

APPENDIX REPORT

Project No.	SHT1912068505EW	Radio Specification	WIFI 5G
Test sample No.	YPHT19120685043	Model No.	iData 50
Start test date	2019/12/31	Finish date	2019/12/31
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	6 dB Bandwidth	PASS
F	Frequency stability	PASS

Appendix A: Maximum Conducted Output Power

Band	Bandwidth (MHz)	Type	Channel	Conducted Output Power (dBm)	Limit (dBm)	Result
I	20	802.11ac	CH _L	17.86	24.00	Pass
			CH _M	18.94		
			CH _H	19.69		
		802.11n	CH _L	17.06	24.00	Pass
			CH _M	18.70		
			CH _H	19.35		
		802.11a	CH _L	18.98	24.00	Pass
			CH _M	19.90		
			CH _H	19.87		
	40	802.11ac	CH _L	18.26	24.00	Pass
			CH _H	19.75		
		802.11n	CH _L	18.21	24.00	Pass
			CH _H	19.29		
	80	802.11ac	CH _M	19.17	24.00	Pass
II	20	802.11ac	CH _L	19.23	24.00	Pass
			CH _M	20.03		
			CH _H	20.04		
		802.11n	CH _L	19.20	24.00	Pass
			CH _M	19.55		
			CH _H	20.12		
		802.11a	CH _L	19.55	24.00	Pass
			CH _M	20.15		
			CH _H	20.21		
	40	802.11ac	CH _L	19.52	24.00	Pass
			CH _H	20.06		
		802.11n	CH _L	19.51	24.00	Pass
			CH _H	20.11		
	80	802.11ac	CH _M	19.58	24.00	Pass

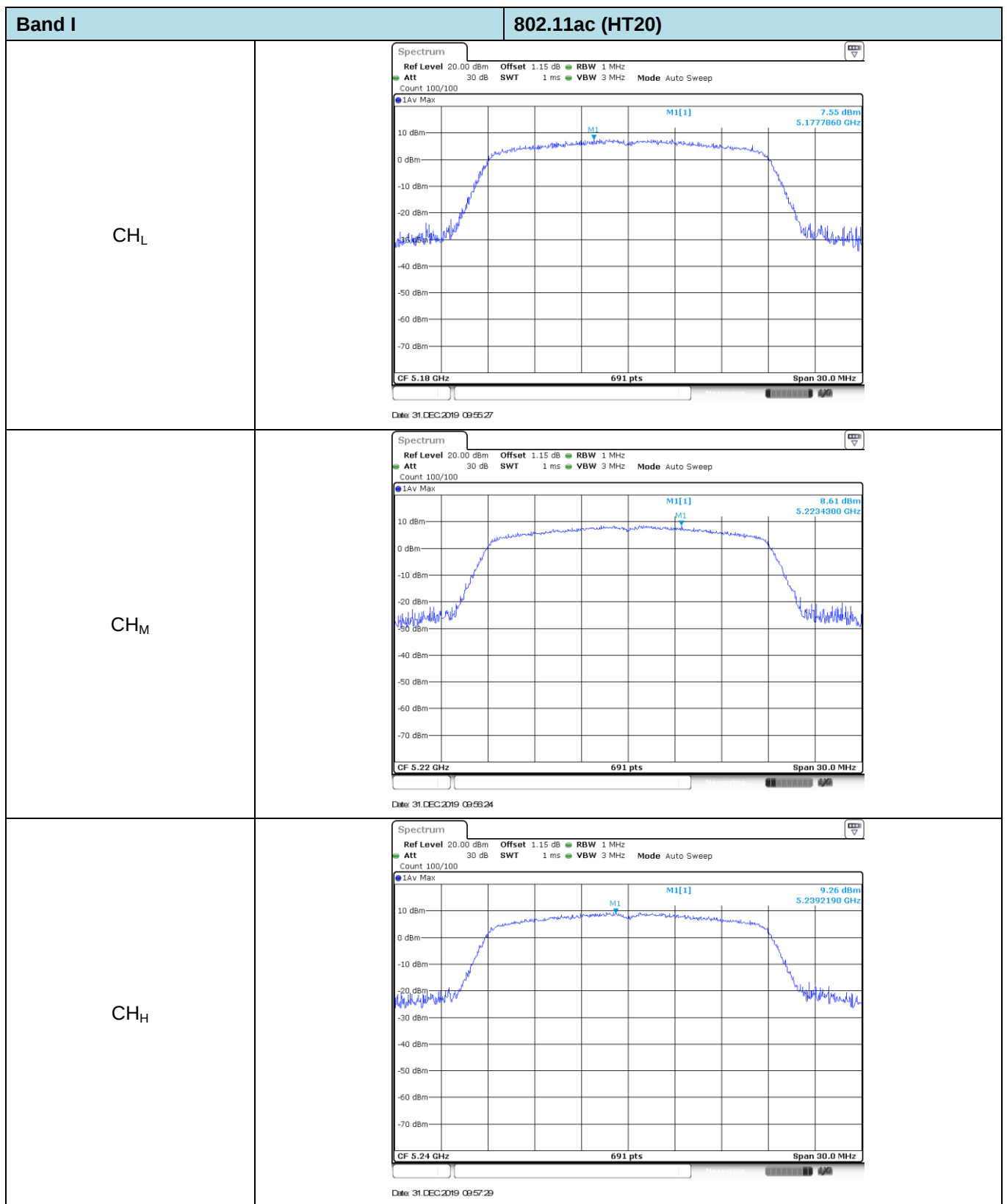
Band	Bandwidth (MHz)	Type	Channel	Conducted Output Power (dBm)	Limit (dBm)	Result
IV	20	802.11ac	CH _L	19.55	30.00	Pass
			CH _M	20.05		
			CH _H	19.98		
		802.11n	CH _L	19.87	30.00	Pass
			CH _M	20.00		
			CH _H	19.95		
		802.11a	CH _L	20.18	30.00	Pass
			CH _M	20.23		
			CH _H	20.26		
	40	802.11ac	CH _L	20.06	30.00	Pass
			CH _H	20.13		
		802.11n	CH _L	20.10	30.00	Pass
			CH _H	20.06		
	80	802.11ac	CH _M	19.93	30.00	Pass

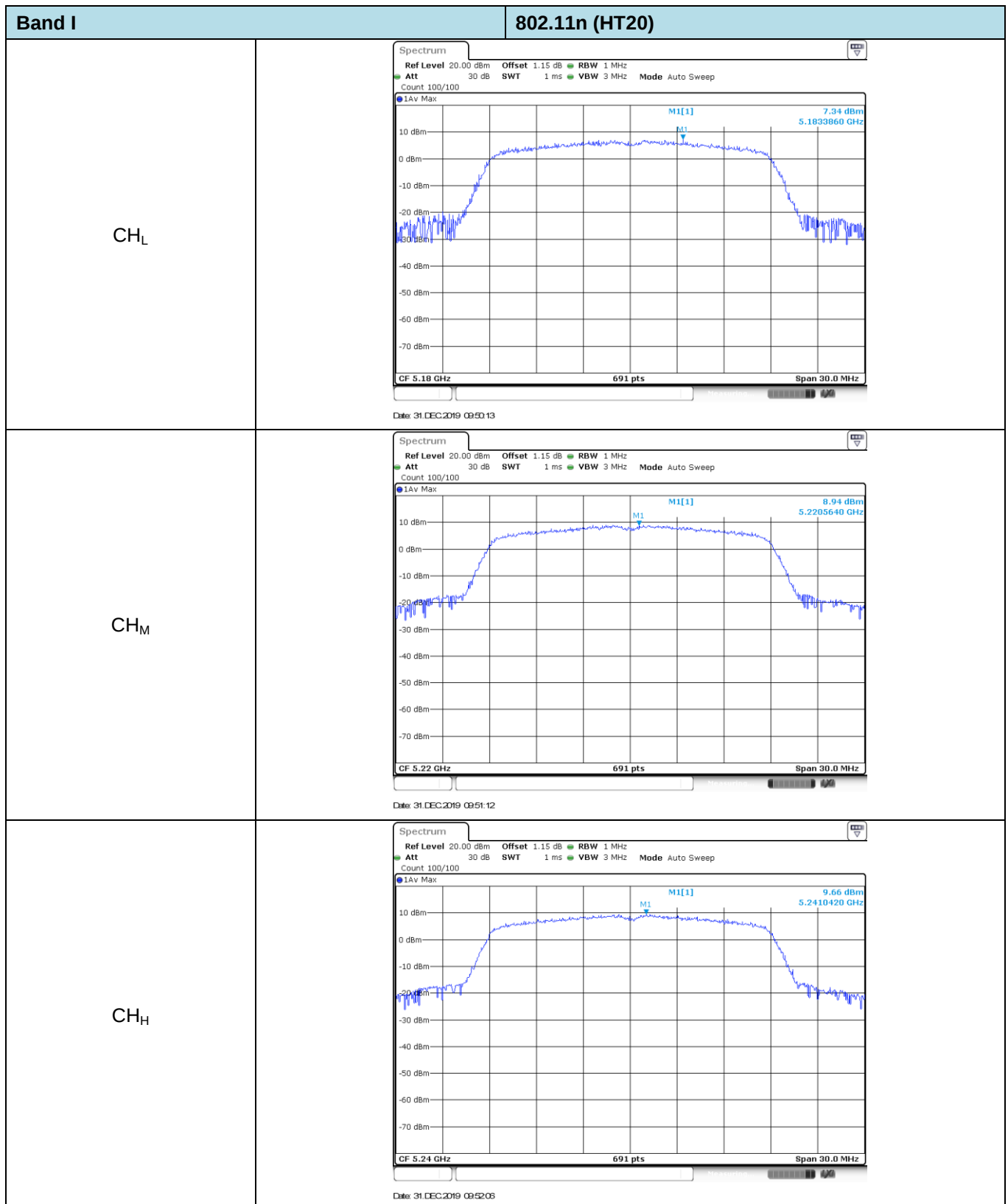
Appendix B: Maximum Power Spectral Density

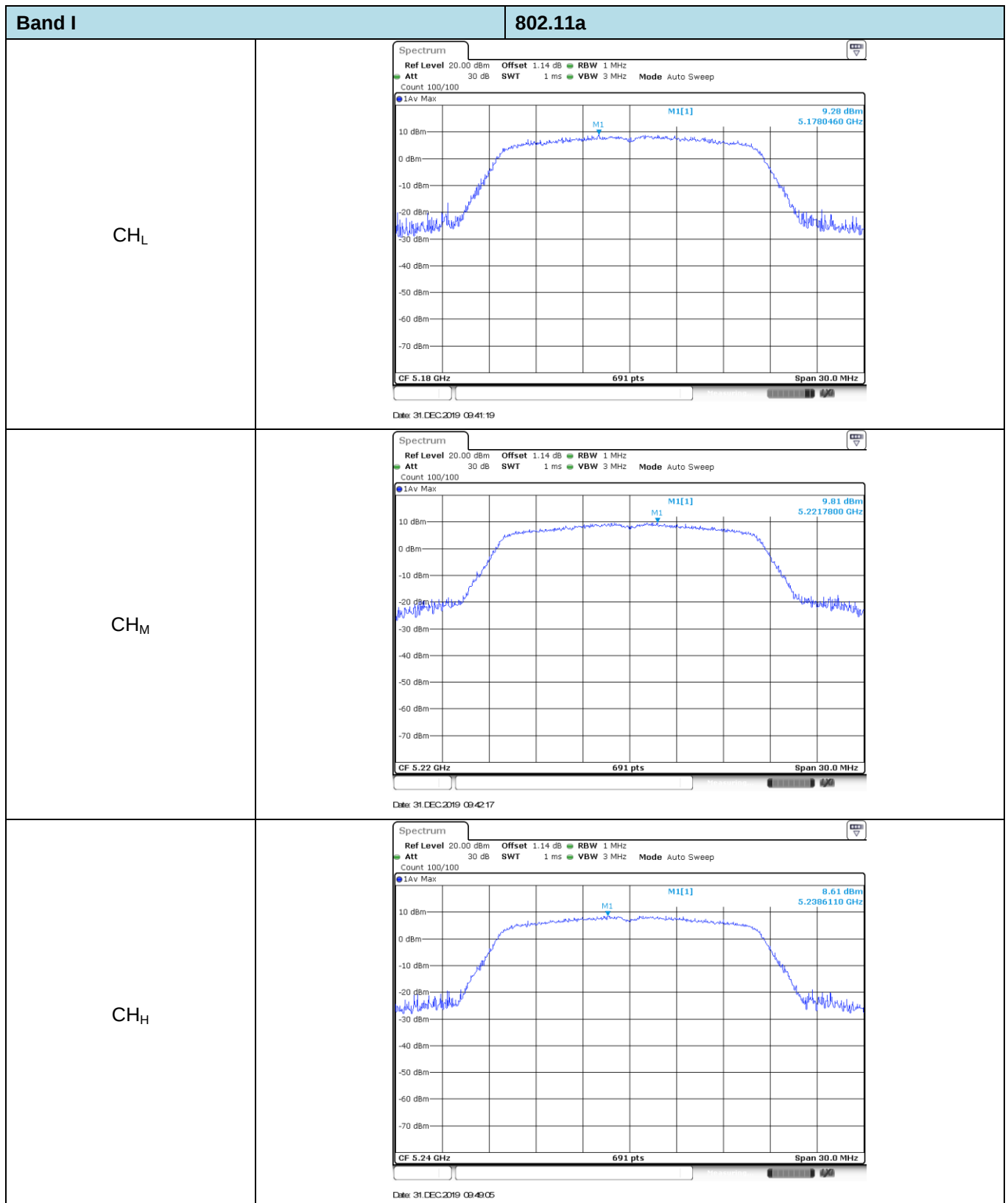
Band	Bandwidth (MHz)	Type	Channel	Power Spectral Density (dBm/MHz)	Limit (dBm/MHz)	Result
I	20	802.11ac	CH _L	7.55	11.00	Pass
			CH _M	8.61		
			CH _H	9.26		
		802.11n	CH _L	7.34	11.00	Pass
			CH _M	8.94		
			CH _H	9.66		
		802.11a	CH _L	9.28	11.00	Pass
			CH _M	9.81		
			CH _H	8.61		
	40	802.11ac	CH _L	5.88	11.00	Pass
			CH _H	6.63		
		802.11n	CH _L	5.33	11.00	Pass
			CH _H	6.11		
	80	802.11ac	CH _M	3.20	11.00	Pass
II	20	802.11ac	CH _L	9.45	11.00	Pass
			CH _M	9.59		
			CH _H	10.13		
		802.11n	CH _L	8.86	11.00	Pass
			CH _M	9.69		
			CH _H	10.28		
		802.11a	CH _L	9.40	11.00	Pass
			CH _M	9.80		
			CH _H	10.19		
	40	802.11ac	CH _L	7.24	11.00	Pass
			CH _H	6.98		
		802.11n	CH _L	6.24	11.00	Pass
			CH _H	6.99		
	80	802.11ac	CH _M	3.23	11.00	Pass

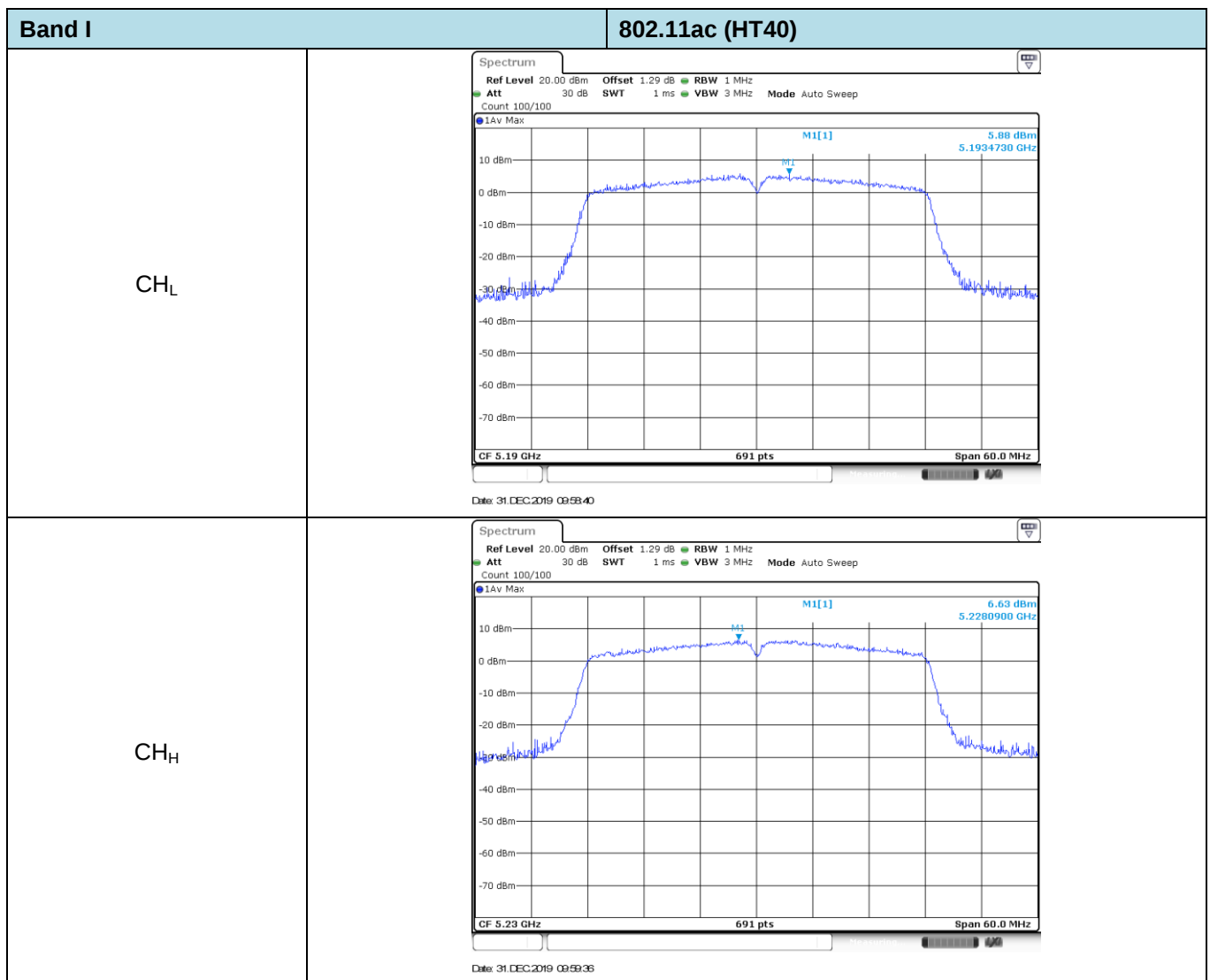
Band	Bandwidth (MHz)	Type	Channel	Power Spectral Density (dBm/500kHz)	Limit (dBm/500KHz)	Result
IV	20	802.11ac	CH _L	8.59	30.00	Pass
			CH _M	8.97		
			CH _H	8.47		
		802.11n	CH _L	8.59	30.00	Pass
			CH _M	8.49		
			CH _H	8.28		
		802.11a	CH _L	8.62	30.00	Pass
			CH _M	8.34		
			CH _H	8.47		
	40	802.11ac	CH _L	5.88	30.00	Pass
			CH _H	5.94		
		802.11n	CH _L	5.55	30.00	Pass
			CH _H	5.88		
	80	802.11ac	CH _M	2.99	30.00	Pass

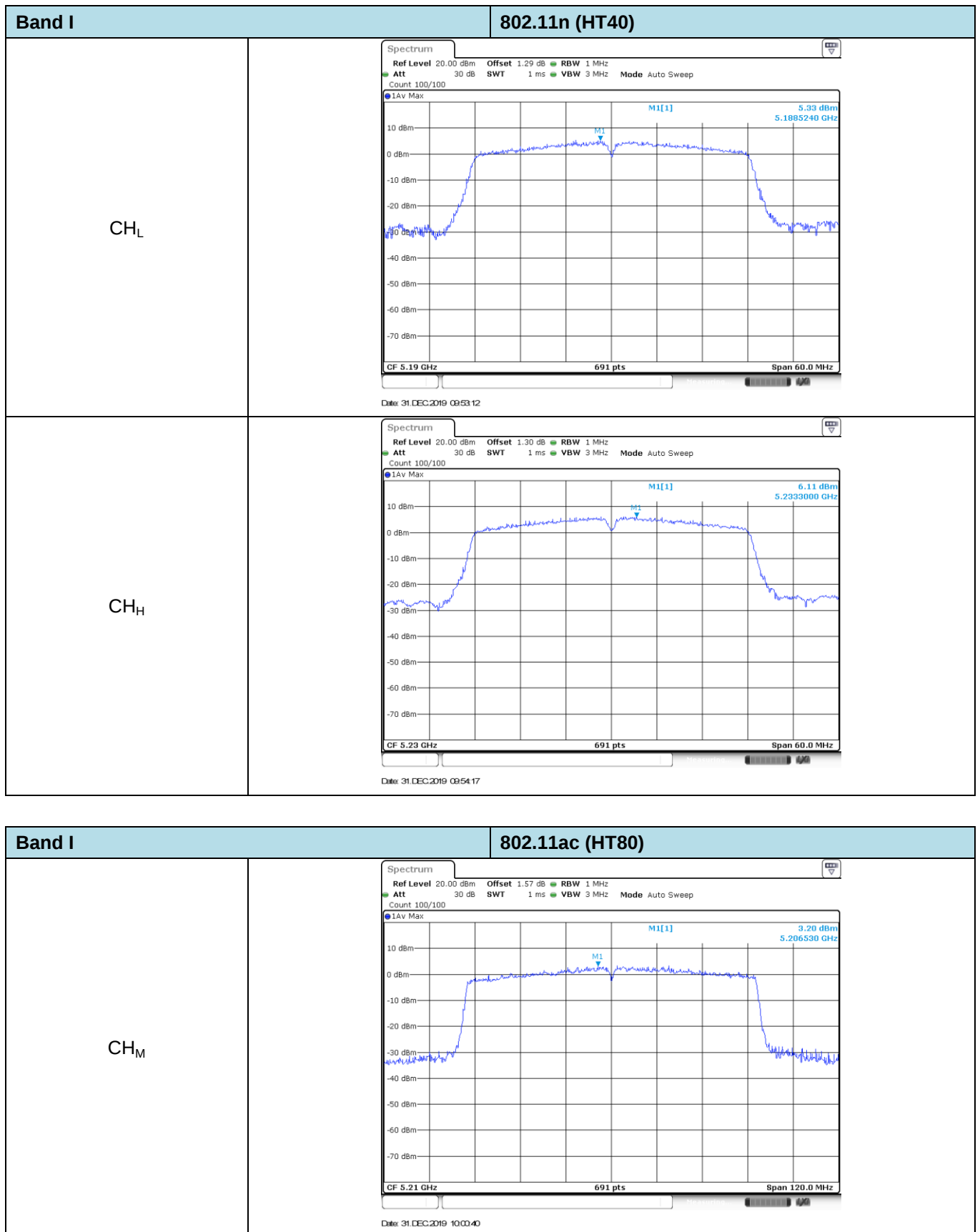
Test plot as follows:

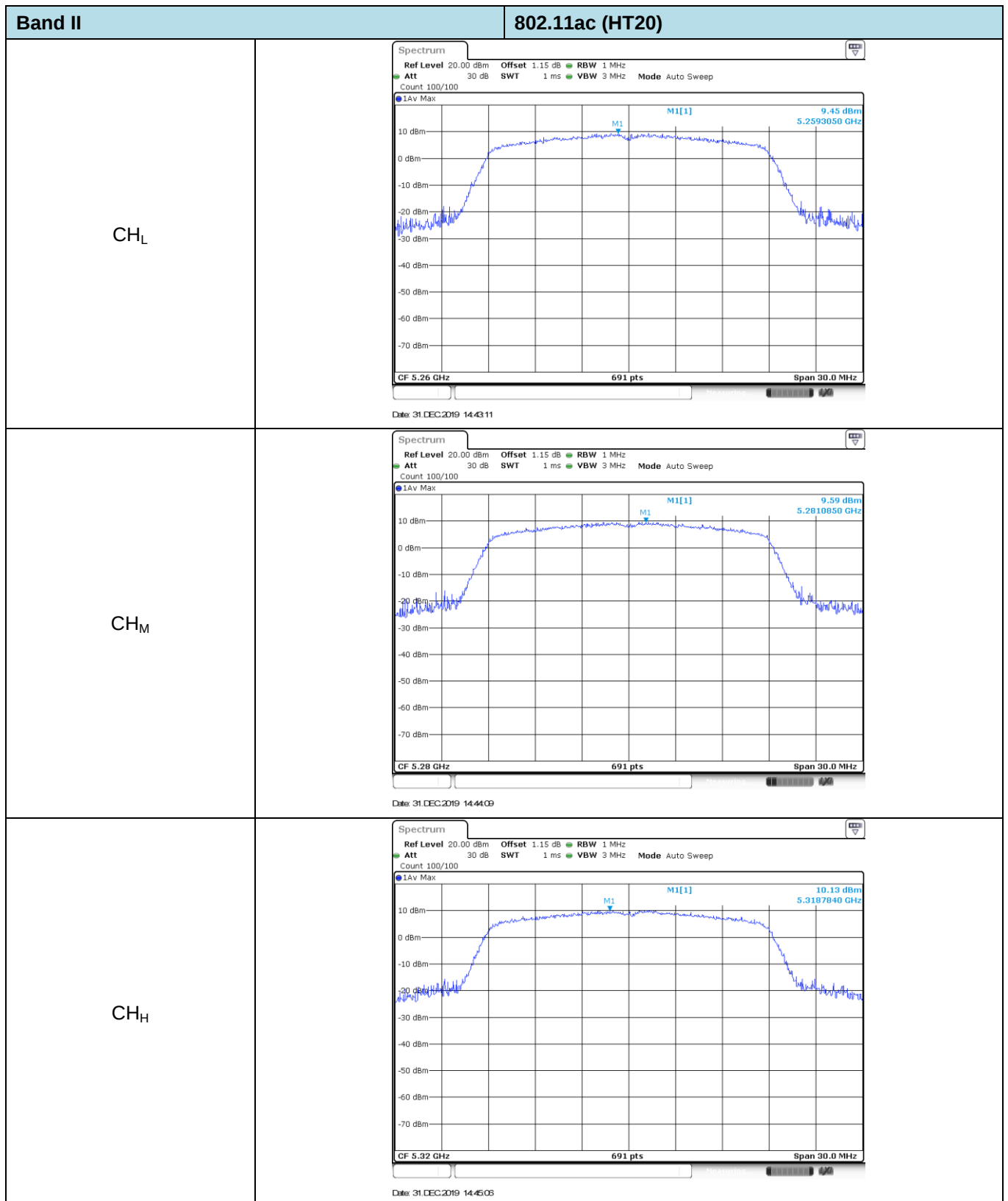


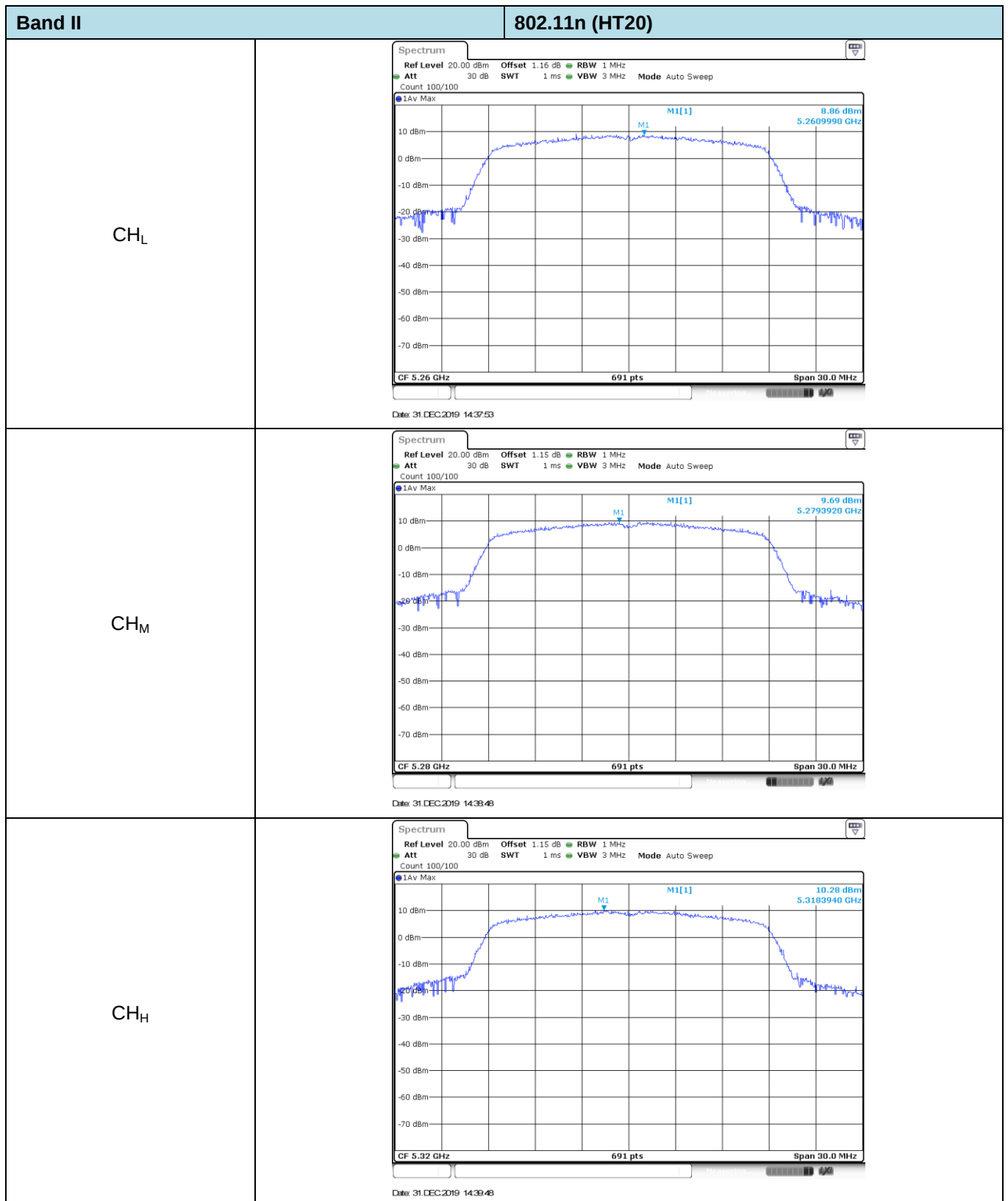




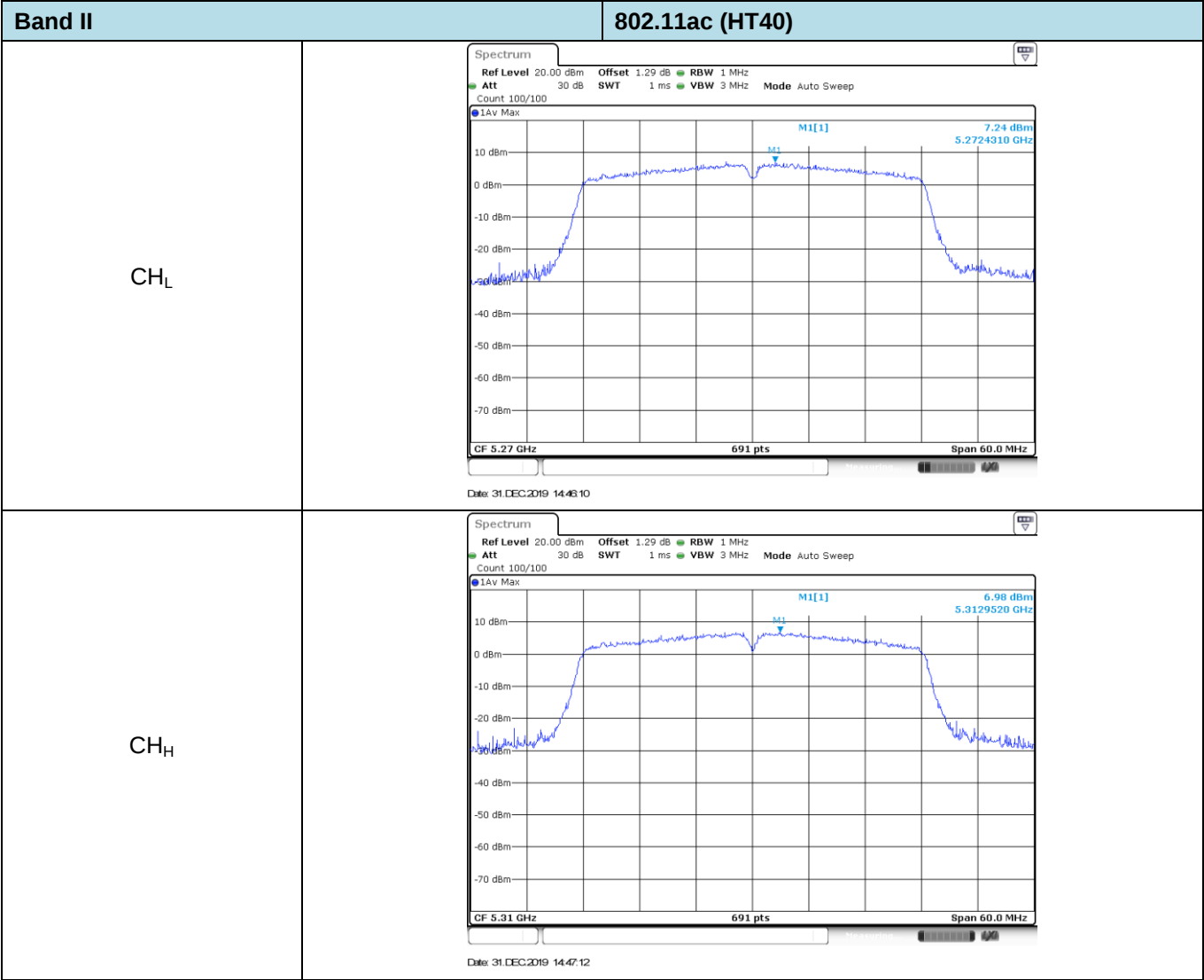


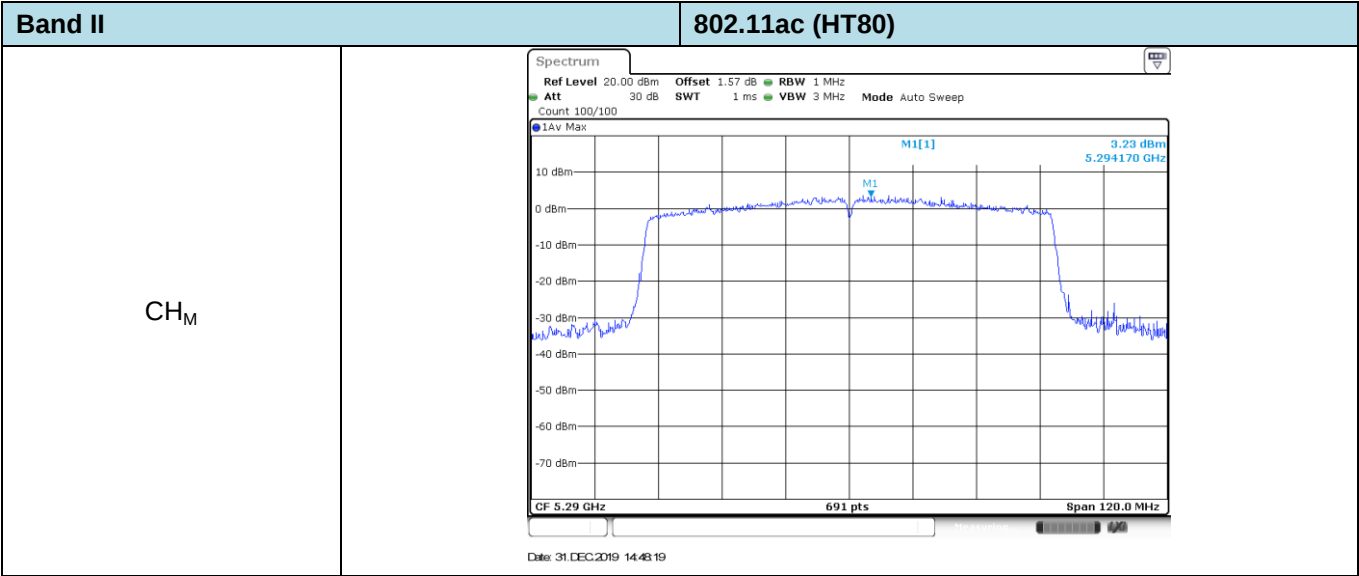
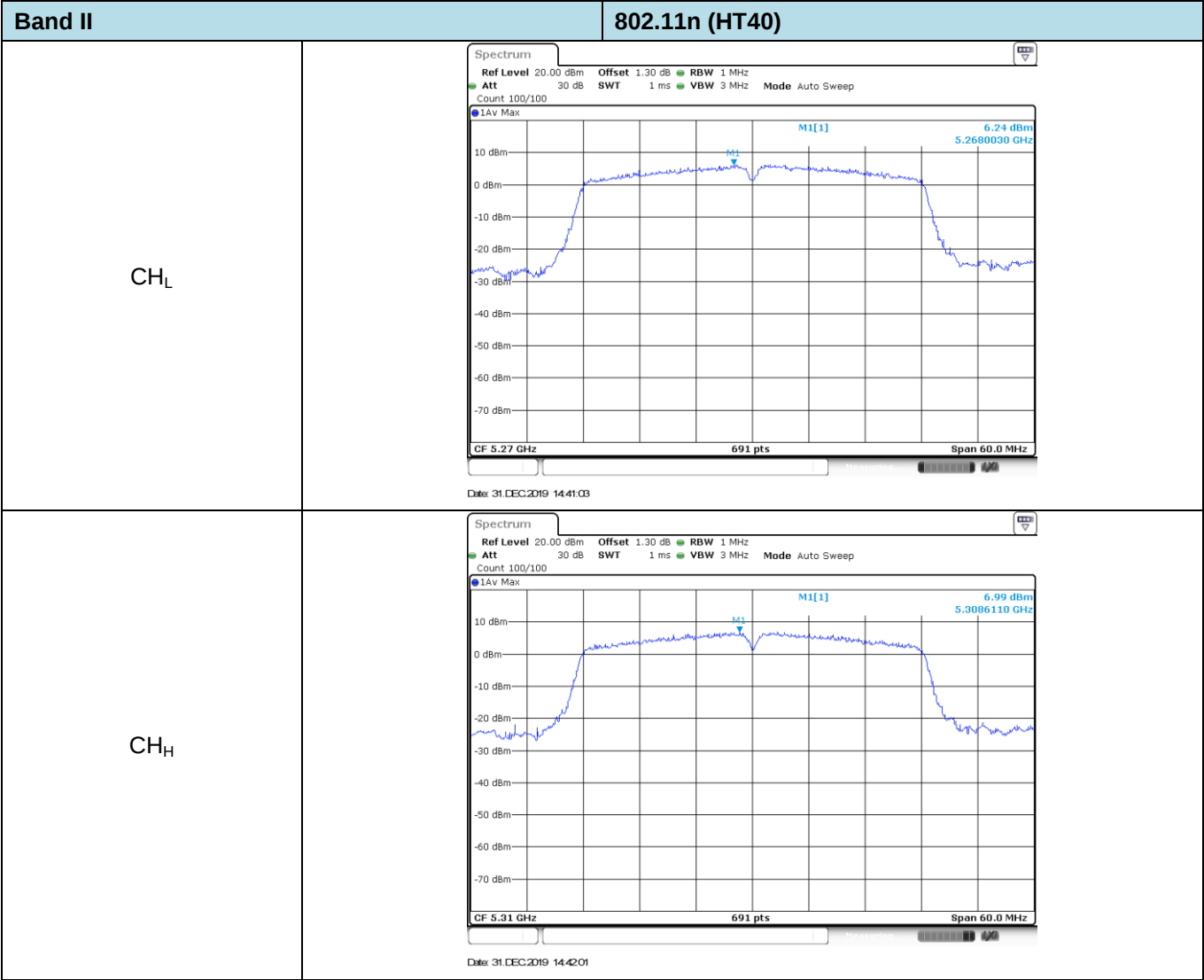






Band II		802.11a
CH _L	Spectrum Ref Level 20.00 dBm Att 30 dB Count 100/100 Offset 1.14 dB SWT 1 ms RBW 1 MHz VBW 3 MHz Mode Auto Sweep IAV Max 9.40 dBm 5.2577860 GHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.26 GHz 691 pts Span 30.0 MHz Date: 31.DEC.2019 14:31:15	
CH _M	Spectrum Ref Level 20.00 dBm Att 30 dB Count 100/100 Offset 1.14 dB SWT 1 ms RBW 1 MHz VBW 3 MHz Mode Auto Sweep IAV Max 9.80 dBm 5.2814330 GHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.28 GHz 691 pts Span 30.0 MHz Date: 31.DEC.2019 14:32:19	
CH _H	Spectrum Ref Level 20.00 dBm Att 30 dB Count 100/100 Offset 1.14 dB SWT 1 ms RBW 1 MHz VBW 3 MHz Mode Auto Sweep IAV Max 10.19 dBm 5.3206510 GHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.32 GHz 691 pts Span 30.0 MHz Date: 31.DEC.2019 14:33:23	





Band IV

802.11ac (HT20)

CH_L

Spectrum

Ref Level 20.00 dBm
Att 30 dB
Offset 1.15 dB
SWT 1 ms
RBW 500 kHz
VBW 3 MHz
Mode Auto Sweep
Count 100/100

1Av Max

Spectrum plot for CH_L channel. The plot shows a signal centered at 5.745 GHz. The peak level is 8.59 dBm. The signal is measured with a resolution bandwidth (RBW) of 500 kHz and a video bandwidth (VBW) of 3 MHz. The offset is 1.15 dB. The mode is Auto Sweep. The plot shows a signal level of approximately 8.59 dBm at 5.7458680 GHz. The signal is measured with a resolution bandwidth (RBW) of 500 kHz and a video bandwidth (VBW) of 3 MHz. The offset is 1.15 dB. The mode is Auto Sweep. The plot shows a signal level of approximately 8.59 dBm at 5.7458680 GHz.

CF 5.745 GHz 691 pts Span 30.0 MHz

Date: 31 DEC 2019 15:05:42

CH_M

Spectrum

Ref Level 20.00 dBm
Att 30 dB
Offset 1.15 dB
SWT 1 ms
RBW 500 kHz
VBW 3 MHz
Mode Auto Sweep
Count 100/100

1Av Max

Spectrum plot for CH_M channel. The plot shows a signal centered at 5.785 GHz. The peak level is 8.97 dBm. The signal is measured with a resolution bandwidth (RBW) of 500 kHz and a video bandwidth (VBW) of 3 MHz. The offset is 1.15 dB. The mode is Auto Sweep. The plot shows a signal level of approximately 8.97 dBm at 5.7834800 GHz. The signal is measured with a resolution bandwidth (RBW) of 500 kHz and a video bandwidth (VBW) of 3 MHz. The offset is 1.15 dB. The mode is Auto Sweep. The plot shows a signal level of approximately 8.97 dBm at 5.7834800 GHz.

CF 5.785 GHz 691 pts Span 30.0 MHz

Date: 31 DEC 2019 15:08:41

CH_H

Spectrum

Ref Level 20.00 dBm
Att 30 dB
Offset 1.15 dB
SWT 1 ms
RBW 500 kHz
VBW 3 MHz
Mode Auto Sweep
Count 100/100

1Av Max

Spectrum plot for CH_H channel. The plot shows a signal centered at 5.825 GHz. The peak level is 8.47 dBm. The signal is measured with a resolution bandwidth (RBW) of 500 kHz and a video bandwidth (VBW) of 3 MHz. The offset is 1.15 dB. The mode is Auto Sweep. The plot shows a signal level of approximately 8.47 dBm at 5.8239580 GHz. The signal is measured with a resolution bandwidth (RBW) of 500 kHz and a video bandwidth (VBW) of 3 MHz. The offset is 1.15 dB. The mode is Auto Sweep. The plot shows a signal level of approximately 8.47 dBm at 5.8239580 GHz.

CF 5.825 GHz 691 pts Span 30.0 MHz

Date: 31 DEC 2019 15:07:38

Band IV		802.11n (HT20)
CH _L	Spectrum Ref Level 20.00 dBm Att 30 dB Count 100/100 Offset 1.16 dB SWT 1 ms RBW 500 kHz VBW 3 MHz Mode Auto Sweep IAV Max 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1 M1[1] 8.59 dBm 5.7435240 GHz CF 5.745 GHz 691 pts Span 30.0 MHz Date: 31.DEC.2019 15:00:15	
CH _M	Spectrum Ref Level 20.00 dBm Att 30 dB Count 100/100 Offset 1.15 dB SWT 1 ms RBW 500 kHz VBW 3 MHz Mode Auto Sweep IAV Max 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1 M1[1] 8.49 dBm 5.7633940 GHz CF 5.765 GHz 691 pts Span 30.0 MHz Date: 31.DEC.2019 15:01:14	
CH _H	Spectrum Ref Level 20.00 dBm Att 30 dB Count 100/100 Offset 1.15 dB SWT 1 ms RBW 500 kHz VBW 3 MHz Mode Auto Sweep IAV Max 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1 M1[1] 8.28 dBm 5.8242620 GHz CF 5.825 GHz 691 pts Span 30.0 MHz Date: 31.DEC.2019 15:02:13	

Band IV

802.11a

CH_L

Spectrum plot for CH_L channel. The plot shows a signal centered at 5.745 GHz. The peak level is 8.62 dBm. The signal is measured over a span of 30.0 MHz. The plot includes a grid and a scale from -70 dBm to 10 dBm. The signal is labeled M1[1].

Ref Level 20.00 dBm Offset 1.14 dB RBW 500 kHz
Att 30 dB SWT 1 ms VBW 3 MHz Mode Auto Sweep
Count 100/100
1Av Max
M1[1]
8.62 dBm
5.7460850 GHz
CF 5.745 GHz 691 pts Span 30.0 MHz
Date: 31 DEC 2019 14:57:05

CH_M

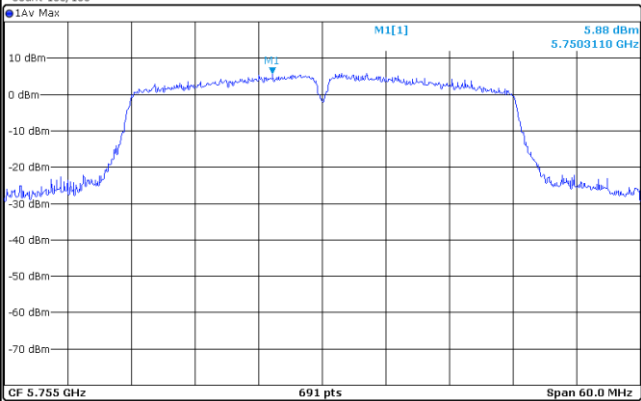
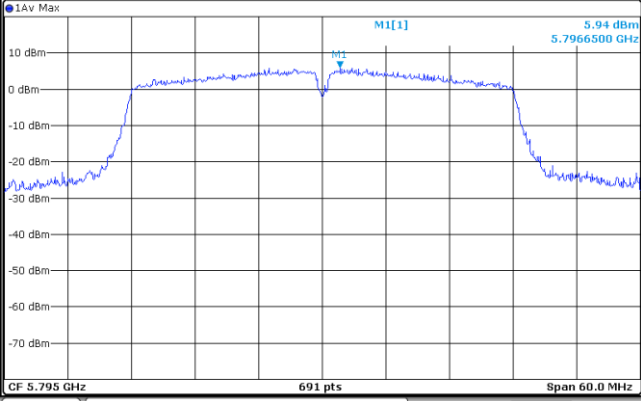
Spectrum plot for CH_M channel. The plot shows a signal centered at 5.785 GHz. The peak level is 8.34 dBm. The signal is measured over a span of 30.0 MHz. The plot includes a grid and a scale from -70 dBm to 10 dBm. The signal is labeled M1[1].

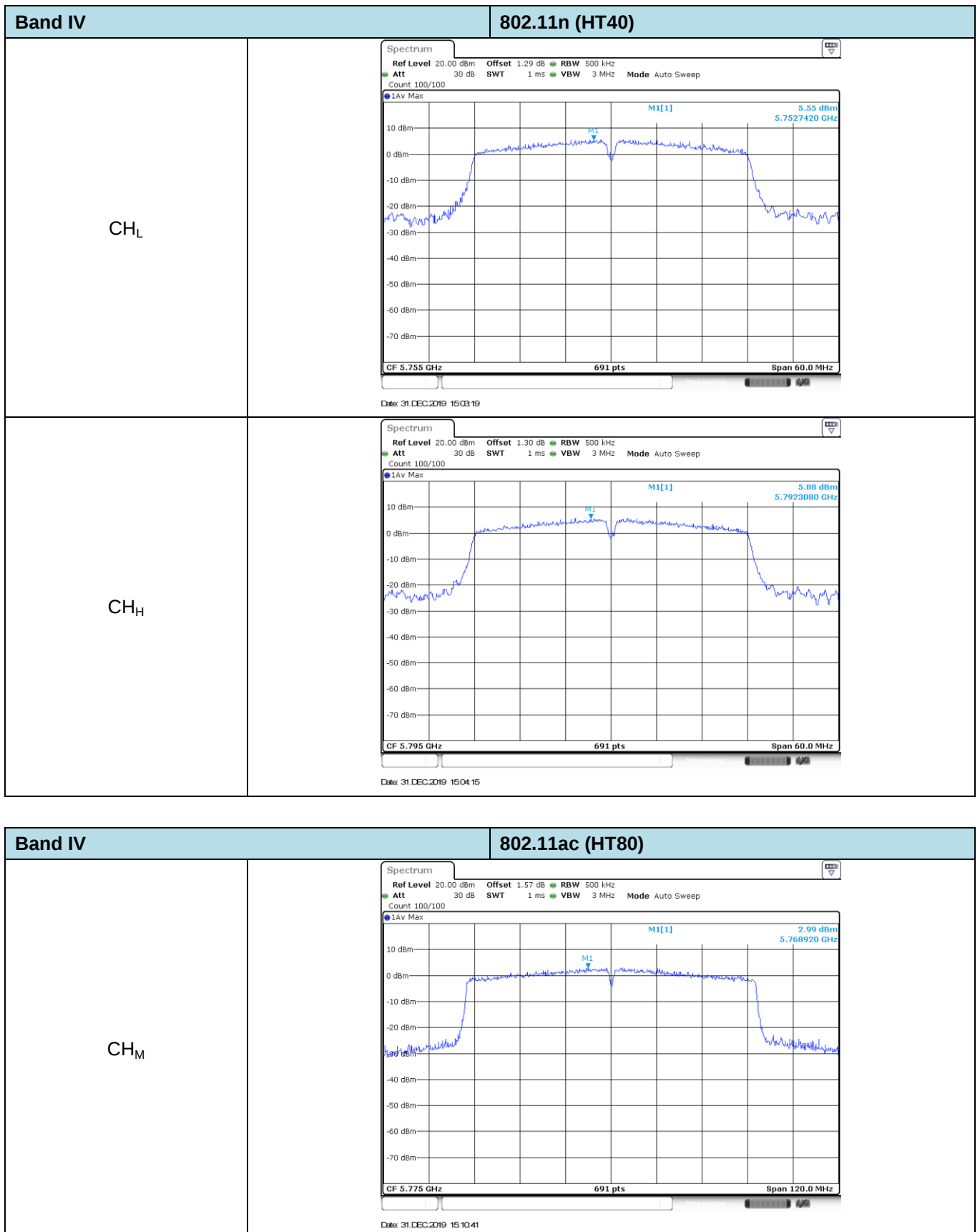
Ref Level 20.00 dBm Offset 1.14 dB RBW 500 kHz
Att 30 dB SWT 1 ms VBW 3 MHz Mode Auto Sweep
Count 100/100
1Av Max
M1[1]
8.34 dBm
5.7859120 GHz
CF 5.785 GHz 691 pts Span 30.0 MHz
Date: 31 DEC 2019 14:58:05

CH_H

Spectrum plot for CH_H channel. The plot shows a signal centered at 5.825 GHz. The peak level is 8.47 dBm. The signal is measured over a span of 30.0 MHz. The plot includes a grid and a scale from -70 dBm to 10 dBm. The signal is labeled M1[1].

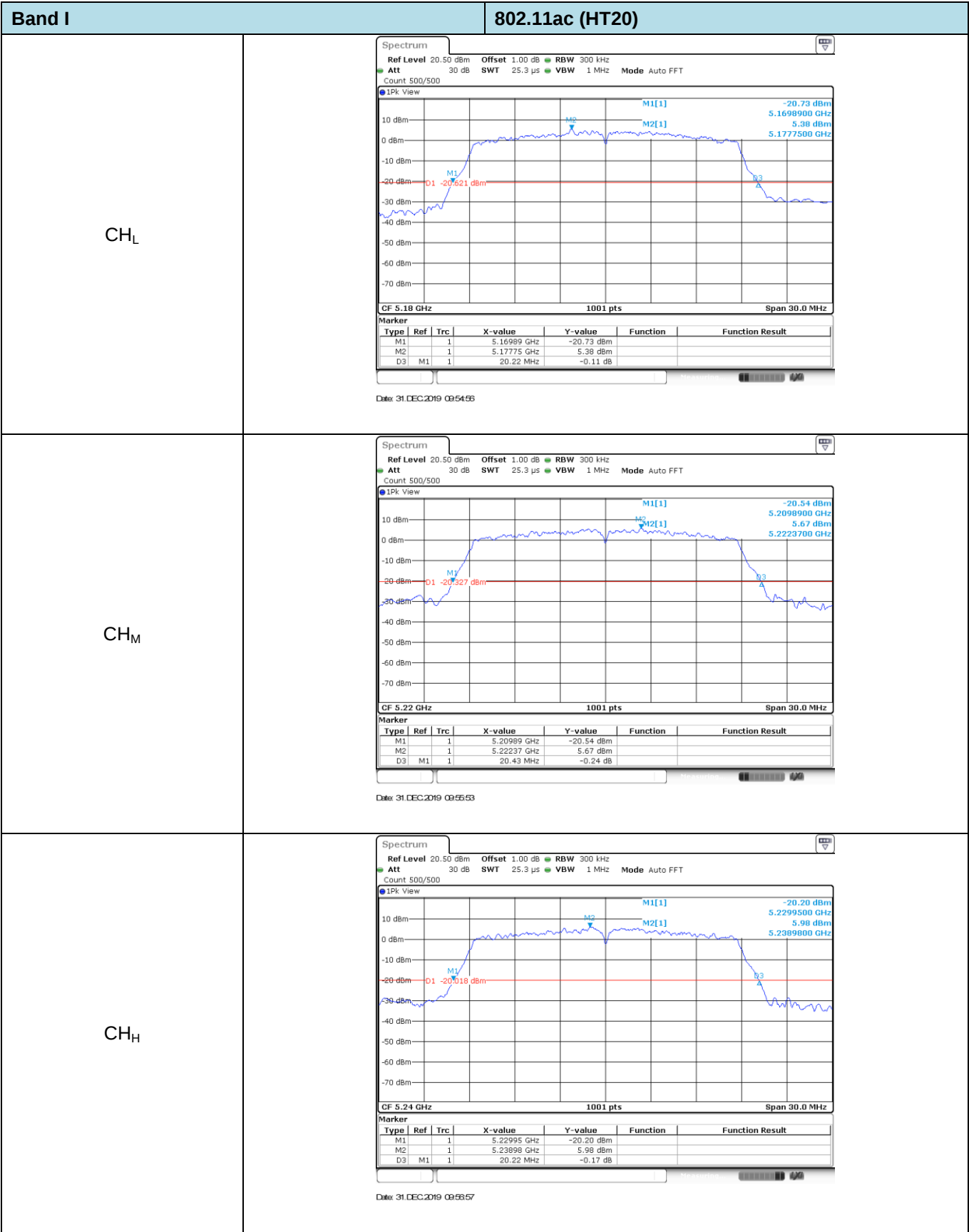
Ref Level 20.00 dBm Offset 1.14 dB RBW 500 kHz
Att 30 dB SWT 1 ms VBW 3 MHz Mode Auto Sweep
Count 100/100
1Av Max
M1[1]
8.47 dBm
5.8238280 GHz
CF 5.825 GHz 691 pts Span 30.0 MHz
Date: 31 DEC 2019 14:59:03

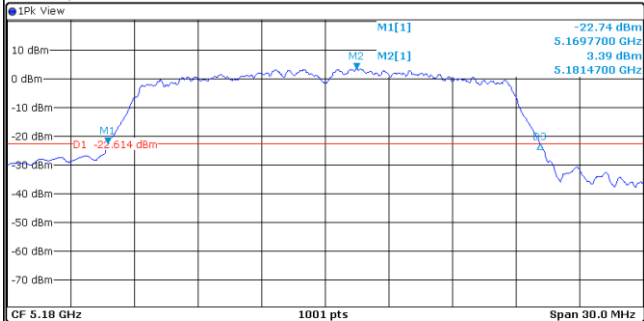
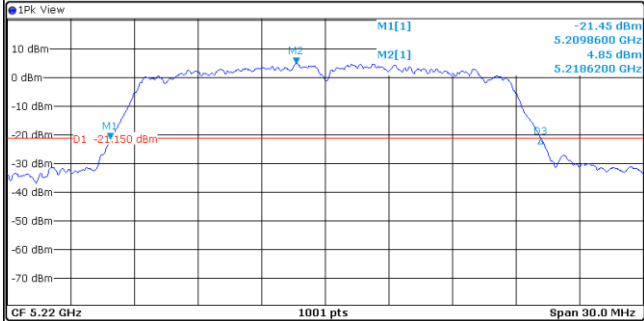
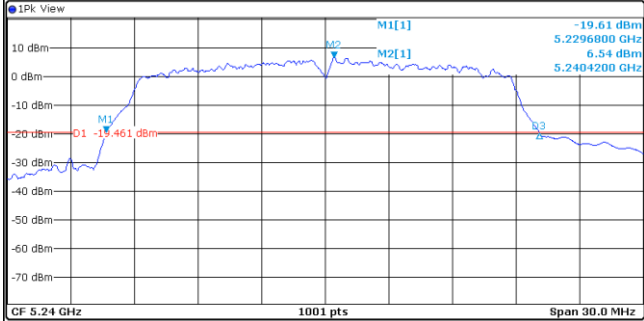
Band IV		802.11ac (HT40)
CH _L	Spectrum Ref Level 20.00 dBm Att 30 dB Offset 1.29 dB SWT 1 ms RBW 500 kHz VBW 3 MHz Mode Auto Sweep Count 100/100 IAV Max  The spectrum plot for the CH_L channel shows a signal centered around 5.755 GHz. The y-axis represents power in dBm, ranging from -70 to 10. The x-axis represents frequency in GHz, with a span of 60.0 MHz. The signal is marked with a peak at 5.88 dBm and a frequency of 5.7503110 GHz. The plot includes a grid and various measurement parameters. CF 5.755 GHz691 ptsSpan 60.0 MHz Date: 31.DEC.2019 15:08:37	
CH _H	Spectrum Ref Level 20.00 dBm Att 30 dB Offset 1.29 dB SWT 1 ms RBW 500 kHz VBW 3 MHz Mode Auto Sweep Count 100/100 IAV Max  The spectrum plot for the CH_H channel shows a signal centered around 5.795 GHz. The y-axis represents power in dBm, ranging from -70 to 10. The x-axis represents frequency in GHz, with a span of 60.0 MHz. The signal is marked with a peak at 5.94 dBm and a frequency of 5.7966500 GHz. The plot includes a grid and various measurement parameters. CF 5.795 GHz691 ptsSpan 60.0 MHz Date: 31.DEC.2019 15:09:33	

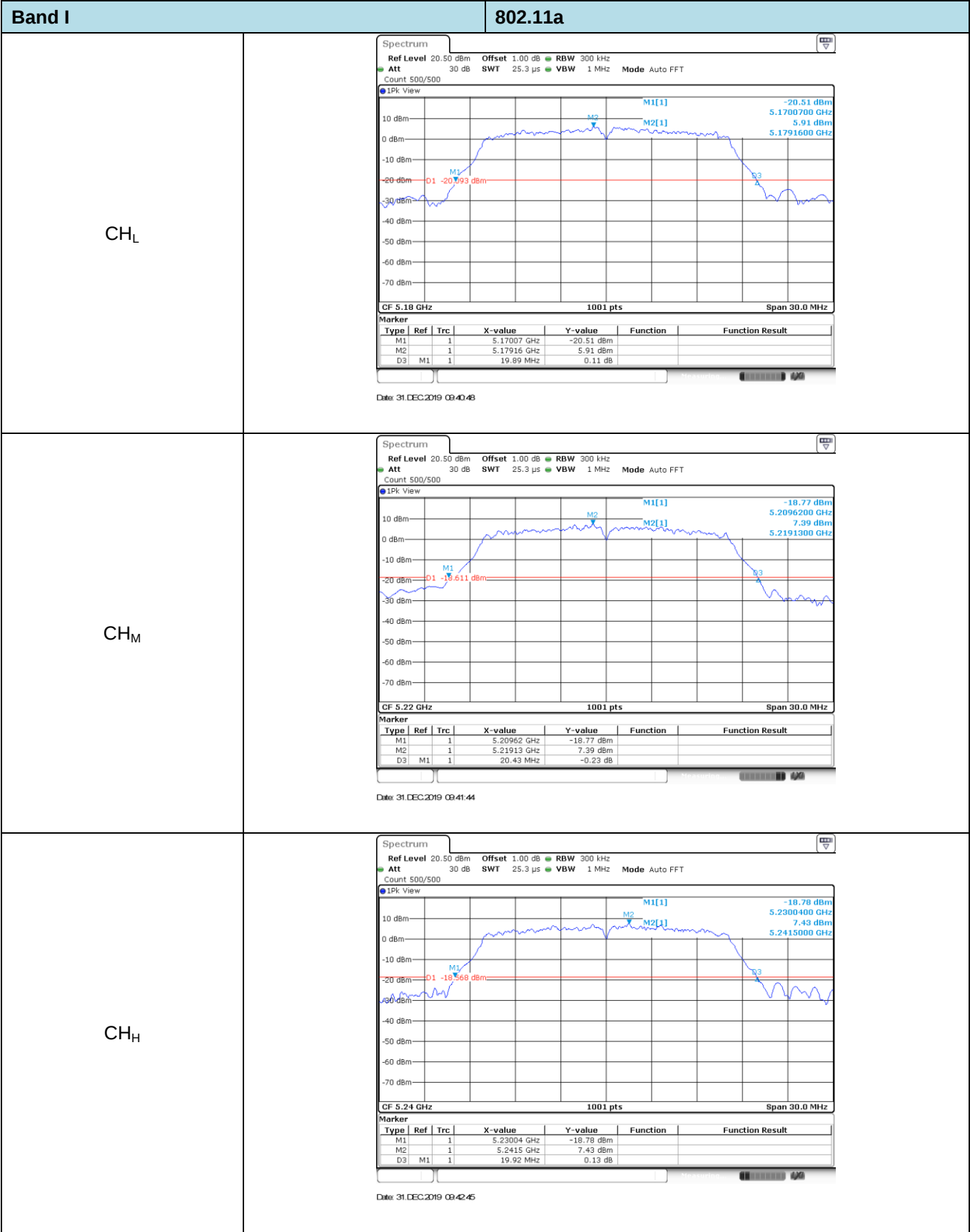


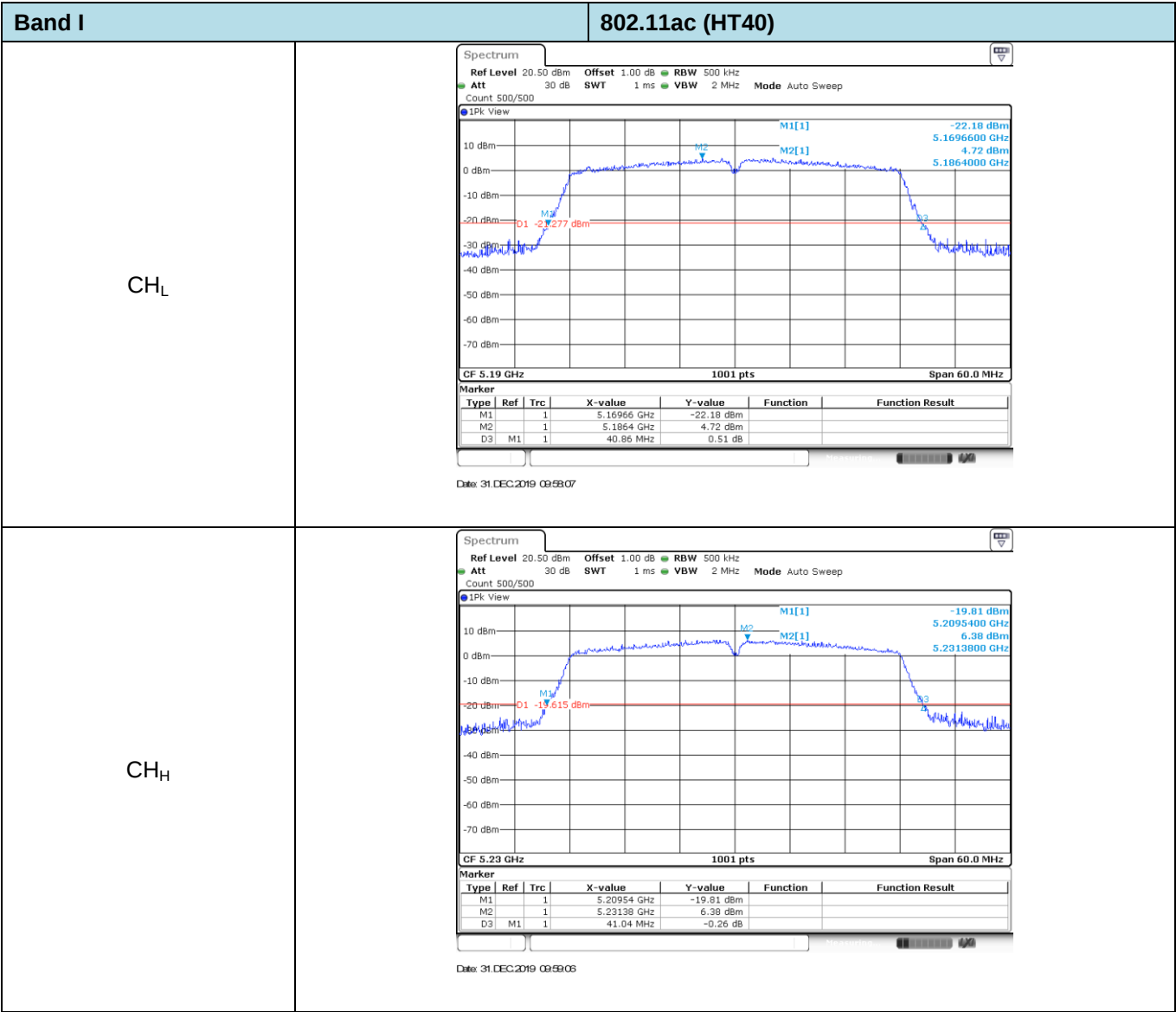
Appendix C: 26dB bandwidth

Band	Bandwidth (MHz)	Type	Channel	26dB bandwidth (MHz)	Result
I	20	802.11ac	CH _L	20.22	Pass
			CH _M	20.43	
			CH _H	20.22	
		802.11n	CH _L	20.37	Pass
			CH _M	20.31	
			CH _H	20.43	
		802.11a	CH _L	19.89	Pass
			CH _M	20.43	
			CH _H	19.92	
	40	802.11ac	CH _L	40.86	Pass
			CH _H	41.04	
		802.11n	CH _L	40.80	Pass
			CH _H	40.86	
	80	802.11ac	CH _M	81.24	Pass
II	20	802.11ac	CH _L	20.19	Pass
			CH _M	20.25	
			CH _H	20.46	
		802.11n	CH _L	20.46	Pass
			CH _M	20.34	
			CH _H	20.52	
		802.11a	CH _L	20.07	Pass
			CH _M	19.86	
			CH _H	20.73	
	40	802.11ac	CH _L	41.58	Pass
			CH _H	41.22	
		802.11n	CH _L	41.10	Pass
			CH _H	41.34	
	80	802.11ac	CH _M	81.24	Pass



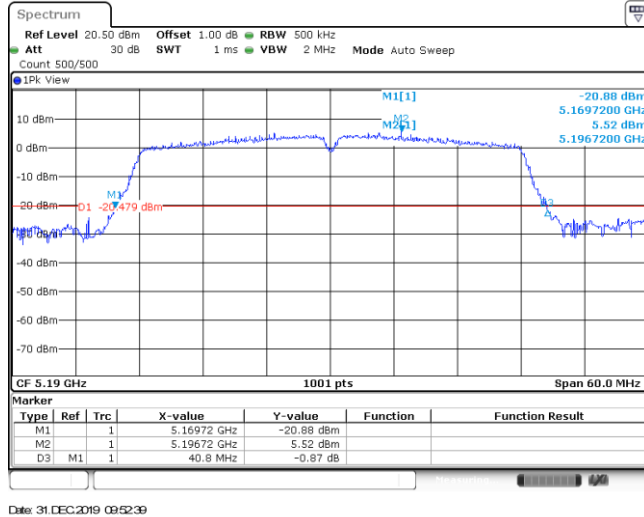
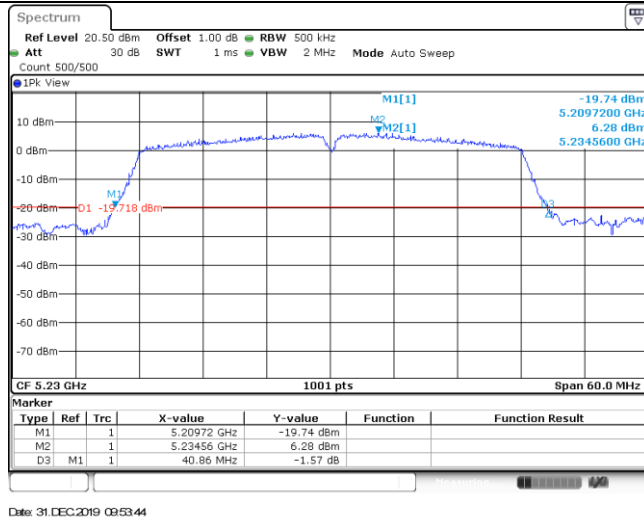
Band I		802.11n (HT20)																											
CH _L	Spectrum Ref Level 20.50 dBm Att 30 dB Count 500/500 Offset 1.00 dB SWT 25.3 μs RBW 300 kHz VBW 1 MHz Mode Auto FFT IPk View  CF 5.18 GHz1001 ptsSpan 30.0 MHz <table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-value</th><th>Y-value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td>1</td><td>1</td><td>5.16977 GHz</td><td>-22.74 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td>1</td><td>5.18147 GHz</td><td>3.39 dBm</td><td></td><td></td></tr><tr><td>D3</td><td>M1</td><td>1</td><td>20.37 MHz</td><td>0.12 dB</td><td></td><td></td></tr></table> Date: 31.DEC.2019 09:49:41	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1	1	5.16977 GHz	-22.74 dBm			M2	1	1	5.18147 GHz	3.39 dBm			D3	M1	1	20.37 MHz	0.12 dB		
Type	Ref	Trc	X-value	Y-value	Function	Function Result																							
M1	1	1	5.16977 GHz	-22.74 dBm																									
M2	1	1	5.18147 GHz	3.39 dBm																									
D3	M1	1	20.37 MHz	0.12 dB																									
CH _M	Spectrum Ref Level 20.50 dBm Att 30 dB Count 500/500 Offset 1.00 dB SWT 25.3 μs RBW 300 kHz VBW 1 MHz Mode Auto FFT IPk View  CF 5.22 GHz1001 ptsSpan 30.0 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>1</td><td>5.20986 GHz</td><td>-21.45 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td>1</td><td>5.21862 GHz</td><td>4.85 dBm</td><td></td><td></td></tr><tr><td>D3</td><td>M1</td><td>1</td><td>20.31 MHz</td><td>0.14 dB</td><td></td><td></td></tr></table> Date: 31.DEC.2019 09:50:40	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1	1	5.20986 GHz	-21.45 dBm			M2	1	1	5.21862 GHz	4.85 dBm			D3	M1	1	20.31 MHz	0.14 dB		
Type	Ref	Trc	X-value	Y-value	Function	Function Result																							
M1	1	1	5.20986 GHz	-21.45 dBm																									
M2	1	1	5.21862 GHz	4.85 dBm																									
D3	M1	1	20.31 MHz	0.14 dB																									
CH _H	Spectrum Ref Level 20.50 dBm Att 30 dB Count 500/500 Offset 1.00 dB SWT 25.3 μs RBW 300 kHz VBW 1 MHz Mode Auto FFT IPk View  CF 5.24 GHz1001 ptsSpan 30.0 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>1</td><td>5.22968 GHz</td><td>-19.61 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td>1</td><td>5.24042 GHz</td><td>6.54 dBm</td><td></td><td></td></tr><tr><td>D3</td><td>M1</td><td>1</td><td>20.43 MHz</td><td>-0.18 dB</td><td></td><td></td></tr></table> Date: 31.DEC.2019 09:51:36	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1	1	5.22968 GHz	-19.61 dBm			M2	1	1	5.24042 GHz	6.54 dBm			D3	M1	1	20.43 MHz	-0.18 dB		
Type	Ref	Trc	X-value	Y-value	Function	Function Result																							
M1	1	1	5.22968 GHz	-19.61 dBm																									
M2	1	1	5.24042 GHz	6.54 dBm																									
D3	M1	1	20.43 MHz	-0.18 dB																									





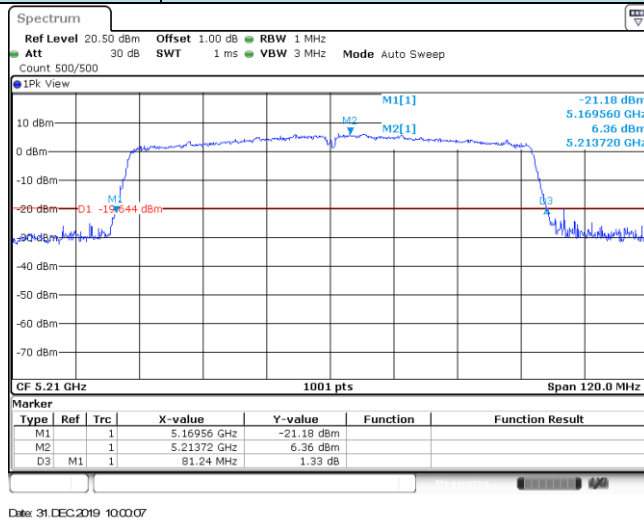
Band I

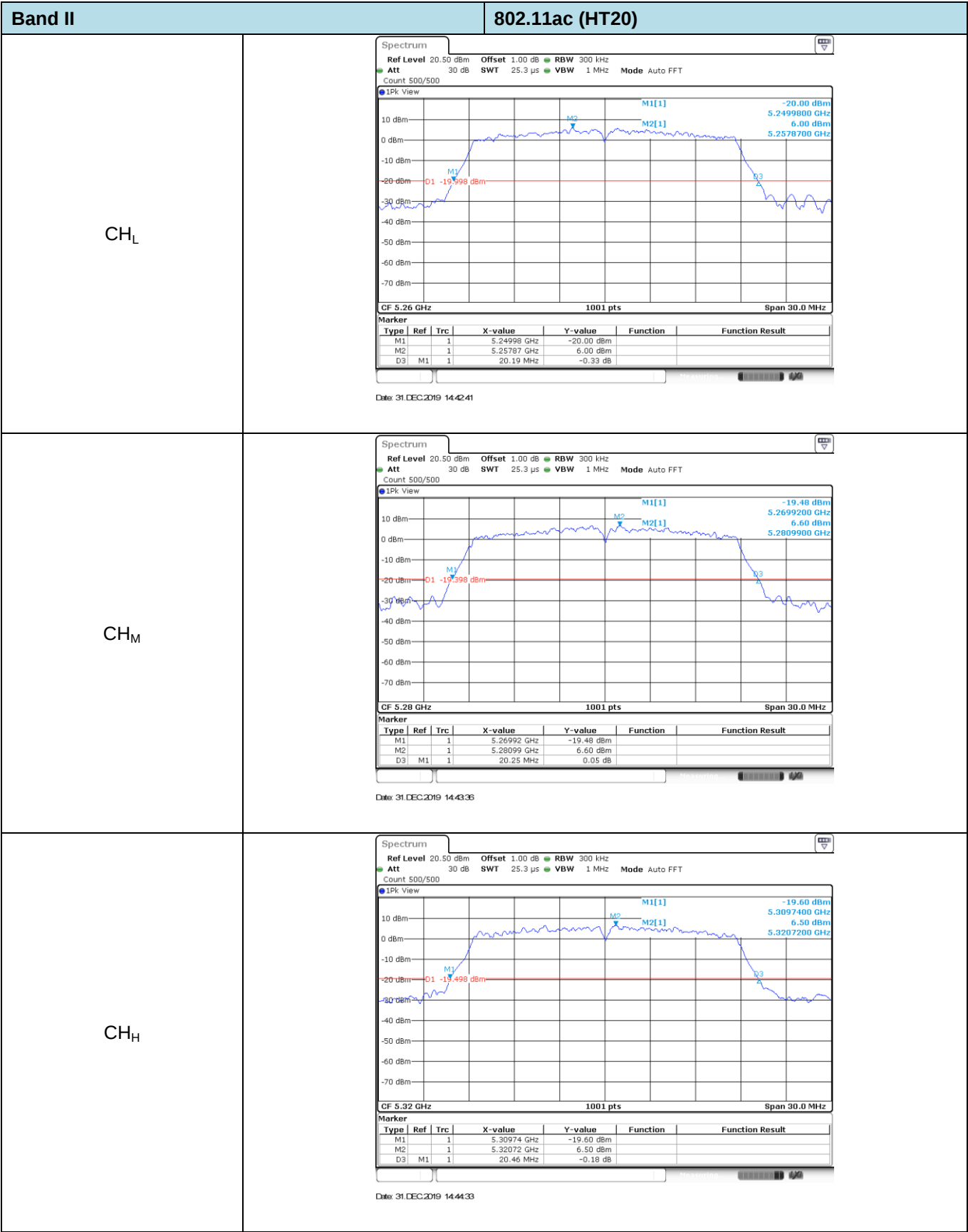
802.11n (HT40)

CH_LCH_H

Band I

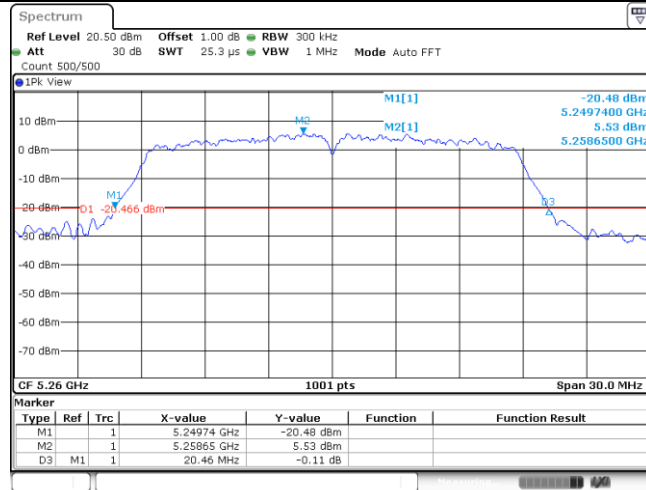
802.11ac (HT80)

CH_M

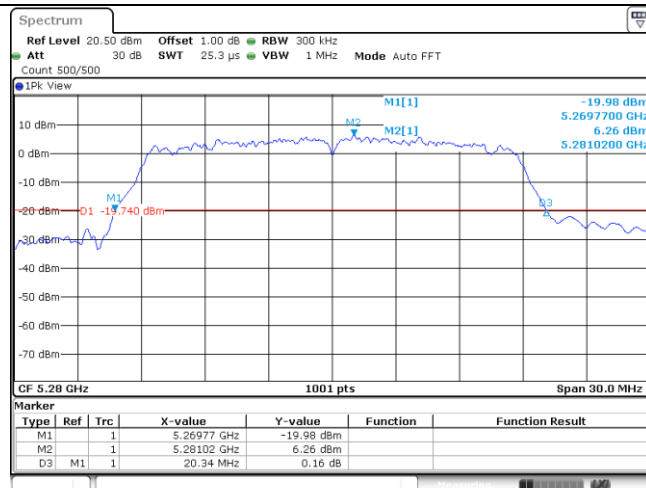


Band II

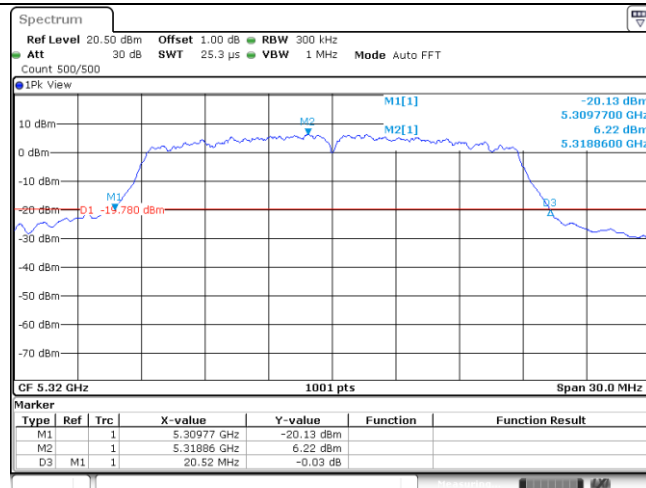
802.11n (HT20)

CH_L

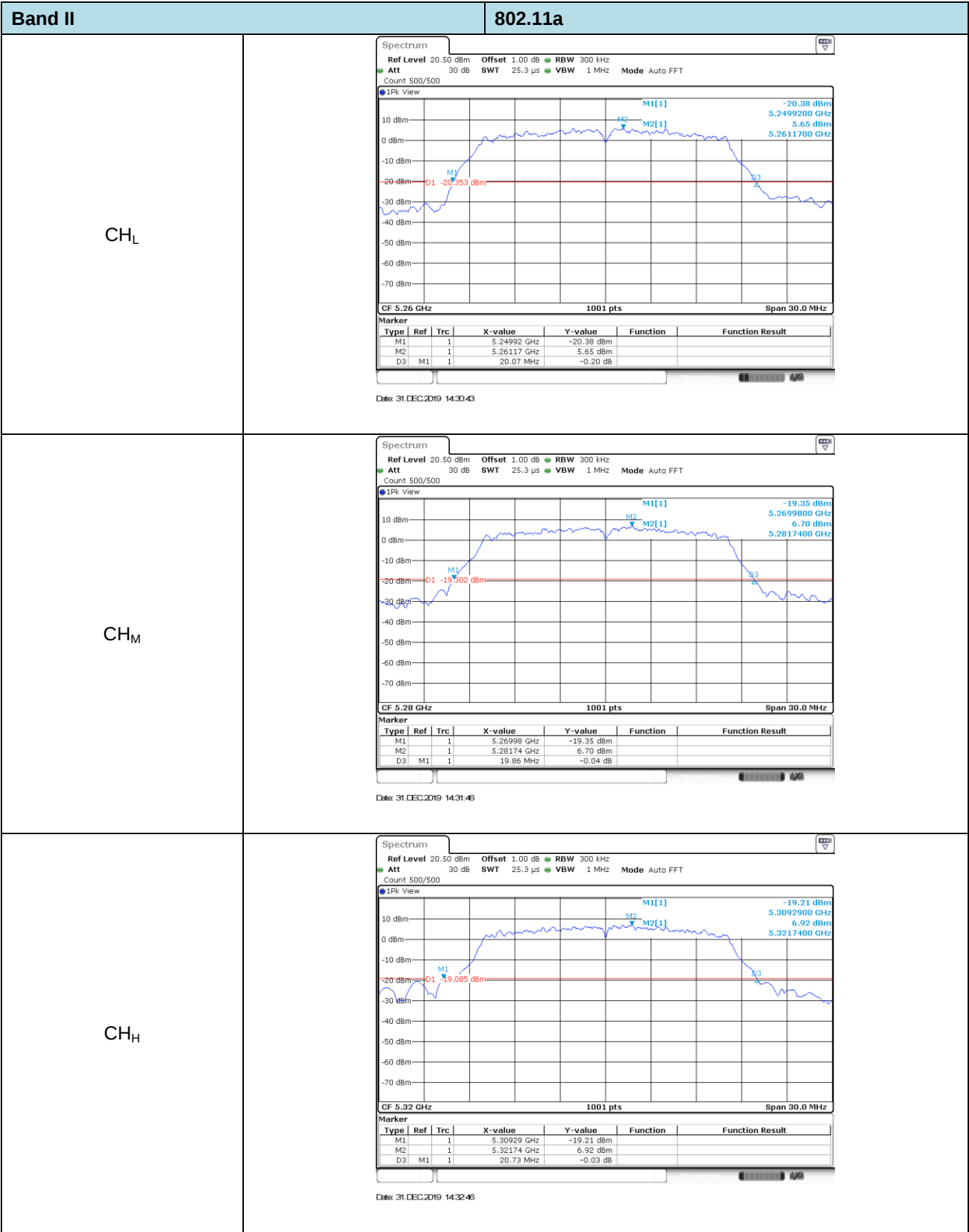
Date: 31.DEC.2019 14:37:21

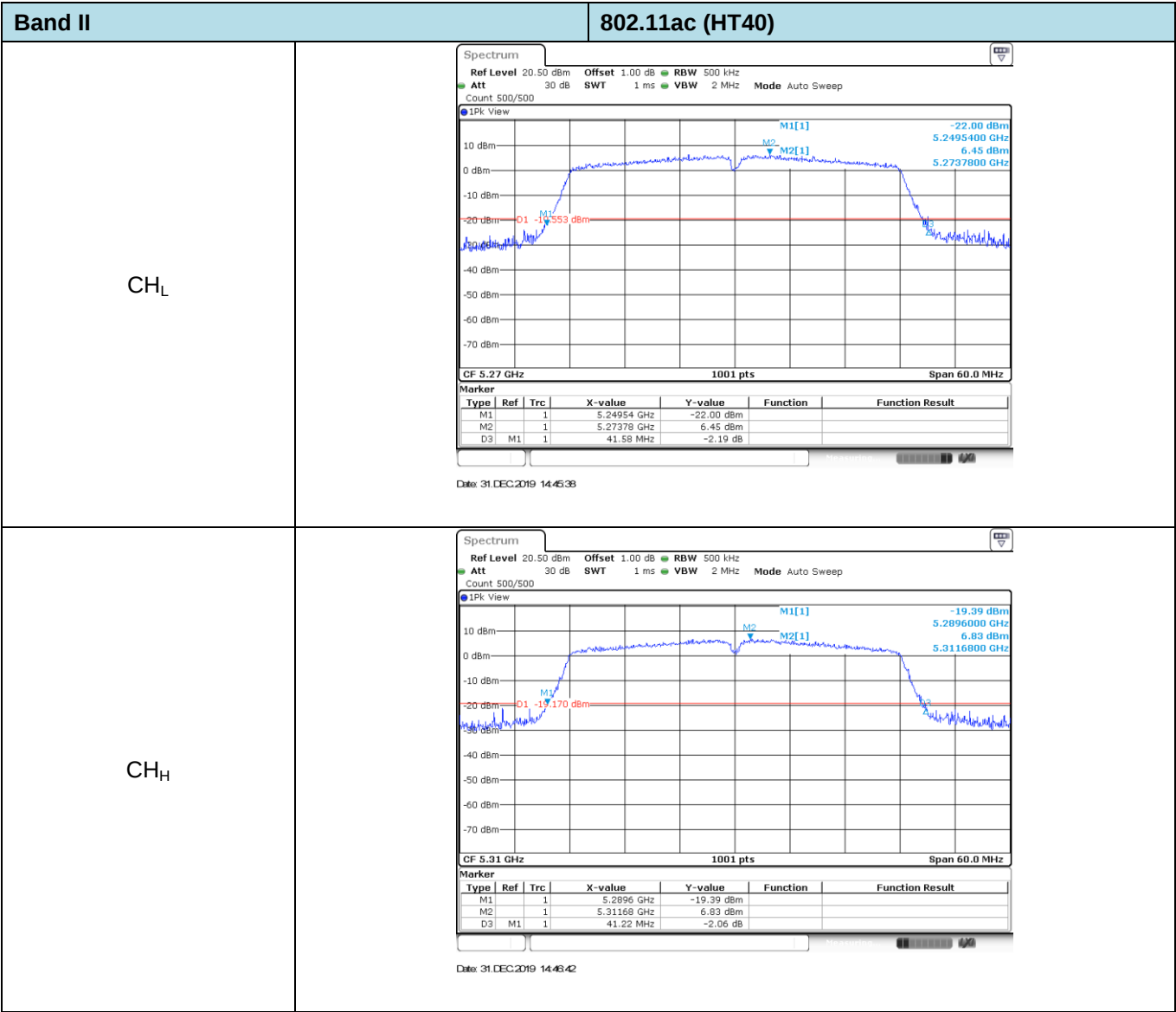
CH_M

Date: 31.DEC.2019 14:38:17

CH_H

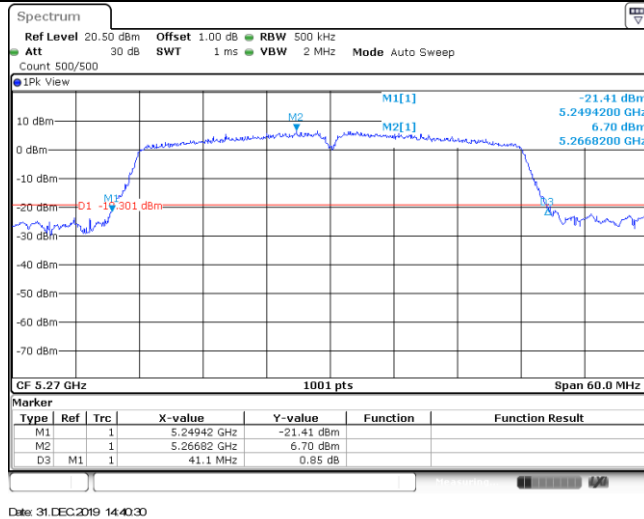
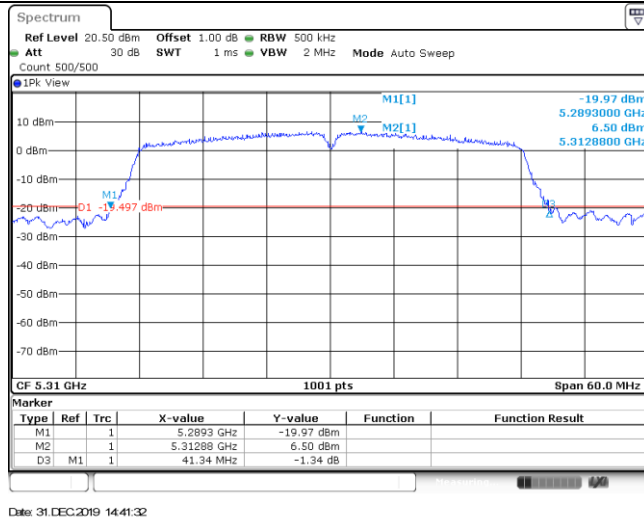
Date: 31.DEC.2019 14:39:15





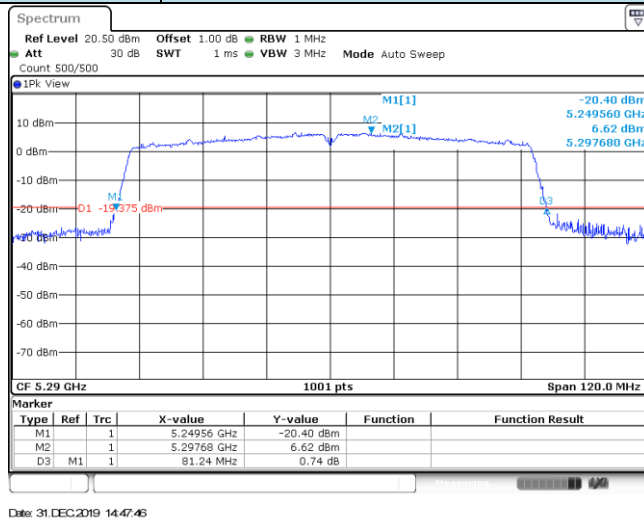
Band II

802.11n (HT40)

CH_LCH_H

Band II

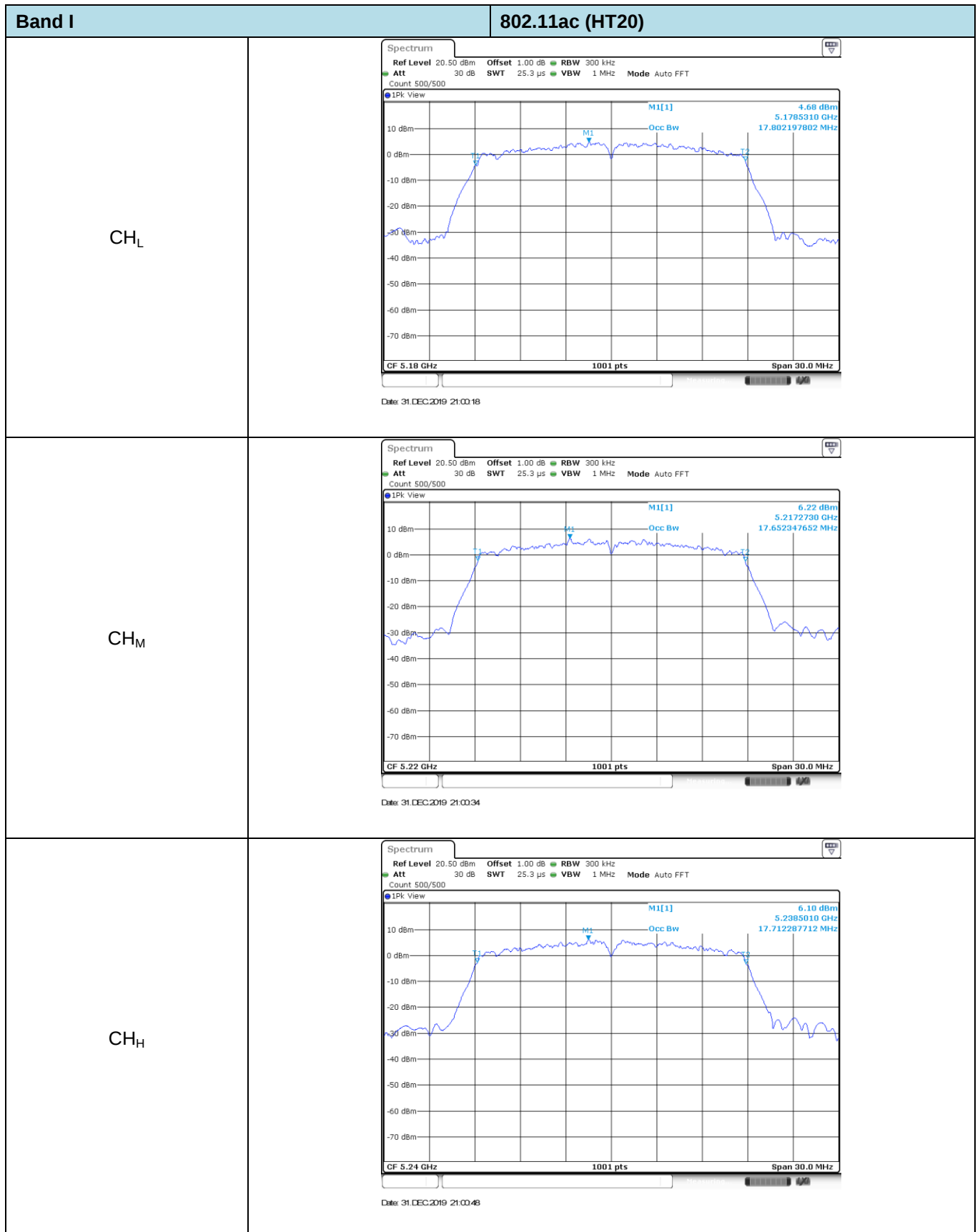
802.11ac (HT80)

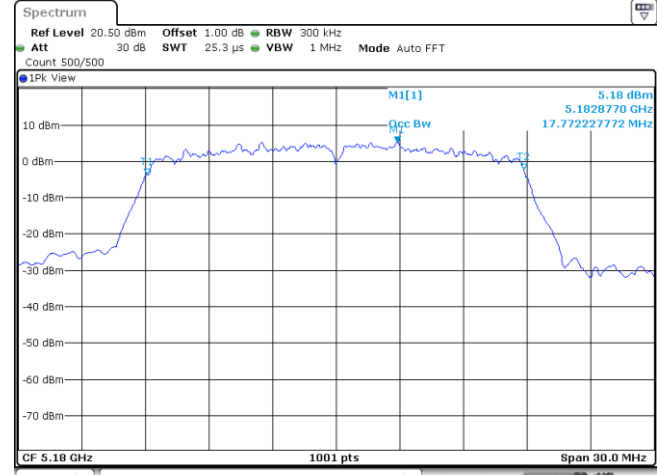
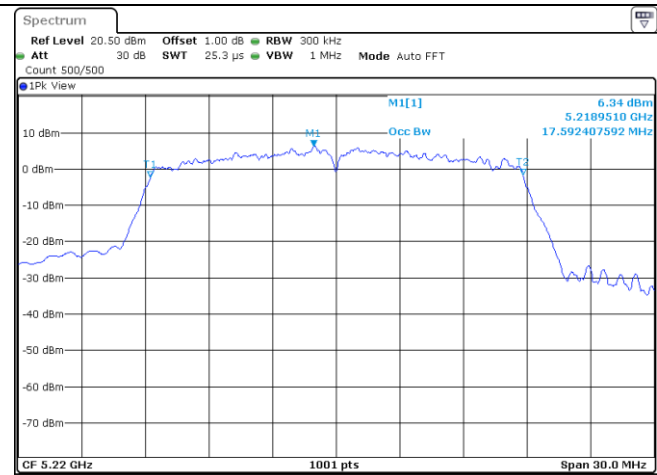
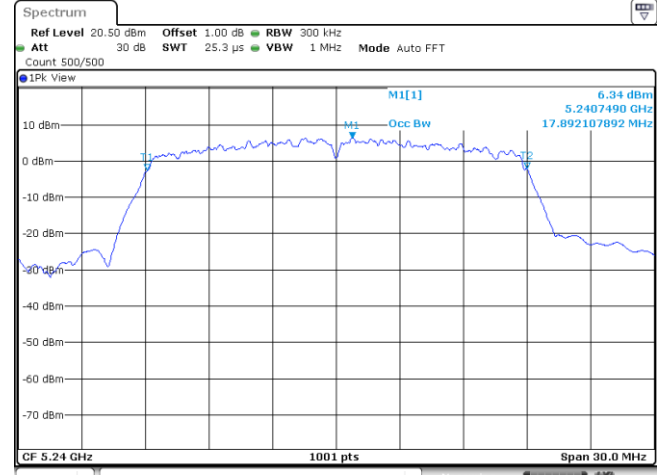
CH_M

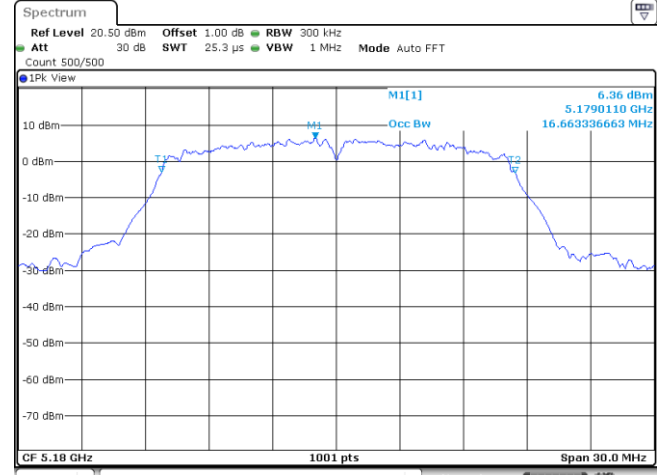
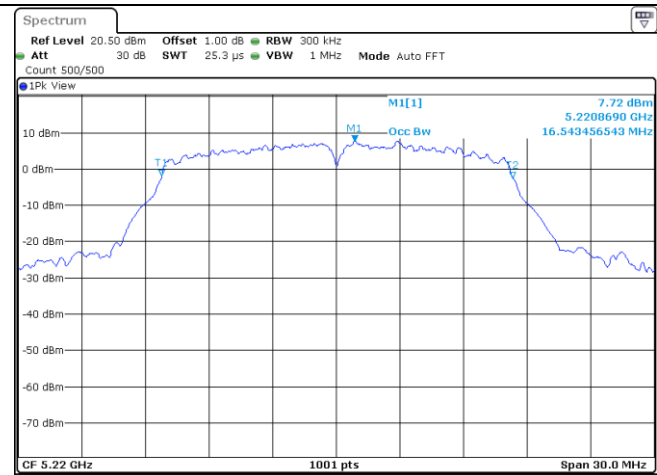
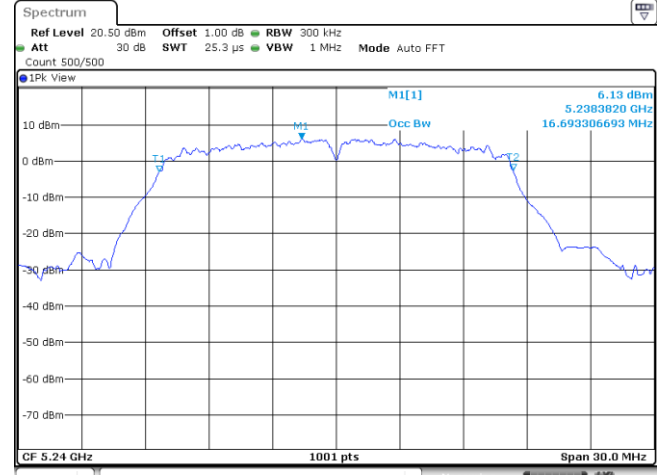
Appendix D: 99% Occupy bandwidth

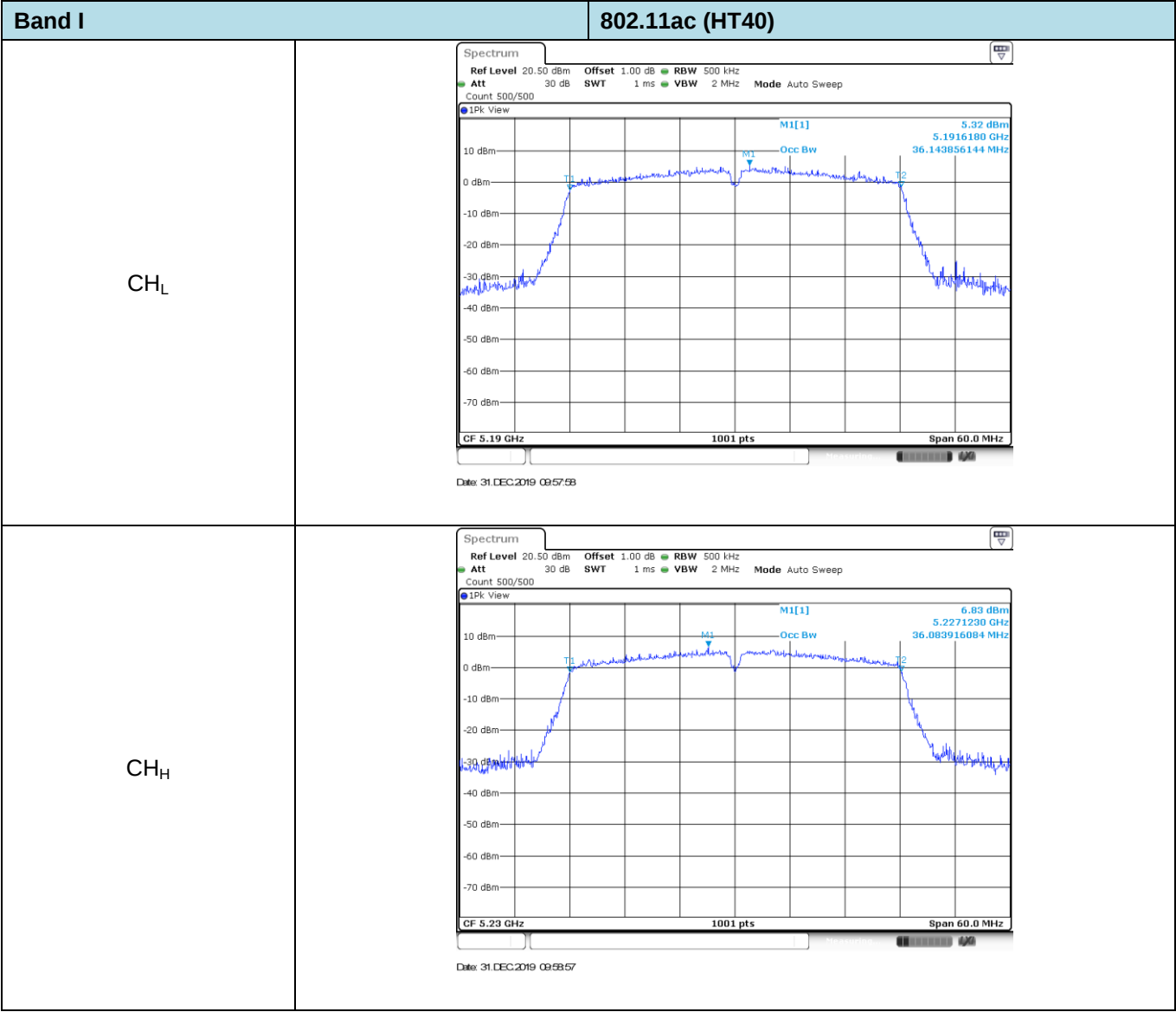
Band	Bandwidth (MHz)	Type	Channel	99% Occupy bandwidth (MHz)	Result
I	20	802.11ac	CH _L	17.80	Pass
			CH _M	17.65	
			CH _H	17.71	
		802.11n	CH _L	17.77	Pass
			CH _M	17.59	
			CH _H	17.89	
		802.11a	CH _L	16.66	Pass
			CH _M	16.54	
			CH _H	16.69	
	40	802.11ac	CH _L	36.14	Pass
			CH _H	36.08	
		802.11n	CH _L	36.08	Pass
			CH _H	36.14	
	80	802.11ac	CH _M	75.17	Pass
II	20	802.11ac	CH _L	17.65	Pass
			CH _M	17.59	
			CH _H	17.71	
		802.11n	CH _L	17.65	Pass
			CH _M	17.74	
			CH _H	17.71	
		802.11a	CH _L	16.54	Pass
			CH _M	16.66	
			CH _H	16.57	
	40	802.11ac	CH _L	36.08	Pass
			CH _H	36.14	
		802.11n	CH _L	36.14	Pass
			CH _H	36.14	
	80	802.11ac	CH _M	75.17	Pass

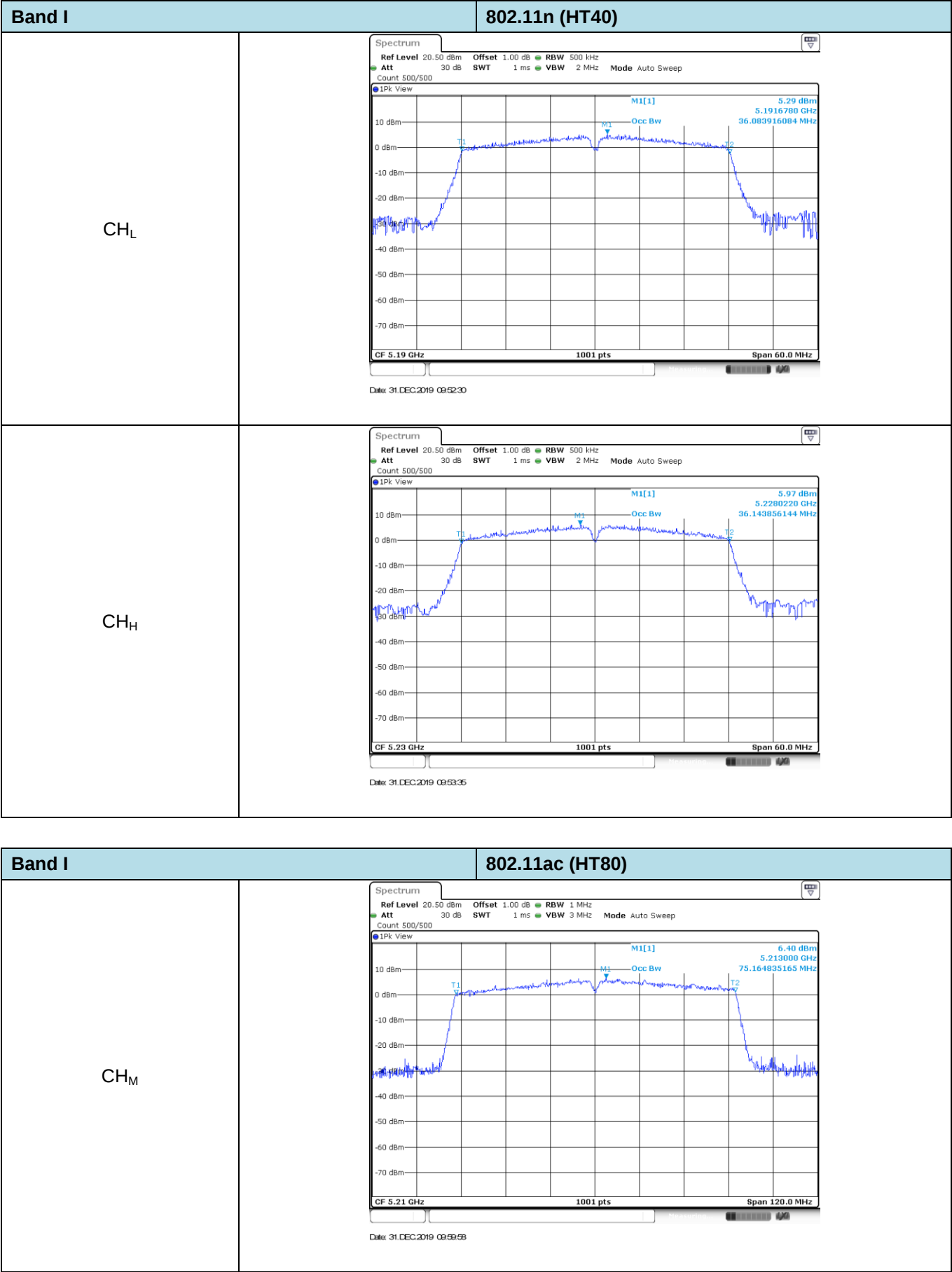
Band	Bandwidth (MHz)	Type	Channel	99% Occupy bandwidth (MHz)	Result
IV	20	802.11ac	CH _L	17.68	Pass
			CH _M	17.74	
			CH _H	17.68	
		802.11n	CH _L	17.68	Pass
			CH _M	17.83	
			CH _H	17.65	
		802.11a	CH _L	16.72	Pass
			CH _M	16.81	
			CH _H	16.63	
	40	802.11ac	CH _L	36.14	Pass
			CH _H	36.20	
		802.11n	CH _L	36.21	Pass
			CH _H	36.21	
	80	802.11ac	CH _M	75.29	Pass



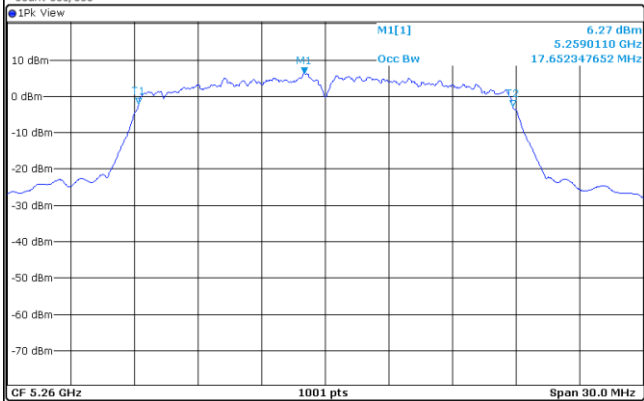
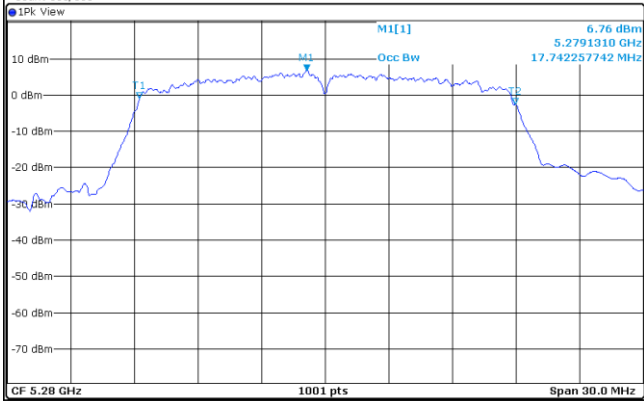
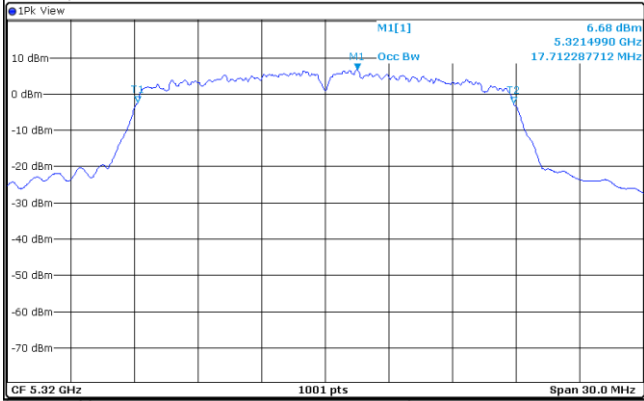
Band I	802.11n (HT20)
CH _L	 Spectrum plot for CH_L channel. The plot shows a signal centered at 5.18 GHz. The peak level is 5.18 dBm. The signal is contained within a 30.0 MHz span. The plot includes a 1001 pt span and a 1001 pt count. The plot is titled 'Spectrum' and includes parameters: Ref Level 20.50 dBm, Att 30 dB, Offset 1.00 dB, RBW 300 kHz, Mode Auto FFT, Count 500/500, and Date: 31 DEC 2019 20:58:36.
CH _M	 Spectrum plot for CH_M channel. The plot shows a signal centered at 5.22 GHz. The peak level is 6.34 dBm. The signal is contained within a 30.0 MHz span. The plot includes a 1001 pt span and a 1001 pt count. The plot is titled 'Spectrum' and includes parameters: Ref Level 20.50 dBm, Att 30 dB, Offset 1.00 dB, RBW 300 kHz, Mode Auto FFT, Count 500/500, and Date: 31 DEC 2019 20:58:55.
CH _H	 Spectrum plot for CH_H channel. The plot shows a signal centered at 5.24 GHz. The peak level is 6.34 dBm. The signal is contained within a 30.0 MHz span. The plot includes a 1001 pt span and a 1001 pt count. The plot is titled 'Spectrum' and includes parameters: Ref Level 20.50 dBm, Att 30 dB, Offset 1.00 dB, RBW 300 kHz, Mode Auto FFT, Count 500/500, and Date: 31 DEC 2019 20:59:35.

Band I	802.11a
CH _L	 Spectrum Ref Level 20.50 dBm Offset 1.00 dB RBW 300 kHz Att 30 dB SWT 25.3 μs VBW 1 MHz Mode Auto FFT Count 500/500 1Pk View MI[1] 6.36 dBm 5.1790110 GHz 16.663336663 MHz CF 5.18 GHz 1001 pts Span 30.0 MHz Date: 31.DEC.2019 20:58:44
CH _M	 Spectrum Ref Level 20.50 dBm Offset 1.00 dB RBW 300 kHz Att 30 dB SWT 25.3 μs VBW 1 MHz Mode Auto FFT Count 500/500 1Pk View MI[1] 7.72 dBm 5.2208690 GHz 16.543456543 MHz CF 5.22 GHz 1001 pts Span 30.0 MHz Date: 31.DEC.2019 20:57:21
CH _H	 Spectrum Ref Level 20.50 dBm Offset 1.00 dB RBW 300 kHz Att 30 dB SWT 25.3 μs VBW 1 MHz Mode Auto FFT Count 500/500 1Pk View MI[1] 6.13 dBm 5.2389820 GHz 16.693306693 MHz CF 5.24 GHz 1001 pts Span 30.0 MHz Date: 31.DEC.2019 20:57:49

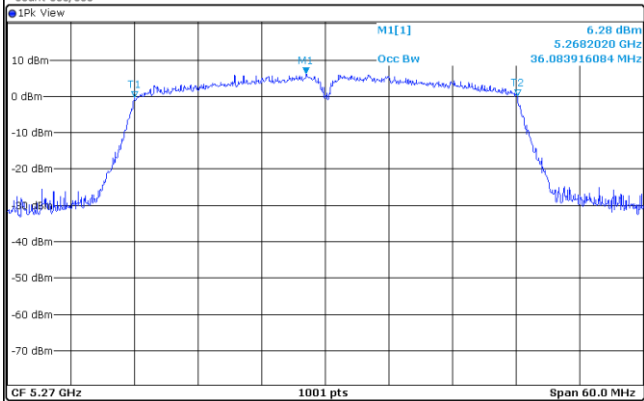
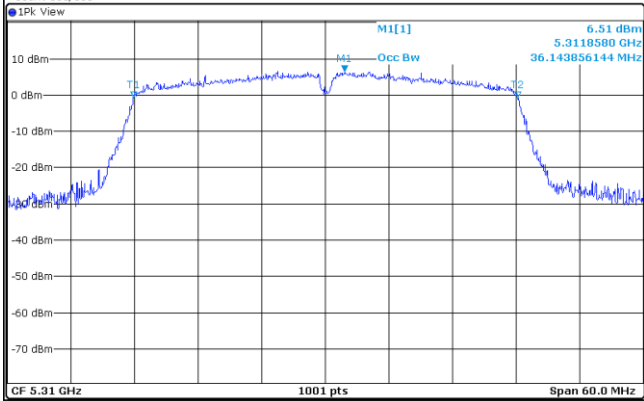




Band II		802.11ac (HT20)
CH _L	Spectrum Ref Level 20.50 dBm Att 30 dB Count 500/500 Offset 1.00 dB SWT 25.3 μs RBW 300 kHz VBW 1 MHz Mode Auto FFT IPk View M1[1] MI Occ Bw 6.82 dBm 5.2614990 GHz 17.652347652 MHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.26 GHz 1001 pts Span 30.0 MHz Date: 31 DEC 2019 21:01:44	
CH _M	Spectrum Ref Level 20.50 dBm Att 30 dB Count 500/500 Offset 1.00 dB SWT 25.3 μs RBW 300 kHz VBW 1 MHz Mode Auto FFT IPk View M1[1] MI Occ Bw 6.11 dBm 5.2783820 GHz 17.592407592 MHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.28 GHz 1001 pts Span 30.0 MHz Date: 31 DEC 2019 21:01:59	
CH _H	Spectrum Ref Level 20.50 dBm Att 30 dB Count 500/500 Offset 1.00 dB SWT 25.3 μs RBW 300 kHz VBW 1 MHz Mode Auto FFT IPk View M1[1] MI Occ Bw 6.16 dBm 5.3180220 GHz 17.712287712 MHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.32 GHz 1001 pts Span 30.0 MHz Date: 31 DEC 2019 21:02:13	

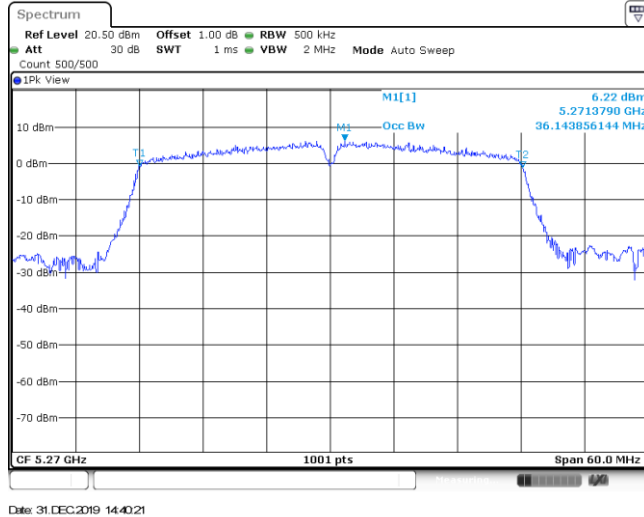
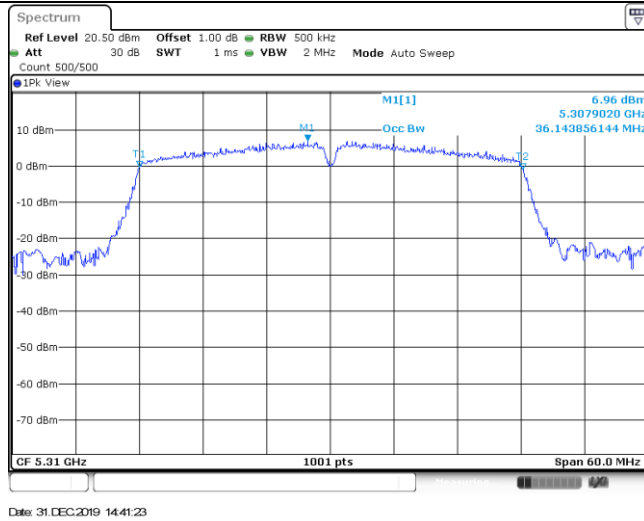
Band II		802.11n (HT20)
CH _L	Spectrum Ref Level 20.50 dBm Att 30 dB Count 500/500 Offset 1.00 dB SWT 25.3 μs RBW 300 kHz VBW 1 MHz Mode Auto FFT 1Pk View  CF 5.26 GHz1001 ptsSpan 30.0 MHz Date: 31.DEC.2019 21:03:03	
CH _M	Spectrum Ref Level 20.50 dBm Att 30 dB Count 500/500 Offset 1.00 dB SWT 25.3 μs RBW 300 kHz VBW 1 MHz Mode Auto FFT 1Pk View  CF 5.28 GHz1001 ptsSpan 30.0 MHz Date: 31.DEC.2019 21:03:18	
CH _H	Spectrum Ref Level 20.50 dBm Att 30 dB Count 500/500 Offset 1.00 dB SWT 25.3 μs RBW 300 kHz VBW 1 MHz Mode Auto FFT 1Pk View  CF 5.32 GHz1001 ptsSpan 30.0 MHz Date: 31.DEC.2019 21:03:33	

Band II		802.11a
CH _L	Spectrum Ref Level 20.50 dBm Att 30 dB Count 500/500 Offset 1.00 dB SWT 25.3 μs RBW 300 kHz VBW 1 MHz Mode Auto FFT 1Pk View M1[1] Occ Bw 6.16 dBm 5.2627270 GHz 16.543456543 MHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.26 GHz 1001 pts Span 30.0 MHz Date: 31.DEC.2019 21:04:01	
CH _M	Spectrum Ref Level 20.50 dBm Att 30 dB Count 500/500 Offset 1.00 dB SWT 25.3 μs RBW 300 kHz VBW 1 MHz Mode Auto FFT 1Pk View M1[1] Occ Bw 6.18 dBm 5.2792510 GHz 16.663336663 MHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.28 GHz 1001 pts Span 30.0 MHz Date: 31.DEC.2019 21:04:15	
CH _H	Spectrum Ref Level 20.50 dBm Att 30 dB Count 500/500 Offset 1.00 dB SWT 25.3 μs RBW 300 kHz VBW 1 MHz Mode Auto FFT 1Pk View M1[1] Occ Bw 7.44 dBm 5.3191310 GHz 16.573426573 MHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.32 GHz 1001 pts Span 30.0 MHz Date: 31.DEC.2019 21:04:30	

Band II		802.11ac (HT40)
CH _L	Spectrum Ref Level 20.50 dBm Att 30 dB Offset 1.00 dB SWT 1 ms RBW 500 kHz VBW 2 MHz Mode Auto Sweep Count 500/500 1Pk View  MI[1] 6.28 dBm 5.2682020 GHz 36.083916084 MHz CF 5.27 GHz 1001 pts Span 60.0 MHz Date: 31.DEC.2019 14:45:29	
CH _H	Spectrum Ref Level 20.50 dBm Att 30 dB Offset 1.00 dB SWT 1 ms RBW 500 kHz VBW 2 MHz Mode Auto Sweep Count 500/500 1Pk View  MI[1] 6.51 dBm 5.3118580 GHz 36.143856144 MHz CF 5.31 GHz 1001 pts Span 60.0 MHz Date: 31.DEC.2019 14:43:33	

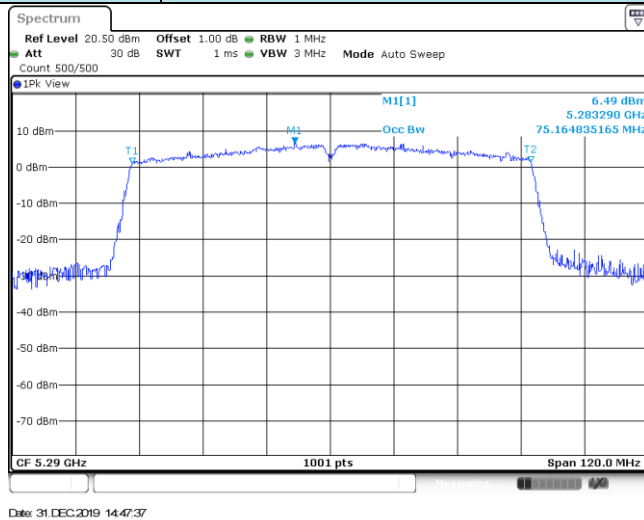
Band II

802.11n (HT40)

CH_LCH_H

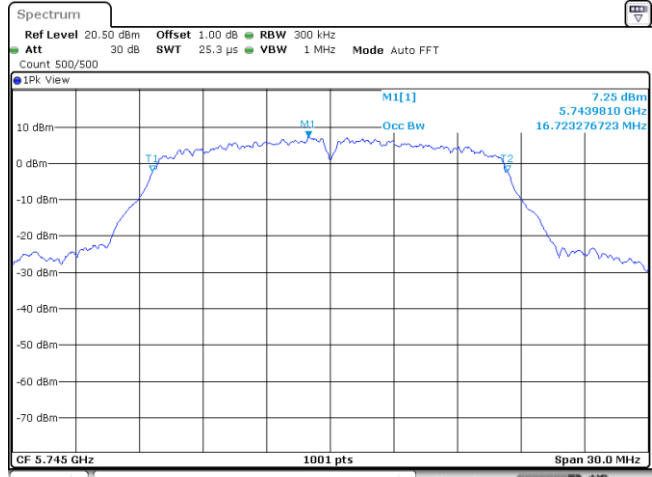
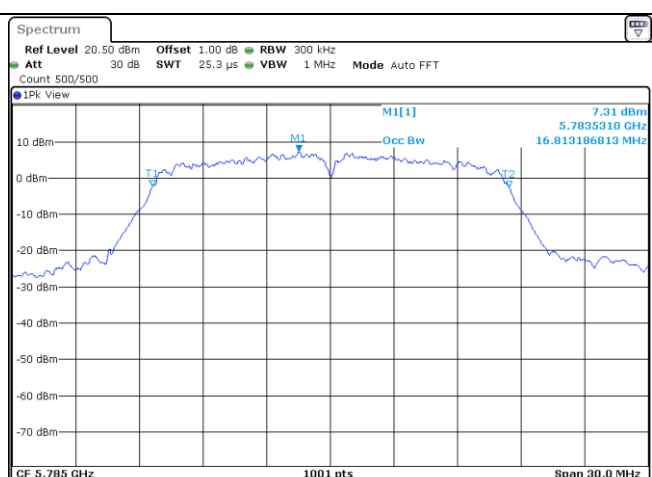
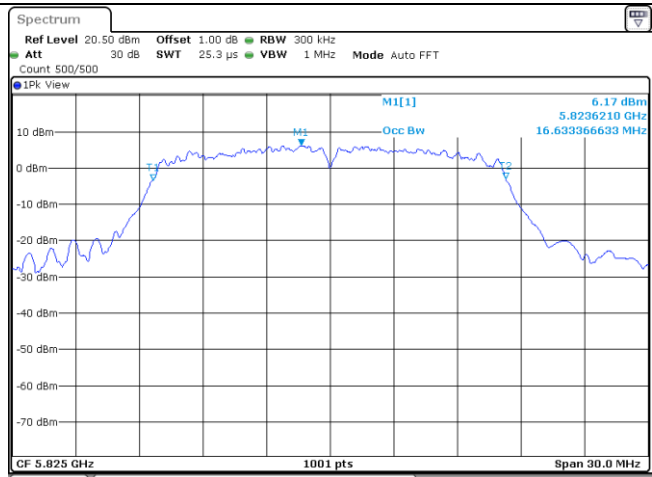
Band II

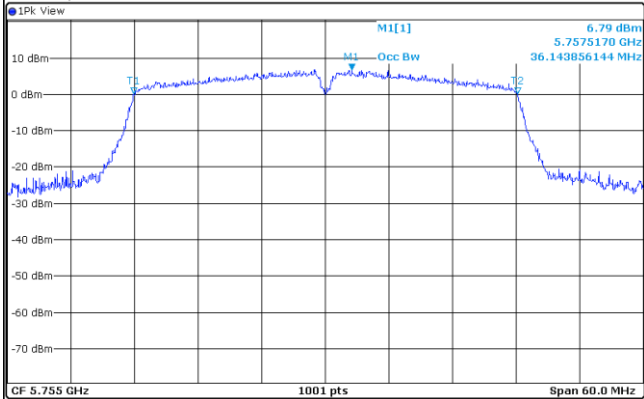
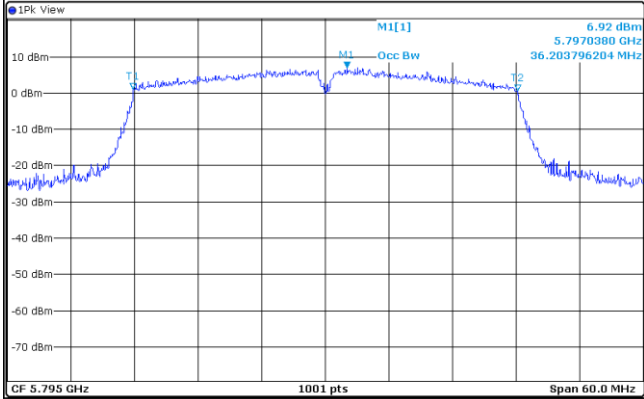
802.11ac (HT80)

CH_M

Band IV		802.11ac (HT20)
CH _L	Spectrum Ref Level 20.50 dBm Att 30 dB Count 500/500 Offset 1.00 dB SWT 25.3 μs RBW 300 kHz VBW 1 MHz Mode Auto FFT IPk View M1 M1[1] Occ Bw 7.47 dBm 5.7458690 GHz 17.682317682 MHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.745 GHz 1001 pts Span 30.0 MHz Date: 31.DEC.2019 21:10:05	
CH _M	Spectrum Ref Level 20.50 dBm Att 30 dB Count 500/500 Offset 1.00 dB SWT 25.3 μs RBW 300 kHz VBW 1 MHz Mode Auto FFT IPk View M1 M1[1] Occ Bw 6.50 dBm 5.7833520 GHz 17.742257742 MHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.785 GHz 1001 pts Span 30.0 MHz Date: 31.DEC.2019 21:10:19	
CH _H	Spectrum Ref Level 20.50 dBm Att 30 dB Count 500/500 Offset 1.00 dB SWT 25.3 μs RBW 300 kHz VBW 1 MHz Mode Auto FFT IPk View M1 M1[1] Occ Bw 6.43 dBm 5.8257190 GHz 17.682317682 MHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.825 GHz 1001 pts Span 30.0 MHz Date: 31.DEC.2019 21:10:31	

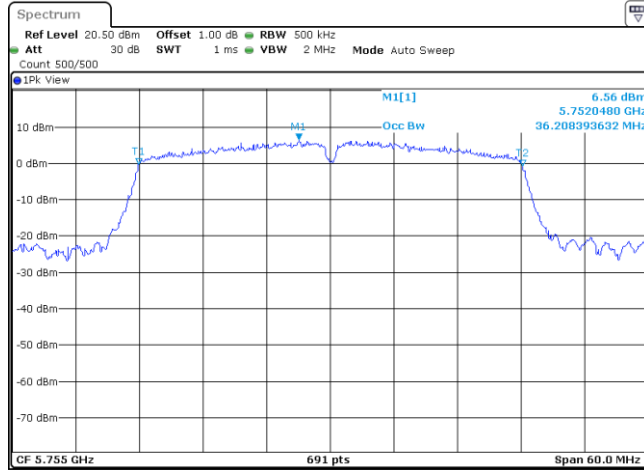
Band IV		802.11n (HT20)
CH _L	Spectrum Ref Level 20.50 dBm Att 30 dB Count 500/500 Offset 1.00 dB SWT 25.3 μs RBW 300 kHz VBW 1 MHz Mode Auto FFT 1Pk View M1[1] 6.35 dBm 5.7478770 GHz 17.682317682 MHz Occ Bw 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.745 GHz 1001 pts Span 30.0 MHz Date: 31.DEC.2019 21:07:04	
CH _M	Spectrum Ref Level 20.50 dBm Att 30 dB Count 500/500 Offset 1.00 dB SWT 25.3 μs RBW 300 kHz VBW 1 MHz Mode Auto FFT 1Pk View M1[1] 6.31 dBm 5.7840110 GHz 17.832167832 MHz Occ Bw 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.785 GHz 1001 pts Span 30.0 MHz Date: 31.DEC.2019 21:07:22	
CH _H	Spectrum Ref Level 20.50 dBm Att 30 dB Count 500/500 Offset 1.00 dB SWT 25.3 μs RBW 300 kHz VBW 1 MHz Mode Auto FFT 1Pk View M1[1] 5.68 dBm 5.8285360 GHz 17.652347652 MHz Occ Bw 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 5.825 GHz 1001 pts Span 30.0 MHz Date: 31.DEC.2019 21:09:34	

Band IV	802.11a
CH _L	 Spectrum plot for CH_L. The plot shows a signal centered around 5.745 GHz. The peak power is 7.25 dBm at 5.749810 GHz. The bandwidth is 16.723276723 MHz. The plot includes a 10 dBm reference level, a 30 dB attenuation, and a 300 kHz resolution bandwidth. The mode is set to Auto FFT.
CH _M	 Spectrum plot for CH_M. The plot shows a signal centered around 5.785 GHz. The peak power is 7.31 dBm at 5.7835310 GHz. The bandwidth is 16.813186813 MHz. The plot includes a 10 dBm reference level, a 30 dB attenuation, and a 300 kHz resolution bandwidth. The mode is set to Auto FFT.
CH _H	 Spectrum plot for CH_H. The plot shows a signal centered around 5.825 GHz. The peak power is 6.17 dBm at 5.8236210 GHz. The bandwidth is 16.633366633 MHz. The plot includes a 10 dBm reference level, a 30 dB attenuation, and a 300 kHz resolution bandwidth. The mode is set to Auto FFT.

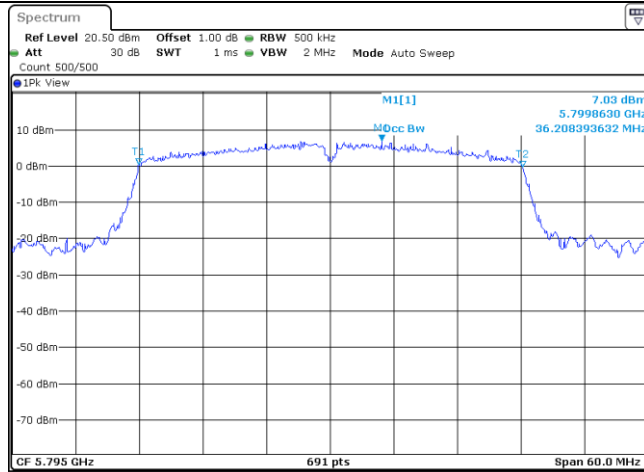
Band IV		802.11ac (HT40)
CH _L	Spectrum Ref Level 20.50 dBm Att 30 dB Offset 1.00 dB SWT 1 ms RBW 500 kHz VBW 2 MHz Mode Auto Sweep Count 500/500 1Pk View  Date: 31.DEC.2019 15:07:59	
CH _H	Spectrum Ref Level 20.50 dBm Att 30 dB Offset 1.00 dB SWT 1 ms RBW 500 kHz VBW 2 MHz Mode Auto Sweep Count 500/500 1Pk View  Date: 31.DEC.2019 15:08:53	

Band IV

802.11n (HT40)

CH_L

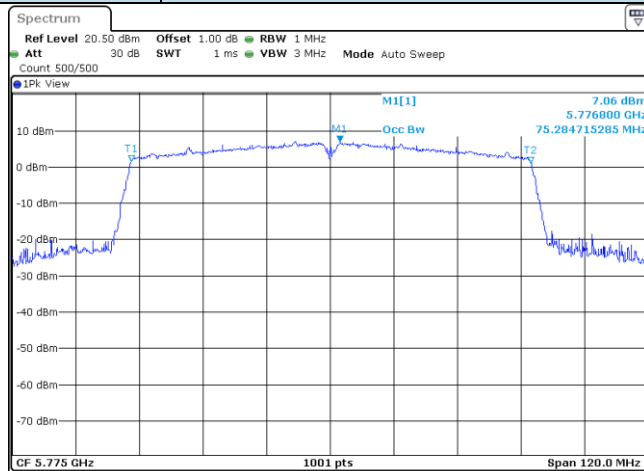
Date: 31 DEC 2019 15:02:41

CH_H

Date: 31 DEC 2019 15:03:35

Band IV

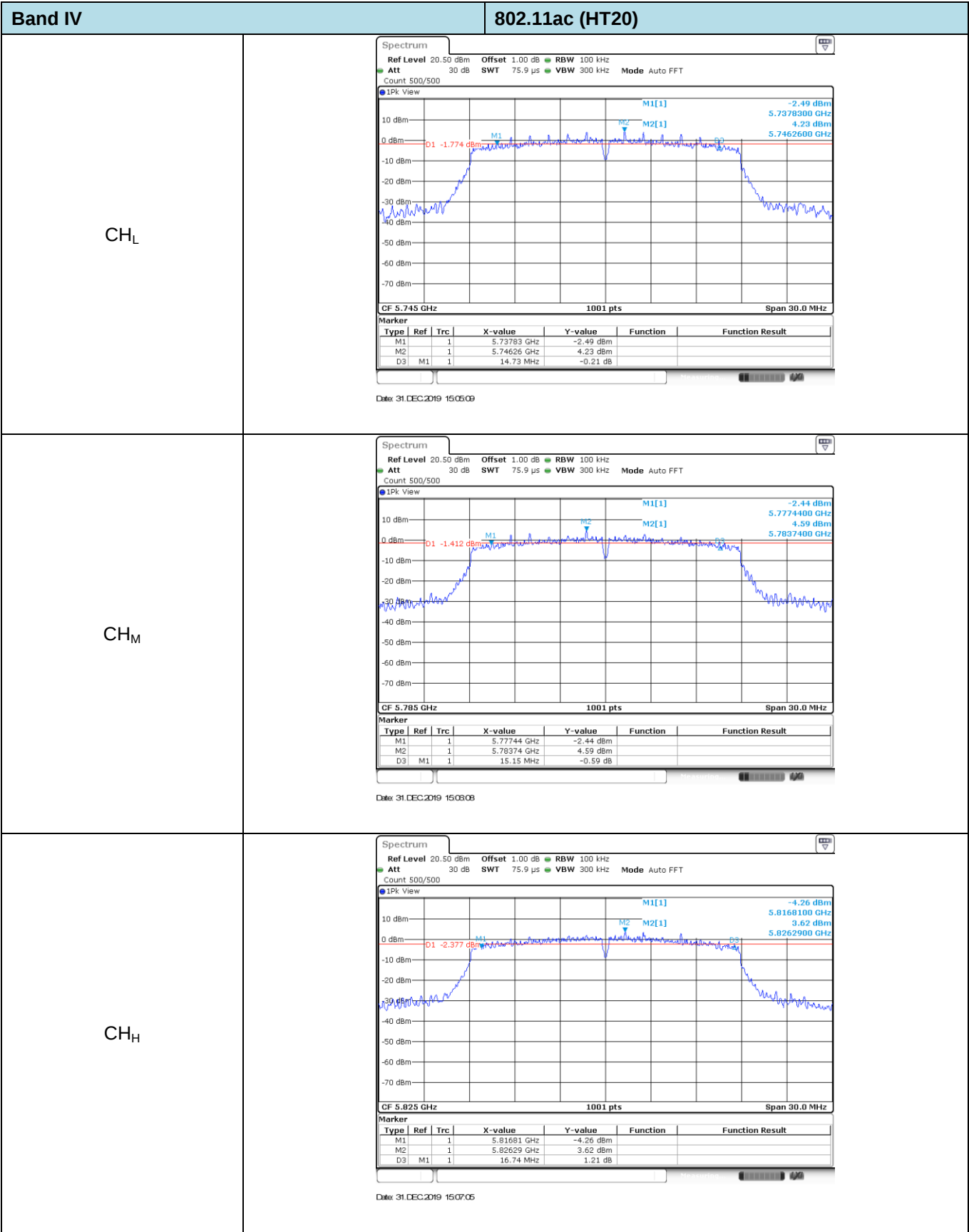
802.11ac (HT80)

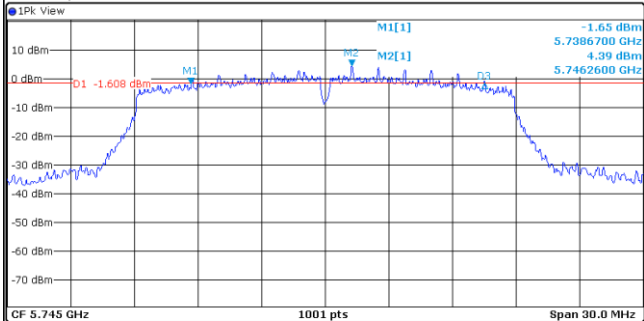
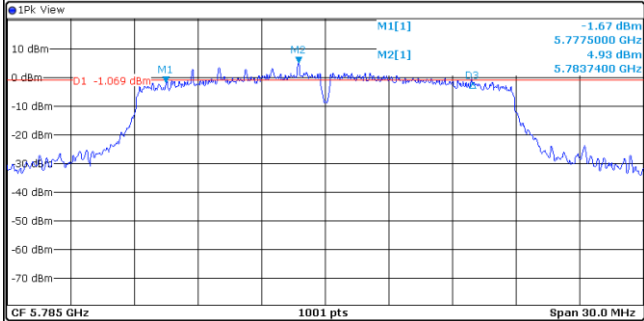
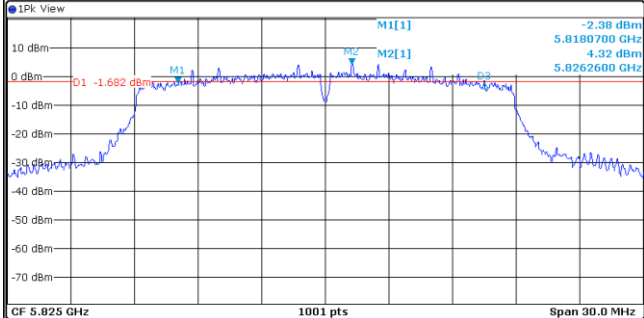
CH_M

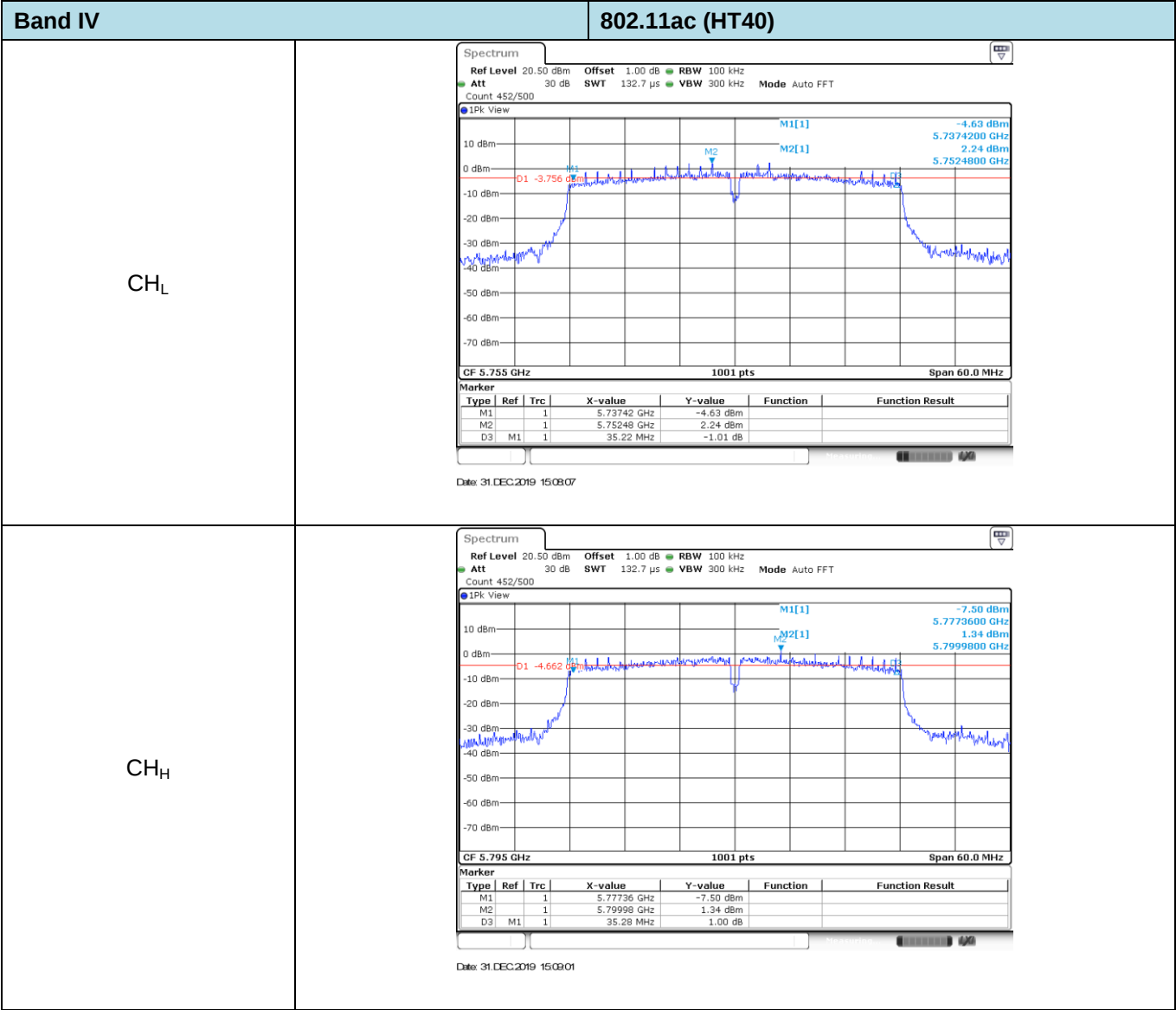
Date: 31 DEC 2019 15:10:01

Appendix E: 6dB Bandwidth

Band	Bandwidth (MHz)	Type	Channel	6dB bandwidth (MHz)	Result
IV	20	802.11ac	CH _L	14.73	Pass
			CH _M	15.15	
			CH _H	16.74	
		802.11n	CH _L	13.86	Pass
			CH _M	14.43	
			CH _H	14.46	
		802.11a	CH _L	15.12	Pass
			CH _M	16.38	
			CH _H	14.73	
	40	802.11ac	CH _L	35.22	Pass
			CH _H	35.28	
		802.11n	CH _L	35.30	Pass
			CH _H	35.30	
	80	802.11ac	CH _M	75.36	Pass

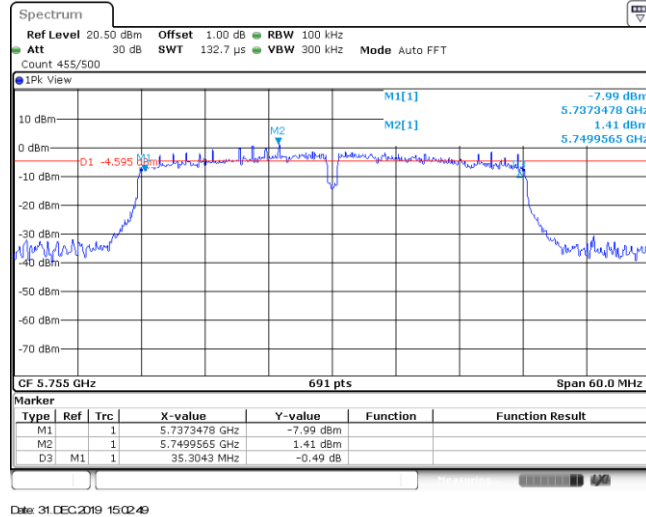
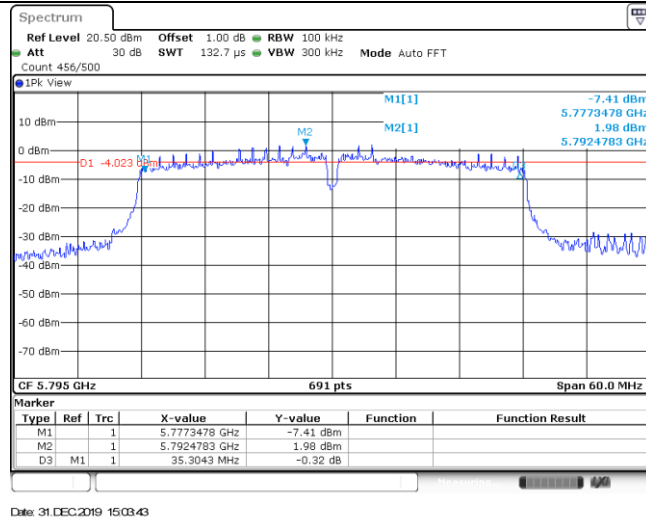


Band IV		802.11n (HT20)																											
CH _L	Spectrum Ref Level 20.50 dBm Att 30 dB Count 500/500 Offset 1.00 dB SWT 75.9 μs RBW 100 kHz VBW 300 kHz Mode Auto FFT IPk View  CF 5.745 GHz1001 ptsSpan 30.0 MHz <table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-value</th><th>Y-value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td></td><td>1</td><td>5.73867 GHz</td><td>-1.65 dBm</td><td></td><td></td></tr><tr><td>M2</td><td></td><td>1</td><td>5.74626 GHz</td><td>4.39 dBm</td><td></td><td></td></tr><tr><td>D3</td><td>M1</td><td>1</td><td>13.86 MHz</td><td>0.01 dB</td><td></td><td></td></tr></table> Date: 31.DEC.2019 14:59:42	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1		1	5.73867 GHz	-1.65 dBm			M2		1	5.74626 GHz	4.39 dBm			D3	M1	1	13.86 MHz	0.01 dB		
Type	Ref	Trc	X-value	Y-value	Function	Function Result																							
M1		1	5.73867 GHz	-1.65 dBm																									
M2		1	5.74626 GHz	4.39 dBm																									
D3	M1	1	13.86 MHz	0.01 dB																									
CH _M	Spectrum Ref Level 20.50 dBm Att 30 dB Count 500/500 Offset 1.00 dB SWT 75.9 μs RBW 100 kHz VBW 300 kHz Mode Auto FFT IPk View  CF 5.785 GHz1001 ptsSpan 30.0 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></td><td>1</td><td>5.7775 GHz</td><td>-1.67 dBm</td><td></td><td></td></tr><tr><td>M2</td><td></td><td>1</td><td>5.78374 GHz</td><td>4.93 dBm</td><td></td><td></td></tr><tr><td>D3</td><td>M1</td><td>1</td><td>14.43 MHz</td><td>-0.17 dB</td><td></td><td></td></tr></table> Date: 31.DEC.2019 15:00:41	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1		1	5.7775 GHz	-1.67 dBm			M2		1	5.78374 GHz	4.93 dBm			D3	M1	1	14.43 MHz	-0.17 dB		
Type	Ref	Trc	X-value	Y-value	Function	Function Result																							
M1		1	5.7775 GHz	-1.67 dBm																									
M2		1	5.78374 GHz	4.93 dBm																									
D3	M1	1	14.43 MHz	-0.17 dB																									
CH _H	Spectrum Ref Level 20.50 dBm Att 30 dB Count 500/500 Offset 1.00 dB SWT 75.9 μs RBW 100 kHz VBW 300 kHz Mode Auto FFT IPk View  CF 5.825 GHz1001 ptsSpan 30.0 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></td><td>1</td><td>5.81807 GHz</td><td>-2.38 dBm</td><td></td><td></td></tr><tr><td>M2</td><td></td><td>1</td><td>5.82626 GHz</td><td>4.32 dBm</td><td></td><td></td></tr><tr><td>D3</td><td>M1</td><td>1</td><td>14.46 MHz</td><td>0.01 dB</td><td></td><td></td></tr></table> Date: 31.DEC.2019 15:01:40	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1		1	5.81807 GHz	-2.38 dBm			M2		1	5.82626 GHz	4.32 dBm			D3	M1	1	14.46 MHz	0.01 dB		
Type	Ref	Trc	X-value	Y-value	Function	Function Result																							
M1		1	5.81807 GHz	-2.38 dBm																									
M2		1	5.82626 GHz	4.32 dBm																									
D3	M1	1	14.46 MHz	0.01 dB																									



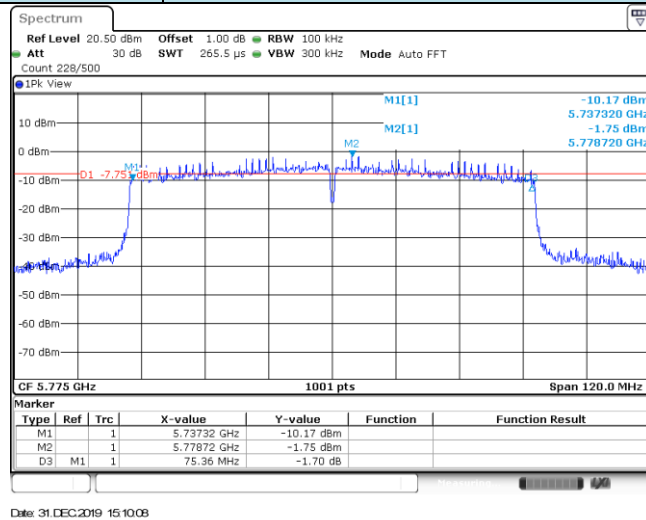
Band IV

802.11n (HT40)

CH_LCH_H

Band IV

802.11ac (HT80)

CH_M

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	0.00	0.00000	PASS
T _N	V _N	0.00	0.00000	PASS
T _N	V _H	0.00	0.00000	PASS

Band: II			Test Frequency: 5260.00MHz	
Temperature (°C)	Voltage (V)	Frequency Deviation (Hz)	Frequency Deviation (ppm)	Result
T _N	V _L	0.00	0.00000	PASS
T _N	V _N	0.00	0.00000	PASS
T _N	V _H	0.00	0.00000	PASS

Band: IV			Test Frequency: 5745.00MHz	
Temperature (°C)	Voltage (V)	Frequency Deviation (Hz)	Frequency Deviation (ppm)	Result
T _N	V _L	0.00	0.00000	PASS
T _N	V _N	-1000.00	-0.17406	PASS
T _N	V _H	0.00	0.00000	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	-1000.00	-0.19305	PASS
V _N	-10	-1000.00	-0.19305	PASS
V _N	0	-1000.00	-0.19305	PASS
V _N	10	-2000.00	-0.38610	PASS
V _N	20	-2000.00	-0.38610	PASS
V _N	30	-2000.00	-0.38610	PASS
V _N	40	-2000.00	-0.38610	PASS
V _N	50	-2000.00	-0.38610	PASS

Band: II			Test Frequency: 5260.00MHz	
Voltage (V)	Temperature (°C)	Frequency Deviation (Hz)	Frequency Deviation (ppm)	Result
V _N	-20	-1000.00	-0.19011	PASS
V _N	-10	-1000.00	-0.19011	PASS
V _N	0	-1000.00	-0.19011	PASS
V _N	10	-1000.00	-0.19011	PASS
V _N	20	-1000.00	-0.19011	PASS
V _N	30	-2000.00	-0.38023	PASS
V _N	40	-2000.00	-0.38023	PASS
V _N	50	-2000.00	-0.38023	PASS

Band: IV			Test Frequency: 5745.00MHz	
Voltage (V)	Temperature (°C)	Frequency Deviation (Hz)	Frequency Deviation (ppm)	Result
V _N	-20	-1000.00	-0.17406	PASS
V _N	-10	-1000.00	-0.17406	PASS
V _N	0	-2000.00	-0.34813	PASS
V _N	10	-2000.00	-0.34813	PASS
V _N	20	-2000.00	-0.34813	PASS
V _N	30	-3000.00	-0.52219	PASS
V _N	40	-3000.00	-0.52219	PASS
V _N	50	-3000.00	-0.52219	PASS

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