

APPENDIX REPORT

Project No.	SHT1911060702EW	Radio Specification	WIFI 5G
Test sample No.	YPHT19110607028	Model No.	TE300
Start test date	2020/1/2	Finish date	2020/1/2
Temperature	25°C	Humidity	50%
Test Engineer	Ximing.Huang	Auditor	<i>William.wang</i>

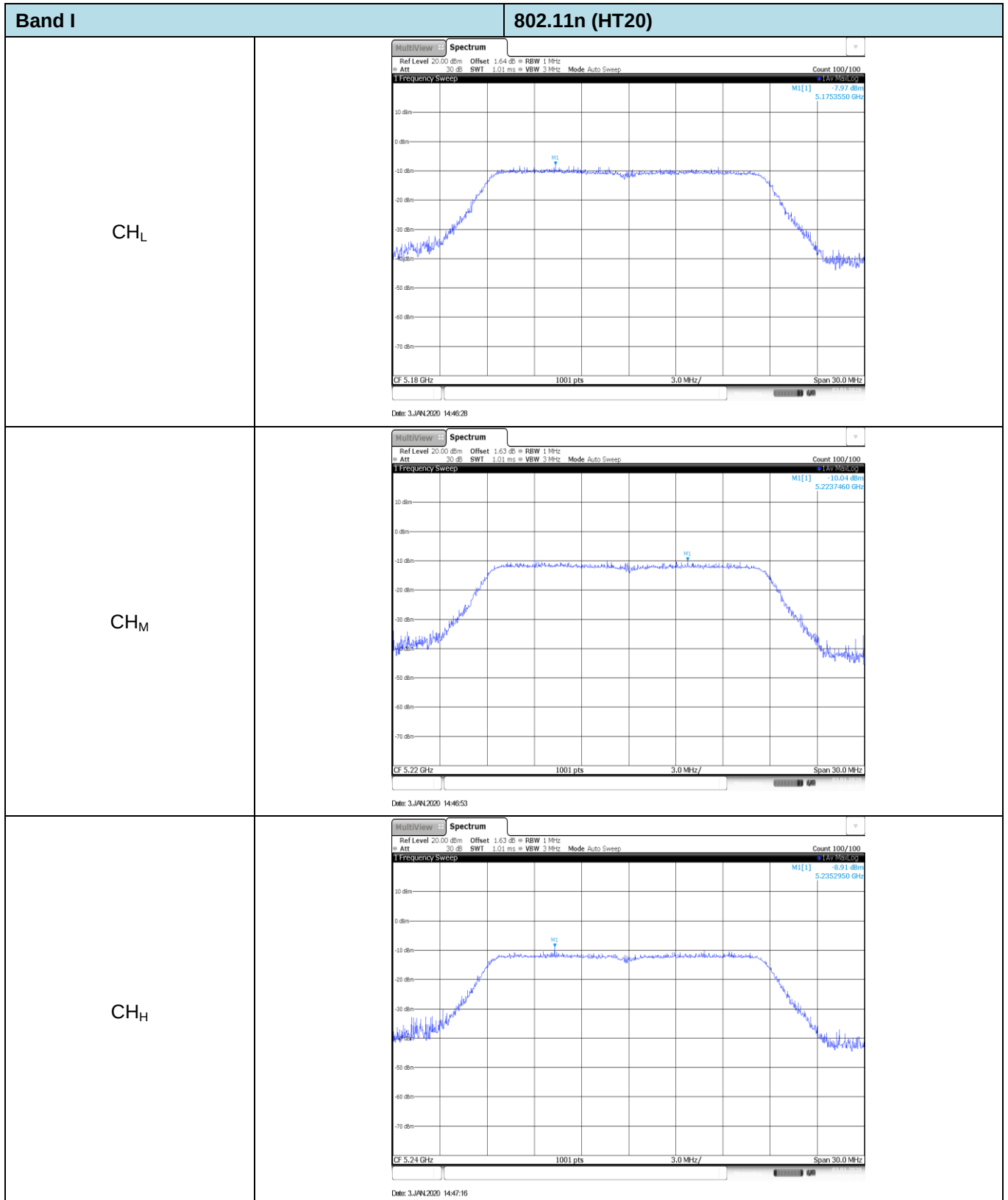
Appendix clause	Test item	Result
A	Maximum Conducted Output Power	PASS
B	Maximum Power Spectral Density	PASS
C	26 dB Bandwidth	PASS
D	99% Occupy bandwidth	PASS
E	Frequency stability	PASS

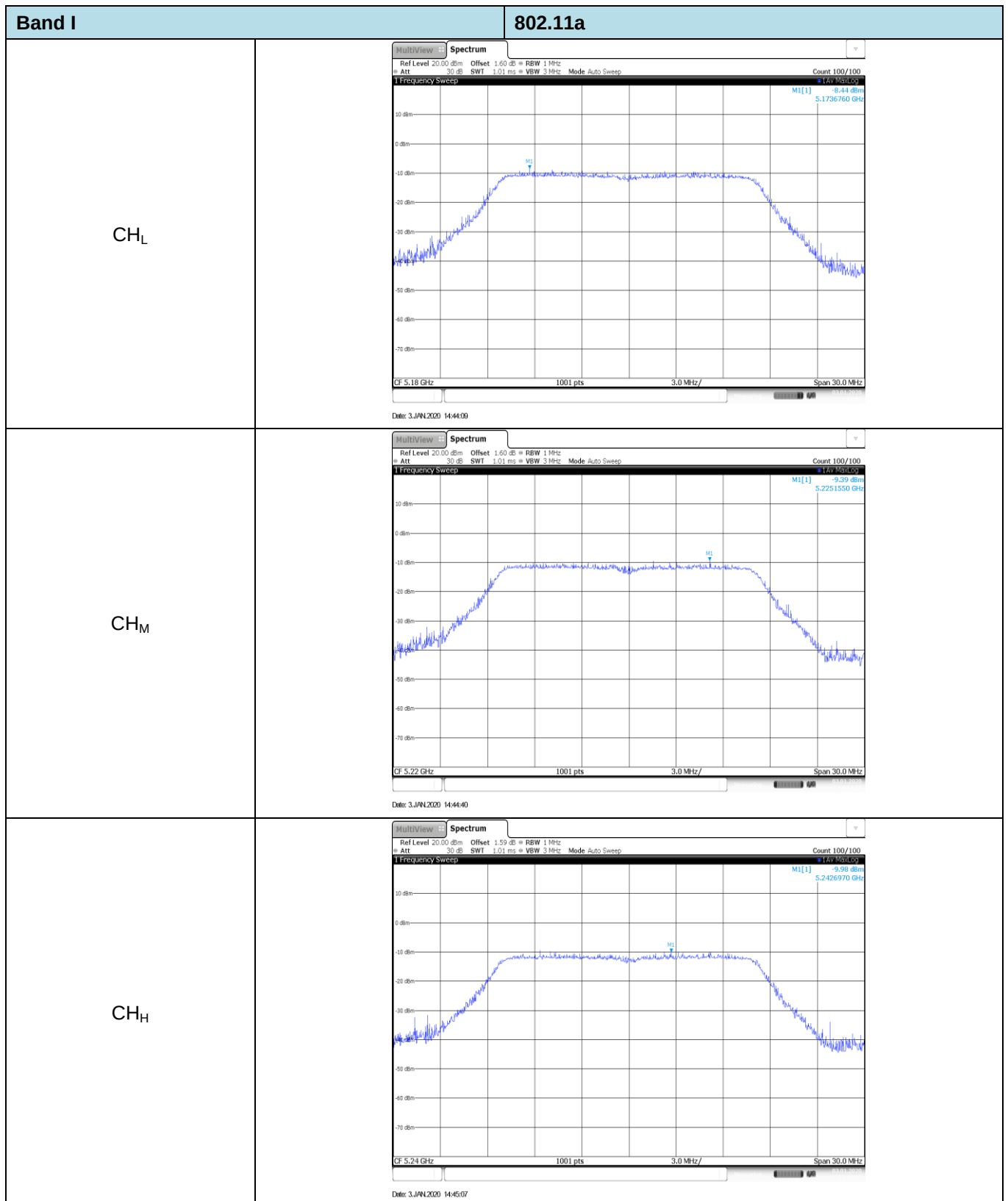
Appendix A: Maximum Conducted Output Power

Band	Bandwidth (MHz)	Type	Channel	Conducted Output Power (dBm)	Limit (dBm)	Result
I	20	802.11n	CH _L	11.29	24.00	Pass
			CH _M	9.86		
			CH _H	9.77		
		802.11a	CH _L	11.22	24.00	Pass
			CH _M	9.86		
			CH _H	9.76		
	40	802.11n	CH _L	11.40	24.00	Pass
			CH _H	10.21		
II	20	802.11n	CH _L	9.55	24.00	Pass
			CH _M	9.03		
			CH _H	7.06		
		802.11a	CH _L	9.53	24.00	Pass
			CH _M	8.96		
			CH _H	6.97		
	40	802.11n	CH _L	9.81	24.00	Pass
			CH _H	8.15		
Band	Bandwidth (MHz)	Type	Channel	Conducted Output Power (dBm)	Limit (dBm)	Result
III	20	802.11n	CH _L	5.26	24.00	Pass
			CH _M	5.67		
			CH _H	7.99		
		802.11a	CH _L	5.17	24.00	Pass
			CH _M	5.67		
			CH _H	7.94		
	40	802.11n	CH _L	5.91	24.00	Pass
			CH _M	6.21		
			CH _H	7.79		

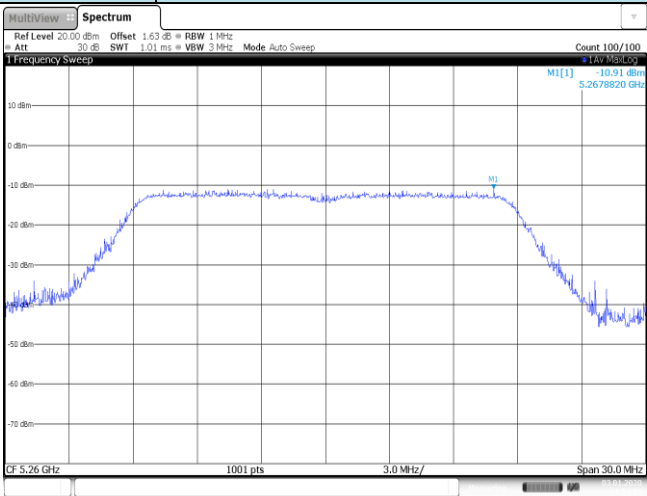
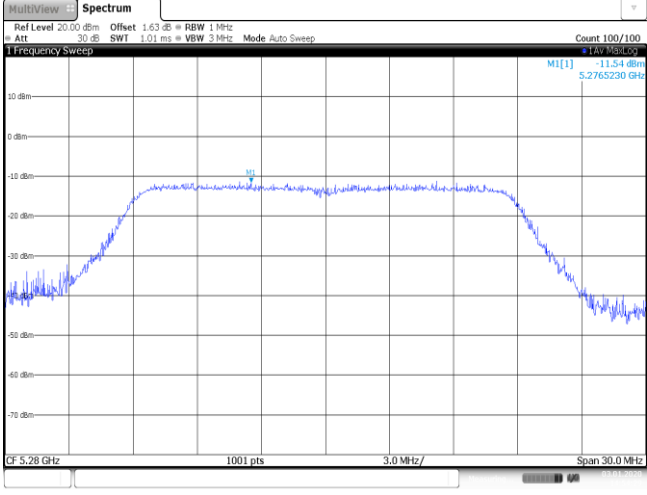
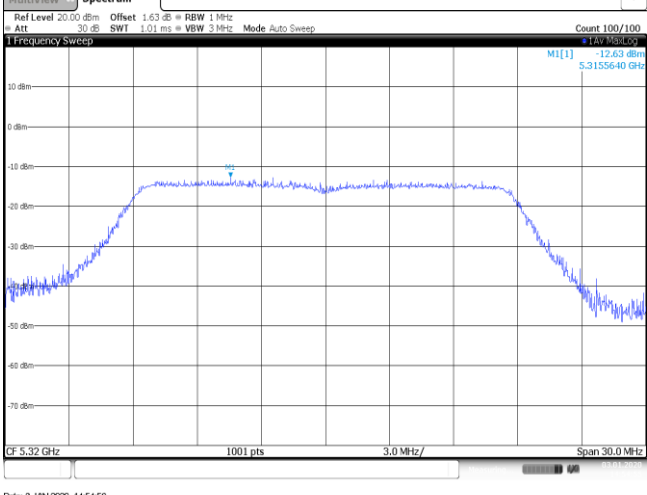
Appendix B: Maximum Power Spectral Density

Band	Bandwidth (MHz)	Type	Channel	Power Spectral Density (dBm/MHz)	Limit (dBm/MHz)	Result
I	20	802.11n	CH _L	-7.97	11.00	Pass
			CH _M	-10.04		
			CH _H	-8.91		
		802.11a	CH _L	-8.44	11.00	Pass
			CH _M	-9.39		
			CH _H	-9.98		
	40	802.11n	CH _L	-11.26	11.00	Pass
			CH _H	-12.18		
II	20	802.11n	CH _L	-10.91	11.00	Pass
			CH _M	-11.54		
			CH _H	-12.63		
		802.11a	CH _L	-10.75	11.00	Pass
			CH _M	-10.65		
			CH _H	-13.17		
	40	802.11n	CH _L	-12.81	11.00	Pass
			CH _H	-14.30		
Band	Bandwidth (MHz)	Type	Channel	Power Spectral Density (dBm/MHz)	Limit (dBm/MHz)	Result
III	20	802.11n	CH _L	-14.26	11.00	Pass
			CH _M	-12.85		
			CH _H	-9.73		
		802.11a	CH _L	-14.09	11.00	Pass
			CH _M	-12.22		
			CH _H	-9.61		
	40	802.11n	CH _L	-16.07	11.00	Pass
			CH _M	-15.40		
			CH _H	-13.34		

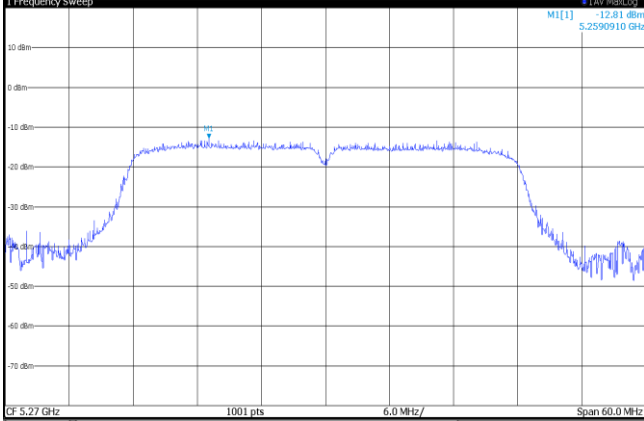
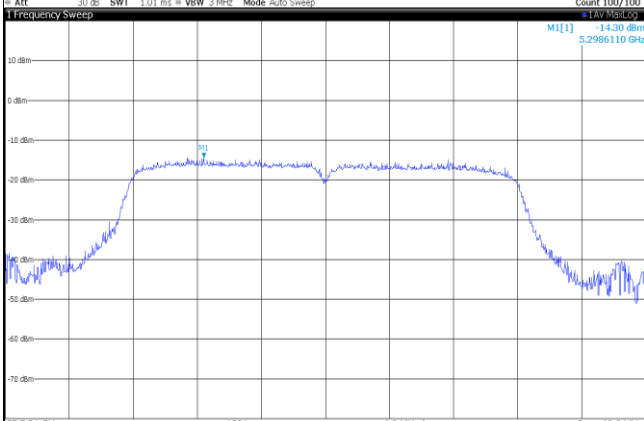


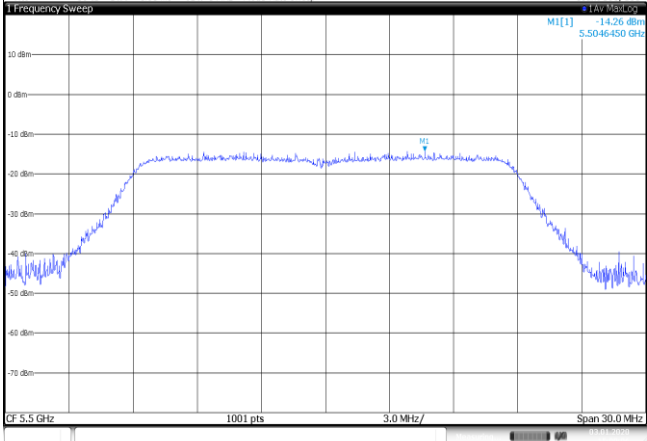
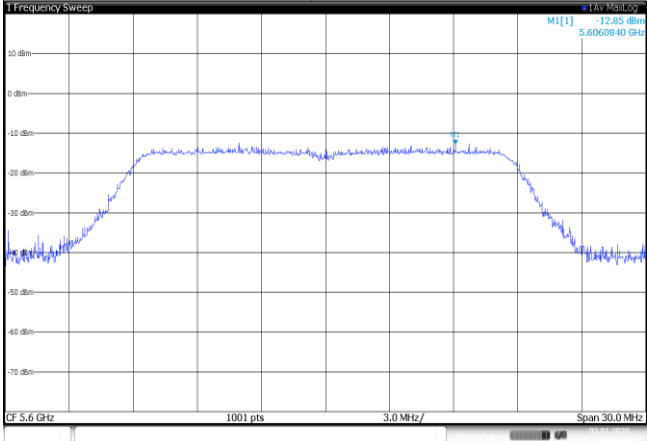
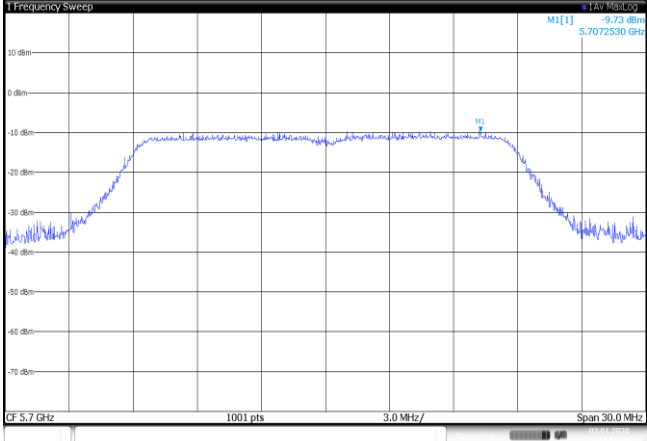


Band I		802.11n (HT40)
CH _L	MultiView Spectrum Ref Level 20.00 dBm Offset 2.19 dB RBW 1 MHz Att 30 dB SWT 1.01 ms VBW 3 MHz Mode Auto Sweep Count 100/100 1 Frequency Sweep MI[1] -11.26 dBm 5.1809490 GHz CF 5.19 GHz1001 pts6.0 MHz/Span 60.0 MHz Date: 3/JUN/2020 14:48:33	
CH _H	MultiView Spectrum Ref Level 20.00 dBm Offset 2.19 dB RBW 1 MHz Att 30 dB SWT 1.01 ms VBW 3 MHz Mode Auto Sweep Count 100/100 1 Frequency Sweep MI[1] -12.18 dBm 5.2179520 GHz CF 5.23 GHz1001 pts6.0 MHz/Span 60.0 MHz Date: 3/JUN/2020 14:48:06	

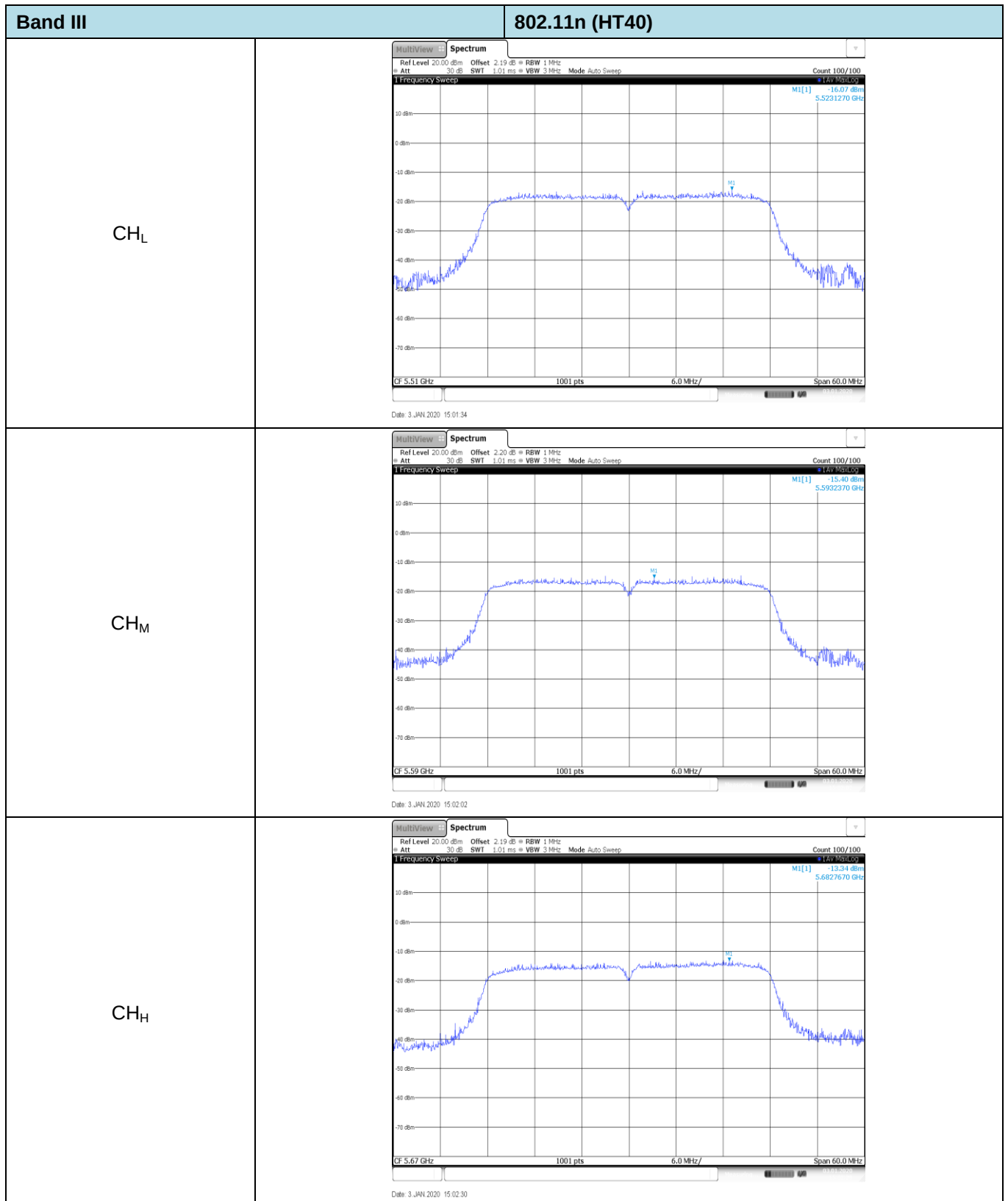
Band II		802.11n (HT20)
CH _L	MultiView Spectrum Ref Level 20.00 dBm Offset 1.63 dB RBW 1 MHz Att -30 dB SWT 1.01 ms VBW 3 MHz Mode Auto Sweep Count 100/100 1 Frequency Sweep MI[1] -10.91 dBm 5.2678820 GHz  Date: 3/JUN/2020 14:54:04	
CH _M	MultiView Spectrum Ref Level 20.00 dBm Offset 1.63 dB RBW 1 MHz Att -30 dB SWT 1.01 ms VBW 3 MHz Mode Auto Sweep Count 100/100 1 Frequency Sweep MI[1] -11.54 dBm 5.2765230 GHz  Date: 3/JUN/2020 14:54:20	
CH _H	MultiView Spectrum Ref Level 20.00 dBm Offset 1.63 dB RBW 1 MHz Att -30 dB SWT 1.01 ms VBW 3 MHz Mode Auto Sweep Count 100/100 1 Frequency Sweep MI[1] -12.63 dBm 5.3155640 GHz  Date: 3/JUN/2020 14:54:56	

Band II		802.11a
CH _L	Ref Level 20.00 dBm Offset 1.59 dB RBW 1 MHz ATT 30 dB SWT 1.01 ms VBW 3 MHz Mode Auto Sweep Count 100/100 M1[1] 10.75 dBm 5.2638060 GHz CF 5.26 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 3/JAN/2010 14:52:27	
CH _M	Ref Level 20.00 dBm Offset 1.59 dB RBW 1 MHz ATT 30 dB SWT 1.01 ms VBW 3 MHz Mode Auto Sweep Count 100/100 M1[1] 10.65 dBm 5.2838360 GHz CF 5.28 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 3/JAN/2010 14:52:53	
CH _H	Ref Level 20.00 dBm Offset 1.59 dB RBW 1 MHz ATT 30 dB SWT 1.01 ms VBW 3 MHz Mode Auto Sweep Count 100/100 M1[1] 13.17 dBm 5.3256640 GHz CF 5.32 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 3/JAN/2010 14:53:27	

Band II		802.11n (HT40)
CH _L	MultiView Spectrum Ref Level 20.00 dBm Offset 2.19 dB RBW 1 MHz Att -30 dB SWT 1.01 ms VBW 3 MHz Mode Auto Sweep Count 100/100 1 Frequency Sweep MU[1] -12.81 dBm 5.2590910 GHz  CF 5.27 GHz 1001 pts 6.0 MHz/ Span 60.0 MHz Date: 3/JUN/2020 14:55:41	
CH _H	MultiView Spectrum Ref Level 20.00 dBm Offset 2.19 dB RBW 1 MHz Att -30 dB SWT 1.01 ms VBW 3 MHz Mode Auto Sweep Count 100/100 1 Frequency Sweep MU[1] -14.30 dBm 5.2986110 GHz  CF 5.31 GHz 1001 pts 6.0 MHz/ Span 60.0 MHz Date: 3/JUN/2020 14:56:10	

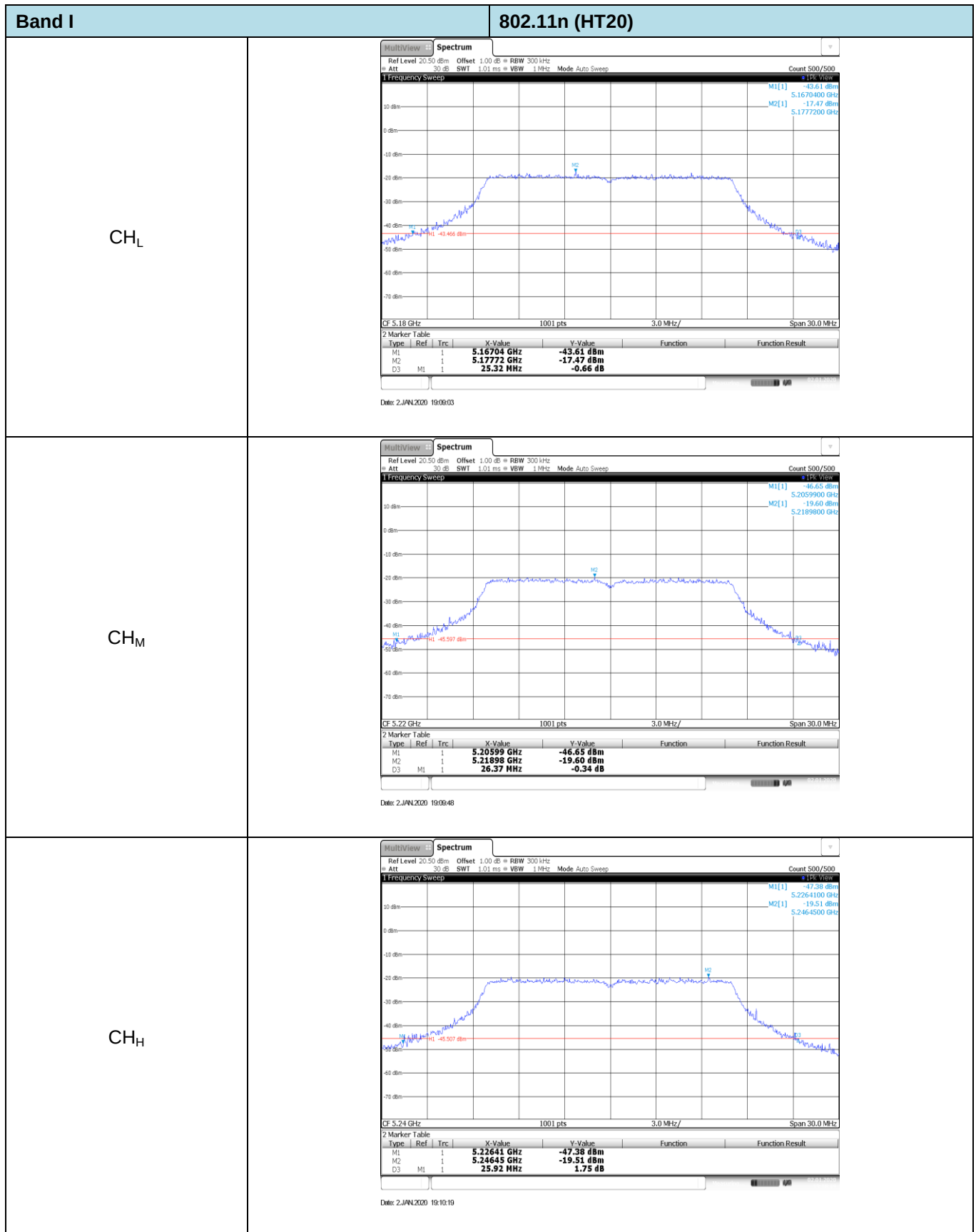
Band III		802.11n (HT20)
CH _L	MultiView Spectrum Ref Level 20.00 dBm Offset 1.64 dB RBW 1 MHz Att 30 dB SWT 1.01 ms VBW 3 MHz Mode Auto Sweep Count 100/100 1 Frequency Sweep MI[1] -14.26 dBm 5.5046450 GHz  CF 5.5 GHz1001 pts3.0 MHz/Span 30.0 MHz Date: 3 JAN 2020 15:00:07	
CH _M	MultiView Spectrum Ref Level 20.00 dBm Offset 1.64 dB RBW 1 MHz Att 30 dB SWT 1.01 ms VBW 3 MHz Mode Auto Sweep Count 100/100 1 Frequency Sweep MI[1] -12.85 dBm 5.6060840 GHz  CF 5.6 GHz1001 pts3.0 MHz/Span 30.0 MHz Date: 3 JAN 2020 15:00:38	
CH _H	MultiView Spectrum Ref Level 20.00 dBm Offset 1.64 dB RBW 1 MHz Att 30 dB SWT 1.01 ms VBW 3 MHz Mode Auto Sweep Count 100/100 1 Frequency Sweep MI[1] -9.73 dBm 5.7072530 GHz  CF 5.7 GHz1001 pts3.0 MHz/Span 30.0 MHz Date: 3 JAN 2020 15:01:01	

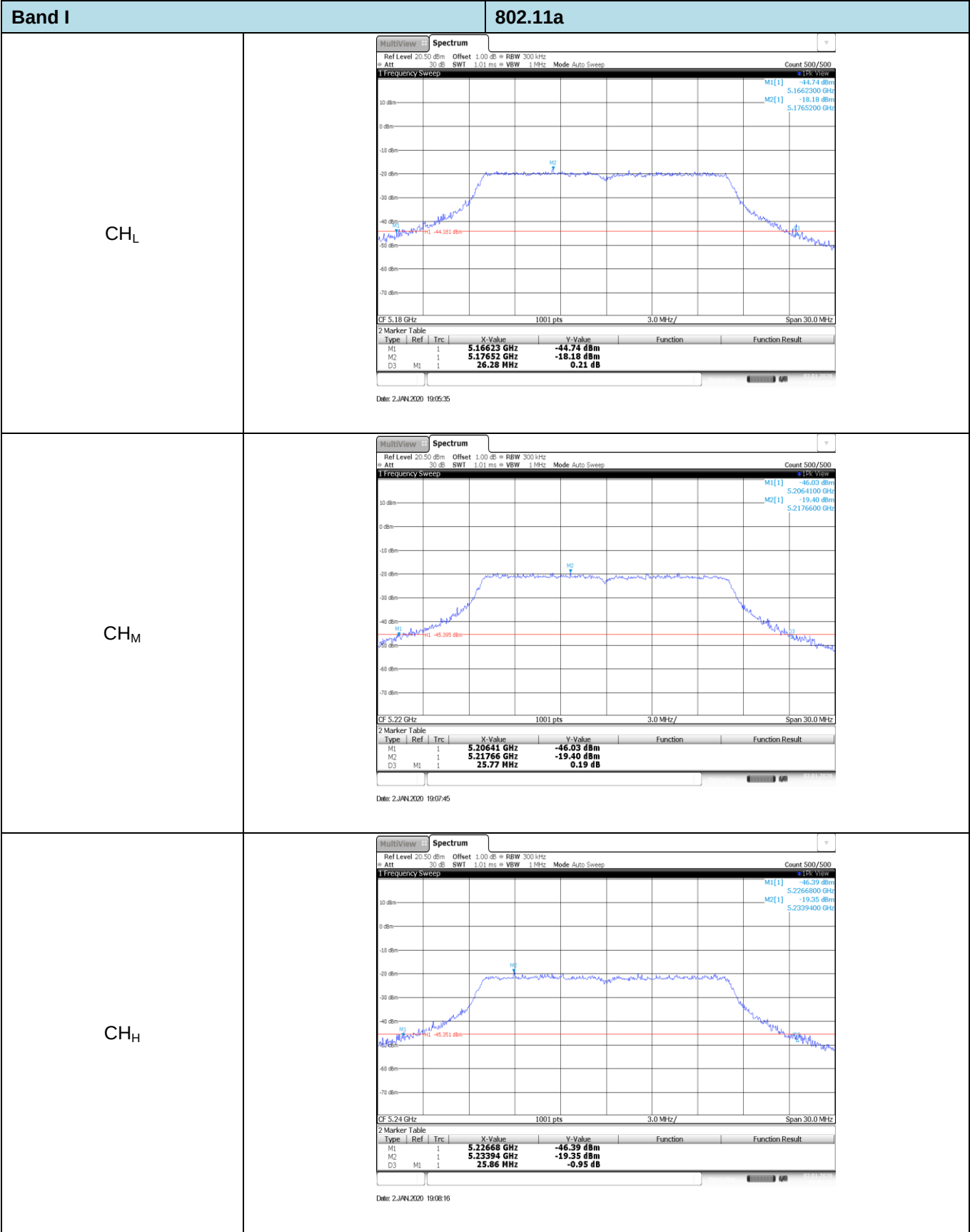
Band III		802.11a
CH _L	MultiView Spectrum Ref Level 20.00 dBm Offset 1.60 dB RBW 1 MHz Att 30 dB SWT 1.01 ms VBW 3 MHz Mode Auto Sweep Count 100/100 1 Frequency Sweep 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.5 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz M1[1] -14.09 dBm 5.4954750 GHz Date: 3 JAN 2020 14:58:46	
CH _M	MultiView Spectrum Ref Level 20.00 dBm Offset 1.60 dB RBW 1 MHz Att 30 dB SWT 1.01 ms VBW 3 MHz Mode Auto Sweep Count 100/100 1 Frequency Sweep 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.6 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz M1[1] -12.22 dBm 5.6025770 GHz Date: 3 JAN 2020 14:59:13	
CH _H	MultiView Spectrum Ref Level 20.00 dBm Offset 1.60 dB RBW 1 MHz Att 30 dB SWT 1.01 ms VBW 3 MHz Mode Auto Sweep Count 100/100 1 Frequency Sweep 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.7 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz M1[1] -9.61 dBm 5.7062340 GHz Date: 3 JAN 2020 14:59:36	

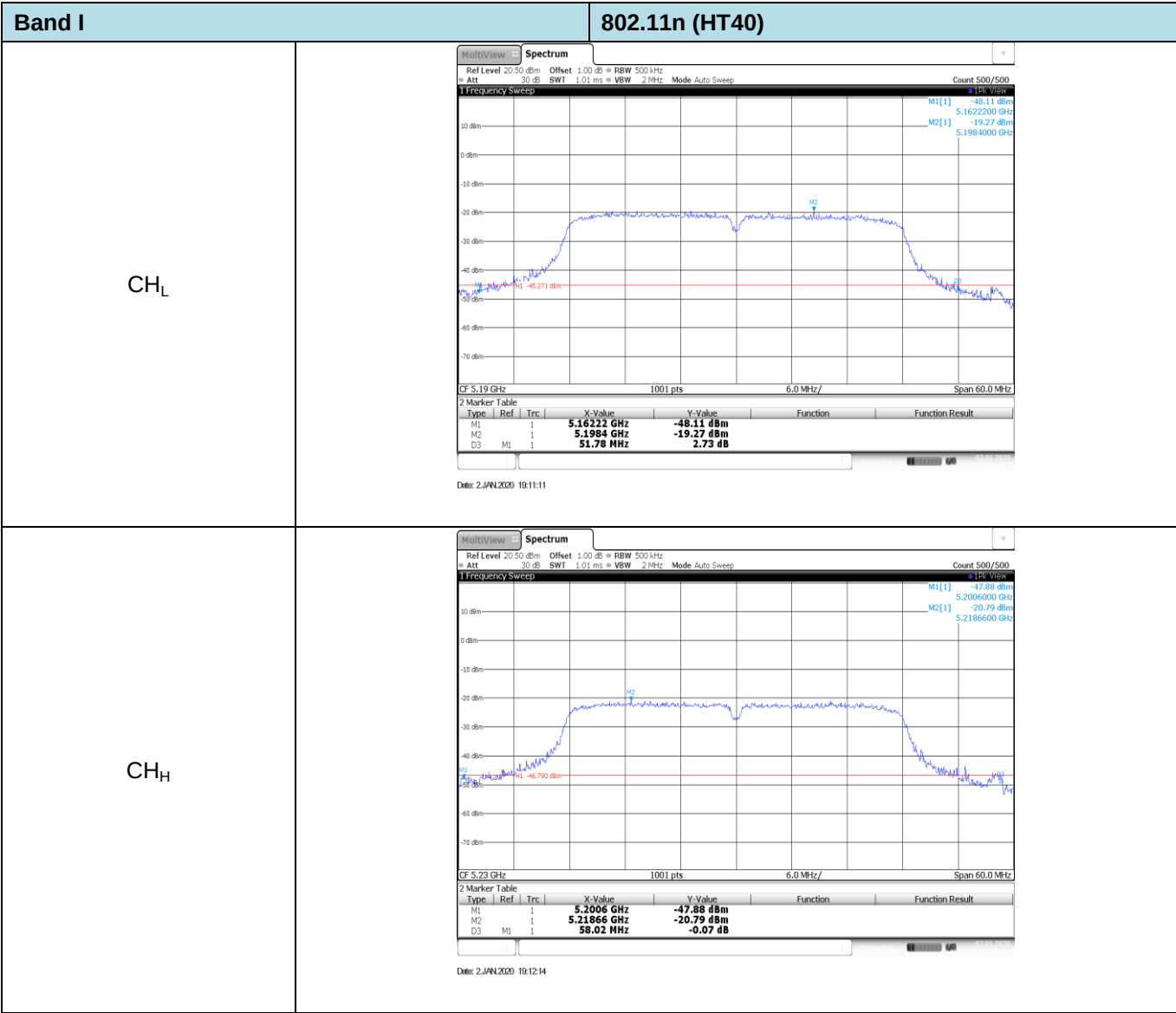


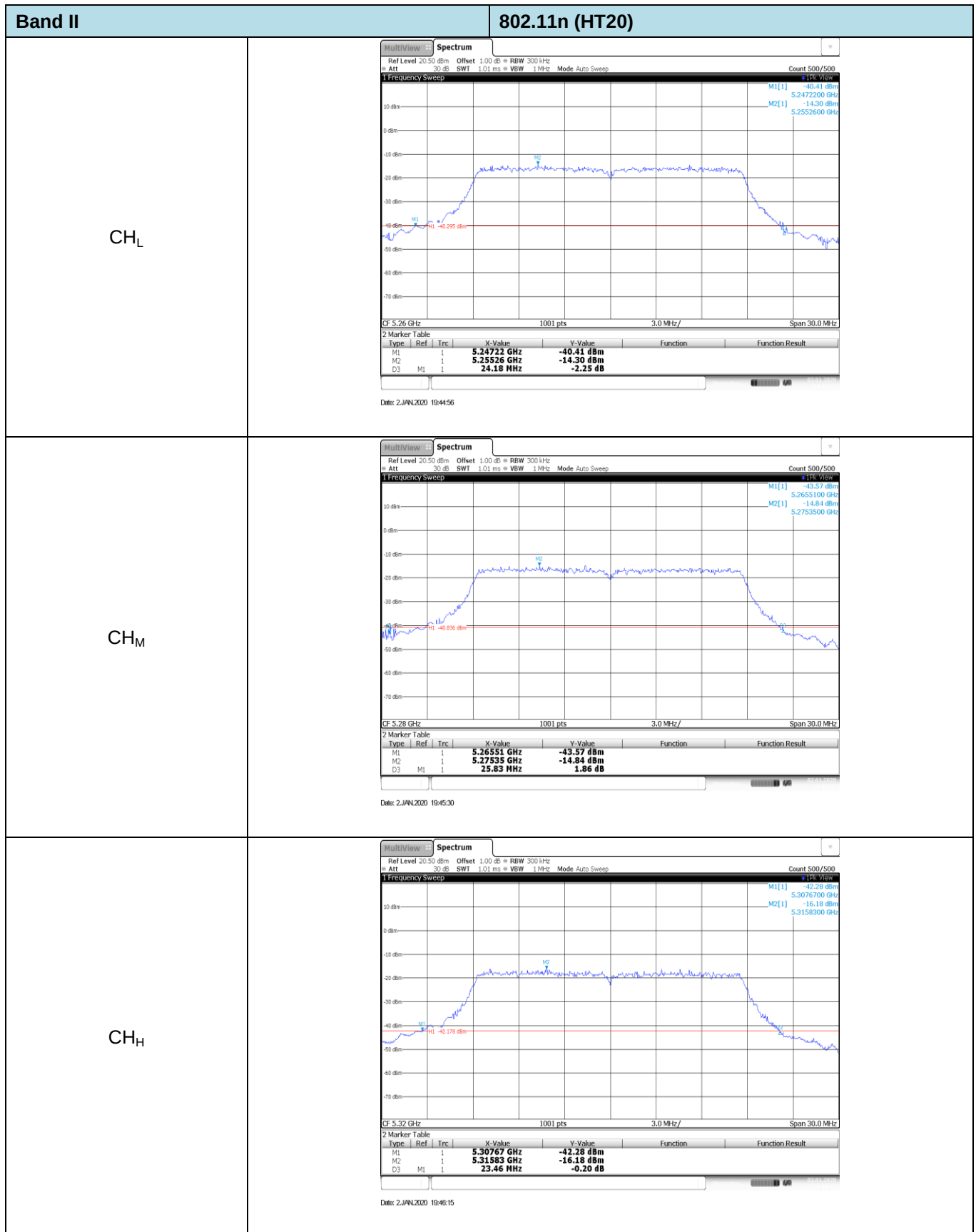
Appendix C: 26dB bandwidth

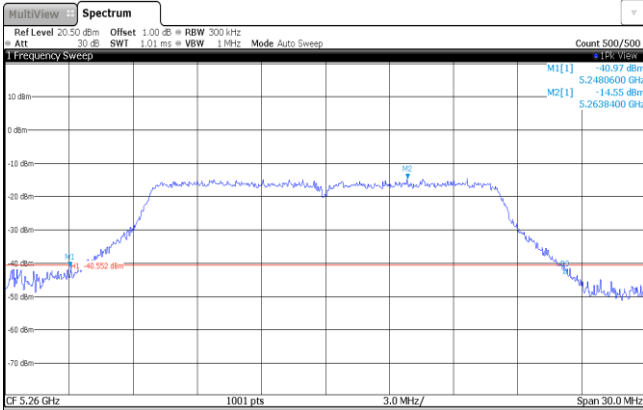
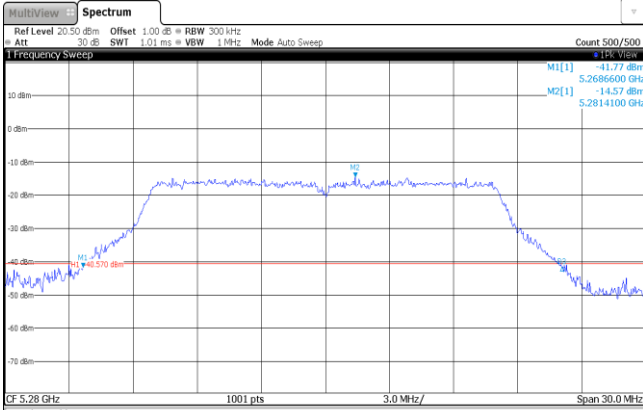
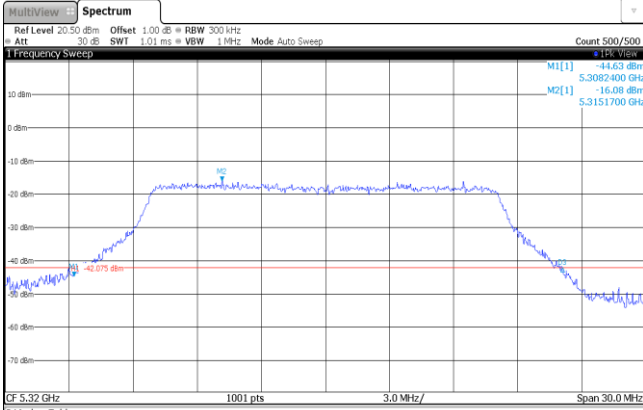
Band	Bandwidth (MHz)	Type	Channel	26dB bandwidth (MHz)	Result
I	20	802.11n	CH _L	25.32	Pass
			CH _M	26.37	
			CH _H	25.92	
		802.11a	CH _L	26.28	Pass
			CH _M	25.77	
			CH _H	25.86	
	40	802.11n	CH _L	51.78	Pass
			CH _H	58.02	
II	20	802.11n	CH _L	24.18	Pass
			CH _M	25.83	
			CH _H	23.46	
		802.11a	CH _L	23.16	Pass
			CH _M	22.41	
			CH _H	22.86	
	40	802.11n	CH _L	53.94	Pass
			CH _H	57.84	
Band	Bandwidth (MHz)	Type	Channel	26dB bandwidth (MHz)	Result
III	20	802.11n	CH _L	23.43	Pass
			CH _M	23.10	
			CH _H	22.92	
		802.11a	CH _L	23.19	Pass
			CH _M	22.62	
			CH _H	22.71	
	40	802.11n	CH _L	60.00	Pass
			CH _M	58.62	
			CH _H	59.94	

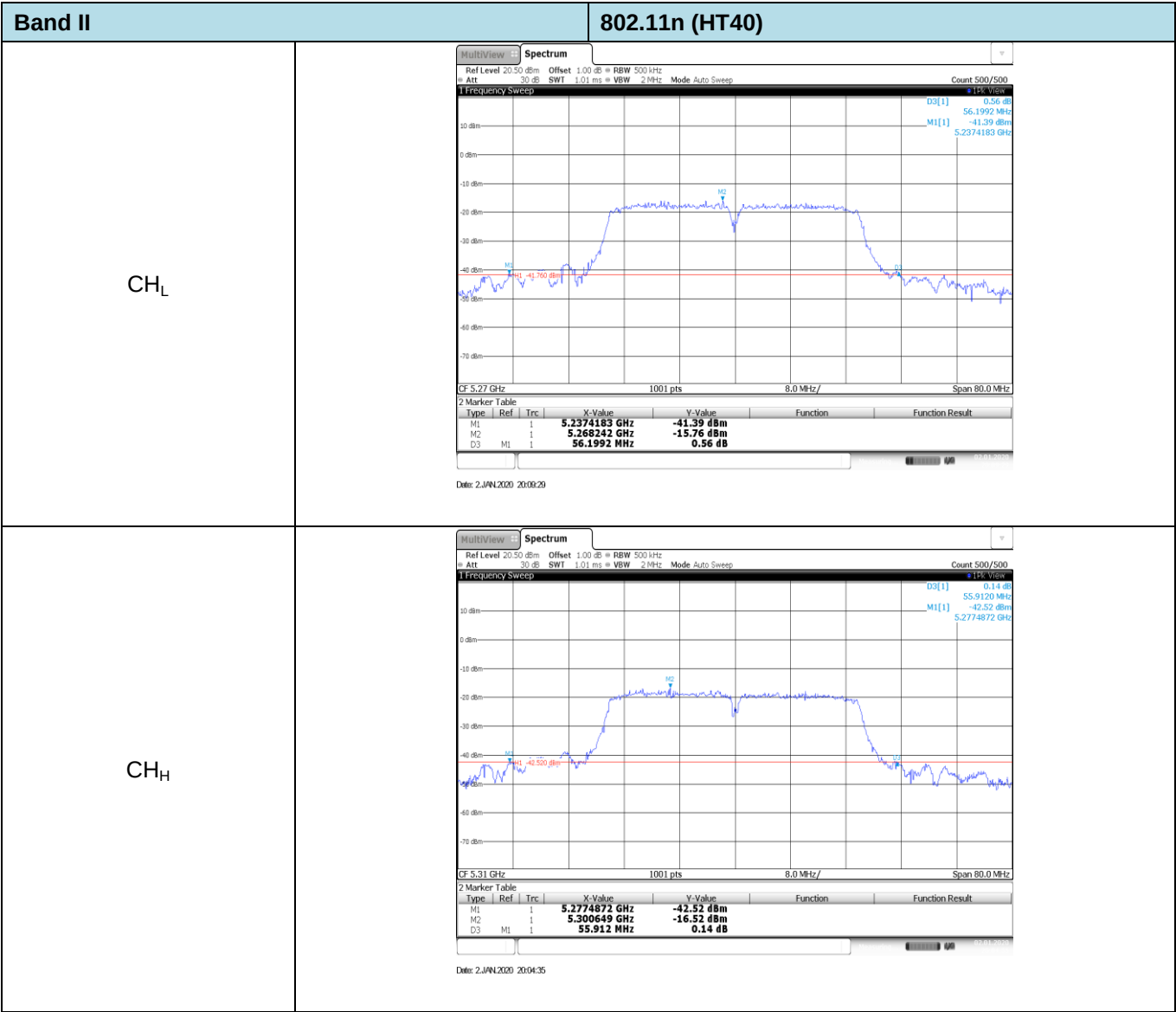


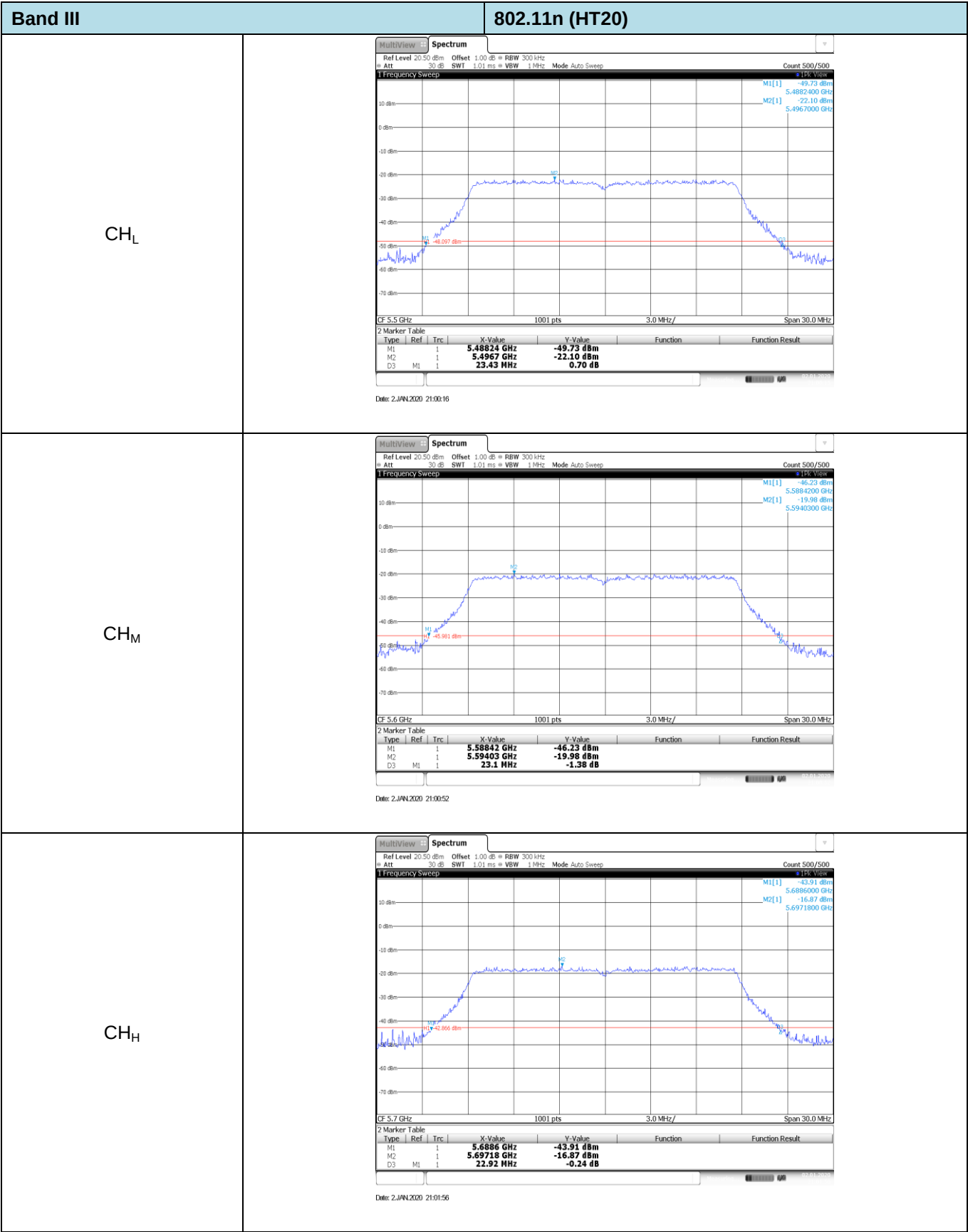


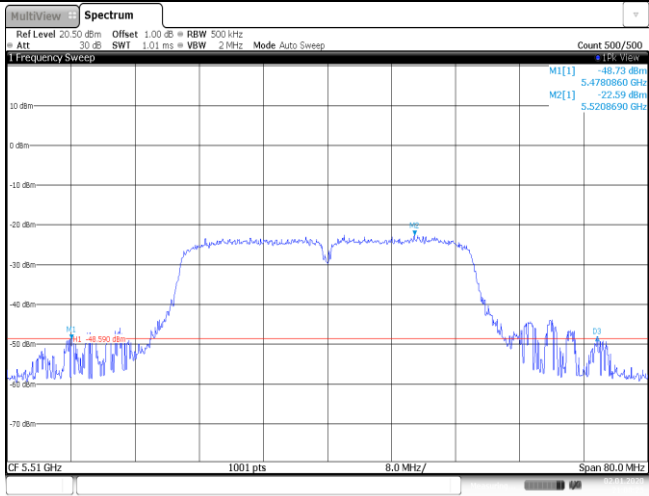
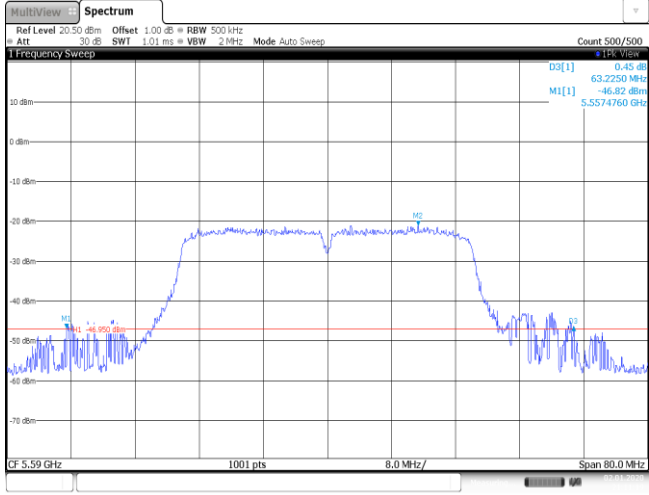
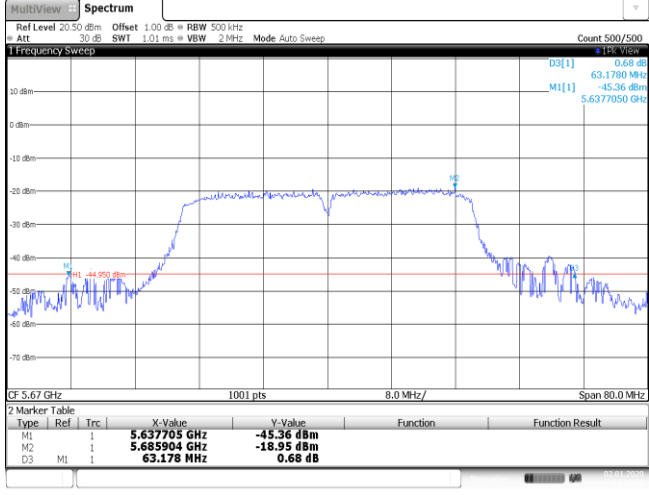




Band II		802.11a																											
CH _L	MultiView Spectrum Ref Level 20.50 dBm Offset 1.00 dB RBW 300 kHz Att 30 dB SWF 1.01 ms VBW 1 MHz Mode Auto Sweep Count 500/500 1 Frequency Sweep  CF 5.26 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz 2 Marker Table <table><tr><th>Type</th><th>Ref</th><th>Trc</th><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>5.24806 GHz</td><td>-40.97 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>5.26384 GHz</td><td>-14.55 dBm</td><td></td><td></td></tr><tr><td>D3</td><td>M1</td><td>1</td><td>23.16 MHz</td><td>-0.82 dB</td><td></td><td></td></tr></table> Date: 2 JUN 2020 19:39:53	Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		5.24806 GHz	-40.97 dBm			M2	1		5.26384 GHz	-14.55 dBm			D3	M1	1	23.16 MHz	-0.82 dB		
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																							
M1	1		5.24806 GHz	-40.97 dBm																									
M2	1		5.26384 GHz	-14.55 dBm																									
D3	M1	1	23.16 MHz	-0.82 dB																									
CH _M	MultiView Spectrum Ref Level 20.50 dBm Offset 1.00 dB RBW 300 kHz Att 30 dB SWF 1.01 ms VBW 1 MHz Mode Auto Sweep Count 500/500 1 Frequency Sweep  CF 5.28 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>5.26866 GHz</td><td>-41.77 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>5.28141 GHz</td><td>-14.57 dBm</td><td></td><td></td></tr><tr><td>D3</td><td>M1</td><td>1</td><td>22.41 MHz</td><td>0.24 dB</td><td></td><td></td></tr></table> Date: 2 JUN 2020 19:41:51	Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		5.26866 GHz	-41.77 dBm			M2	1		5.28141 GHz	-14.57 dBm			D3	M1	1	22.41 MHz	0.24 dB		
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																							
M1	1		5.26866 GHz	-41.77 dBm																									
M2	1		5.28141 GHz	-14.57 dBm																									
D3	M1	1	22.41 MHz	0.24 dB																									
CH _H	MultiView Spectrum Ref Level 20.50 dBm Offset 1.00 dB RBW 300 kHz Att 30 dB SWF 1.01 ms VBW 1 MHz Mode Auto Sweep Count 500/500 1 Frequency Sweep  CF 5.32 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>5.30824 GHz</td><td>-44.63 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>5.31517 GHz</td><td>-16.08 dBm</td><td></td><td></td></tr><tr><td>D3</td><td>M1</td><td>1</td><td>22.86 MHz</td><td>2.51 dB</td><td></td><td></td></tr></table> Date: 2 JUN 2020 19:42:41	Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		5.30824 GHz	-44.63 dBm			M2	1		5.31517 GHz	-16.08 dBm			D3	M1	1	22.86 MHz	2.51 dB		
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																							
M1	1		5.30824 GHz	-44.63 dBm																									
M2	1		5.31517 GHz	-16.08 dBm																									
D3	M1	1	22.86 MHz	2.51 dB																									

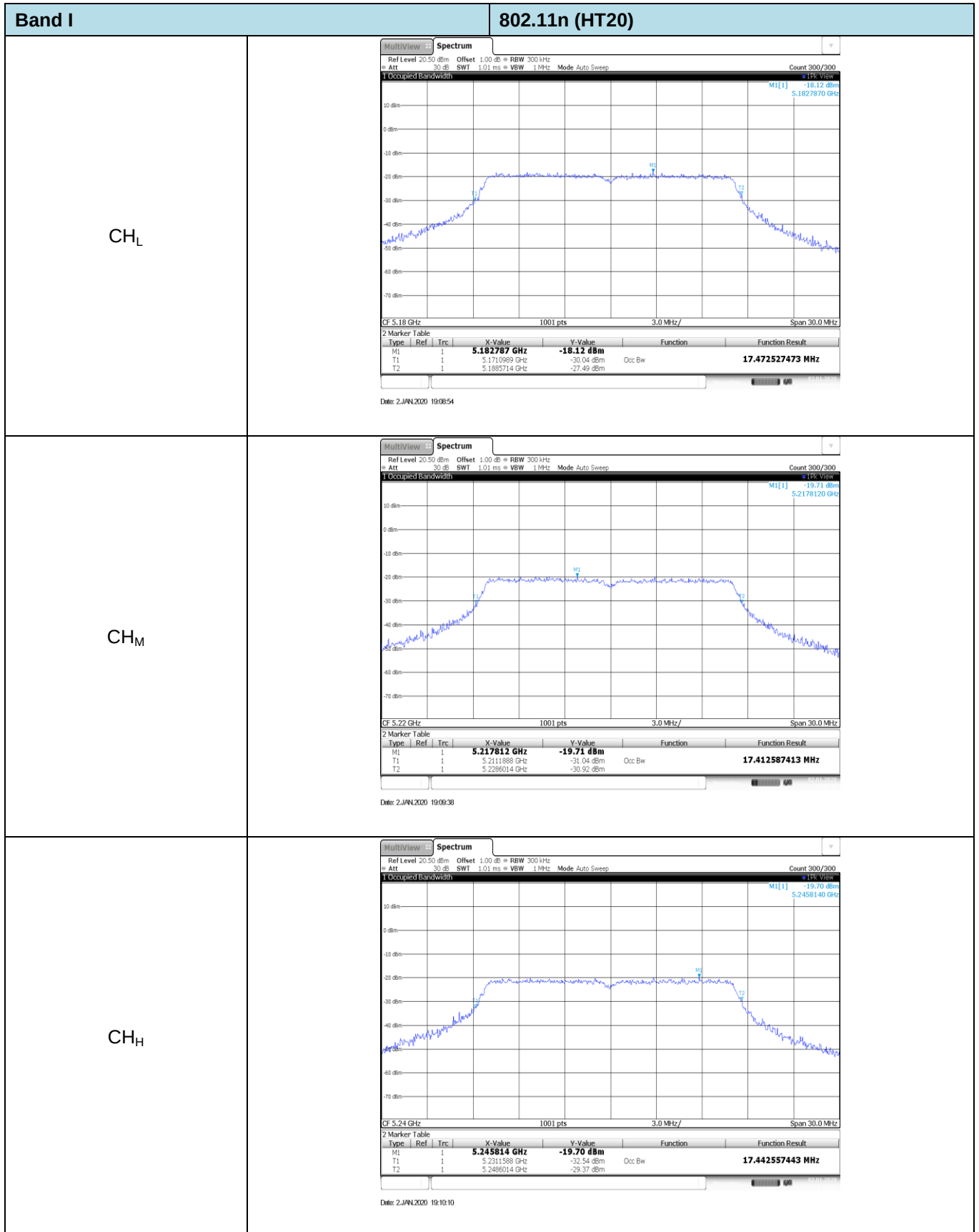


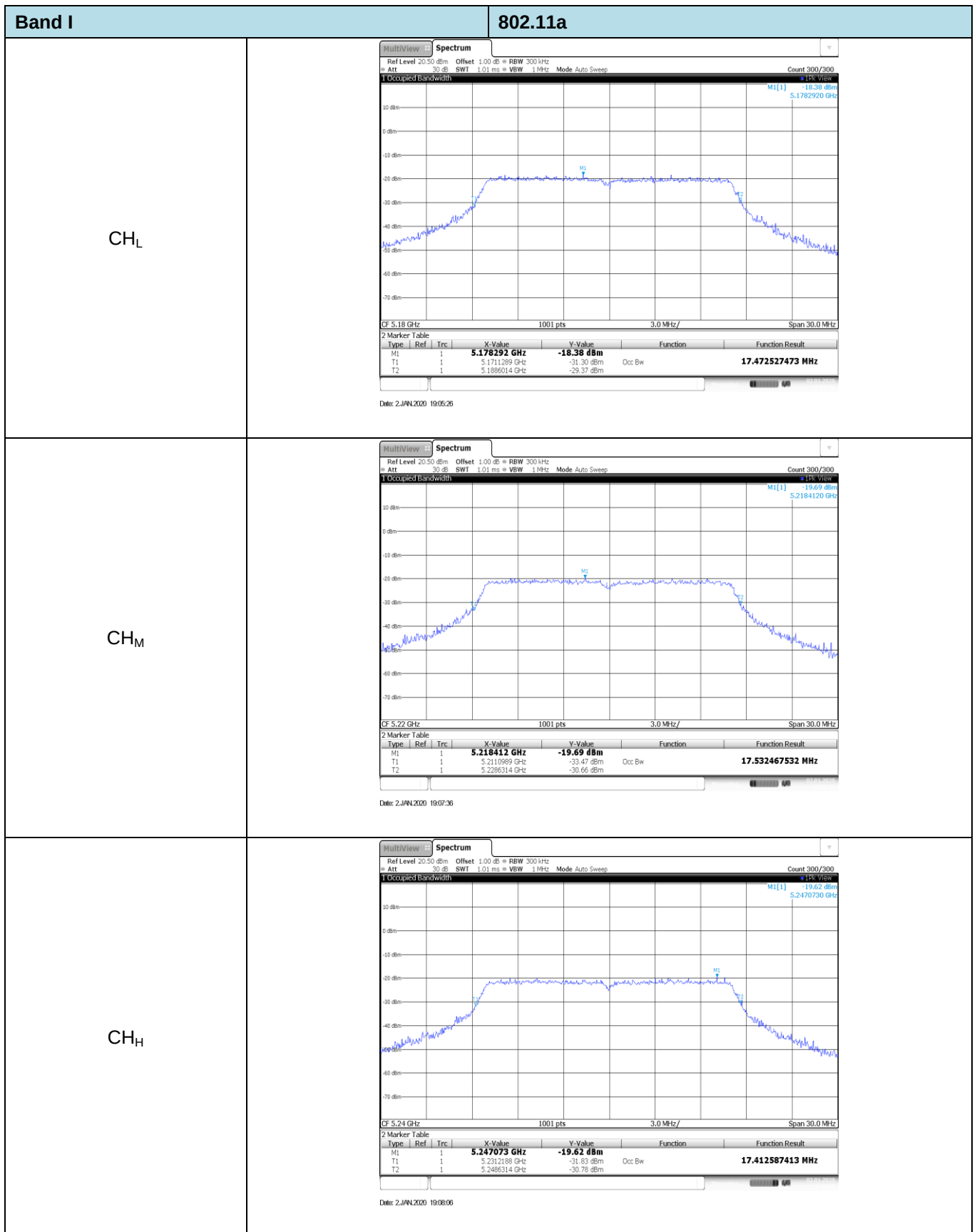


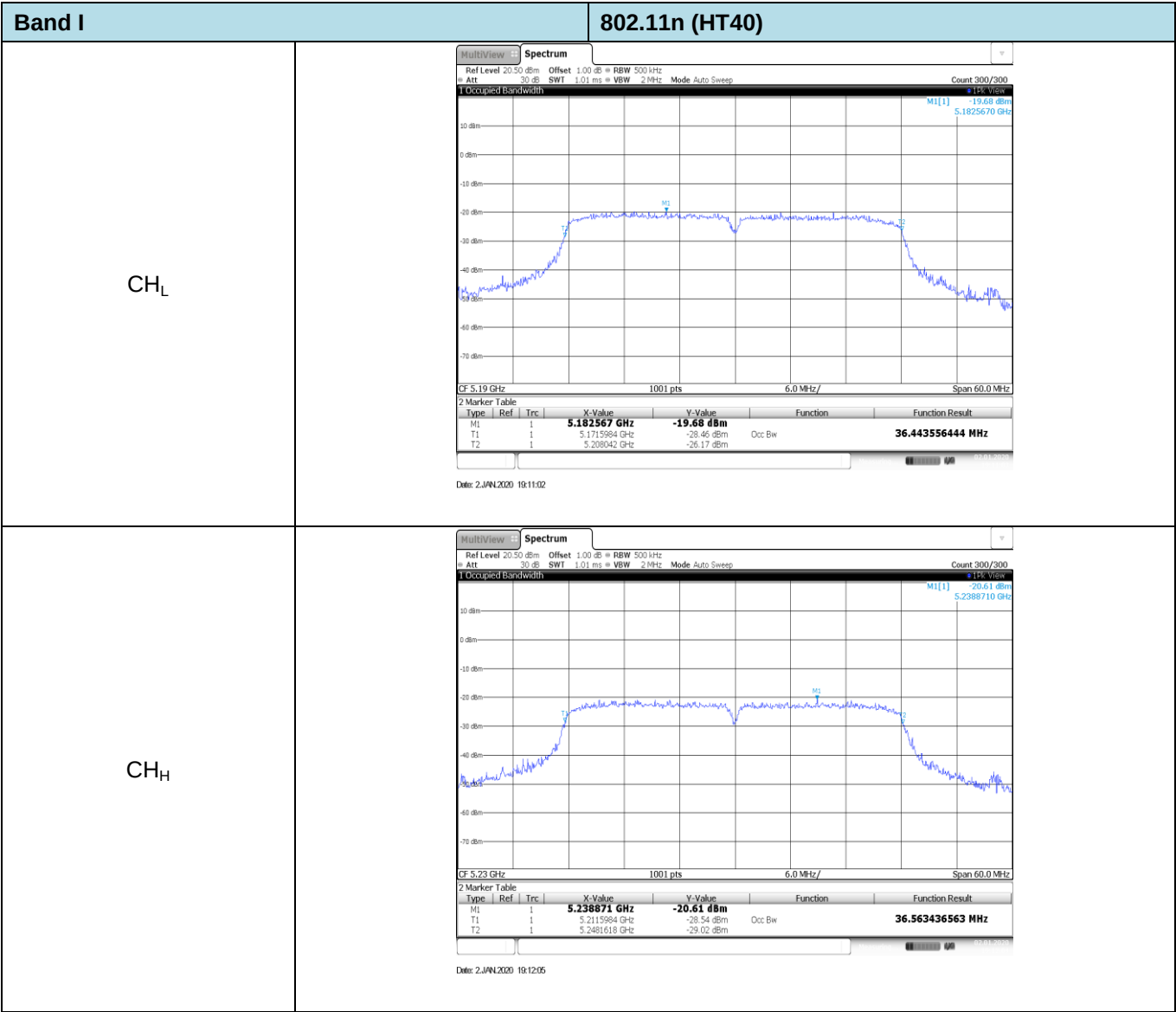
Band III	802.11n (HT40)
CH _L	 Ref Level 20.50 dBm Offset 1.00 dB BW 500 kHz ATT 30 dB SWF 1.01 ms VBW 2 MHz Mode Auto Sweep Count 500/500 Frequency Sweep M1[1] -48.73 dBm M2[1] -22.59 dBm CF 5.51 GHz 1001 pts 8.0 MHz/ Span 80.0 MHz Date: 2/JAN/2020 21:08:24
CH _M	 Ref Level 20.50 dBm Offset 1.00 dB BW 500 kHz ATT 30 dB SWF 1.01 ms VBW 2 MHz Mode Auto Sweep Count 500/500 Frequency Sweep M1[1] -46.82 dBm M2[1] -22.59 dBm CF 5.59 GHz 1001 pts 8.0 MHz/ Span 80.0 MHz Date: 2/JAN/2020 21:11:19
CH _H	 Ref Level 20.50 dBm Offset 1.00 dB BW 500 kHz ATT 30 dB SWF 1.01 ms VBW 2 MHz Mode Auto Sweep Count 500/500 Frequency Sweep M1[1] -45.36 dBm M2[1] -18.95 dBm CF 5.67 GHz 1001 pts 8.0 MHz/ Span 80.0 MHz Date: 2/JAN/2020 21:16:03

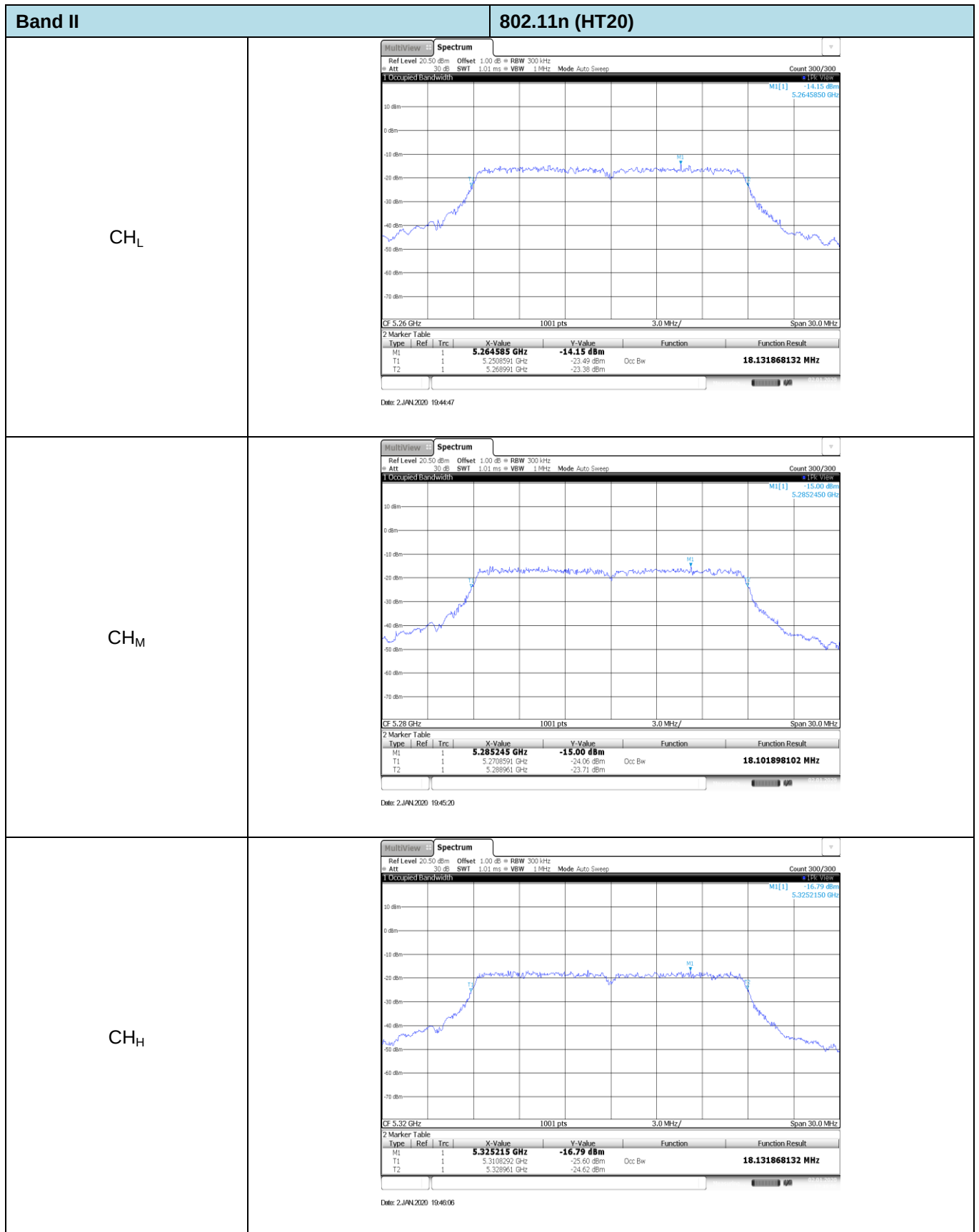
Appendix D: 99% Occupy bandwidth

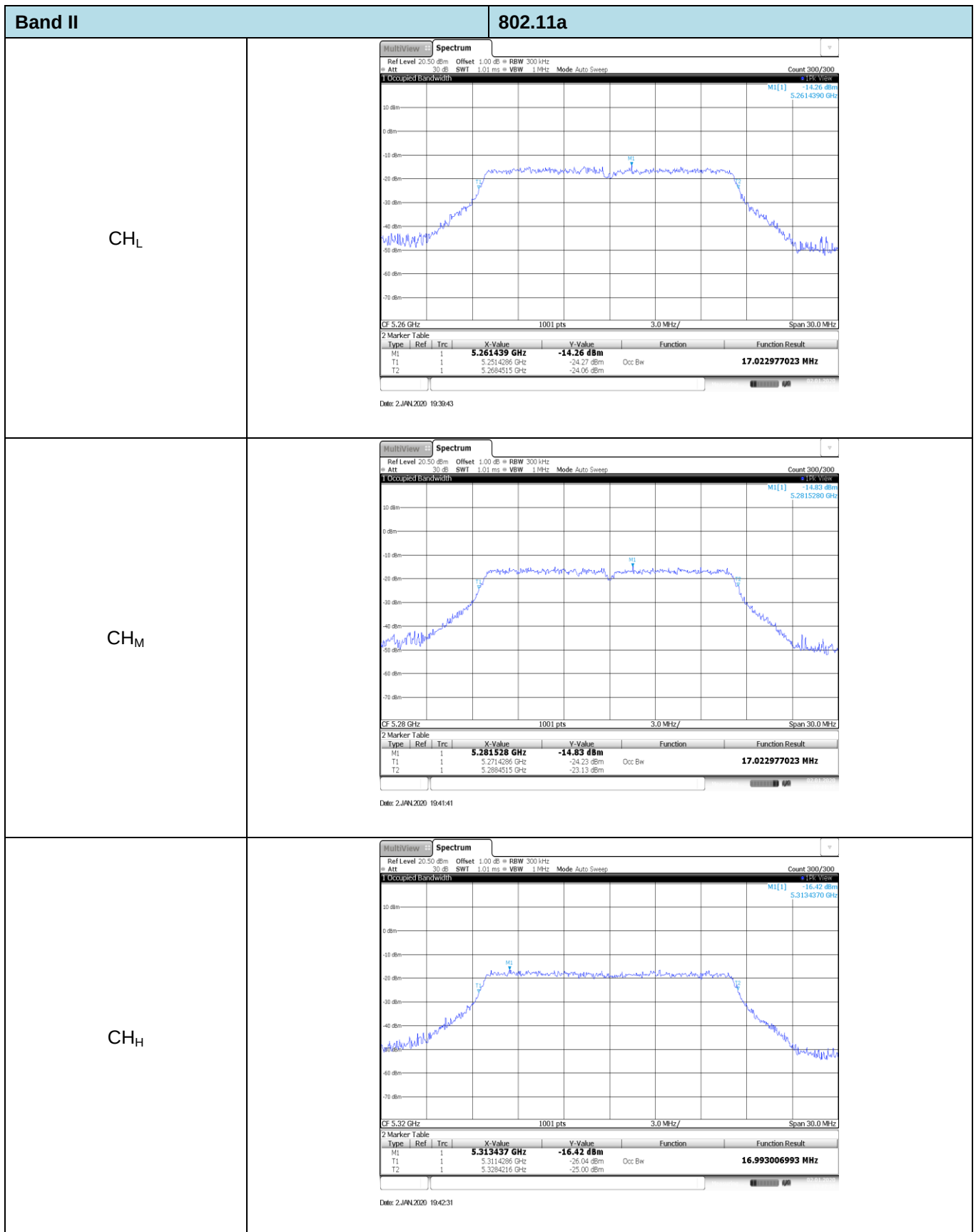
Band	Bandwidth (MHz)	Type	Channel	99% Occupy bandwidth (MHz)	Result
I	20	802.11n	CH _L	17.47	Pass
			CH _M	17.41	
			CH _H	17.44	
		802.11a	CH _L	17.47	Pass
			CH _M	17.53	
			CH _H	17.41	
	40	802.11n	CH _L	36.44	Pass
			CH _H	36.56	
II	20	802.11n	CH _L	18.13	Pass
			CH _M	18.10	
			CH _H	18.13	
		802.11a	CH _L	17.02	Pass
			CH _M	17.02	
			CH _H	16.99	
	40	802.11n	CH _L	36.62	Pass
			CH _H	36.62	
Band	Bandwidth (MHz)	Type	Channel	99% Occupy bandwidth (MHz)	Result
III	20	802.11n	CH _L	18.19	Pass
			CH _M	18.16	
			CH _H	18.16	
		802.11a	CH _L	17.20	Pass
			CH _M	17.26	
			CH _H	17.20	
	40	802.11n	CH _L	36.56	Pass
			CH _M	36.50	
			CH _H	36.50	

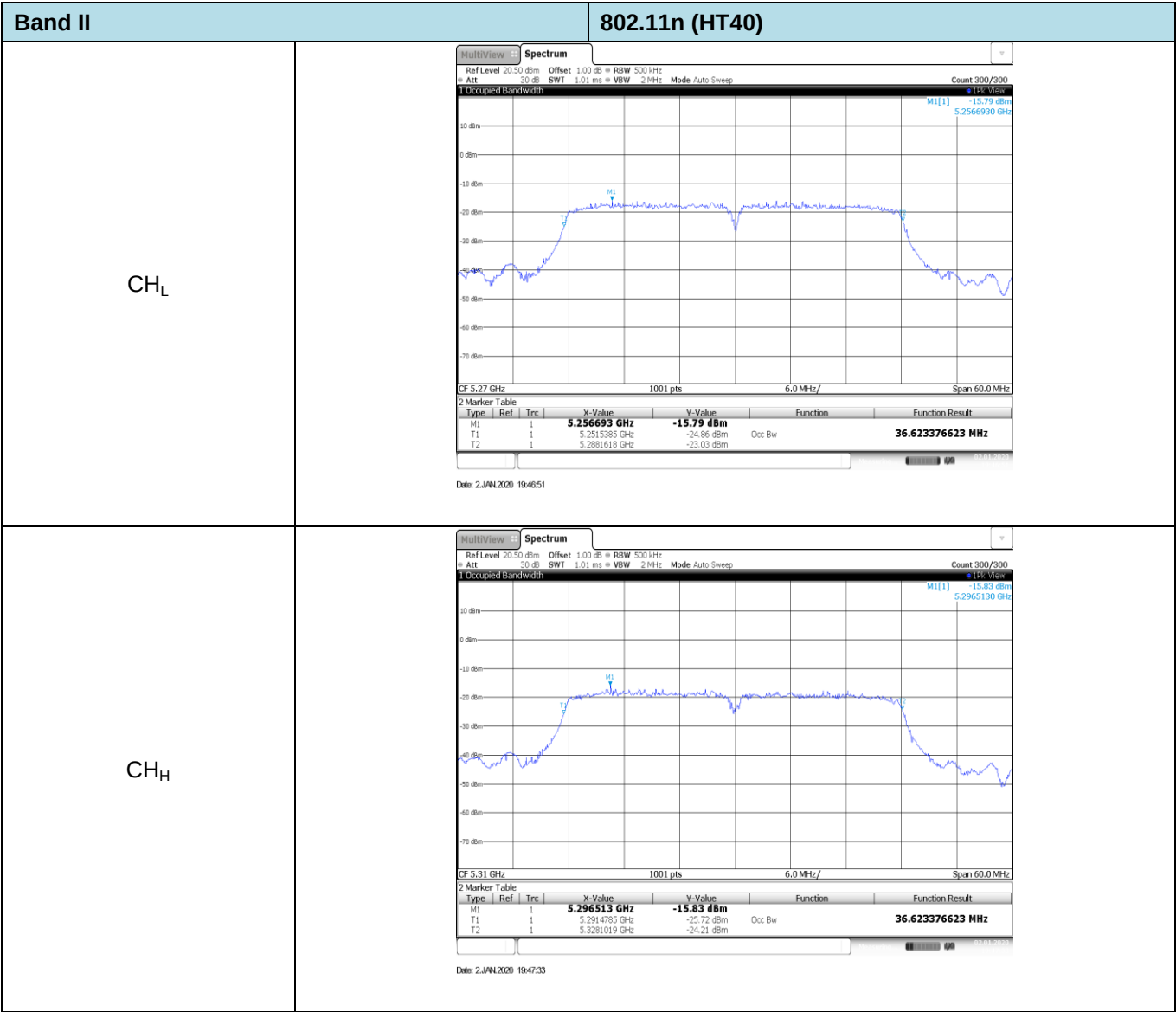


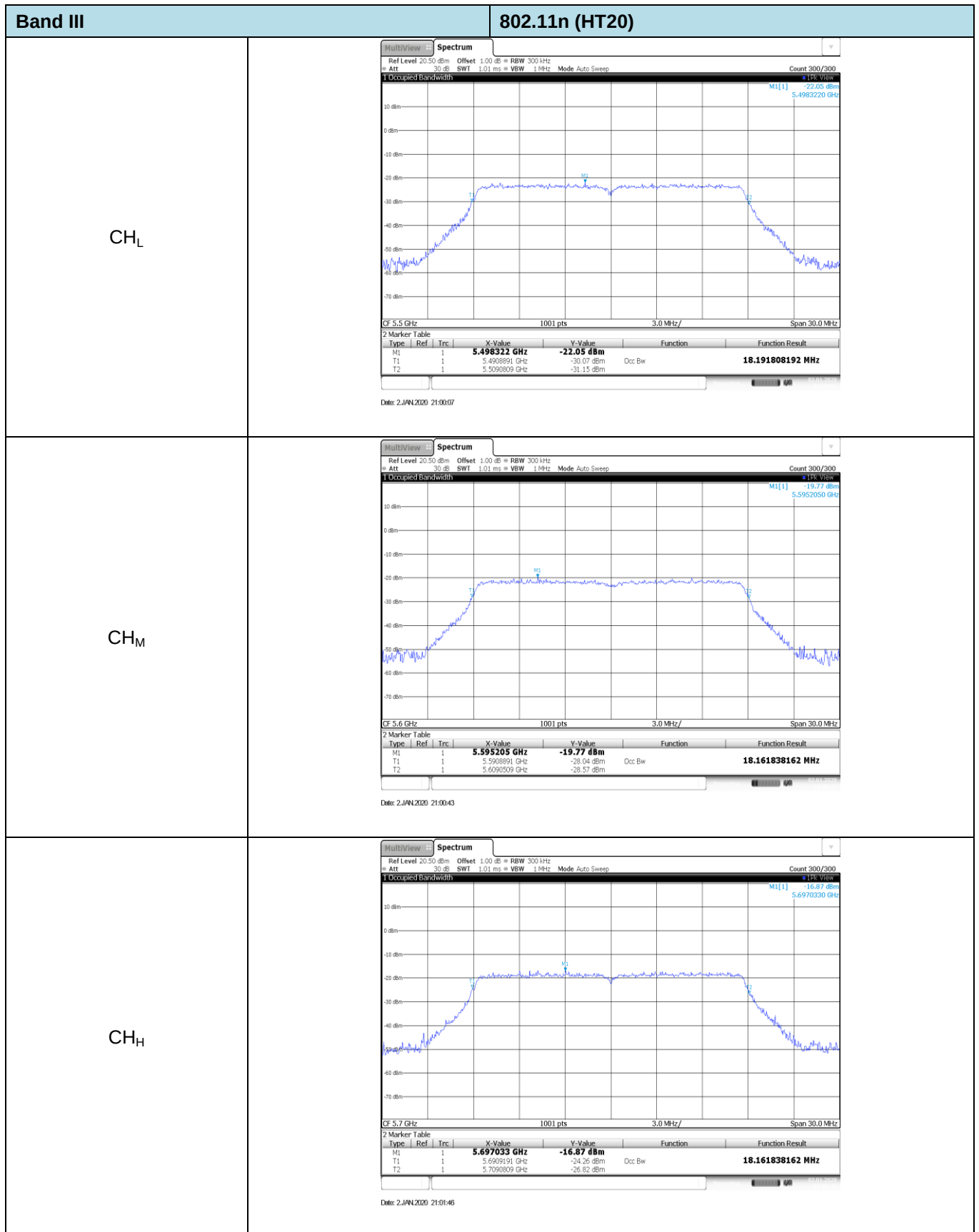


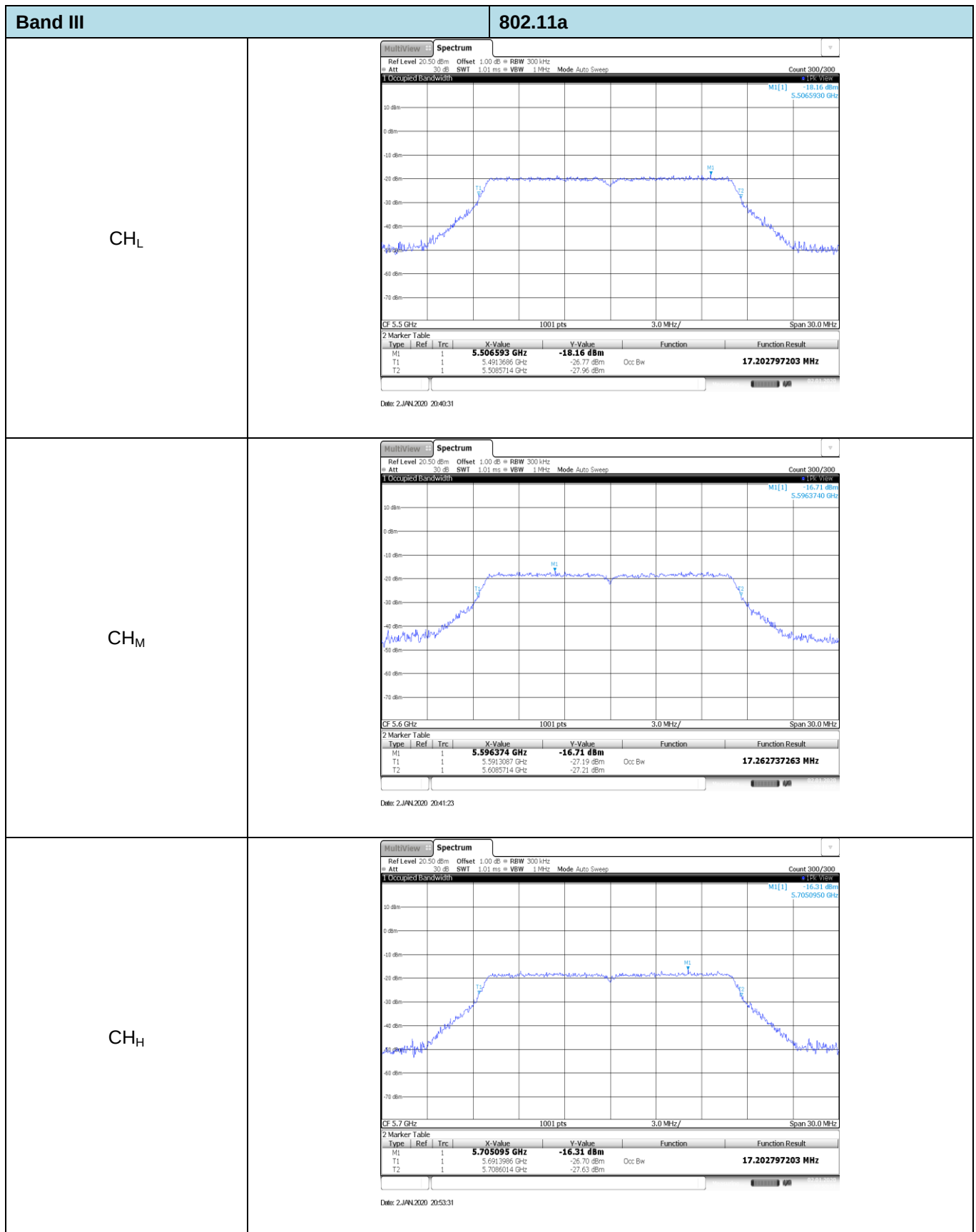


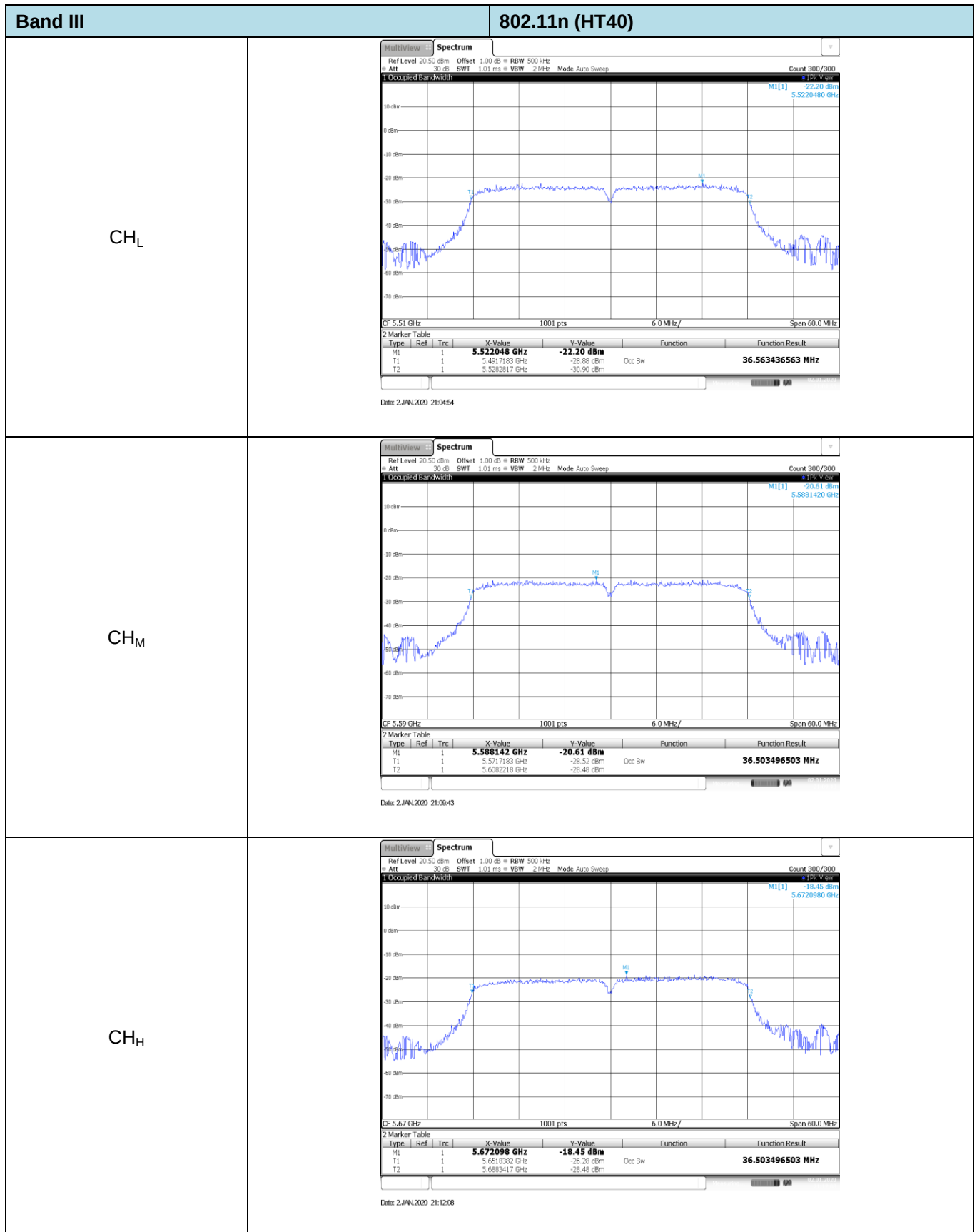












Appendix E: Frequency stability**Voltage VS Frequency stability**

Band: I			Test Frequency: 5180.00MHz	
Temperature (°C)	Voltage (V)	Frequency Deviation (Hz)	Frequency Deviation (ppm)	Result
25	V _L	-26000.00	-5.01931	PASS
25	V _N	-26000.00	-5.01931	PASS
25	V _H	-26000.00	-5.01931	PASS

Band: II			Test Frequency: 5260.00MHz	
Temperature (°C)	Voltage (V)	Frequency Deviation (Hz)	Frequency Deviation (ppm)	Result
25	V _L	-25000.00	-4.75285	PASS
25	V _N	-26000.00	-4.94297	PASS
25	V _H	-25000.00	-4.75285	PASS

Band: III			Test Frequency: 5500.00MHz	
Temperature (°C)	Voltage (V)	Frequency Deviation (Hz)	Frequency Deviation (ppm)	Result
25	V _L	-27000.00	-4.90909	PASS
25	V _N	-27000.00	-4.90909	PASS
25	V _H	-27000.00	-4.90909	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	-24000.00	-4.63321	PASS
V _N	-10	-24000.00	-4.63321	PASS
V _N	0	-24000.00	-4.63321	PASS
V _N	10	-23000.00	-4.44015	PASS
V _N	20	-23000.00	-4.44015	PASS
V _N	30	-22000.00	-4.24710	PASS
V _N	40	-22000.00	-4.24710	PASS
V _N	50	-22000.00	-4.24710	PASS

Band: II			Test Frequency: 5260.00MHz	
Voltage (V)	Temperature (°C)	Frequency Deviation (Hz)	Frequency Deviation (ppm)	Result
V _N	-20	-24000.00	-4.56274	PASS
V _N	-10	-24000.00	-4.56274	PASS
V _N	0	-24000.00	-4.56274	PASS
V _N	10	-23000.00	-4.37262	PASS
V _N	20	-23000.00	-4.37262	PASS
V _N	30	-23000.00	-4.37262	PASS
V _N	40	-23000.00	-4.37262	PASS
V _N	50	-23000.00	-4.37262	PASS

Band: III			Test Frequency: 5500.00MHz	
Voltage (V)	Temperature (°C)	Frequency Deviation (Hz)	Frequency Deviation (ppm)	Result
V _N	-20	-27000.00	-4.90909	PASS
V _N	-10	-27000.00	-4.90909	PASS
V _N	0	-27000.00	-4.90909	PASS
V _N	10	-27000.00	-4.90909	PASS
V _N	20	-27000.00	-4.90909	PASS
V _N	30	-27000.00	-4.90909	PASS
V _N	40	-27000.00	-4.90909	PASS
V _N	50	-27000.00	-4.90909	PASS

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