

APPENDIX REPORT

Project No.	SHT2106117003EW	Radio Specification	WIFI 5G
Test sample No.	YPHT21061170022	Model No.	C6200
Start test date	2021-10-20	Finish date	2021-10-20
Temperature	25.7℃	Humidity	35%
Test Engineer	Xiaoqin Li	Auditor	Xiaodong Zheo

Appendix clause	Test item	Result
A	Maximum Conducted Output Power	PASS
B	Maximum Power Spectral Density	PASS
C	26 dB Bandwidth	PASS
D	99% Occupy bandwidth	PASS
E	6 dB Bandwidth	PASS
F	Frequency stability	PASS

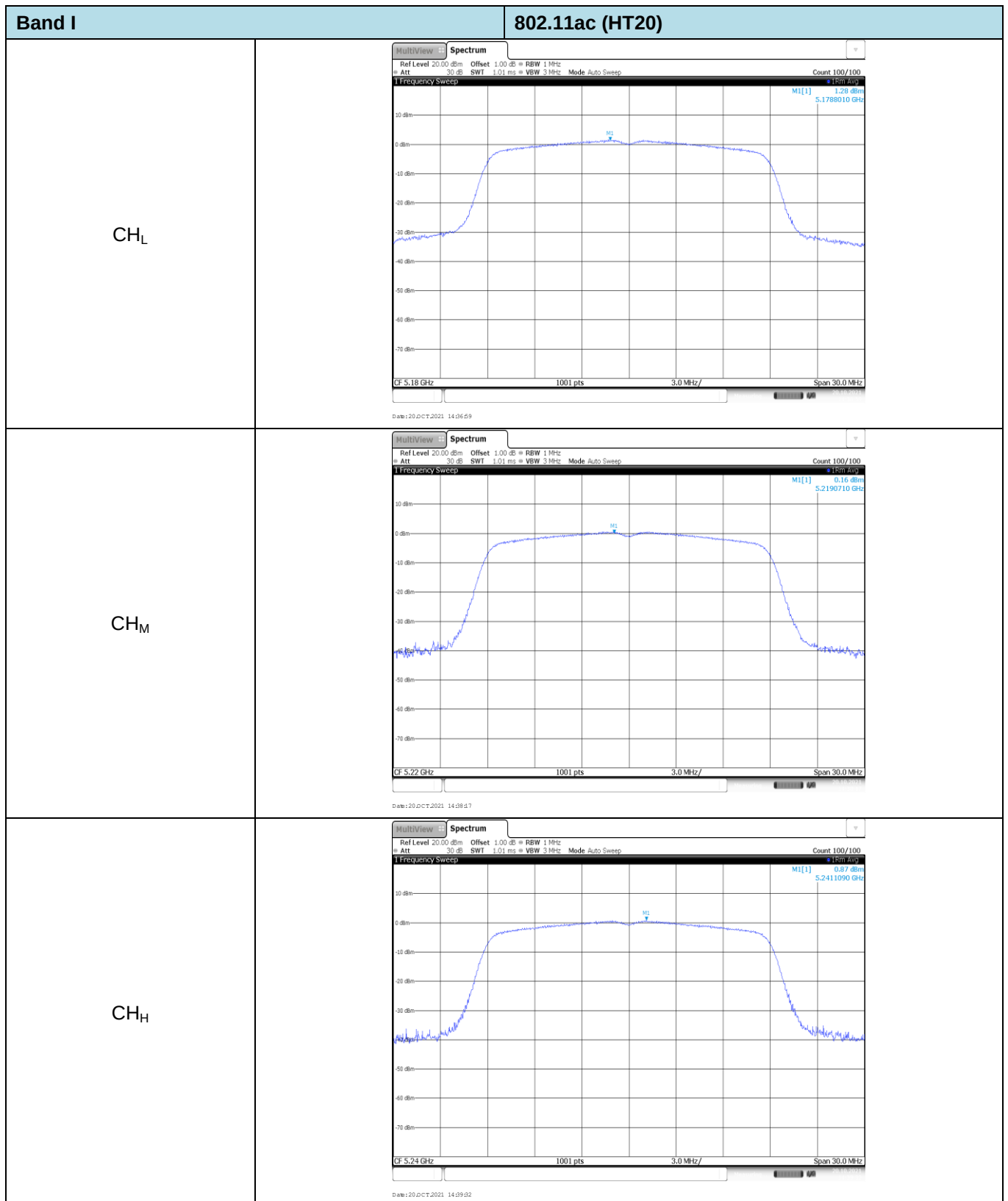
Appendix A: Maximum Conducted Output Power

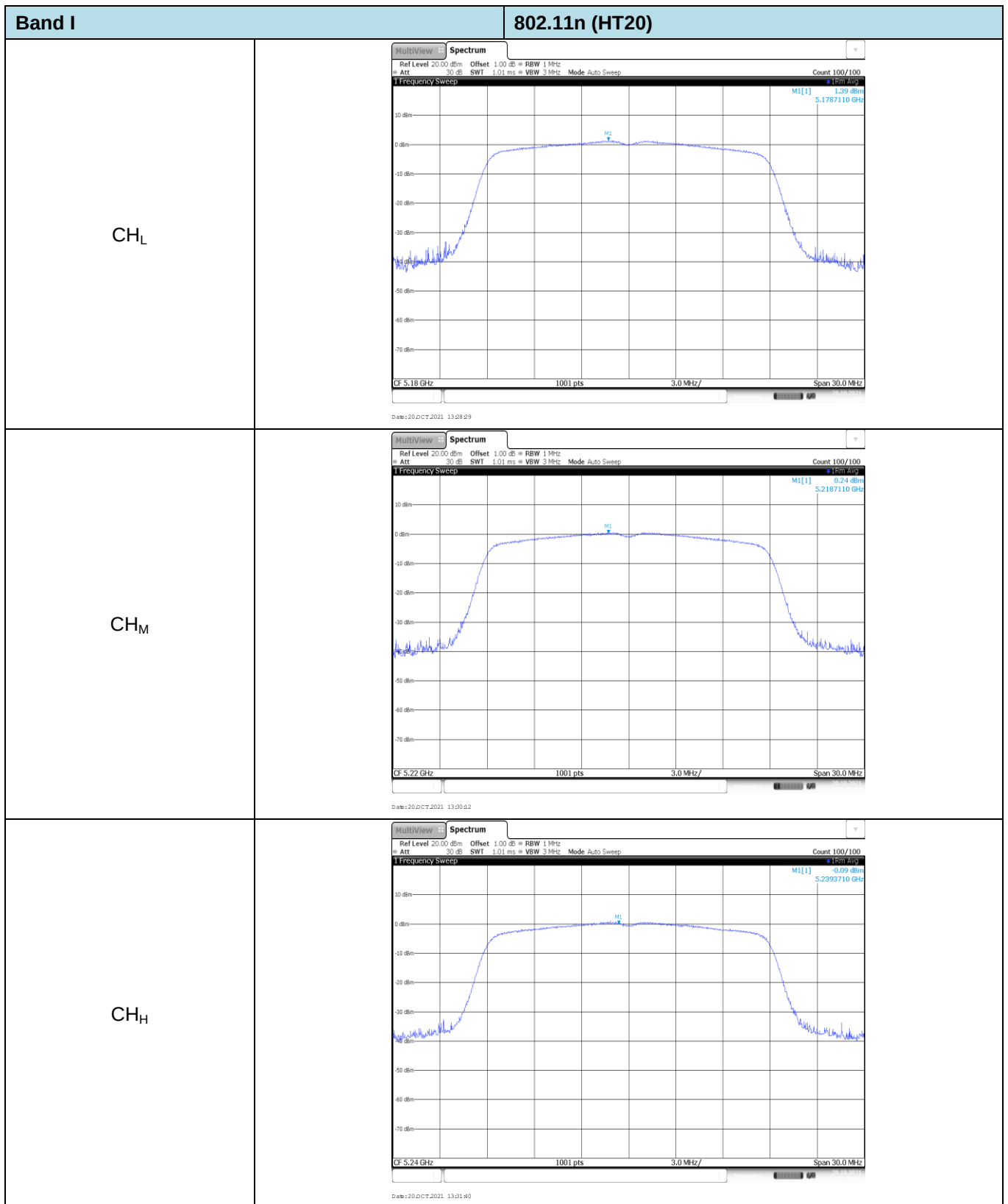
Band	Bandwidth (MHz)	Type	Channel	Reading (dBm)	Duty cycle (%)	Duty cycle factor (dB)	Conducted Output Power (dBm)	Limit (dBm)	Result
I	20	802.11ac	CH _L	10.88	96.58	0.15	11.03	24.00	Pass
			CH _M	10.52	96.58	0.15	10.67		
			CH _H	10.93	96.58	0.15	11.08		
		802.11n	CH _L	10.64	96.55	0.15	10.79	24.00	Pass
			CH _M	10.28	96.55	0.15	10.43		
			CH _H	10.88	96.55	0.15	11.03		
		802.11a	CH _L	10.85	96.77	0.14	10.99	24.00	Pass
			CH _M	10.46	96.77	0.14	10.60		
			CH _H	11.01	96.77	0.14	11.15		
	40	802.11ac	CH _L	10.36	93.48	0.29	10.65	24.00	Pass
			CH _H	10.48	93.48	0.29	10.77		
		802.11n	CH _L	10.49	93.44	0.29	10.78	24.00	Pass
			CH _H	10.65	93.44	0.29	10.94		
	80	802.11ac	CH _M	10.11	87.69	0.57	10.68	24.00	Pass
IV	20	802.11ac	CH _L	11.64	96.58	0.15	11.79	30.00	Pass
			CH _M	10.98	96.57	0.15	11.13		
			CH _H	10.72	96.58	0.15	10.87		
		802.11n	CH _L	11.77	96.55	0.15	11.92	30.00	Pass
			CH _M	11.11	96.55	0.15	11.26		
			CH _H	10.77	96.46	0.16	10.93		
		802.11a	CH _L	11.81	96.77	0.14	11.95	30.00	Pass
			CH _M	11.11	96.77	0.14	11.25		
			CH _H	10.81	96.77	0.14	10.95		
	40	802.11ac	CH _L	11.34	93.57	0.29	11.63	30.00	Pass
			CH _H	10.73	93.48	0.29	11.02		
		802.11n	CH _L	11.34	93.45	0.29	11.63	30.00	Pass
			CH _H	10.75	93.44	0.29	11.04		
	80	802.11ac	CH _M	10.78	87.67	0.57	11.35	30.00	Pass

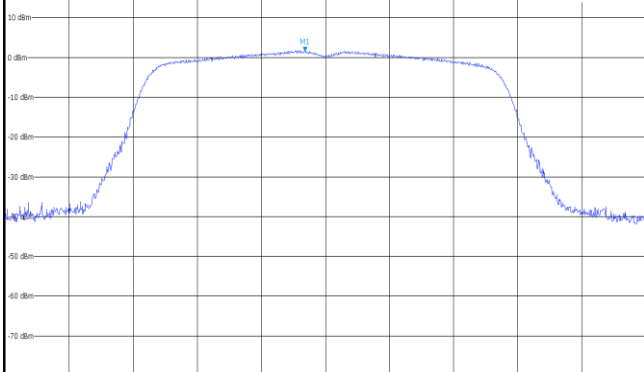
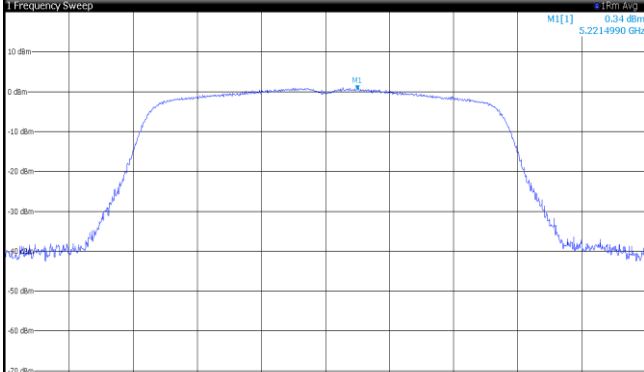
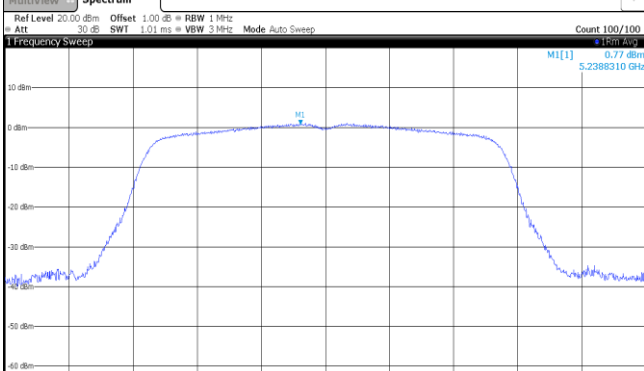
NOTE: duty cycle factor = 10LOG(1/ duty cycle)

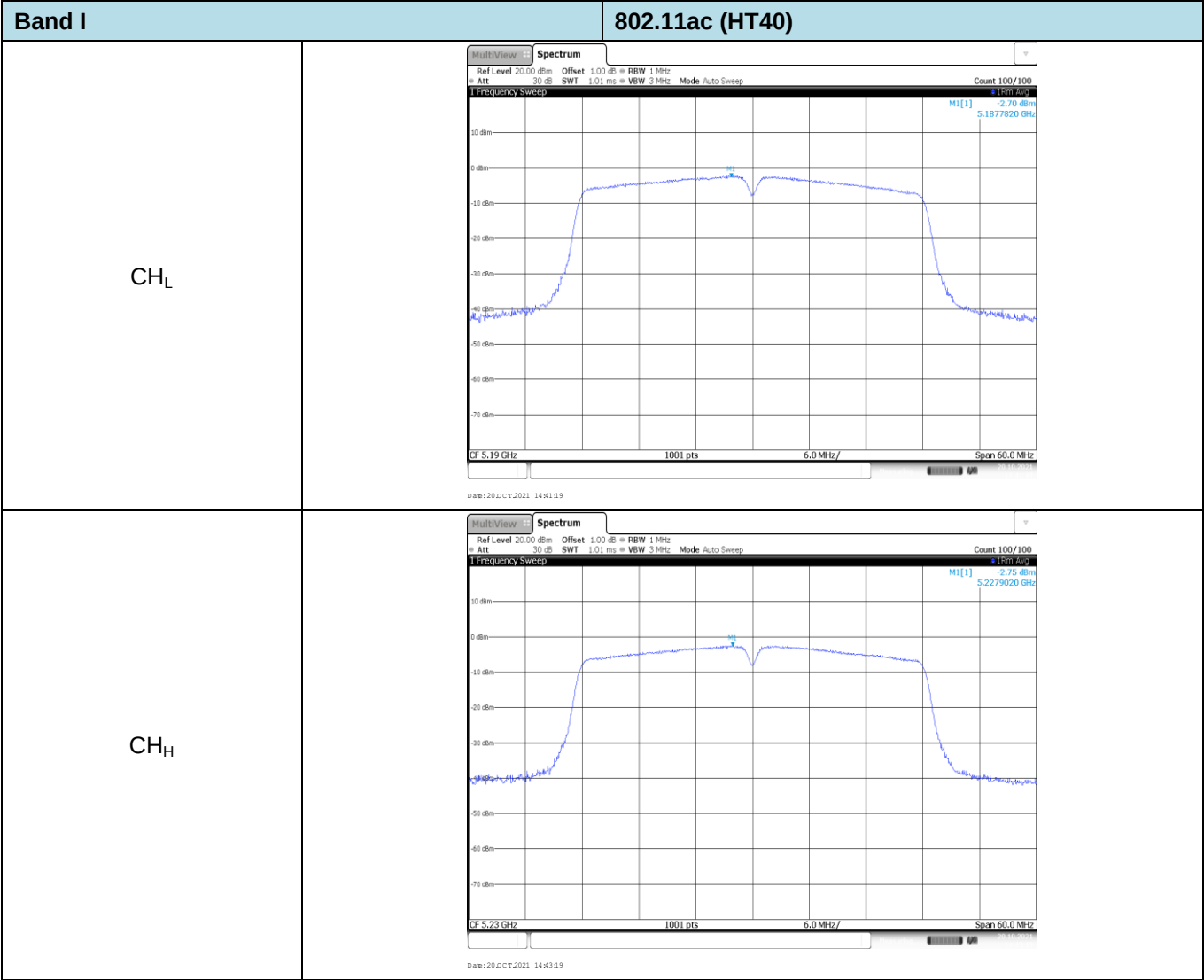
Appendix B: Maximum Power Spectral Density

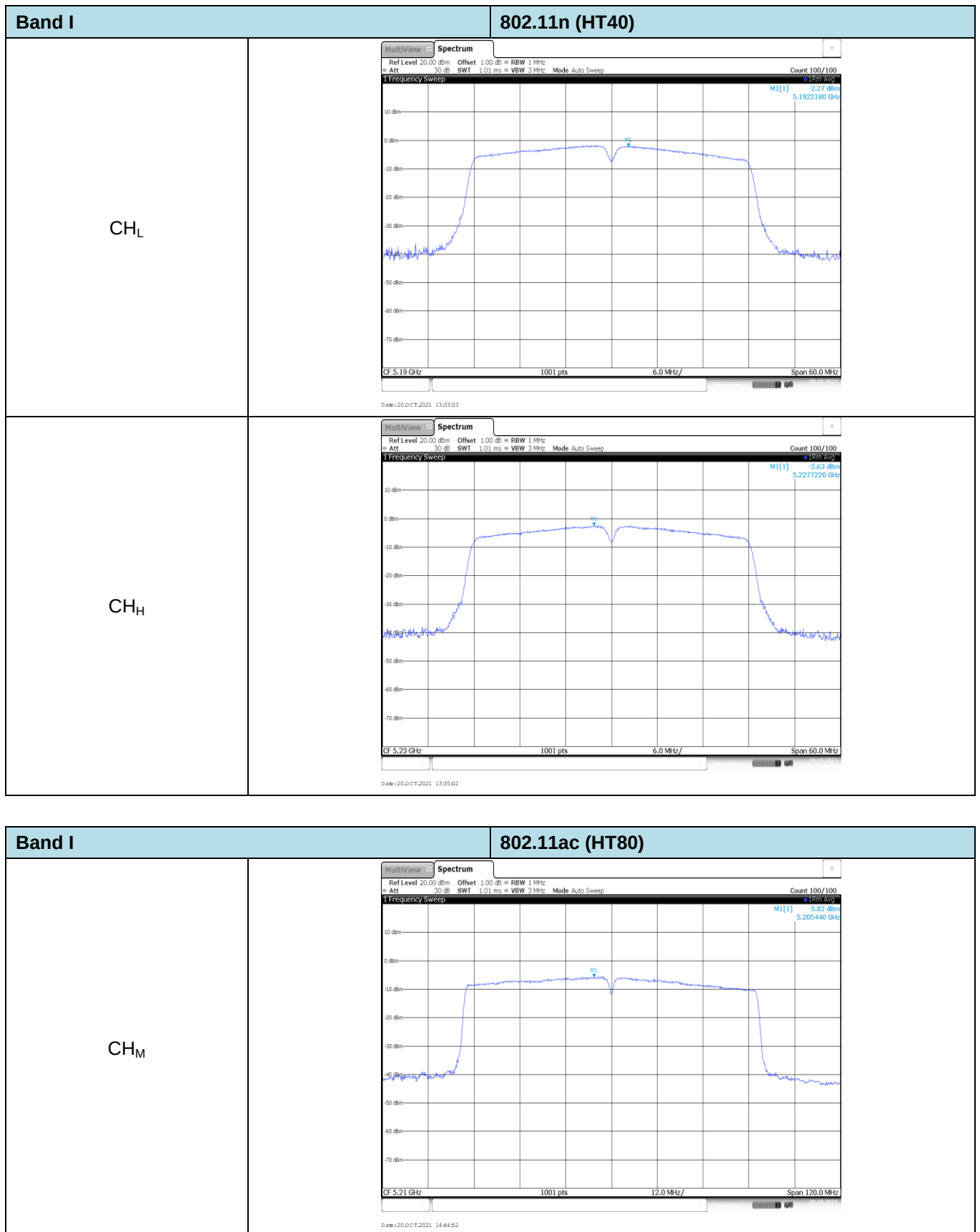
Band	Bandwidth (MHz)	Type	Channel	Reading (dBm)	Duty cycle (%)	Duty cycle factor (dB)	Power Spectral Density (dBm/MHz)	Limit (dBm/MHz)	Result
I	20	802.11ac	CH _L	1.28	96.58	0.15	1.43	11.00	Pass
			CH _M	0.16	96.58	0.15	0.31		
			CH _H	0.87	96.58	0.15	1.02		
		802.11n	CH _L	1.39	96.55	0.15	1.54	11.00	Pass
			CH _M	0.24	96.55	0.15	0.39		
			CH _H	-0.09	96.55	0.15	0.06		
		802.11a	CH _L	1.52	96.77	0.14	1.66	11.00	Pass
			CH _M	0.34	96.77	0.14	0.48		
			CH _H	0.77	96.77	0.14	0.91		
	40	802.11ac	CH _L	-2.70	93.48	0.29	-2.41	11.00	Pass
			CH _H	-2.75	93.48	0.29	-2.46		
		802.11n	CH _L	-2.27	93.44	0.29	-1.98	11.00	Pass
			CH _H	-2.63	93.44	0.29	-2.34		
	80	802.11ac	CH _M	-5.82	87.69	0.57	-5.25	11.00	Pass
Band	Bandwidth (MHz)	Type	Channel	Reading (dBm)	Duty cycle (%)	Duty cycle factor (dB)	Power Spectral Density (dBm/500KHz)	Limit (dBm/500KHz)	Result
IV	20	802.11ac	CH _L	-0.95	96.58	0.15	-0.80	30.00	Pass
			CH _M	-1.75	96.57	0.15	-1.60		
			CH _H	-3.03	96.58	0.15	-2.88		
		802.11n	CH _L	-1.64	96.55	0.15	-1.49	30.00	Pass
			CH _M	-1.66	96.55	0.15	-1.51		
			CH _H	-2.51	96.46	0.16	-2.35		
		802.11a	CH _L	-0.50	96.77	0.14	-0.36	30.00	Pass
			CH _M	-1.72	96.77	0.14	-1.58		
			CH _H	-2.24	96.77	0.14	-2.10		
	40	802.11ac	CH _L	-4.50	93.57	0.29	-4.21	30.00	Pass
			CH _H	-5.52	93.48	0.29	-5.23		
		802.11n	CH _L	-4.32	93.45	0.29	-4.03	30.00	Pass
			CH _H	-5.24	93.44	0.29	-4.95		
	80	802.11ac	CH _M	-8.29	87.67	0.57	-7.72	30.00	Pass

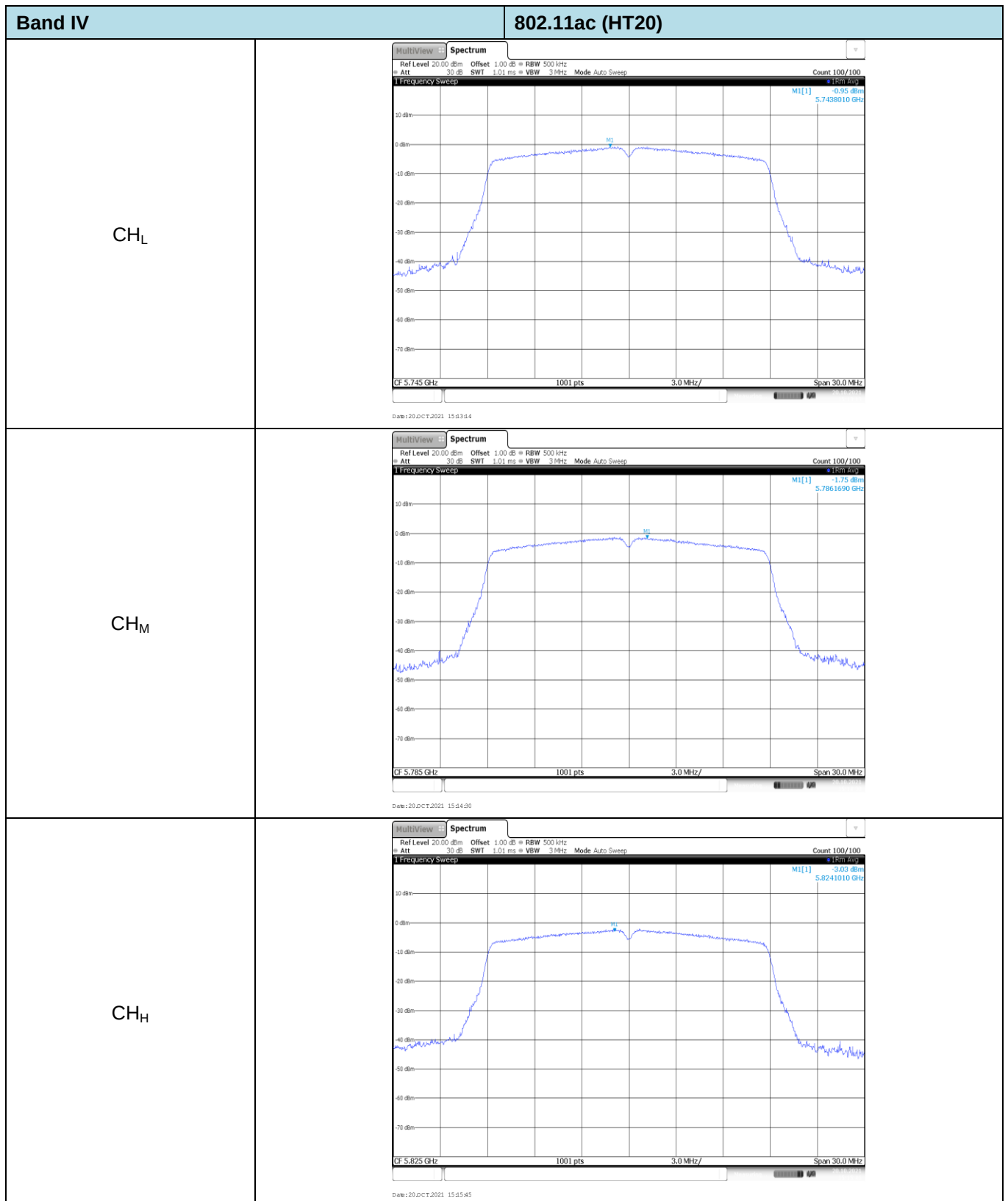




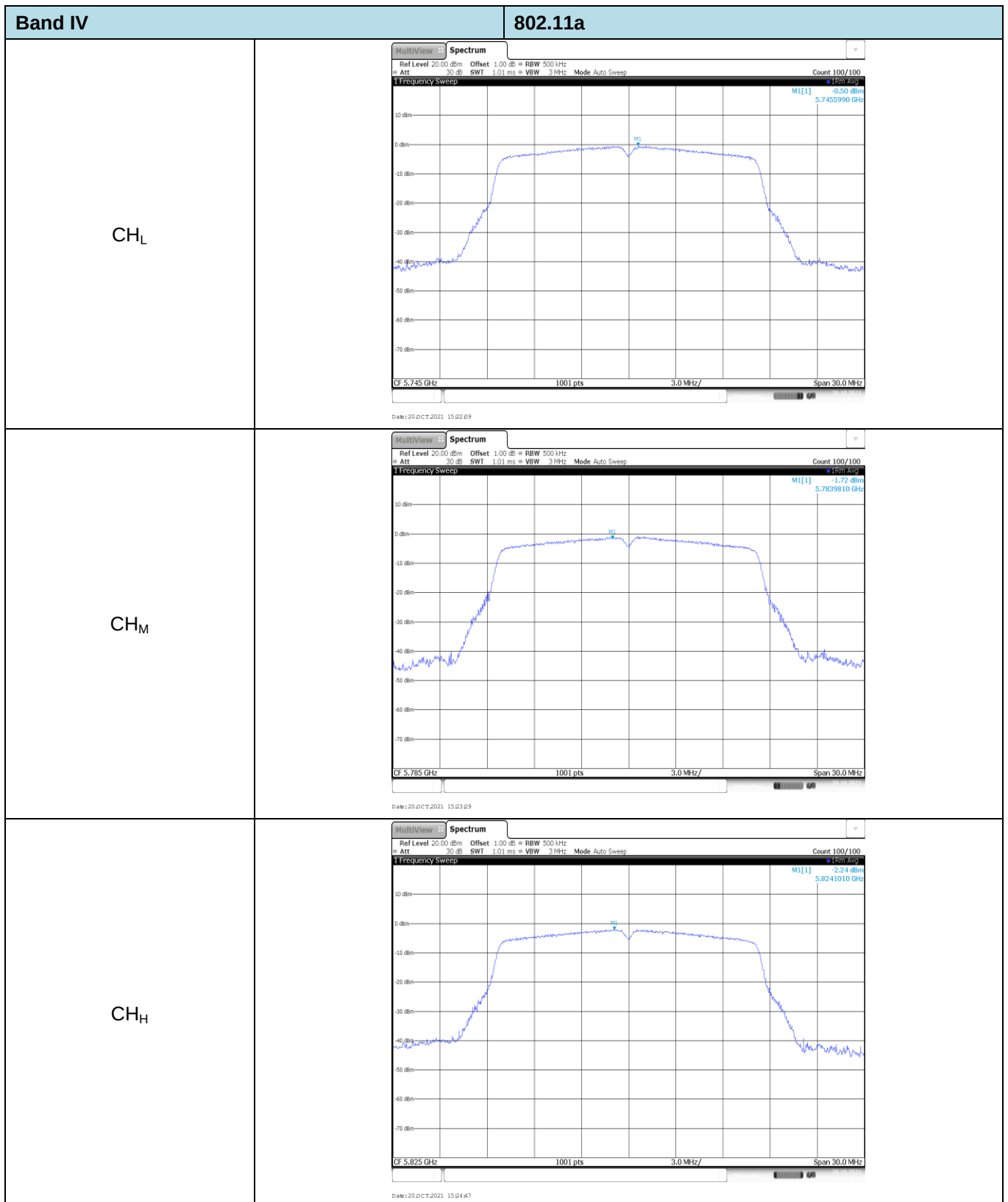
Band I		802.11a
CH _L	MultiView Spectrum Ref Level 20.00 dBm Att 30.0 dB Offset 1.00 dB RBW 1 MHz SWT 1.01 ms VBW 3 MHz Mode Auto Sweep Count 100/100 1 Frequency Sweep M1[1] 1.52 dBm 5.1790410 GHz  CF 5.18 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 20.Oct.2021 13:21:39	
CH _M	MultiView Spectrum Ref Level 20.00 dBm Att 30.0 dB Offset 1.00 dB RBW 1 MHz SWT 1.01 ms VBW 3 MHz Mode Auto Sweep Count 100/100 1 Frequency Sweep M1[1] 0.34 dBm 5.2214990 GHz  CF 5.22 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 20.Oct.2021 13:23:50	
CH _H	MultiView Spectrum Ref Level 20.00 dBm Att 30.0 dB Offset 1.00 dB RBW 1 MHz SWT 1.01 ms VBW 3 MHz Mode Auto Sweep Count 100/100 1 Frequency Sweep M1[1] 0.77 dBm 5.2388310 GHz  CF 5.24 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 20.Oct.2021 13:26:05	

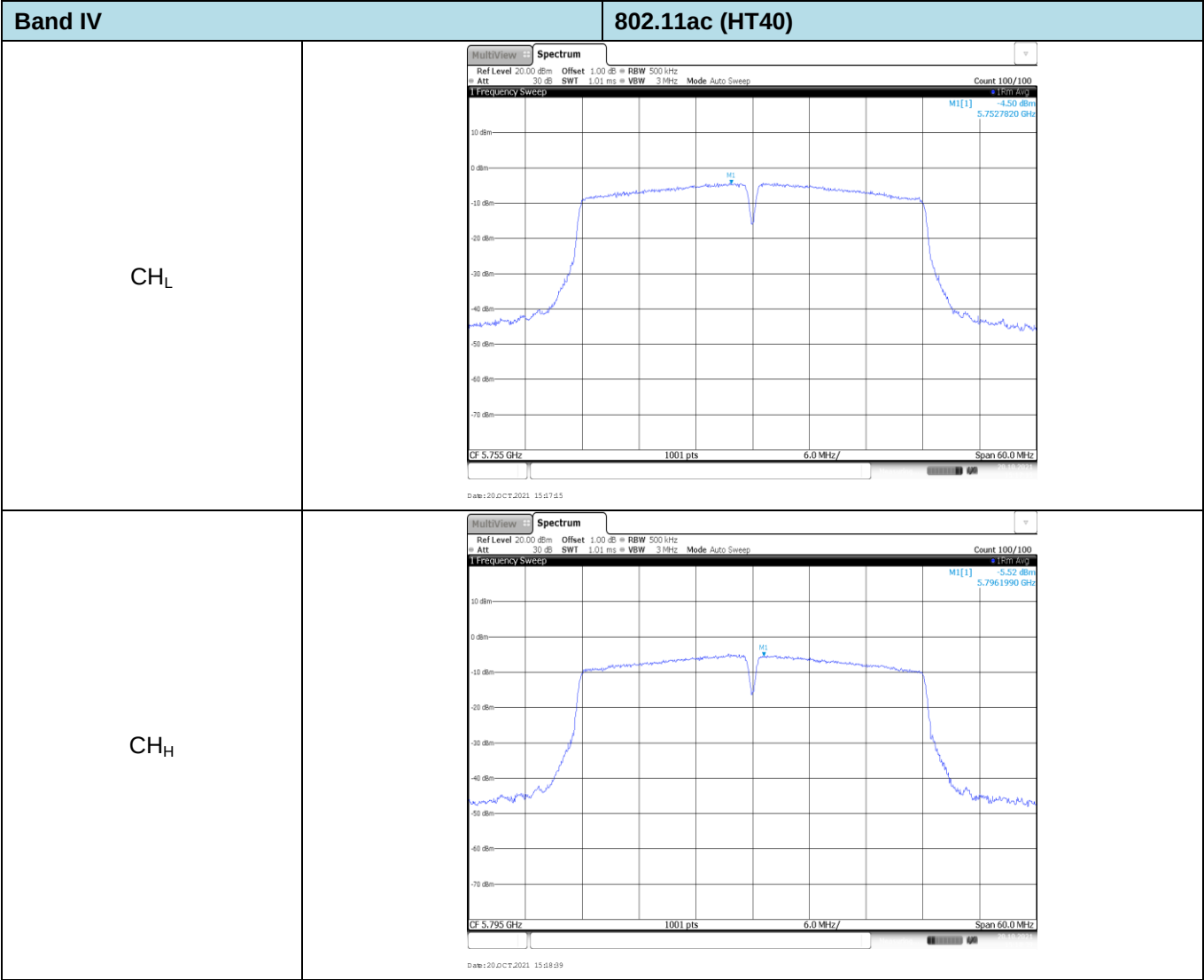


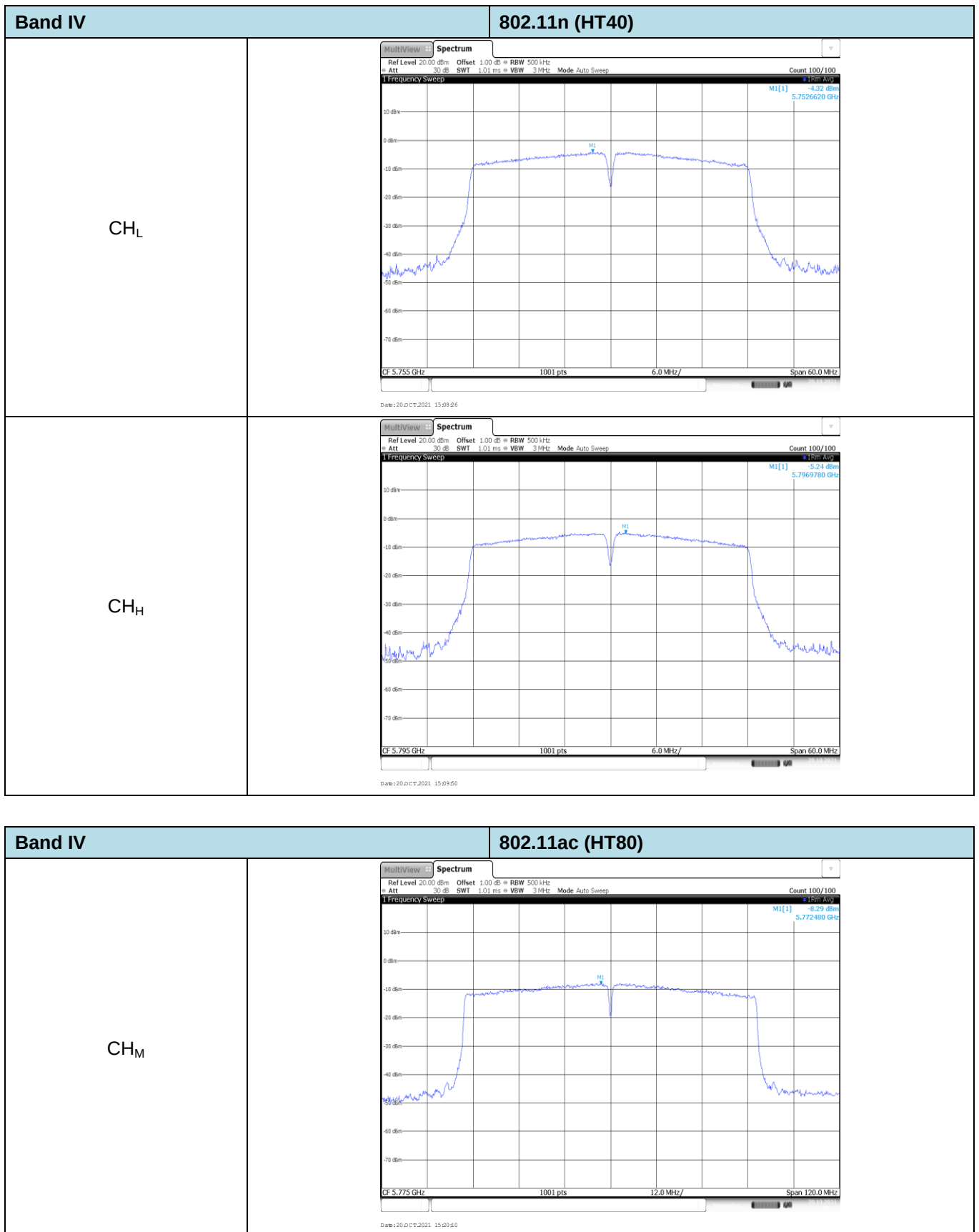




Band IV		802.11n (HT20)
CH _L	MultiView Spectrum Ref Level 20.00 dBm Offset 1.00 dB RBW 500 kHz Att 30 dB SWT 1.01 ms VBW 3 MHz Mode Auto Sweep Count 100/100 1 Frequency Sweep MU[1] -1.64 dBm 5.7441610 GHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.745 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 20/07/2021 15:01:05	
CH _M	MultiView Spectrum Ref Level 20.00 dBm Offset 1.00 dB RBW 500 kHz Att 30 dB SWT 1.01 ms VBW 3 MHz Mode Auto Sweep Count 100/100 1 Frequency Sweep MU[1] -1.66 dBm 5.7839510 GHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.785 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 20/07/2021 15:02:42	
CH _H	MultiView Spectrum Ref Level 20.00 dBm Offset 1.00 dB RBW 500 kHz Att 30 dB SWT 1.01 ms VBW 3 MHz Mode Auto Sweep Count 100/100 1 Frequency Sweep MU[1] -2.51 dBm 5.8240110 GHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.825 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 20/07/2021 15:06:02	



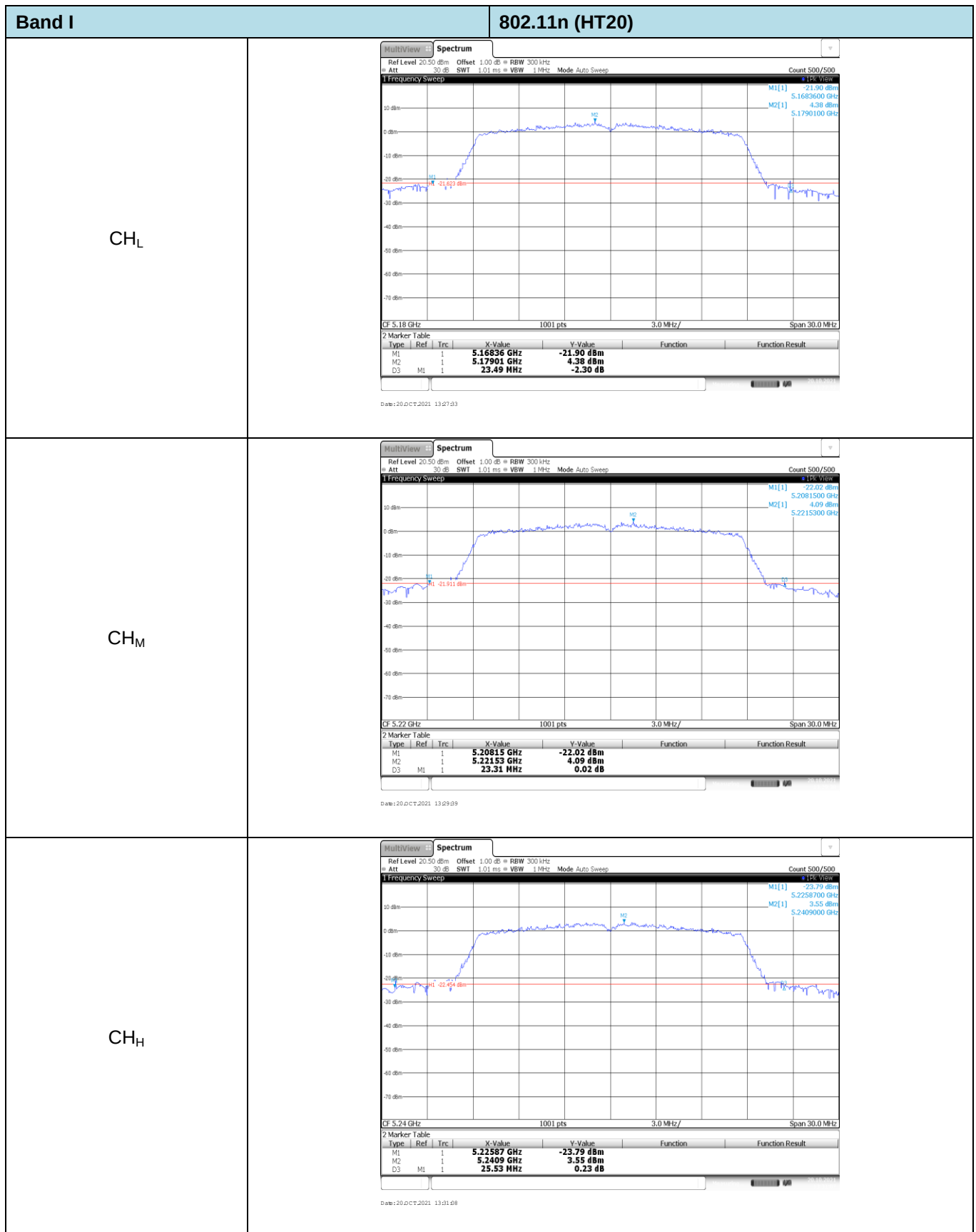


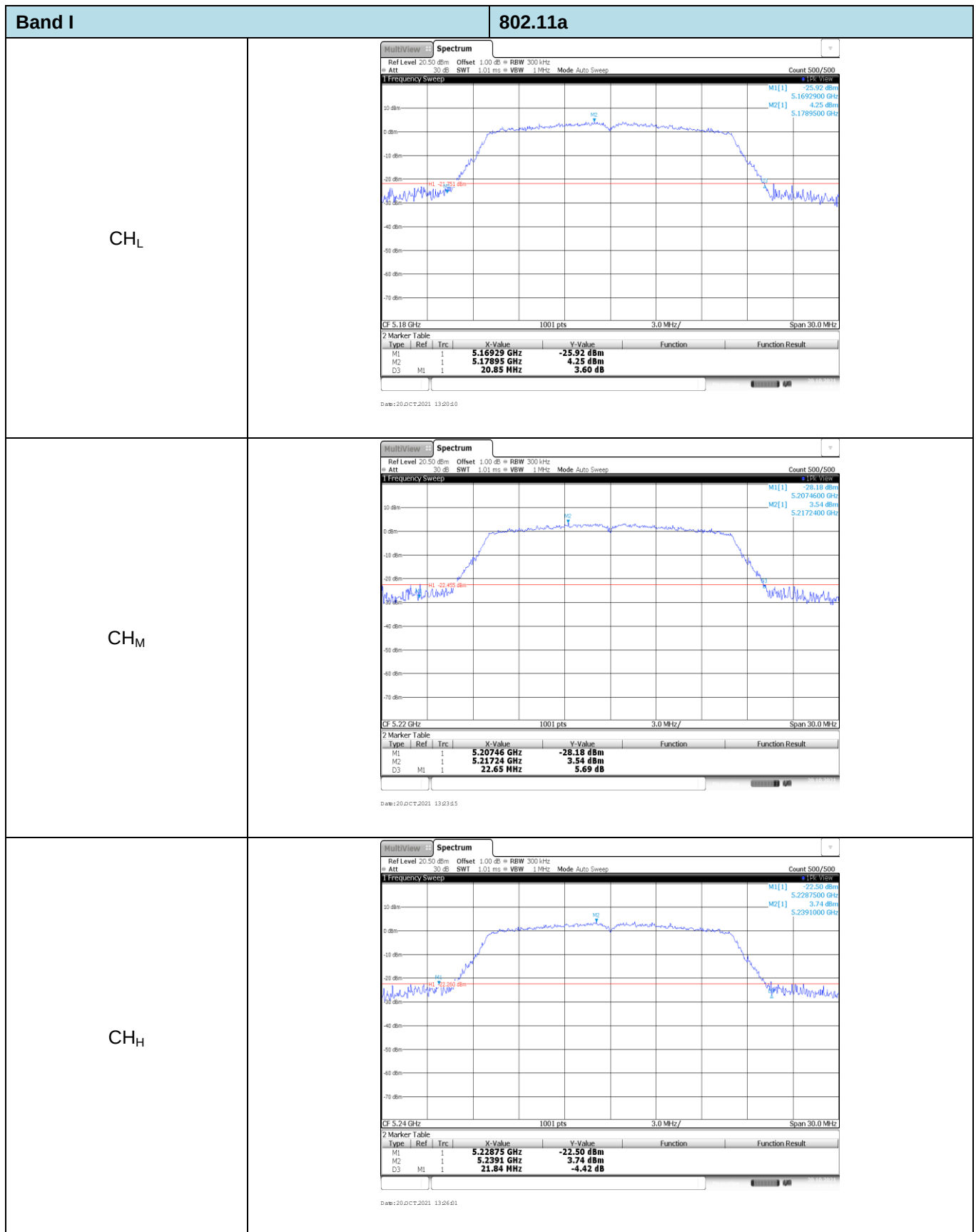


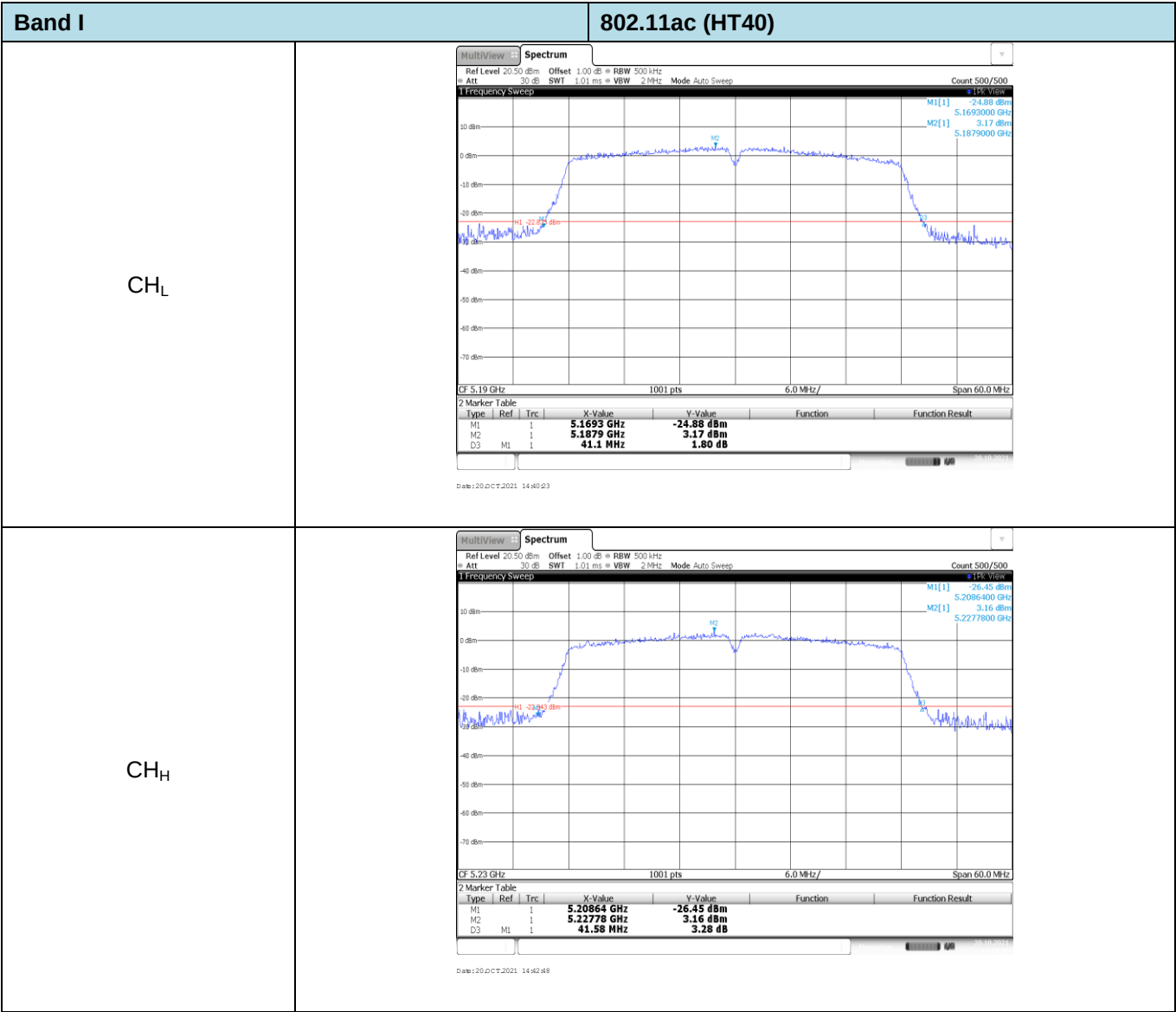
Appendix C: 26dB bandwidth

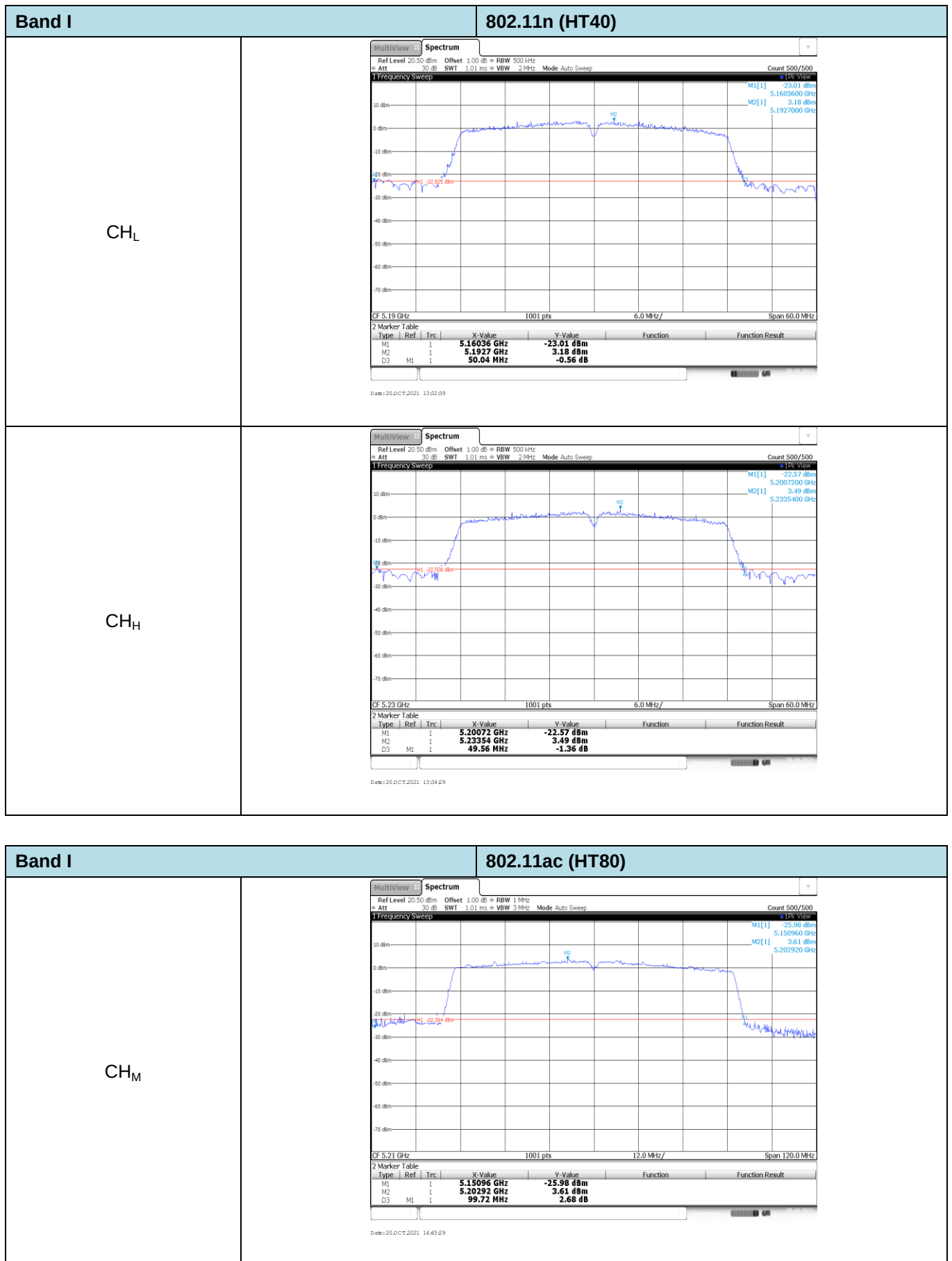
Band	Bandwidth (MHz)	Type	Channel	26dB bandwidth (MHz)	Result
I	20	802.11ac	CH _L	25.74	Pass
			CH _M	21.06	
			CH _H	24.45	
		802.11n	CH _L	23.49	Pass
			CH _M	23.31	
			CH _H	25.53	
		802.11a	CH _L	20.85	Pass
			CH _M	22.65	
			CH _H	21.84	
	40	802.11ac	CH _L	41.10	Pass
			CH _H	41.58	
		802.11n	CH _L	50.04	Pass
			CH _H	49.56	
	80	802.11ac	CH _M	99.72	Pass

Band I		802.11ac (HT20)	
CH _L			



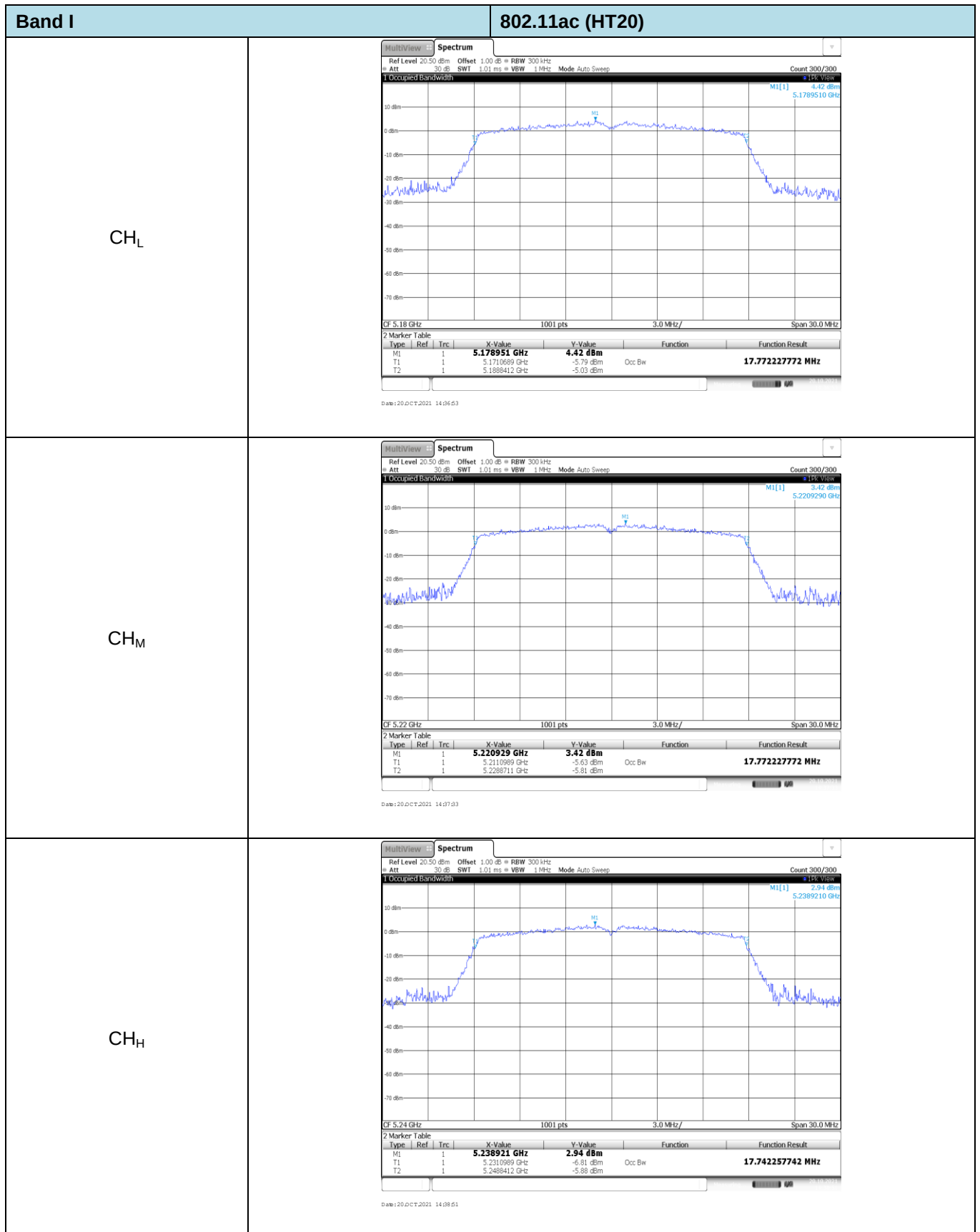


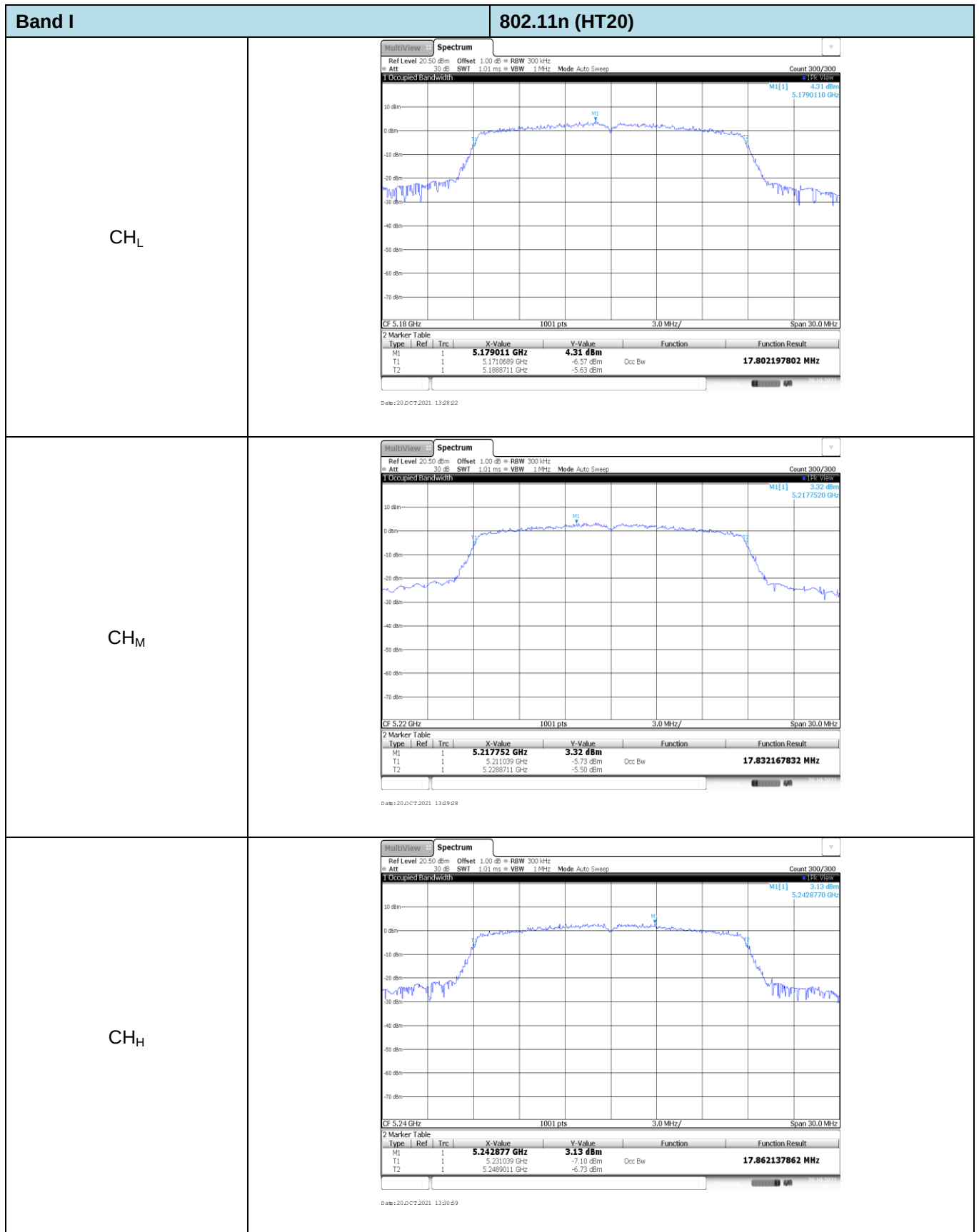


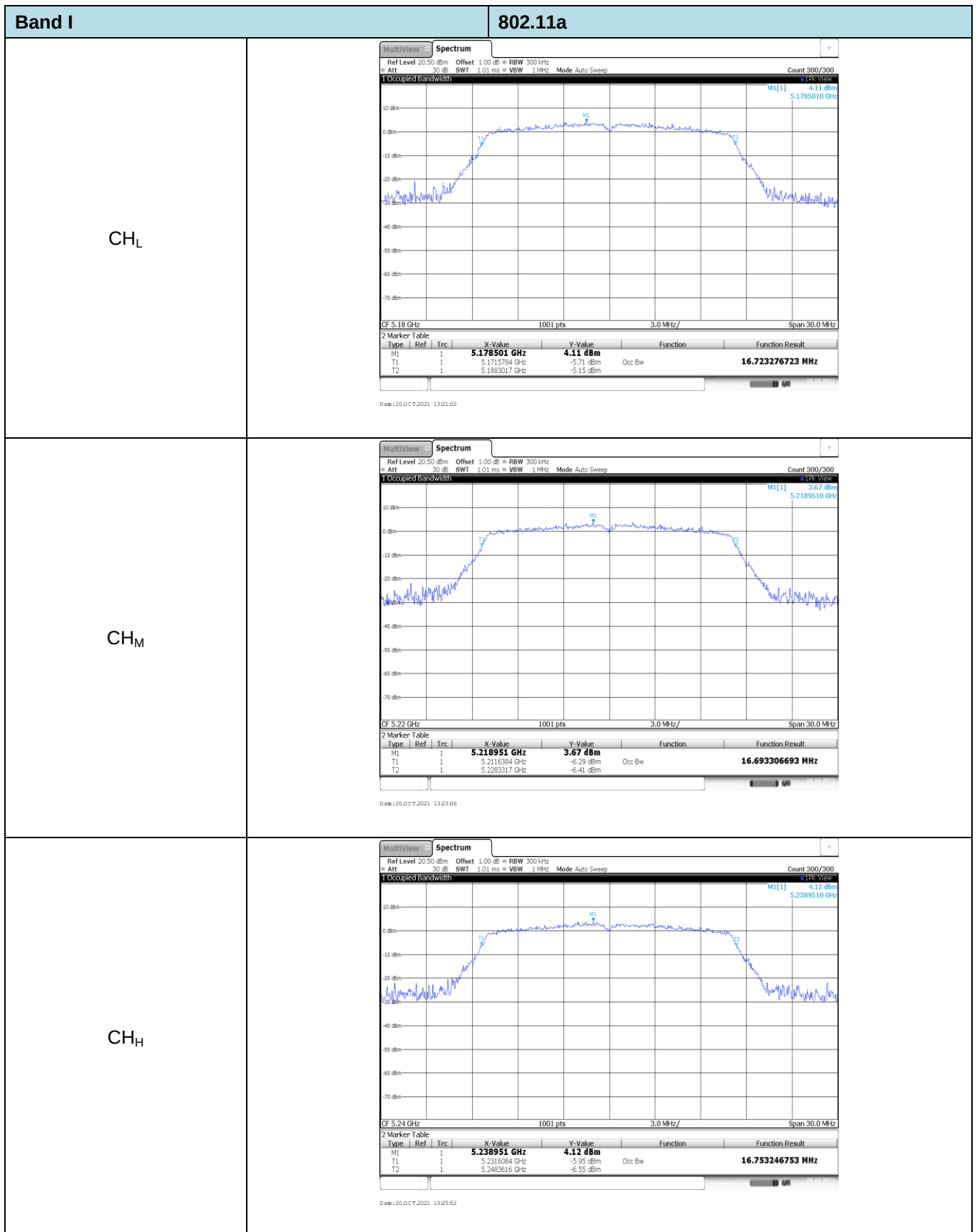


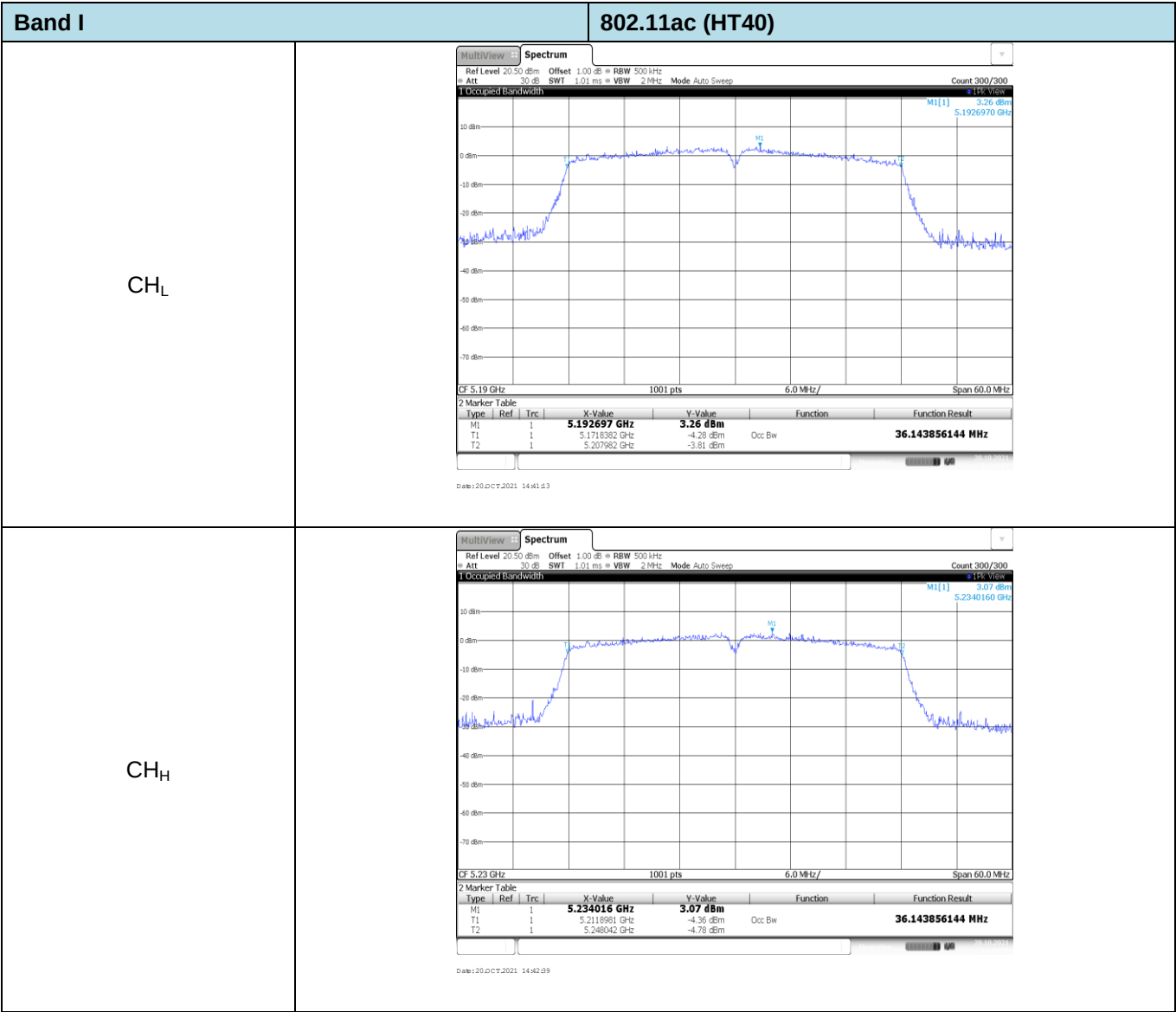
Appendix D: 99% Occupy bandwidth

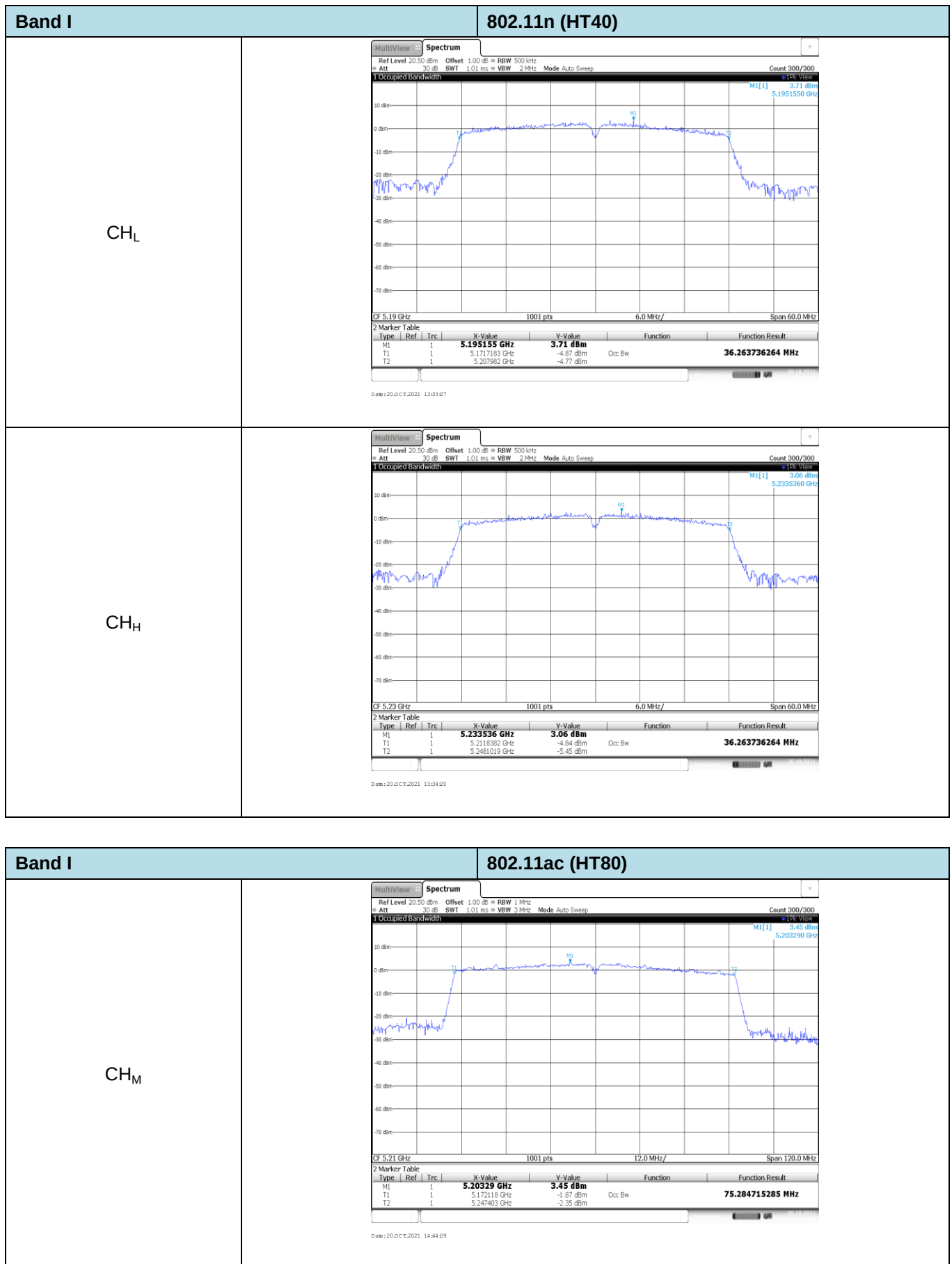
Band	Bandwidth (MHz)	Type	Channel	99% Occupy bandwidth (MHz)	Result
I	20	802.11ac	CH _L	17.77	Pass
			CH _M	17.77	
			CH _H	17.74	
		802.11n	CH _L	17.80	Pass
			CH _M	17.83	
			CH _H	17.86	
		802.11a	CH _L	16.72	Pass
			CH _M	16.69	
			CH _H	16.75	
	40	802.11ac	CH _L	36.14	Pass
			CH _H	36.14	
		802.11n	CH _L	36.26	Pass
			CH _H	36.26	
	80	802.11ac	CH _M	75.29	Pass
IV	20	802.11ac	CH _L	17.68	Pass
			CH _M	17.71	
			CH _H	17.74	
		802.11n	CH _L	17.77	Pass
			CH _M	17.77	
			CH _H	17.80	
		802.11a	CH _L	16.69	Pass
			CH _M	16.69	
			CH _H	16.72	
	40	802.11ac	CH _L	36.08	Pass
			CH _H	36.08	
		802.11n	CH _L	36.12	Pass
			CH _H	36.21	
	80	802.11ac	CH _M	75.17	Pass

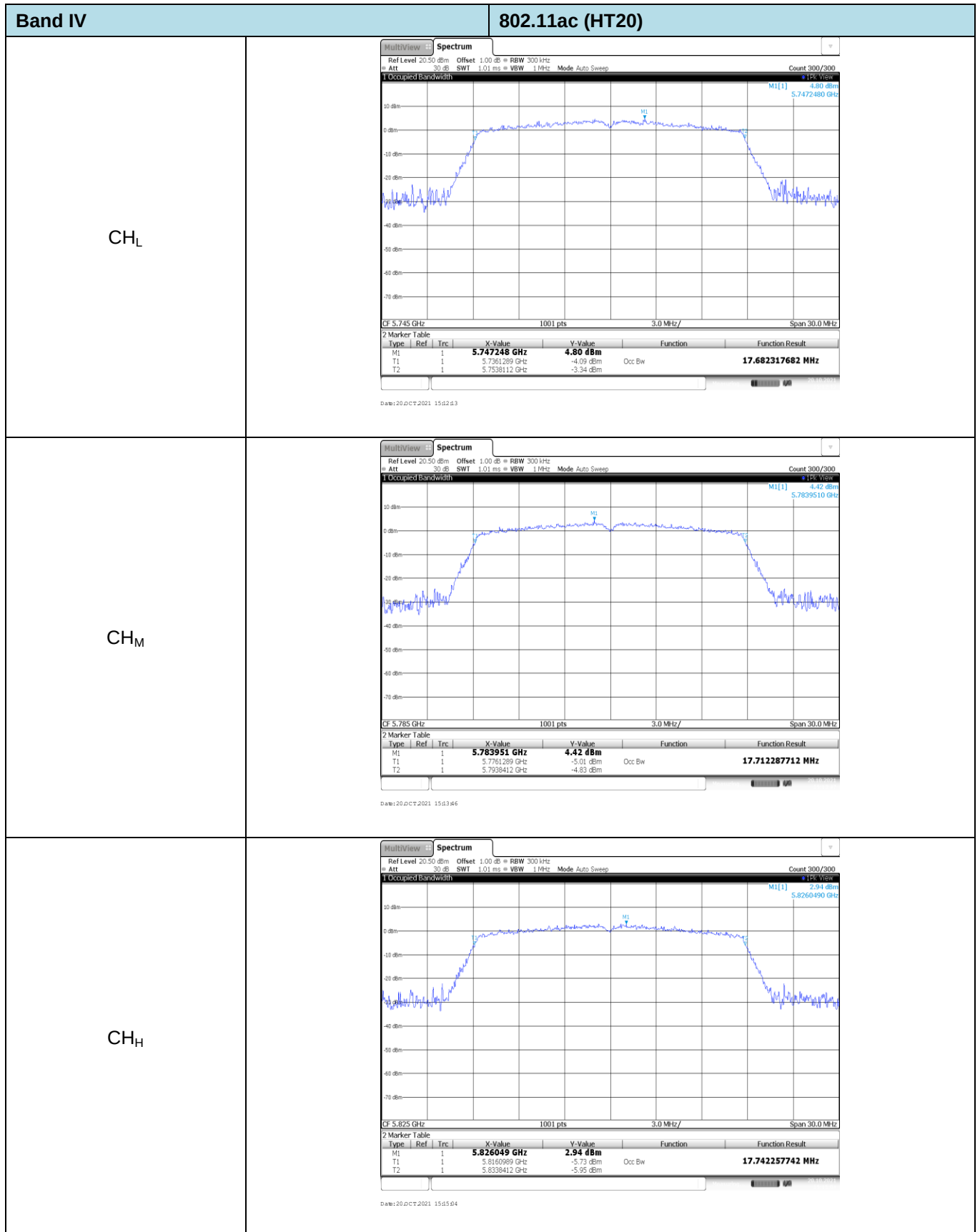


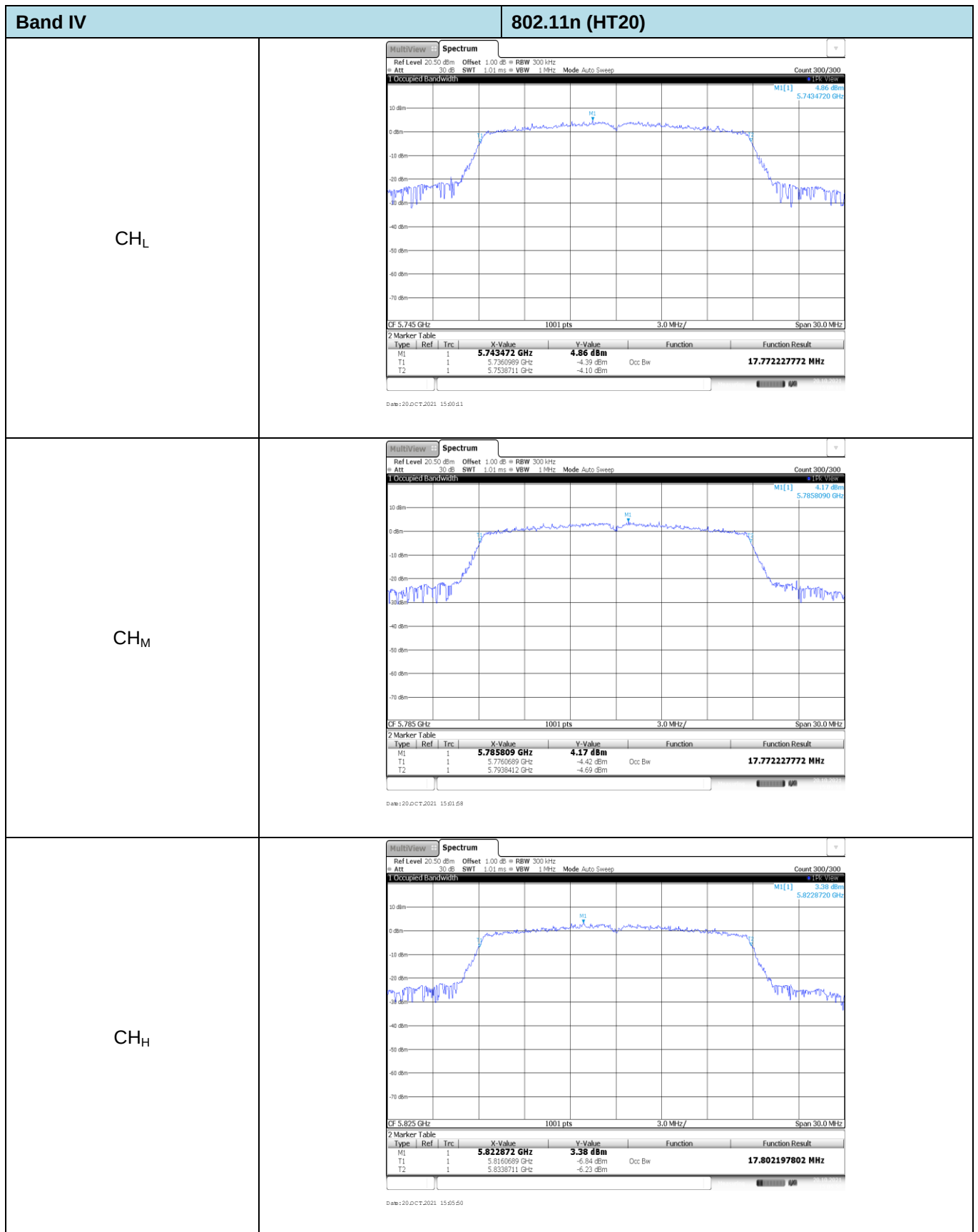


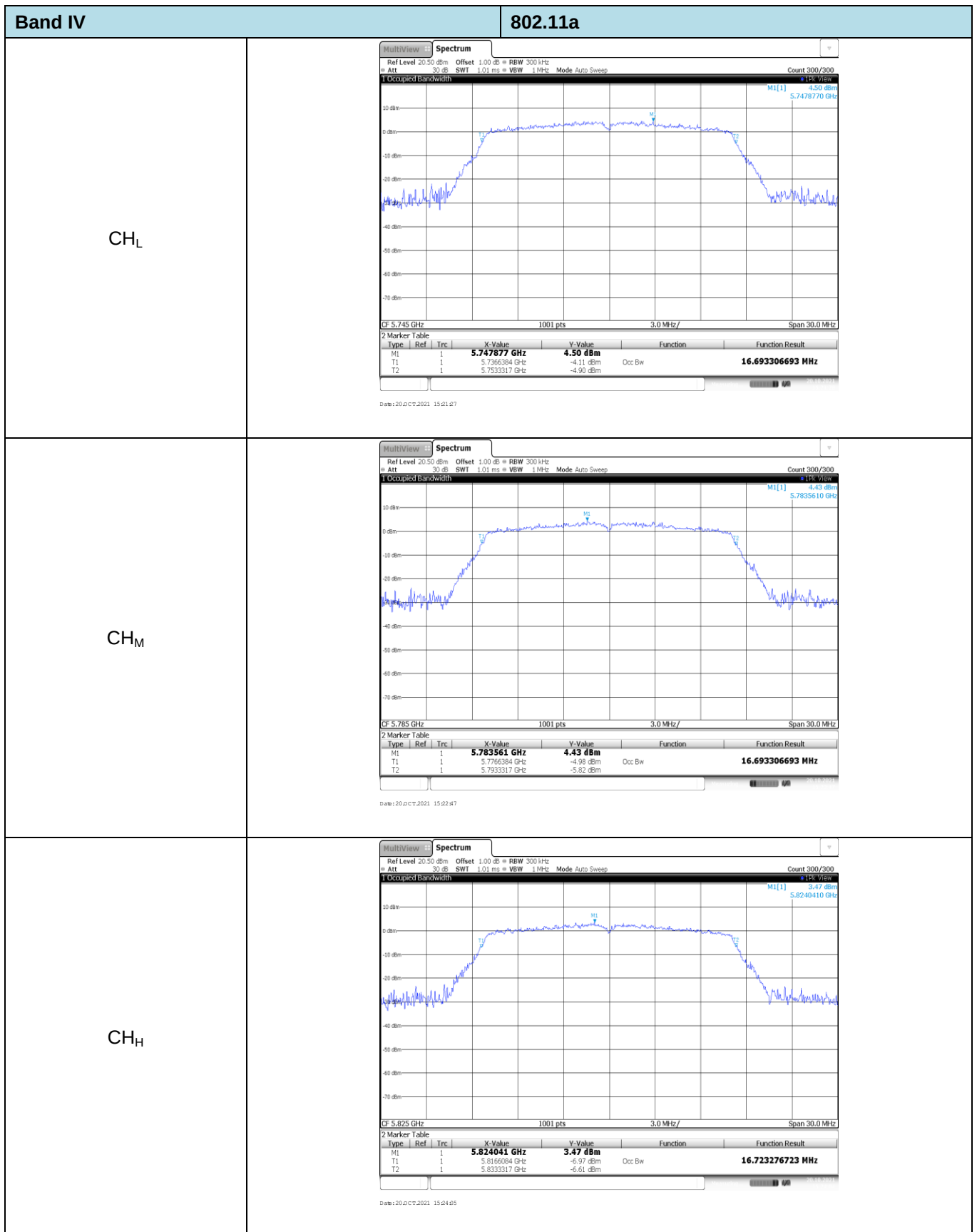


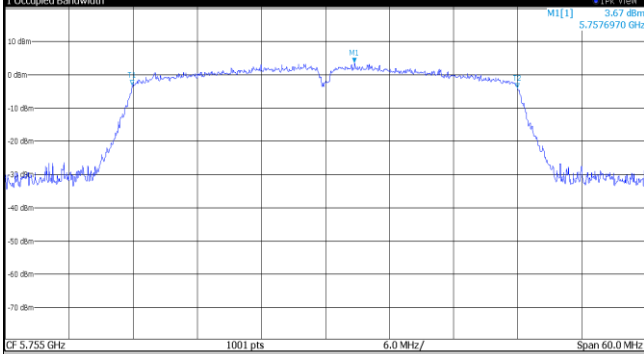
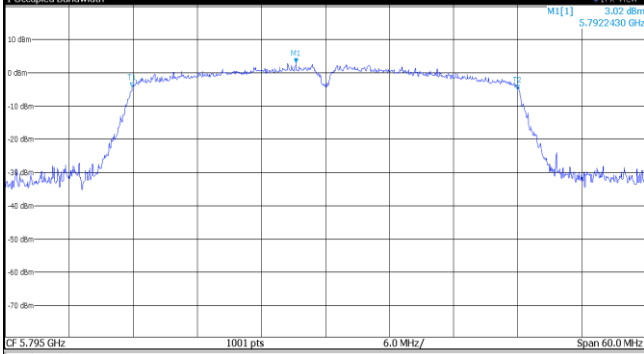


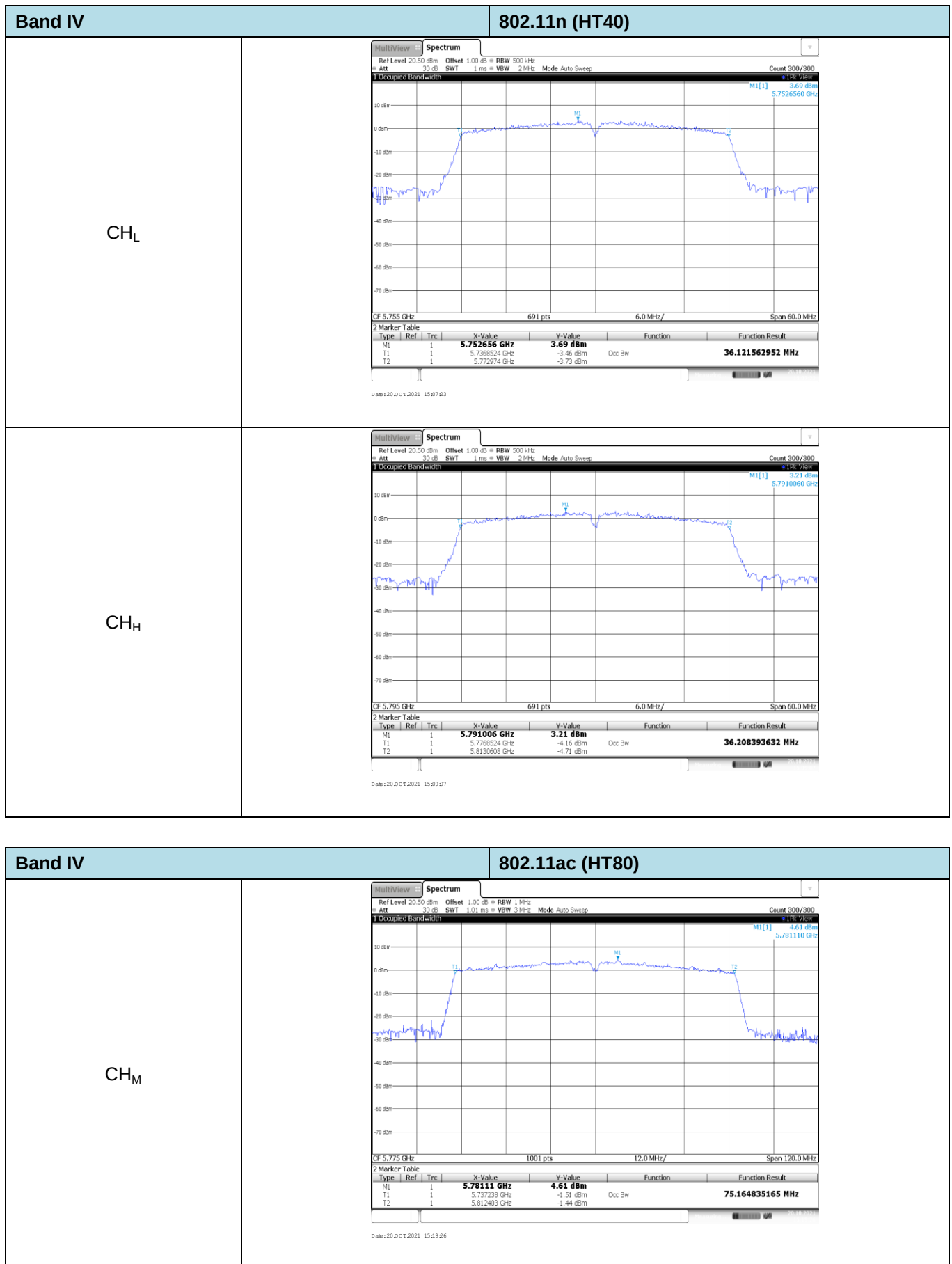








Band IV		802.11ac (HT40)																											
CH _L	MultiView Spectrum Ref Level 20.50 dBm Offset 1.00 dB RBW 500 kHz Att 30 dB SWF 1.01 ms VBW 2 MHz Mode Auto Sweep Count 300/300 1 Occupied Bandwidth  CF 5.755 GHz 1001 pts 6.0 MHz/ Span 60.0 MHz <table><tr><th>Type</th><th>Ref</th><th>Trc</th><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>5.757697 GHz</td><td>3.67 dBm</td><td></td><td></td></tr><tr><td>T1</td><td>1</td><td></td><td>5.7368981 GHz</td><td>-3.01 dBm</td><td>Occ Bw</td><td>36.083916084 MHz</td></tr><tr><td>T2</td><td>1</td><td></td><td>5.772982 GHz</td><td>-3.95 dBm</td><td></td><td></td></tr></table> Date:20.DCT.2021 15:16:31	Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		5.757697 GHz	3.67 dBm			T1	1		5.7368981 GHz	-3.01 dBm	Occ Bw	36.083916084 MHz	T2	1		5.772982 GHz	-3.95 dBm		
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																							
M1	1		5.757697 GHz	3.67 dBm																									
T1	1		5.7368981 GHz	-3.01 dBm	Occ Bw	36.083916084 MHz																							
T2	1		5.772982 GHz	-3.95 dBm																									
CH _H	MultiView Spectrum Ref Level 20.50 dBm Offset 1.00 dB RBW 500 kHz Att 30 dB SWF 1.01 ms VBW 2 MHz Mode Auto Sweep Count 300/300 1 Occupied Bandwidth  CF 5.795 GHz 1001 pts 6.0 MHz/ Span 60.0 MHz <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>5.792243 GHz</td><td>3.02 dBm</td><td></td><td></td></tr><tr><td>T1</td><td>1</td><td></td><td>5.7768981 GHz</td><td>-4.29 dBm</td><td>Occ Bw</td><td>36.083916084 MHz</td></tr><tr><td>T2</td><td>1</td><td></td><td>5.812982 GHz</td><td>-5.08 dBm</td><td></td><td></td></tr></table> Date:20.DCT.2021 15:17:56	Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		5.792243 GHz	3.02 dBm			T1	1		5.7768981 GHz	-4.29 dBm	Occ Bw	36.083916084 MHz	T2	1		5.812982 GHz	-5.08 dBm		
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																							
M1	1		5.792243 GHz	3.02 dBm																									
T1	1		5.7768981 GHz	-4.29 dBm	Occ Bw	36.083916084 MHz																							
T2	1		5.812982 GHz	-5.08 dBm																									

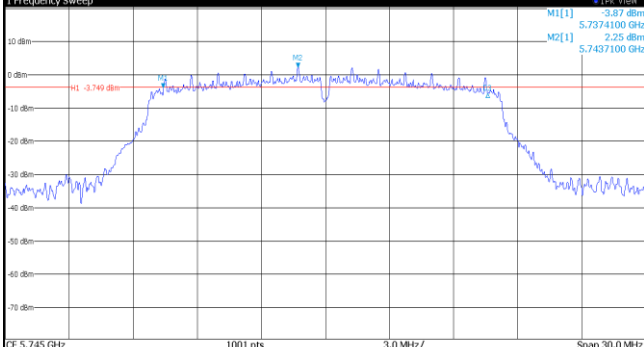
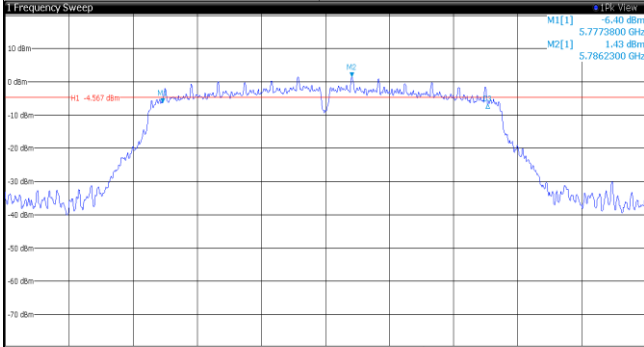
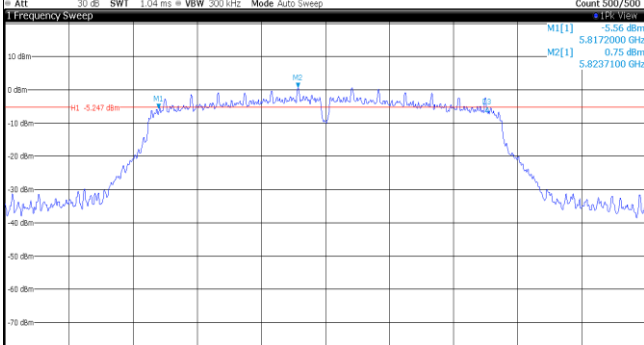


Appendix E: 6dB Bandwidth

Band	Bandwidth (MHz)	Type	Channel	6dB bandwidth (MHz)	Result
IV	20	802.11ac	CH _L	15.21	Pass
			CH _M	15.21	
			CH _H	15.21	
		802.11n	CH _L	15.21	Pass
			CH _M	15.21	
			CH _H	15.21	
		802.11a	CH _L	15.18	Pass
			CH _M	15.21	
			CH _H	15.36	
	40	802.11ac	CH _L	35.22	Pass
			CH _H	35.22	
		802.11n	CH _L	35.30	Pass
			CH _H	35.30	
	80	802.11ac	CH _M	75.48	Pass

Test channel	802.11ac (HT20)
CH _L	MultiView Spectrum Ref Level 20.50 dBm Offset 1.00 dB RBW 100 kHz Att 30.0 dB SWF 1.04 ms VBW 300 kHz Mode Auto Sweep Count 500/500 1 Frequency Sweep <

Test channel	802.11n (HT20)
CH _L	MultiView Spectrum Ref Level 20.50 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWT 1.04 ms VBW 300 kHz Mode Auto Sweep Count 500/500 1 Frequency Sweep </

Test channel	802.11a																												
CH _L	MultiView Spectrum Ref Level 20.50 dBm Offset 1.00 dB RBW 100 kHz Count 500/500 ATT 30 dB SWT 1.04 ms VBW 300 kHz Mode Auto Sweep 1 Frequency Sweep  M1[1] -3.87 dBm M2[1] 2.25 dBm M2[1] 5.7437100 GHz CF 5.745 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz 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>5.73741 GHz</td><td>-3.87 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>5.74371 GHz</td><td>2.25 dBm</td><td></td><td></td></tr><tr><td>D3</td><td>M1</td><td>1</td><td>15.18 MHz</td><td>-1.79 dB</td><td></td><td></td></tr></table> Date: 20/07/2021 15:21:57	Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		5.73741 GHz	-3.87 dBm			M2	1		5.74371 GHz	2.25 dBm			D3	M1	1	15.18 MHz	-1.79 dB		
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																							
M1	1		5.73741 GHz	-3.87 dBm																									
M2	1		5.74371 GHz	2.25 dBm																									
D3	M1	1	15.18 MHz	-1.79 dB																									
CH _M	MultiView Spectrum Ref Level 20.50 dBm Offset 1.00 dB RBW 100 kHz Count 500/500 ATT 30 dB SWT 1.04 ms VBW 300 kHz Mode Auto Sweep 1 Frequency Sweep  M1[1] -6.40 dBm M2[1] 1.43 dBm M2[1] 5.7862300 GHz CF 5.785 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz 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>5.77738 GHz</td><td>-6.40 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>5.78623 GHz</td><td>1.43 dBm</td><td></td><td></td></tr><tr><td>D3</td><td>M1</td><td>1</td><td>15.21 MHz</td><td>-0.28 dB</td><td></td><td></td></tr></table> Date: 20/07/2021 15:22:57	Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		5.77738 GHz	-6.40 dBm			M2	1		5.78623 GHz	1.43 dBm			D3	M1	1	15.21 MHz	-0.28 dB		
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																							
M1	1		5.77738 GHz	-6.40 dBm																									
M2	1		5.78623 GHz	1.43 dBm																									
D3	M1	1	15.21 MHz	-0.28 dB																									
CH _H	MultiView Spectrum Ref Level 20.50 dBm Offset 1.00 dB RBW 100 kHz Count 500/500 ATT 30 dB SWT 1.04 ms VBW 300 kHz Mode Auto Sweep 1 Frequency Sweep  M1[1] -5.56 dBm M2[1] 0.75 dBm M2[1] 5.8237100 GHz CF 5.825 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz 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>5.8172 GHz</td><td>-5.56 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>5.82371 GHz</td><td>0.75 dBm</td><td></td><td></td></tr><tr><td>D3</td><td>M1</td><td>1</td><td>15.36 MHz</td><td>0.28 dB</td><td></td><td></td></tr></table> Date: 20/07/2021 15:24:14	Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		5.8172 GHz	-5.56 dBm			M2	1		5.82371 GHz	0.75 dBm			D3	M1	1	15.36 MHz	0.28 dB		
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																							
M1	1		5.8172 GHz	-5.56 dBm																									
M2	1		5.82371 GHz	0.75 dBm																									
D3	M1	1	15.36 MHz	0.28 dB																									

Test channel

802.11ac (HT40)

CH_L

Ref Level 20.50 dBm Offset 1.00 dB RBW 100 kHz
Att 30 dB SWT 1.07 ms VBW 300 kHz Mode Auto Sweep

Count 500/500

1 Frequency Sweep

M1[1] -9.05 dBm
5.737360 GHz
M2[1] -0.60 dBm
5.752480 GHz

CF 5.755 GHz 1001 pts 6.0 MHz/ Span 60.0 MHz

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1	1		5.73736 GHz	-9.05 dBm		
M2	1		5.75248 GHz	-0.60 dBm		
D3	M1	1	35.22 MHz	1.72 dB		

Date: 20 OCT 2021 15:56:40

CH_H

Ref Level 20.50 dBm Offset 1.00 dB RBW 100 kHz
Att 30 dB SWT 1.07 ms VBW 300 kHz Mode Auto Sweep

Count 500/500

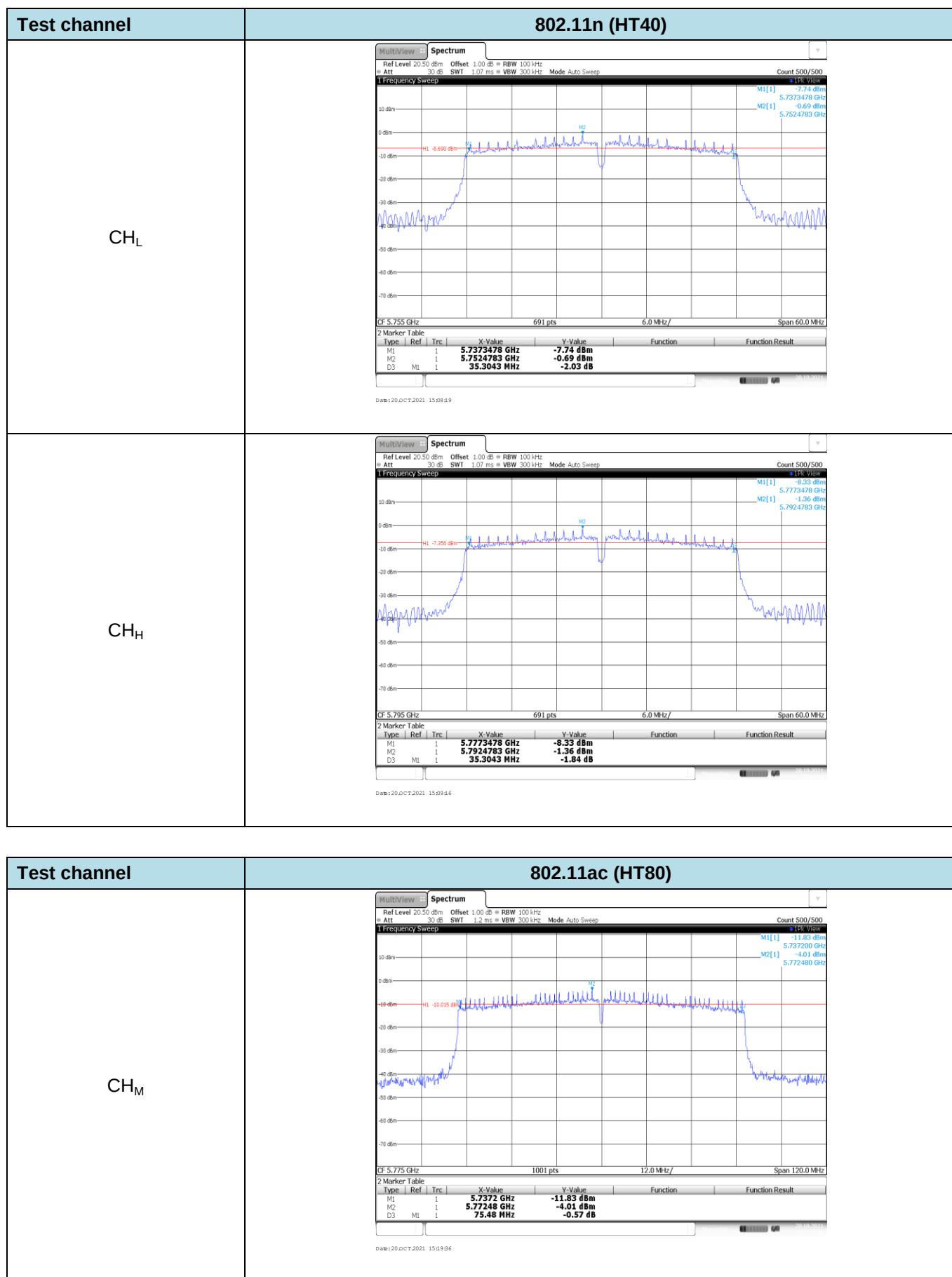
1 Frequency Sweep

M1[1] -9.78 dBm
5.777360 GHz
M2[1] -1.40 dBm
5.792480 GHz

CF 5.795 GHz 1001 pts 6.0 MHz/ Span 60.0 MHz

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1	1		5.77736 GHz	-9.78 dBm		
M2	1		5.79248 GHz	-1.40 dBm		
D3	M1	1	35.22 MHz	1.59 dB		

Date: 20 OCT 2021 15:58:05



Appendix F: Frequency stability**Voltage VS Frequency stability**

Band: I			Test Frequency: 5180.00MHz	
Temperature (°C)	Voltage (V)	Frequency Deviation (Hz)	Frequency Deviation (ppm)	Result
T _N	V _L	-7000.00	-1.35135	PASS
T _N	V _N	-7000.00	-1.35135	PASS
T _N	V _H	-7000.00	-1.35135	PASS

Band: IV			Test Frequency: 5745.00MHz	
Temperature (°C)	Voltage (V)	Frequency Deviation (Hz)	Frequency Deviation (ppm)	Result
T _N	V _L	-7000.00	-1.21845	PASS
T _N	V _N	-7000.00	-1.21845	PASS
T _N	V _H	-7000.00	-1.21845	PASS

Temperature VS Frequency stability

Band: I			Test Frequency: 5180.00MHz	
Voltage (V)	Temperature (°C)	Frequency Deviation (Hz)	Frequency Deviation (ppm)	Result
V _N	-20	-8000.00	-1.54440	PASS
V _N	-10	-8000.00	-1.54440	PASS
V _N	0	-8000.00	-1.54440	PASS
V _N	10	-8000.00	-1.54440	PASS
V _N	20	-8000.00	-1.54440	PASS
V _N	30	-8000.00	-1.54440	PASS
V _N	40	-8000.00	-1.54440	PASS
V _N	50	-8000.00	-1.54440	PASS

Band: IV			Test Frequency: 5745.00MHz	
Voltage (V)	Temperature (°C)	Frequency Deviation (Hz)	Frequency Deviation (ppm)	Result
V _N	-20	-7000.00	-1.21845	PASS
V _N	-10	-7000.00	-1.21845	PASS
V _N	0	-7000.00	-1.21845	PASS
V _N	10	-8000.00	-1.39252	PASS
V _N	20	-8000.00	-1.39252	PASS
V _N	30	-8000.00	-1.39252	PASS
V _N	40	-8000.00	-1.39252	PASS
V _N	50	-8000.00	-1.39252	PASS

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