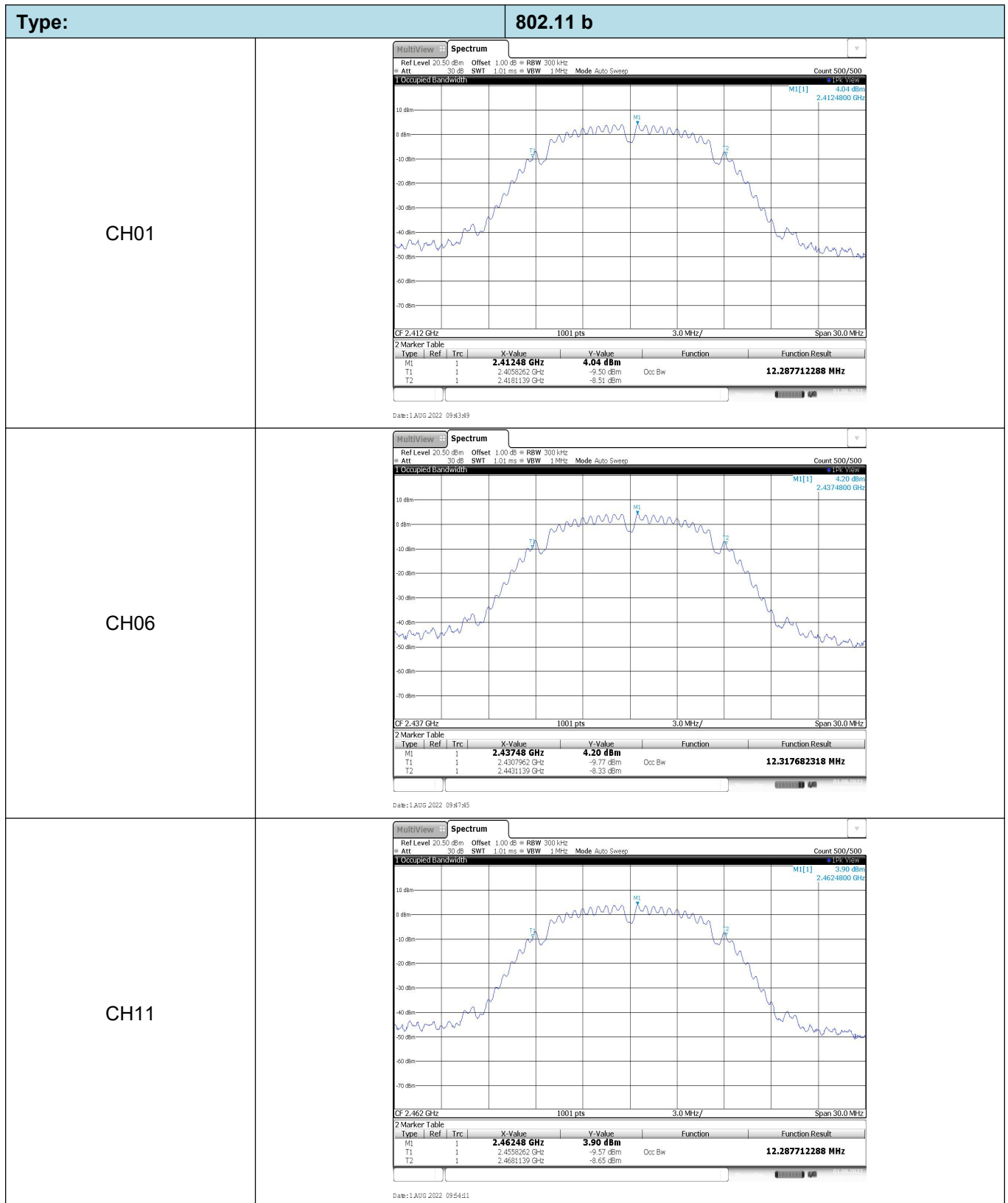
CH11

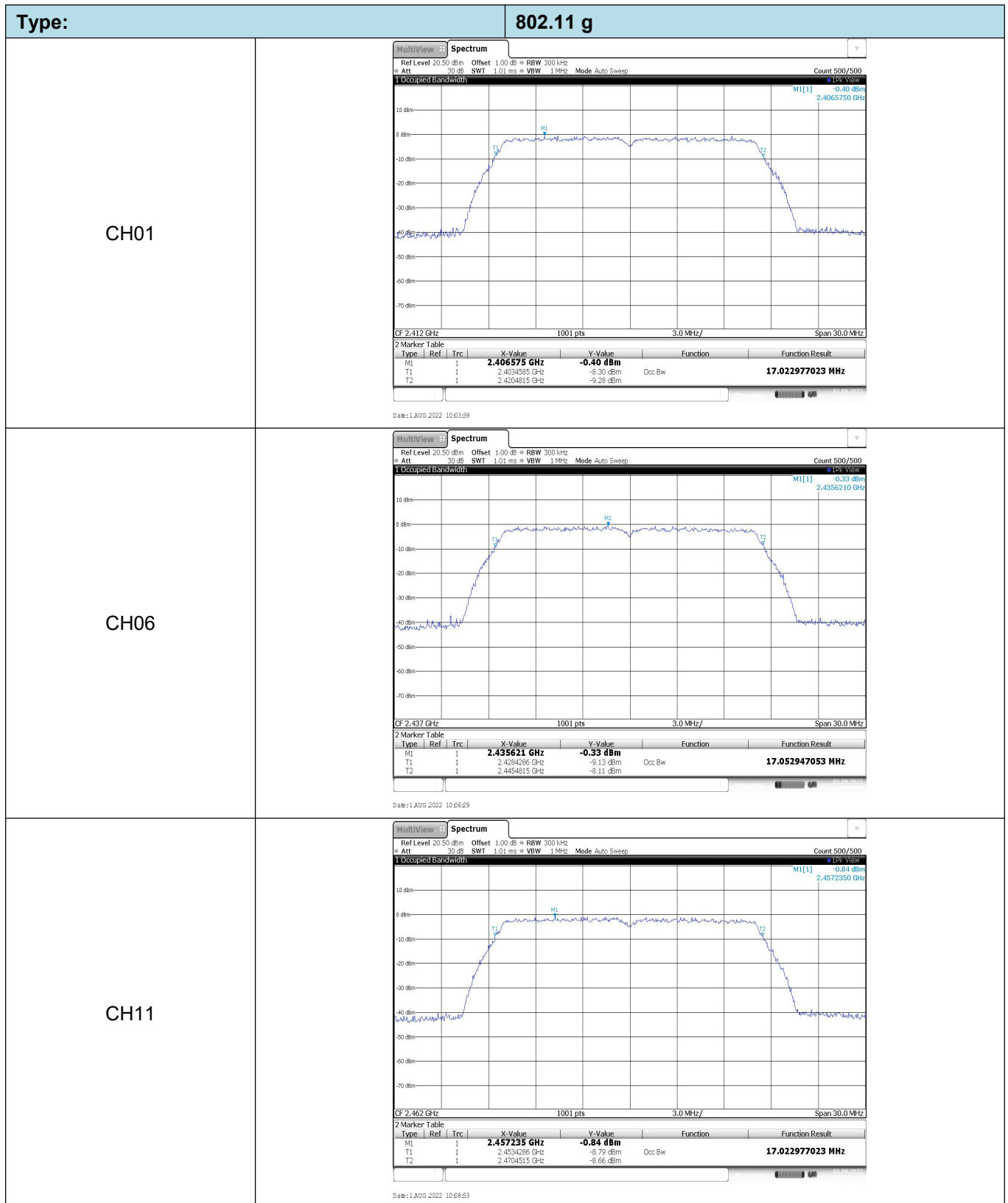


Date: 1 AUG 2022 10:22:03

Appendix D: 99% Occupied Bandwidth

Type	Channel	99% Bandwidth (MHz)	Limit (kHz)	Result
802.11b	01	12.29	-	Pass
	06	12.32		
	11	12.29		
802.11g	01	17.02	-	Pass
	06	17.05		
	11	17.02		
802.11n(HT20)	01	17.89	-	Pass
	06	17.92		
	11	17.92		

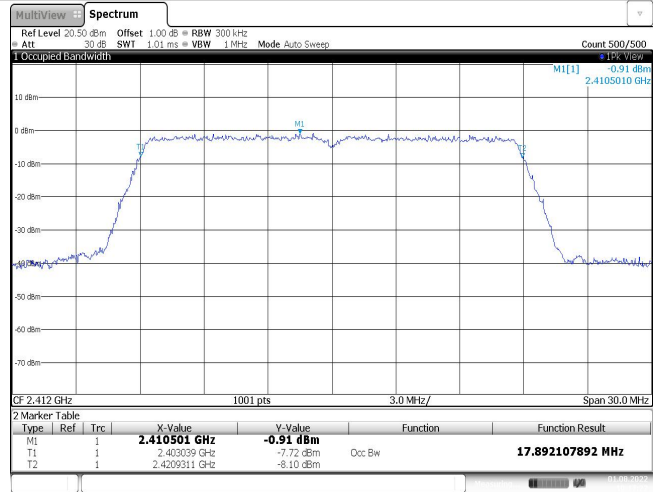




Type:

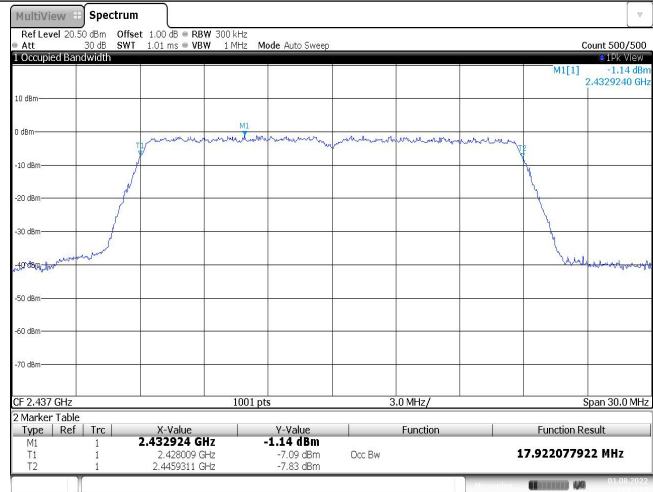
802.11n(HT20)

CH01



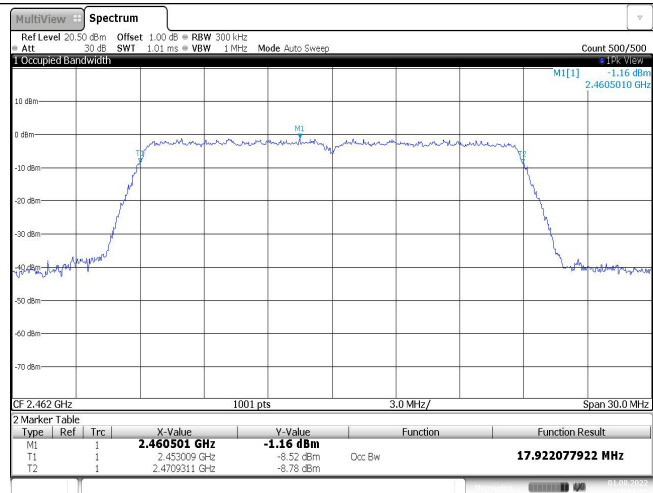
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CH06



Date:1 AUG 2022 10:19:27

CH11

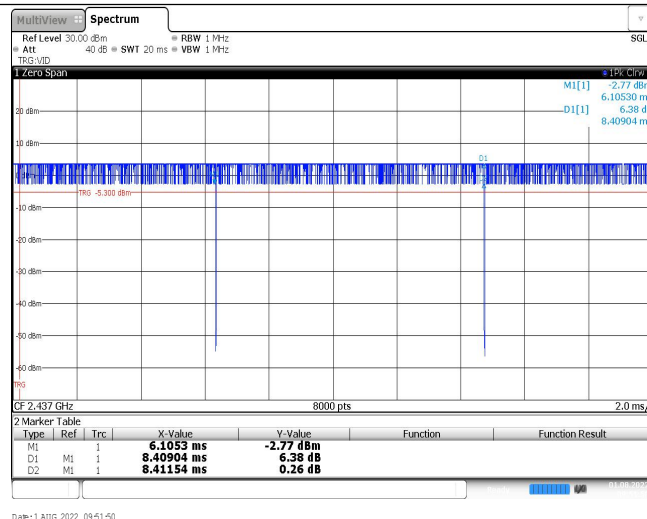


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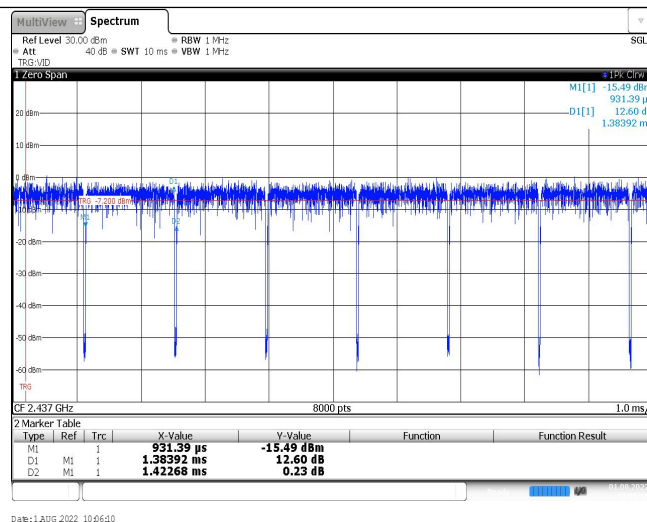
Appendix E: Duty Cycle

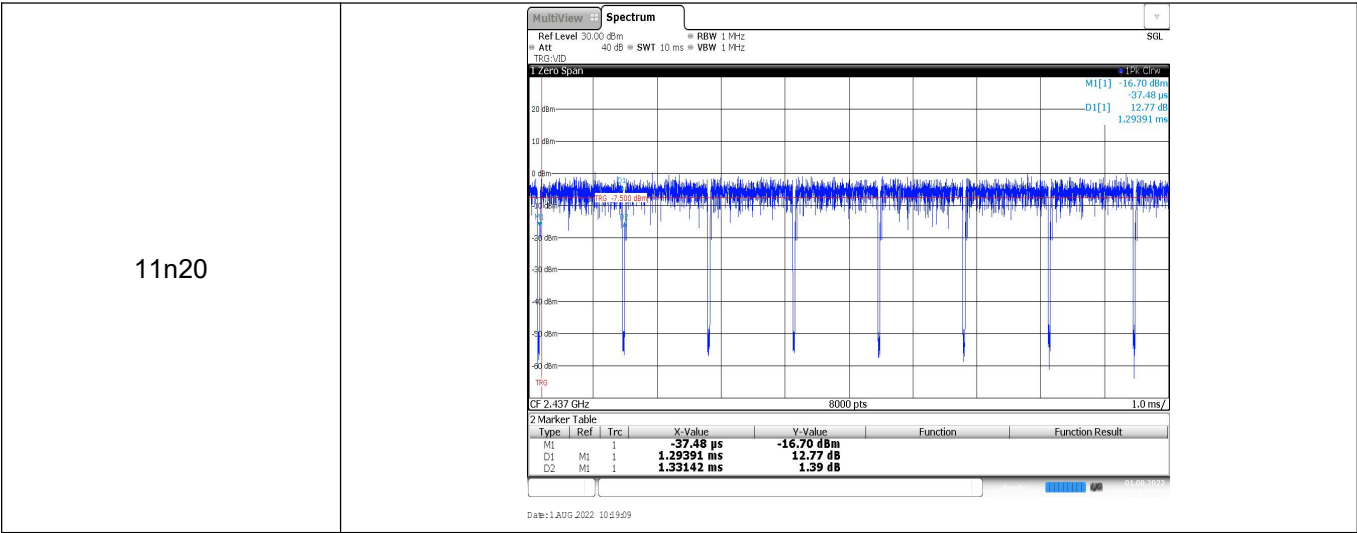
Modulation Type	Test Frequency (MHz)	T _{on} time for single burst (ms)	T _{period} (ms)	Duty cycle	1/T _{on} time (kHz)
11b	2437	8.36	8.40	99.5%	0.1
11g	2437	1.38	1.42	97.2%	0.7
11n20	2437	1.29	1.33	97.0%	0.8

11b



11g



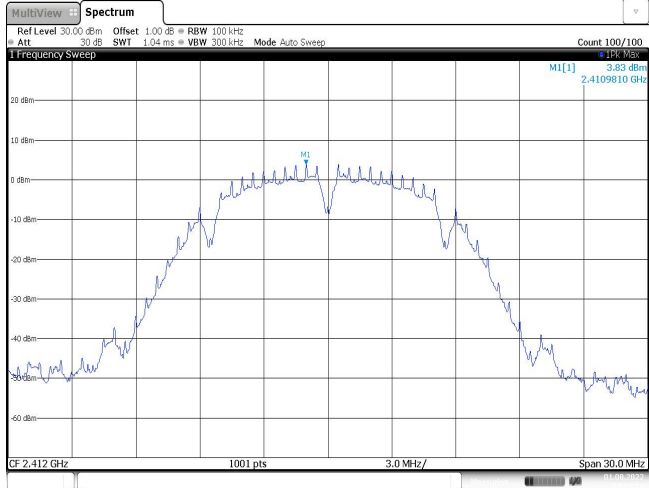
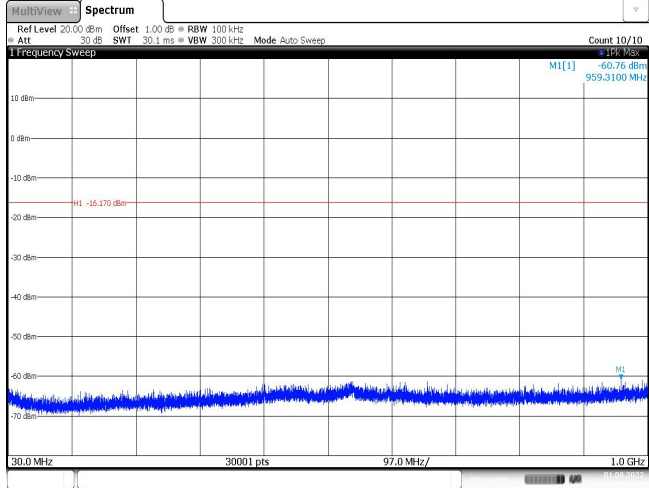
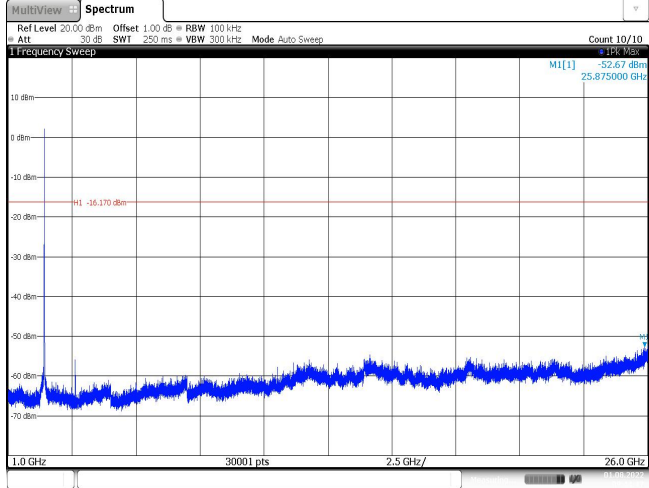


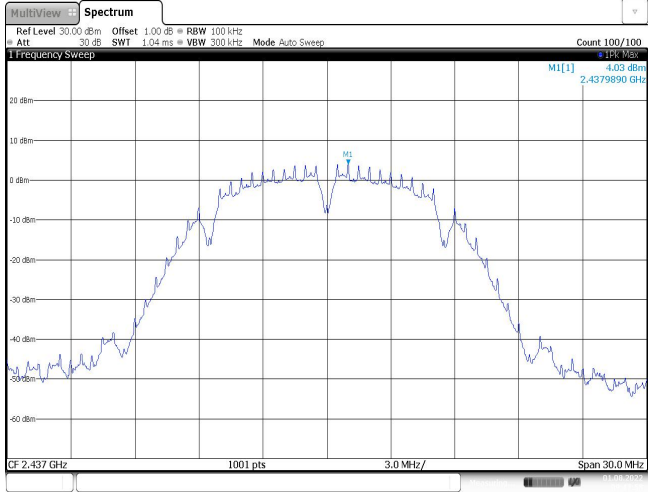
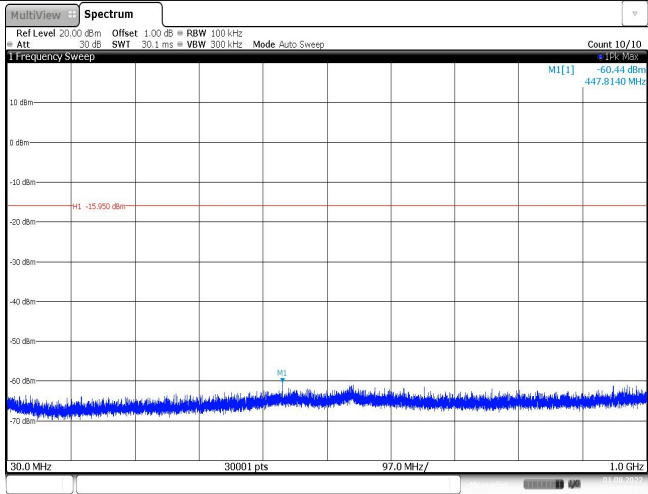
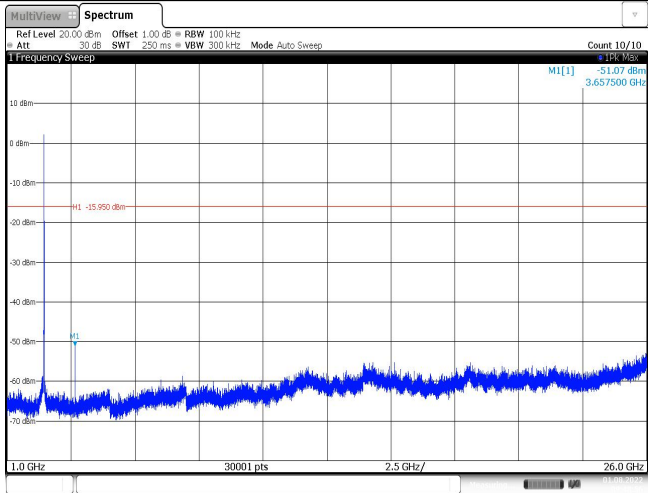
Appendix F: Band edge and Spurious Emissions (conducted)

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 PRM MSx 1 Frequency Sweep 19 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1 M2 M3 M4 M5 M1[1] 3.65 dBm M2[1] 2.411430 GHz M2 -48.96 dBm M2 -400000 GHz 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>2.41143 GHz</td><td>3.65 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-48.96 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-57.82 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-60.45 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.398032 GHz</td><td>-46.02 dBm</td><td></td><td></td></tr></table> Date:1AUG 2022 09:44:05			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.41143 GHz	3.65 dBm			M2	1		2.4 GHz	-48.96 dBm			M3	1		2.39 GHz	-57.82 dBm			M4	1		2.31 GHz	-60.45 dBm			M5	1		2.398032 GHz	-46.02 dBm		
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Test Item:	Bandedge	Type:	802.11 g																																										
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 18 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/ 2.472 GHz M1 -3.63 dBm 2.406950 GHz -46.25 dBm 2.400000 GHz M2 -46.25 dBm 2.400000 GHz M3 -50.48 dBm 2.39 GHz M4 -59.54 dBm 2.31 GHz M5 -43.55 dBm 2.397024 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>2.40695 GHz</td><td>-3.63 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-46.25 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-50.48 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-59.54 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.397024 GHz</td><td>-43.55 dBm</td><td></td><td></td></tr></table> Date: 1 AUG 2022 10:43:55			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.40695 GHz	-3.63 dBm			M2	1		2.4 GHz	-46.25 dBm			M3	1		2.39 GHz	-50.48 dBm			M4	1		2.31 GHz	-59.54 dBm			M5	1		2.397024 GHz	-43.55 dBm		
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M2	1		2.4835 GHz	-49.75 dBm																																									
M3	1		2.5 GHz	-58.69 dBm																																									
M4	1		2.483624 GHz	-49.22 dBm																																									

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

CH06 Reference level	 Ref Level 30.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWF 1.04 ms VBW 300 kHz Mode Auto Sweep Count 100/100 MI[1] -4.03 dBm 2.4379890 GHz CF 2.437 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date:1 AUG 2022 09:47:58
CH06 30MHz~1000MHz	 Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWF 30.1 ms VBW 300 kHz Mode Auto Sweep Count 10/10 MI[1] -60.44 dBm 447.8140 MHz MI -15.950 dBm 30.0 MHz 30001 pts 97.0 MHz/ 1.0 GHz Date:1 AUG 2022 09:48:14
CH06 1GHz~26GHz	 Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWF 250 ms VBW 300 kHz Mode Auto Sweep Count 10/10 MI[1] -51.07 dBm 3.657500 GHz MI -15.950 dBm 1.0 GHz 30001 pts 2.5 GHz/ 26.0 GHz Date:1 AUG 2022 09:48:56