

APPENDIX REPORT

Project No.	SHT2009015201EW	Radio Specification	WIFI 2.4G
Test sample No.	YPHT20090152004	Model No.	ABX00032
Start test date	2020/9/17	Finish date	2020/9/17
Temperature	25°C	Humidity	50%
Test Engineer	Jiongsheng.Feng	Auditor	Xiaodong Zheo

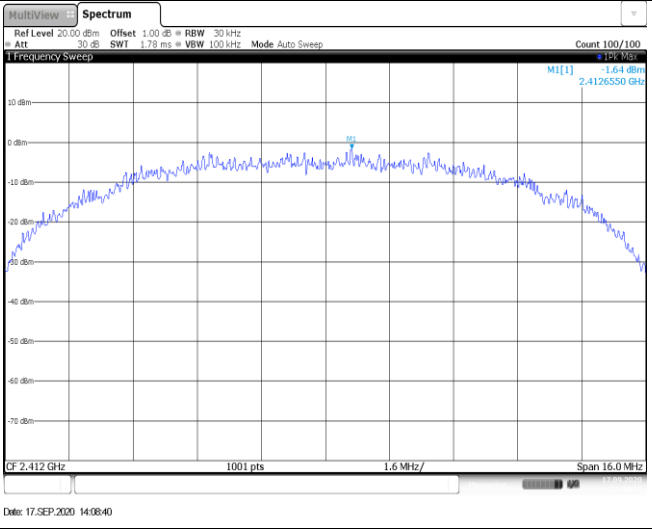
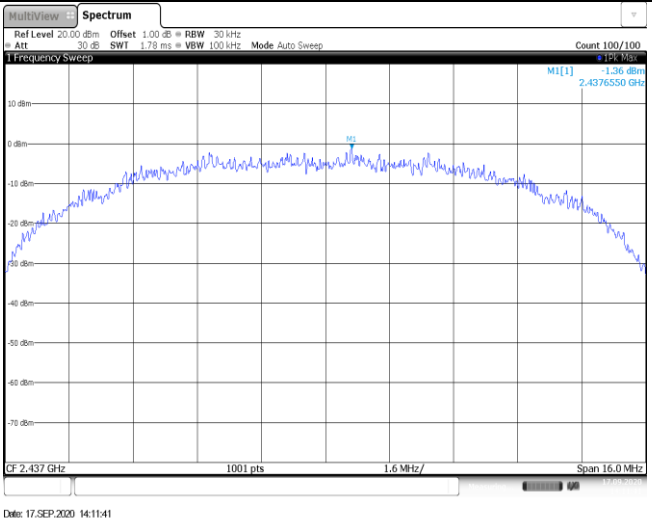
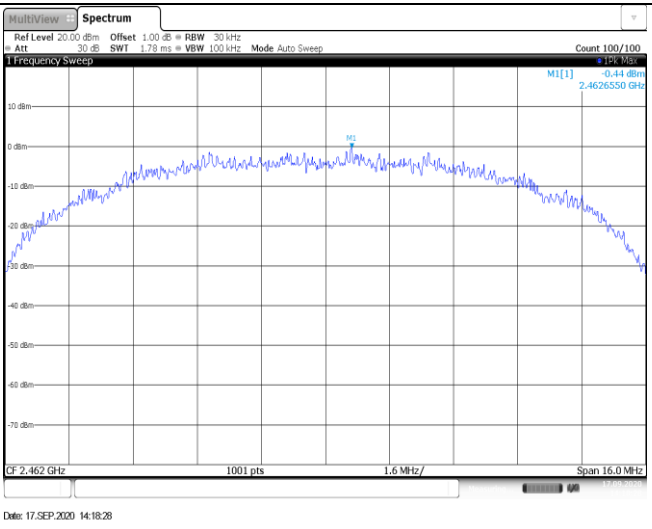
Appendix clause	Test item	Result
A	Conducted Peak Output Power	PASS
B	Power Spectral Density	PASS
C	6 dB Bandwidth	PASS
D	99% Occupied Bandwidth	PASS
E	Duty Cycle	PASS
F	Band edge and Spurious Emissions (conducted)	PASS

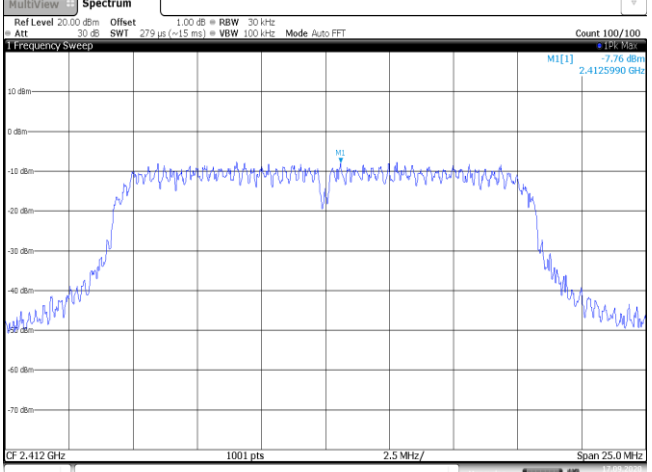
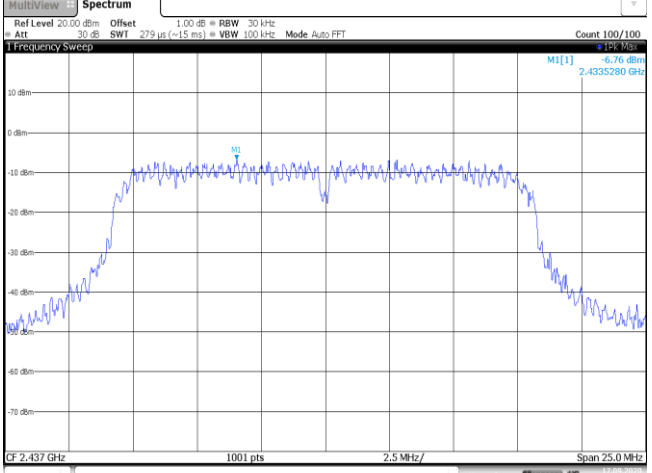
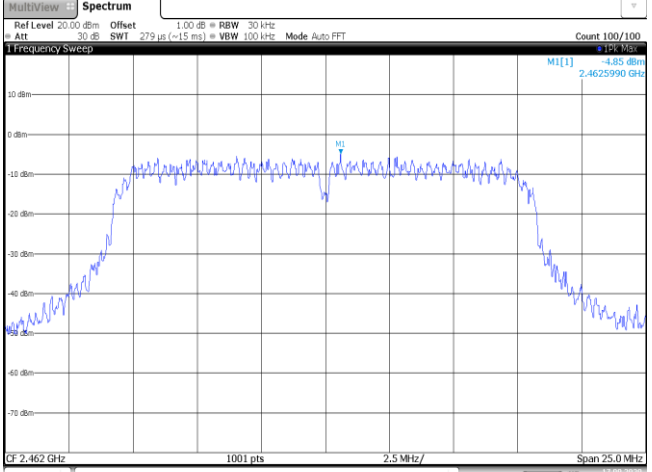
Appendix A: Conducted Peak Output Power

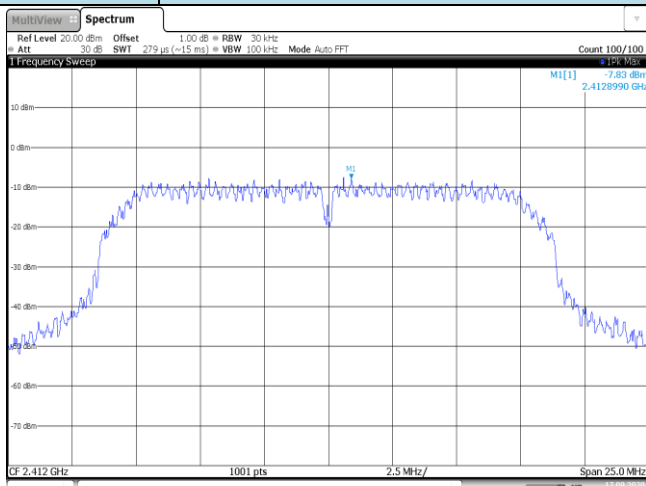
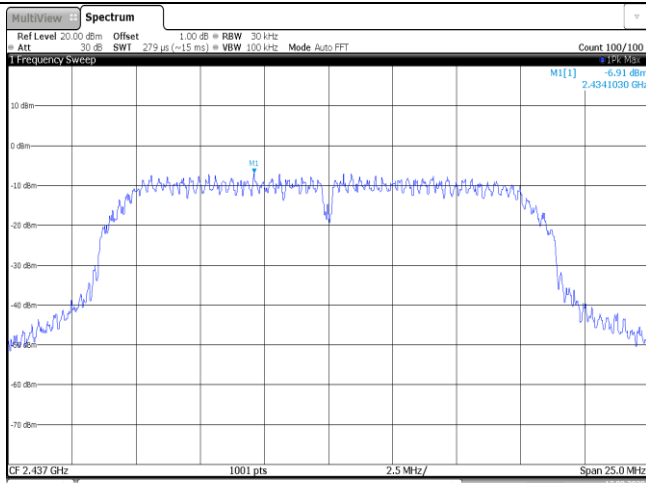
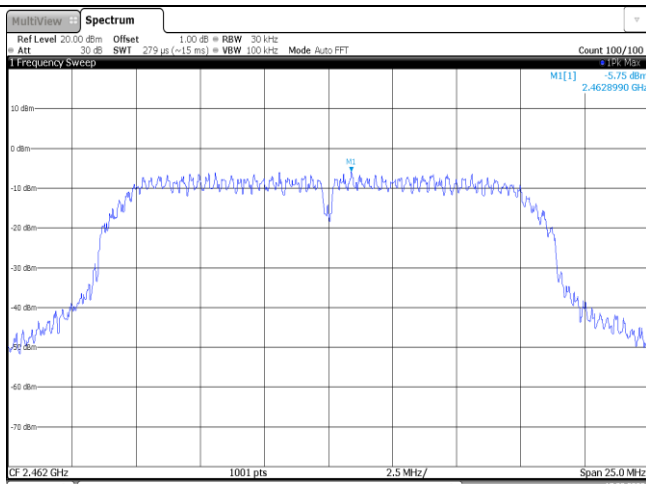
Type	Channel	Peak Output power (dBm)	Average Output power (dBm)	Limit (dBm)	Result
802.11b	01	19.14	17.48	≤ 30.00	Pass
	06	18.86	17.22		
	11	20.04	18.31		
802.11g	01	17.19	15.03	≤ 30.00	Pass
	06	17.91	15.57		
	11	19.40	16.97		
802.11n (HT20)	01	17.25	15.32	≤ 30.00	Pass
	06	17.78	15.44		
	11	19.25	16.84		

Appendix B: Power Spectral Density

Type	Channel	Power Spectral Density (dBm/30KHz)	Limit (dBm/3KHz)	Result
802.11b	01	-1.64	≤8.00	Pass
	06	-1.36		
	11	-0.44		
802.11g	01	-7.76	≤8.00	Pass
	06	-6.76		
	11	-4.85		
802.11n(HT20)	01	-7.83	≤8.00	Pass
	06	-6.91		
	11	-5.75		

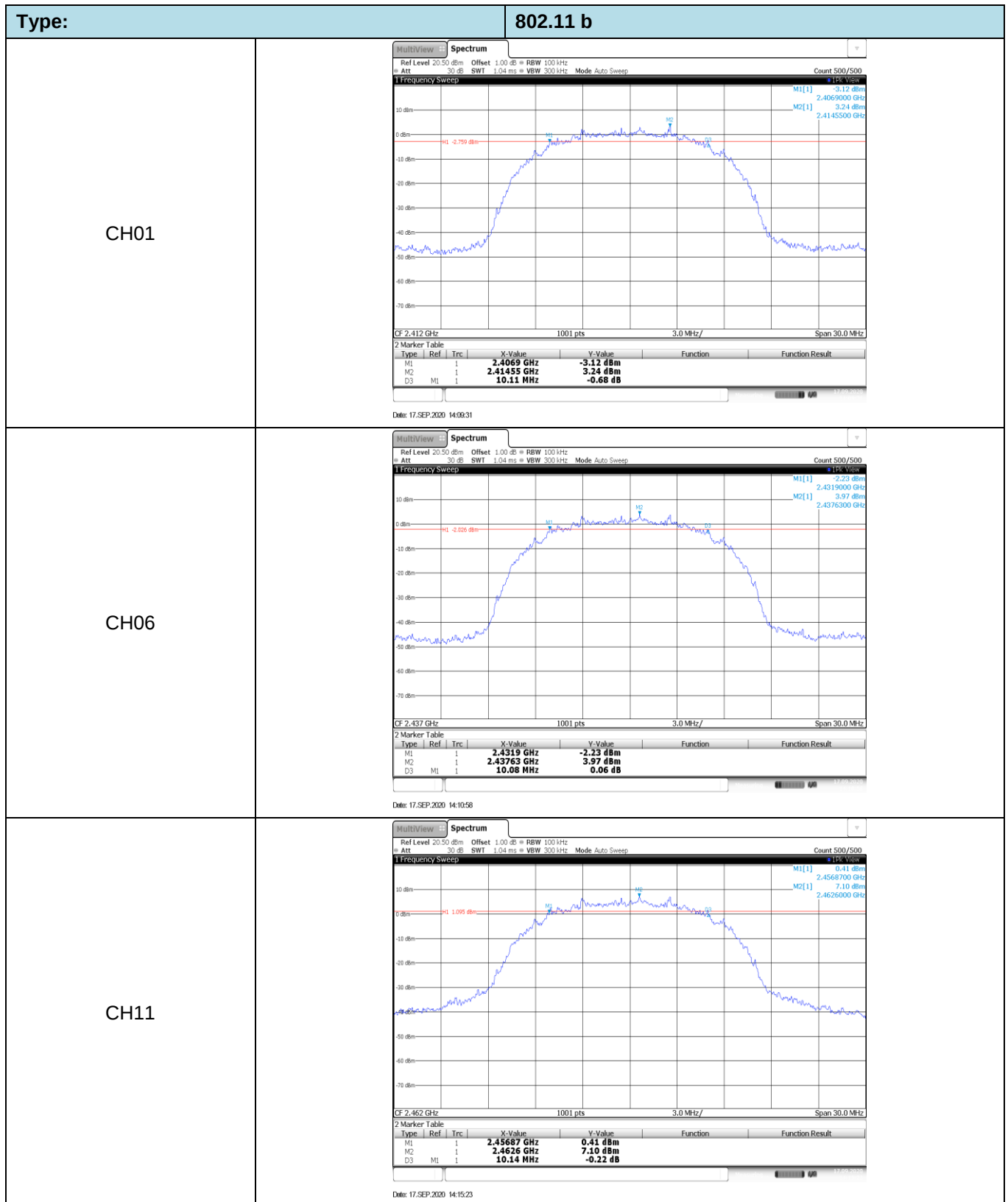
Type:	802.11 b
CH01	 Ref Level 20.00 dBm Offset 1.00 dB RBW 30 kHz Att 30 dB SWI 1.78 ms VBW 100 kHz Mode Auto Sweep Count 100/100 MI[1] 1.64 dBm 2.4126550 GHz CF 2.412 GHz 1001 pts 1.6 MHz/ Span 16.0 MHz Date: 17 SEP 2000 14:08:40
CH06	 Ref Level 20.00 dBm Offset 1.00 dB RBW 30 kHz Att 30 dB SWI 1.78 ms VBW 100 kHz Mode Auto Sweep Count 100/100 MI[1] 1.36 dBm 2.4376550 GHz CF 2.437 GHz 1001 pts 1.6 MHz/ Span 16.0 MHz Date: 17 SEP 2000 14:11:41
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] 0.44 dBm 2.4626550 GHz CF 2.462 GHz 1001 pts 1.6 MHz/ Span 16.0 MHz Date: 17 SEP 2000 14:18:28

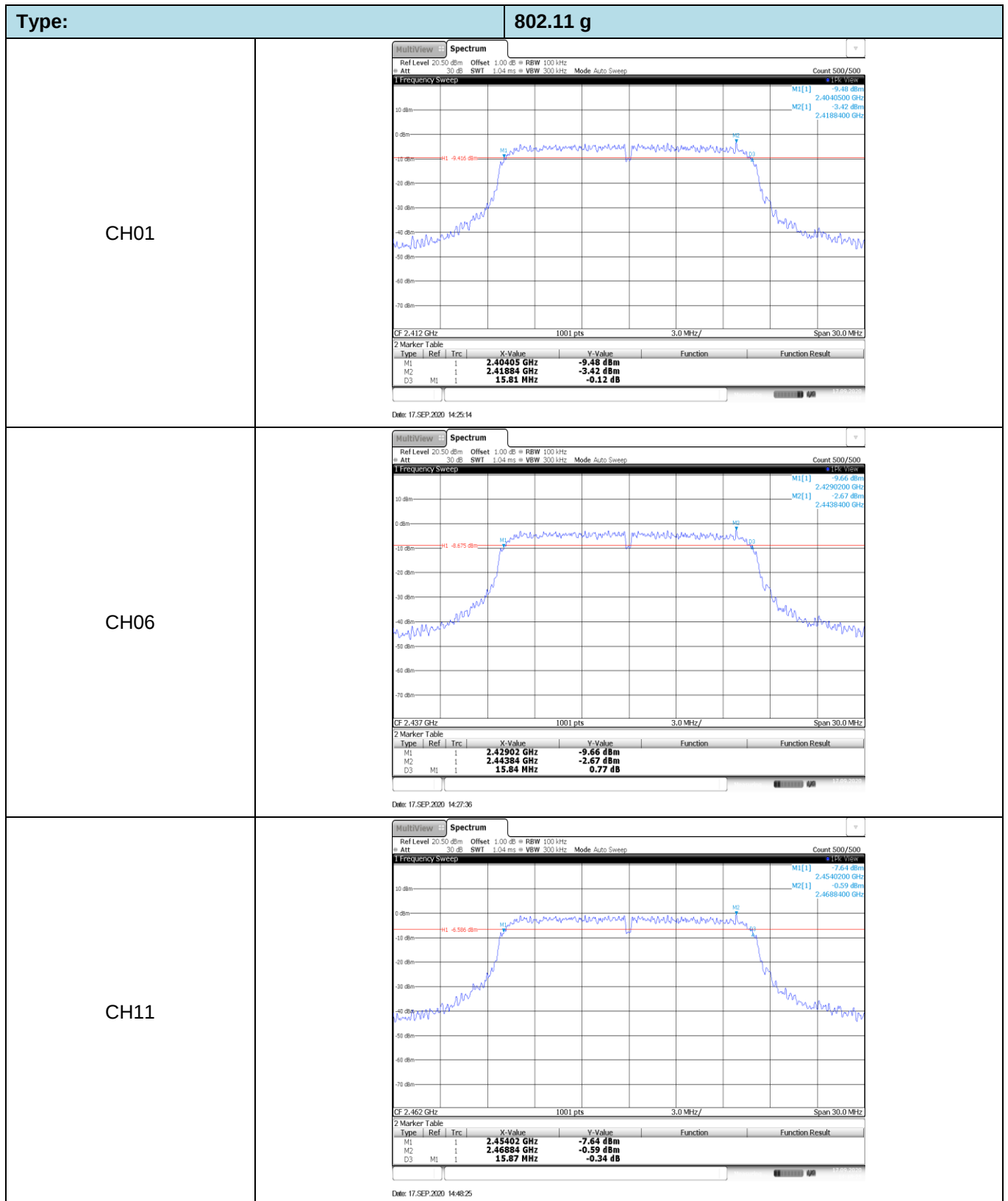
Type:	802.11 g
CH01	 Ref Level 20.00 dBm Offset 1.00 dB BW 30 kHz Att 30 dB SWI 279 μs (~1.5 ms) VBW 100 kHz Mode Auto FFT Count 100/100 MI[1] 7.76 dBm 2.4125990 GHz CF 2.412 GHz 1001 pts 2.5 MHz/ Span 25.0 MHz Date: 17.SEP.2000 14:22:25
CH06	 Ref Level 20.00 dBm Offset 1.00 dB BW 30 kHz Att 30 dB SWI 279 μs (~1.5 ms) VBW 100 kHz Mode Auto FFT Count 100/100 MI[1] 6.76 dBm 2.4335280 GHz CF 2.437 GHz 1001 pts 2.5 MHz/ Span 25.0 MHz Date: 17.SEP.2000 14:28:19
CH11	 Ref Level 20.00 dBm Offset 1.00 dB BW 30 kHz Att 30 dB SWI 279 μs (~1.5 ms) VBW 100 kHz Mode Auto FFT Count 100/100 MI[1] 4.85 dBm 2.4625990 GHz CF 2.462 GHz 1001 pts 2.5 MHz/ Span 25.0 MHz Date: 17.SEP.2000 14:32:58

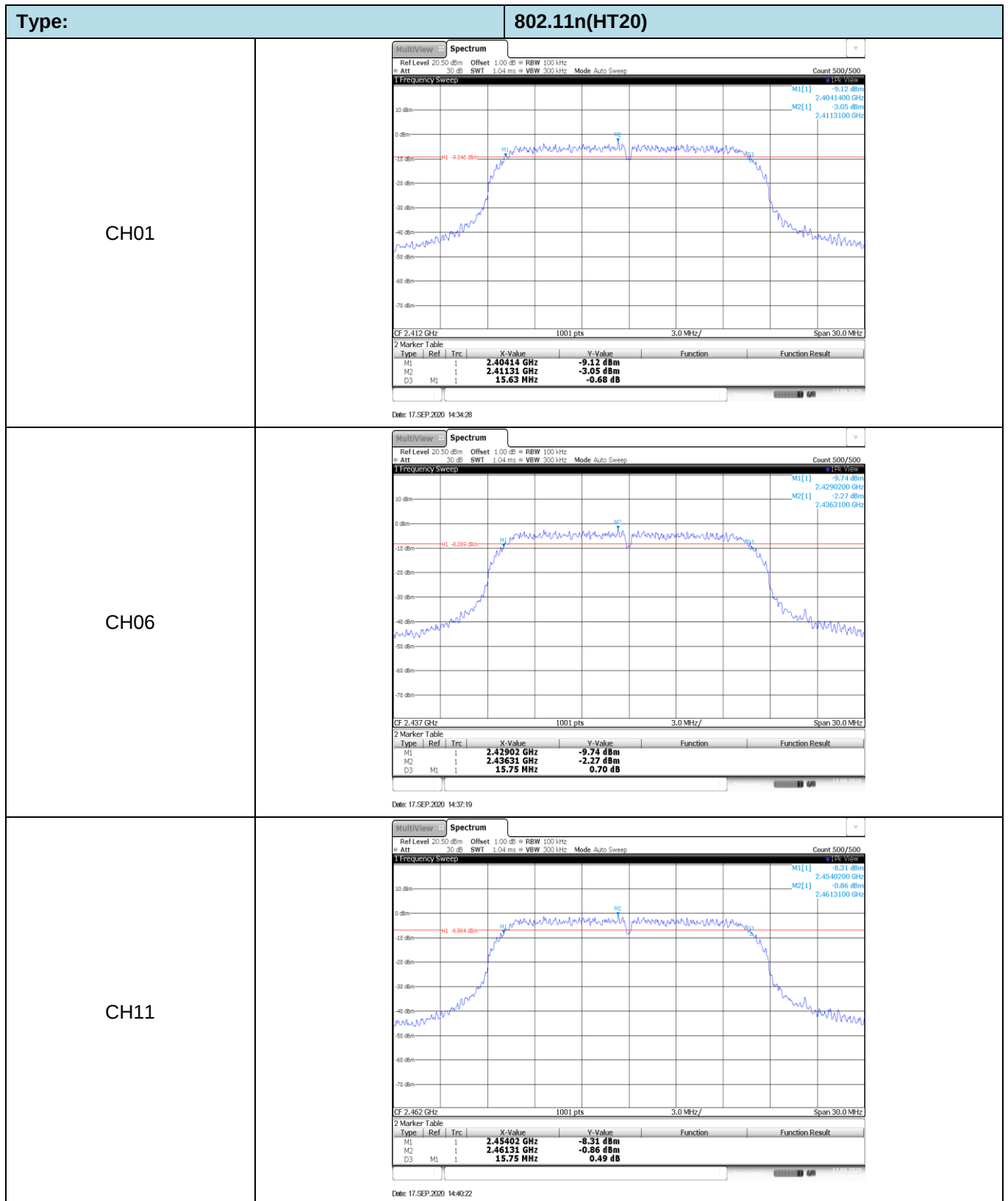
Type:		802.11n(HT20)
CH01	MultiView Spectrum Ref Level 20.00 dBm Offset 1.00 dB BW 30 kHz Att 30 dB SWI 279 μs (~15 ms) VBW 100 kHz Mode Auto FFT Count 100/100 Frequency Sweep M1[1] -7.83 dBm 2.4128990 GHz  CF 2.412 GHz 1001 pts 2.5 MHz/ Span 25.0 MHz Date: 17.SEP.2000 14:34:49	
CH06	MultiView Spectrum 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 Frequency Sweep M1[1] -6.91 dBm 2.4341030 GHz  CF 2.437 GHz 1001 pts 2.5 MHz/ Span 25.0 MHz Date: 17.SEP.2000 14:38:05	
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 Frequency Sweep M1[1] -5.75 dBm 2.4628990 GHz  CF 2.462 GHz 1001 pts 2.5 MHz/ Span 25.0 MHz Date: 17.SEP.2000 14:41:04	

Appendix C: 6dB bandwidth

Type	Channel	6dB Bandwidth (MHz)	Limit (MHz)	Result
802.11b	01	10.11	≥0.5	Pass
	06	10.08		
	11	10.14		
802.11g	01	15.81	≥0.5	Pass
	06	15.84		
	11	15.87		
802.11n(HT20)	01	15.63	≥0.5	Pass
	06	15.75		
	11	15.75		

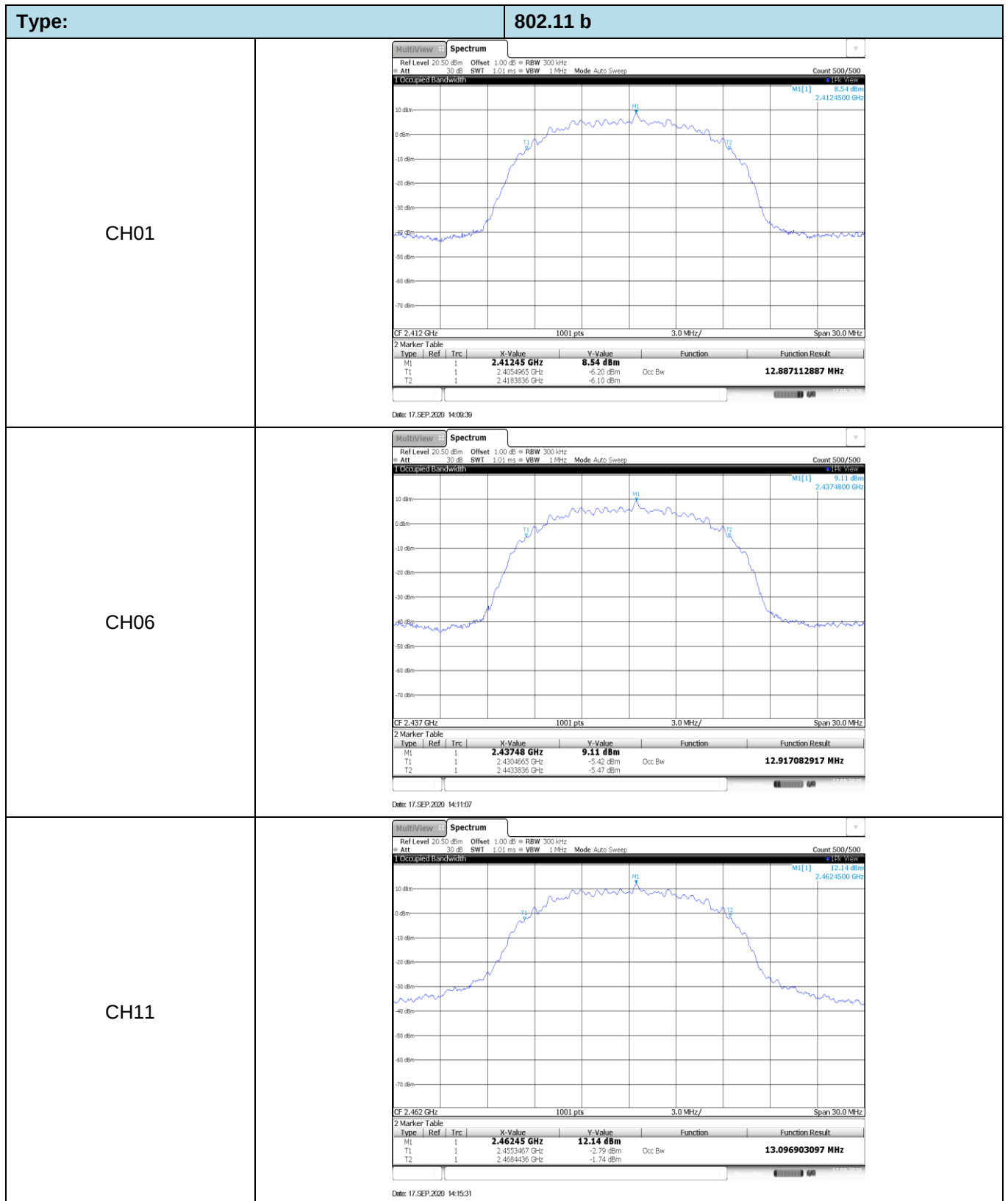


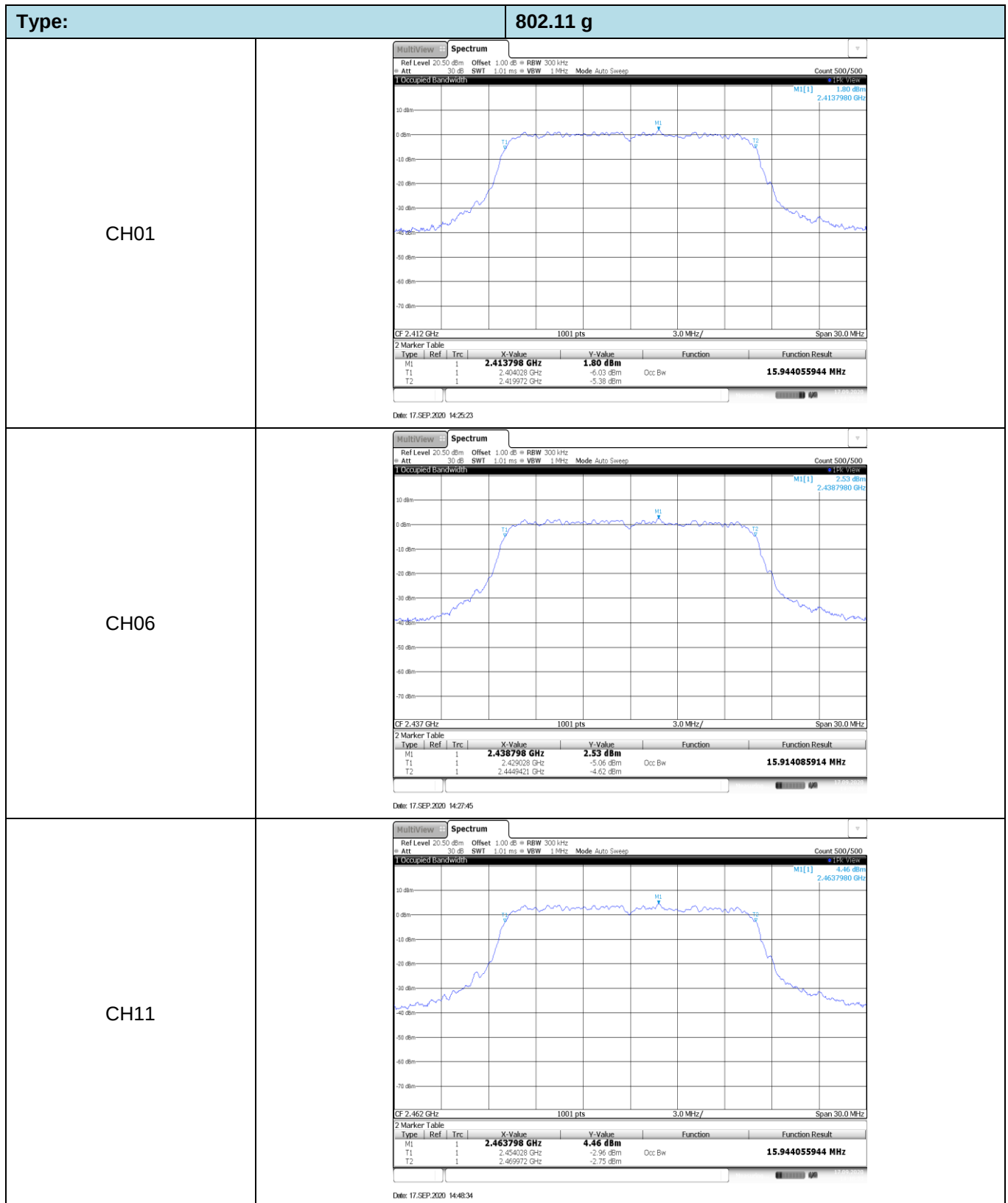




Appendix D: 99% Occupied Bandwidth

Type	Channel	99% Bandwidth (MHz)	Limit (MHz)	Result
802.11b	01	12.89	-	Pass
	06	12.92		
	11	13.10		
802.11g	01	15.94	-	Pass
	06	15.91		
	11	15.94		
802.11n(HT20)	01	16.39	-	Pass
	06	16.42		
	11	16.42		

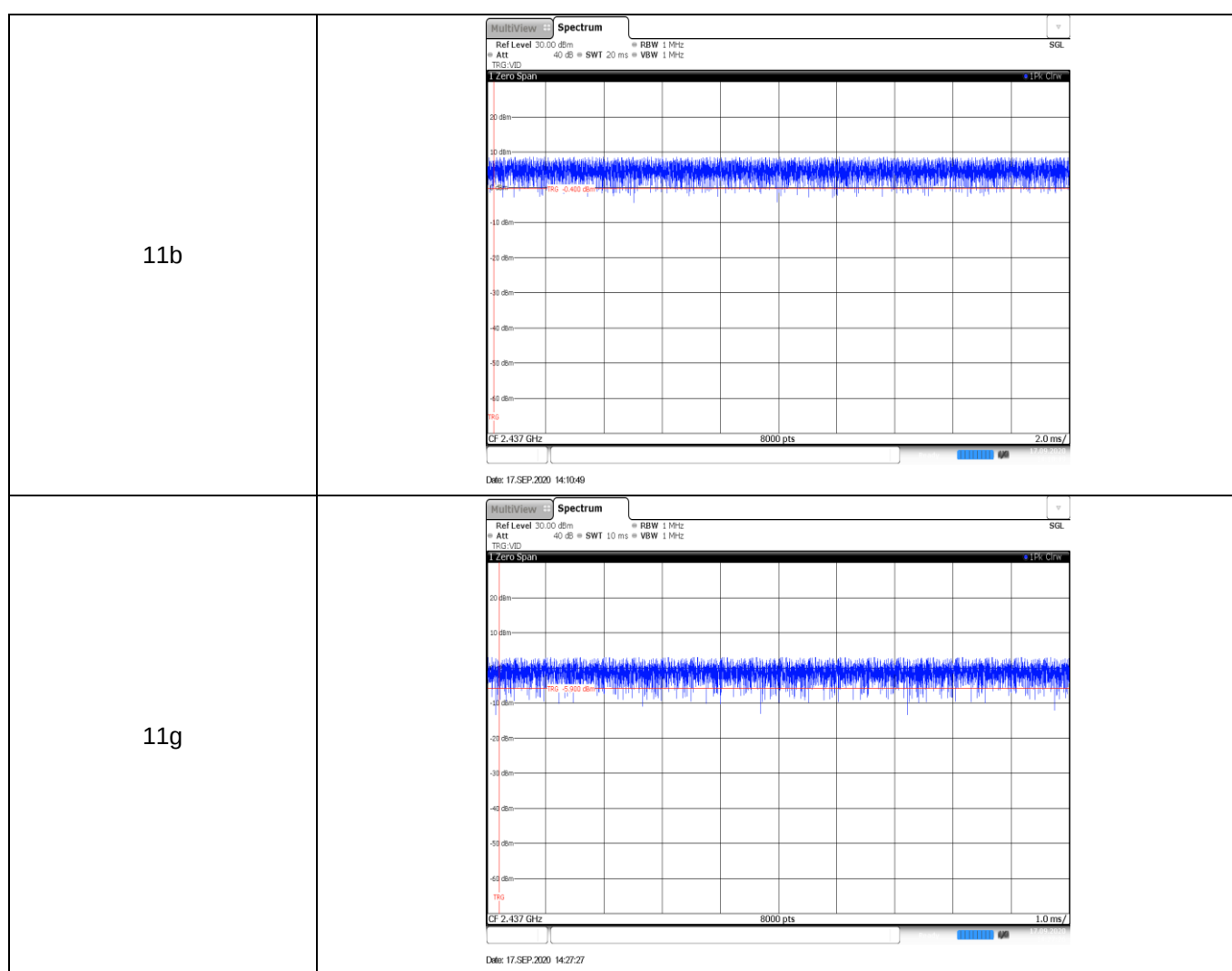




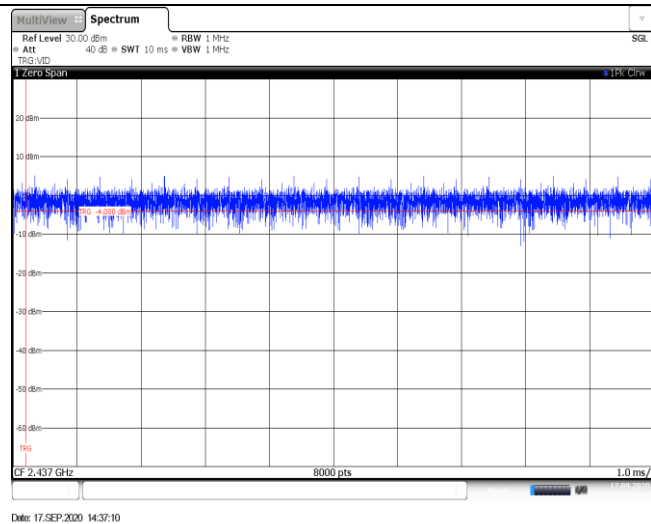
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Appendix E: Duty Cycle

Modulation Type	Test Frequency (MHz)	T _{on time} for single burst (ms)	T _{period} (ms)	Duty cycle	1/T _{on time} (kHz)
11b	2437	1.00	1.00	100%	1.0
11g	2437	1.00	1.00	100%	1.0
11n20	2437	1.00	1.00	100%	1.0

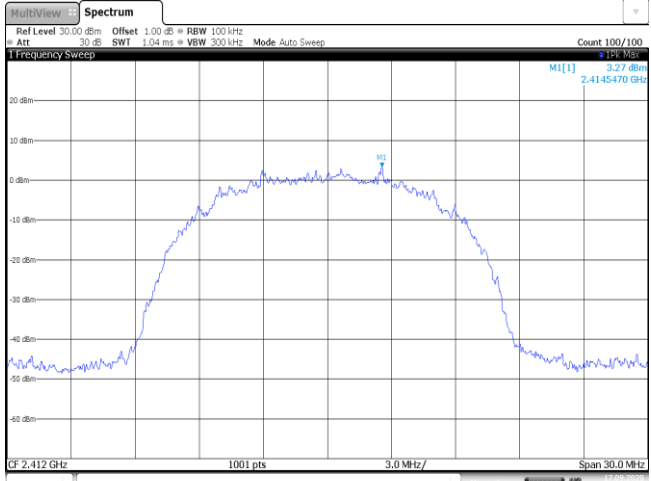
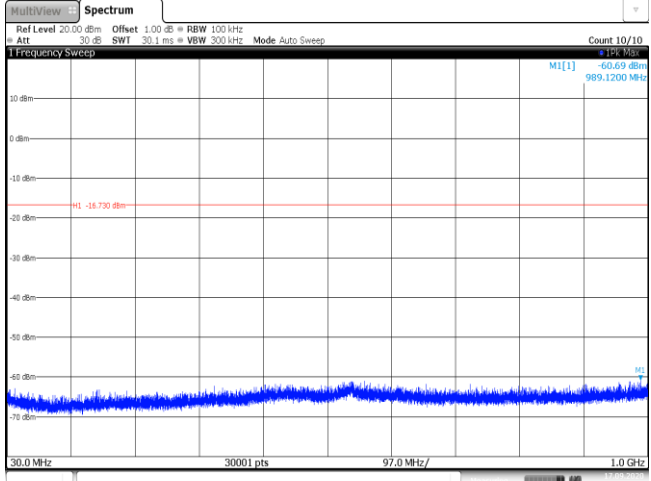
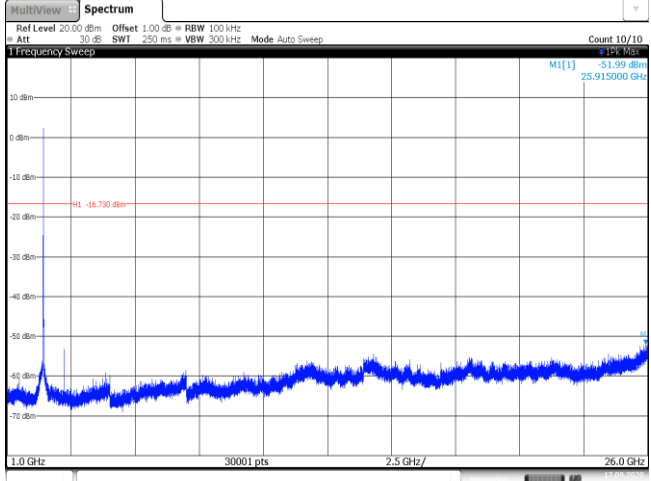


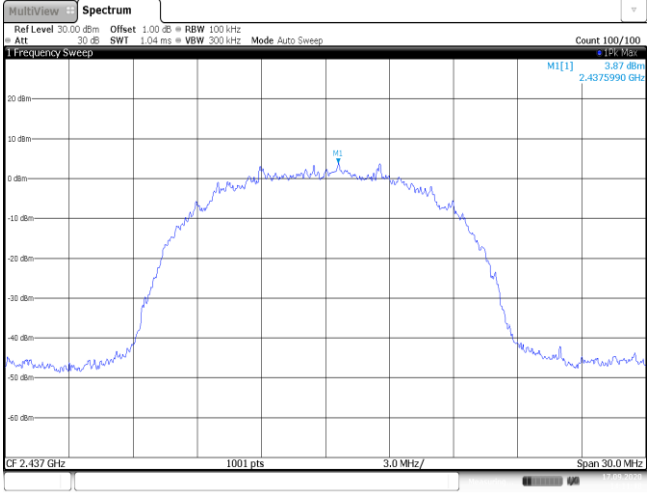
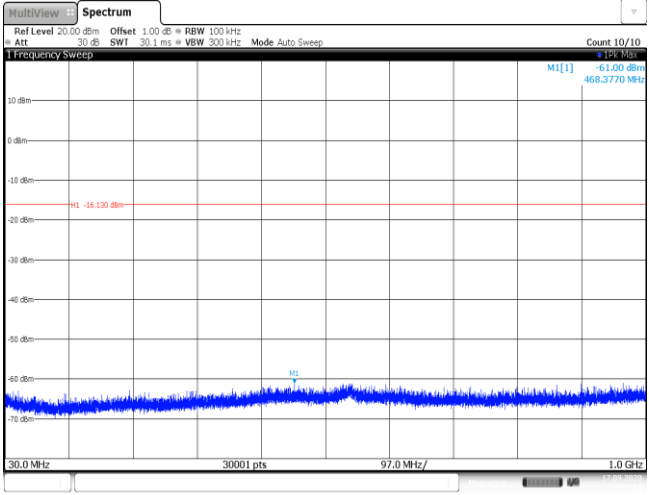
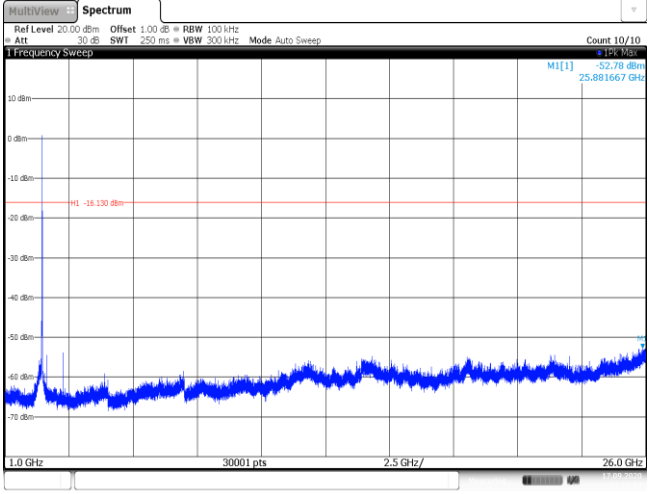
11n20

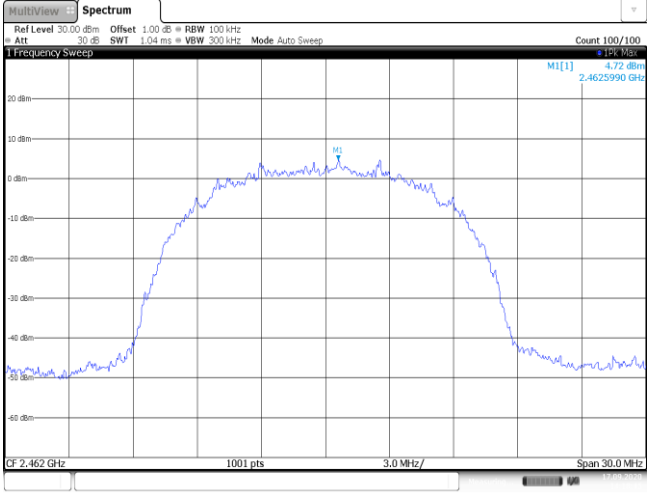
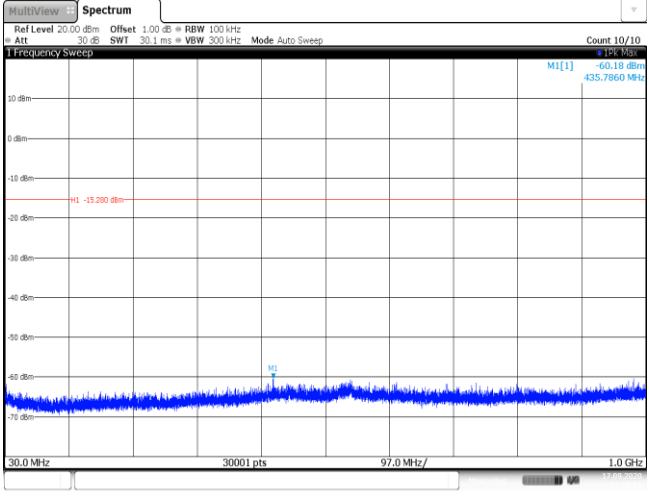
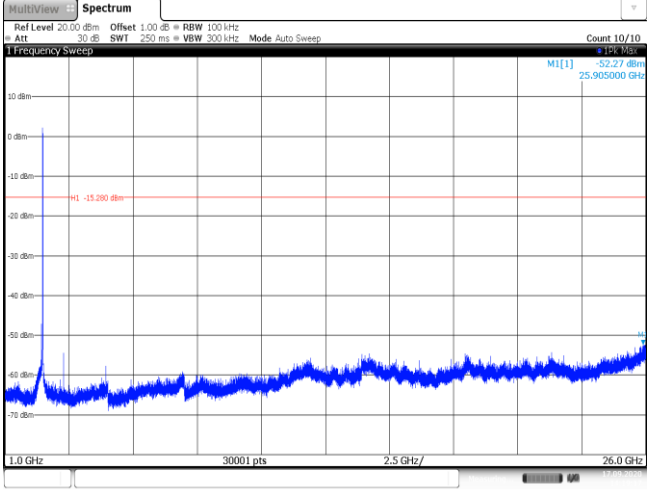


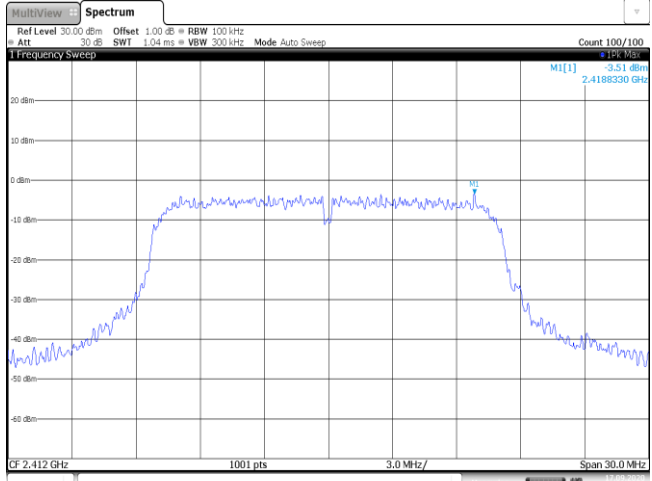
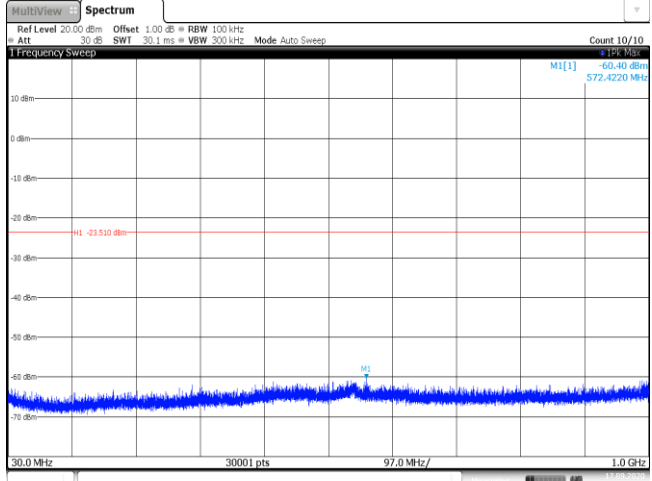
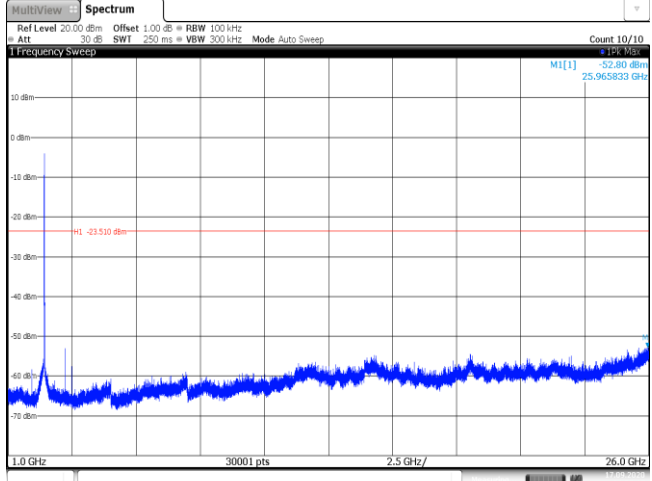
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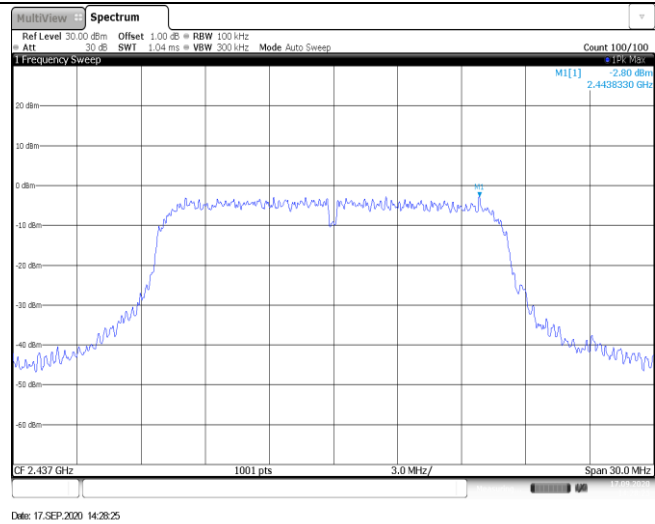
Test Item:	SE	Type:	802.11 b
CH01 Reference level		 Ref Level 30.00 dBm Offset 1.00 dB BW 100 kHz Att 30 dB SWI 1.04 ms VBW 300 kHz Mode Auto Sweep Count 100/100 M1[1] 3.27 dBm 2.4145470 GHz 2.412 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 17.SEP.2020 14:03:46	
CH01 30MHz~1000MHz		 Ref Level 20.00 dBm Offset 1.00 dB BW 100 kHz Att 30 dB SWI 30.1 ms VBW 300 kHz Mode Auto Sweep Count 10/10 M1[1] -60.69 dBm 989.1200 MHz 30.0 MHz 30001 pts 97.0 MHz/ 1.0 GHz Date: 17.SEP.2020 14:10:02	
CH01 1GHz~26GHz		 Ref Level 20.00 dBm Offset 1.00 dB BW 100 kHz Att 30 dB SWI 250 ms VBW 300 kHz Mode Auto Sweep Count 10/10 M1[1] -51.99 dBm 25.915000 GHz 1.0 GHz 30001 pts 2.5 GHz/ 26.0 GHz Date: 17.SEP.2020 14:10:18	

CH06 Reference level	 The spectrum plot shows a signal centered at 2.437 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 signal is a broad peak with a maximum power of approximately 10 dBm. The plot includes a grid and various measurement parameters at the top: Ref Level 30.00 dBm, Offset 1.00 dB, RBW 100 kHz, Att 30.0 dB, SWF 1.04 ms, VSW 300 kHz, Mode Auto Sweep, Count 100/100, and MI[1] 3.87 dBm, 2.4375990 GHz. The date is 17-SEP-2020 14:11:47.
CH06 30MHz~1000MHz	 The spectrum plot shows a signal centered at 468.3770 MHz. The y-axis represents power in dBm, ranging from -70 to 10. The x-axis represents frequency in MHz, with a span of 1.0 GHz. The signal is a broad peak with a maximum power of approximately -61.00 dBm. The plot includes a grid and various measurement parameters at the top: Ref Level 20.00 dBm, Offset 1.00 dB, RBW 100 kHz, Att 30.0 dB, SWF 30.1 ms, VSW 300 kHz, Mode Auto Sweep, Count 10/10, and MI[1] -61.00 dBm, 468.3770 MHz. The date is 17-SEP-2020 14:12:03.
CH06 1GHz~26GHz	 The spectrum plot shows a signal centered at 25.881667 GHz. The y-axis represents power in dBm, ranging from -70 to 10. The x-axis represents frequency in GHz, with a span of 26.0 GHz. The signal is a broad peak with a maximum power of approximately -52.78 dBm. The plot includes a grid and various measurement parameters at the top: Ref Level 20.00 dBm, Offset 1.00 dB, RBW 100 kHz, Att 30.0 dB, SWF 250 ms, VSW 300 kHz, Mode Auto Sweep, Count 10/10, and MI[1] -52.78 dBm, 25.881667 GHz. The date is 17-SEP-2020 14:12:20.

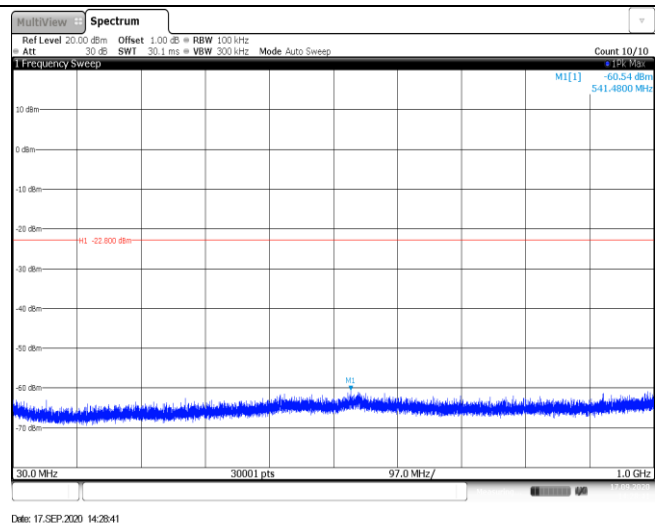
CH11 Reference level	 Ref Level 30.00 dBm Offset 1.00 dB RBW 100 kHz Att 30.0 dB SWF 1.04 ms VBW 300 kHz Mode Auto Sweep Count 100/100 M1[1] 4.72 dBm 2.4625990 GHz CF 2.462 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 17-SEP-2020 14:18:45
CH11 30MHz~1000MHz	 Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30.0 dB SWF 30.1 ms VBW 300 kHz Mode Auto Sweep Count 10/10 M1[1] -60.18 dBm 435.7860 MHz 30.0 MHz 30001 pts 97.0 MHz/ 1.0 GHz Date: 17-SEP-2020 14:19:01
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 M1[1] -52.27 dBm 25.905000 GHz 1.0 GHz 30001 pts 2.5 GHz/ 26.0 GHz Date: 17-SEP-2020 14:19:17

Test Item:	SE	Type:	802.11 g
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] 3.51 dBm 2.4188330 GHz 2.412 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 17.SEP.2000 14:22:42	
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] -60.40 dBm 572.4220 MHz 30.0 MHz 30001 pts 97.0 MHz/ 1.0 GHz Date: 17.SEP.2000 14:22:58	
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] -52.80 dBm 25.963833 GHz 1.0 GHz 30001 pts 2.5 GHz/ 26.0 GHz Date: 17.SEP.2000 14:23:14	

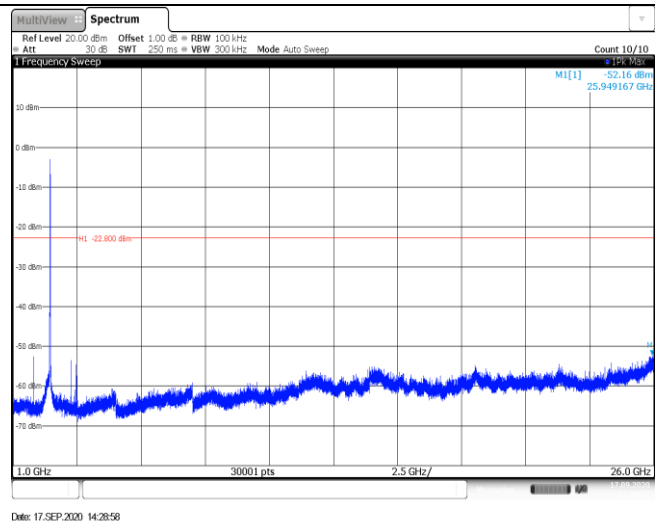
CH06
Reference level

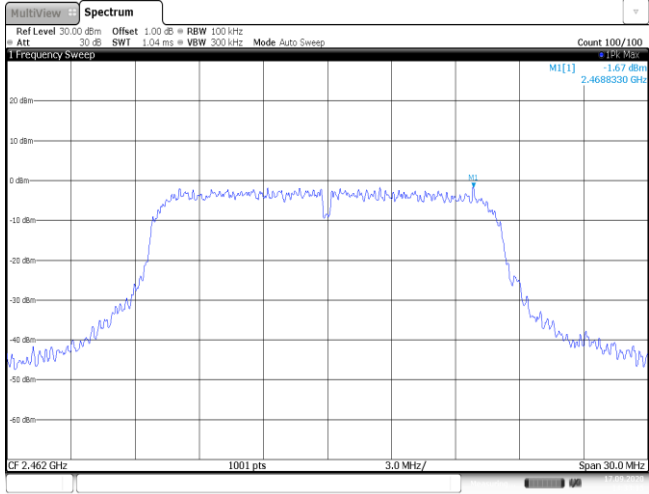
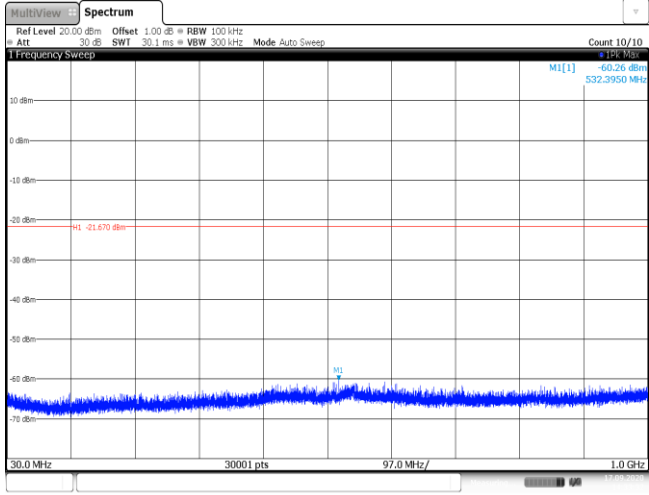
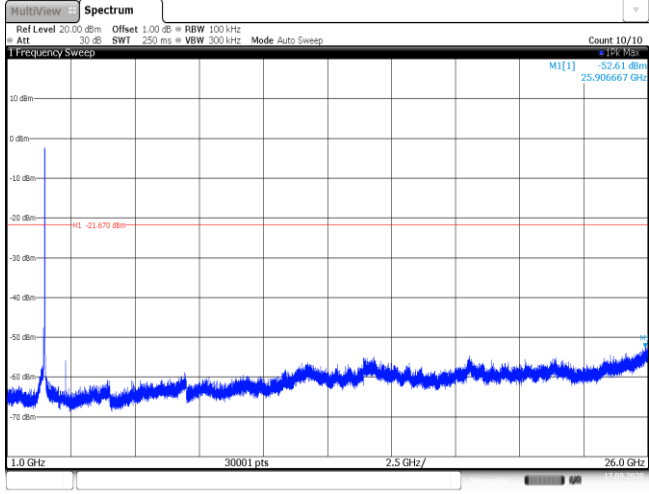


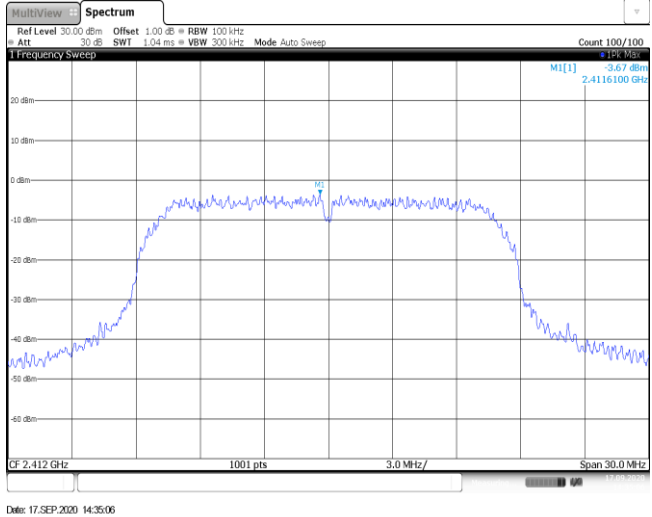
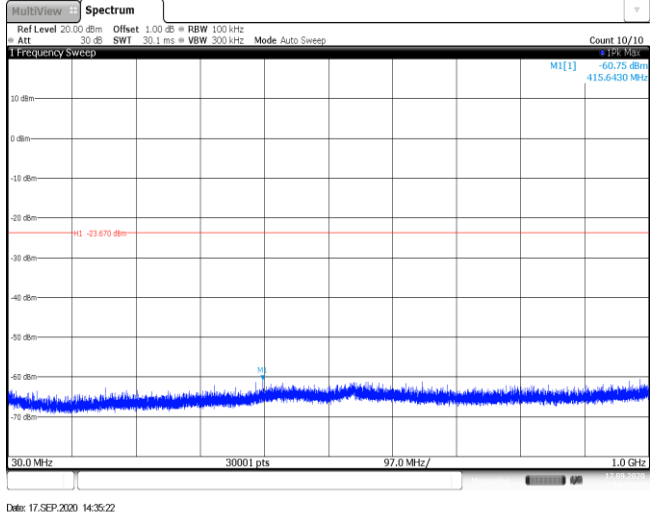
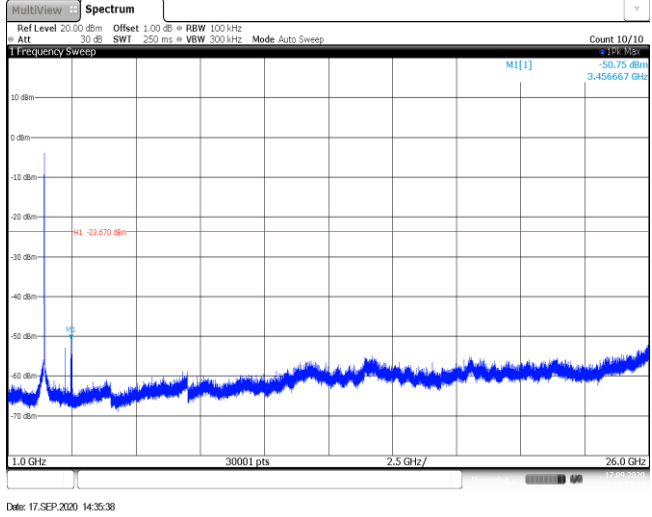
CH06
30MHz~1000MHz

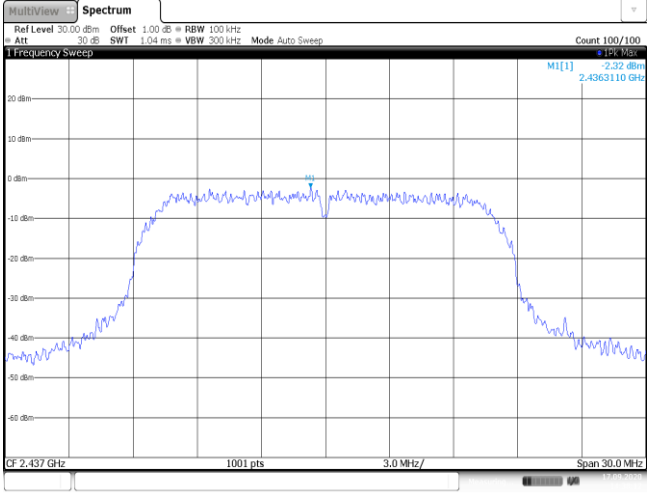
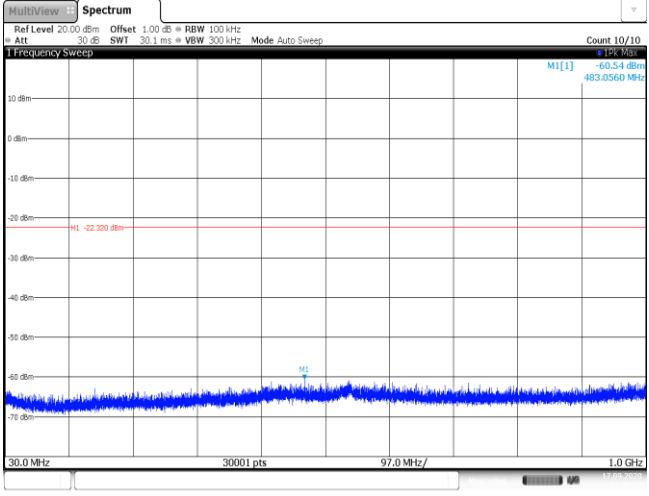
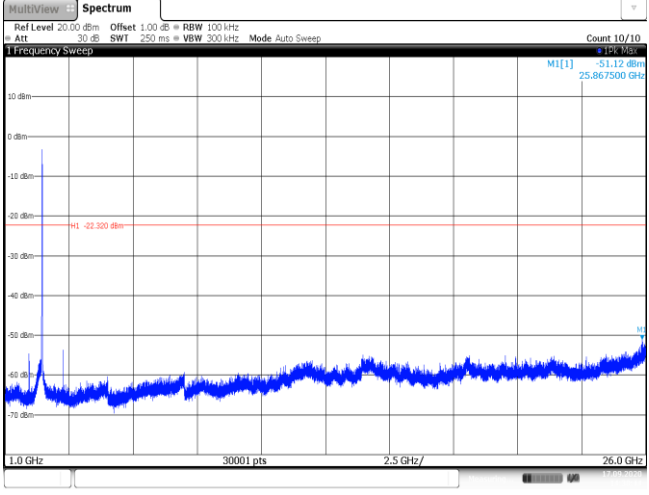


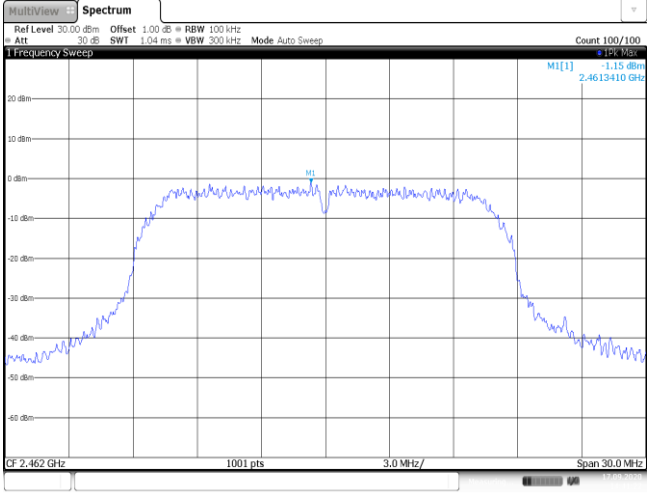
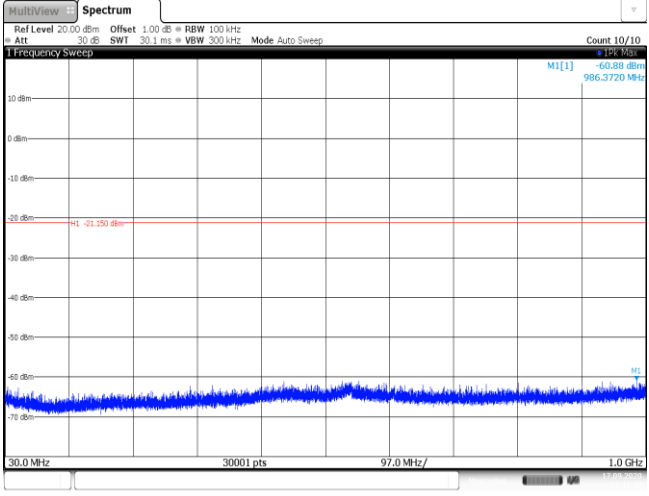
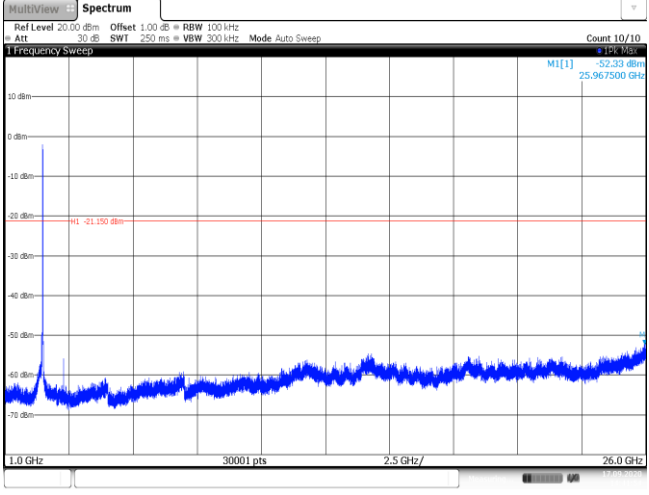
CH06
1GHz~26GHz



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 MI[1] -1.67 dBm 2.4688330 GHz CF 2.462 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 17-SEP-2020 14:33:15
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 MI[1] -60.26 dBm 532.3950 MHz 30.0 MHz 30001 pts 97.0 MHz/ 1.0 GHz Date: 17-SEP-2020 14:33:31
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 MI[1] -52.61 dBm 25.906667 GHz 1.0 GHz 30001 pts 2.5 GHz/ 26.0 GHz Date: 17-SEP-2020 14:33:48

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 dB SWF 1.04 ms VSW 300 kHz Mode Auto Sweep Count 100/100 M1[1] -2.32 dBm 2.4363110 GHz CF 2.437 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 17-SEP-2020 14:38:11
CH06 30MHz~1000MHz	 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 Count 10/10 M1[1] -60.54 dBm 483.0560 MHz H1 -22.200 dBm 30.0 MHz 30001 pts 97.0 MHz/ 1.0 GHz Date: 17-SEP-2020 14:38:28
CH06 1GHz~26GHz	 Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWF 250 ms VSW 300 kHz Mode Auto Sweep Count 10/10 M1[1] -51.12 dBm 25.867500 GHz H1 -22.200 dBm 1.0 GHz 30001 pts 2.5 GHz/ 26.0 GHz Date: 17-SEP-2020 14:38:44

CH11 Reference level	 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 Count 100/100 MI[1] -1.15 dBm 2.4613410 GHz CF 2.462 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 17-SEP-2020 14:41:21
CH11 30MHz~1000MHz	 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 Count 10/10 MI[1] -60.88 dBm 986.3720 MHz 30.0 MHz 30001 pts 97.0 MHz/ 1.0 GHz Date: 17-SEP-2020 14:41:37
CH11 1GHz~26GHz	 Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWF 250 ms VSW 300 kHz Mode Auto Sweep Count 10/10 MI[1] -52.33 dBm 25.967500 GHz 1.0 GHz 30001 pts 2.5 GHz/ 26.0 GHz Date: 17-SEP-2020 14:41:54

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