

APPENDIX REPORT

Project No.	SHT2007054805EW	Radio Specification	WIFI 2.4G
Test sample No.	YPHT20070548009	Model No.	P4H
Start test date	2020/7/22	Finish date	2020/7/22
Temperature	25°C	Humidity	50%
Test Engineer	Jiongsheng.Feng	Auditor	Xiaodong Zheo

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

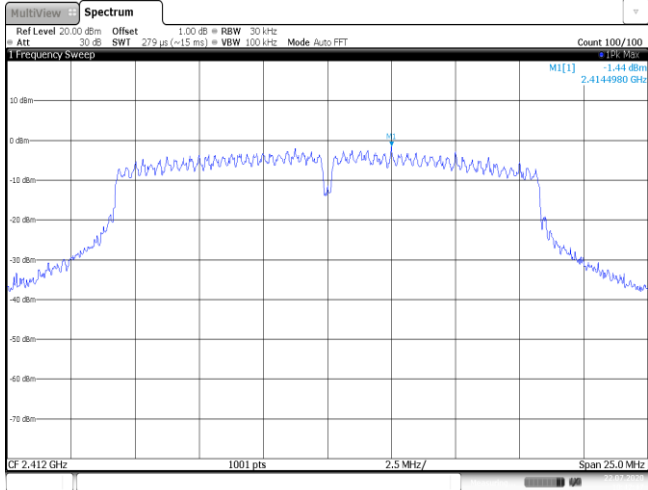
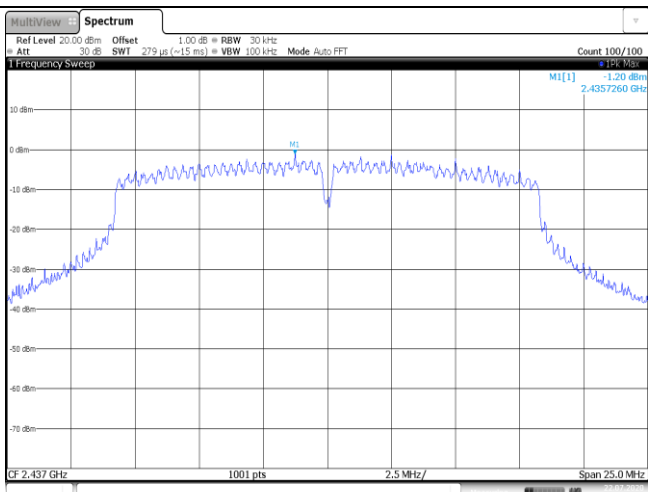
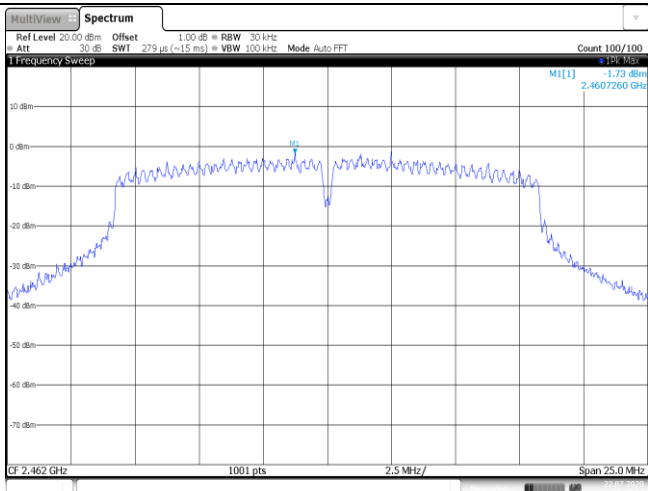
Appendix A: Conducted Peak Output Power

Type	Channel	Peak Output power (dBm)	Average Output power (dBm)	Limit (dBm)	Result
802.11b	01	19.49	17.17	≤ 30.00	Pass
	06	19.48	17.15		
	11	19.12	17.01		
802.11g	01	22.85	20.45	≤ 30.00	Pass
	06	22.82	20.32		
	11	22.50	20.15		
802.11n (HT20)	01	22.16	19.74	≤ 30.00	Pass
	06	22.21	19.86		
	11	21.82	19.37		

Appendix B: Power Spectral Density

Type	Channel	Power Spectral Density (dBm/30KHz)	Limit (dBm/3KHz)	Result
802.11b	01	3.85	≤8.00	Pass
	06	6.31		
	11	5.25		
802.11g	01	-1.44	≤8.00	Pass
	06	-1.20		
	11	-1.73		
802.11n(HT20)	01	-0.87	≤8.00	Pass
	06	-0.95		
	11	-2.49		

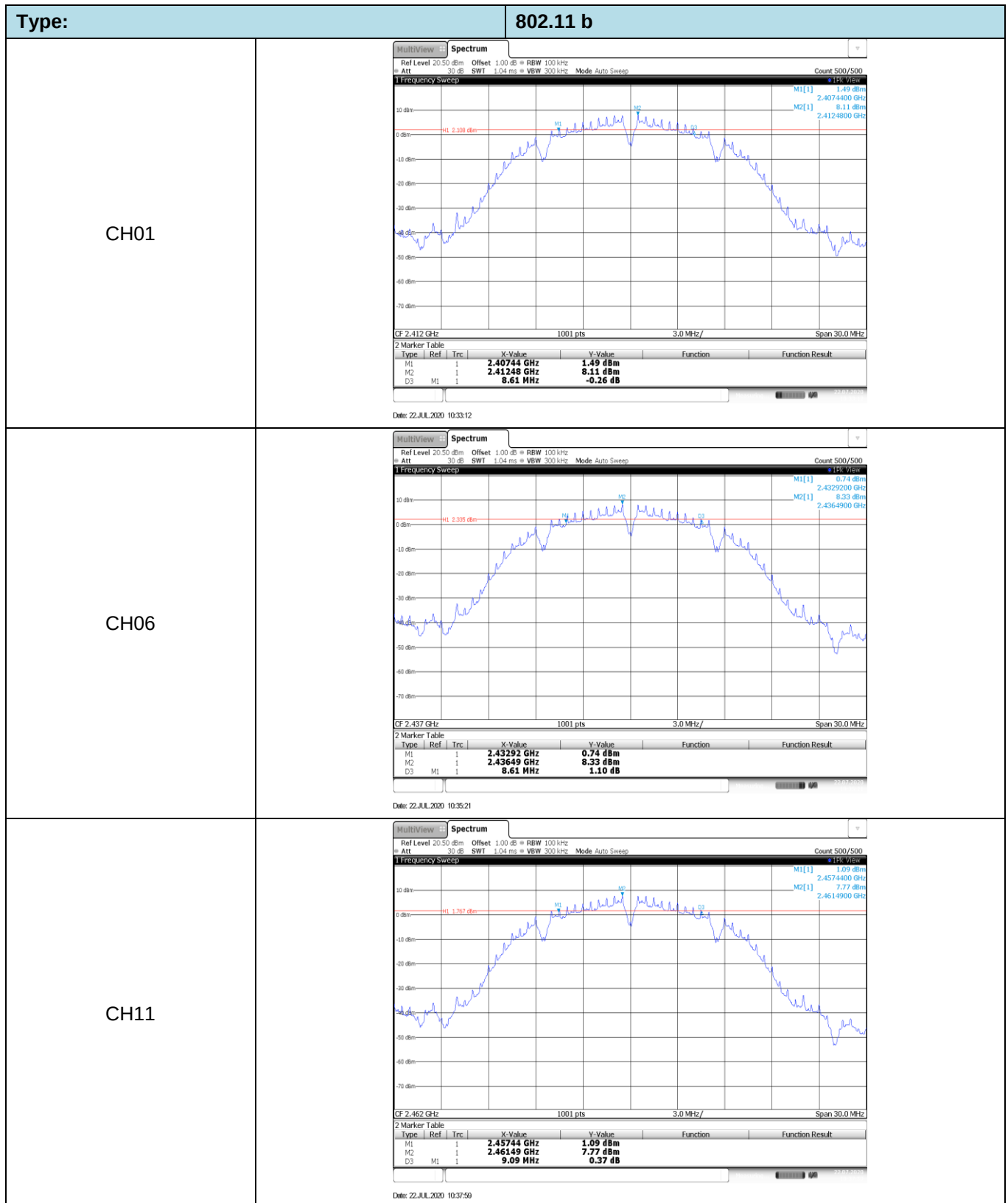
Type:		802.11 b
CH01	MultiView Spectrum Ref Level 20.00 dBm Offset 1.00 dB RBW 30 kHz Att 30 dB SWI 1.78 ms VBW 100 kHz Mode Auto Sweep Count 100/100 1 Frequency Sweep MI[1] 3.85 dBm 2.4114890 GHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 2.412 GHz 1001 pts 1.6 MHz/ Span 16.0 MHz Date: 22.JUL.2020 10:33:37	
CH06	MultiView Spectrum 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 1 Frequency Sweep MI[1] 6.31 dBm 2.4364890 GHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 2.437 GHz 1001 pts 1.6 MHz/ Span 16.0 MHz Date: 22.JUL.2020 10:36:33	
CH11	MultiView Spectrum 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 1 Frequency Sweep MI[1] 5.25 dBm 2.4634870 GHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 2.462 GHz 1001 pts 1.6 MHz/ Span 16.0 MHz Date: 22.JUL.2020 10:38:48	

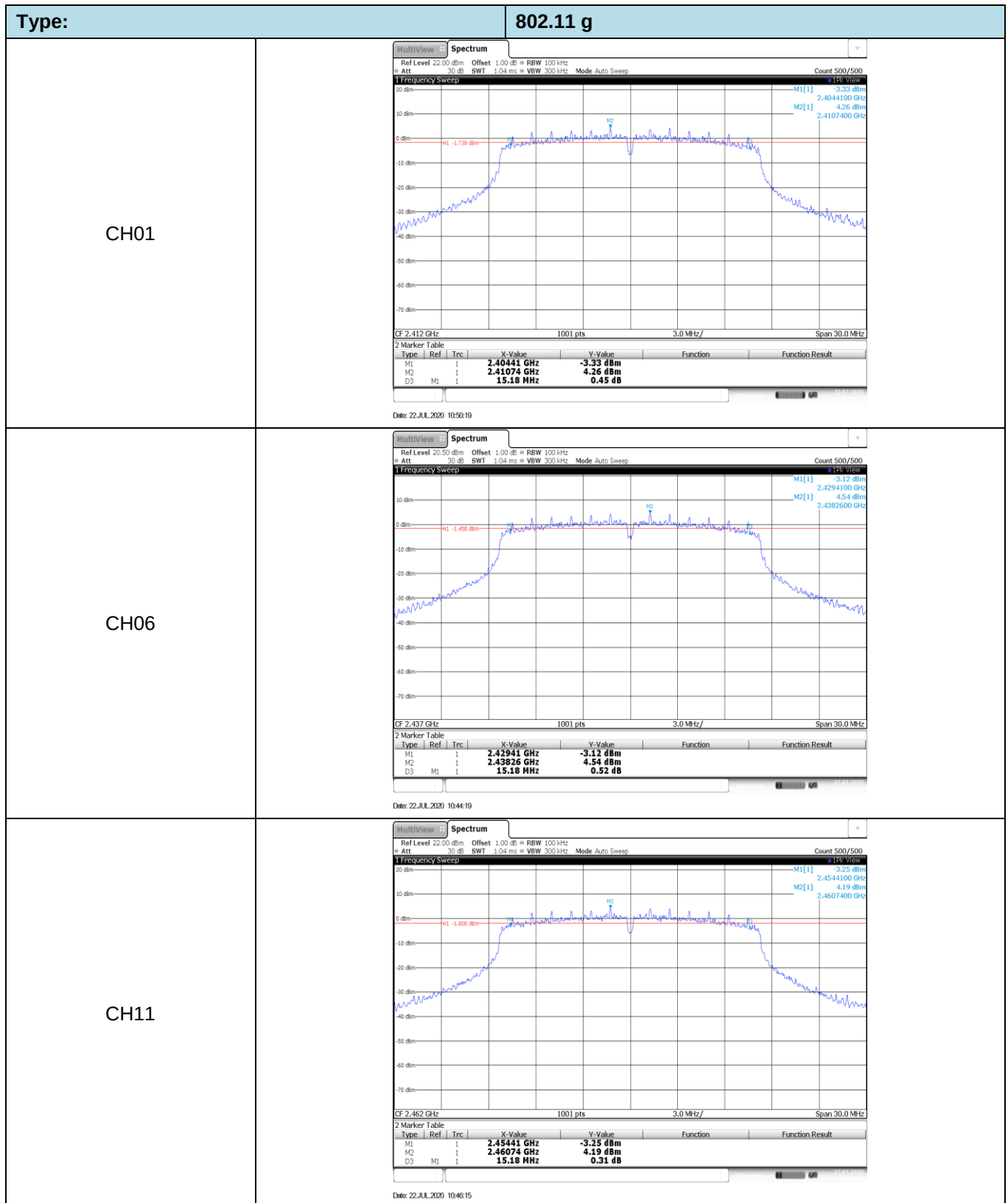
Type:	802.11 g
CH01	 MultiView Spectrum Ref Level 20.00 dBm Offset 1.00 dB RBW 30 kHz Count 100/100 Att 30 dB SWI 279 μs (~15 ms) VBW 100 kHz Mode Auto FFT Frequency Sweep M1[1] -1.44 dBm 2.4144980 GHz CF 2.412 GHz 1001 pts 2.5 MHz/ Span 25.0 MHz Date: 22.AUG.2020 10:42:47
CH06	 MultiView Spectrum Ref Level 20.00 dBm Offset 1.00 dB RBW 30 kHz Count 100/100 Att 30 dB SWI 279 μs (~15 ms) VBW 100 kHz Mode Auto FFT Frequency Sweep M1[1] -1.20 dBm 2.4357260 GHz CF 2.437 GHz 1001 pts 2.5 MHz/ Span 25.0 MHz Date: 22.AUG.2020 10:45:00
CH11	 MultiView Spectrum Ref Level 20.00 dBm Offset 1.00 dB RBW 30 kHz Count 100/100 Att 30 dB SWI 279 μs (~15 ms) VBW 100 kHz Mode Auto FFT Frequency Sweep M1[1] -1.73 dBm 2.4607260 GHz CF 2.462 GHz 1001 pts 2.5 MHz/ Span 25.0 MHz Date: 22.AUG.2020 10:47:14

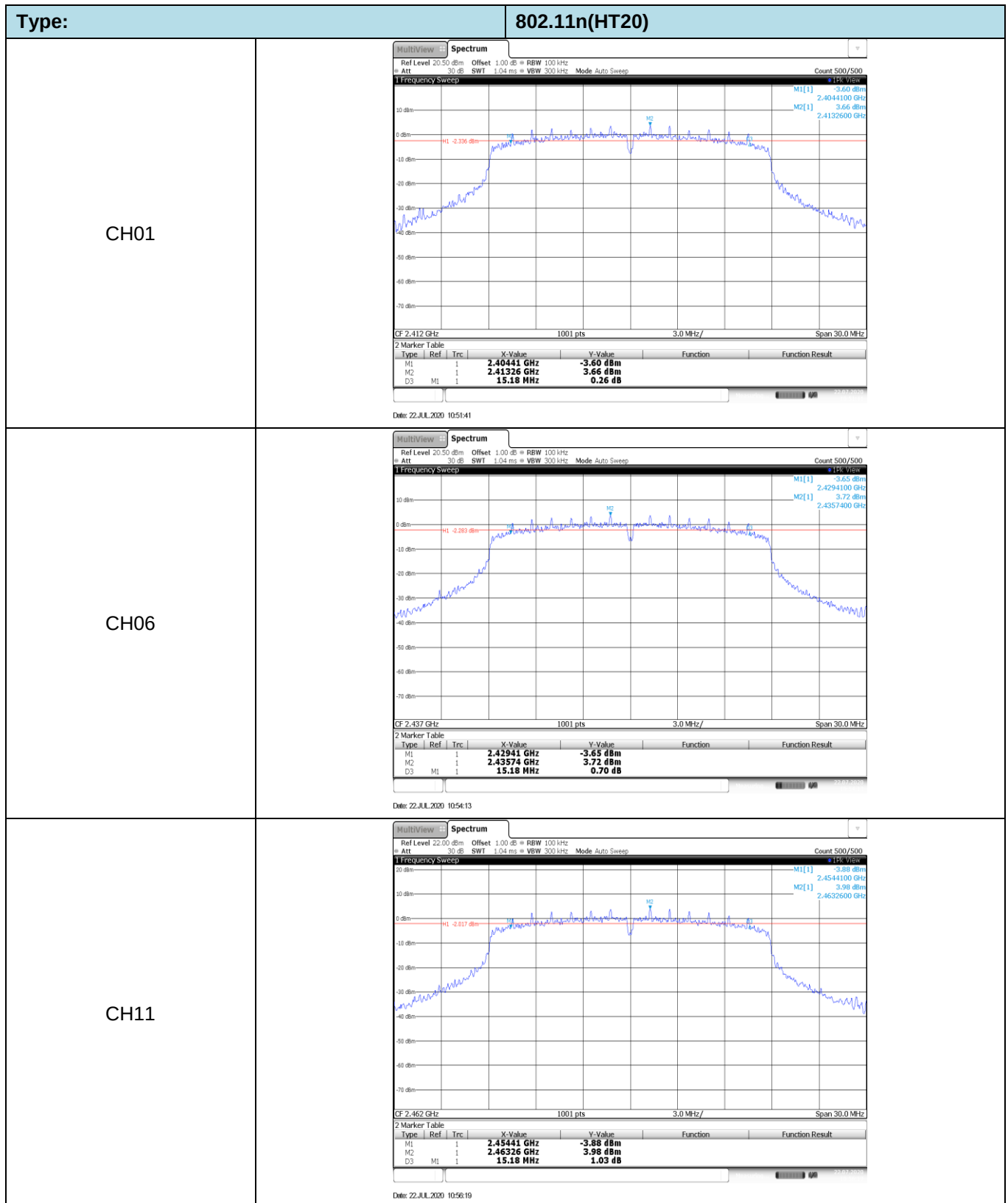
Type:		802.11n(HT20)
CH01	<	

Appendix C: 6dB bandwidth

Type	Channel	6dB Bandwidth (MHz)	Limit (MHz)	Result
802.11b	01	8.61	≥0.5	Pass
	06	8.61		
	11	9.09		
802.11g	01	15.18	≥0.5	Pass
	06	15.18		
	11	15.18		
802.11n(HT20)	01	15.18	≥0.5	Pass
	06	15.18		
	11	15.18		







Appendix D: 99% Occupied Bandwidth

Type	Channel	99% Bandwidth (MHz)	Limit (MHz)	Result
802.11b	01	14.18	-	Pass
	06	14.12		
	11	14.09		
802.11g	01	16.51	-	Pass
	06	16.54		
	11	16.51		
802.11n(HT20)	01	17.59	-	Pass
	06	17.56		
	11	17.59		

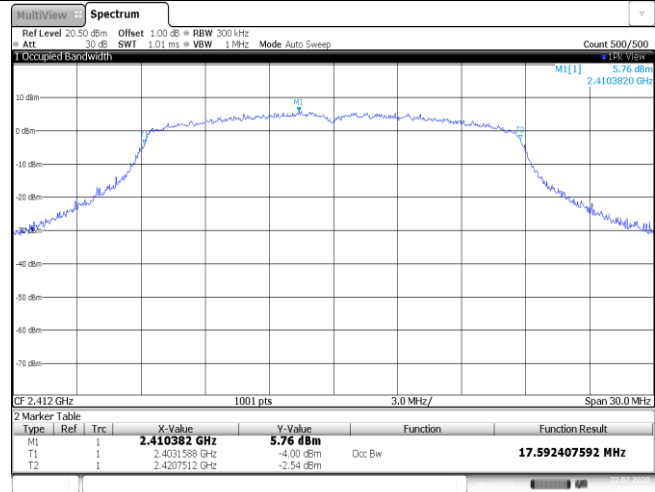
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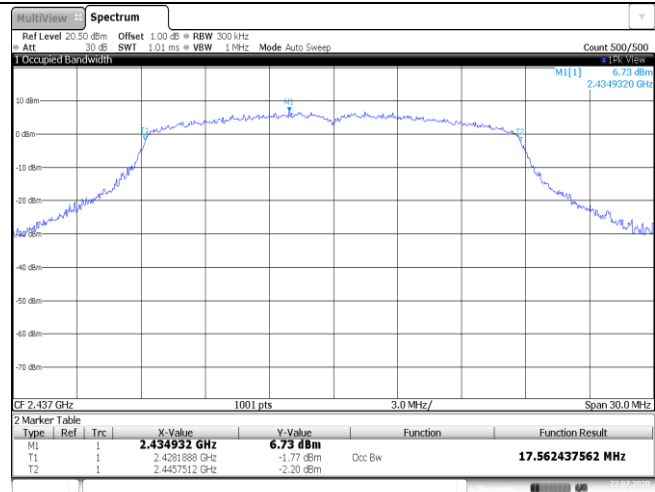
Type:

802.11n(HT20)

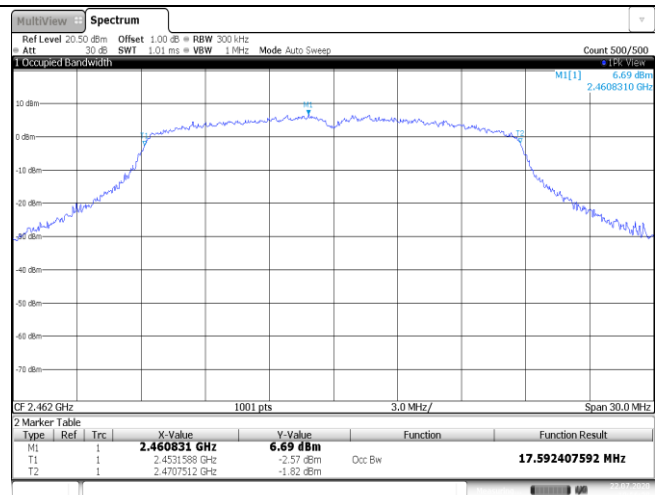
CH01



CH06

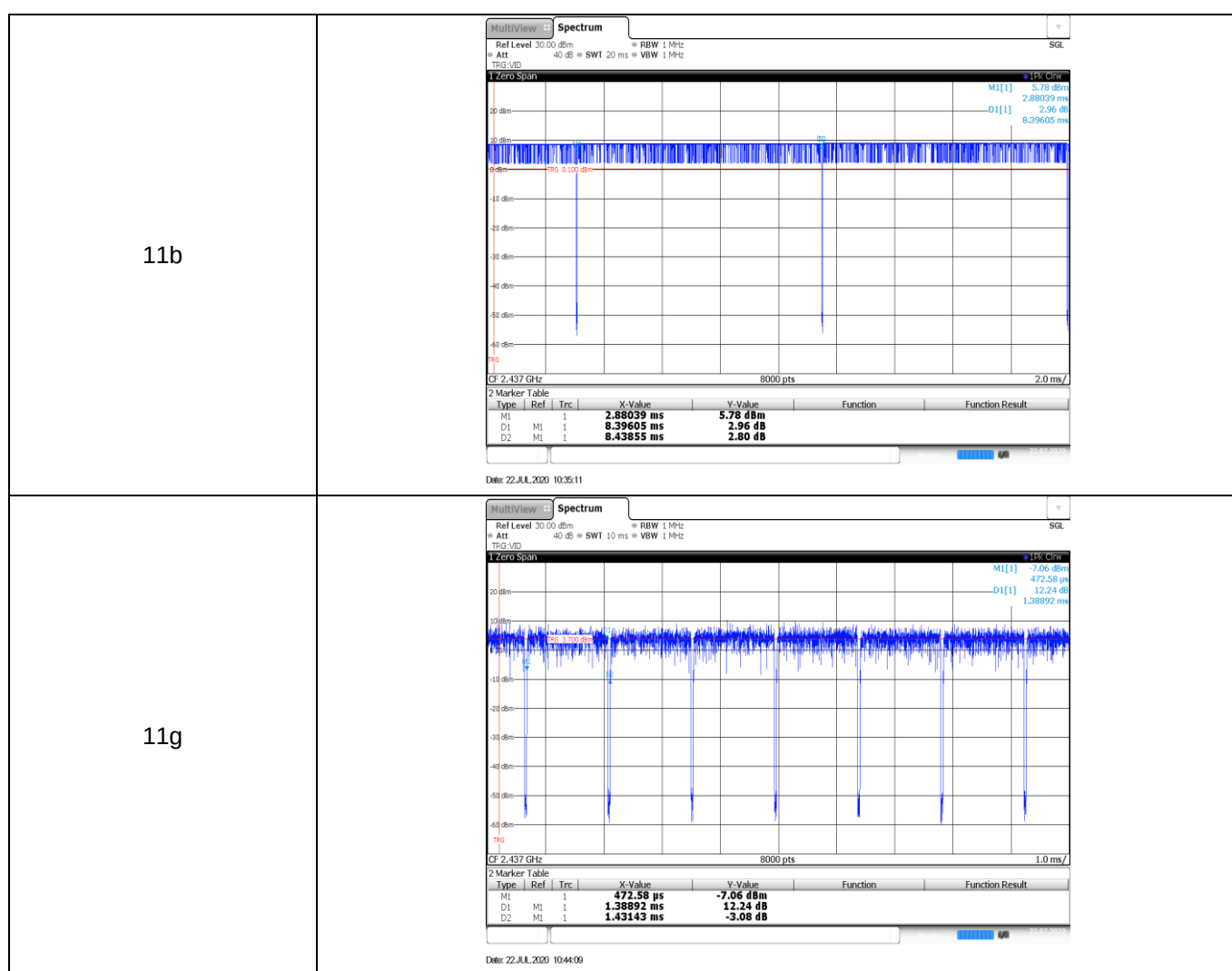


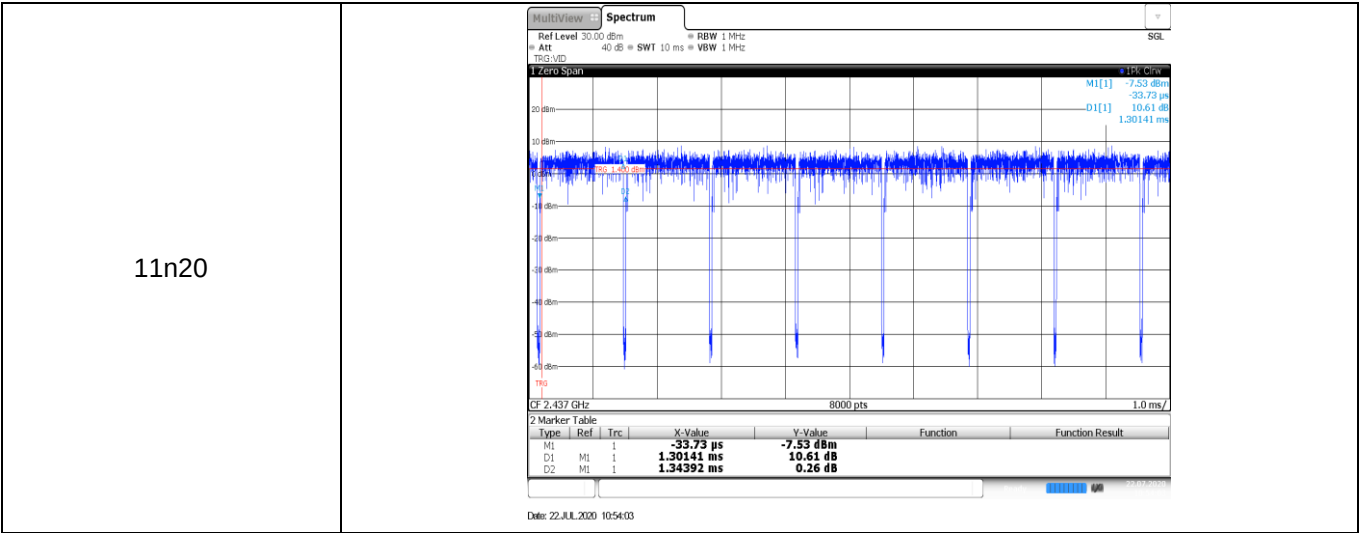
CH11



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	8.40	8.44	99.5%	0.1
11g	2437	1.39	1.43	97.2%	0.7
11n20	2437	1.30	1.34	97.0%	0.8





Appendix F: Band edge and Spurious Emissions (conducted)

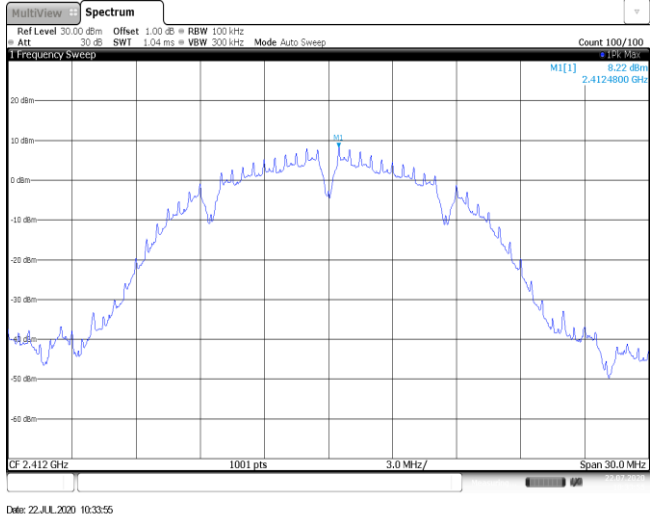
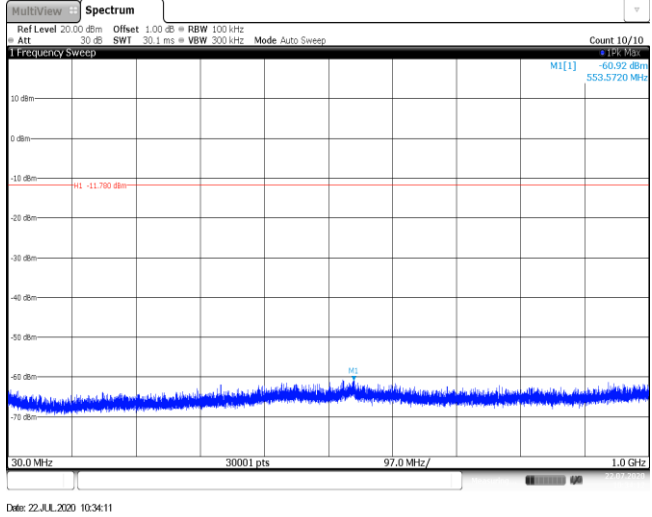
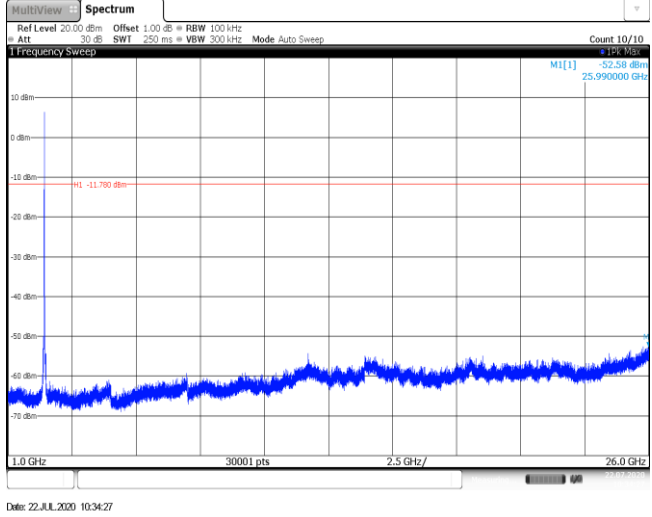
Test Item:	Bandedge	Type:	802.11 b																																										
CH01	MultiView Spectrum Ref Level 20.00 dBm Offset 1.00 dB BW 100 kHz Att 30 dB SW 1.12 ms VBW 300 kHz Mode Auto Sweep Count 300/300 1 Frequency Sweep 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1 M2 -12.04 dBm -39.45 dBm M1[1] 7.96 dBm 2.411430 GHz M2[1] -39.45 dBm 2.400000 GHz 2.31 GHz 1001 pts 11.2 MHz/ 2.472 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>7.96 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-39.45 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-53.03 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-61.81 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.399488 GHz</td><td>-36.04 dBm</td><td></td><td></td></tr></table> Date: 22.JUL.2020 10:33:47			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.41143 GHz	7.96 dBm			M2	1		2.4 GHz	-39.45 dBm			M3	1		2.39 GHz	-53.03 dBm			M4	1		2.31 GHz	-61.81 dBm			M5	1		2.399488 GHz	-36.04 dBm		
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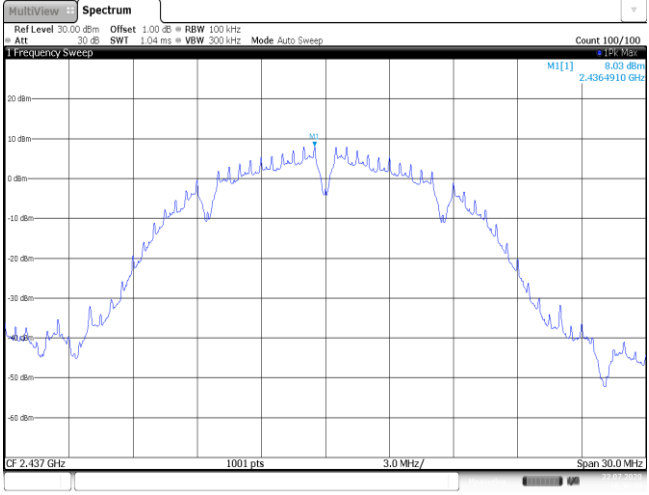
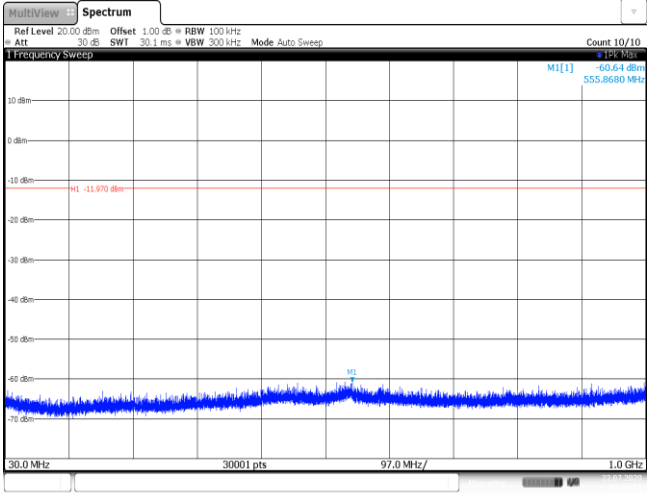
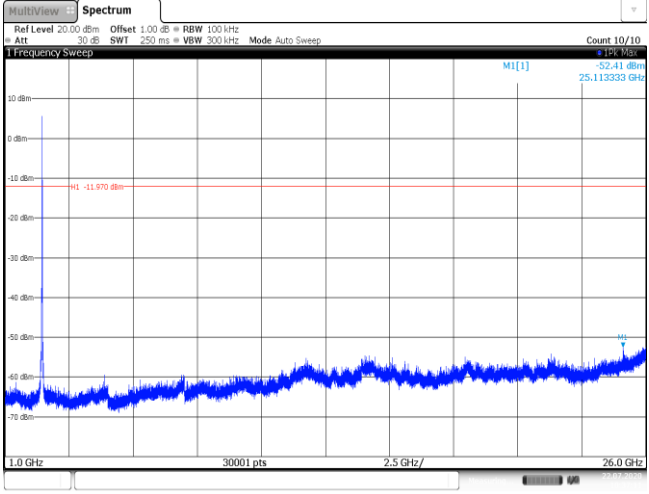
Test Item:	Bandedge	Type:	802.11 g																																										
CH01	MultiViewSpectrum Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWI 1.12 ms VBW 300 kHz Mode Auto Sweep Count 300/300 1 Frequency Sweep 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1 M2 M3 M4 M5 2.31 GHz 1001 pts 11.2 MHz/ 2.422 GHz M1 M2 M3 M4 M5 2.41322 GHz 2.4 GHz 2.39 GHz 2.31 GHz 2.399824 GHz 4.11 dBm -28.98 dBm -39.36 dBm -62.74 dBm -28.63 dBm Function Function Result 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>2.41322 GHz</td><td>4.11 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-28.98 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-39.36 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-62.74 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.399824 GHz</td><td>-28.63 dBm</td><td></td><td></td></tr></table> Date: 22 JUL 2020 10:42:57			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.41322 GHz	4.11 dBm			M2	1		2.4 GHz	-28.98 dBm			M3	1		2.39 GHz	-39.36 dBm			M4	1		2.31 GHz	-62.74 dBm			M5	1		2.399824 GHz	-28.63 dBm		
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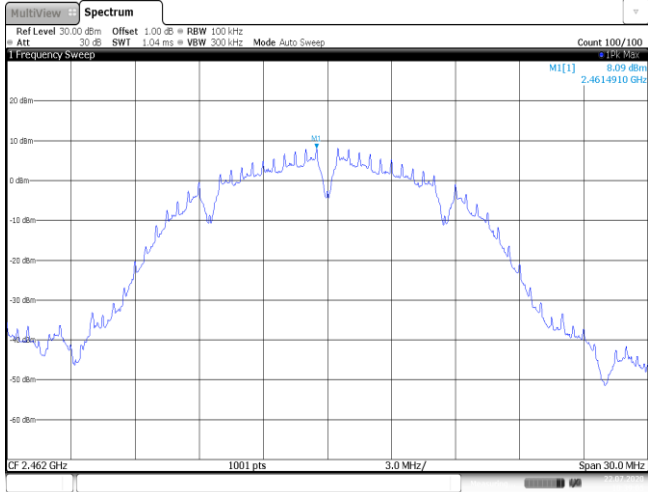
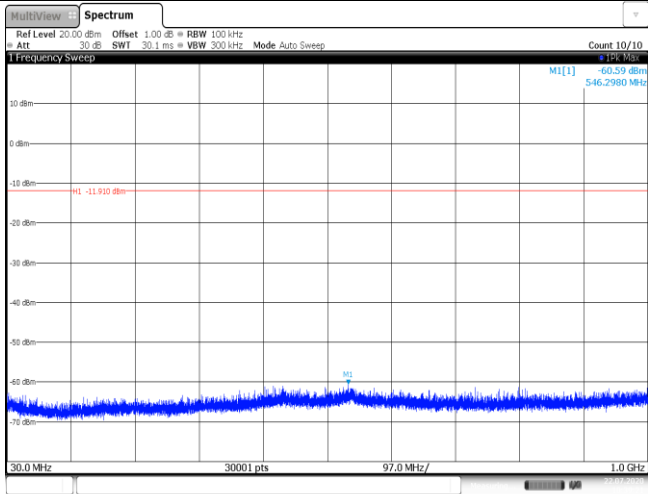
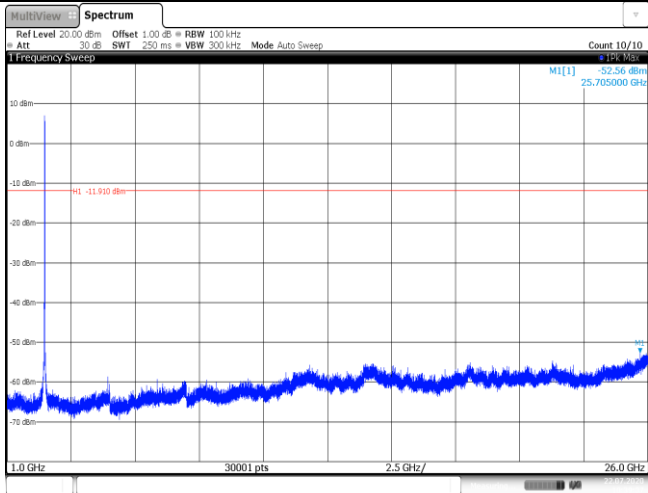
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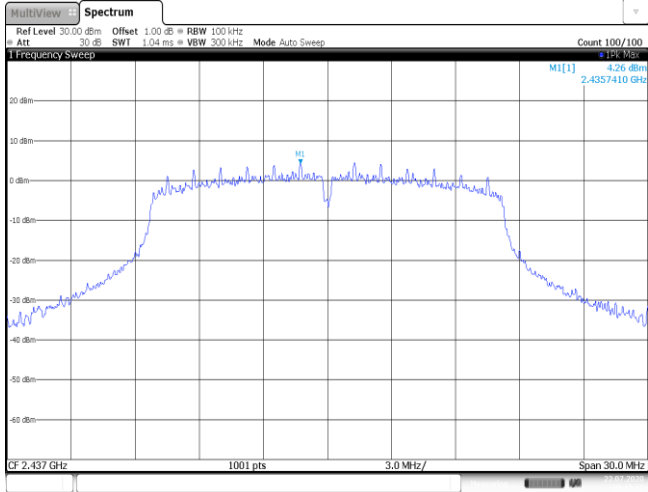
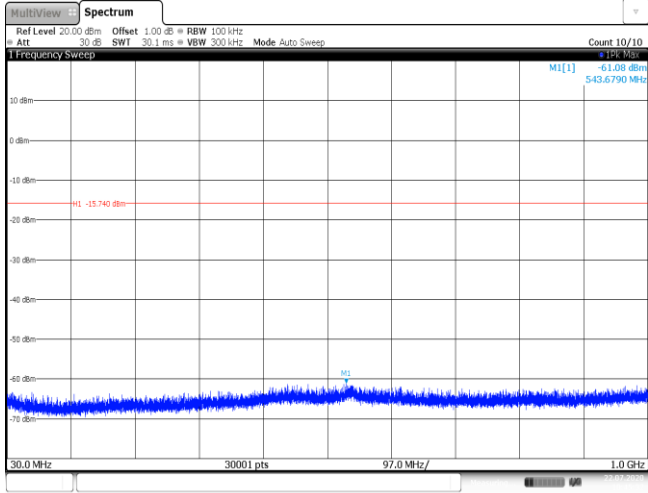
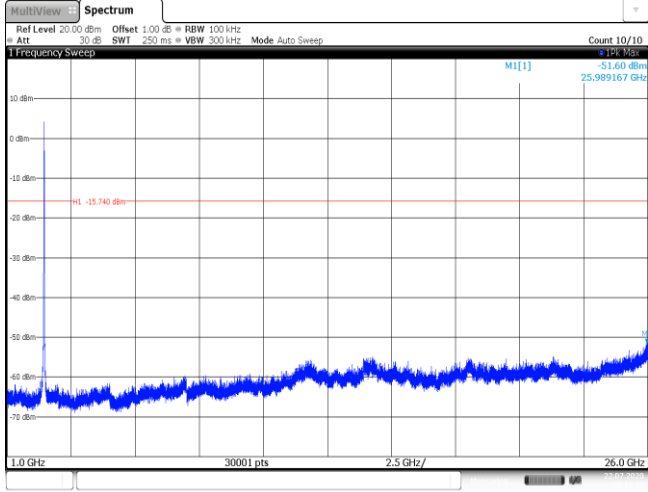
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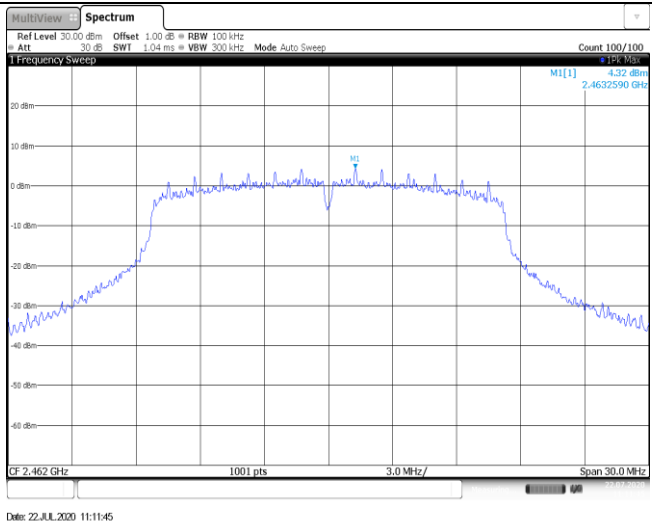
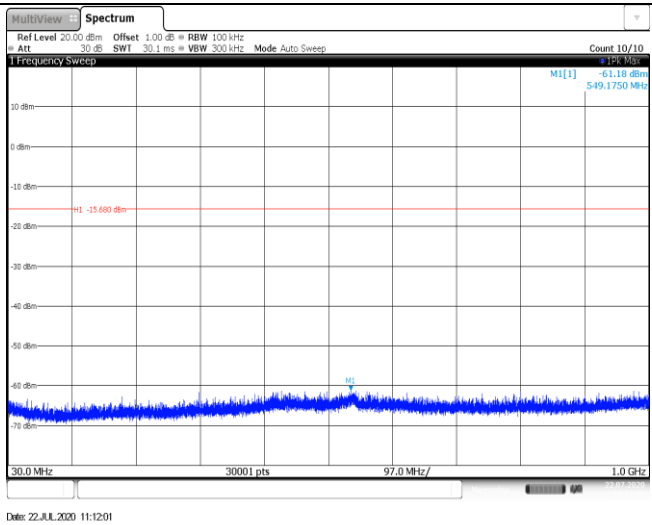
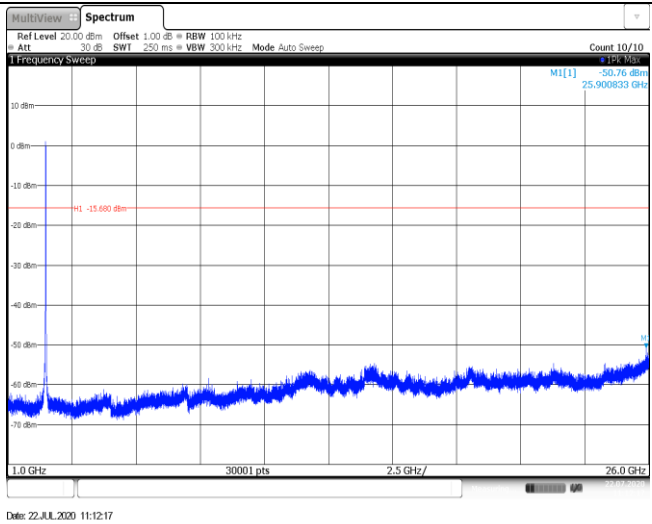
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CH01 1GHz~26GHz			

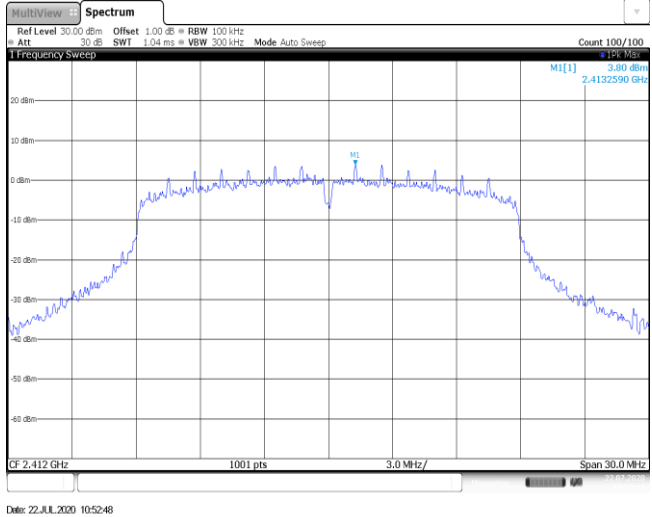
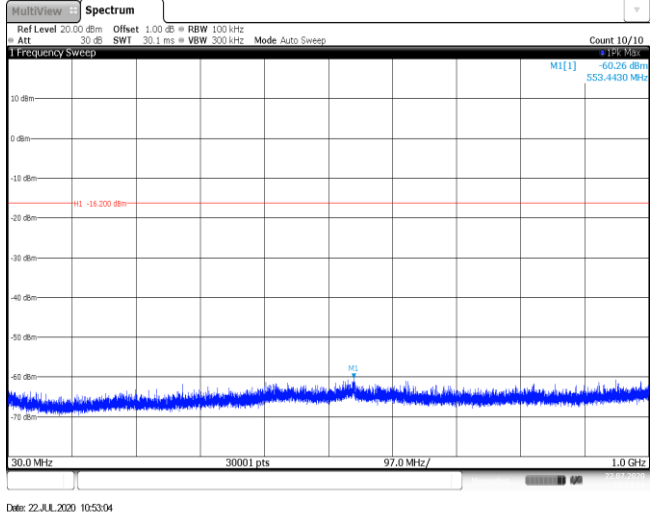
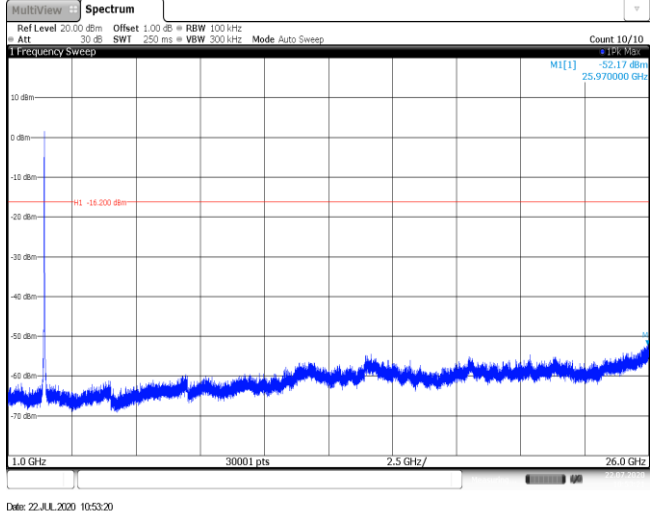
CH06 Reference level	 The spectrum plot shows a frequency sweep from 2.437 GHz to 2.4364910 GHz. The y-axis represents power in dBm, ranging from -60 to 20. The x-axis represents frequency in MHz, with a span of 30.0 MHz. The plot shows a noisy signal with a peak around 10 dBm. The date is 22 JUL 2020 10:36:39.
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 x-axis represents frequency in MHz, with a span of 97.0 MHz. The plot shows a noisy signal with a peak around -60.64 dBm. The date is 22 JUL 2020 10:36:55.
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 x-axis represents frequency in GHz, with a span of 25.0 GHz. The plot shows a noisy signal with a peak around -52.41 dBm. The date is 22 JUL 2020 10:37:12.

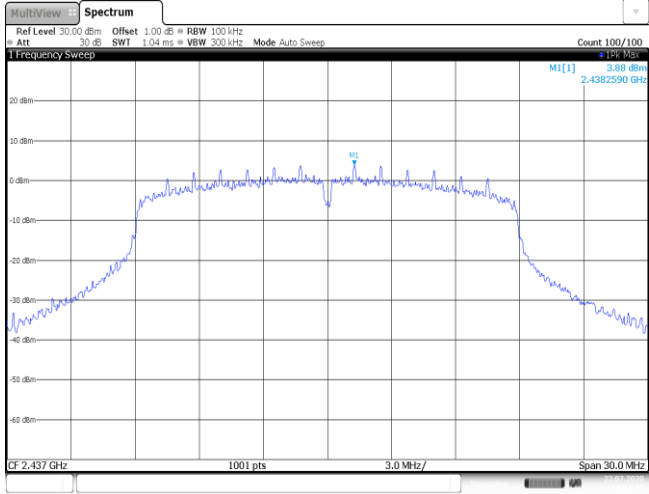
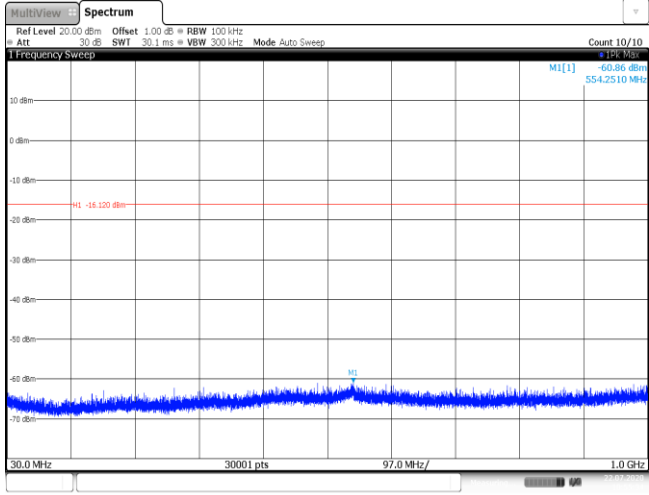
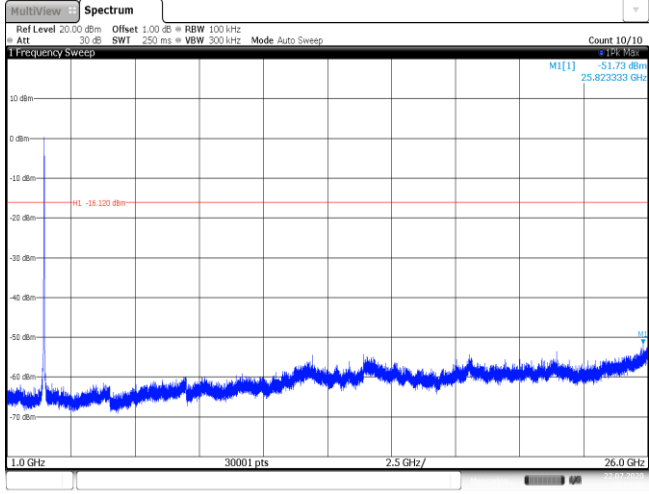
CH11 Reference level	
CH11 30MHz~1000MHz	
CH11 1GHz~26GHz	

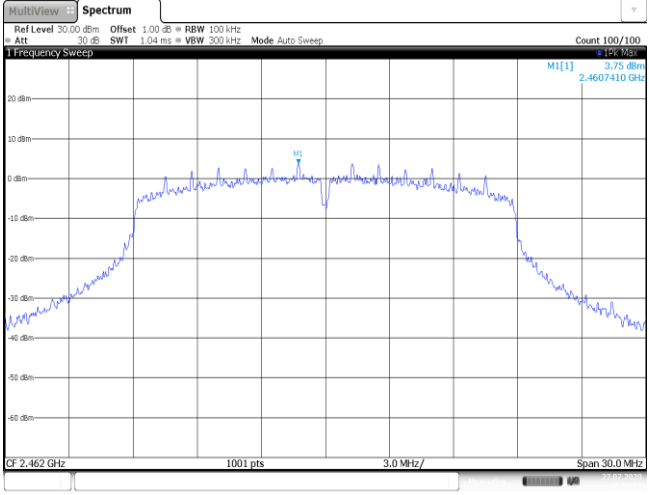
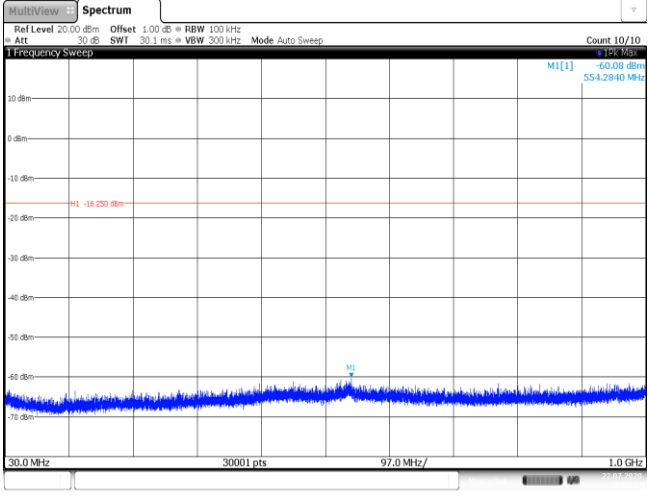
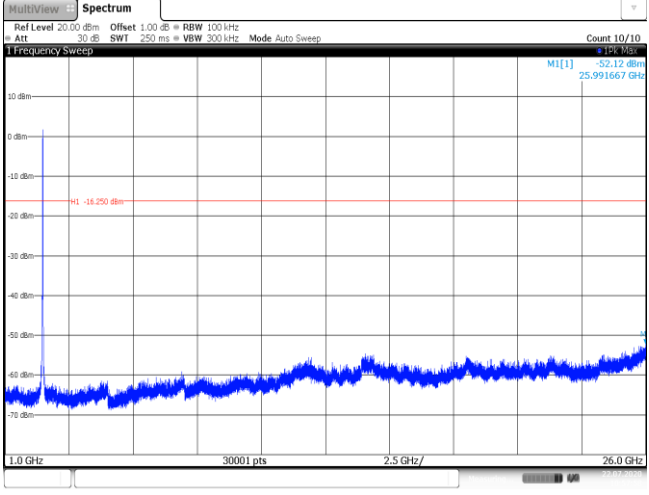
Test Item:	SE	Type:	802.11 g
CH01 Reference level	MultiViewSpectrum Ref Level 30.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWI 1.04 ms VBW 300 kHz Mode Auto Sweep Count 100/100 1 Frequency Sweep MI[1] 4.23 dBm 2.4107410 GHz CF 2.412 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 22 JUL 2020 11:08:00		
CH01 30MHz~1000MHz	MultiViewSpectrum 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 1 Frequency Sweep MI[1] -60.23 dBm 549.2400 MHz MI -15.770 dBm 30.0 MHz 30001 pts 97.0 MHz/ 1.0 GHz Date: 22 JUL 2020 11:08:17		
CH01 1GHz~26GHz	MultiViewSpectrum 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 1 Frequency Sweep MI[1] -52.06 dBm 25.987500 GHz MI -15.770 dBm 1.0 GHz 30001 pts 2.5 GHz/ 26.0 GHz Date: 22 JUL 2020 11:08:33		

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 M1[1] 4.26 dBm 2.4357410 GHz CF 2.437 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 22.JUL.2020 10:45:15
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 M1[1] -61.08 dBm 543.6790 MHz 30.0 MHz 30001 pts 97.0 MHz/ 1.0 GHz Date: 22.JUL.2020 10:45:31
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 M1[1] -51.60 dBm 25.989167 GHz 1.0 GHz 30001 pts 2.5 GHz/ 26.0 GHz Date: 22.JUL.2020 10:45:48

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	 Ref Level 30.00 dBm Offset 1.00 dB RBW 100 kHz Att 30.0 dB SWF 1.04 ms VBW 300 kHz Mode Auto Sweep Count 100/100 M1[1] 3.88 dBm 2.4382590 GHz CF 2.437 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 22.JUL.2020 10:56:17
CH06 30MHz~1000MHz	 Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30.0 dB SWF 30.1 ms VBW 300 kHz Mode Auto Sweep Count 10/10 M1[1] -60.86 dBm 554.2510 MHz 30.0 MHz 30001 pts 97.0 MHz/ 1.0 GHz Date: 22.JUL.2020 10:56:33
CH06 1GHz~26GHz	 Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30.0 dB SWF 250 ms VBW 300 kHz Mode Auto Sweep Count 10/10 M1[1] -51.73 dBm 25.823333 GHz 1.0 GHz 30001 pts 2.5 GHz/ 26.0 GHz Date: 22.JUL.2020 10:56:50

CH11 Reference level	 Ref Level 30.00 dBm Offset 1.00 dB RBW 100 kHz Att 30.0 dB SWF 1.04 ms VBW 300 kHz Mode Auto Sweep Count 100/100 MI[1] 3.75 dBm 2.4607410 GHz CF 2.462 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 22.JUL.2020 10:57:25
CH11 30MHz~1000MHz	 Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30.0 dB SWF 30.1 ms VBW 300 kHz Mode Auto Sweep Count 10/10 MI[1] -60.08 dBm 554.2840 MHz H1 -16.250 dBm 30.0 MHz 30001 pts 97.0 MHz/ 1.0 GHz Date: 22.JUL.2020 10:57:41
CH11 1GHz~26GHz	 Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30.0 dB SWF 250 ms VBW 300 kHz Mode Auto Sweep Count 10/10 MI[1] -52.12 dBm 25.991667 GHz H1 -16.250 dBm 1.0 GHz 30001 pts 2.5 GHz/ 26.0 GHz Date: 22.JUL.2020 10:57:58

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