

APPENDIX REPORT

Project No.	SHT2005087301EW	Radio Specification	WIFI 2.4G
Test sample No.	YPHT20050873001	Model No.	SC201
Start test date	2020/6/2	Finish date	2020/6/2
Temperature	25°C	Humidity	50%
Test Engineer	JiongSheng.Feng	Auditor	<i>William.wang</i>

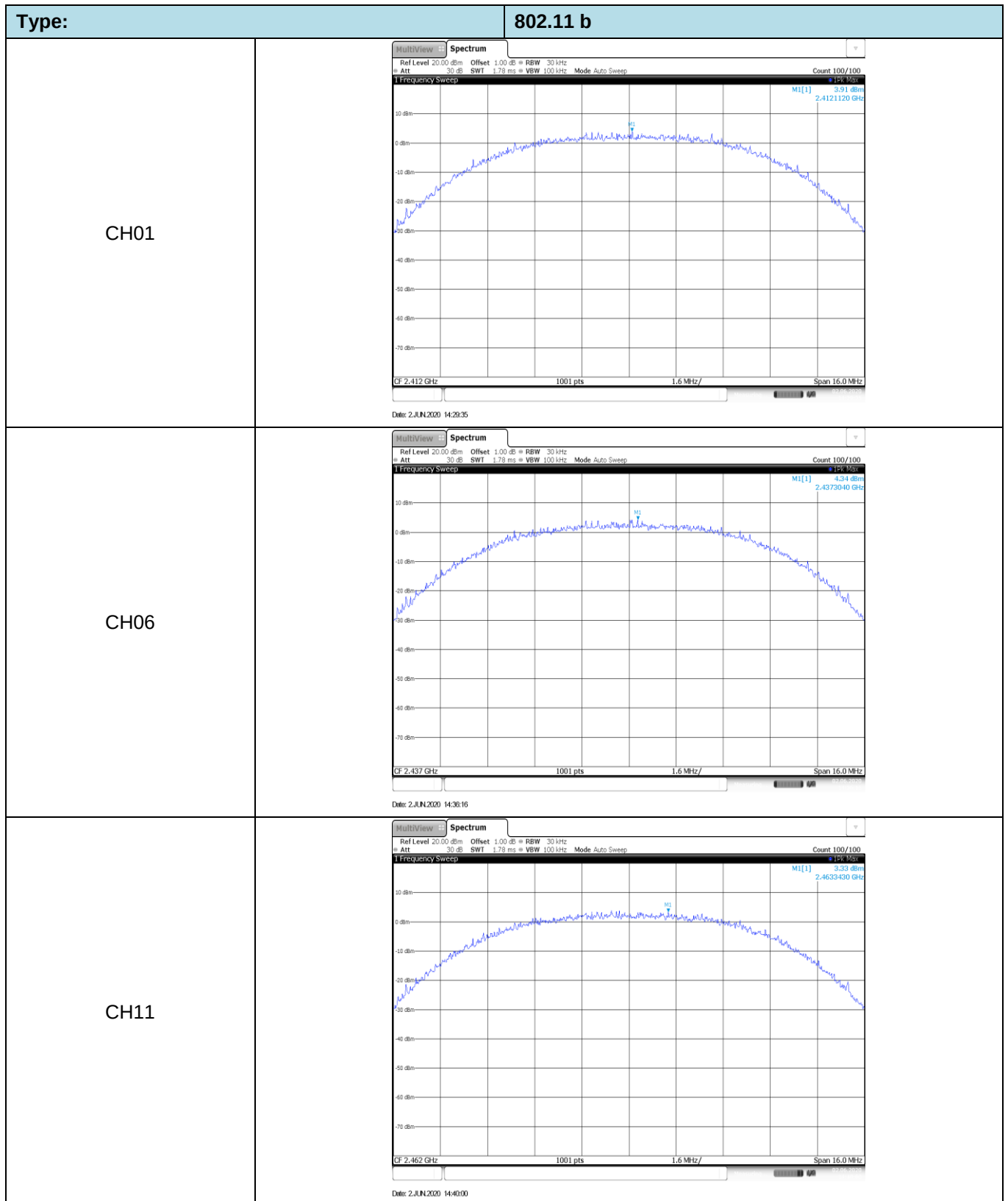
Appendix clause	Test item	Result
A	Conducted Peak Output Power	PASS
B	Power Spectral Density	PASS
C	6 dB Bandwidth	PASS
D	99% Occupied Bandwidth	PASS
E	Duty Cycle	PASS
F	Band edge and Spurious Emissions (conducted)	PASS

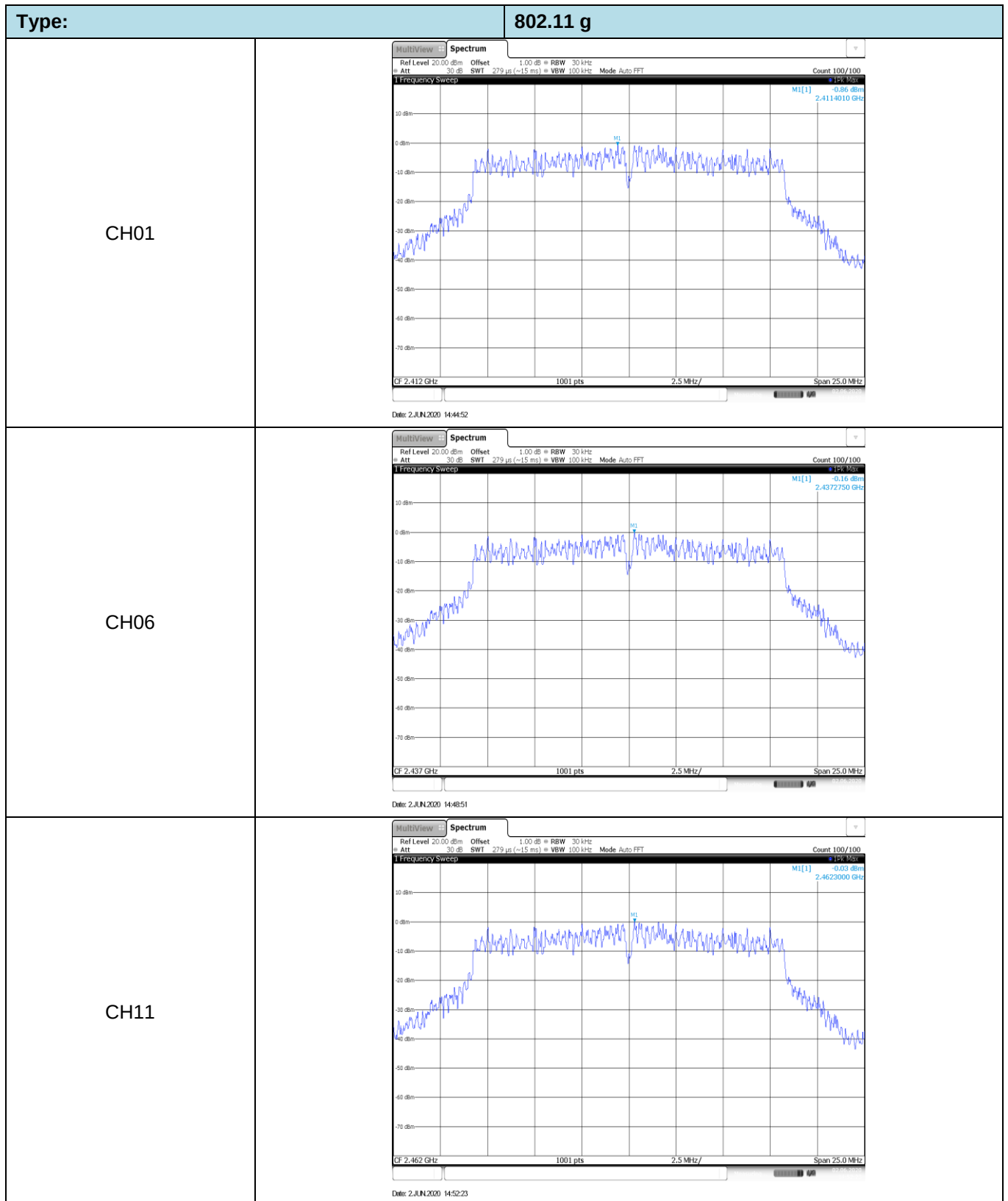
Appendix A: Conducted Peak Output Power

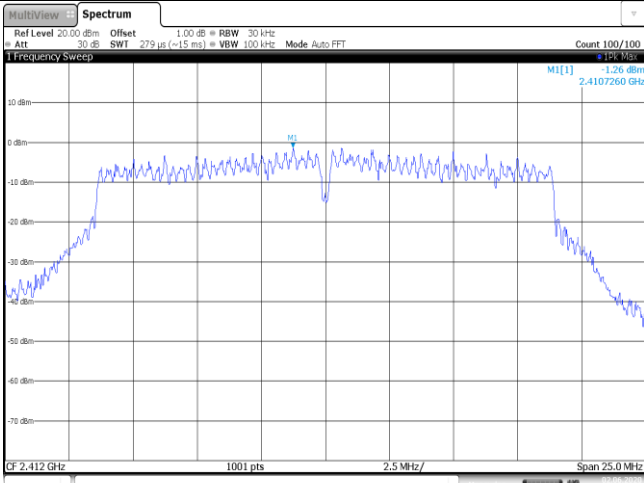
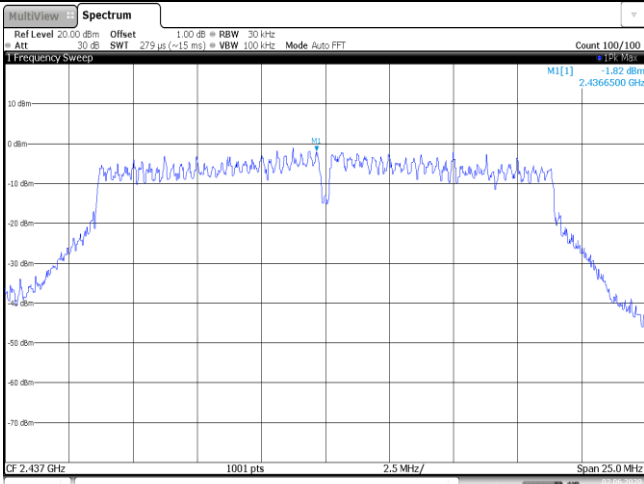
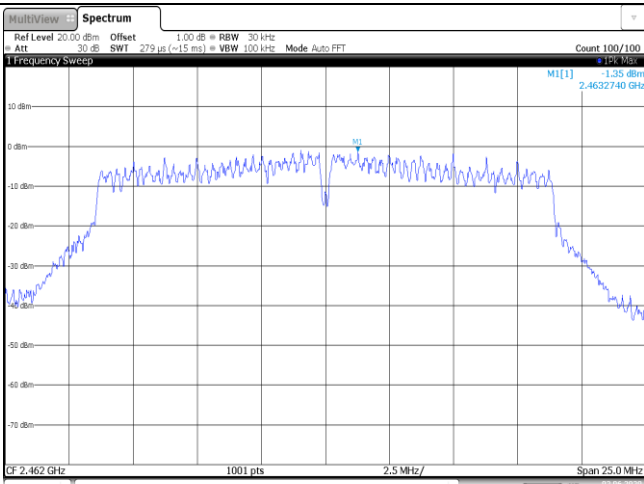
Type	Channel	Peak Output power (dBm)	Average Output power (dBm)	Limit (dBm)	Result
802.11b	01	22.33	21.07	≤30.00	Pass
	06	22.65	21.15		
	11	22.69	21.23		
802.11g	01	23.26	21.10	≤30.00	Pass
	06	23.57	21.41		
	11	23.84	21.67		
802.11n(HT20)	01	22.45	20.74	≤30.00	Pass
	06	22.67	21.04		
	11	22.89	21.22		

Appendix B: Power Spectral Density

Type	Channel	Power Spectral Density (dBm/30KHz)	Limit (dBm/3KHz)	Result
802.11b	01	3.91	≤8.00	Pass
	06	4.34		
	11	3.33		
802.11g	01	-0.86	≤8.00	Pass
	06	-0.16		
	11	-0.03		
802.11n(HT20)	01	-1.26	≤8.00	Pass
	06	-1.82		
	11	-1.35		

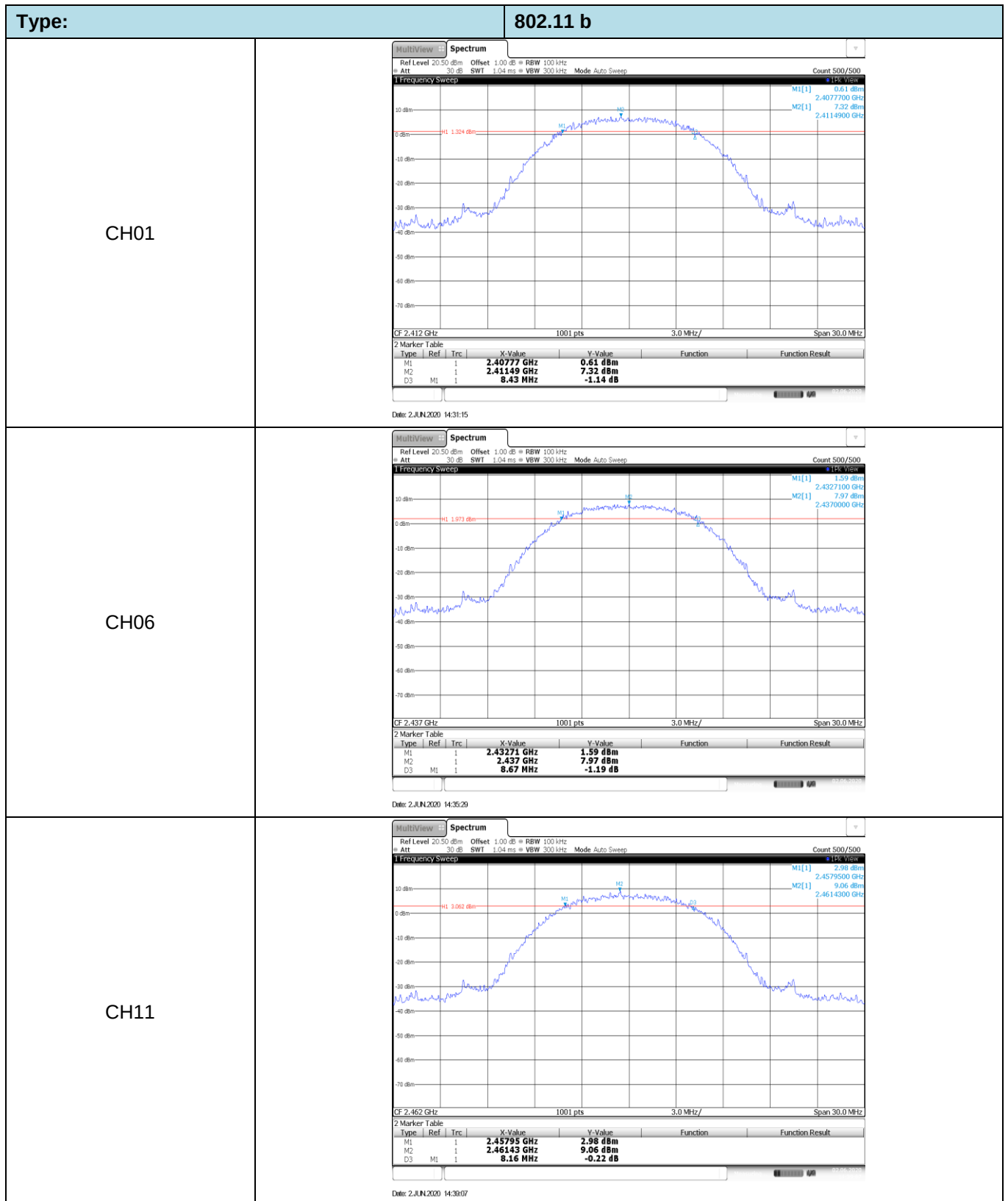


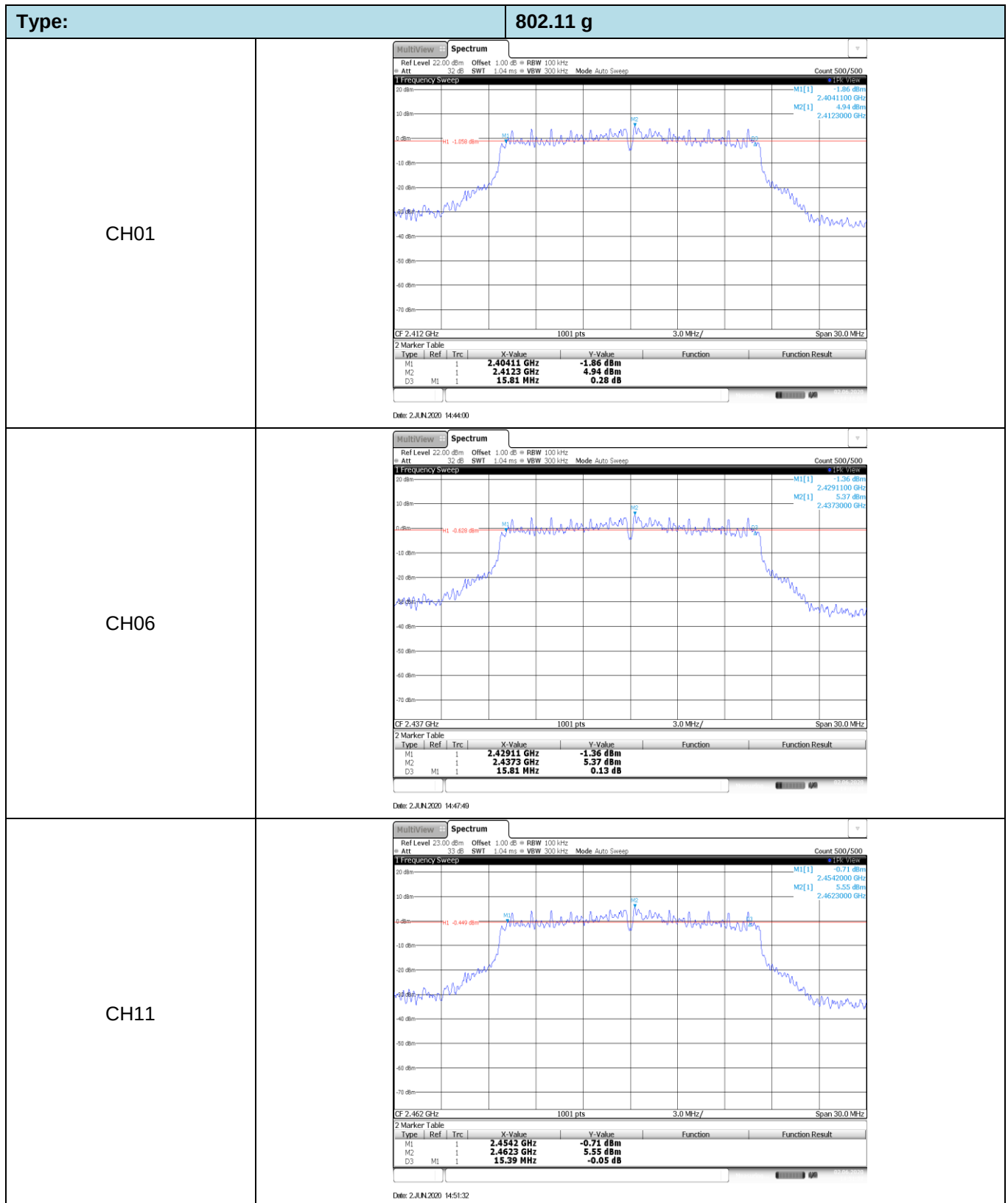


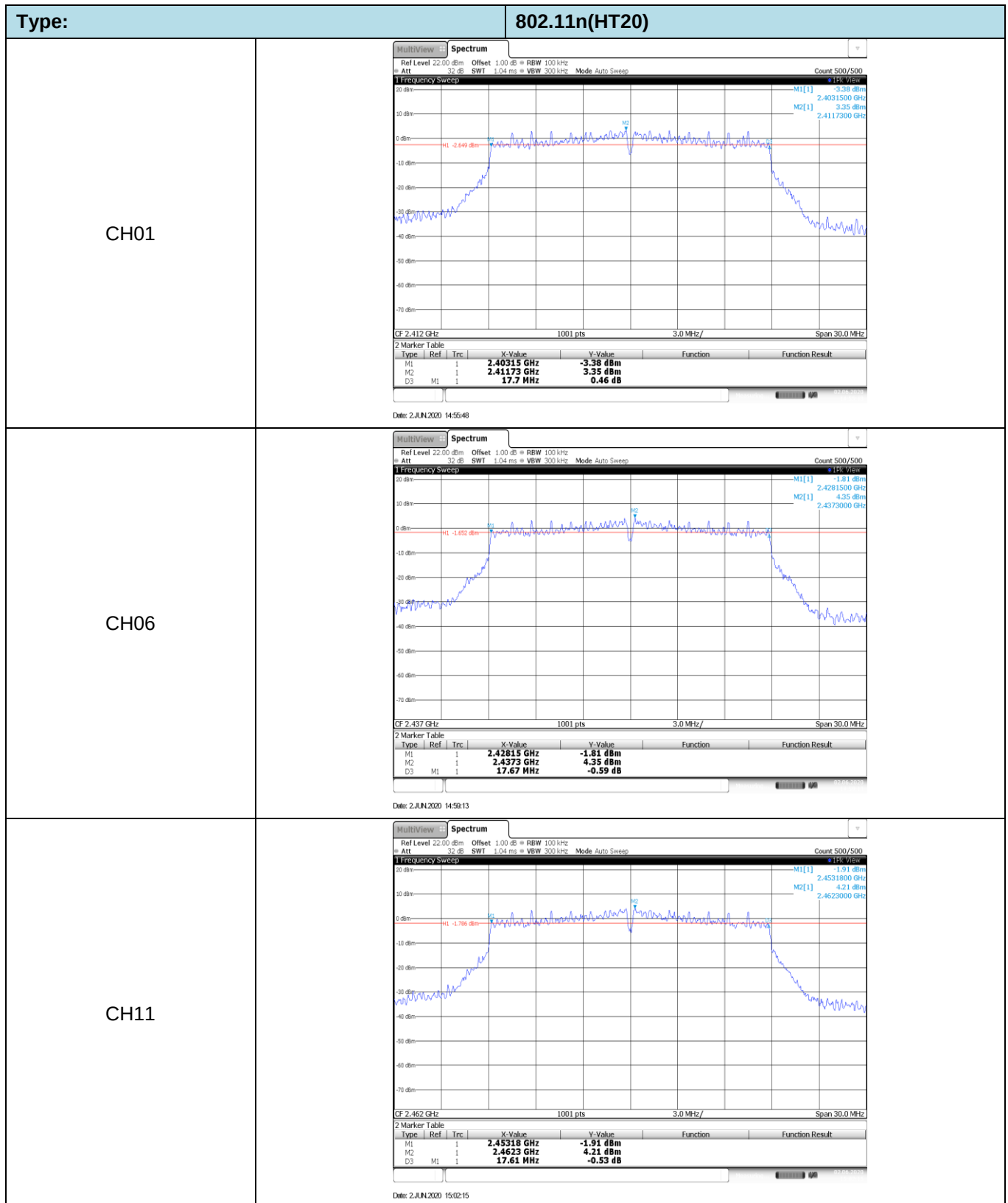
Type:	802.11n(HT20)
CH01	 2.JUN.2020 14:56:53
CH06	 2.JUN.2020 15:00:19
CH11	 2.JUN.2020 15:03:34

Appendix C: 6dB bandwidth

Type	Channel	6dB Bandwidth (MHz)	Limit (MHz)	Result
802.11b	01	8.43	≥0.5	Pass
	06	8.67		
	11	8.16		
802.11g	01	15.81	≥0.5	Pass
	06	15.81		
	11	15.39		
802.11n(HT20)	01	17.70	≥0.5	Pass
	06	17.67		
	11	17.61		

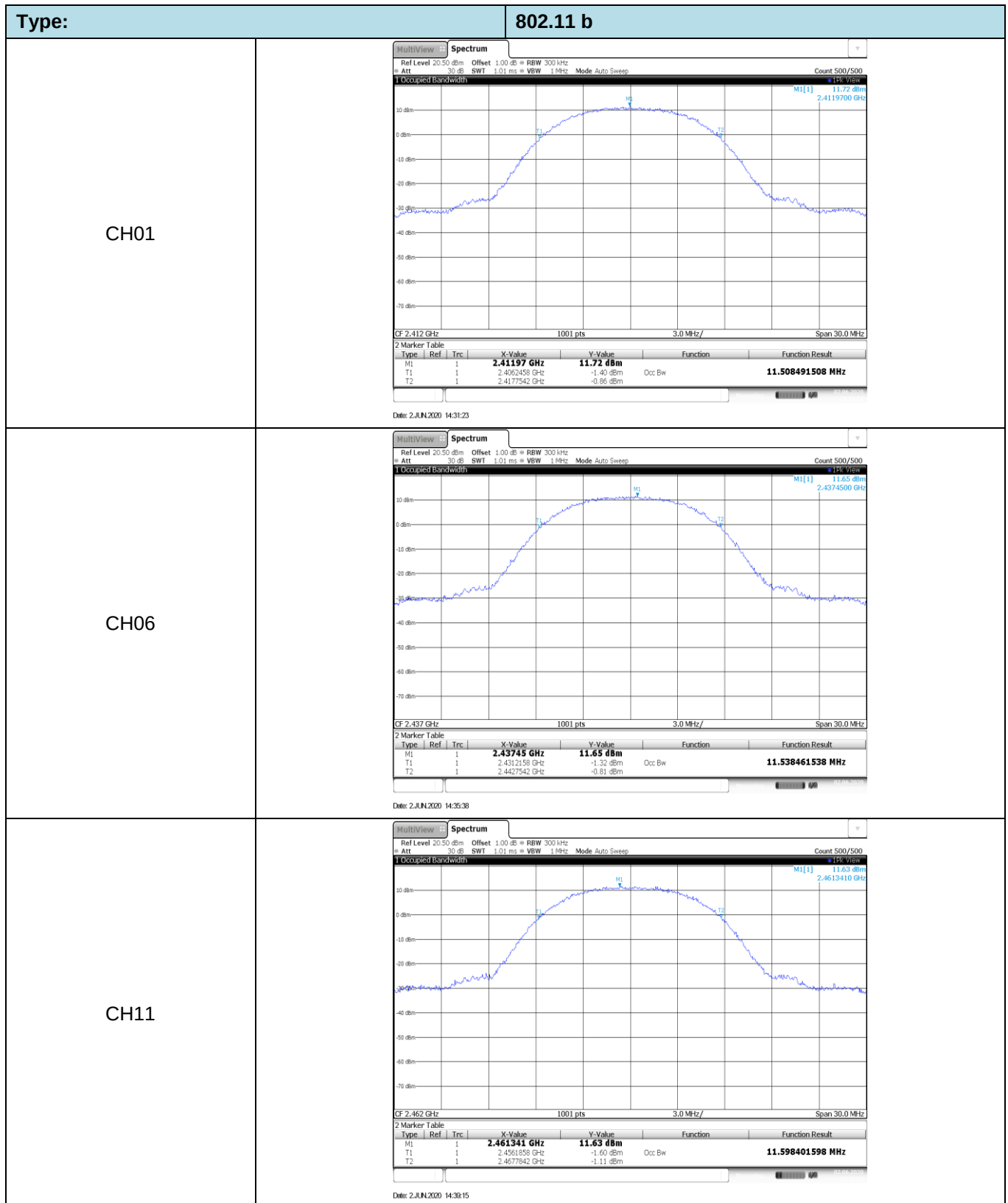


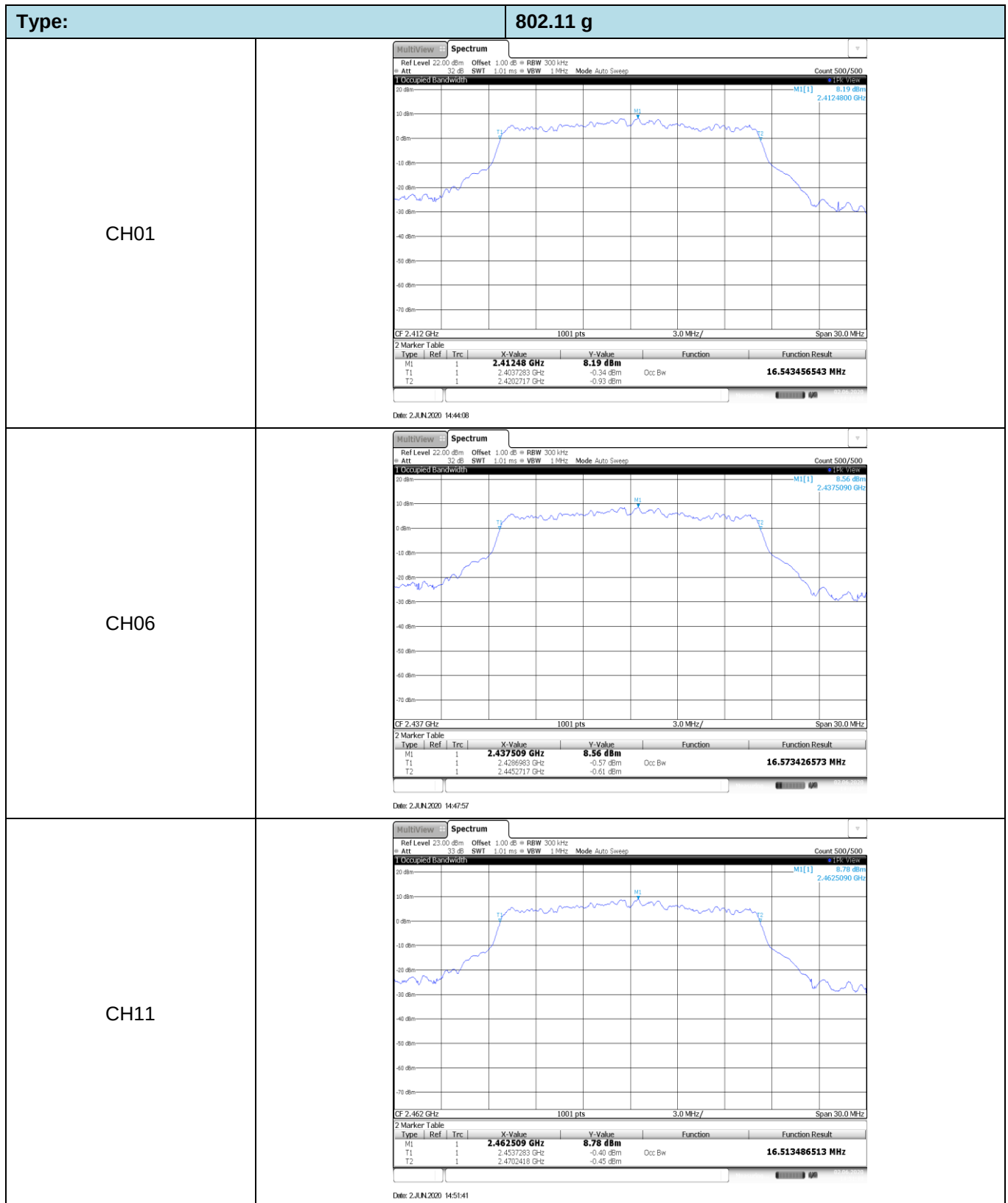


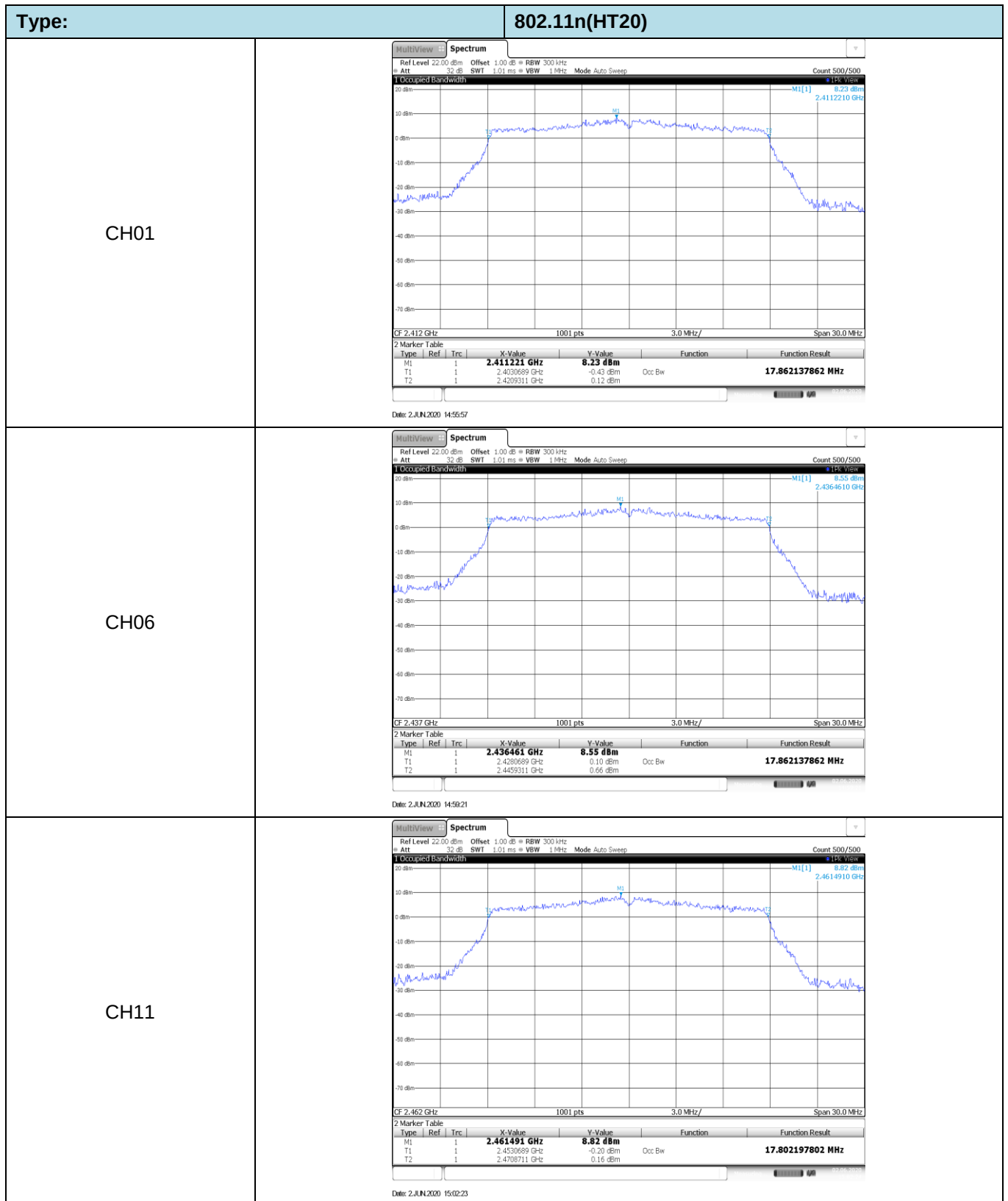


Appendix D: 99% Occupied Bandwidth

Type	Channel	99% Bandwidth (MHz)	Limit (MHz)	Result
802.11b	01	11.51	-	Pass
	06	11.54		
	11	11.60		
802.11g	01	16.54	-	Pass
	06	16.57		
	11	16.51		
802.11n(HT20)	01	17.86	-	Pass
	06	17.86		
	11	17.80		

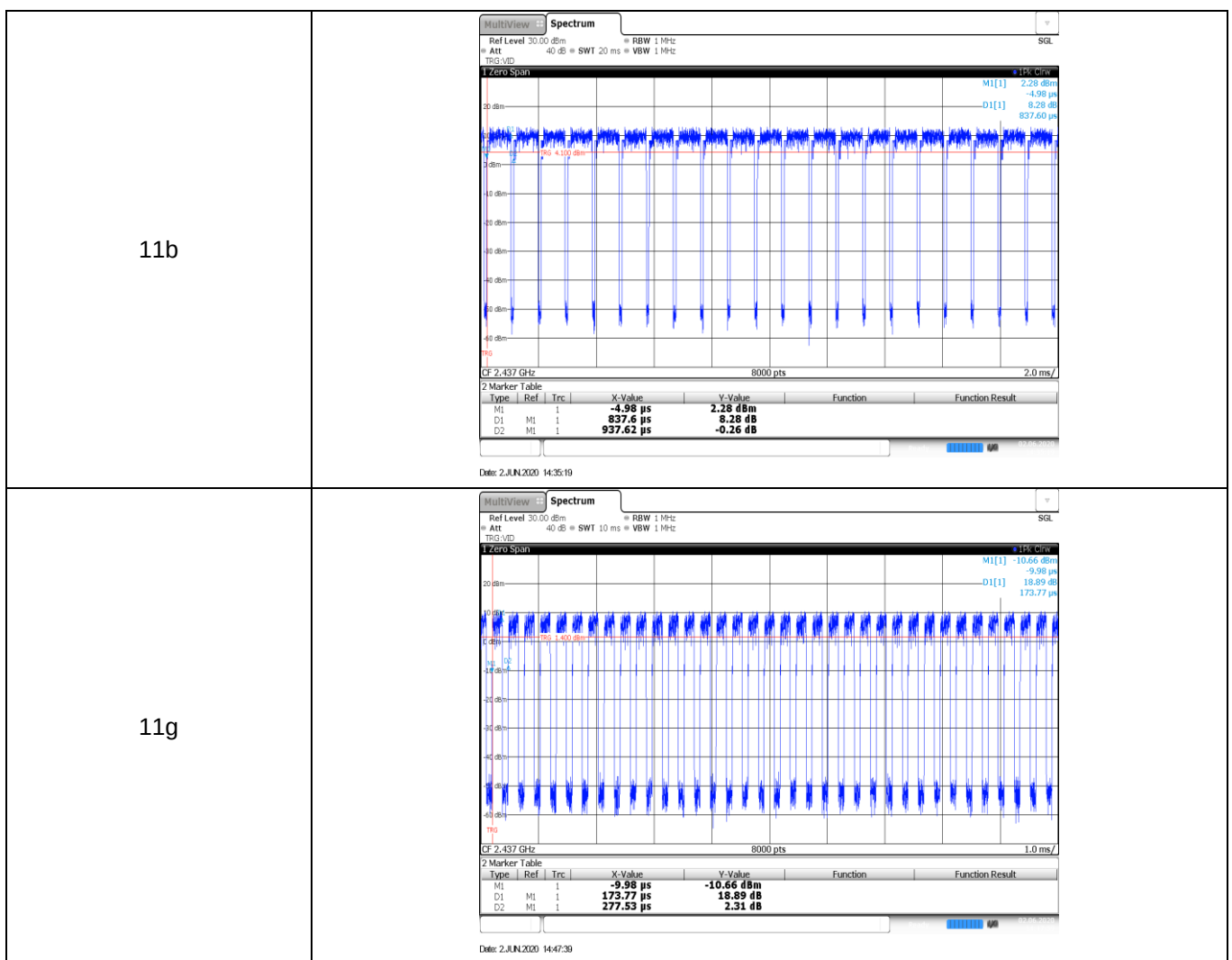


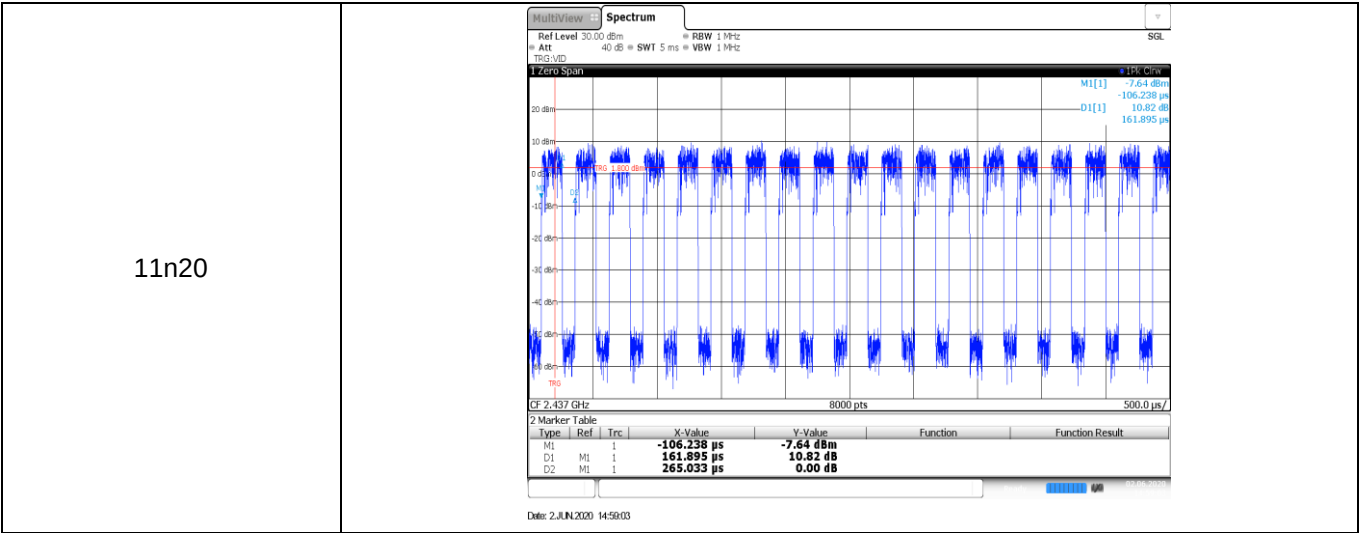




Appendix E: Duty Cycle

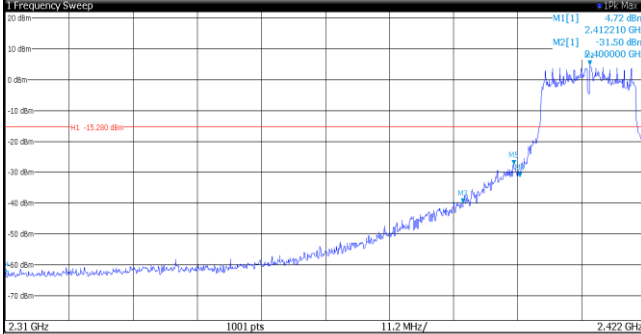
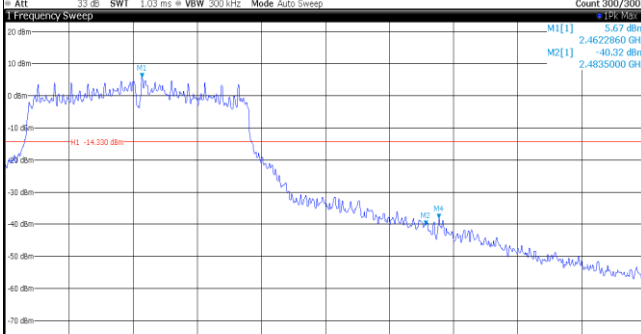
Modulation Type	Test Frequency (MHz)	T _{on time} for single burst (ms)	T _{period} (ms)	Duty cycle	1/T _{on time} (kHz)
11b	2437	0.84	0.94	89.4%	1.2
11g	2437	0.17	0.28	60.7%	5.9
11n20	2437	0.16	0.27	59.3%	6.3

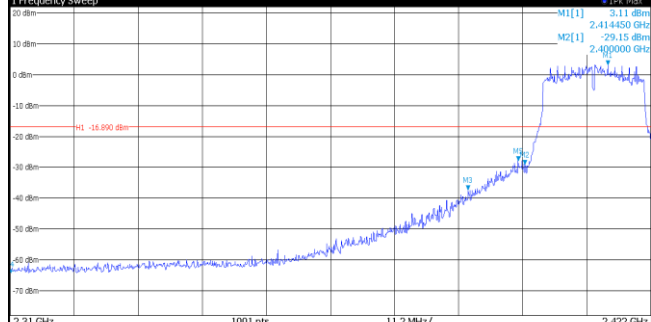
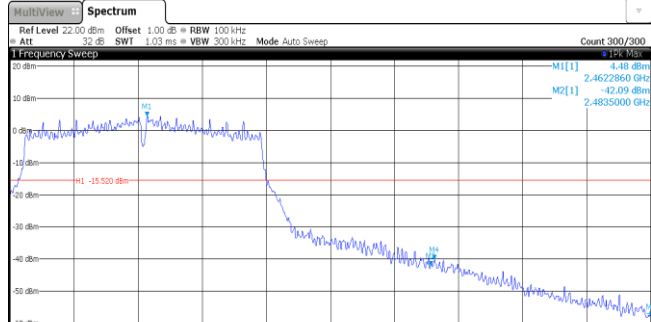


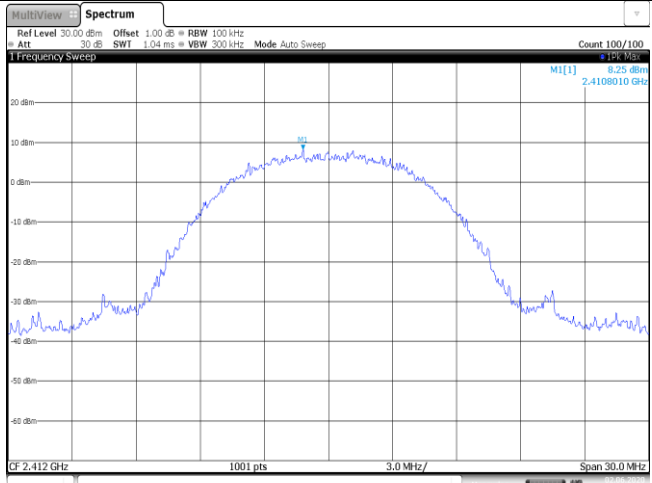
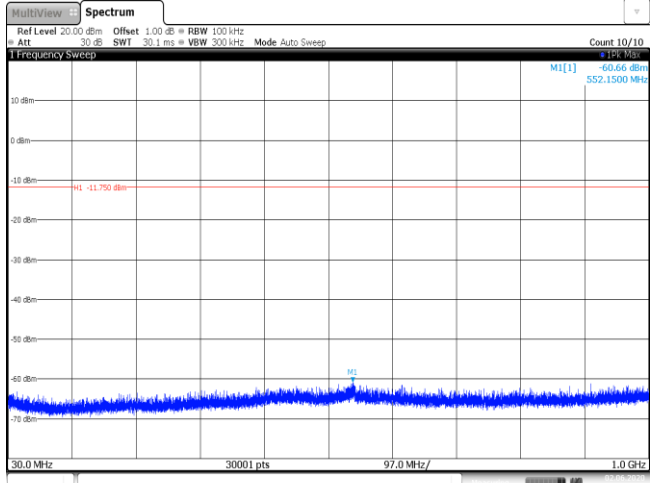
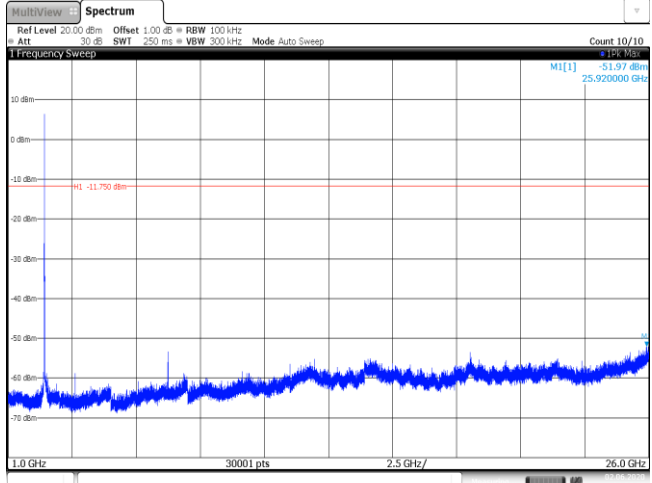


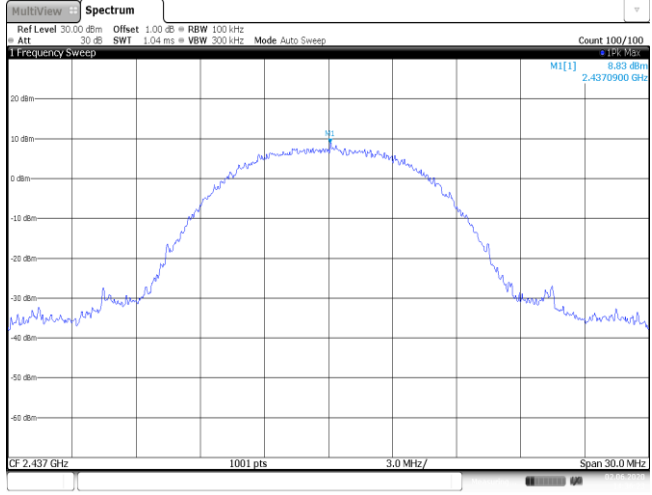
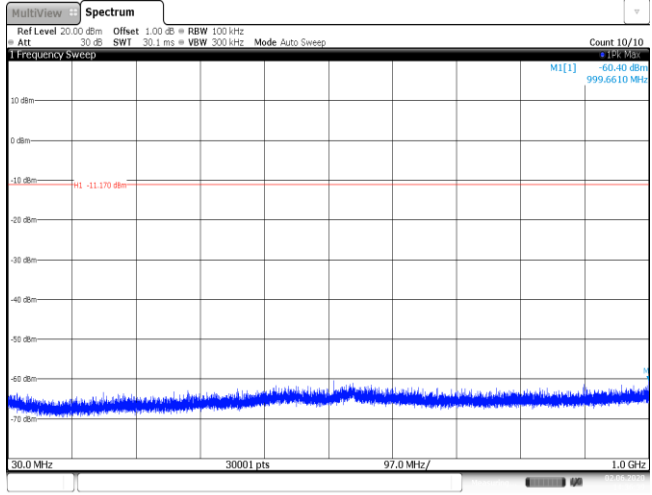
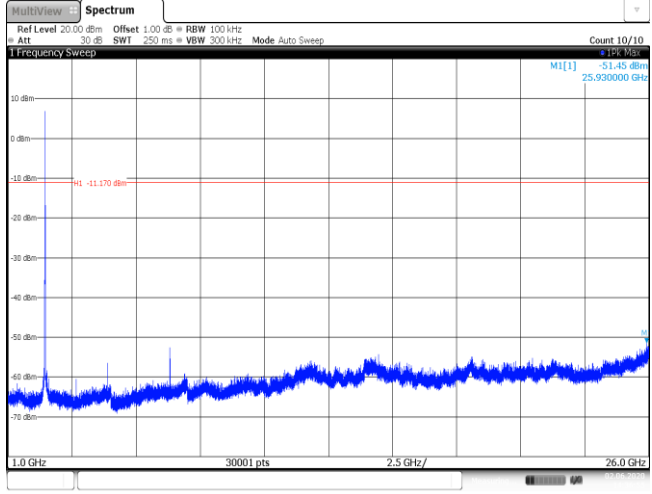
Appendix F: Band edge and Spurious Emissions (conducted)

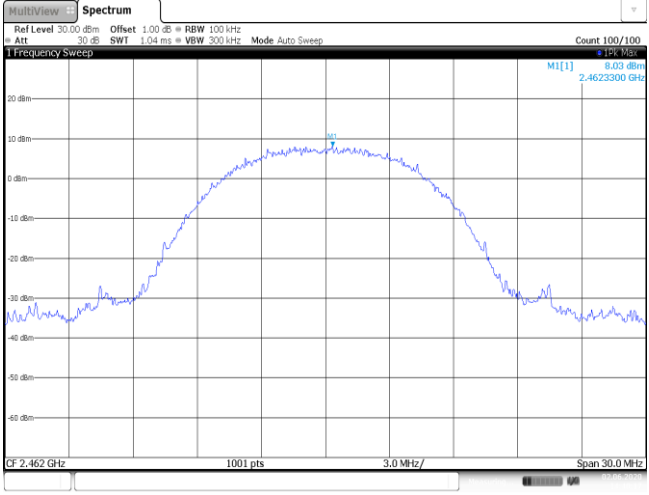
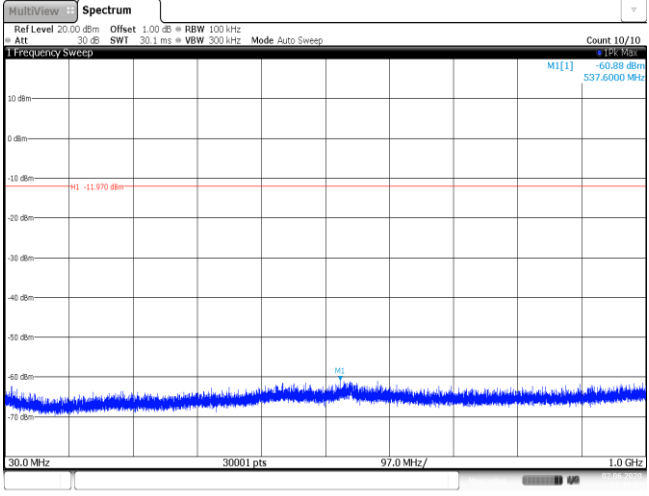
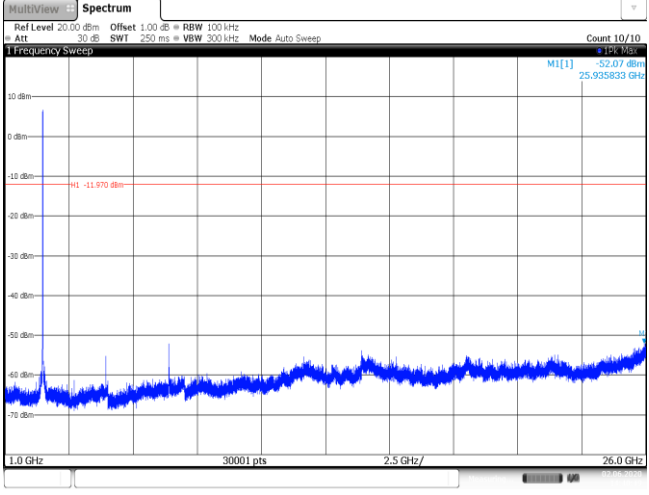
Test Item:	Bandedge	Type:	802.11 b																																										
CH01	MultiViewSpectrum Ref Level 20.00 dBm Offset 1.00 dB BW 100 kHz ATT 30 dB SWT 1.12 ms VBW 300 kHz Mode Auto Sweep Count 300/300 Frequency Sweep M1[1] 7.55 dBm 2.412550 GHz M2[1] -36.72 dBm 2.400000 GHz 10 dBm 0 dBm -10 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>2.41255 GHz</td><td>-7.55 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-36.72 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-55.98 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-63.20 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.39848 GHz</td><td>-32.59 dBm</td><td></td><td></td></tr></table> Date: 2 JUN 2020 14:29:45			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.41255 GHz	-7.55 dBm			M2	1		2.4 GHz	-36.72 dBm			M3	1		2.39 GHz	-55.98 dBm			M4	1		2.31 GHz	-63.20 dBm			M5	1		2.39848 GHz	-32.59 dBm		
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CH11	MultiViewSpectrum Ref Level 20.00 dBm Offset 1.00 dB BW 100 kHz ATT 30 dB SWT 1.03 ms VBW 300 kHz Mode Auto Sweep Count 300/300 Frequency Sweep M1[1] 8.41 dBm 2.461039 GHz M2[1] -50.30 dBm 2.483500 GHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm 2.452 GHz 1001 pts 4.8 MHz/ 2.5 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>2.461039 GHz</td><td>-8.41 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.48335 GHz</td><td>-50.30 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.5 GHz</td><td>-59.42 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.483536 GHz</td><td>-51.58 dBm</td><td></td><td></td></tr></table> Date: 2 JUN 2020 14:40:10			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.461039 GHz	-8.41 dBm			M2	1		2.48335 GHz	-50.30 dBm			M3	1		2.5 GHz	-59.42 dBm			M4	1		2.483536 GHz	-51.58 dBm									
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																																							
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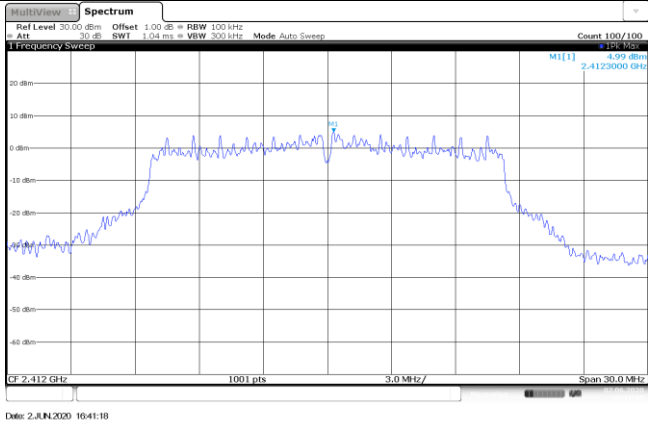
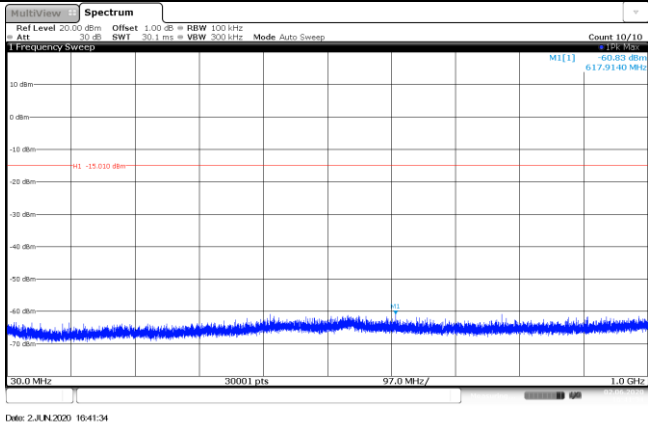
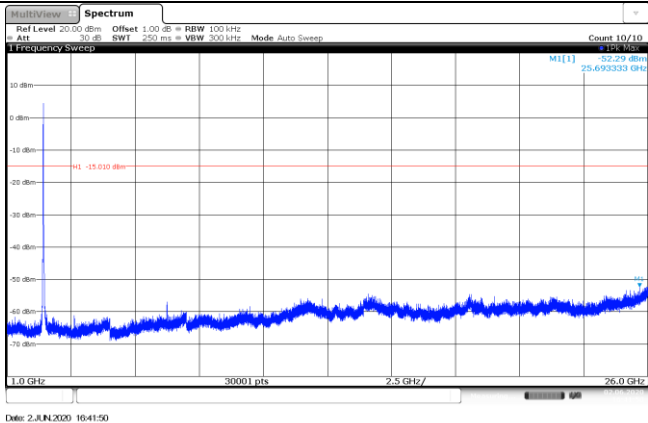
Test Item:	Bandedge	Type:	802.11 g																																										
CH01	MultiView Spectrum Ref Level 22.00 dBm Offset 1.00 dB BW 100 kHz Att 32 dB SWI 1.12 ms VBW 300 kHz Mode Auto Sweep Count 300/300 1 Frequency Sweep  2.31 GHz 1001 pts 11.2 MHz/ 2.42 GHz 2 Marker Table <table><tr><th>Type</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>2.41221 GHz</td><td>4.72 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-31.50 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-39.91 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-62.06 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.398928 GHz</td><td>-27.54 dBm</td><td></td><td></td></tr></table> Date: 2.JUN.2020 14:45:03			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.41221 GHz	4.72 dBm			M2	1		2.4 GHz	-31.50 dBm			M3	1		2.39 GHz	-39.91 dBm			M4	1		2.31 GHz	-62.06 dBm			M5	1		2.398928 GHz	-27.54 dBm		
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M5	1		2.398928 GHz	-27.54 dBm																																									
CH11	MultiView Spectrum Ref Level 23.00 dBm Offset 1.00 dB BW 100 kHz Att 33 dB SWI 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 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>2.462286 GHz</td><td>5.67 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4835 GHz</td><td>-40.32 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.5 GHz</td><td>-57.02 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.484496 GHz</td><td>-38.21 dBm</td><td></td><td></td></tr></table> Date: 2.JUN.2020 14:52:34			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.462286 GHz	5.67 dBm			M2	1		2.4835 GHz	-40.32 dBm			M3	1		2.5 GHz	-57.02 dBm			M4	1		2.484496 GHz	-38.21 dBm									
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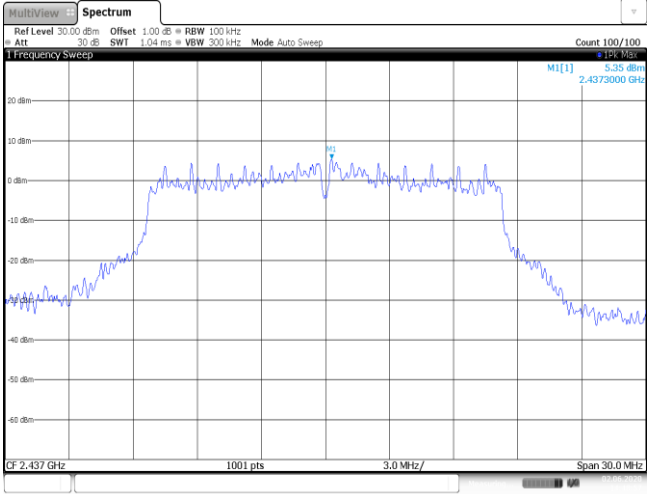
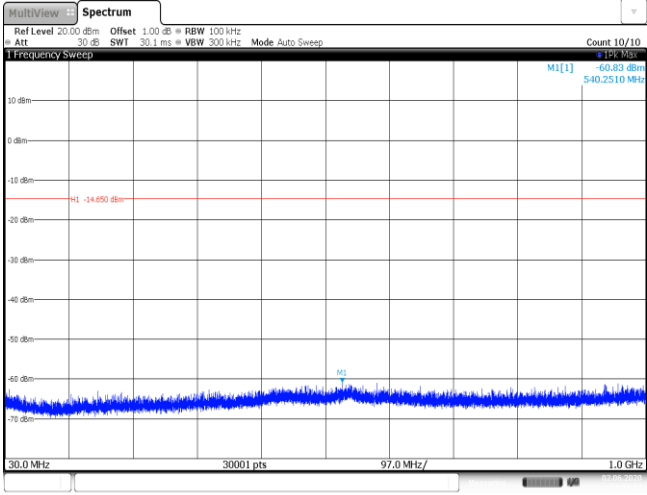
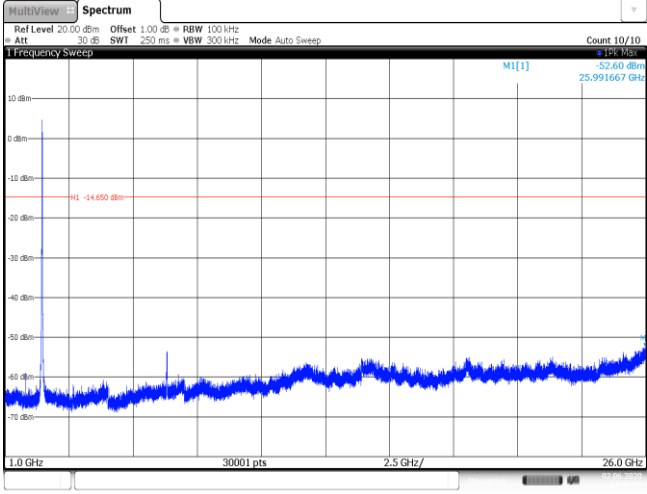
Test Item:	Bandedge	Type:	802.11 n(HT20)																																										
CH01	MultiViewSpectrum Ref Level 22.00 dBm Offset 1.00 dB BW 100 kHz Att 32 dB SWI 1.12 ms VBW 300 kHz Mode Auto Sweep Count 300/300 1 Frequency Sweep  2.31 GHz 1001 pts 11.2 MHz/ 2.422 GHz 2 Marker Table <table><tr><th>Type</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>2.41445 GHz</td><td>3.11 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-29.15 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-37.29 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-65.61 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.398816 GHz</td><td>-27.91 dBm</td><td></td><td></td></tr></table> Date: 2 JUN 2020 14:57:03			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.41445 GHz	3.11 dBm			M2	1		2.4 GHz	-29.15 dBm			M3	1		2.39 GHz	-37.29 dBm			M4	1		2.31 GHz	-65.61 dBm			M5	1		2.398816 GHz	-27.91 dBm		
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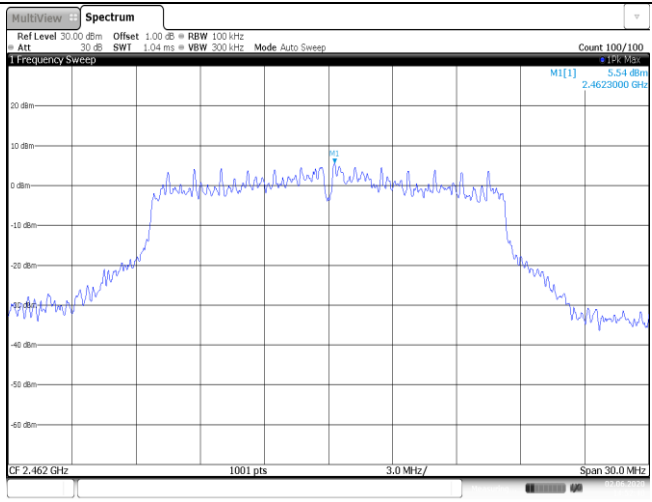
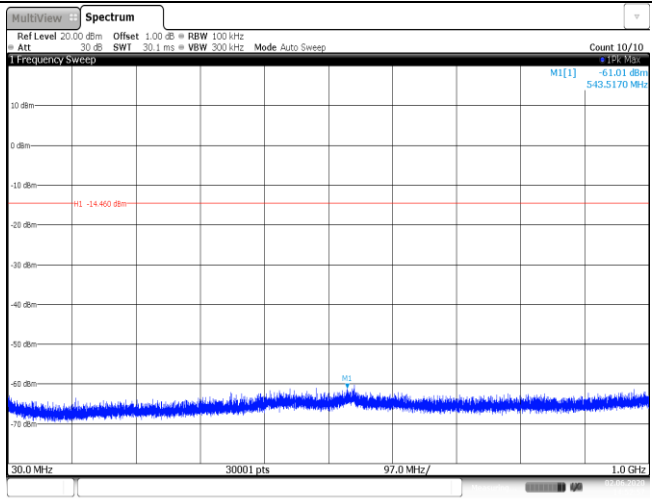
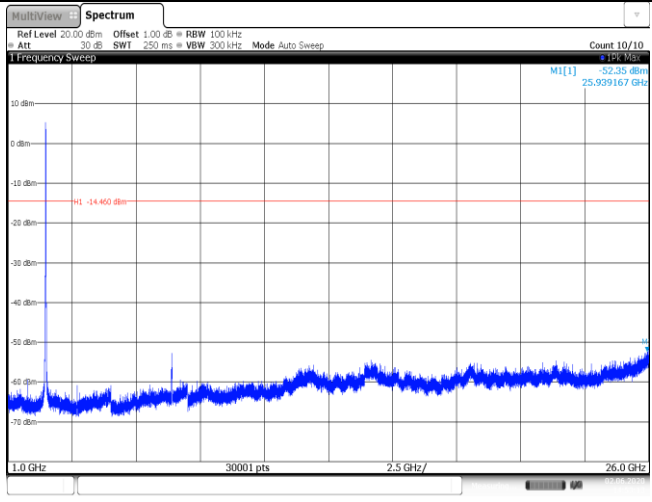
Test Item:	SE	Type:	802.11 b
CH01 Reference level		 Ref Level 30.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWI 1.04 ms VBW 300 kHz Mode Auto Sweep Count 100/100 MI[1] 8.25 dBm 2.4108010 GHz Date: 2 JUN 2020 14:29:52	
CH01 30MHz~1000MHz		 Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWI 30.1 ms VBW 300 kHz Mode Auto Sweep Count 10/10 MI[1] -60.66 dBm 552.1500 MHz Date: 2 JUN 2020 14:30:08	
CH01 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 MI[1] -51.97 dBm 25.920000 GHz Date: 2 JUN 2020 14:30:24	

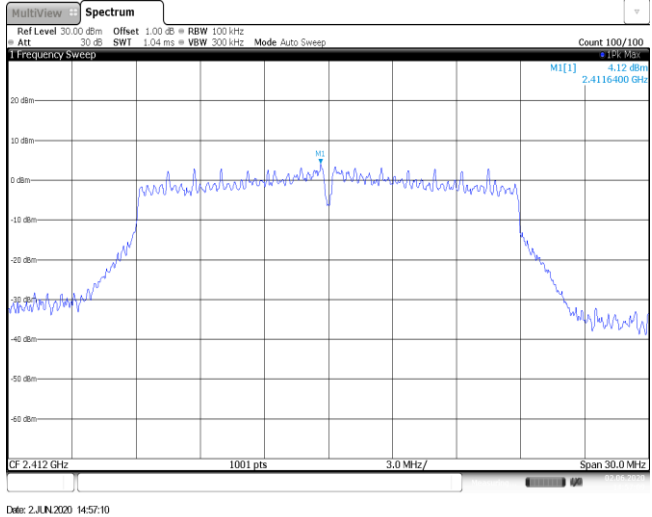
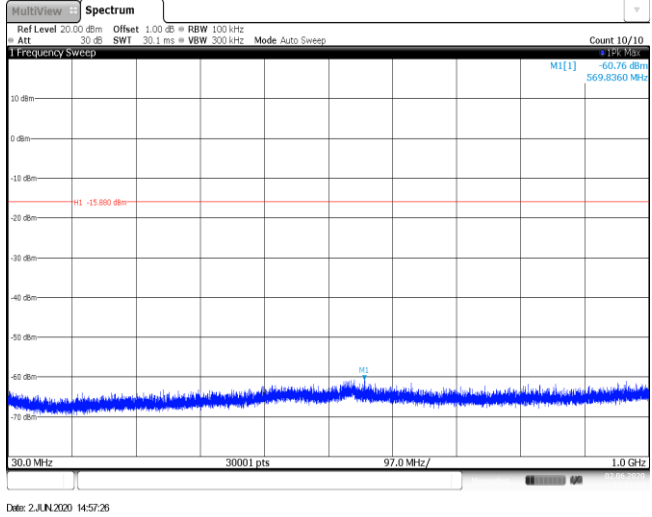
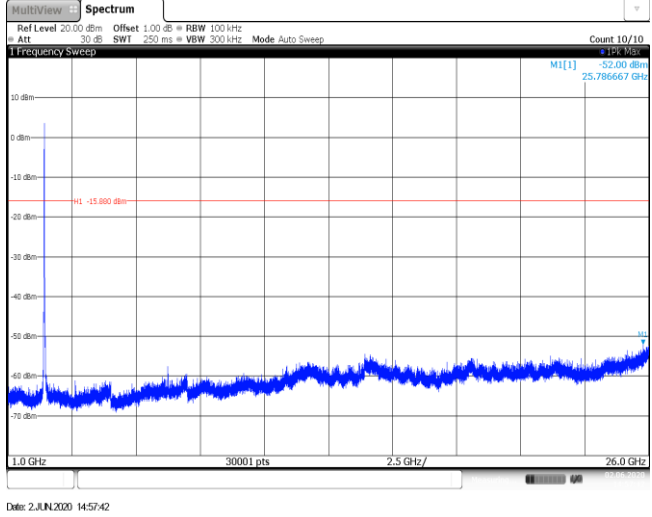
CH06 Reference level	 2.JUN.2020 14:36:23
CH06 30MHz~1000MHz	 2.JUN.2020 14:36:30
CH06 1GHz~26GHz	 2.JUN.2020 14:36:55

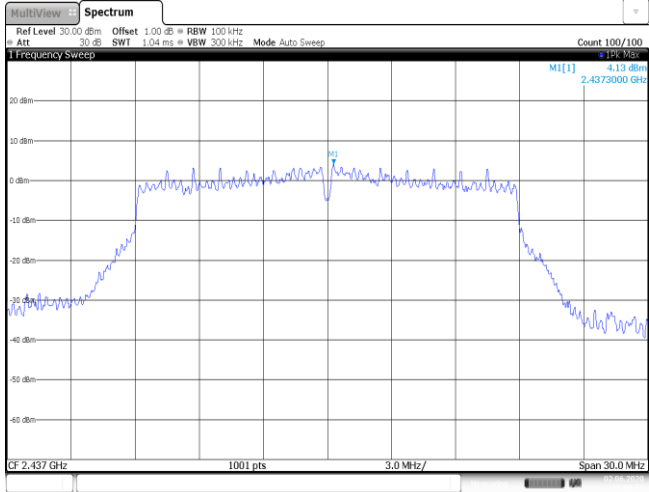
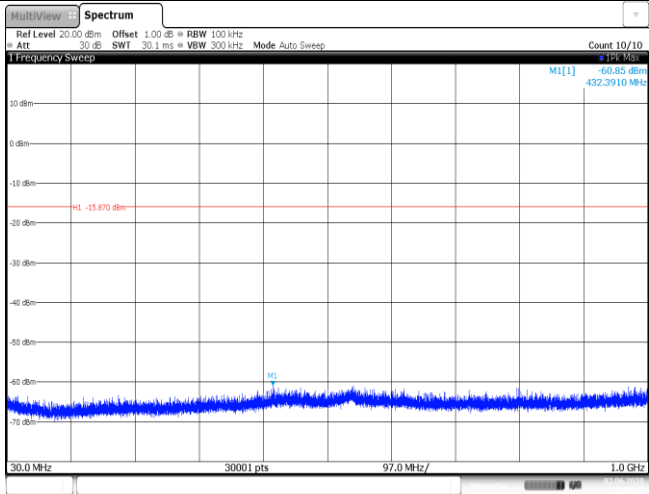
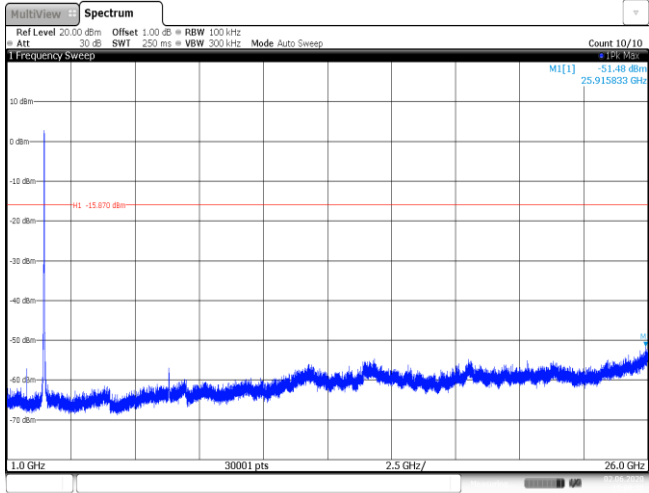
CH11 Reference level	
CH11 30MHz~1000MHz	
CH11 1GHz~26GHz	

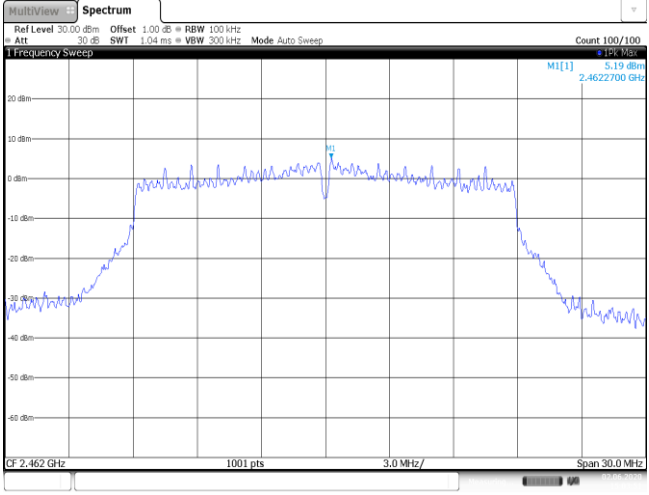
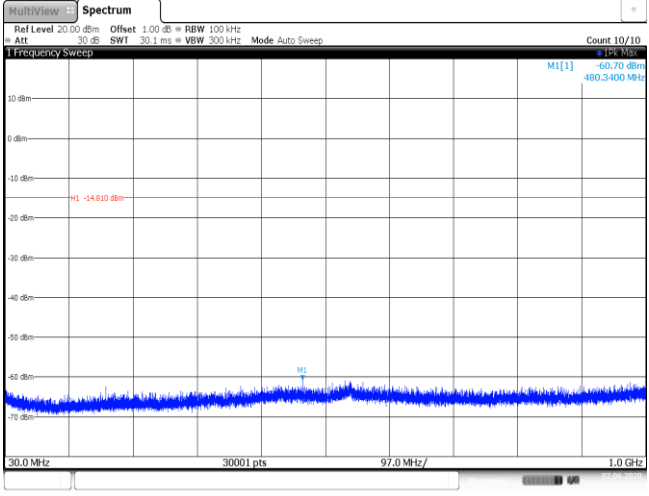
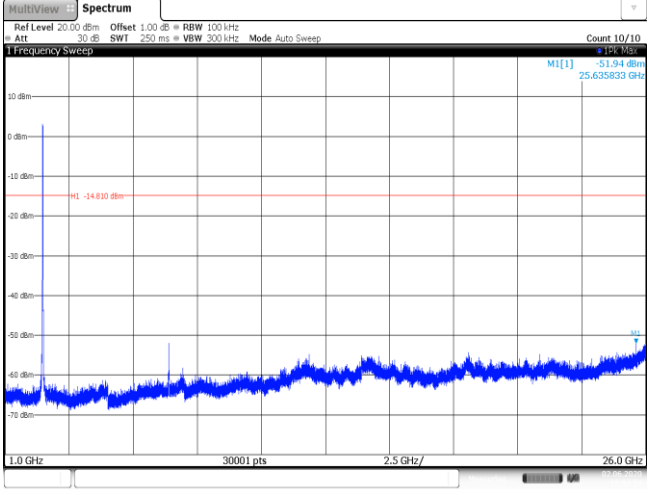
Test Item:	SE	Type:	802.11 g
CH01 Reference level			
CH01 30MHz~1000MHz			
CH01 1GHz~26GHz			

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

CH11 Reference level	
CH11 30MHz~1000MHz	
CH11 1GHz~26GHz	

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

CH06 Reference level	 The spectrum plot shows a signal centered at 2.437 GHz. The y-axis represents power in dBm, ranging from -40 to 20. The x-axis represents frequency in MHz, with a span of 30.0 MHz. The signal is a narrow band around 2.437 GHz. The plot includes a reference level at 30.00 dBm and a noise floor around -40 dBm. The date is 2 JUN 2020 15:00:25.
CH06 30MHz~1000MHz	 The spectrum plot shows a wideband signal from 30.0 MHz to 1.0 GHz. The y-axis represents power in dBm, ranging from -70 to 10. The x-axis represents frequency in MHz, with a span of 97.0 MHz. The signal is a wideband noise floor around -60.85 dBm. The plot includes a reference level at 20.00 dBm and a noise floor around -70 dBm. The date is 2 JUN 2020 15:00:41.
CH06 1GHz~26GHz	 The spectrum plot shows a wideband signal from 1.0 GHz to 26.0 GHz. The y-axis represents power in dBm, ranging from -70 to 10. The x-axis represents frequency in GHz, with a span of 2.5 GHz. The signal is a wideband noise floor around -51.48 dBm. The plot includes a reference level at 20.00 dBm and a noise floor around -70 dBm. The date is 2 JUN 2020 15:00:58.

CH11 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 M1[1] 5.19 dBm 2.4622700 GHz CF 2.462 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 2.JUN.2020 15:03:51
CH11 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 M1[1] -60.70 dBm 480.3400 MHz H1 -14.810 dBm 30.0 MHz 30001 pts 97.0 MHz/ 1.0 GHz Date: 2.JUN.2020 15:04:07
CH11 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 M1[1] -51.94 dBm 25.635833 GHz H1 -14.810 dBm 1.0 GHz 30001 pts 2.5 GHz/ 26.0 GHz Date: 2.JUN.2020 15:04:23

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