

APPENDIX REPORT

Project No.	SHT2106125001EW	Radio Specification	WIFI 2.4G
Test sample No.	YPHT21061250005	Model No.	E2000
Start test date	2021-9-15	Finish date	2021-10-26
Temperature	24.6℃	Humidity	36%
Test Engineer	Xiaoqin Li	Auditor	Xiaodong Zheo

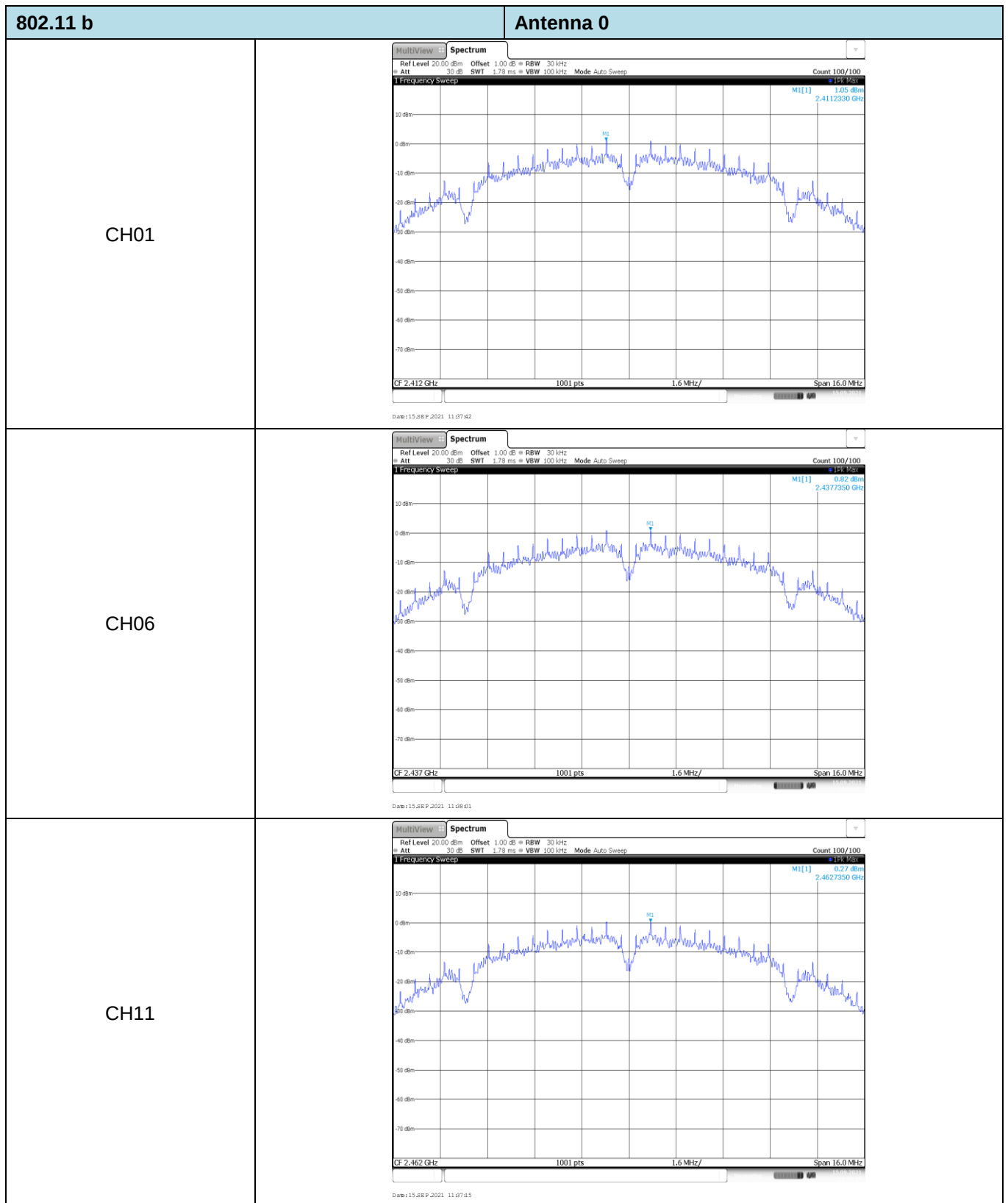
Appendix clause	Test item	Result
A	Conducted Peak Output Power	PASS
B	Power Spectral Density	PASS
C	6 dB Bandwidth	PASS
D	99% Occupied Bandwidth	PASS
E	Duty Cycle	PASS
F	Band edge and Spurious Emissions(coducted)	PASS

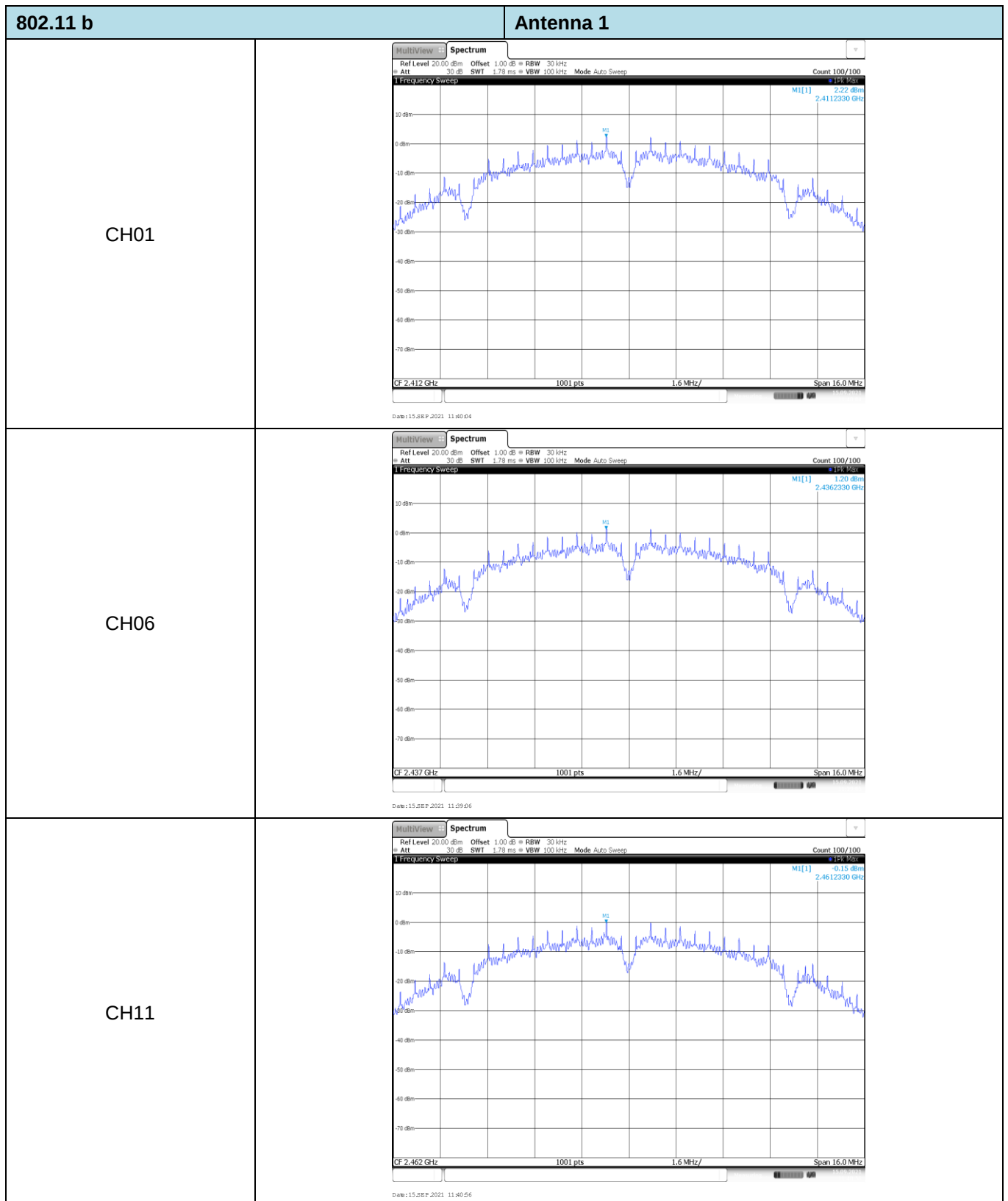
Appendix A: Conducted Peak Output Power

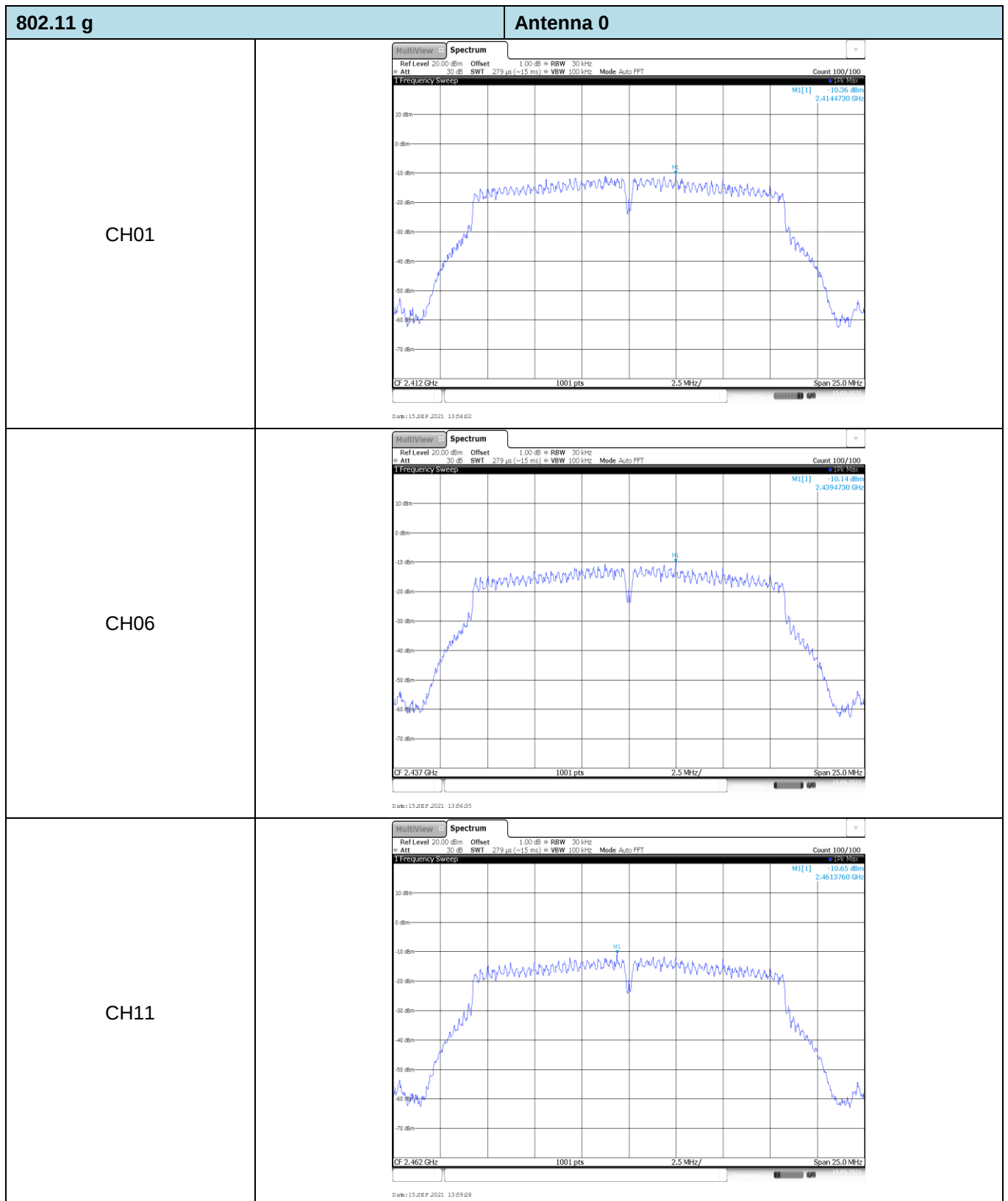
Type	Channel	Peak Output power (dBm)			Average Output power (dBm)			Limit (dBm)	Result
		Antenna 0	Antenna 1	Total	Antenna 0	Antenna 1	Total		
802.11 b	01	14.07	14.79	-	11.56	12.31	-	≤30.00	Pass
	06	13.63	14.09	-	11.15	11.55	-		
	11	12.68	12.59	-	10.22	10.14	-		
802.11 g	01	13.84	14.32	-	11.04	12.24	-	≤30.00	Pass
	06	13.35	13.55	-	10.56	11.48	-		
	11	12.38	12.16	-	9.68	10.04	-		
802.11 n(HT20)	01	11.51	12.47	15.04	8.68	10.68	12.80	≤30.00	Pass
	06	11.08	11.71	14.42	8.26	9.96	12.20		
	11	10.13	11.25	13.75	7.38	9.60	11.64		
802.11 n(HT40)	03	11.75	12.69	15.28	8.94	11.02	13.11	≤30.00	Pass
	06	11.53	12.22	14.87	8.62	10.60	12.73		
	09	11.11	11.53	14.31	8.22	9.98	12.20		

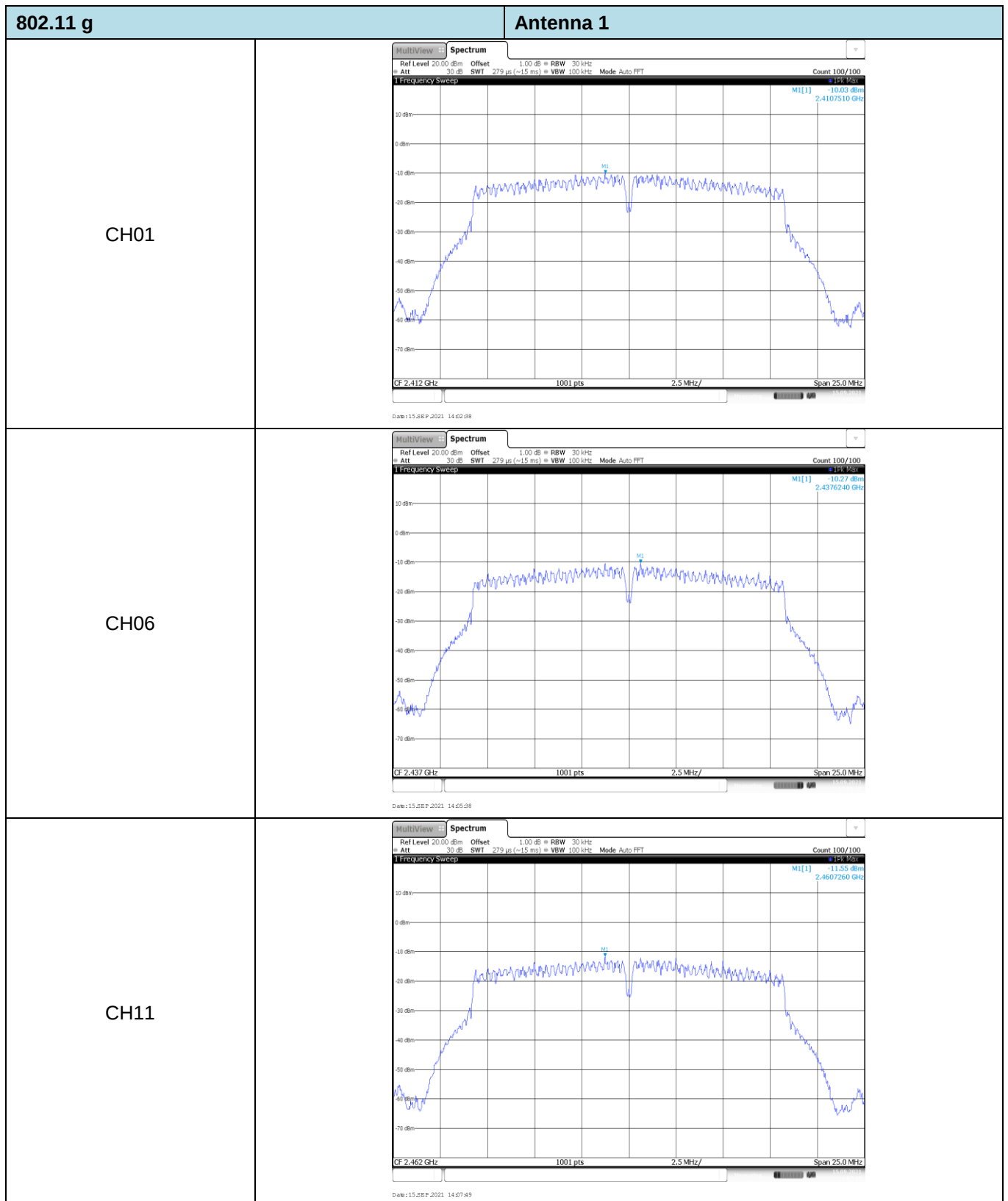
Appendix B: Power Spectral Density

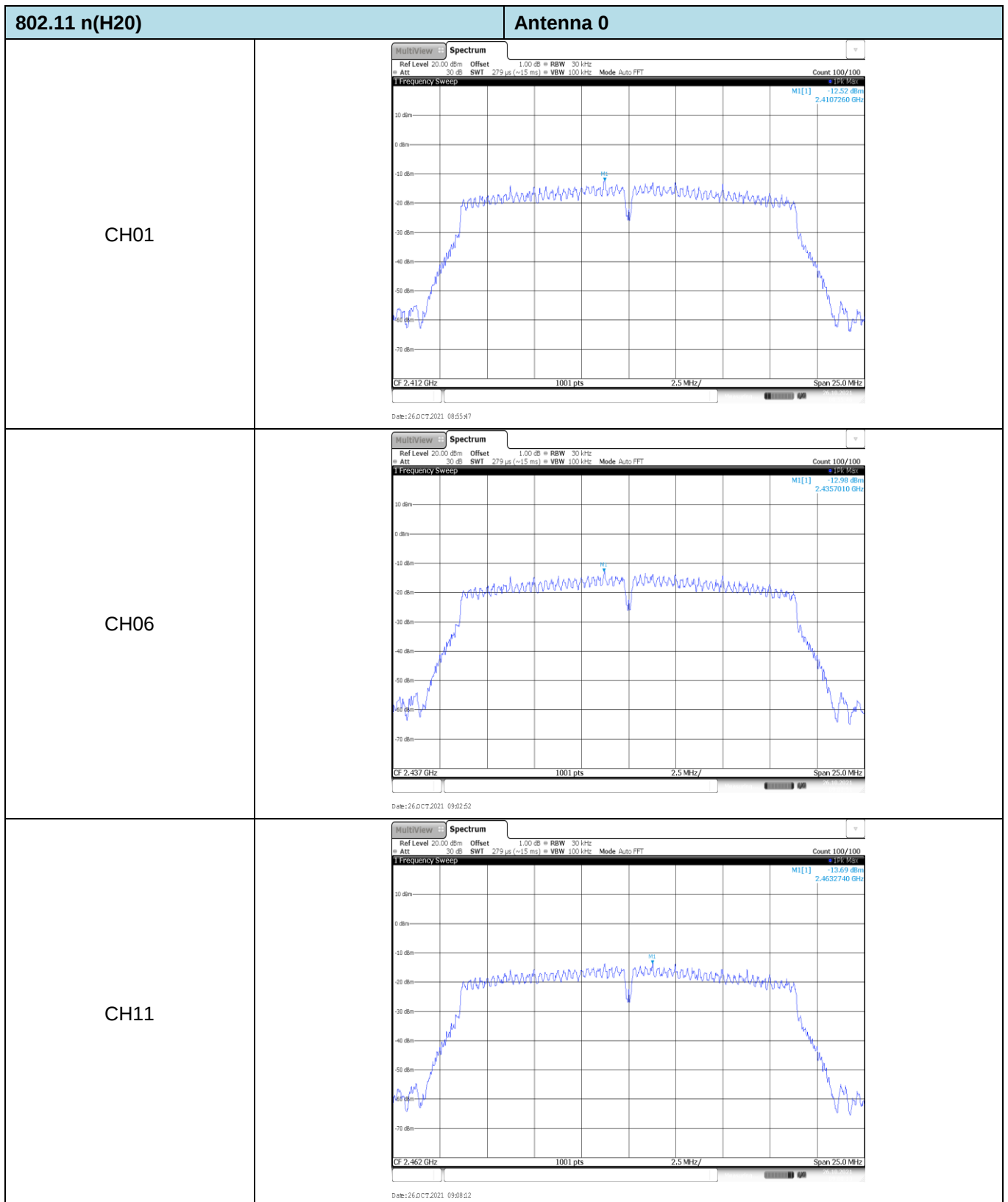
Type	Channel	Power Spectral Density (dBm/30KHz)		Total Power Spectral Density (dBm/30KHz)	Limit (dBm/3KHz)	Result
		Antenna 0	Antenna 1			
802.11b	01	1.05	2.22	-	≤8.00	Pass
	06	0.82	1.20	-		
	11	0.27	-0.15	-		
802.11g	01	-10.36	-10.03	-	≤8.00	Pass
	06	-10.14	-10.27	-		
	11	-10.65	-11.55	-		
802.11n(HT20)	01	-12.52	-12.06	-9.27	≤8.00	Pass
	06	-12.98	-12.64	-9.80		
	11	-13.69	-12.82	-10.22		
802.11n(HT40)	03	-14.10	-15.01	-11.52	≤8.00	Pass
	06	-15.70	-15.59	-12.63		
	09	-16.02	-16.25	-13.12		

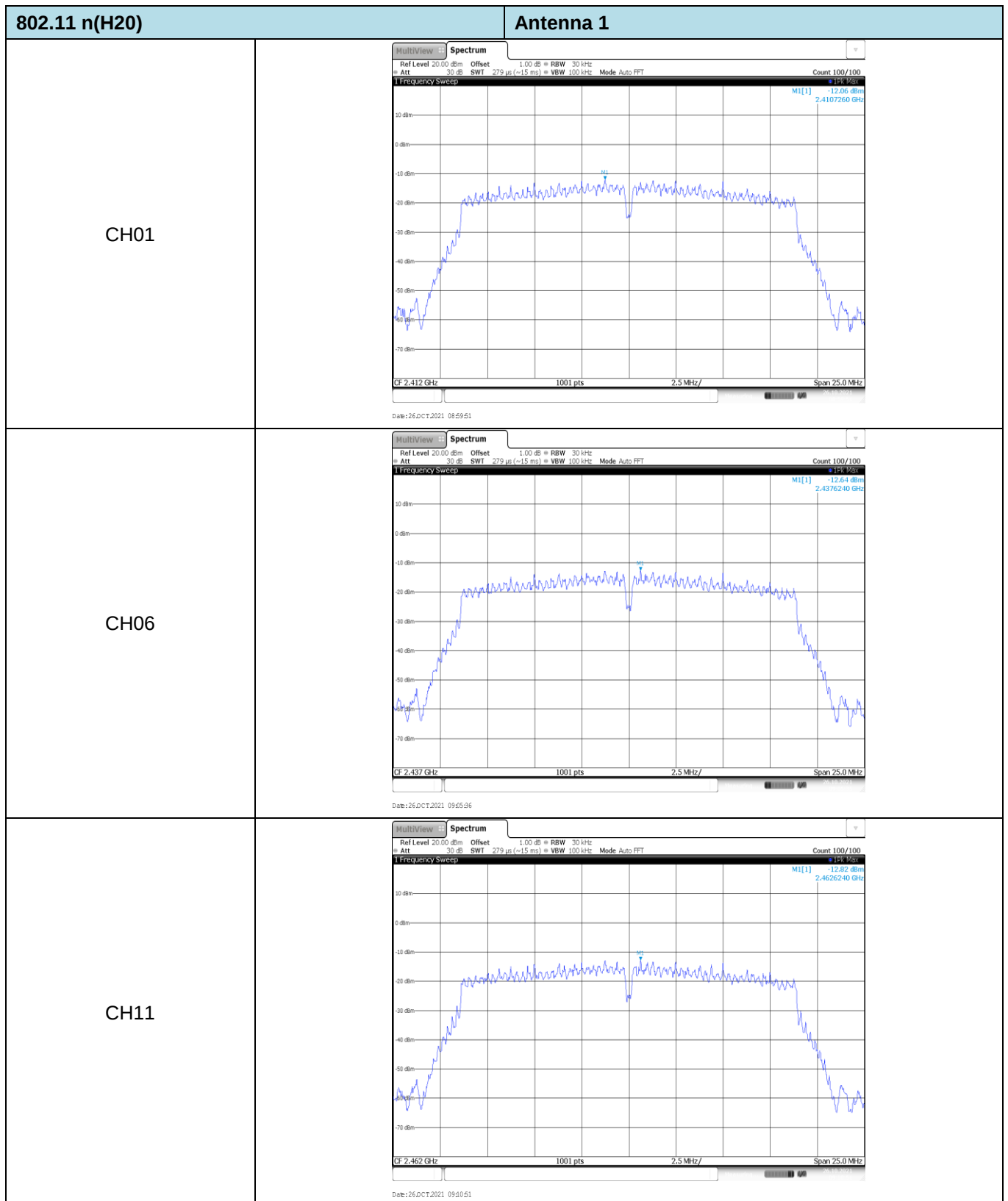


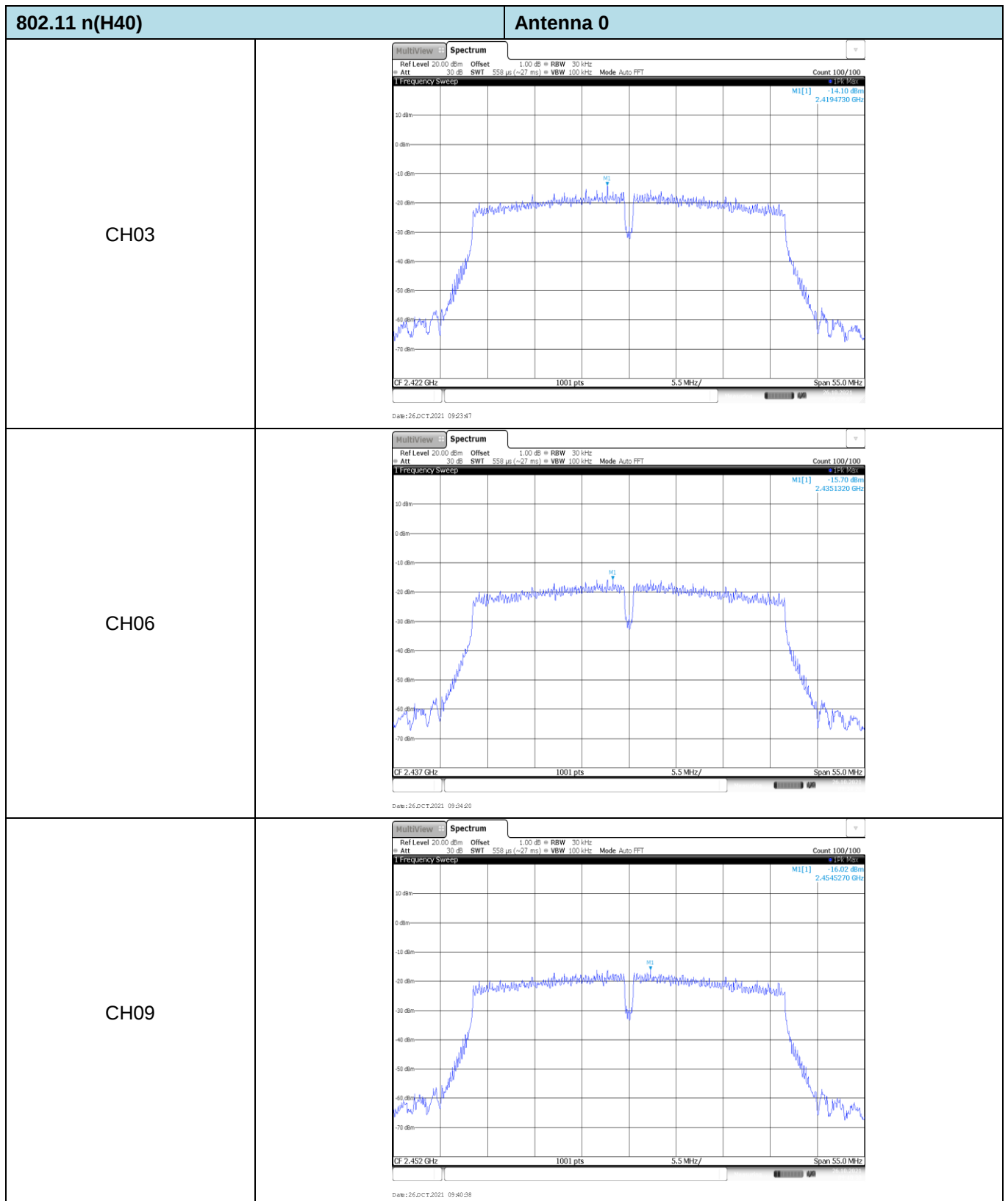


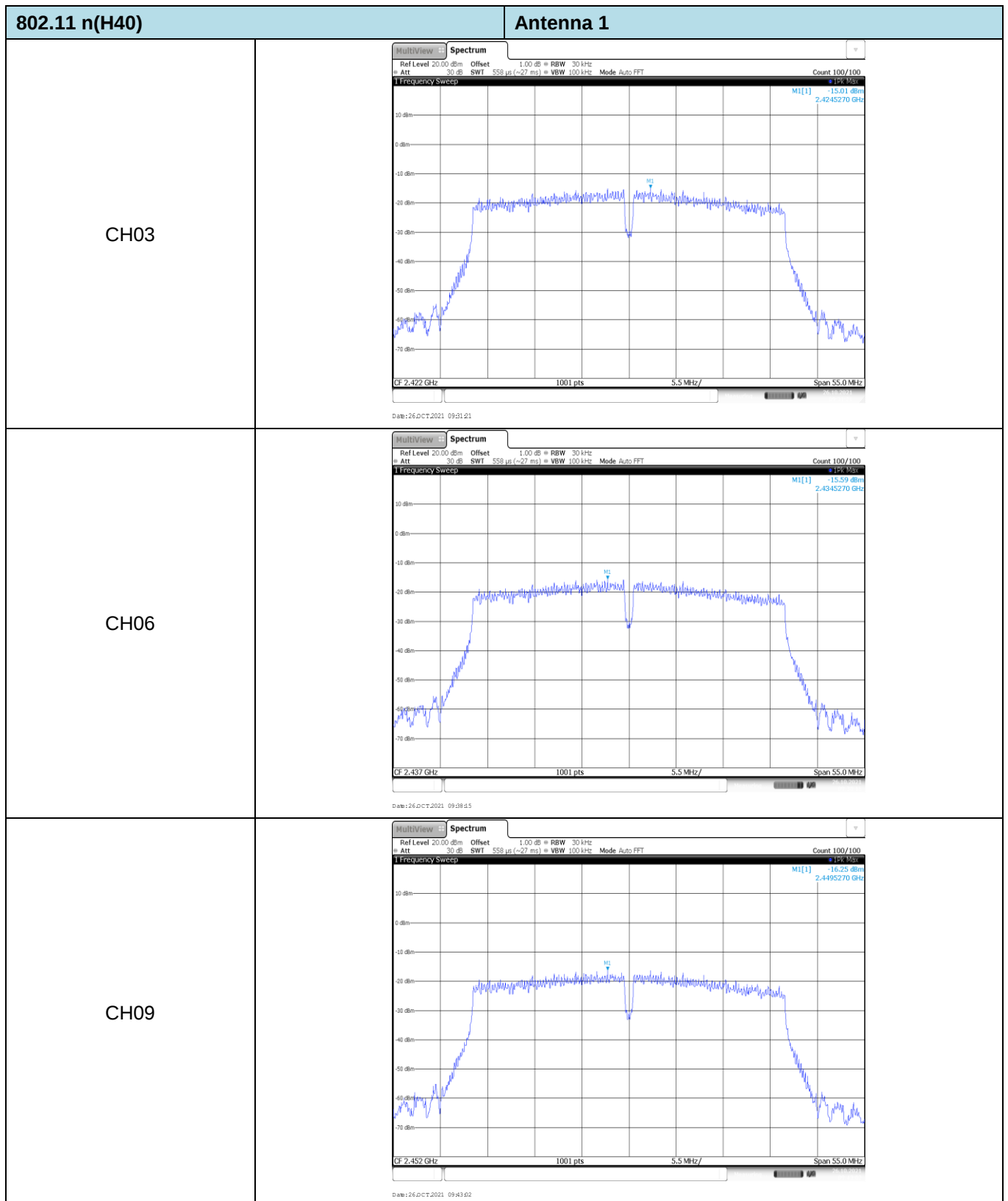






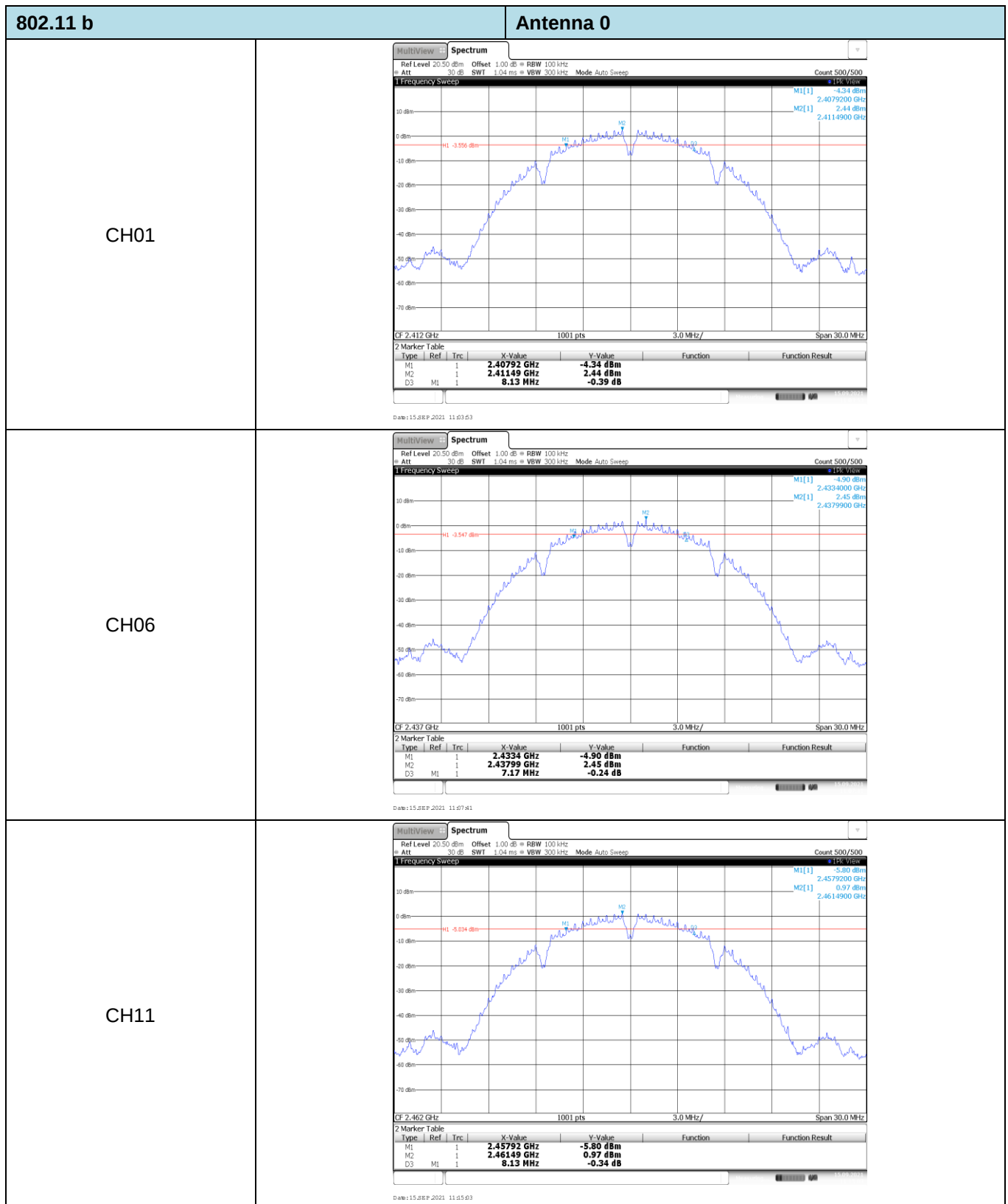


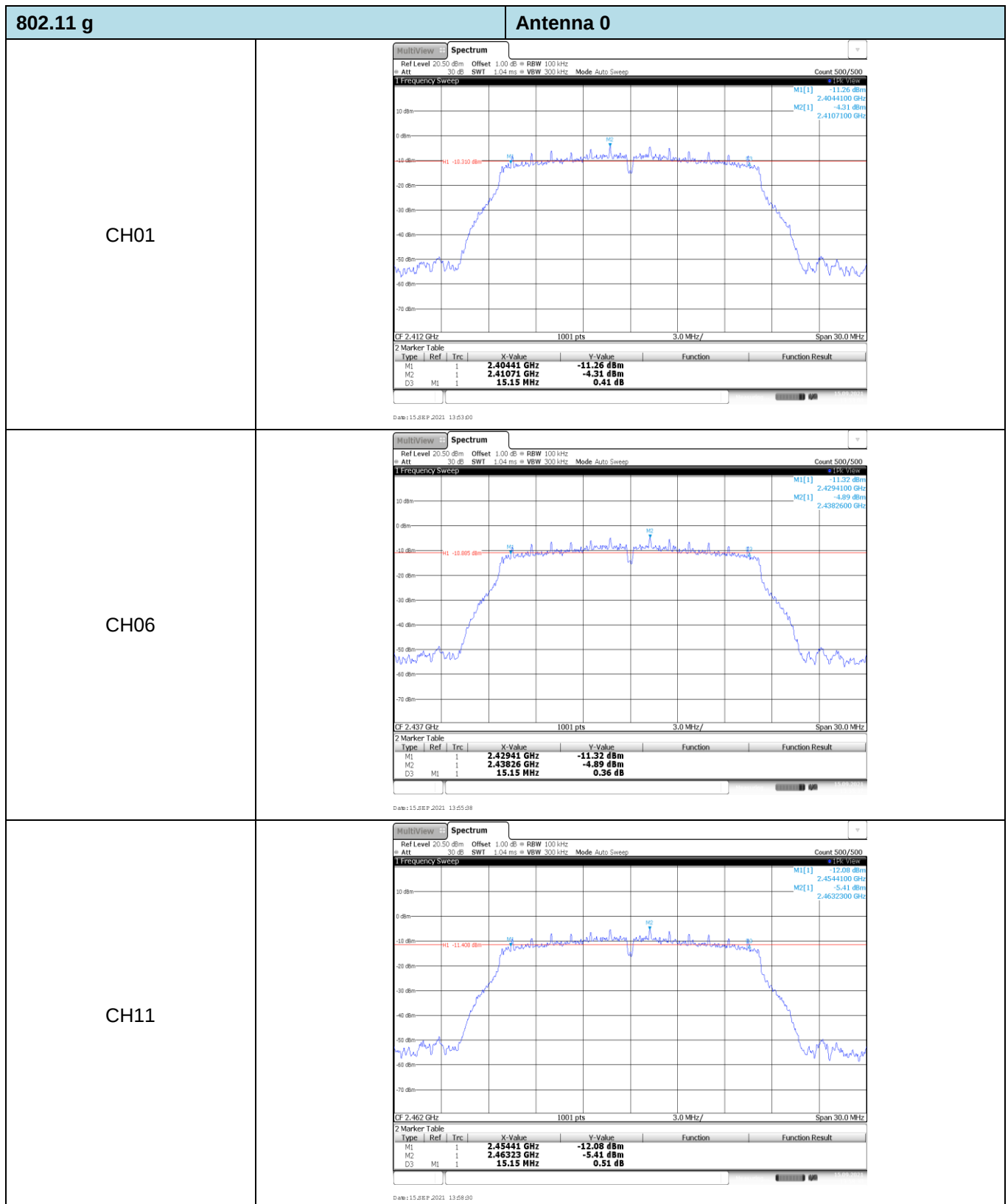


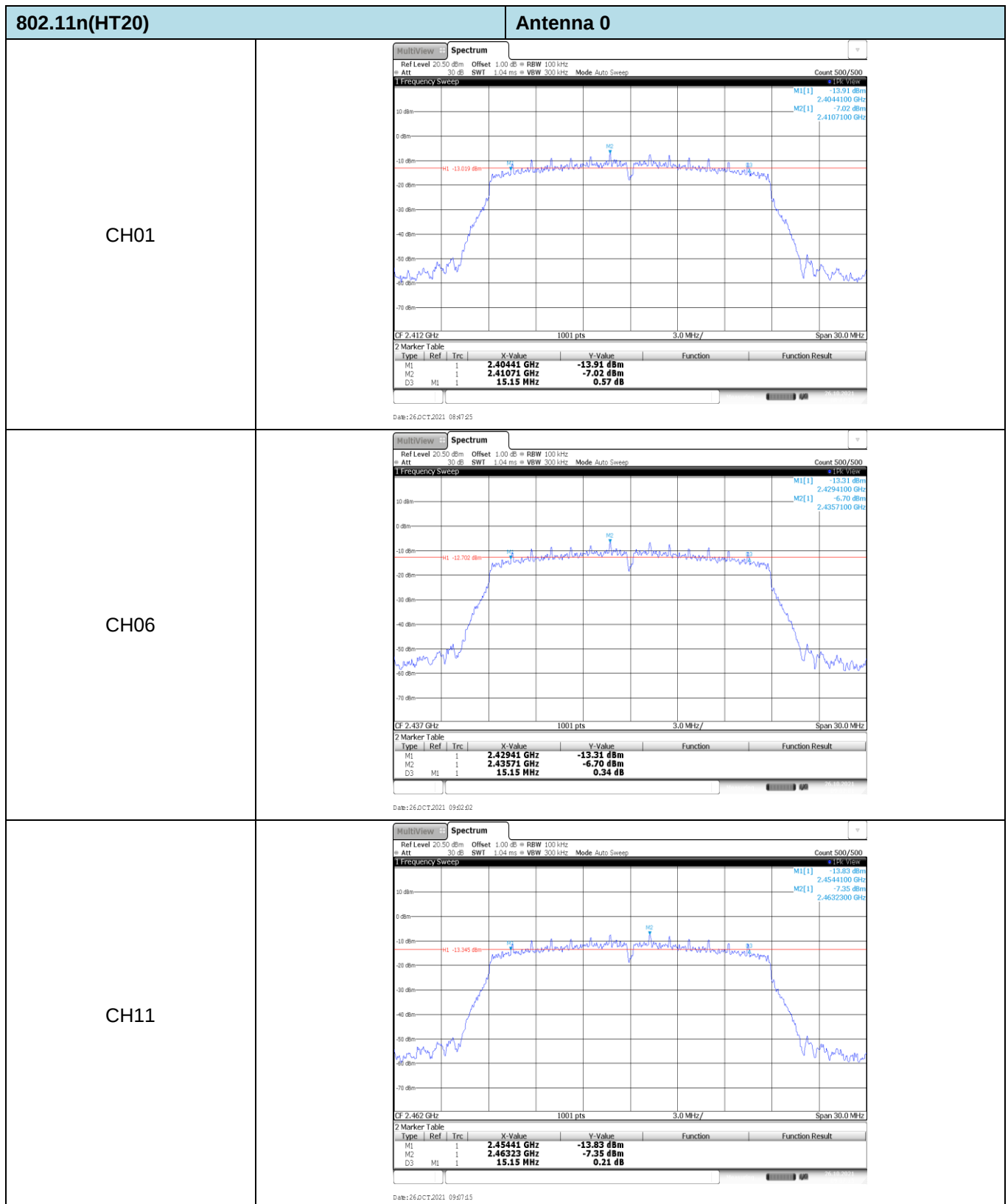


Appendix C: 6dB Bandwidth

Type	Channel	6dB Bandwidth (MHz)		Limit (kHz)	Result
		Antenna 0	Antenna 1		
802.11b	01	8.13	8.13	≥500	Pass
	06	7.17	8.13		
	11	8.13	8.10		
802.11g	01	15.15	15.12	≥500	Pass
	06	15.15	15.15		
	11	15.15	15.15		
802.11n(HT20)	01	15.15	15.15	≥500	Pass
	06	15.15	15.15		
	11	15.15	15.15		
802.11n(HT40)	03	35.22	35.22	≥500	Pass
	06	35.22	35.22		
	09	35.22	35.22		



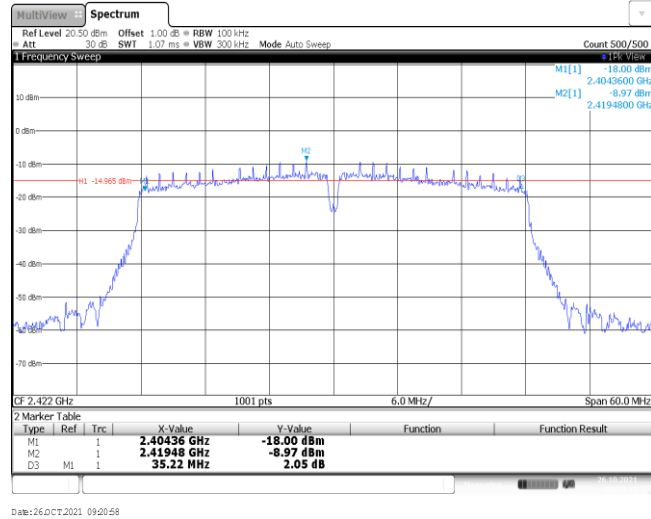




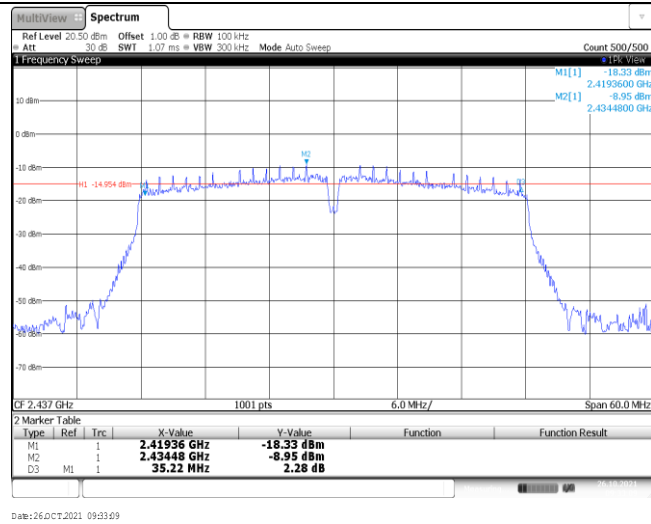
802.11n(HT40)

Antenna 0

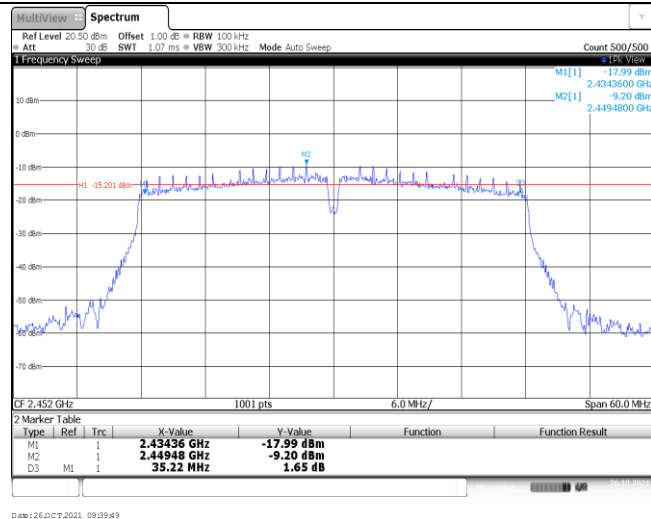
CH03



CH06



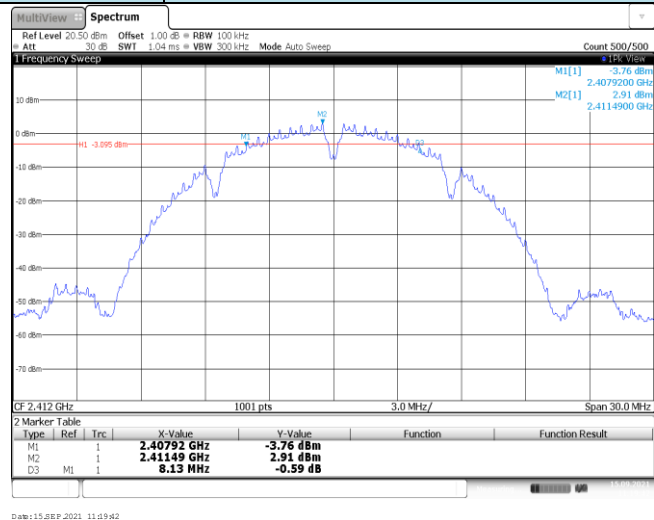
CH09



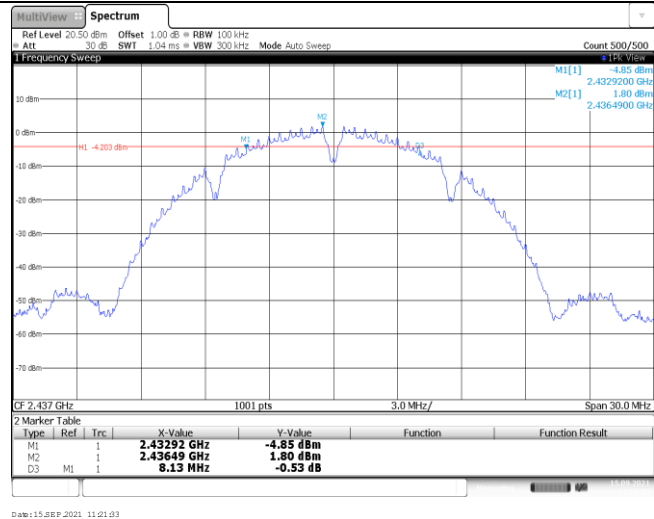
802.11 b

Antenna 1

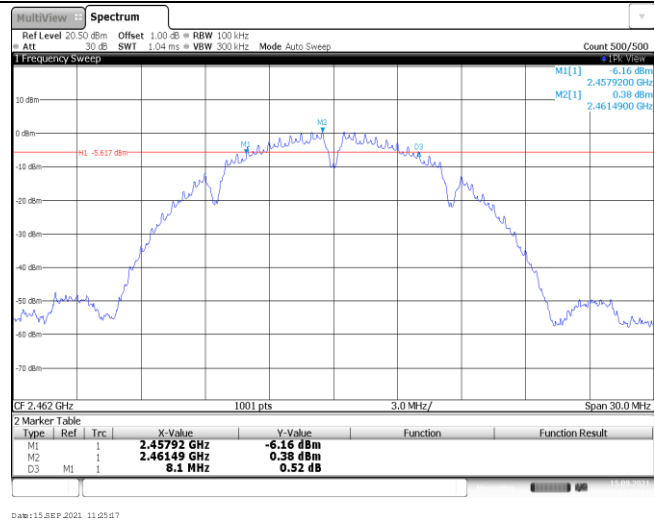
CH01

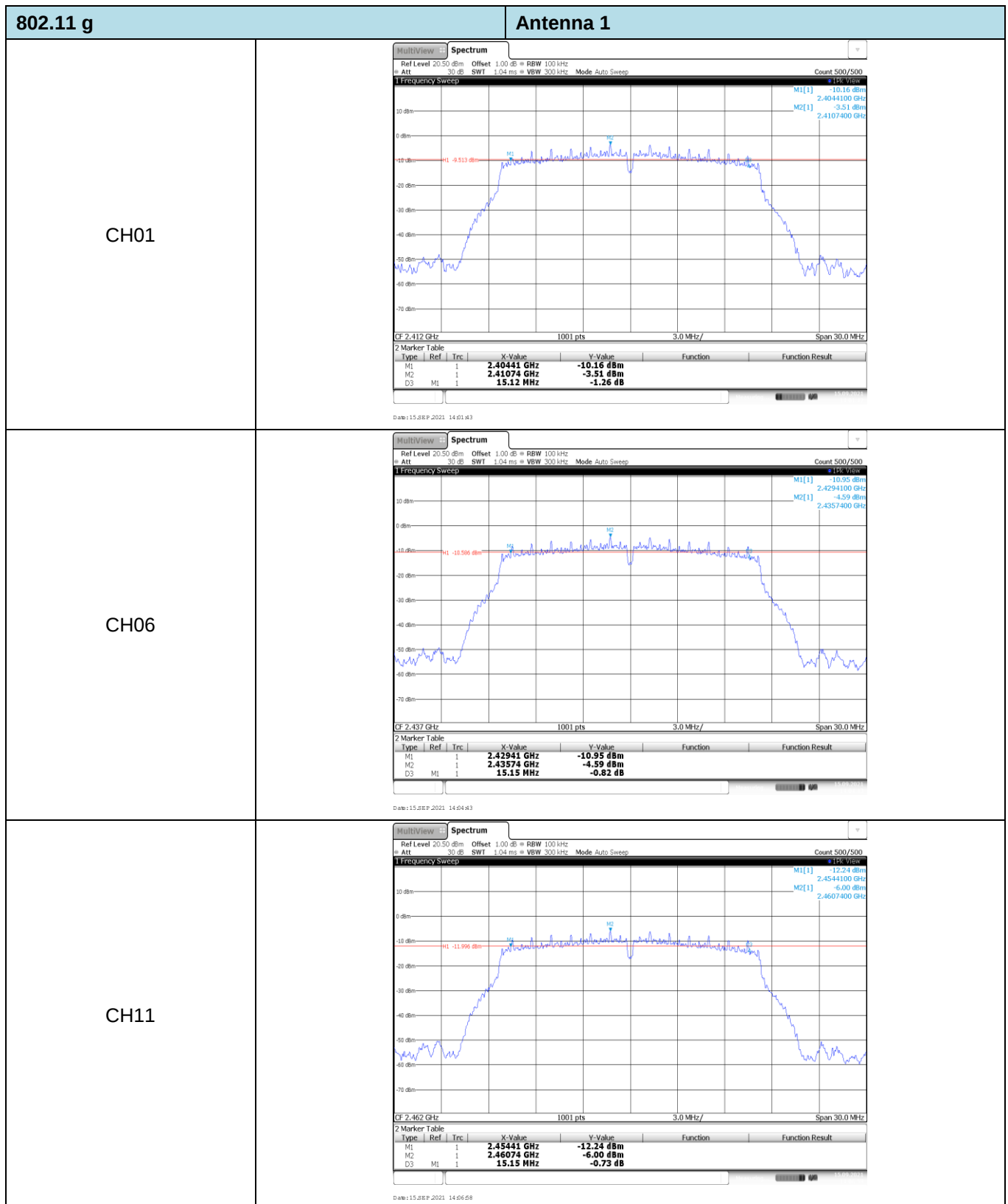


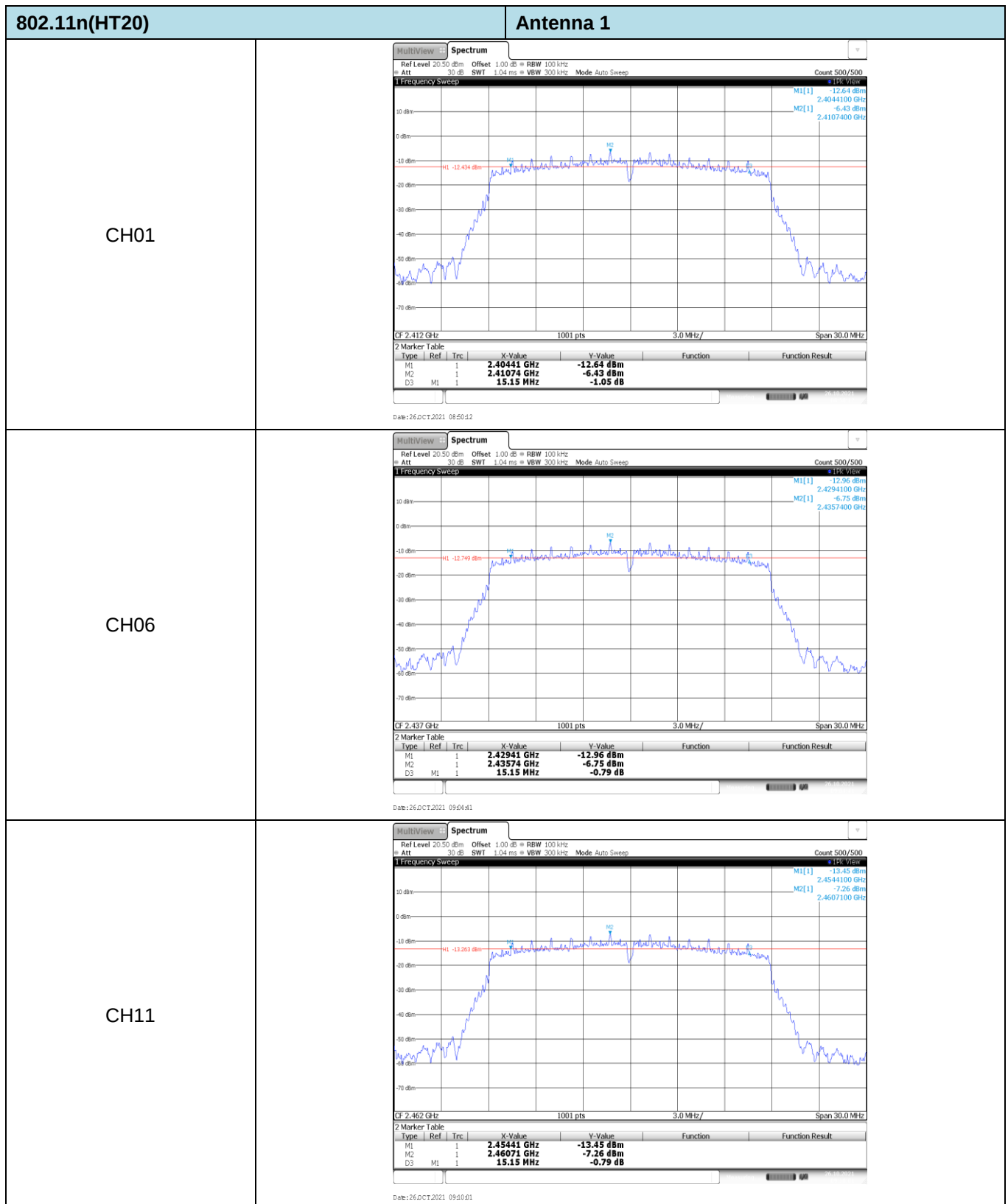
CH06

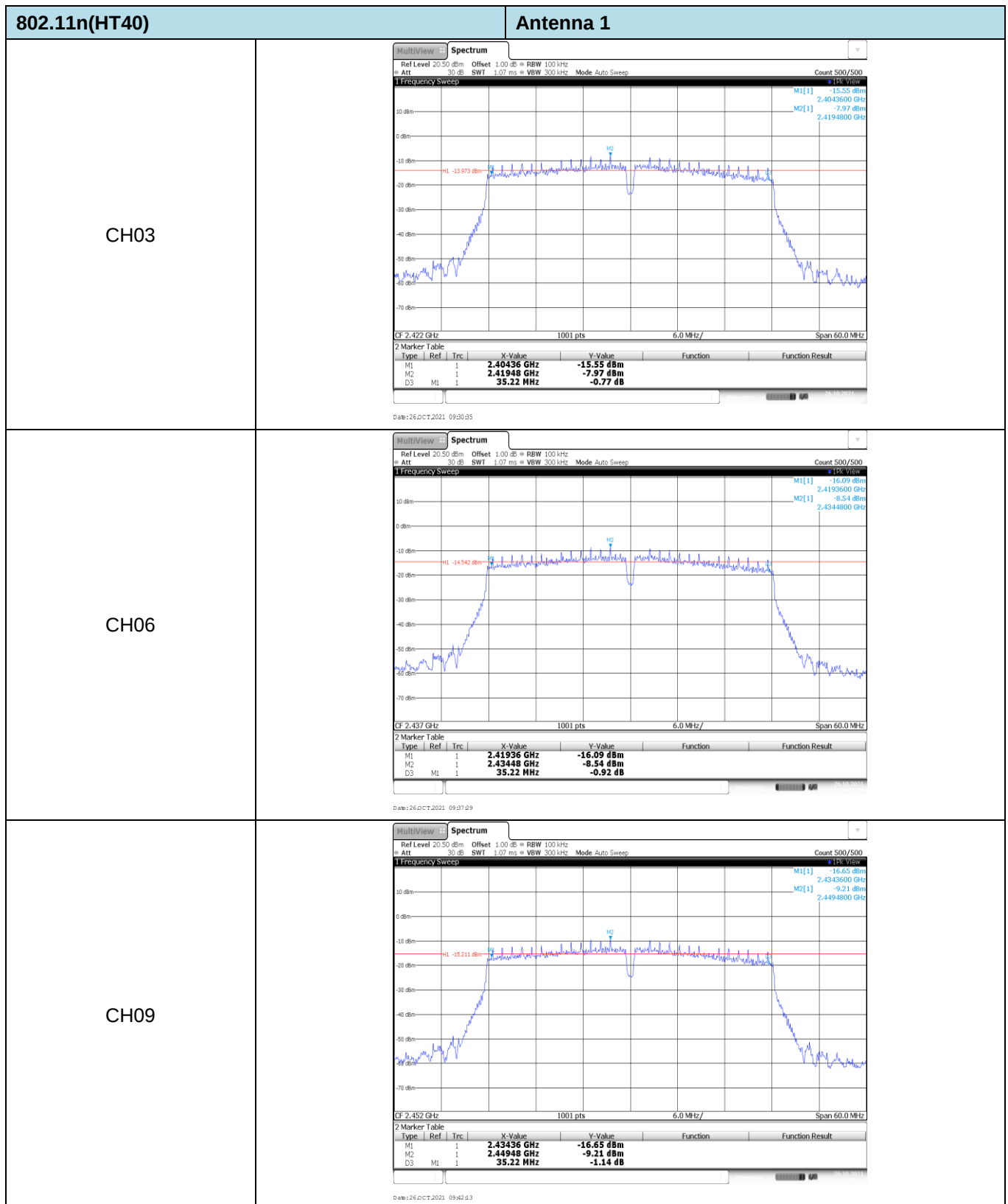


CH11



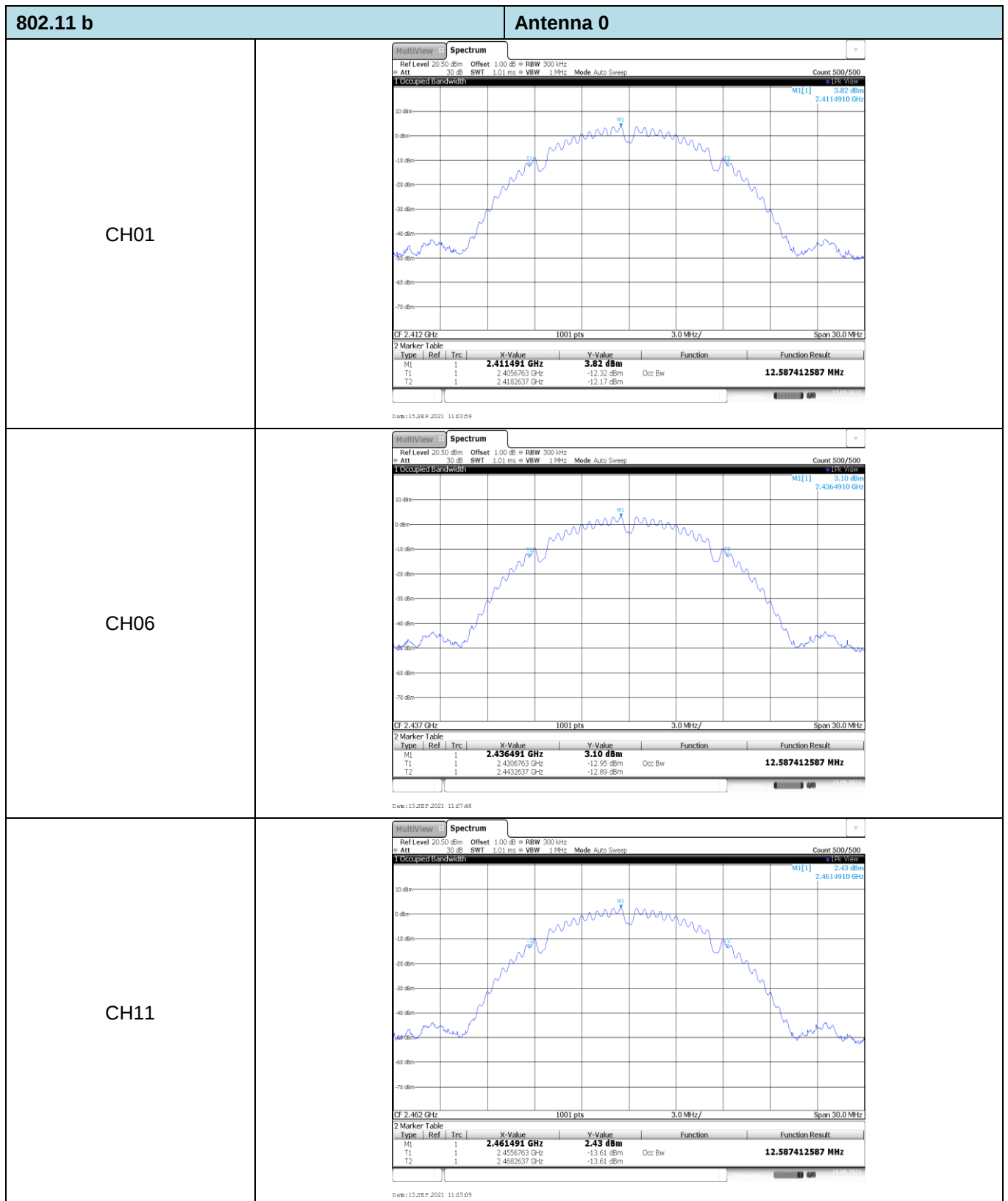


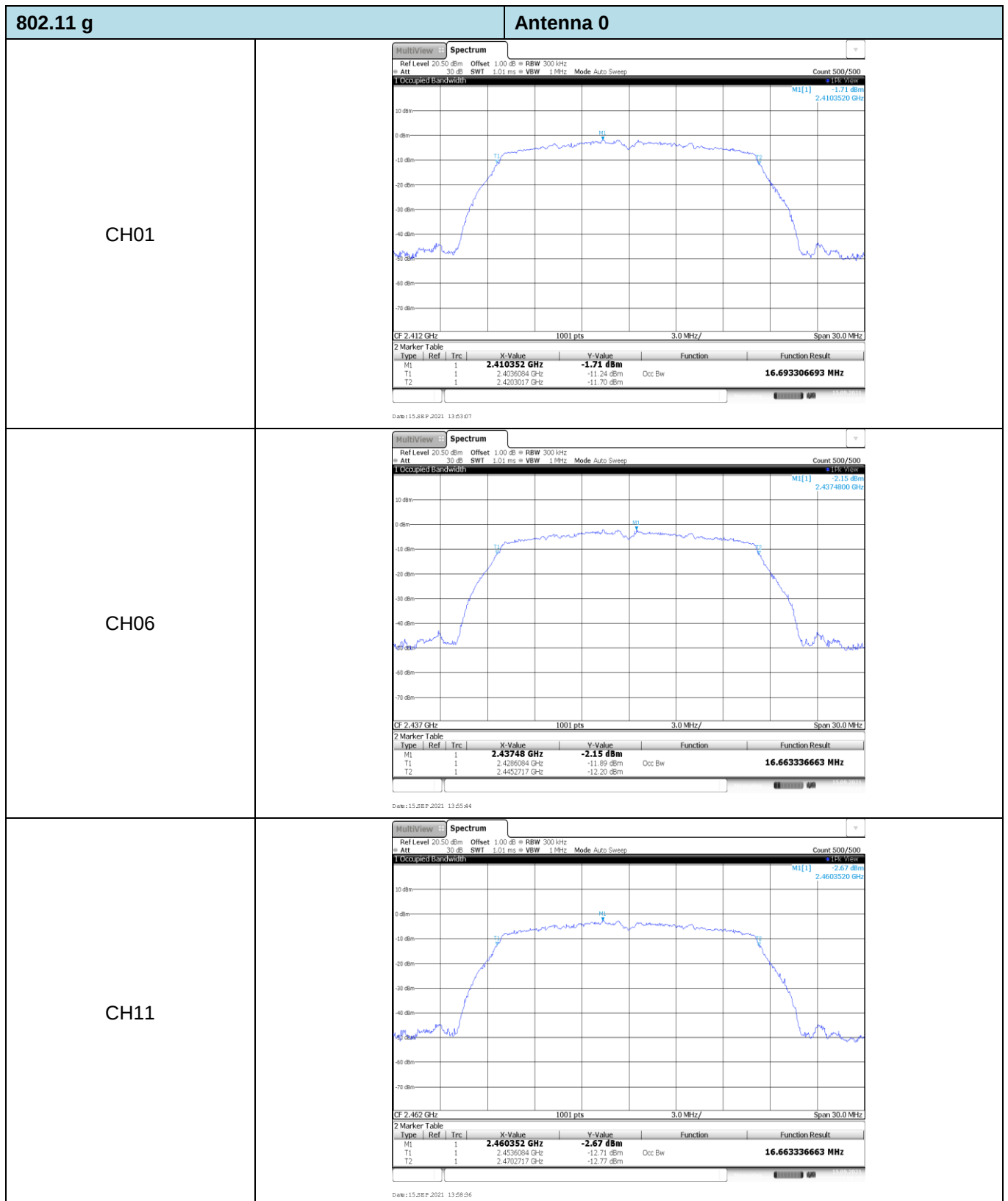


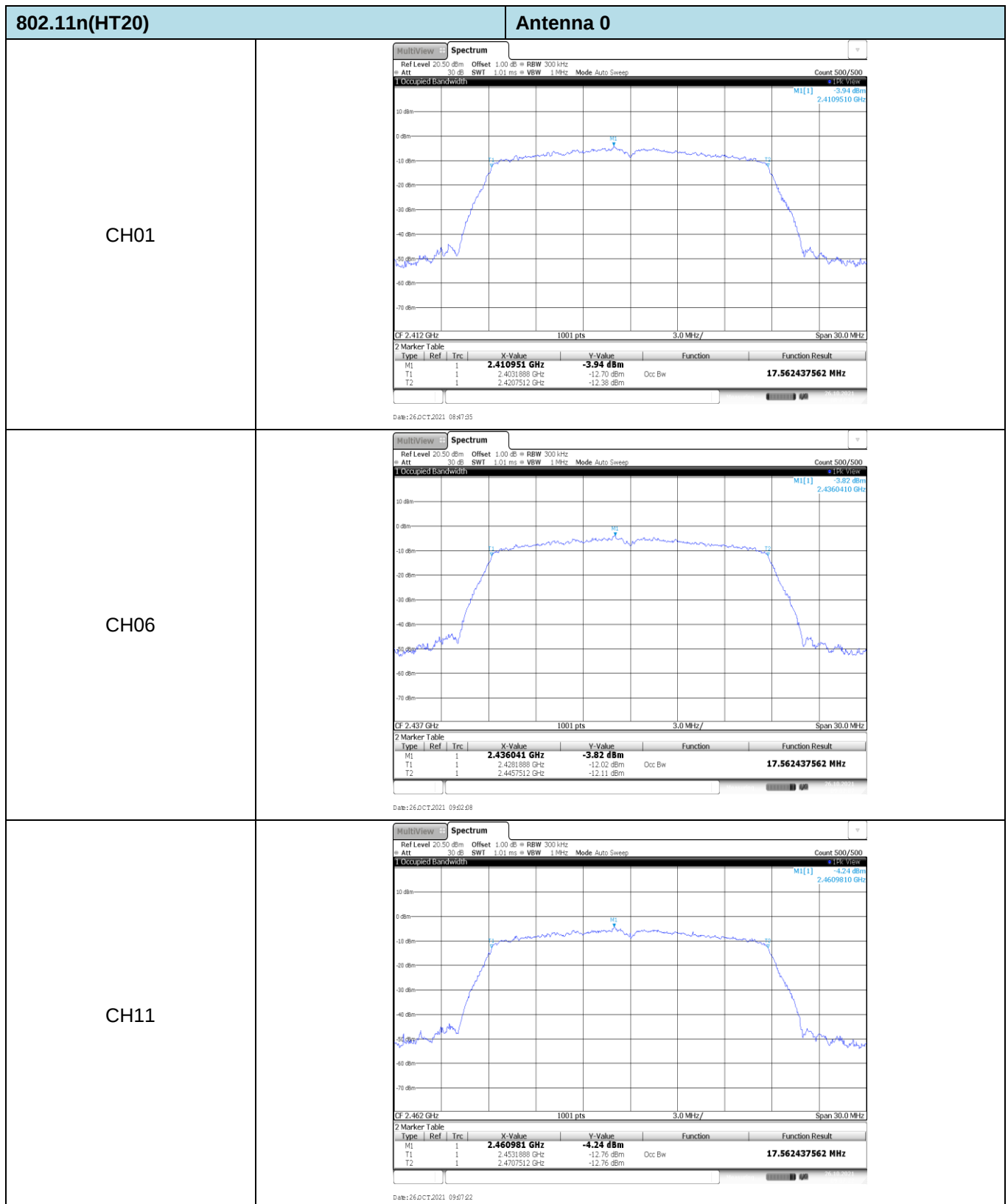


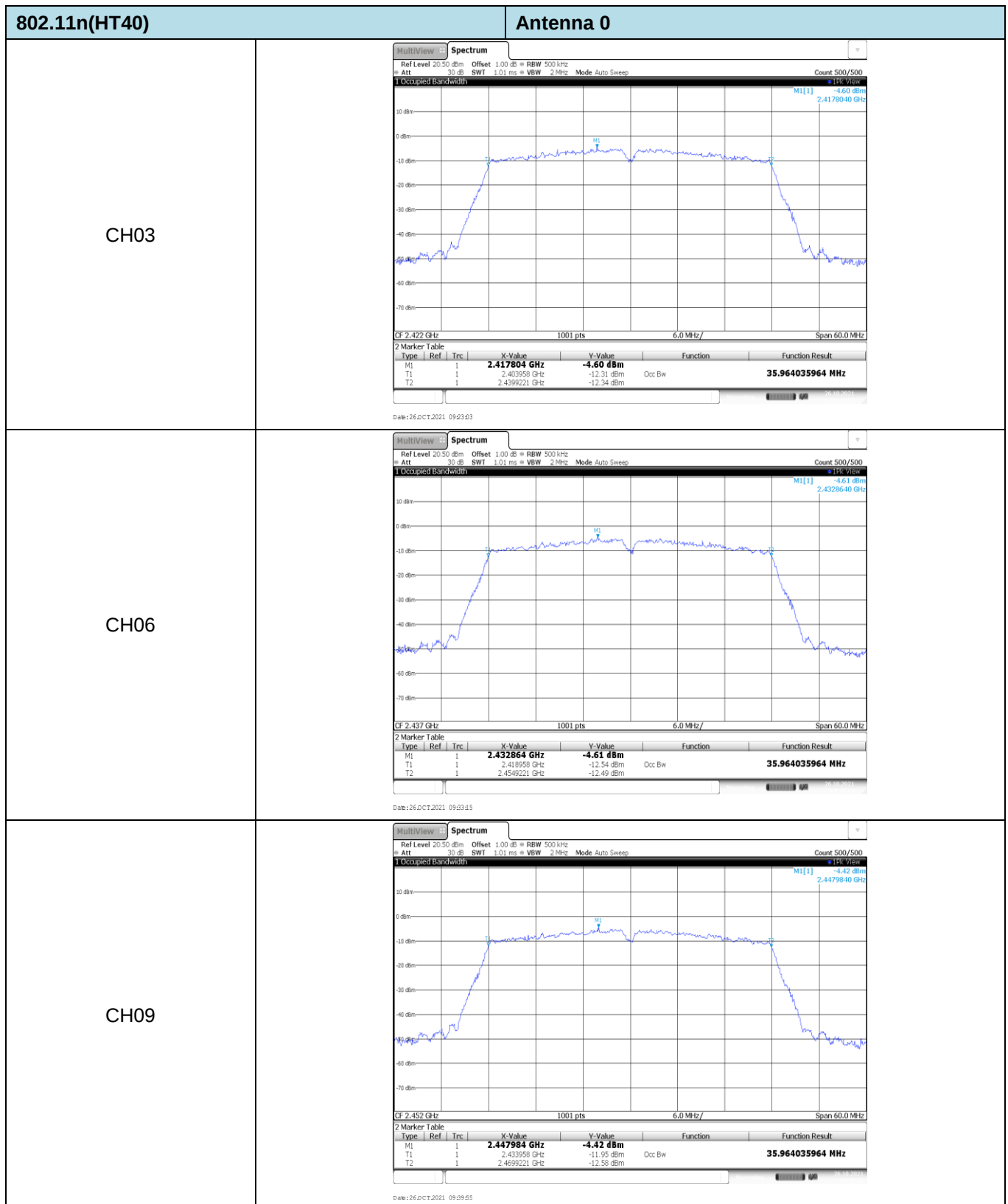
Appendix D: 99% Occupied Bandwidth

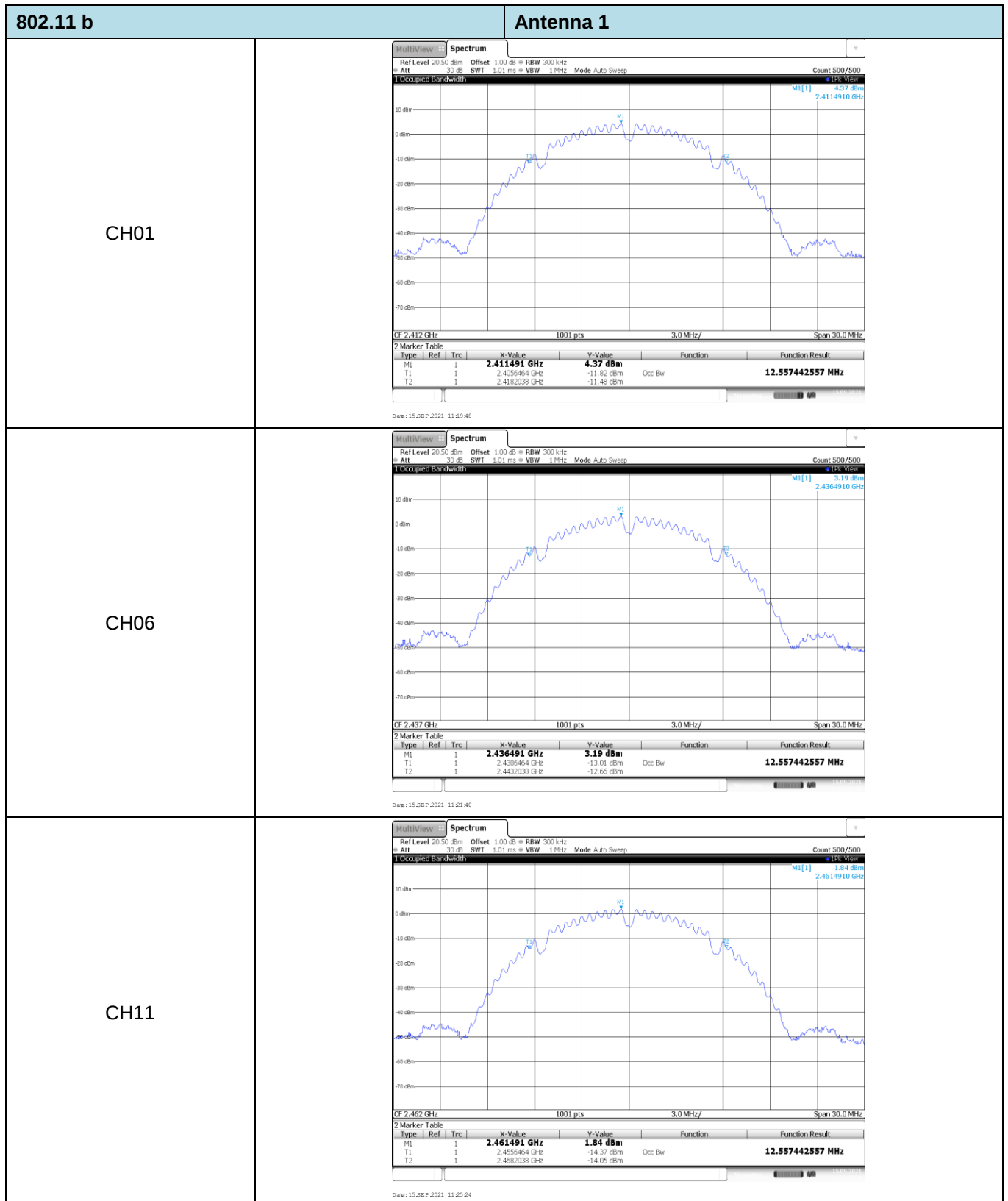
Type	Channel	99% Bandwidth (MHz)		Limit (kHz)	Result
		Antenna 0	Antenna 1		
802.11b	01	12.59	12.56	-	Pass
	06	12.59	12.56		
	11	12.59	12.56		
802.11g	01	16.69	16.36	-	Pass
	06	16.66	16.39		
	11	16.66	16.39		
802.11n(HT20)	01	17.56	17.53	-	Pass
	06	17.56	17.53		
	11	17.56	17.53		
802.11n(HT40)	03	35.96	35.78	-	Pass
	06	35.96	35.84		
	09	35.96	35.78		

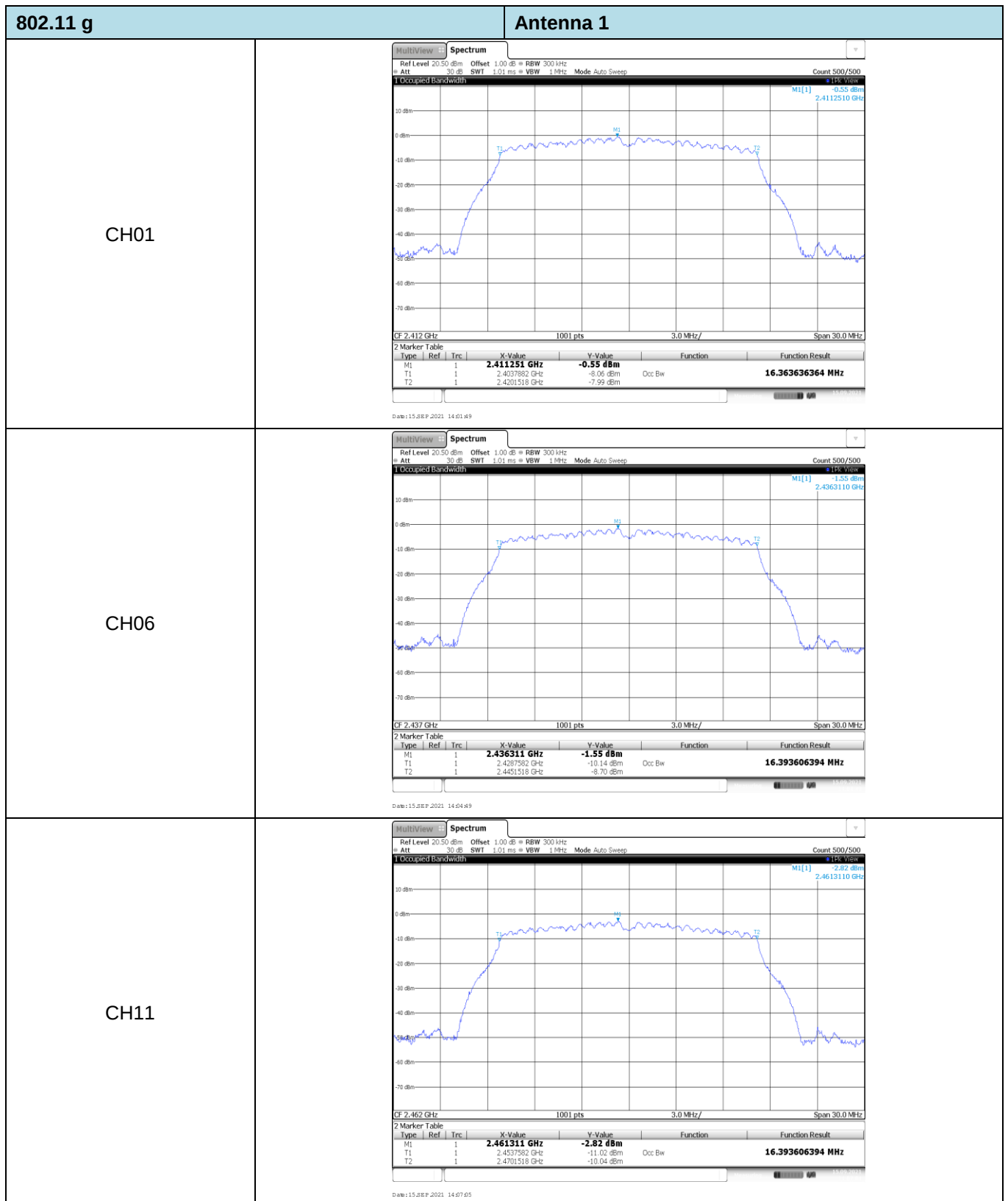


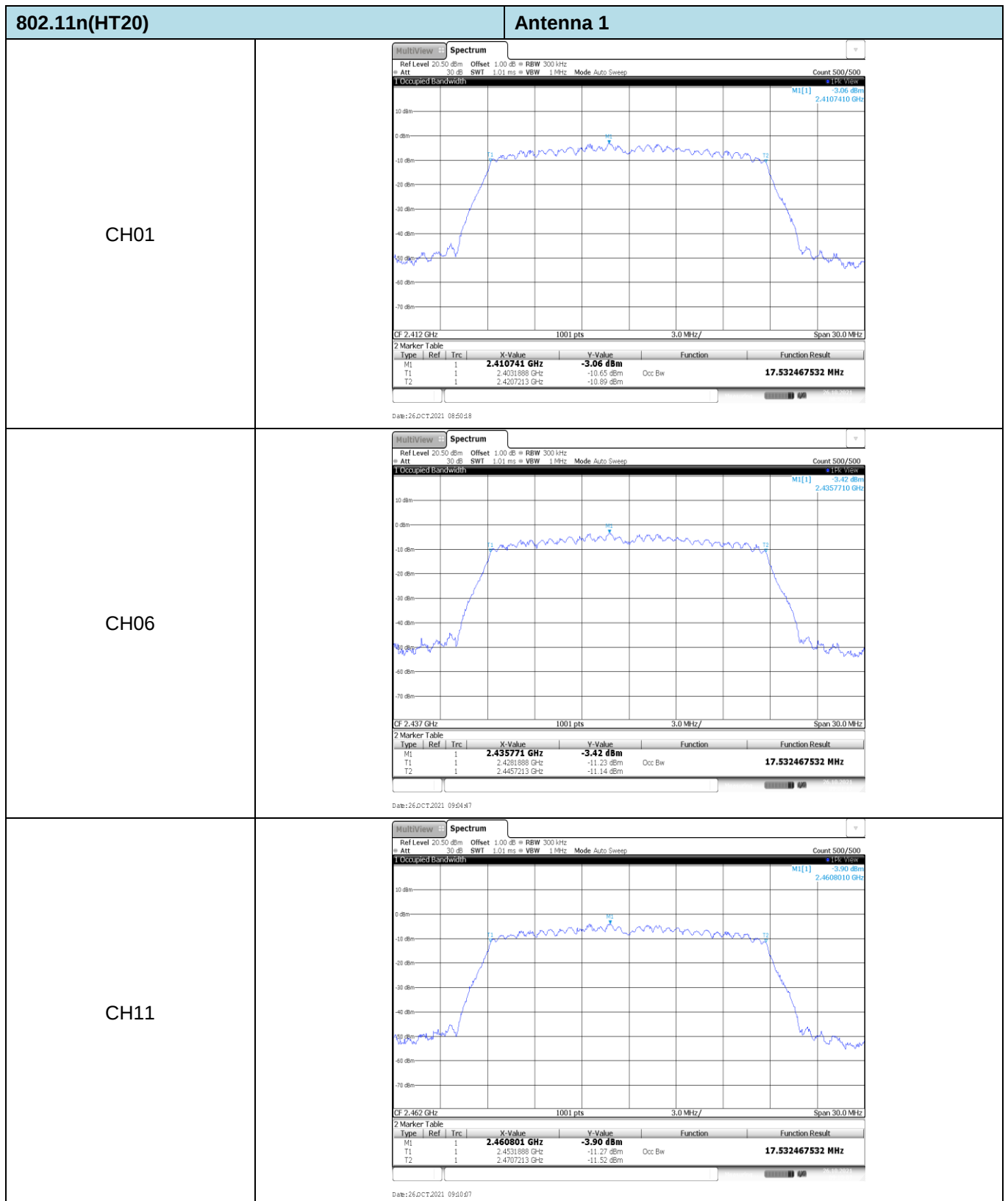


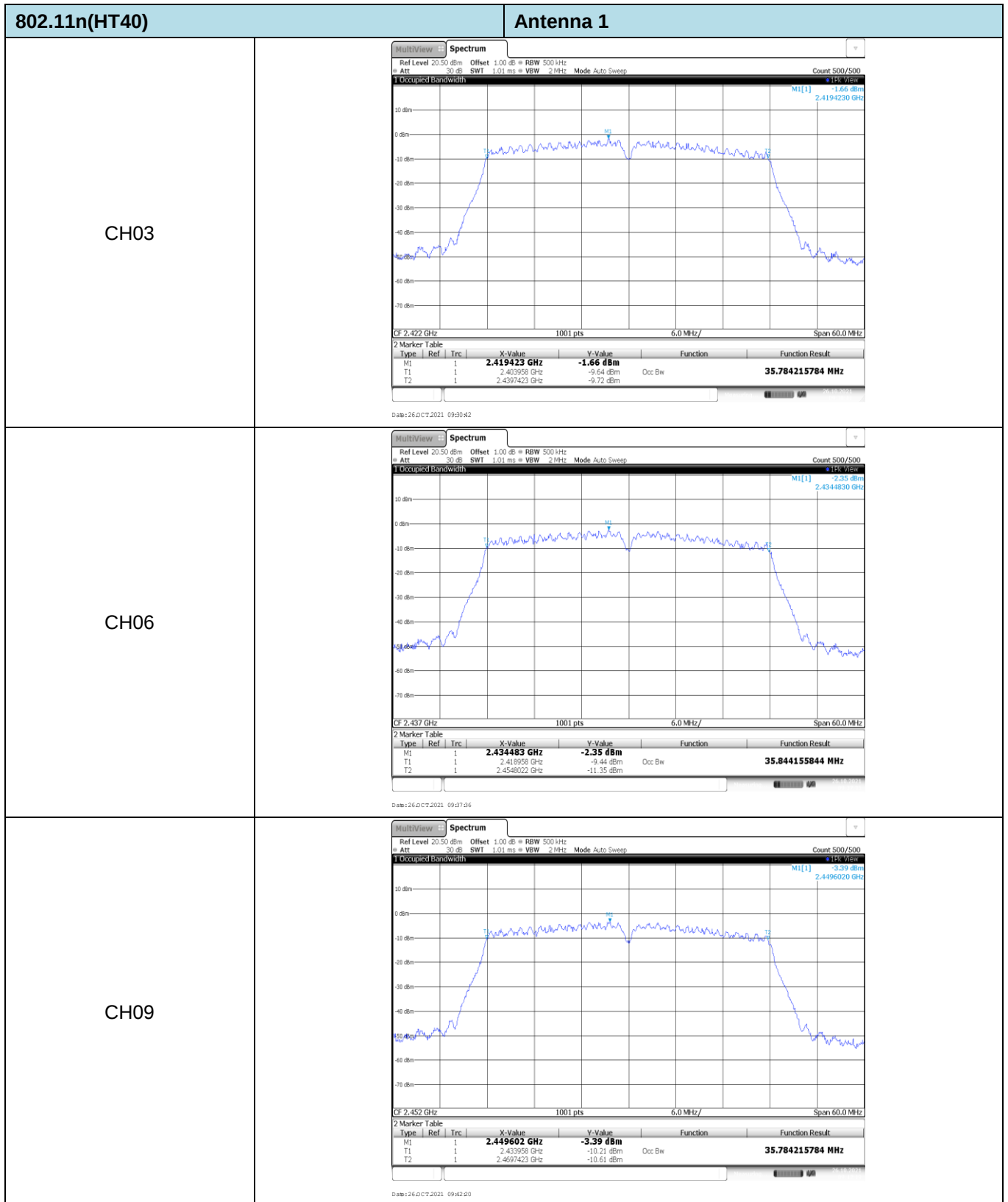








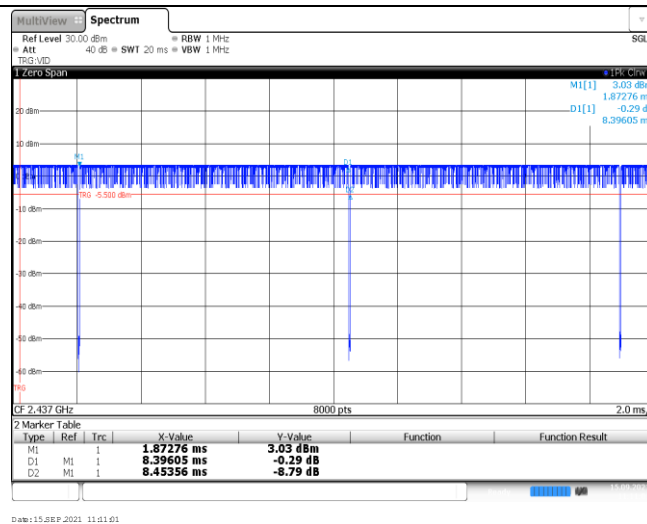




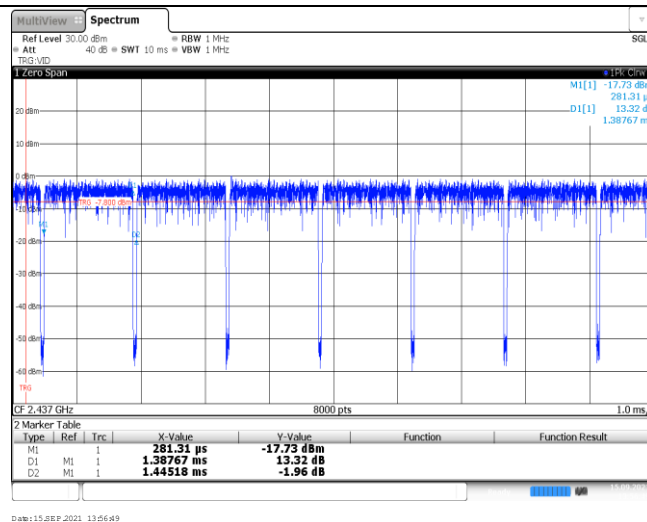
Appendix E: Duty Cycle

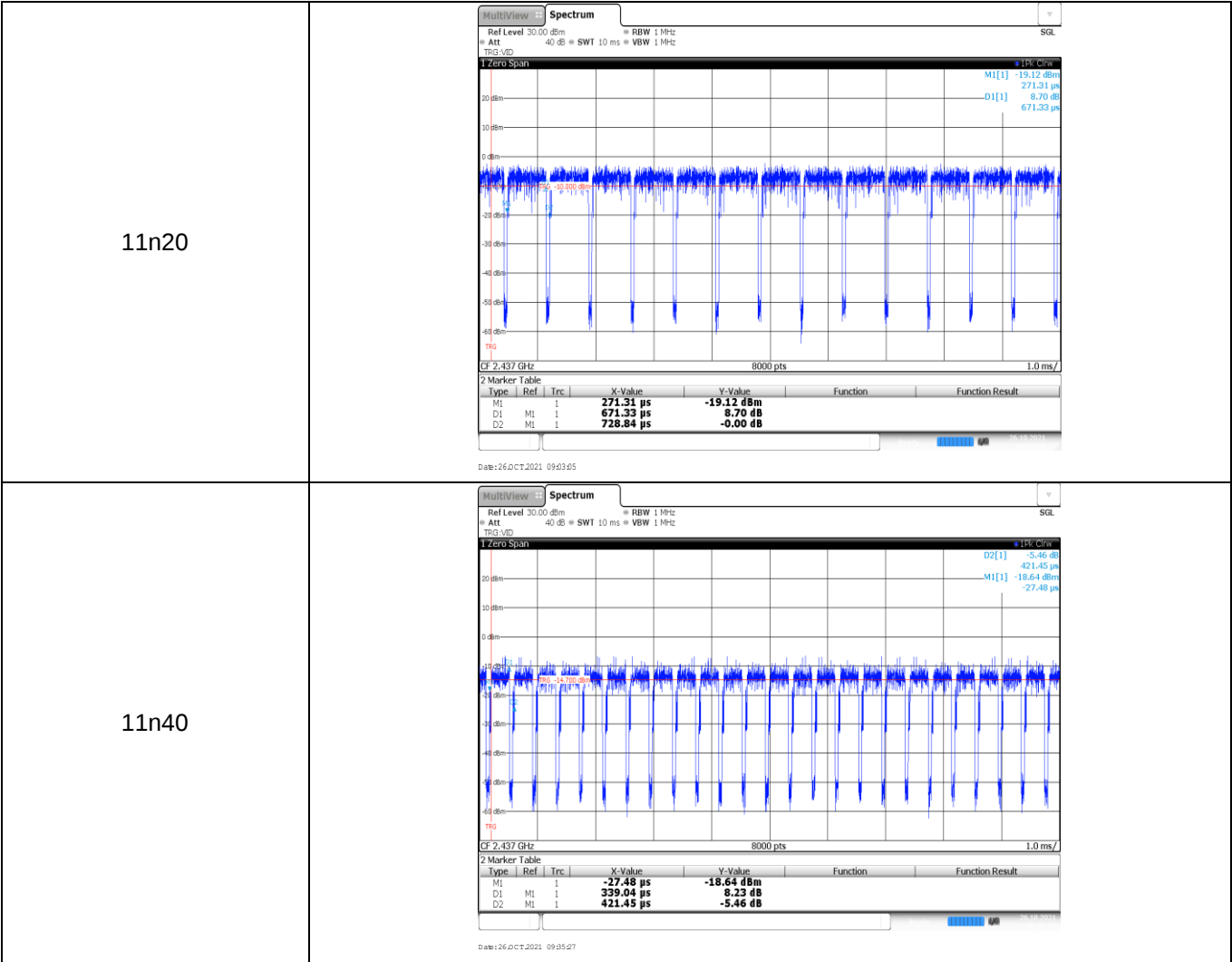
Modulation Type	Test Frequency (MHz)	T _{on time} for single burst (ms)	T _{period} (ms)	Duty cycle	1/T _{on time} (kHz)
11b	2437	8.40	8.45	99.4%	0.1
11g	2437	1.39	1.45	95.9%	0.7
11n20	2437	0.67	0.73	91.8%	1.5
11n40	2437	0.34	0.42	81.0%	2.9

11b



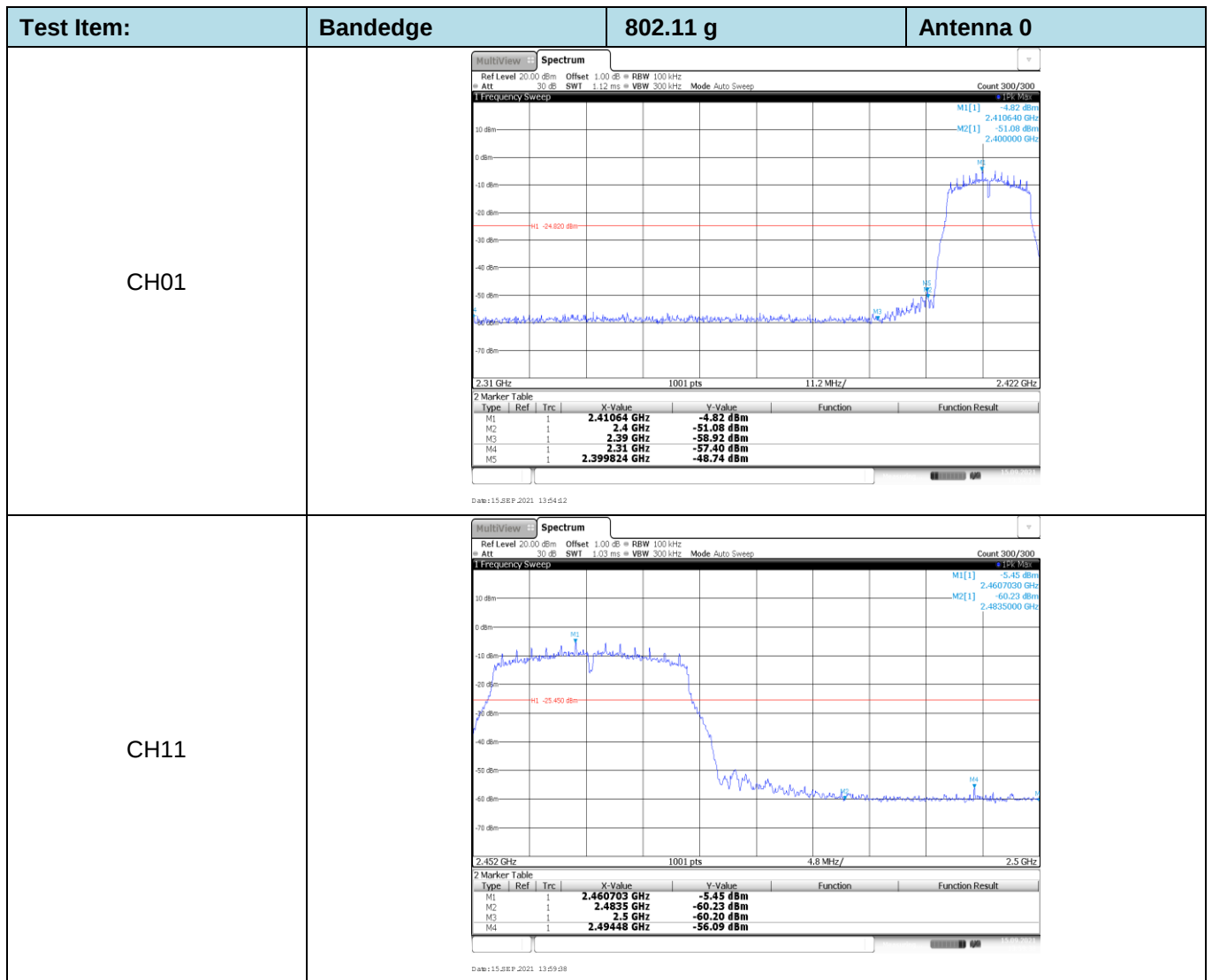
11g





Appendix F: Band Edge and Spurious Emissions (Conducted)

Test Item:	Bandedge	802.11 b	Antenna 0																																										
CH01	MultViewSpectrum 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 Frequency Sweep M1[1] 1.78 dBm 2.411430 GHz M2[1] -47.68 dBm 2.400000 GHz 18.220 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>2.41143 GHz</td><td>1.78 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-47.68 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-55.39 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-55.96 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.399488 GHz</td><td>-45.99 dBm</td><td></td><td></td></tr></table> Date: 15 SEP 2021 11:05:31			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.41143 GHz	1.78 dBm			M2	1		2.4 GHz	-47.68 dBm			M3	1		2.39 GHz	-55.39 dBm			M4	1		2.31 GHz	-55.96 dBm			M5	1		2.399488 GHz	-45.99 dBm		
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																																							
M1	1		2.41143 GHz	1.78 dBm																																									
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M4	1		2.31 GHz	-55.96 dBm																																									
M5	1		2.399488 GHz	-45.99 dBm																																									
CH11	MultViewSpectrum Ref Level 20.00 dBm Offset 1.00 dB BW 100 kHz Att 30 dB SW 1.03 ms VBW 300 kHz Mode Auto Sweep Count 300/300 Frequency Sweep M1[1] 0.81 dBm 2.4614710 GHz M2[1] -56.39 dBm 2.4835000 GHz 19.190 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>2.461471 GHz</td><td>0.81 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4835 GHz</td><td>-56.39 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.5 GHz</td><td>-57.32 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.492032 GHz</td><td>-53.53 dBm</td><td></td><td></td></tr></table> Date: 15 SEP 2021 11:06:18			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.461471 GHz	0.81 dBm			M2	1		2.4835 GHz	-56.39 dBm			M3	1		2.5 GHz	-57.32 dBm			M4	1		2.492032 GHz	-53.53 dBm									
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M1	1		2.461471 GHz	0.81 dBm																																									
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M3	1		2.5 GHz	-57.32 dBm																																									
M4	1		2.492032 GHz	-53.53 dBm																																									



Test Item:	Bandedge	802.11 n(HT20)	Antenna 0
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CH01

Ref Level 20.00 dBm Offset 1.00 dB BW 100 kHz
ATT 30 dB SWI 1.12 ms VBW 300 kHz Mode Auto Sweep Count 300/300
1 Hz Max

Frequency Sweep

M1[1] -6.67 dBm
M2[1] 2.410640 GHz
M2[1] -52.69 dBm
M3 2.400000 GHz

-26.670 dBm

2.31 GHz 1001 pts 11.2 MHz/ 2.422 GHz

2 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1	1		2.41064 GHz	-6.67 dBm		
M2	1		2.4 GHz	-52.69 dBm		
M3	1		2.39 GHz	-60.84 dBm		
M4	1		2.31 GHz	-61.22 dBm		
M5	1		2.399824 GHz	-50.85 dBm		

Date: 26 OCT 2021 08:55:57

CH11

Ref Level 20.00 dBm Offset 1.00 dB BW 100 kHz
ATT 30 dB SWI 1.03 ms VBW 300 kHz Mode Auto Sweep Count 300/300
1 Hz Max

Frequency Sweep

M1[1] -7.42 dBm
M2[1] 2.4607030 GHz
M2[1] -61.56 dBm
M3 2.4835000 GHz

-27.420 dBm

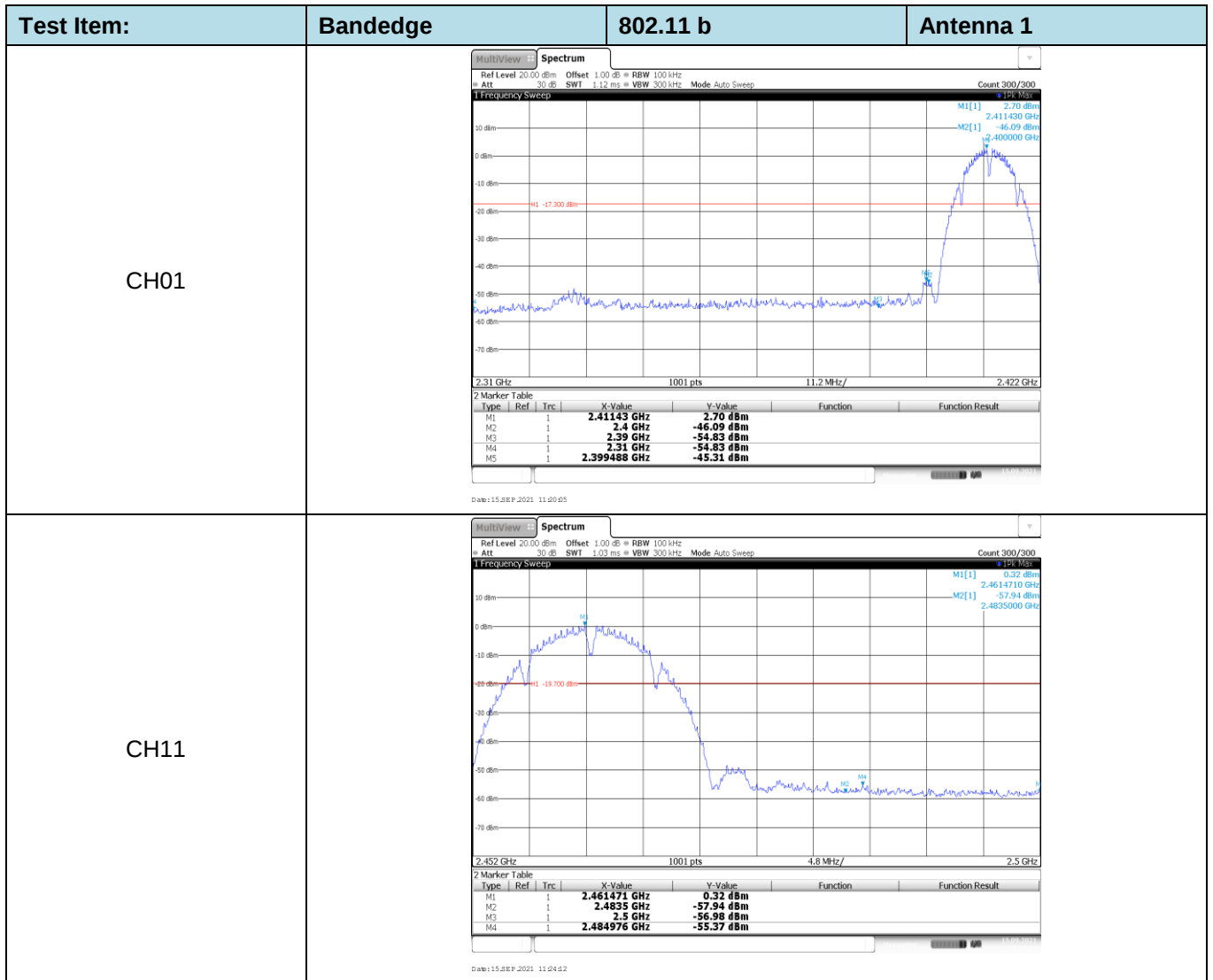
2.452 GHz 1001 pts 4.8 MHz/ 2.5 GHz

2 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1	1		2.460703 GHz	-7.42 dBm		
M2	1		2.4625 GHz	-61.56 dBm		
M3	1		2.5 GHz	-62.28 dBm		
M4	1		2.48368 GHz	-59.56 dBm		

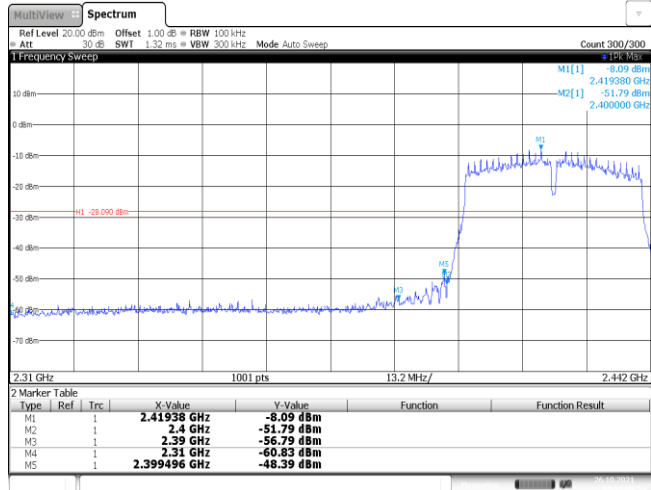
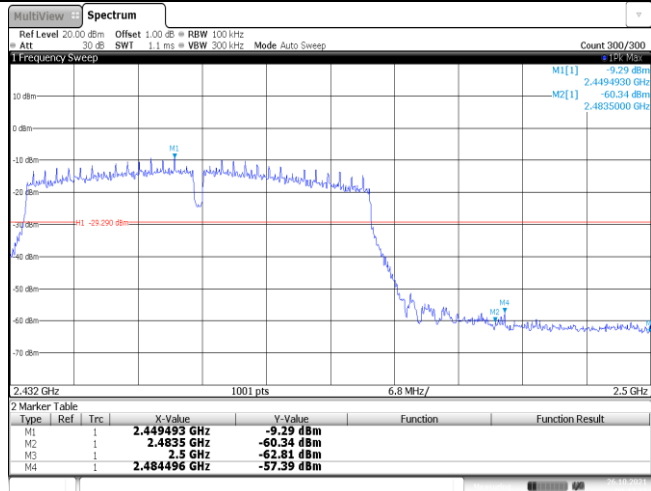
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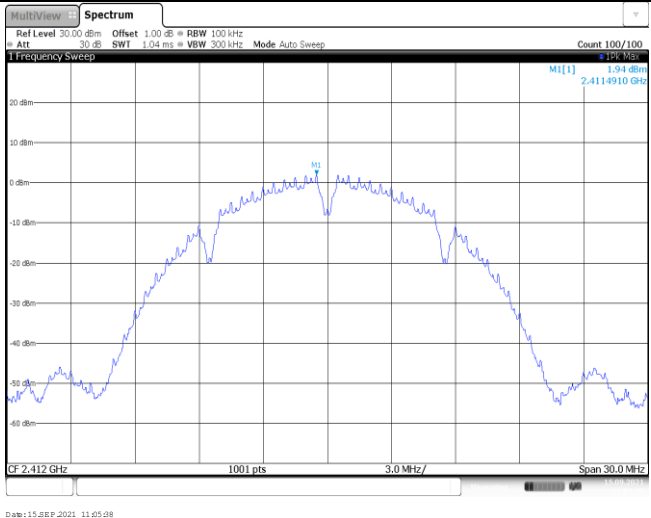
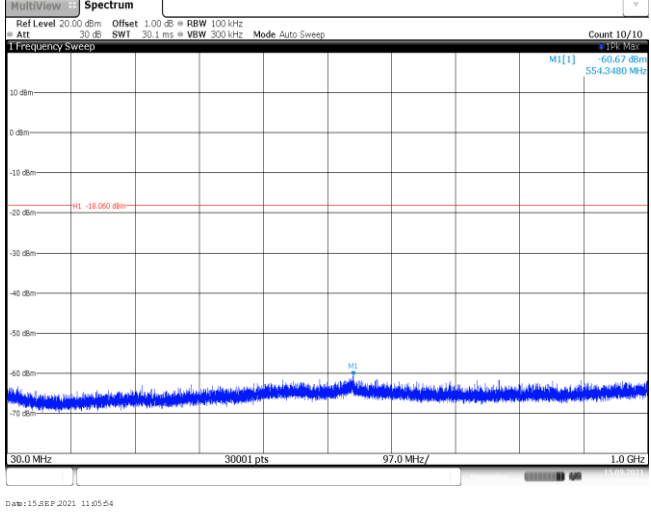
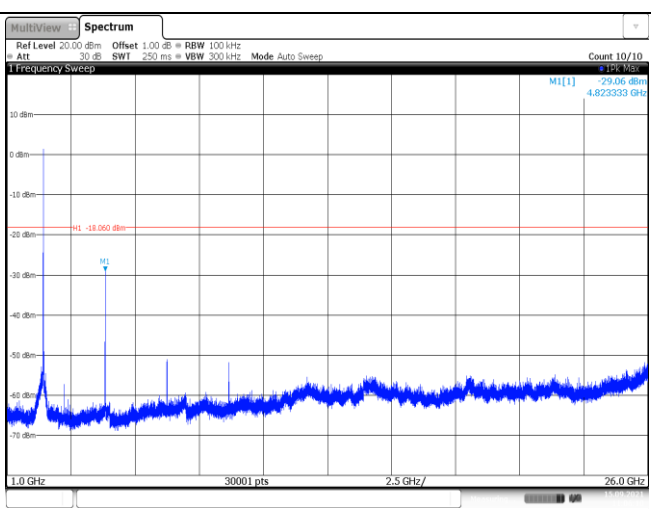
Test Item:	Bandedge	802.11 n(HT40)	Antenna 0
CH03	</		



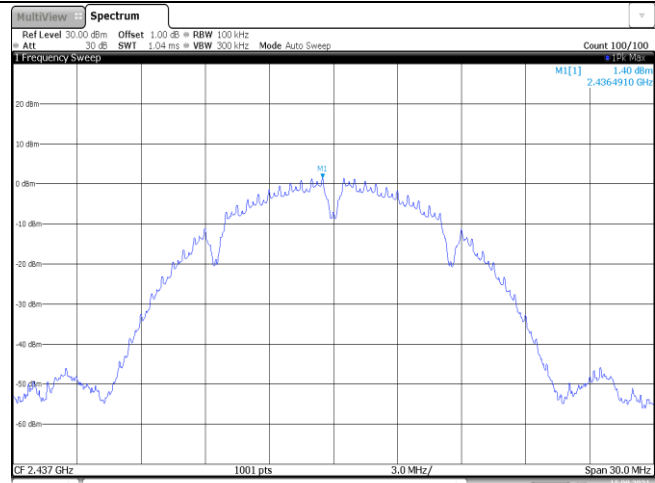
Test Item:	Bandedge	802.11 g	Antenna 1																																										
CH01	MultiView Spectrum Ref Level 20.00 dBm Offset 1.00 dB BW 100 kHz Att 30 dB SW 1.12 ms VBW 300 kHz Mode Auto Sweep Count 300/300 Frequency Sweep M1 -23.790 dBm M1 2.410640 GHz -3.79 dBm M2 2.400000 GHz -49.85 dBm 2.31 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>2.41064 GHz</td><td>-3.79 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-49.85 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-55.88 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-55.91 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.399936 GHz</td><td>-48.26 dBm</td><td></td><td></td></tr></table> Date: 15 SEP 2021 14:02:49			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.41064 GHz	-3.79 dBm			M2	1		2.4 GHz	-49.85 dBm			M3	1		2.39 GHz	-55.88 dBm			M4	1		2.31 GHz	-55.91 dBm			M5	1		2.399936 GHz	-48.26 dBm		
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M2	1		2.4835 GHz	-59.30 dBm																																									
M3	1		2.5 GHz	-61.29 dBm																																									
M4	1		2.484064 GHz	-57.71 dBm																																									

Test Item:	Bandedge	802.11 n(HT20)	Antenna 1																																										
CH01	MultiView Spectrum 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 200/300 1 Frequency Sweep 2.31 GHz 1001 pts 11.2 MHz/ 2.422 GHz M1 -25.880 dBm M1[1] -5.88 dBm 2.410640 GHz M2[1] -51.39 dBm 2.400000 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>2.41064 GHz</td><td>-5.88 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-51.39 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-59.95 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-61.45 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.399824 GHz</td><td>-49.66 dBm</td><td></td><td></td></tr></table> Date: 26 OCT 2021 09:00:01			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.41064 GHz	-5.88 dBm			M2	1		2.4 GHz	-51.39 dBm			M3	1		2.39 GHz	-59.95 dBm			M4	1		2.31 GHz	-61.45 dBm			M5	1		2.399824 GHz	-49.66 dBm		
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																																							
M1	1		2.41064 GHz	-5.88 dBm																																									
M2	1		2.4 GHz	-51.39 dBm																																									
M3	1		2.39 GHz	-59.95 dBm																																									
M4	1		2.31 GHz	-61.45 dBm																																									
M5	1		2.399824 GHz	-49.66 dBm																																									
CH11	MultiView Spectrum 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 1 Frequency Sweep 2.452 GHz 1001 pts 4.8 MHz/ 2.5 GHz M1 -27.010 dBm M1[1] -7.01 dBm 2.4607510 GHz M2[1] -60.74 dBm 2.4835000 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>2.460751 GHz</td><td>-7.01 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4835 GHz</td><td>-60.74 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.5 GHz</td><td>-62.79 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.48536 GHz</td><td>-60.02 dBm</td><td></td><td></td></tr></table> Date: 26 OCT 2021 09:01:01			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.460751 GHz	-7.01 dBm			M2	1		2.4835 GHz	-60.74 dBm			M3	1		2.5 GHz	-62.79 dBm			M4	1		2.48536 GHz	-60.02 dBm									
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																																							
M1	1		2.460751 GHz	-7.01 dBm																																									
M2	1		2.4835 GHz	-60.74 dBm																																									
M3	1		2.5 GHz	-62.79 dBm																																									
M4	1		2.48536 GHz	-60.02 dBm																																									

Test Item:	Bandedge	802.11 n(HT40)	Antenna 1																																										
CH03	MultiView Spectrum Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWT 1.52 ms VBW 300 kHz Mode Auto Sweep Count 300/300 1 Frequency Sweep  M1[1] -8.09 dBm 2.419380 GHz M2[1] -51.79 dBm 2.400000 GHz 2.31 GHz 1001 pts 13.2 MHz/ 2.442 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>2.41938 GHz</td><td>-8.09 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-51.79 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-56.79 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-60.83 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.399496 GHz</td><td>-48.39 dBm</td><td></td><td></td></tr></table> Date: 26/07/2021 09:01:31			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.41938 GHz	-8.09 dBm			M2	1		2.4 GHz	-51.79 dBm			M3	1		2.39 GHz	-56.79 dBm			M4	1		2.31 GHz	-60.83 dBm			M5	1		2.399496 GHz	-48.39 dBm		
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																																							
M1	1		2.41938 GHz	-8.09 dBm																																									
M2	1		2.4 GHz	-51.79 dBm																																									
M3	1		2.39 GHz	-56.79 dBm																																									
M4	1		2.31 GHz	-60.83 dBm																																									
M5	1		2.399496 GHz	-48.39 dBm																																									
CH09	MultiView Spectrum Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWT 1.1 ms VBW 300 kHz Mode Auto Sweep Count 300/300 1 Frequency Sweep  M1[1] -9.29 dBm 2.4494930 GHz M2[1] -60.34 dBm 2.4835000 GHz 2.432 GHz 1001 pts 6.8 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>2.449493 GHz</td><td>-9.29 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4835 GHz</td><td>-60.34 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.5 GHz</td><td>-62.81 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.484496 GHz</td><td>-57.39 dBm</td><td></td><td></td></tr></table> Date: 26/07/2021 09:03:13			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.449493 GHz	-9.29 dBm			M2	1		2.4835 GHz	-60.34 dBm			M3	1		2.5 GHz	-62.81 dBm			M4	1		2.484496 GHz	-57.39 dBm									
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																																							
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M3	1		2.5 GHz	-62.81 dBm																																									
M4	1		2.484496 GHz	-57.39 dBm																																									

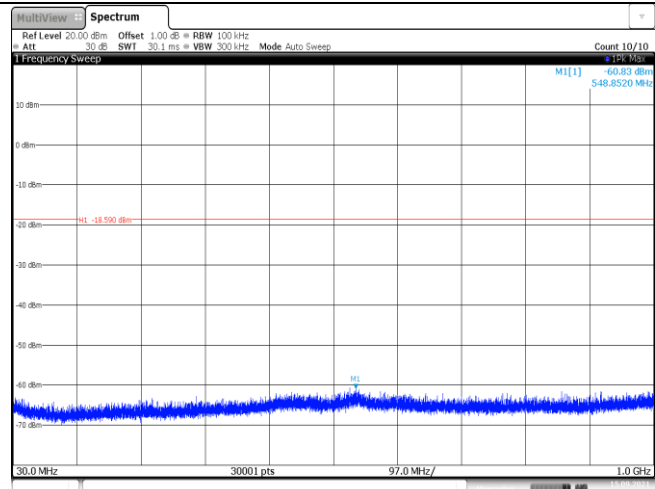
Test Item:	SE	802.11 b	Antenna 0
Reference level CH01			
CH01			
			

Reference level CH06

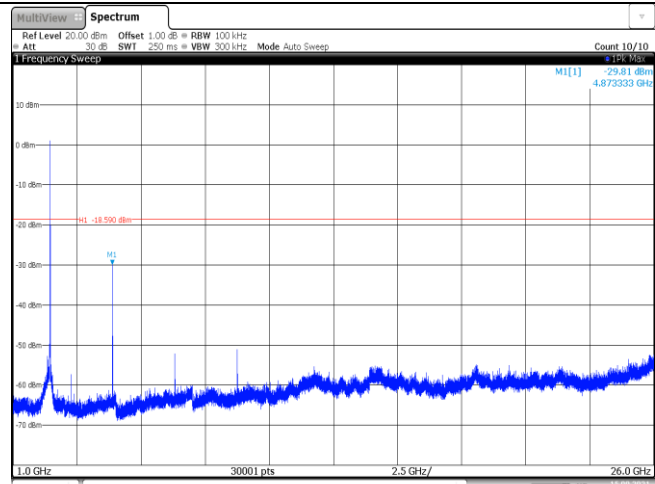


Date:15.SEP.2021 11:11:09

CH06



Date:15.SEP.2021 11:11:25



Date:15.SEP.2021 11:11:42