

APPENDIX REPORT

Project No.	SHT2102028901EW	Radio Specification	WIFI 2.4G
Test sample No.	YPHT21020289001	Model No.	H60
Start test date	2021-02-26	Finish date	2021-02-26
Temperature	24.8°C	Humidity	50%
Test Engineer	Qizhi Zhang	Auditor	Xiaodong Zhu

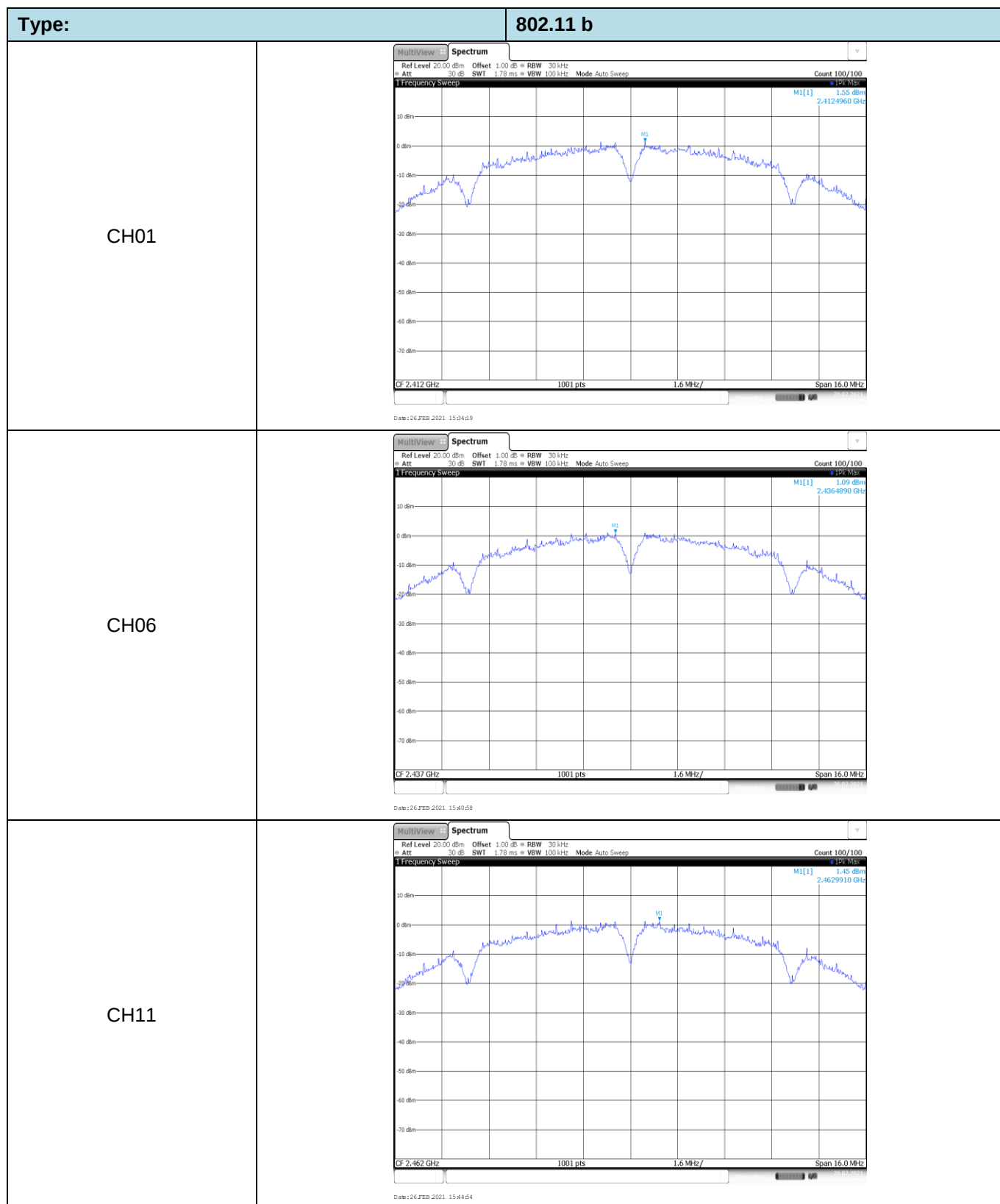
Appendix clause	Test item	Result
A	Conducted Peak Output Power	PASS
B	Power Spectral Density	PASS
C	6 dB Bandwidth	PASS
D	99% Occupied Bandwidth	PASS
E	Duty Cycle	PASS
F	Band edge and Spurious Emissions (conducted)	PASS

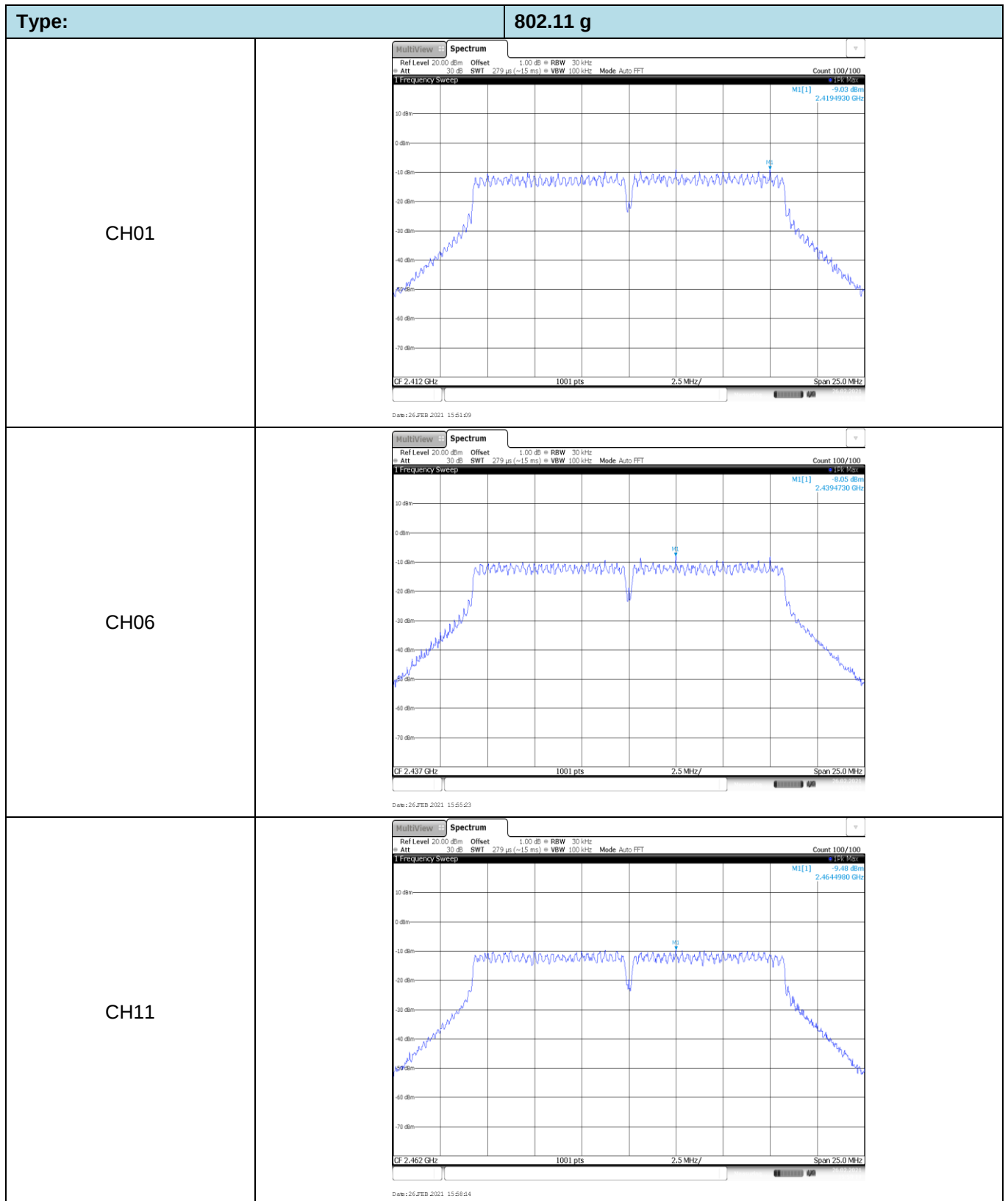
Appendix A: Conducted Peak Output Power

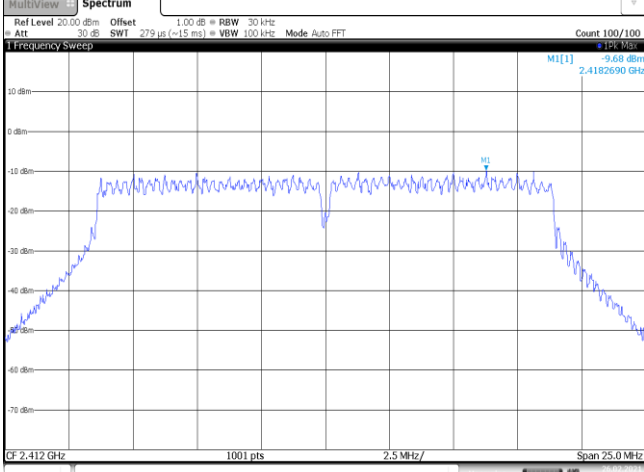
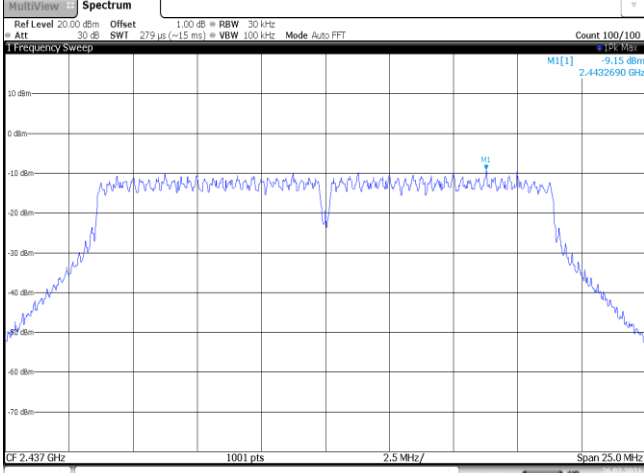
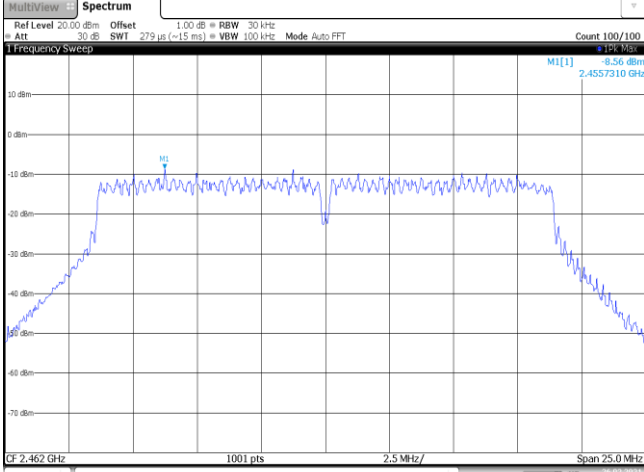
Type	Channel	Peak Output power (dBm)	Average Output power (dBm)	Limit (dBm)	Result
802.11b	01	16.57	14.12	≤ 30.00	Pass
	06	16.14	13.74		
	11	16.66	14.22		
802.11g	01	15.55	12.99	≤ 30.00	Pass
	06	15.56	13.08		
	11	16.09	13.55		
802.11n (HT20)	01	15.47	12.82	≤ 30.00	Pass
	06	15.29	12.74		
	11	15.79	13.18		
802.11n(HT40)	03	15.42	12.63	≤ 30.00	Pass
	06	15.35	12.61		
	09	15.60	12.88		

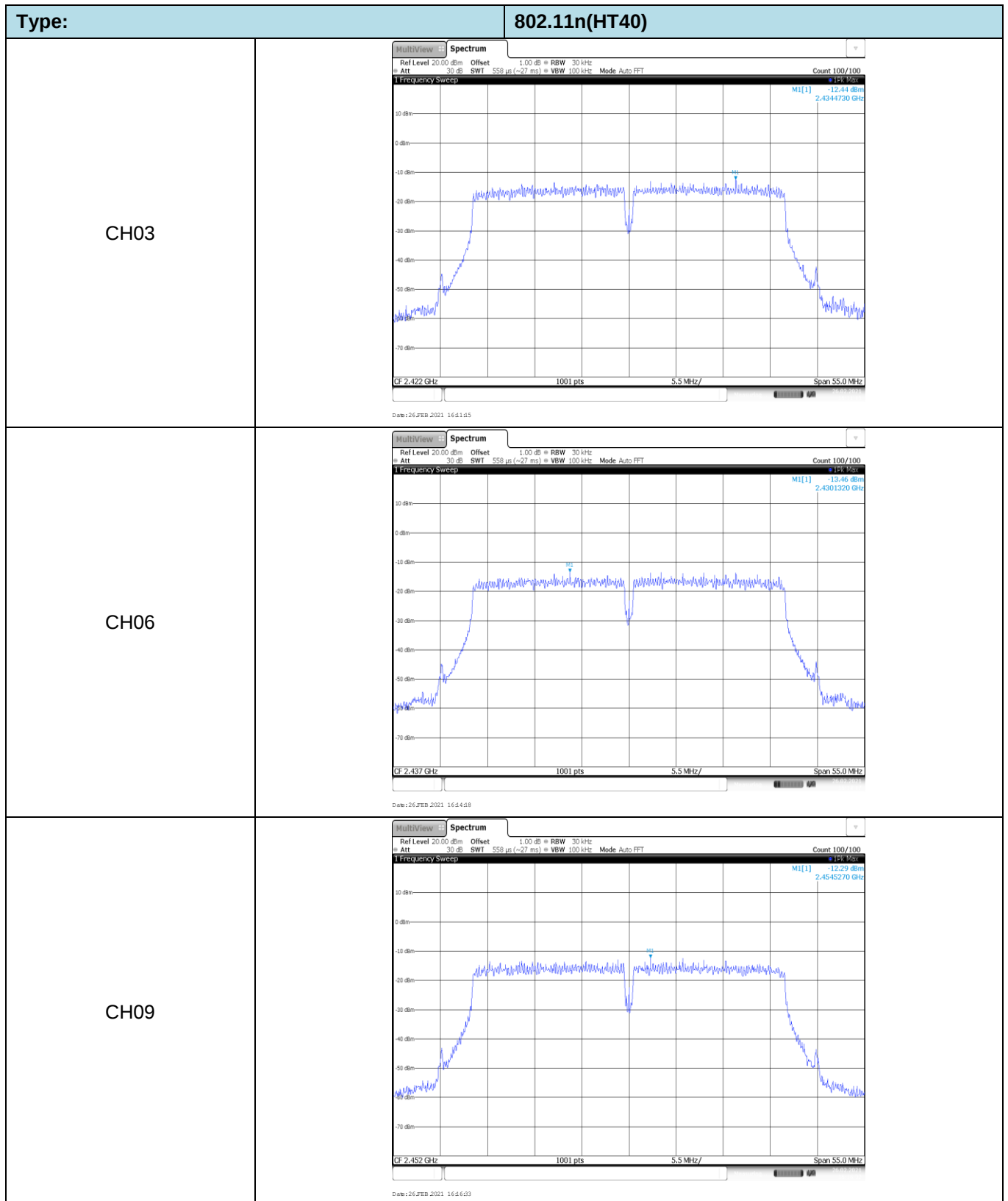
Appendix B: Power Spectral Density

Type	Channel	Power Spectral Density (dBm/30KHz)	Limit (dBm/3KHz)	Result
802.11b	01	1.55	≤8.00	Pass
	06	1.09		
	11	1.45		
802.11g	01	-9.03	≤8.00	Pass
	06	-8.05		
	11	-9.48		
802.11n(HT20)	01	-9.68	≤8.00	Pass
	06	-9.15		
	11	-8.56		
802.11n(HT40)	03	-12.44	≤8.00	Pass
	06	-13.46		
	09	-12.29		



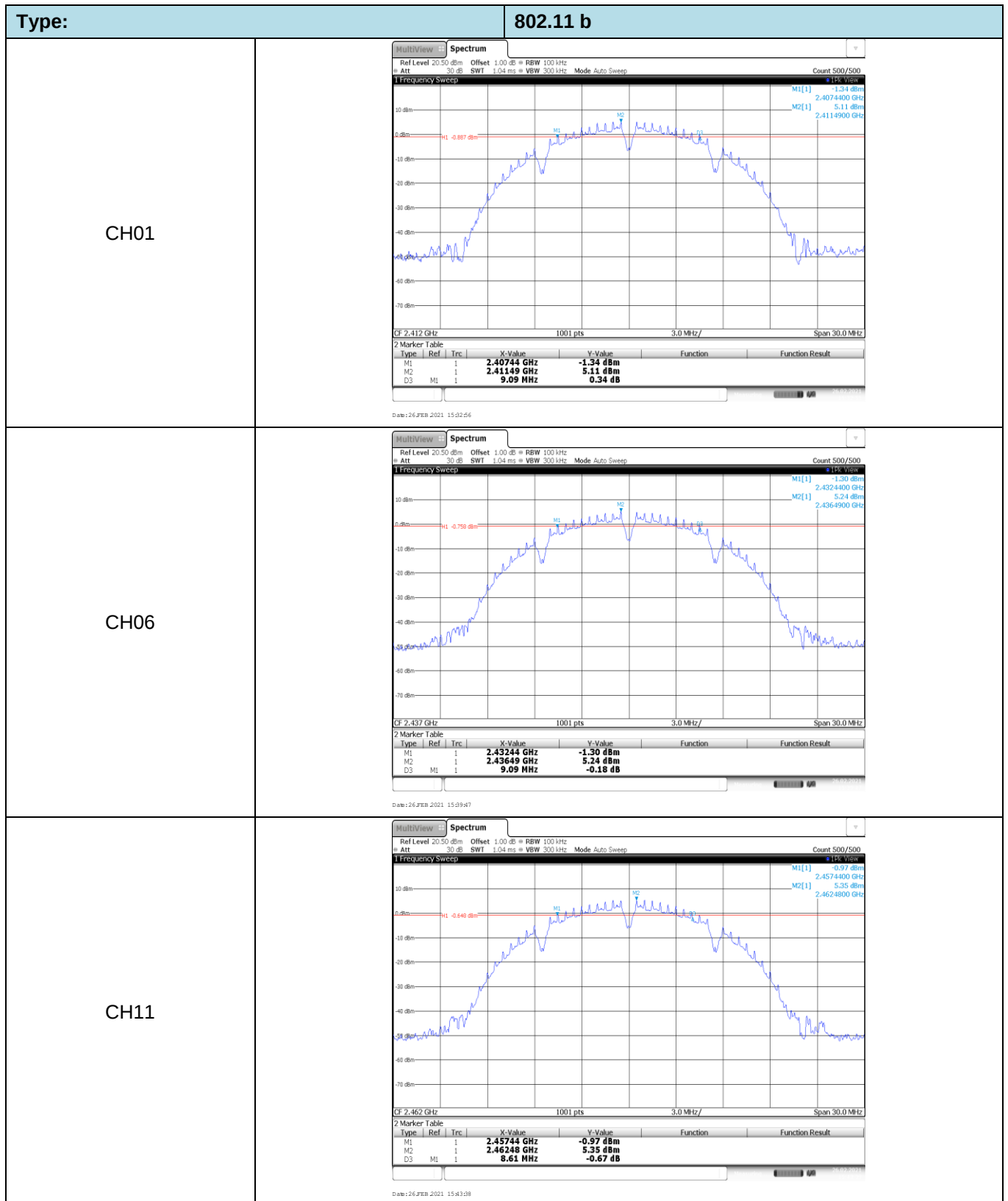


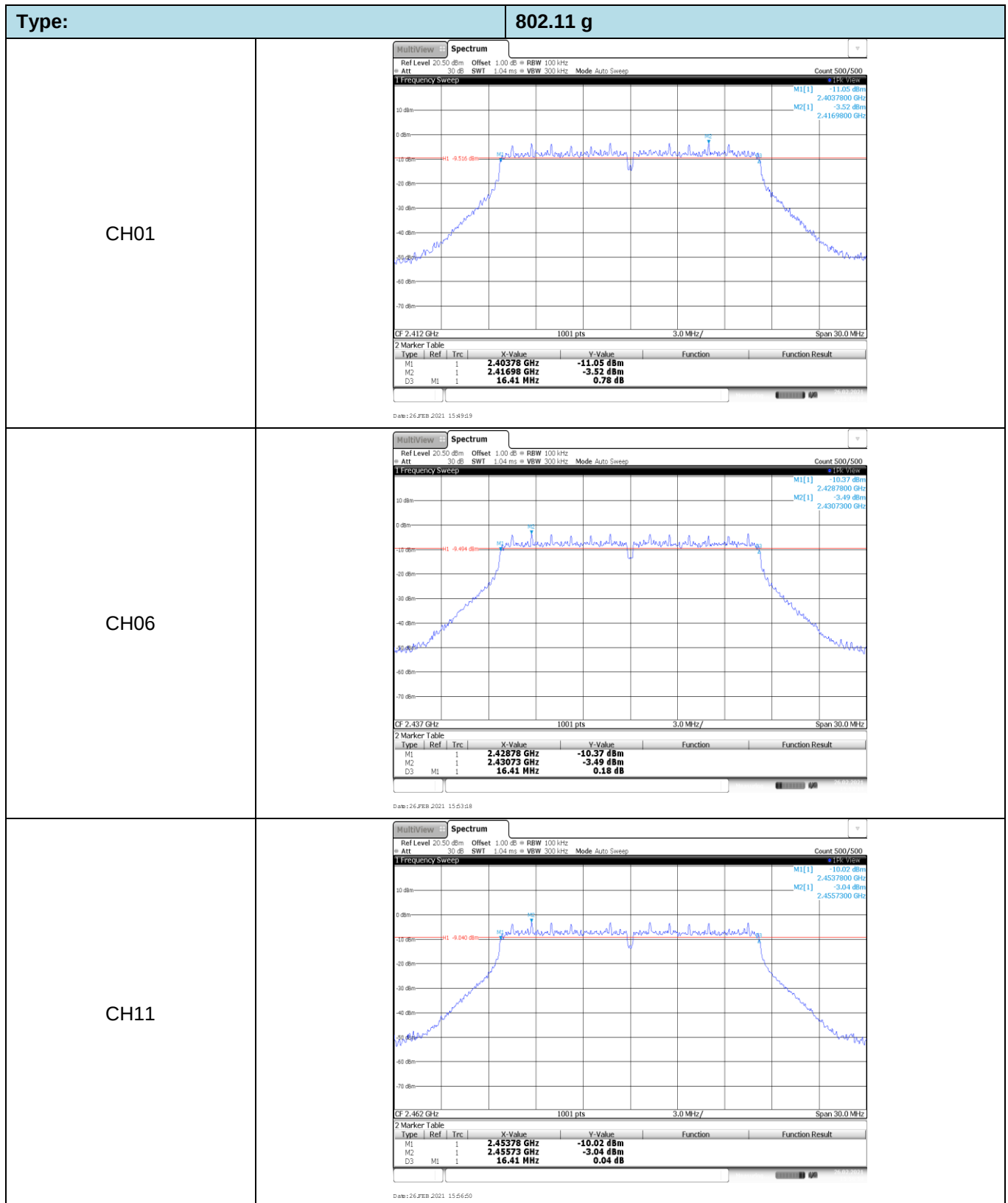
Type:	802.11n(HT20)
CH01	 Ref Level 20.00 dBm Att 30 dB Offset 1.00 dB BW 30 kHz SWI 279 us (~1.5 ms) VBW 100 kHz Mode Auto FFT Count 100/100 MI[1] 9.68 dBm 2.4182690 GHz CF 2.412 GHz 1001 pts 2.5 MHz/ Span 25.0 MHz Date: 26.FEB.2021 16:01:30
CH06	 Ref Level 20.00 dBm Att 30 dB Offset 1.00 dB BW 30 kHz SWI 279 us (~1.5 ms) VBW 100 kHz Mode Auto FFT Count 100/100 MI[1] -9.15 dBm 2.4432690 GHz CF 2.437 GHz 1001 pts 2.5 MHz/ Span 25.0 MHz Date: 26.FEB.2021 16:04:22
CH11	 Ref Level 20.00 dBm Att 30 dB Offset 1.00 dB BW 30 kHz SWI 279 us (~1.5 ms) VBW 100 kHz Mode Auto FFT Count 100/100 MI[1] 8.56 dBm 2.4557310 GHz CF 2.462 GHz 1001 pts 2.5 MHz/ Span 25.0 MHz Date: 26.FEB.2021 16:08:00

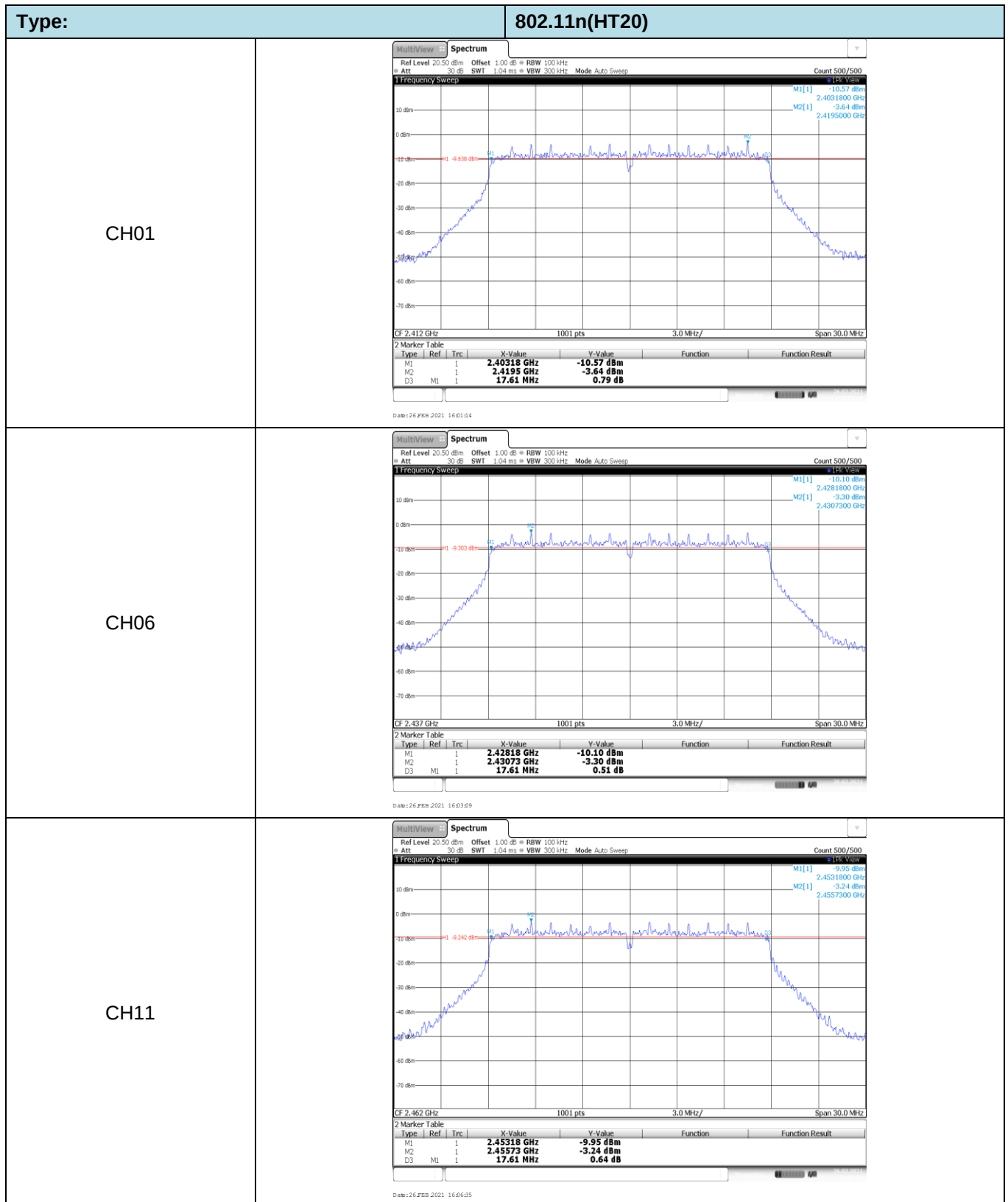


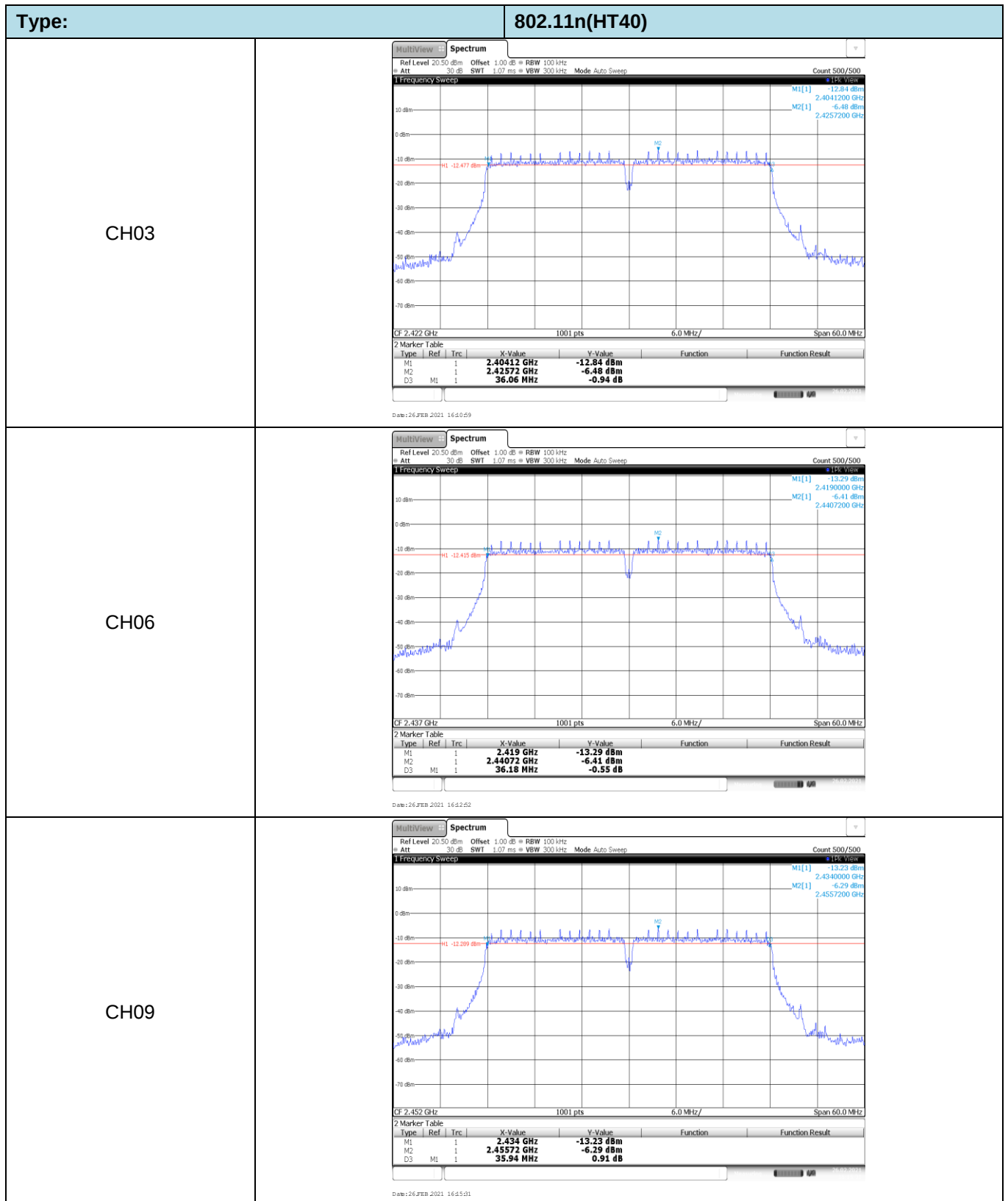
Appendix C: 6dB bandwidth

Type	Channel	6dB Bandwidth (MHz)	Limit (MHz)	Result
802.11b	01	9.09	≥0.5	Pass
	06	9.09		
	11	8.61		
802.11g	01	16.41	≥0.5	Pass
	06	16.41		
	11	16.41		
802.11n(HT20)	01	17.61	≥0.5	Pass
	06	17.61		
	11	17.61		
802.11n(HT40)	03	36.06	≥0.5	Pass
	06	36.18		
	09	35.94		



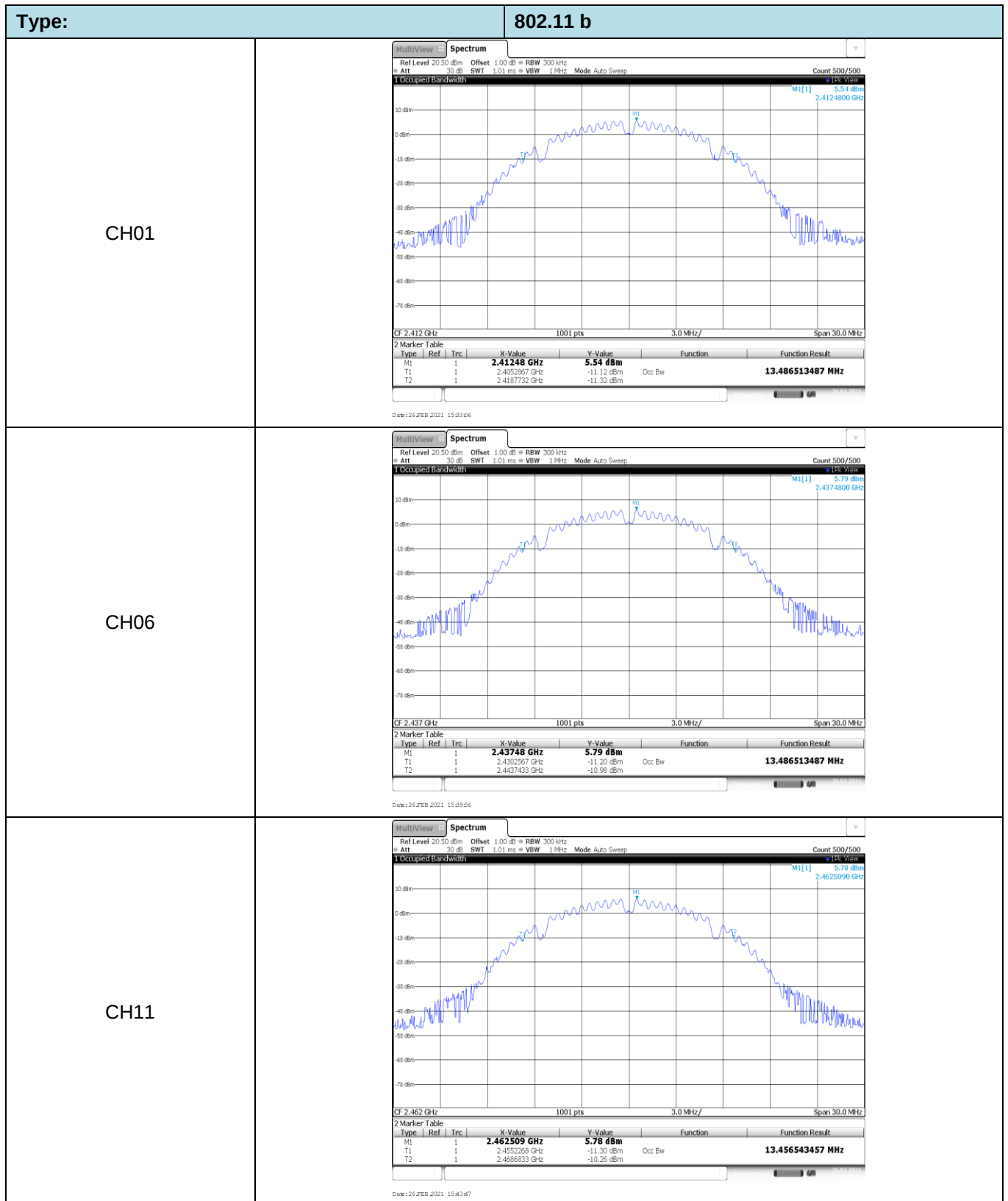


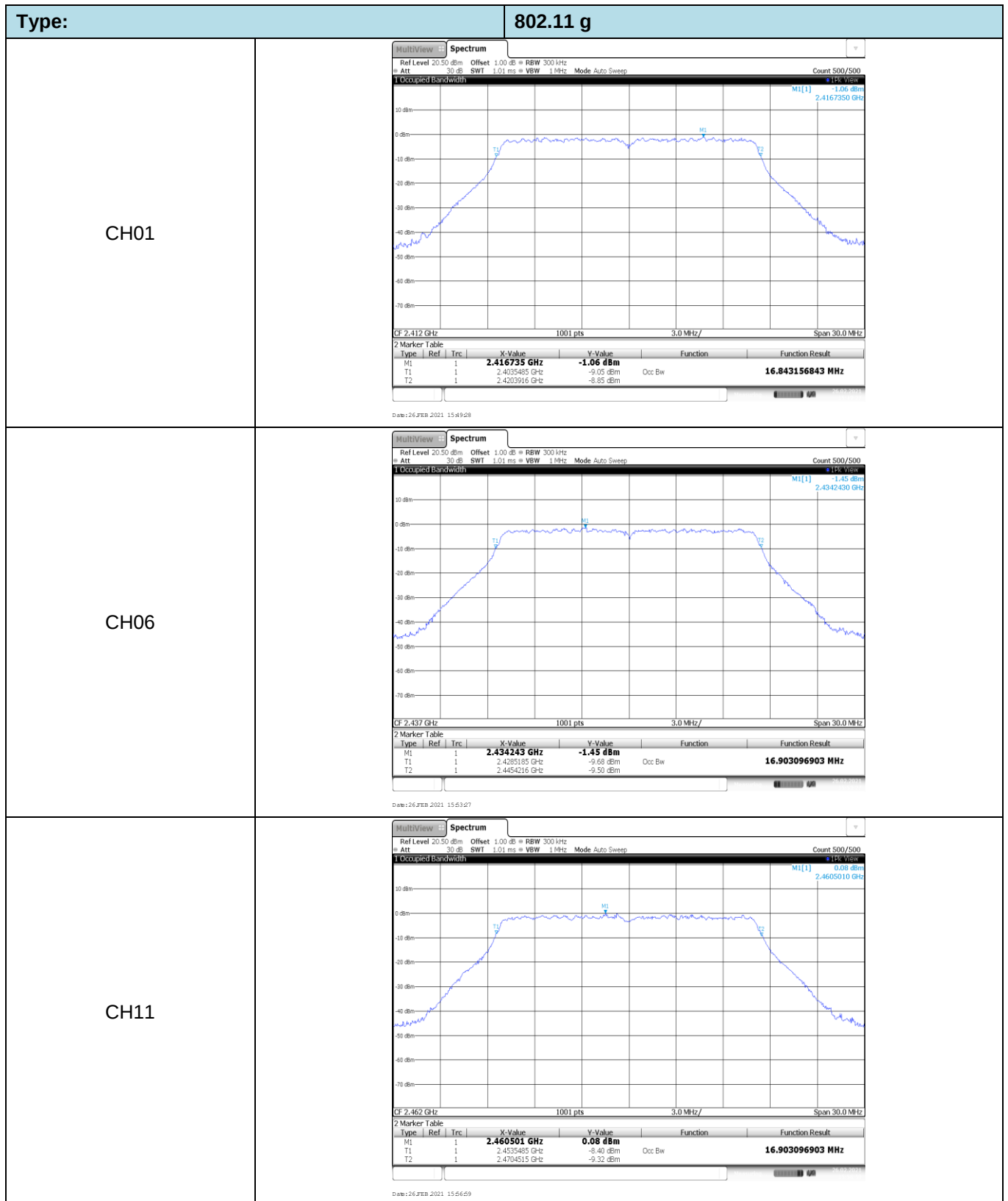




Appendix D: 99% Occupied Bandwidth

Type	Channel	99% Bandwidth (MHz)	Limit (kHz)	Result
802.11b	01	13.49	-	Pass
	06	13.49		
	11	13.46		
802.11g	01	16.84	-	Pass
	06	16.90		
	11	16.90		
802.11n(HT20)	01	17.92	-	Pass
	06	17.89		
	11	17.92		
802.11n(HT40)	03	36.32	-	Pass
	06	36.44		
	09	36.32		

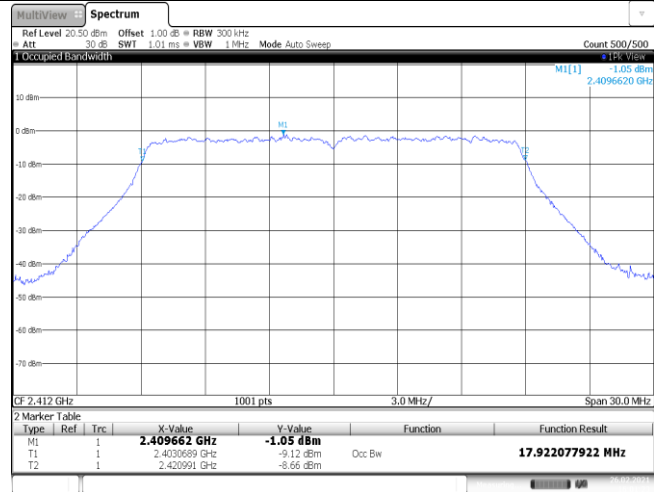




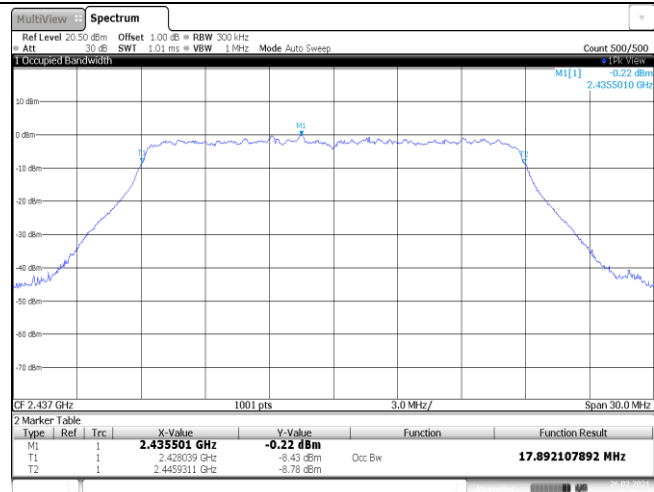
Type:

802.11n(HT20)

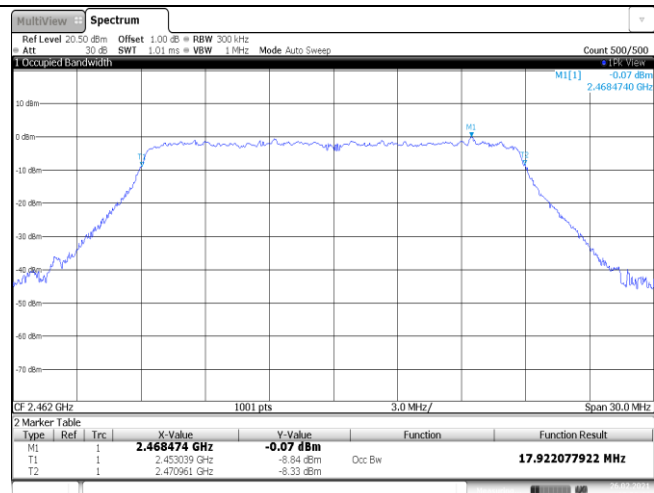
CH01

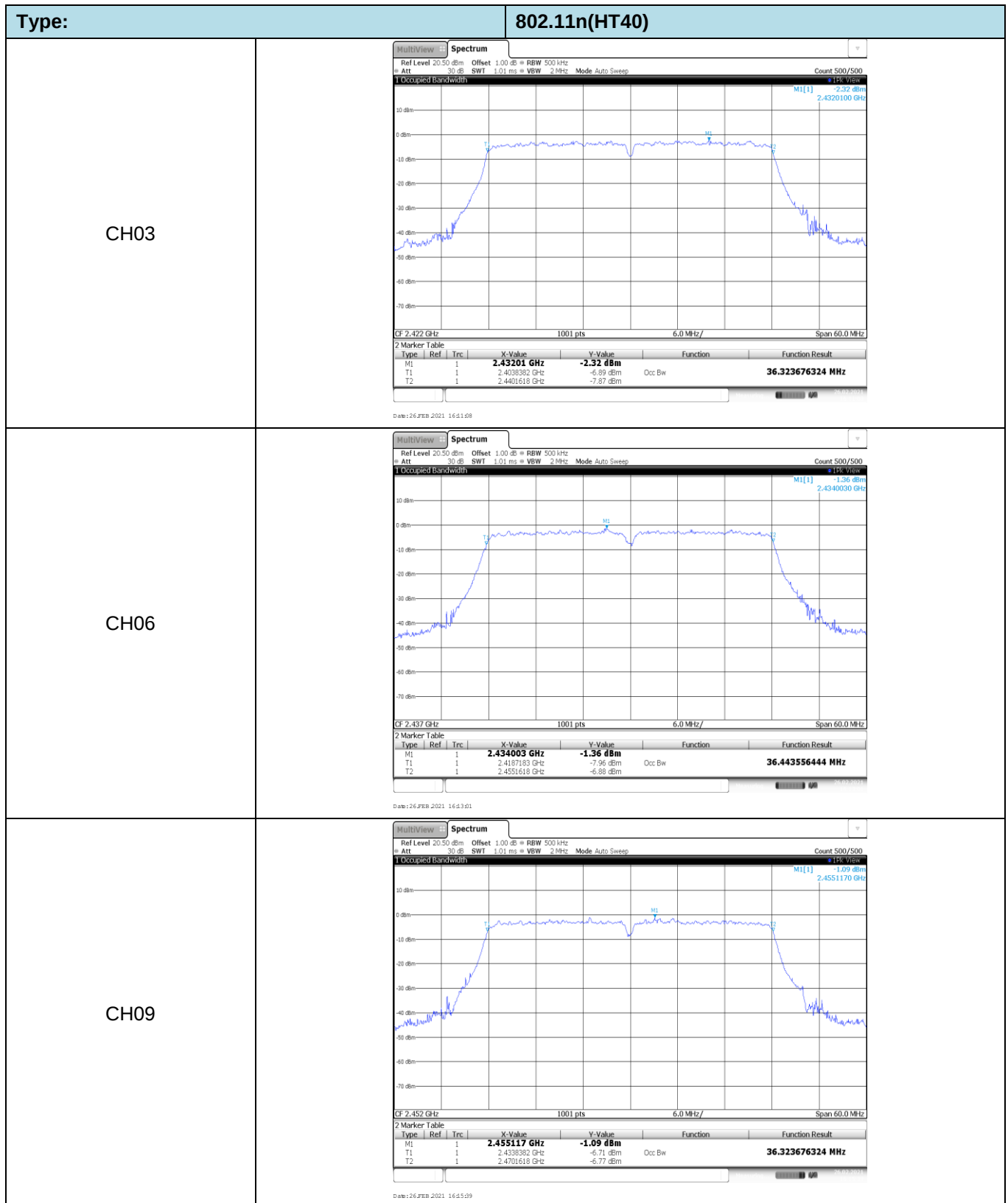


CH06



CH11

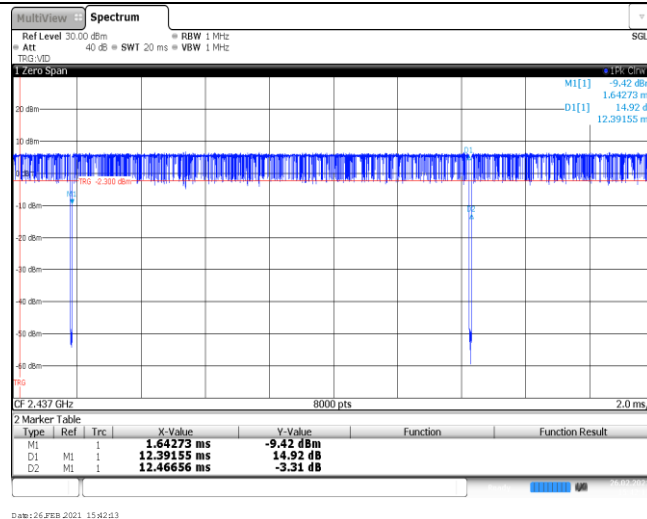




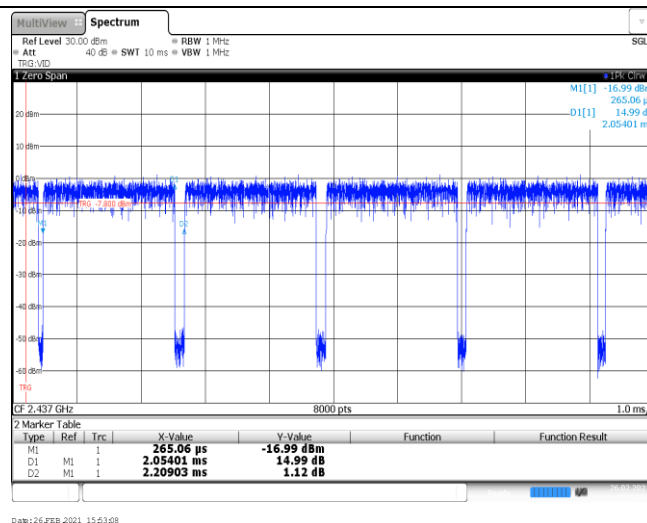
Appendix E: Duty Cycle

Modulation Type	Test Frequency (MHz)	T _{on time} for single burst (ms)	T _{period} (ms)	Duty cycle	1/T _{on time} (kHz)
11b	2437	12.39	12.47	99.4%	0.1
11g	2437	2.05	2.21	92.8%	0.5
11n20	2437	1.91	2.01	95.0%	0.5
11n40	2437	0.94	1.08	87.0%	1.1

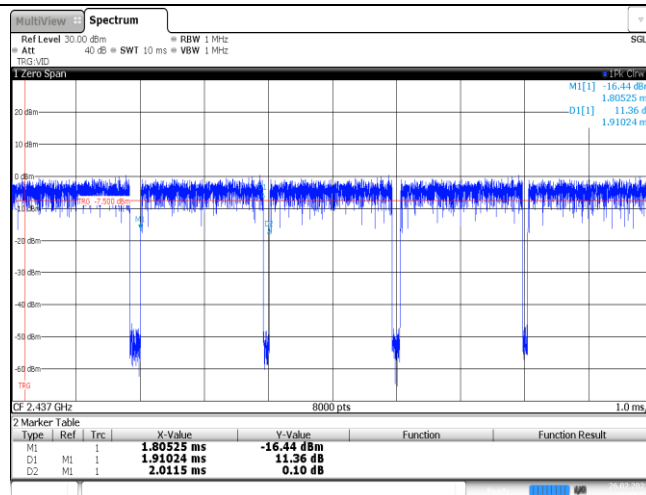
11b



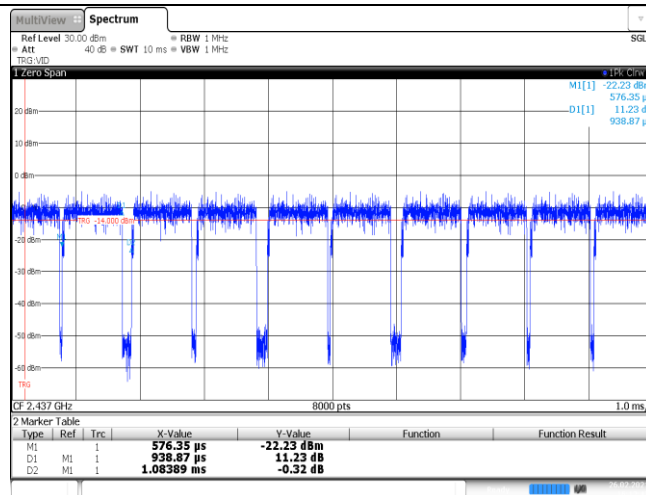
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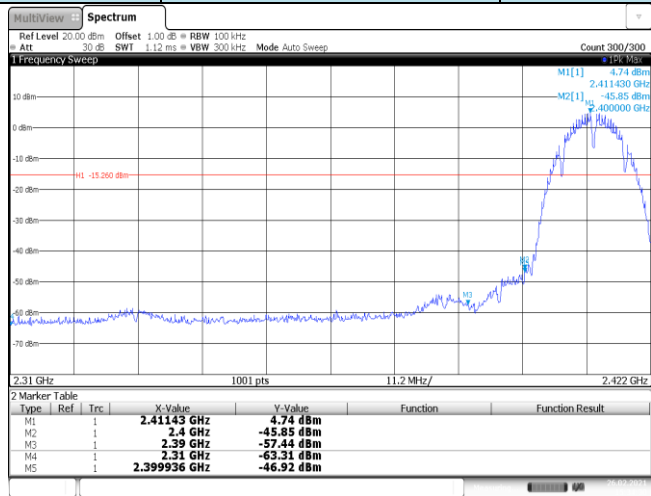
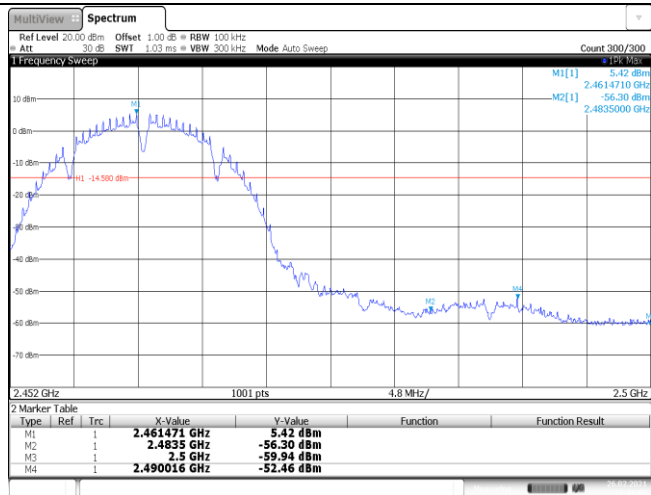
11n20

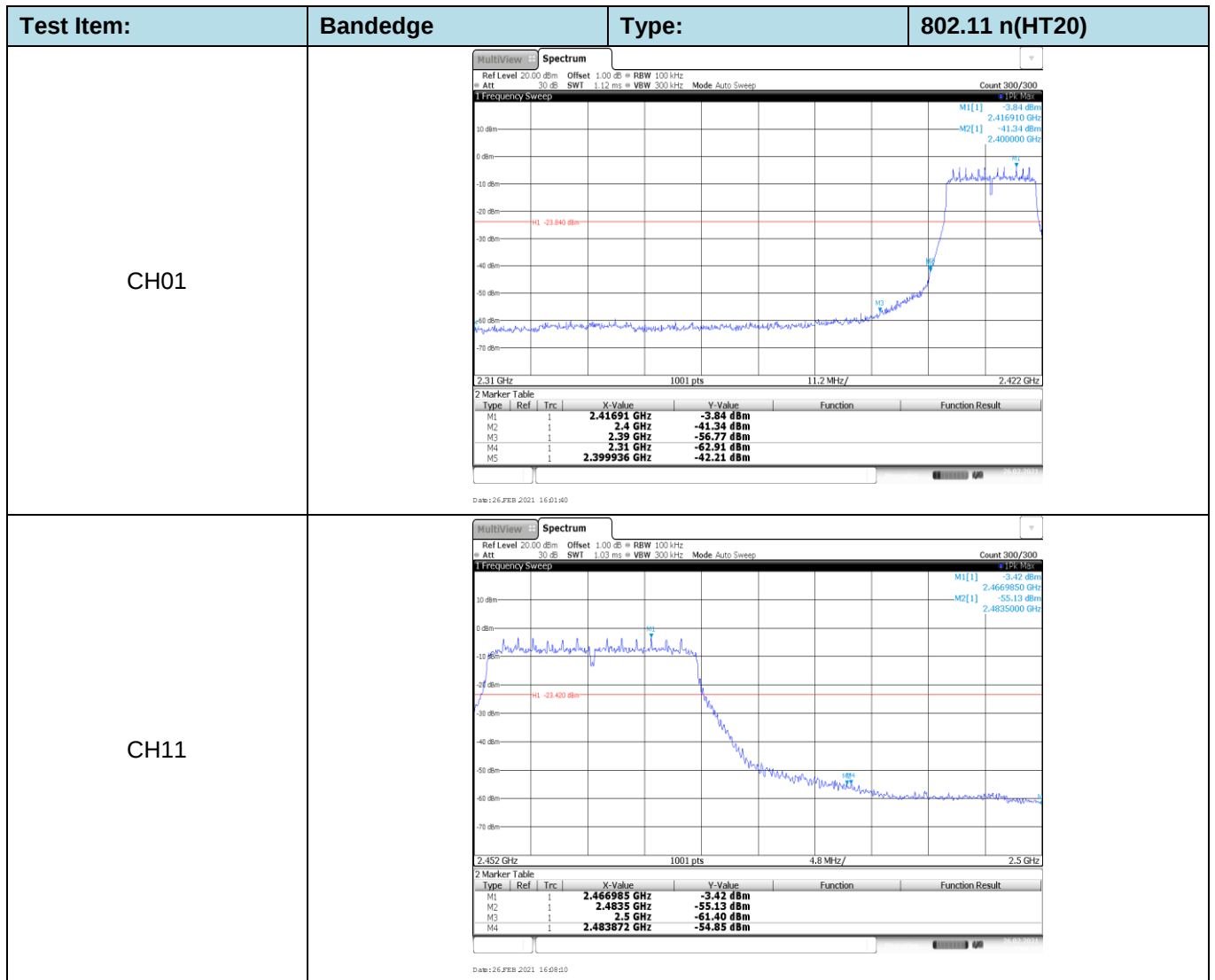


11n40

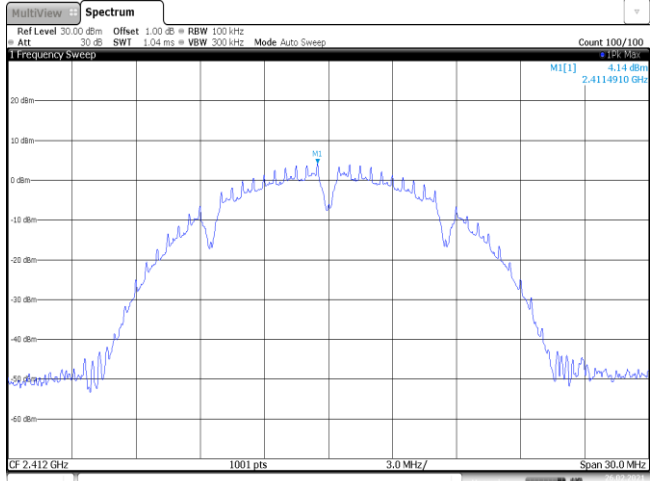
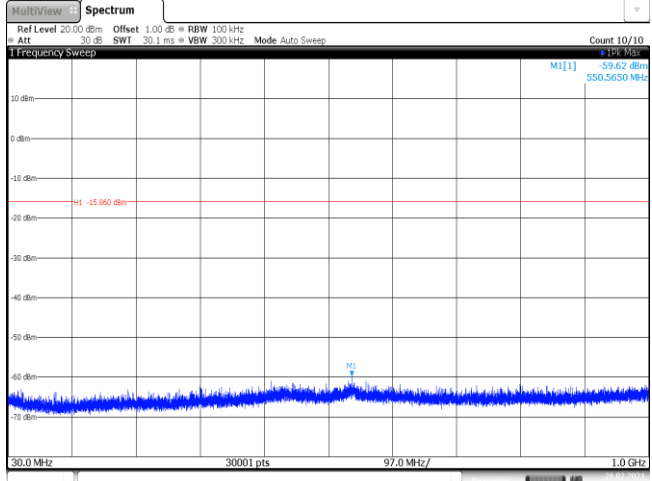
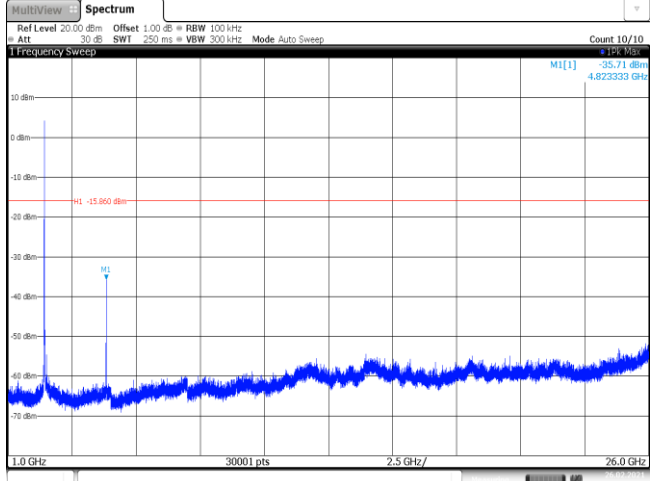


Appendix F: Band edge and Spurious Emissions (conducted)

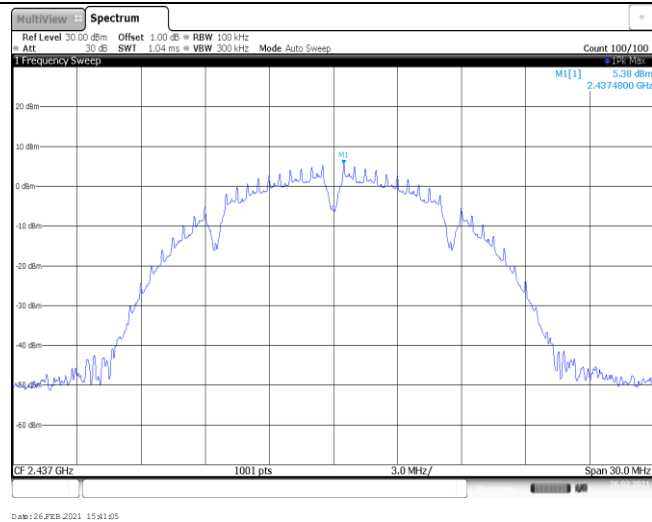
Test Item:	Bandedge	Type:	802.11 b																																										
CH01	MultiviewSpectrum Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWI 1.12 ms VBW 300 kHz Mode Auto Sweep Count 300/300 1 Frequency Sweep  2.31 GHz1001 pts11.2 MHz/2.422 GHz 2 Marker Table <table><tr><th>Type</th><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>-4.74 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-45.85 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-57.44 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-63.31 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.399936 GHz</td><td>-46.92 dBm</td><td></td><td></td></tr></table> Date: 26.FEB.2021 15:04:00			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.41143 GHz	-4.74 dBm			M2	1		2.4 GHz	-45.85 dBm			M3	1		2.39 GHz	-57.44 dBm			M4	1		2.31 GHz	-63.31 dBm			M5	1		2.399936 GHz	-46.92 dBm		
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																																							
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M4	1		2.31 GHz	-63.31 dBm																																									
M5	1		2.399936 GHz	-46.92 dBm																																									
CH11	MultiviewSpectrum Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWI 1.03 ms VBW 300 kHz Mode Auto Sweep Count 300/300 1 Frequency Sweep  2.452 GHz1001 pts4.8 MHz/2.5 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>2.461471 GHz</td><td>-5.42 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4835 GHz</td><td>-56.30 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.5 GHz</td><td>-59.94 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.490016 GHz</td><td>-52.46 dBm</td><td></td><td></td></tr></table> Date: 26.FEB.2021 15:05:04			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.461471 GHz	-5.42 dBm			M2	1		2.4835 GHz	-56.30 dBm			M3	1		2.5 GHz	-59.94 dBm			M4	1		2.490016 GHz	-52.46 dBm									
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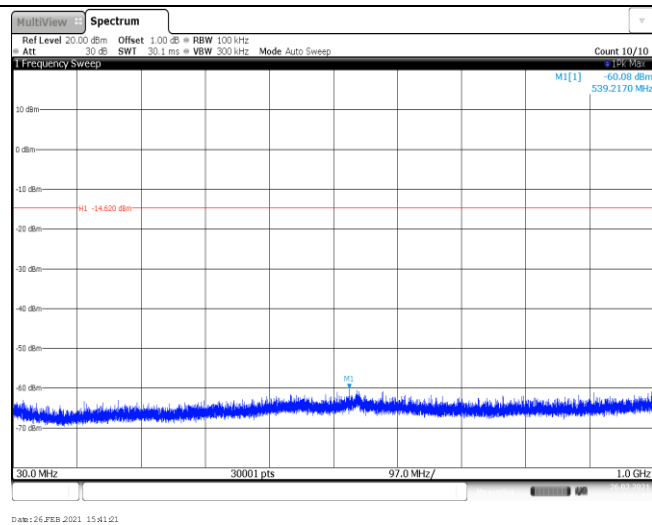
Test Item:	Bandedge	Type:	802.11 n(HT40)
CH03			

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

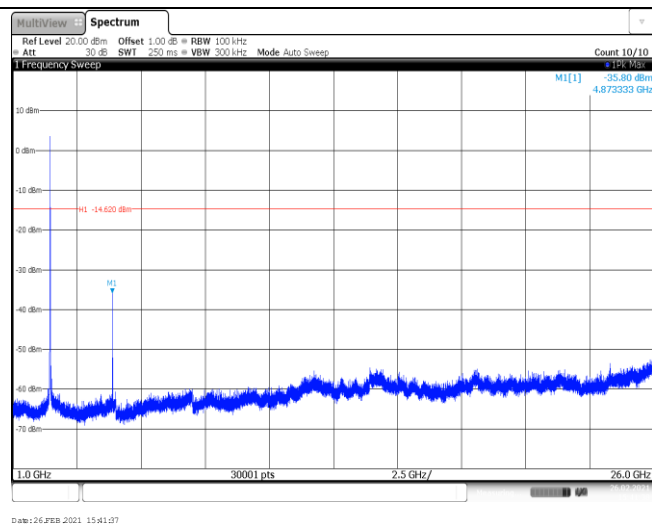
CH06
Reference level



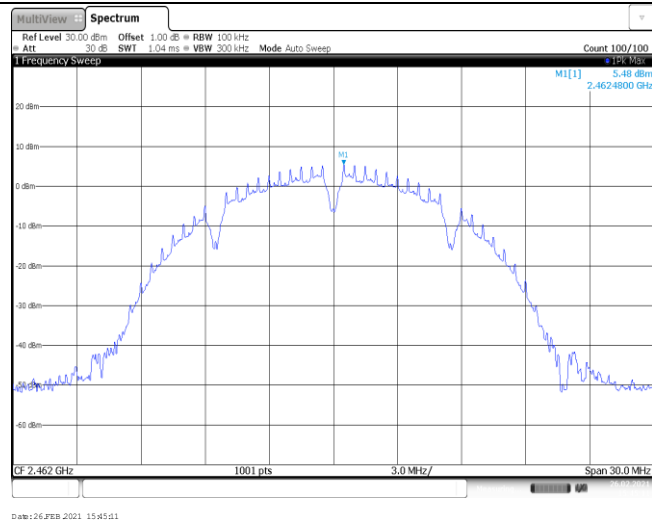
CH06
30MHz~1000MHz



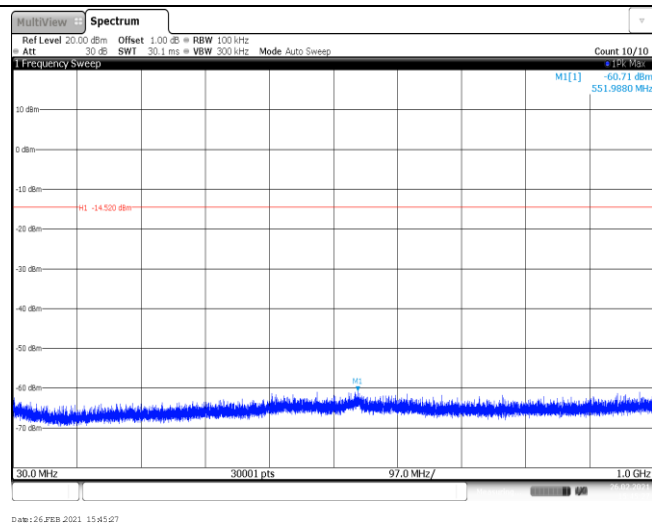
CH06
1GHz~26GHz



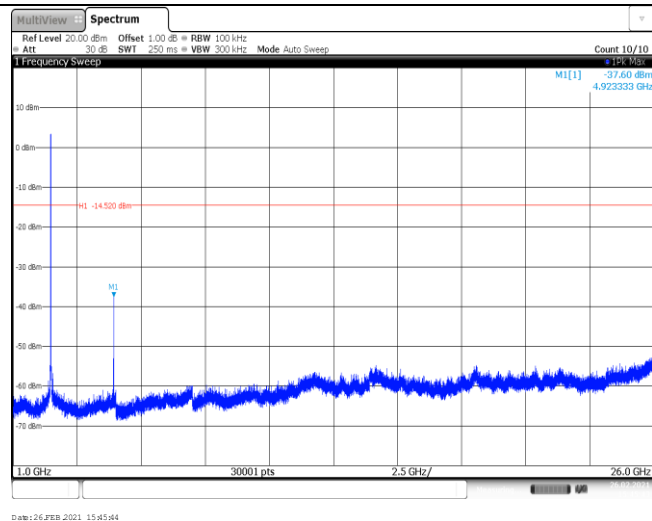
CH11
Reference level

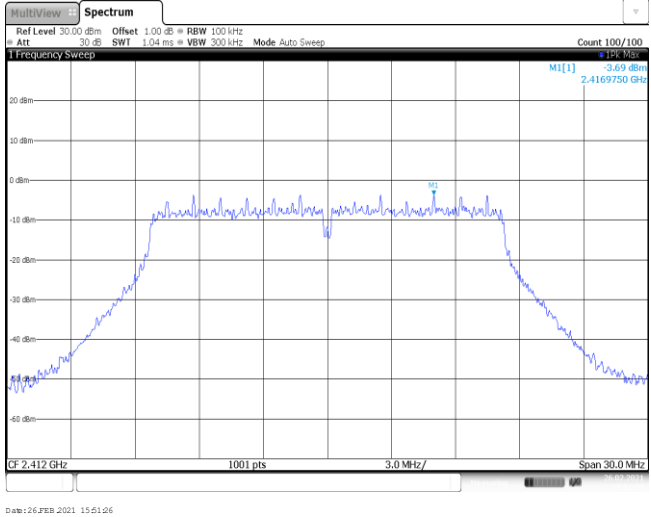
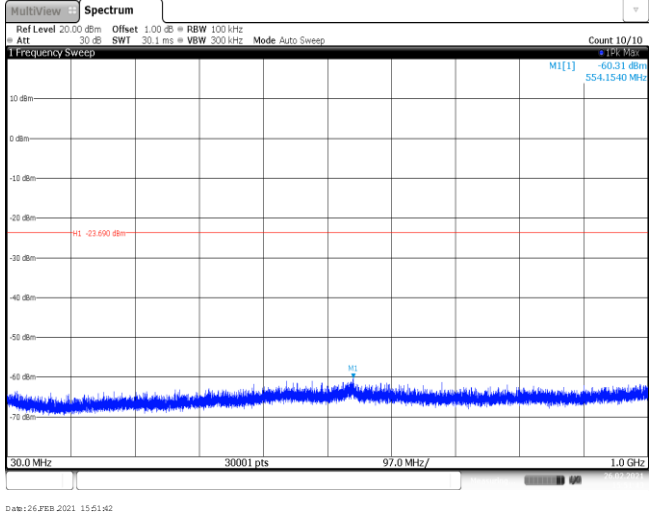
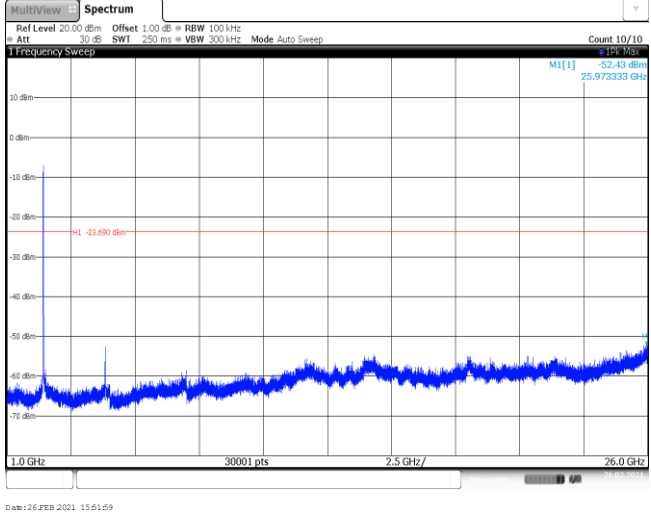


CH11
30MHz~1000MHz

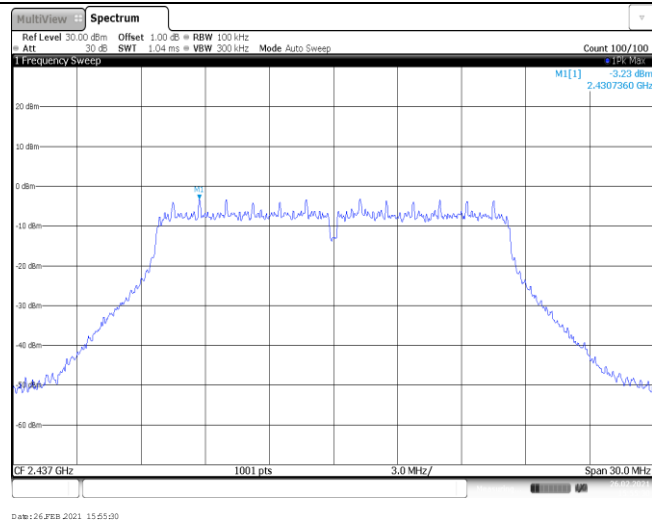


CH11
1GHz~26GHz

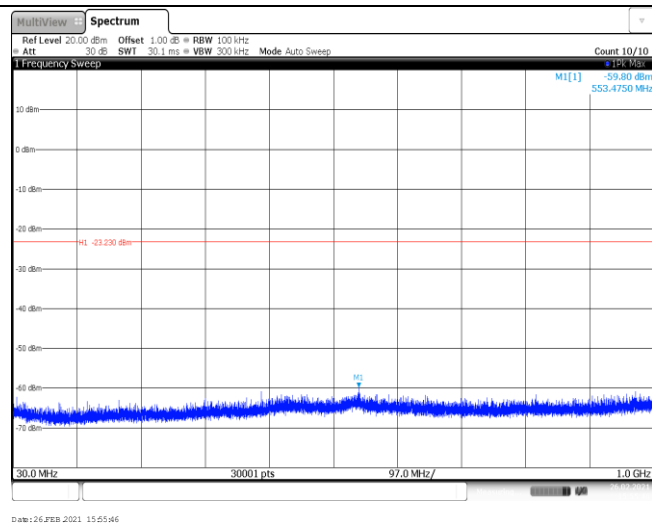


Test Item:	SE	Type:	802.11g
CH01 Reference level			
CH01 30MHz~1000MHz			
CH01 1GHz~26GHz			

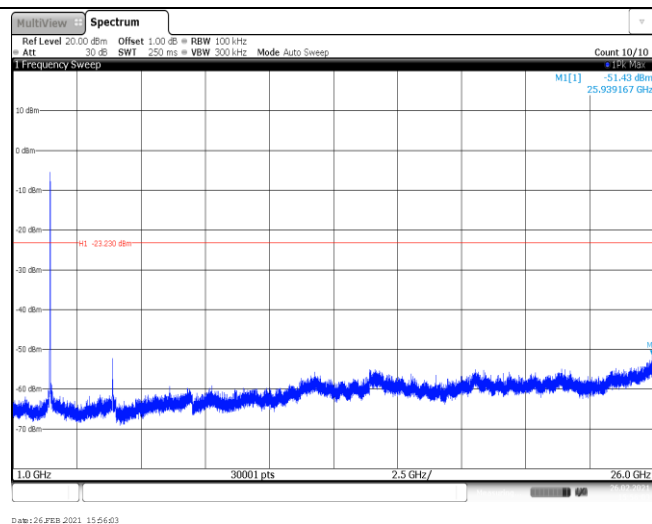
CH06
Reference level

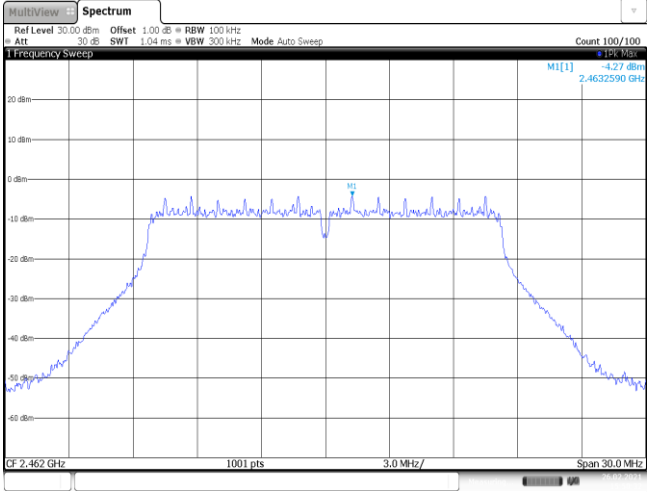
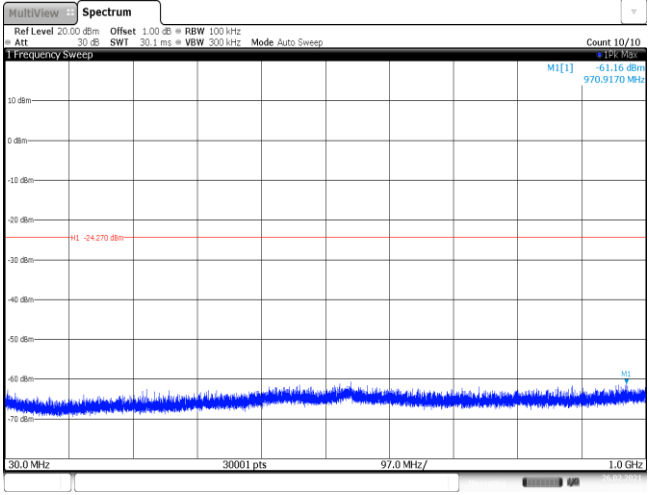
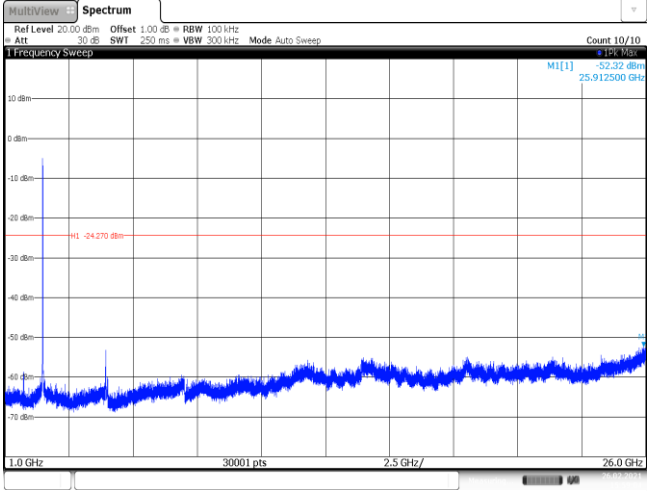


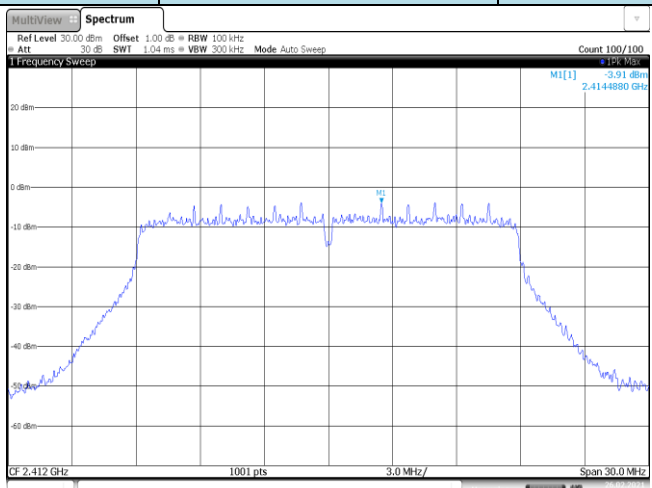
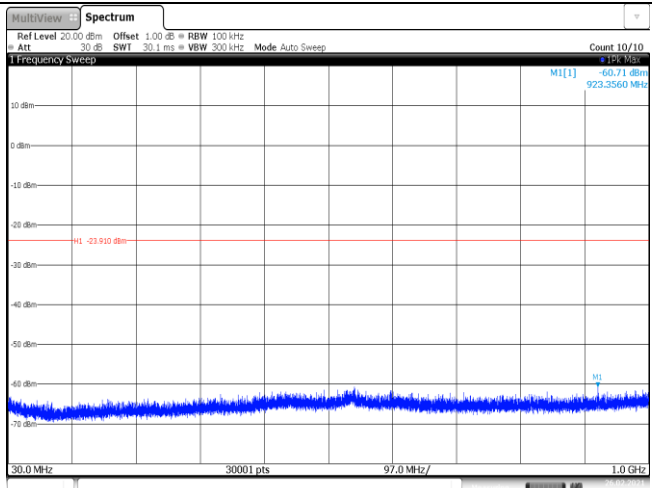
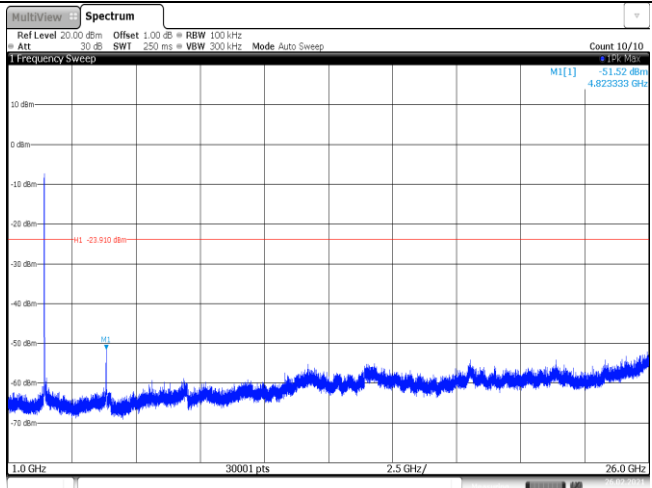
CH06
30MHz~1000MHz

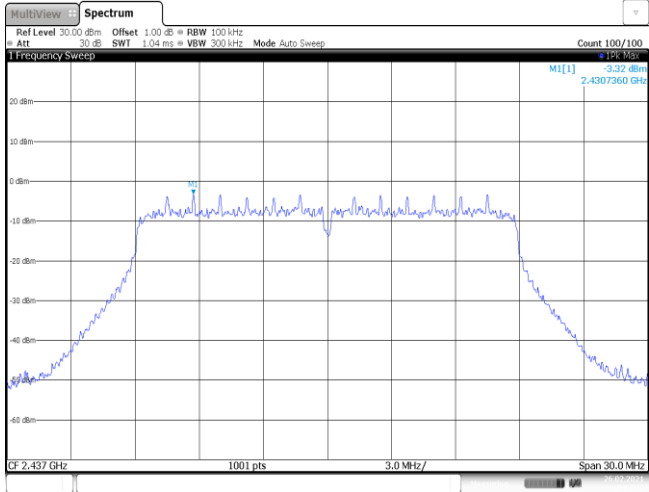
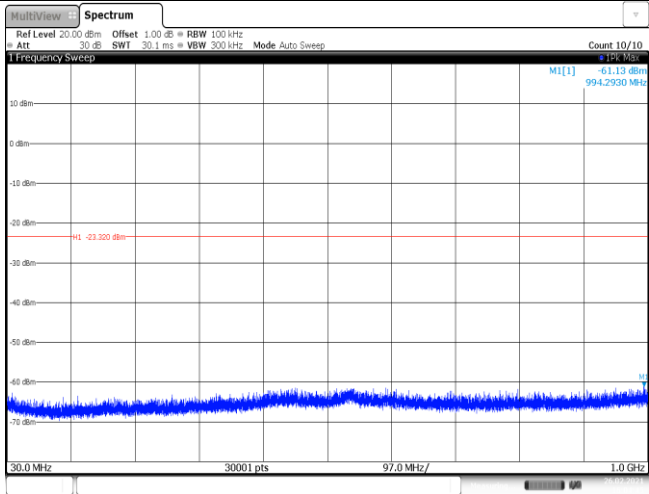
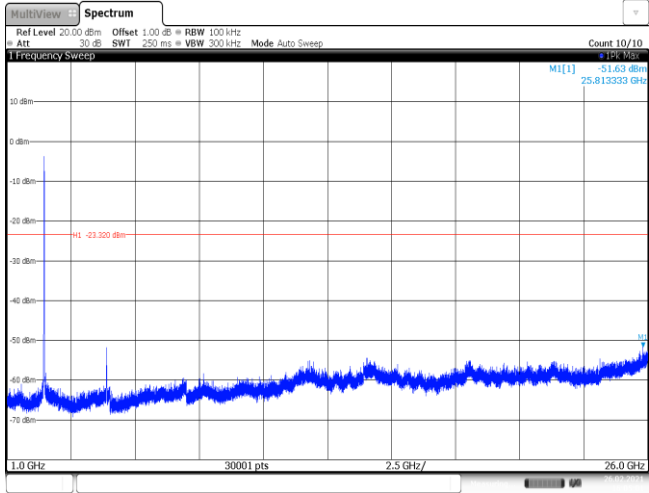


CH06
1GHz~26GHz

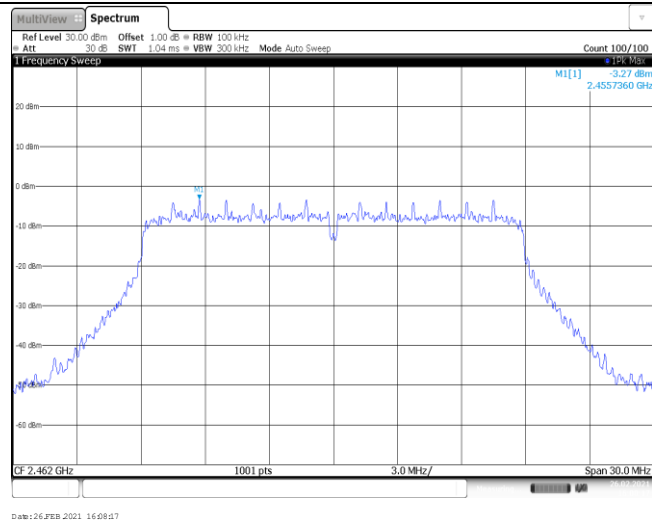


CH11 Reference level	 The spectrum plot shows a frequency sweep from 2.462 GHz to 2.4632590 GHz. The y-axis represents power in dBm, ranging from -60 to 20. The signal is centered around -10 dBm. The plot includes a peak marker at 2.4632590 GHz with a value of -4.27 dBm. The x-axis shows 1001 points and a span of 30.0 MHz.
CH11 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 signal is centered around -61.16 dBm. The plot includes a peak marker at 970.9170 MHz with a value of -61.16 dBm. The x-axis shows 30001 points and a span of 97.0 MHz.
CH11 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 signal is centered around -52.32 dBm. The plot includes a peak marker at 25.912500 GHz with a value of -52.32 dBm. The x-axis shows 30001 points and a span of 2.5 GHz.

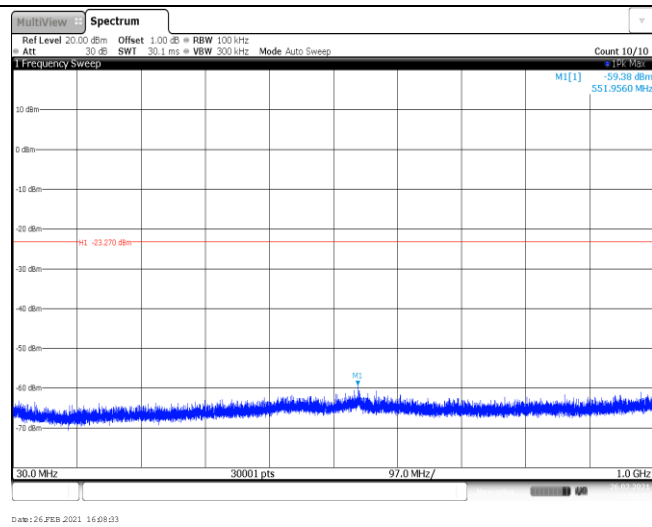
Test Item:	SE	Type:	802.11n(HT20)
CH01 Reference level		 Ref Level 30.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWI 1.04 ms VSW 300 kHz Mode Auto Sweep Count 100/100 M1[1] -3.91 dBm 2.414880 GHz 2.412 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 26.FEB.2021 16:01:47	
CH01 30MHz~1000MHz		 Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWI 30.1 ms VSW 300 kHz Mode Auto Sweep Count 10/10 M1[1] -60.71 dBm 923.3560 MHz 30.0 MHz 30001 pts 97.0 MHz/ 1.0 GHz Date: 26.FEB.2021 16:02:03	
CH01 1GHz~26GHz		 Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWI 250 ms VSW 300 kHz Mode Auto Sweep Count 10/10 M1[1] -51.52 dBm 4.822533 GHz 1.0 GHz 30001 pts 2.5 GHz/ 26.0 GHz Date: 26.FEB.2021 16:02:20	

CH06 Reference level	 The spectrum plot shows a frequency sweep from 2.437 GHz to 2.437360 GHz. The y-axis represents power in dBm, ranging from -60 to 20. The signal is a flat line at approximately -30 dBm. The plot includes a grid and a title bar with parameters: Ref Level 30.00 dBm, Offset 1.00 dB, RBW 100 kHz, Att 30 dB, SWF 1.04 ms, VSW 300 kHz, Mode Auto Sweep. The date is 26 FEB 2021 16:04:29.
CH06 30MHz~1000MHz	 The spectrum plot shows a frequency sweep from 30.0 MHz to 1000 MHz. The y-axis represents power in dBm, ranging from -70 to 10. The signal is a flat line at approximately -61 dBm. The plot includes a grid and a title bar with parameters: Ref Level 20.00 dBm, Offset 1.00 dB, RBW 100 kHz, Att 30 dB, SWF 30.1 ms, VSW 300 kHz, Mode Auto Sweep. The date is 26 FEB 2021 16:04:45.
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 signal is a flat line at approximately -51 dBm. The plot includes a grid and a title bar with parameters: Ref Level 20.00 dBm, Offset 1.00 dB, RBW 100 kHz, Att 30 dB, SWF 250 ms, VSW 300 kHz, Mode Auto Sweep. The date is 26 FEB 2021 16:05:01.

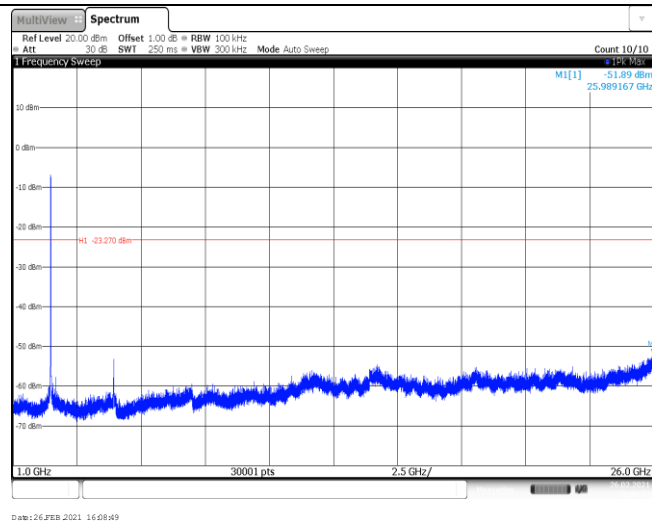
CH11
Reference level

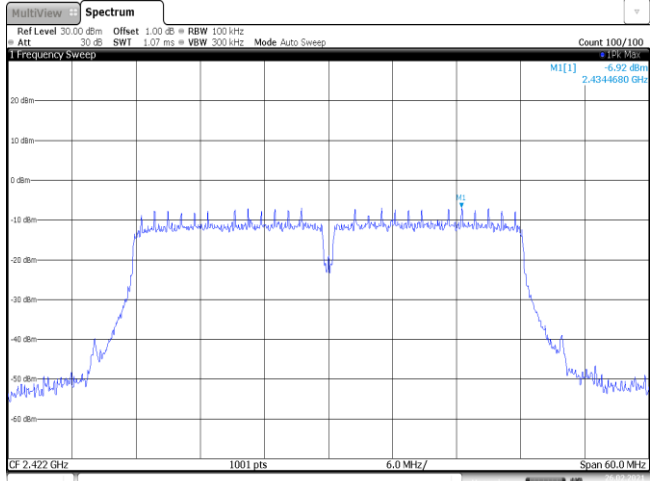
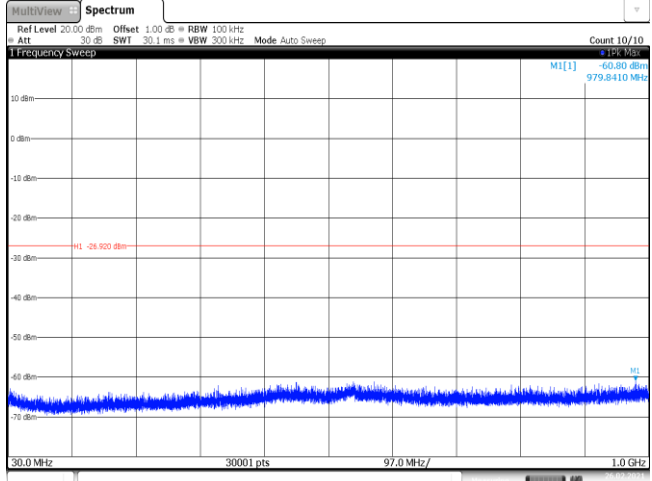
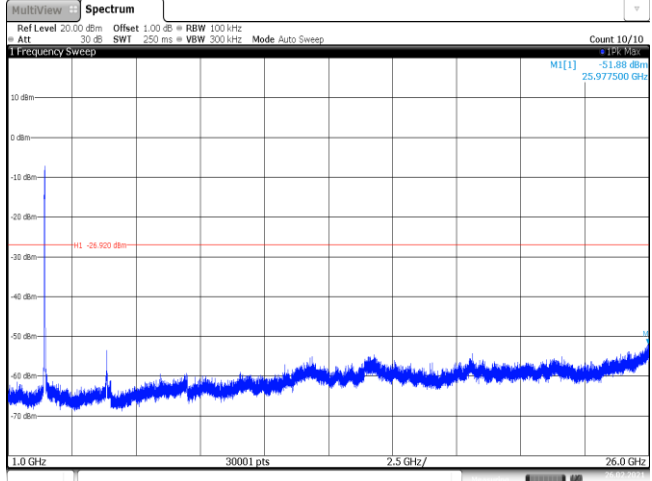


CH11
30MHz~1000MHz

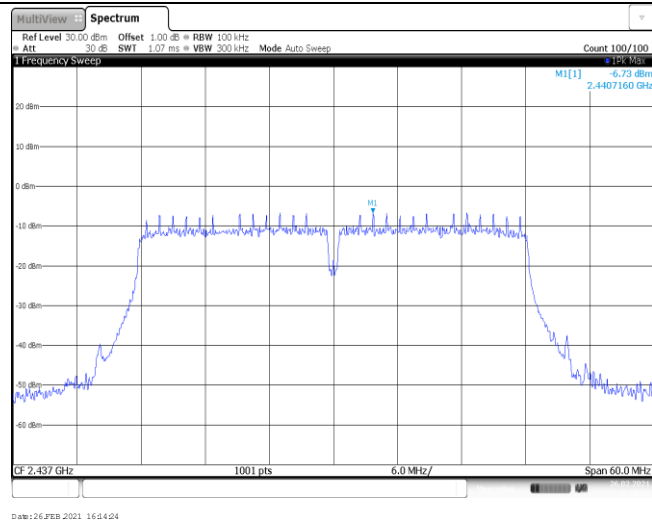


CH11
1GHz~26GHz

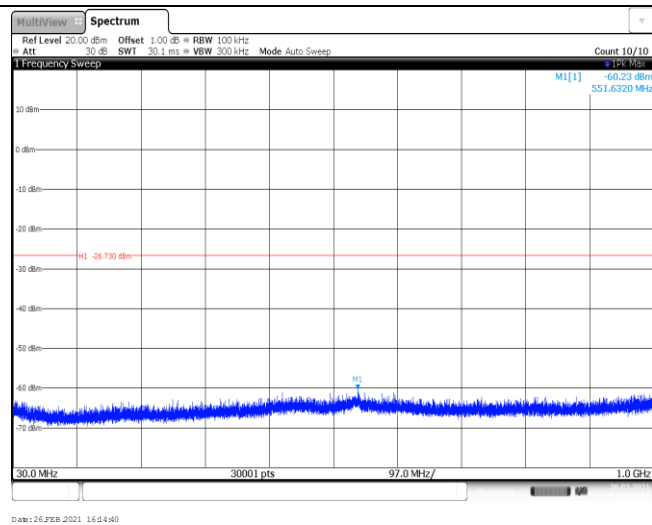


Test Item:	SE	Type:	802.11n(HT40)
CH03 Reference level			
CH03 30MHz~1000MHz			
CH03 1GHz~26GHz			

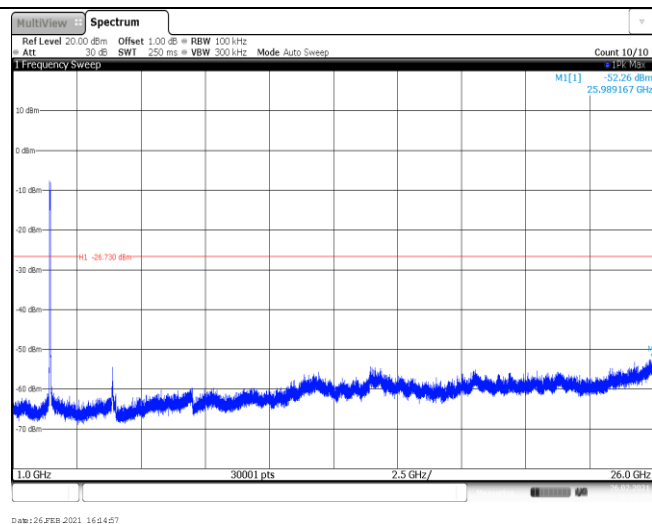
CH06
Reference level

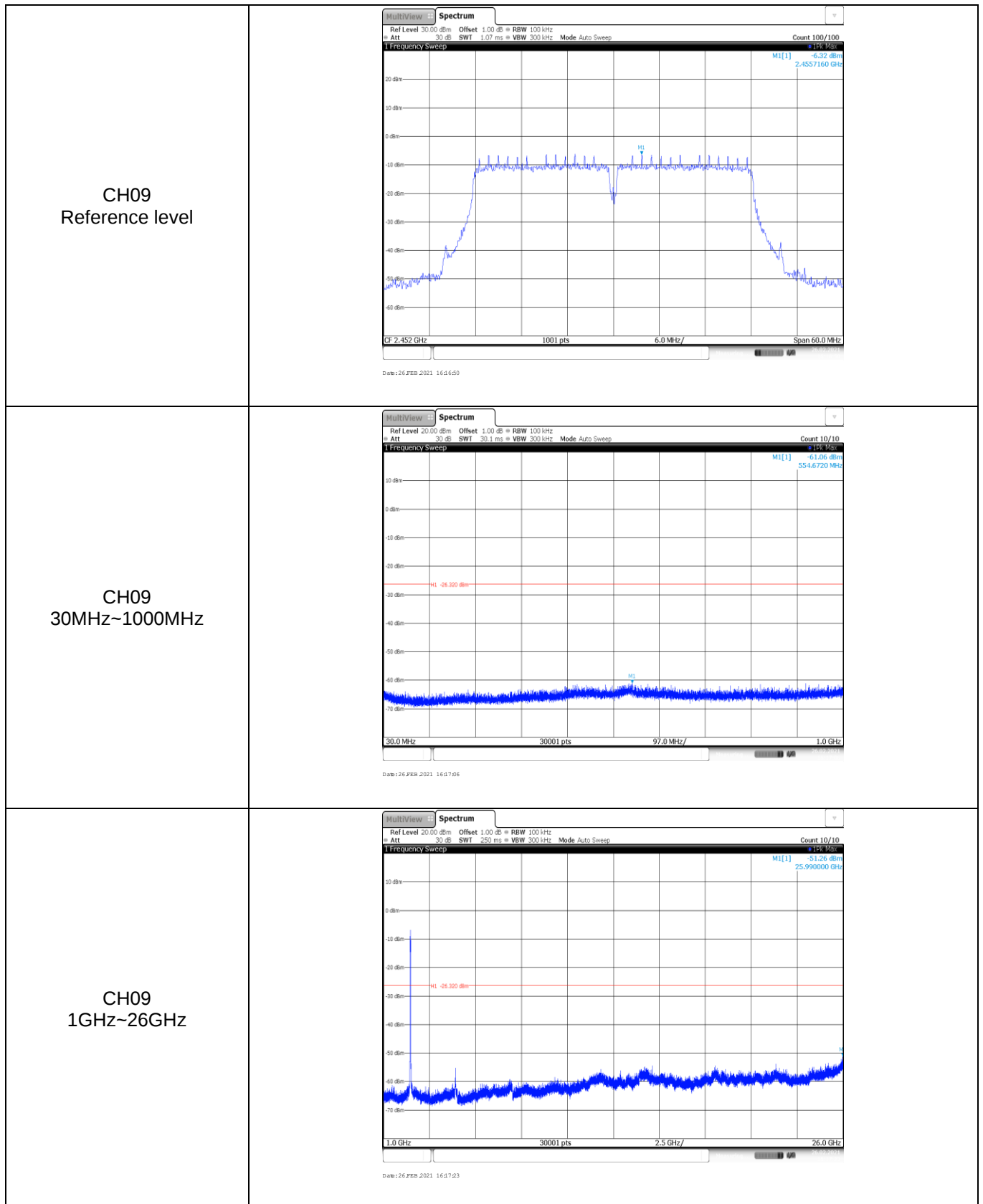


CH06
30MHz~1000MHz



CH06
1GHz~26GHz





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