

APPENDIX REPORT

Project No.	SHT2109071201EW	Radio Specification	WIFI 5G
Test sample No.	YPHT21120271007	Model No.	A4100
Start test date	2021-12-14	Finish date	2021-12-14
Temperature	22.9℃	Humidity	29%
Test Engineer	Xiaoqin Li	Auditor	Xiaodong Zhe

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	802.11n	CH _L	9.40	86.46	0.63	10.03	24.00	Pass
			CH _M	9.92	86.46	0.63	10.55		
			CH _H	10.22	86.46	0.63	10.85		
		802.11a	CH _L	10.45	87.30	0.59	11.04	24.00	Pass
			CH _M	10.89	87.22	0.59	11.48		
			CH _H	11.14	87.22	0.59	11.73		
	40	802.11n	CH _L	8.86	76.02	1.19	10.05	24.00	Pass
			CH _H	9.50	76.02	1.19	10.69		
II	20	802.11n	CH _L	9.48	86.38	0.64	10.12	24.00	Pass
			CH _M	10.36	86.46	0.63	10.99		
			CH _H	10.71	86.38	0.64	11.35		
		802.11a	CH _L	9.43	87.22	0.59	10.02	24.00	Pass
			CH _M	10.34	87.15	0.60	10.94		
			CH _H	10.69	87.22	0.59	11.28		
	40	802.11n	CH _L	9.83	76.02	1.19	11.02	24.00	Pass
			CH _H	9.29	76.02	1.19	10.48		
III	20	802.11n	CH _L	10.05	86.38	0.64	10.69	24.00	Pass
			CH _M	9.18	86.46	0.63	9.81		
			CH _{H1}	8.93	86.33	0.64	9.57		
			CH _{H2}	8.81	86.38	0.64	9.45		
		802.11a	CH _L	10.25	87.15	0.60	10.85	24.00	Pass
			CH _M	9.39	87.22	0.59	9.98		
			CH _{H1}	9.09	87.15	0.60	9.69		
			CH _{H2}	8.94	87.15	0.60	9.54		
	40	802.11n	CH _L	9.47	76.02	1.19	10.66	24.00	Pass
			CH _M	9.33	76.00	1.19	10.52		
			CH _{H1}	8.84	76.02	1.19	10.03		
			CH _{H2}	8.25	76.08	1.19	9.44		
IV	20	802.11n	CH _L	10.63	86.46	0.63	11.26	30.00	Pass
			CH _M	11.22	86.38	0.64	11.86		
			CH _H	10.53	86.38	0.64	11.17		
		802.11a	CH _L	10.66	87.23	0.59	11.25	30.00	Pass
			CH _M	11.27	87.22	0.59	11.86		
			CH _H	10.54	87.22	0.59	11.13		
	40	802.11n	CH _L	10.17	76.02	1.19	11.36	30.00	Pass
			CH _H	10.65	76.02	1.19	11.84		

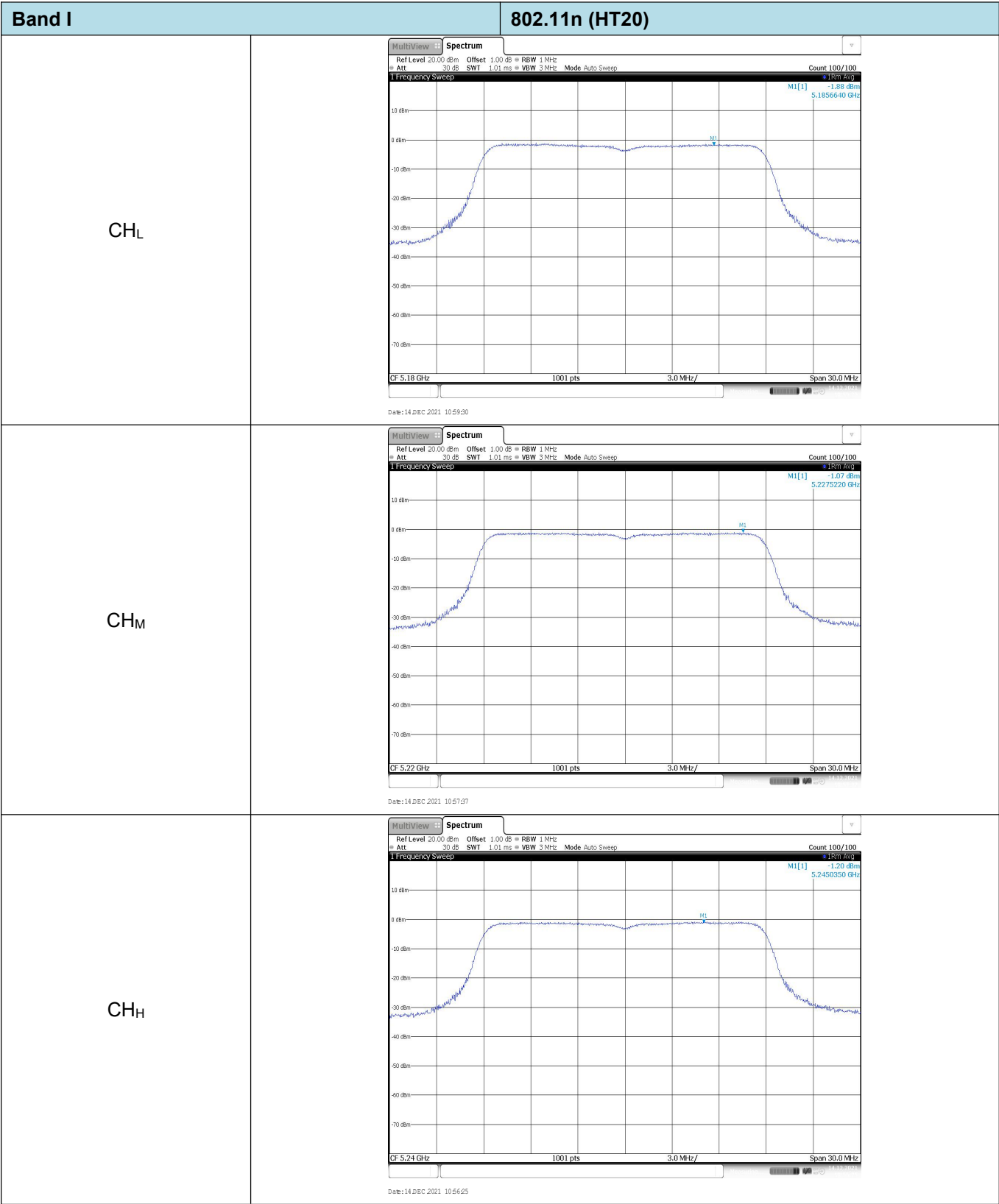
NOTE: duty cycle factor =10LOG(1/ duty cycle)

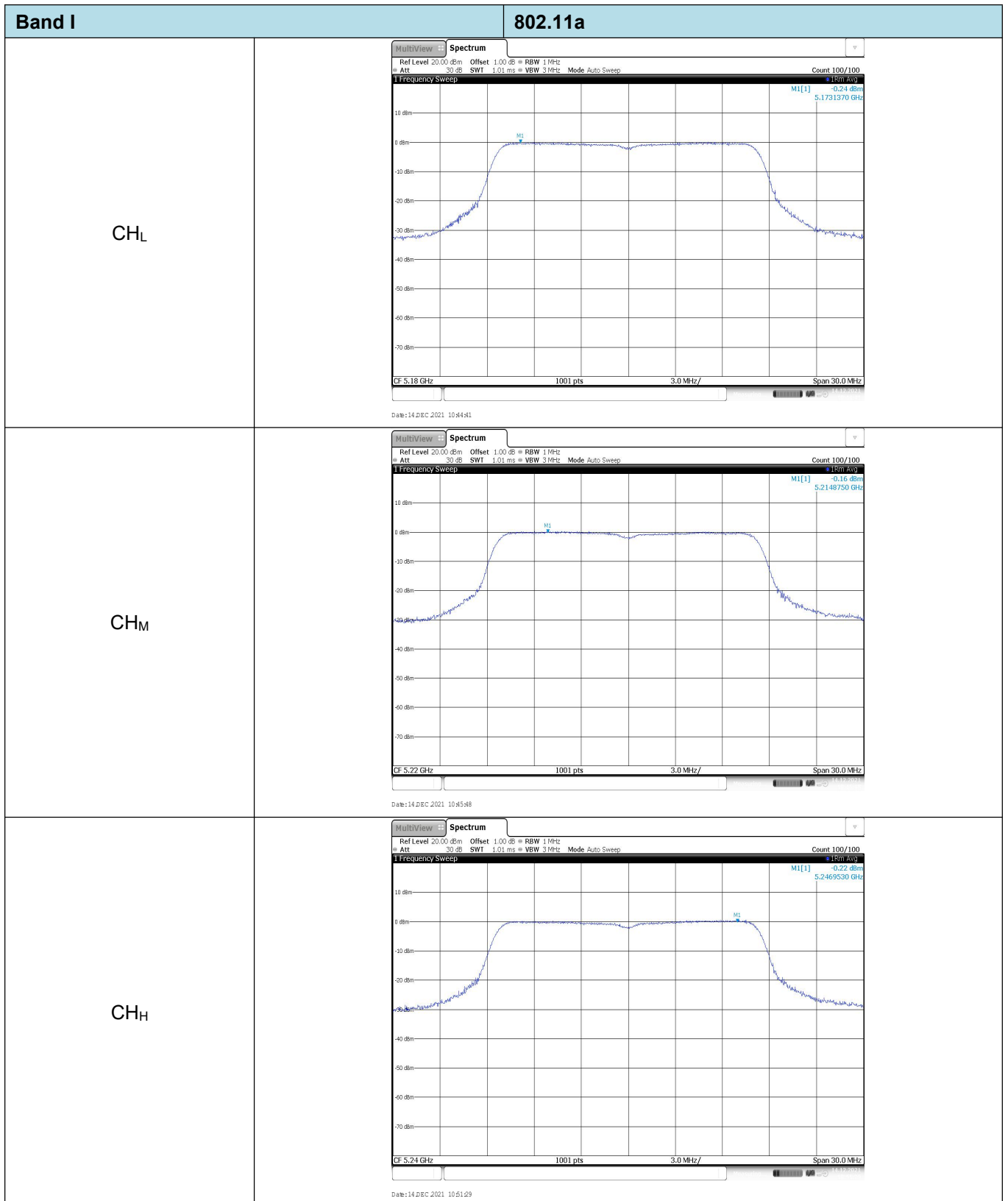
Appendix B: Maximum Power Spectral Density

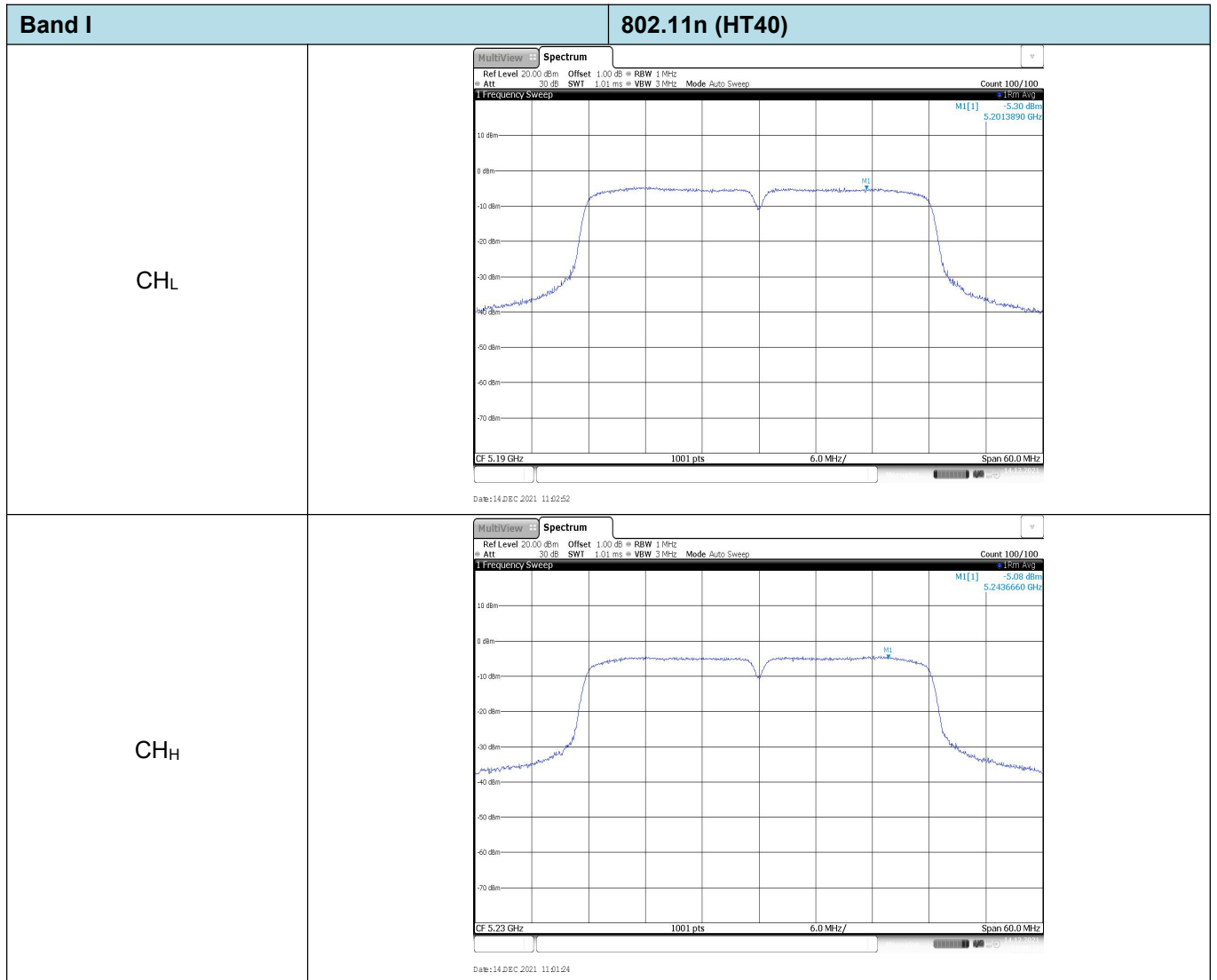
Band	Bandwidth (MHz)	Type	Channel	Reading (dBm)	Duty cycle (%)	Duty cycle factor (dB)	Power Spectral Density (dBm/MHz)	Limit (dBm/MHz)	Result
I	20	802.11n	CH _L	-1.88	86.46	0.63	-1.25	11.00	Pass
			CH _M	-1.07	86.46	0.63	-0.44		
			CH _H	-1.20	86.46	0.63	-0.57		
		802.11a	CH _L	-0.24	87.30	0.59	0.35	11.00	Pass
			CH _M	-0.16	87.22	0.59	0.43		
			CH _H	-0.22	87.22	0.59	0.37		
	40	802.11n	CH _L	-5.30	76.02	1.19	-4.11	11.00	Pass
			CH _H	-5.08	76.02	1.19	-3.89		
II	20	802.11n	CH _L	-2.04	86.38	0.64	-1.40	11.00	Pass
			CH _M	-0.64	86.46	0.63	-0.01		
			CH _H	-0.33	86.38	0.64	0.31		
		802.11a	CH _L	-1.67	87.22	0.59	-1.08	11.00	Pass
			CH _M	-0.62	87.15	0.60	-0.02		
			CH _H	-0.14	87.22	0.59	0.45		
	40	802.11n	CH _L	-4.23	76.02	1.19	-3.04	11.00	Pass
			CH _H	-4.92	76.02	1.19	-3.73		
III	20	802.11n	CH _L	-1.68	86.38	0.64	-1.04	11.00	Pass
			CH _M	-1.90	86.46	0.63	-1.27		
			CH _H	-1.92	86.38	0.64	-1.28		
		802.11a	CH _L	-1.11	87.15	0.60	-0.51	11.00	Pass
			CH _M	-1.44	87.22	0.59	-0.85		
			CH _H	-1.77	87.15	0.60	-1.17		
	40	802.11n	CH _L	-5.40	76.02	1.19	-4.21	11.00	Pass
			CH _M	-5.62	76.00	1.19	-4.43		
			CH _H	-5.64	76.08	1.19	-4.45		

Band	Bandwidth (MHz)	Type	Channel	Reading (dBm)	Duty cycle (%)	Duty cycle factor (dB)	Power Spectral Density (dBm/500kHz)	Limit (dBm/500k Hz)	Result
IV	20	802.11n	CH _L	-3.55	86.46	0.63	-2.92	30.00	Pass
			CH _M	-3.61	86.38	0.64	-2.97		
			CH _H	-3.43	86.38	0.64	-2.79		
		802.11a	CH _L	-3.64	87.23	0.59	-3.05	30.00	Pass
			CH _M	-3.23	87.22	0.59	-2.64		
	40	802.11n	CH _H	-3.41	87.22	0.59	-2.82	30.00	Pass
			CH _L	-7.40	76.02	1.19	-6.21		
			CH _H	-6.43	76.02	1.19	-5.24		

Test plot as follows:



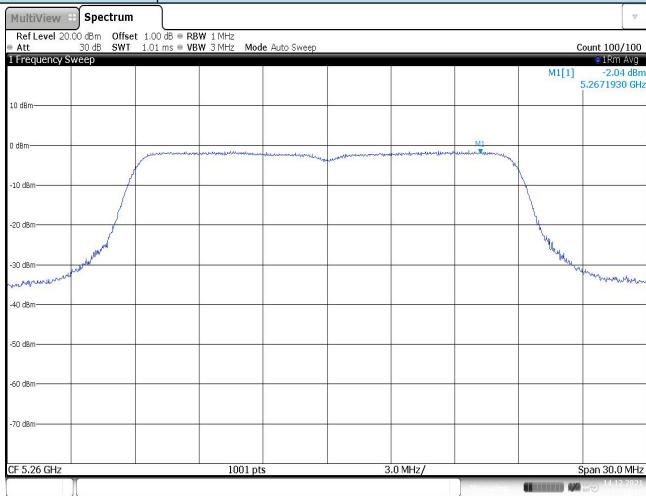




Band II

802.11n (HT20)

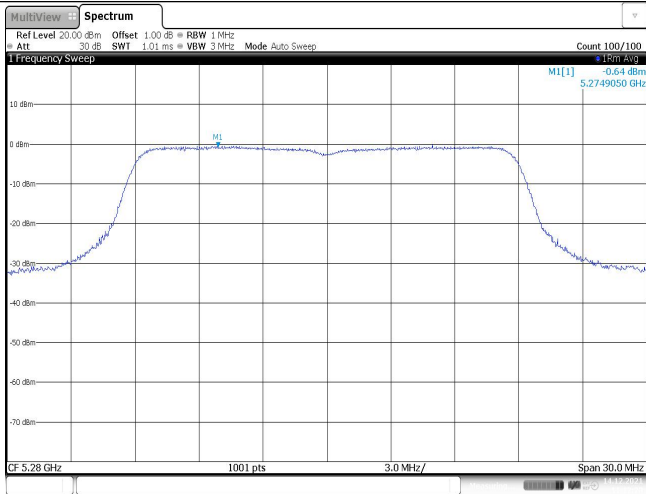
CH_L



MultiView Spectrum
Ref Level 20.00 dBm Offset 1.00 dB RBW 1 MHz
Att 30 dB SWI 1.01 ms VBW 3 MHz Mode Auto Sweep
Count 100/100
1 Frequency Sweep
M1[1] -2.04 dBm
5.2671930 GHz
CF 5.26 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz

Date: 14 DEC 2021 11:54:27

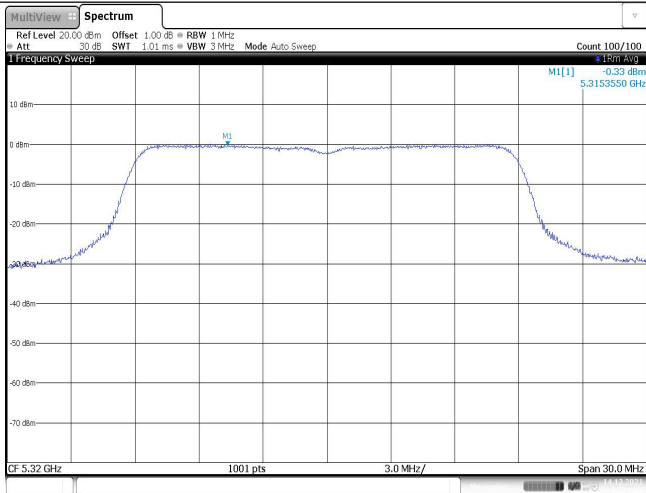
CH_M



MultiView Spectrum
Ref Level 20.00 dBm Offset 1.00 dB RBW 1 MHz
Att 30 dB SWI 1.01 ms VBW 3 MHz Mode Auto Sweep
Count 100/100
1 Frequency Sweep
M1[1] -0.64 dBm
5.2749050 GHz
CF 5.28 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz

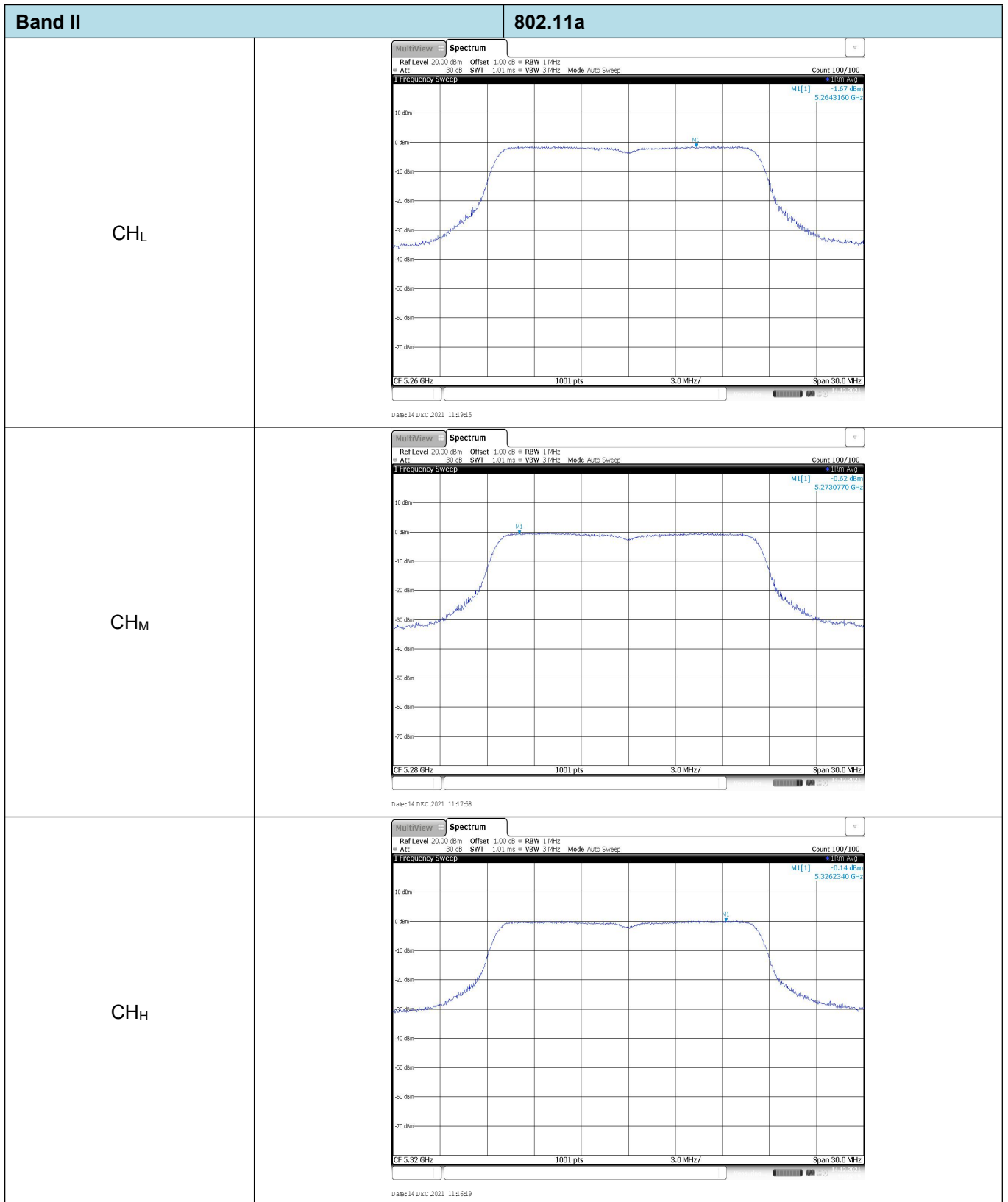
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CH_H



MultiView Spectrum
Ref Level 20.00 dBm Offset 1.00 dB RBW 1 MHz
Att 30 dB SWI 1.01 ms VBW 3 MHz Mode Auto Sweep
Count 100/100
1 Frequency Sweep
M1[1] -0.53 dBm
5.3153550 GHz
CF 5.32 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz

Date: 14 DEC 2021 11:51:54



Band II

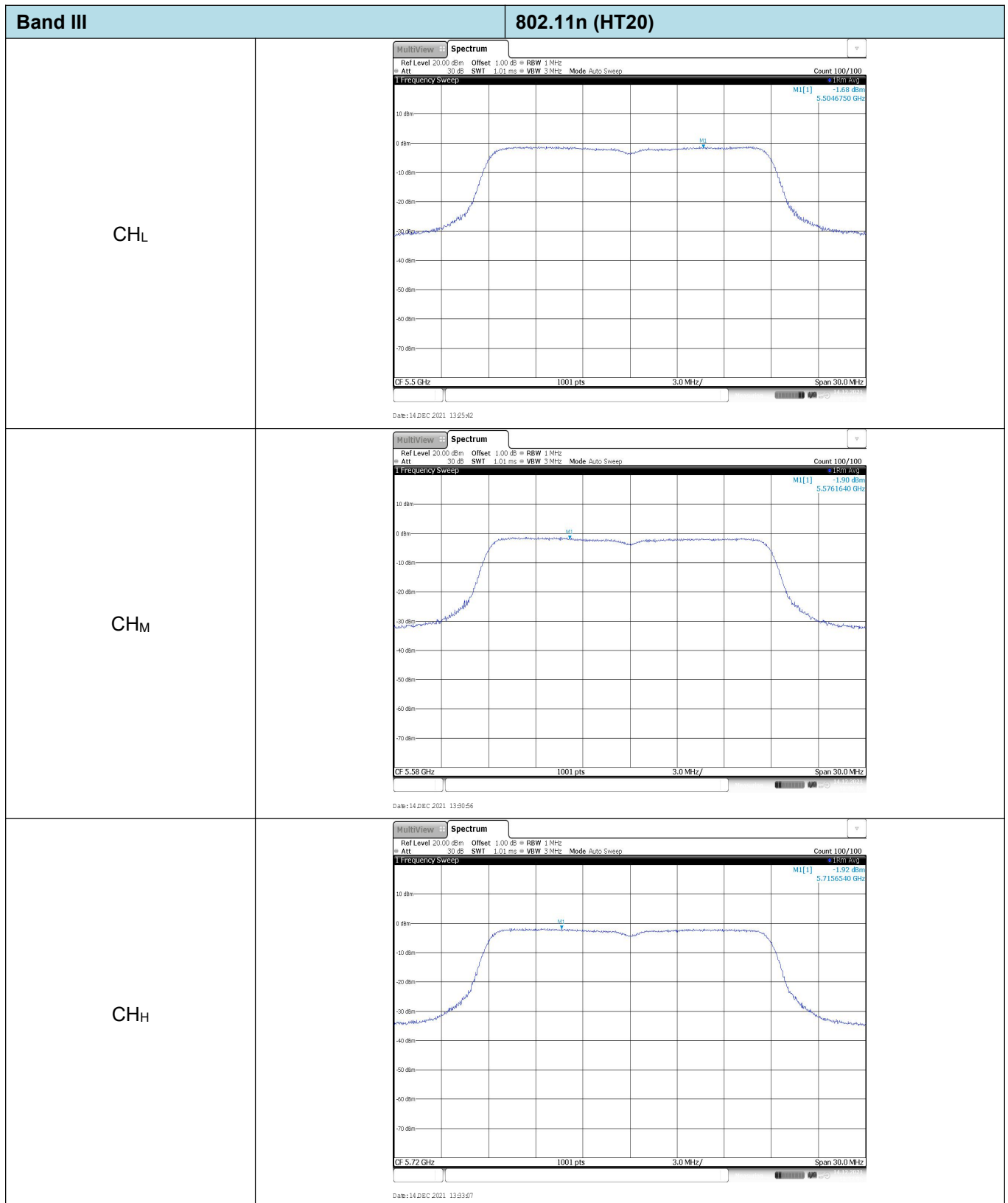
802.11n (HT40)

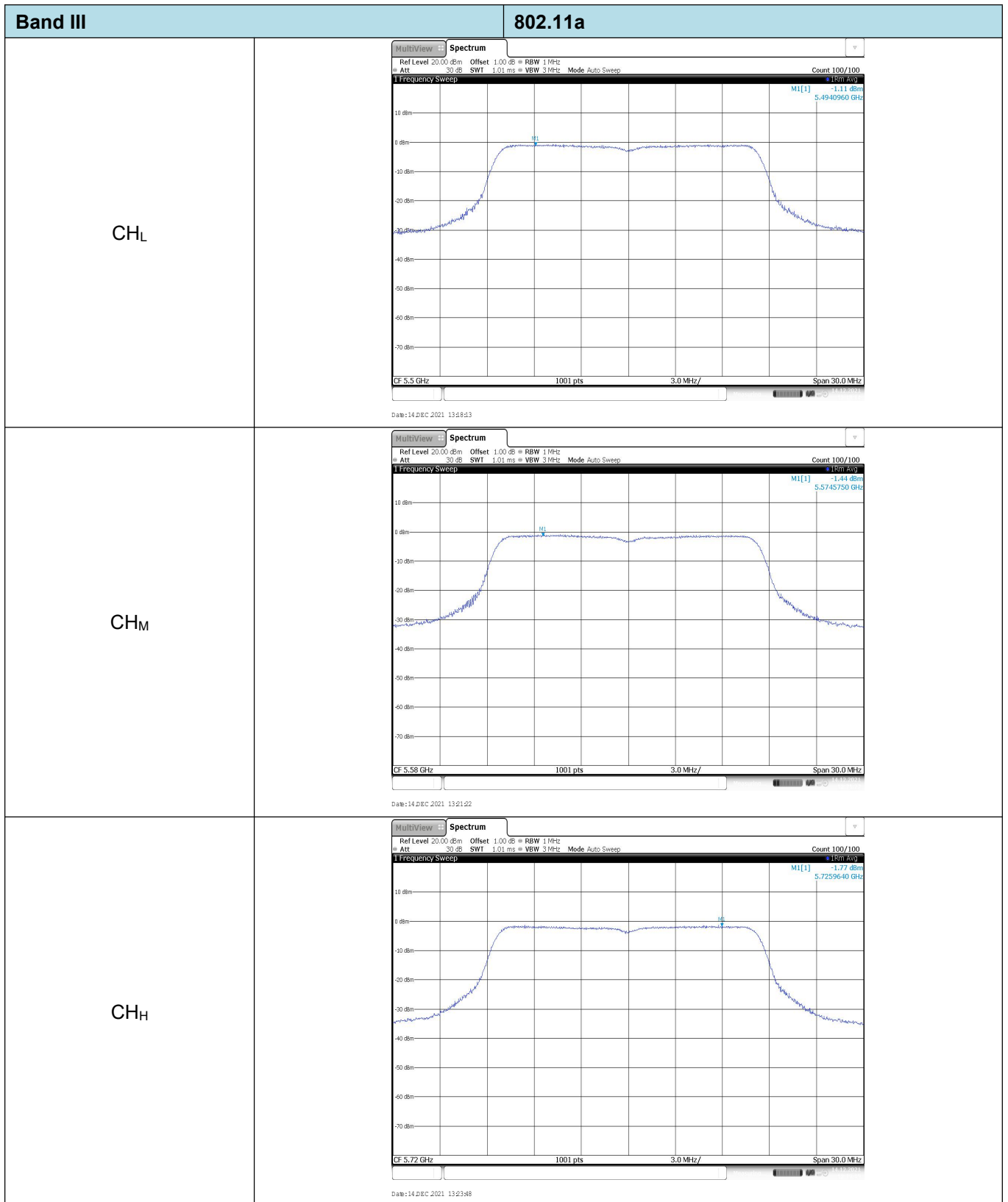
CH_L

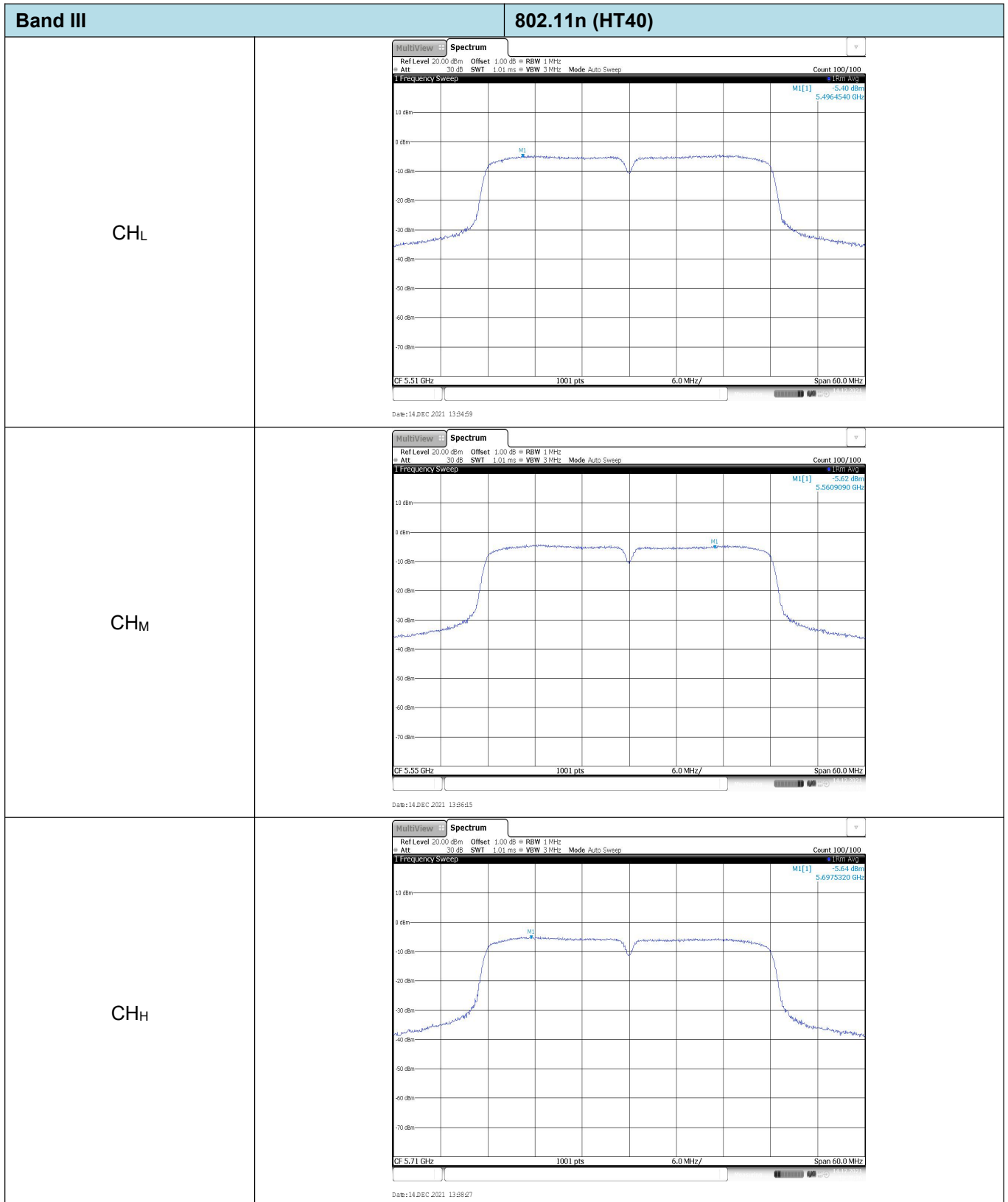
This spectrum plot for channel CH_L shows a signal centered around 5.275 GHz. The frequency span is 60.0 MHz, ranging from 5.27 GHz to 5.28 GHz. The signal level is approximately -4.23 dBm. The plot includes a grid with dBm on the vertical axis (from -70 to 10) and frequency on the horizontal axis. The signal is a flat-topped pulse with a small notch in the center. The interface shows settings: Ref Level 20.00 dBm, Offset 1.00 dB, RBW 1 MHz, Att 30 dB, SWT 1.01 ms, VBW 3 MHz, Mode Auto Sweep, Count 100/100, and 15m Avg. The date and time are 14 DEC 2021 11:05:51.

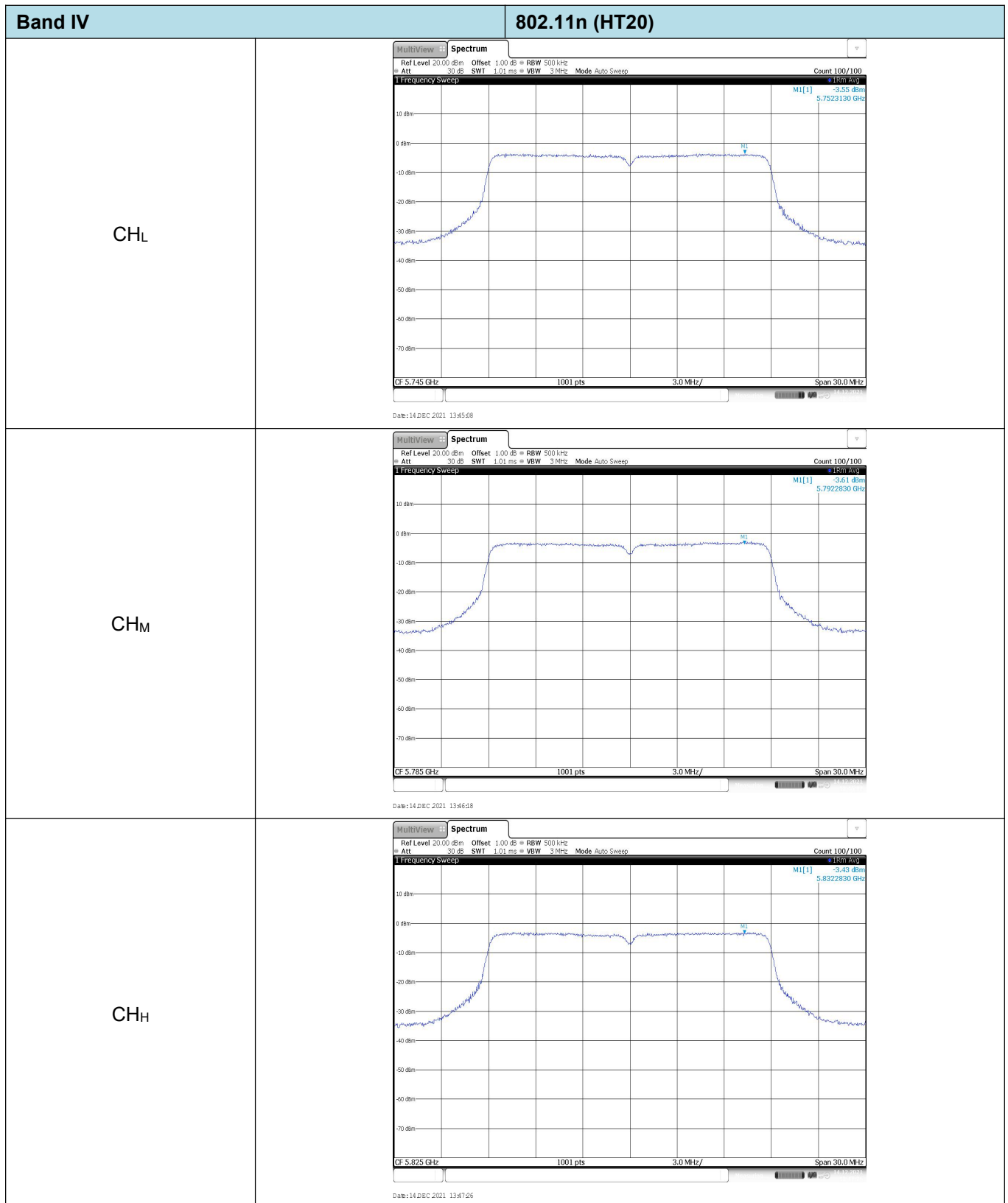
CH_H

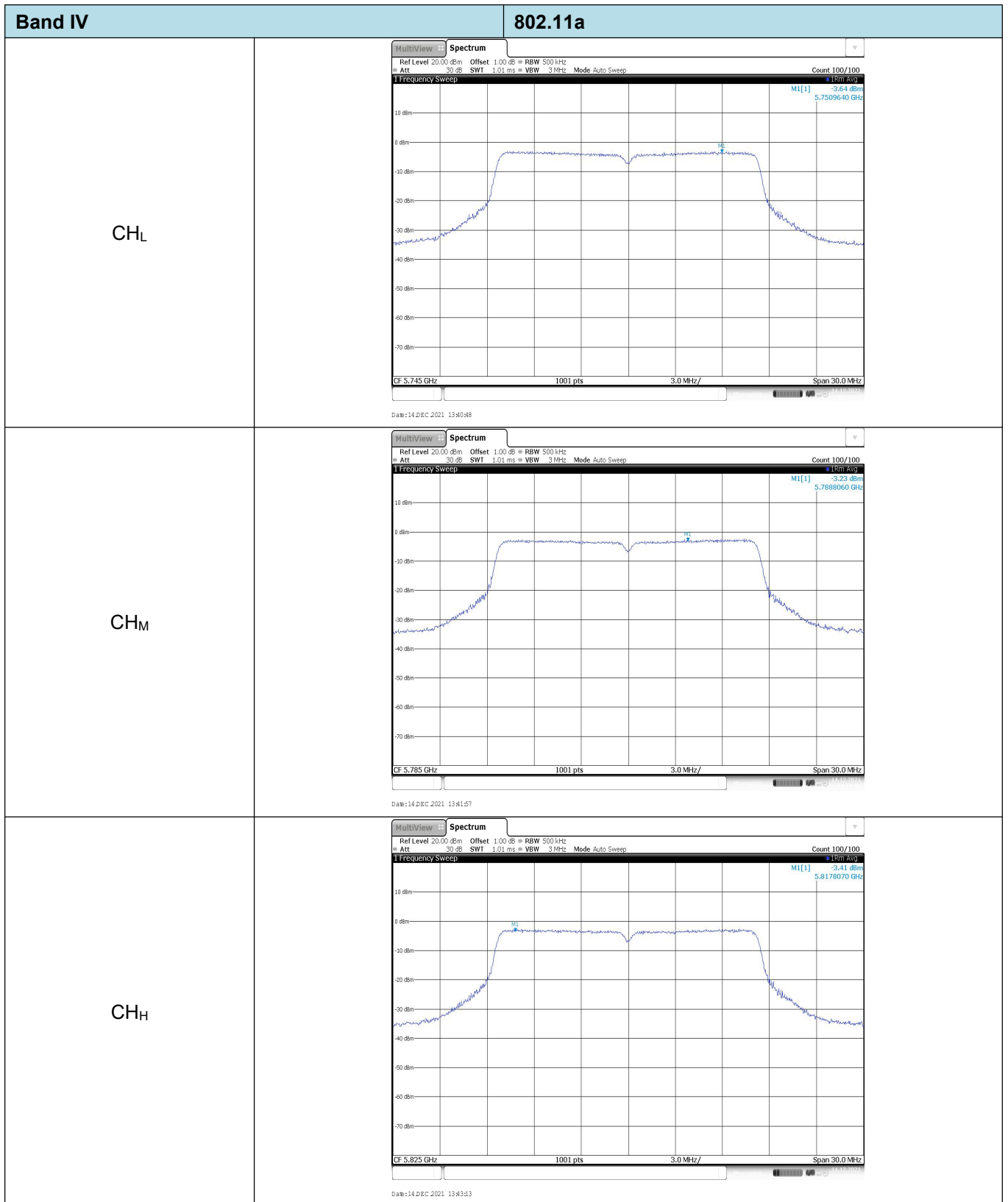
This spectrum plot for channel CH_H shows a signal centered around 5.31 GHz. The frequency span is 60.0 MHz, ranging from 5.31 GHz to 5.29 GHz. The signal level is approximately -4.52 dBm. The plot includes a grid with dBm on the vertical axis (from -70 to 10) and frequency on the horizontal axis. The signal is a flat-topped pulse with a small notch in the center. The interface shows settings: Ref Level 20.00 dBm, Offset 1.00 dB, RBW 1 MHz, Att 30 dB, SWT 1.01 ms, VBW 3 MHz, Mode Auto Sweep, Count 100/100, and 15m Avg. The date and time are 14 DEC 2021 11:05:51.

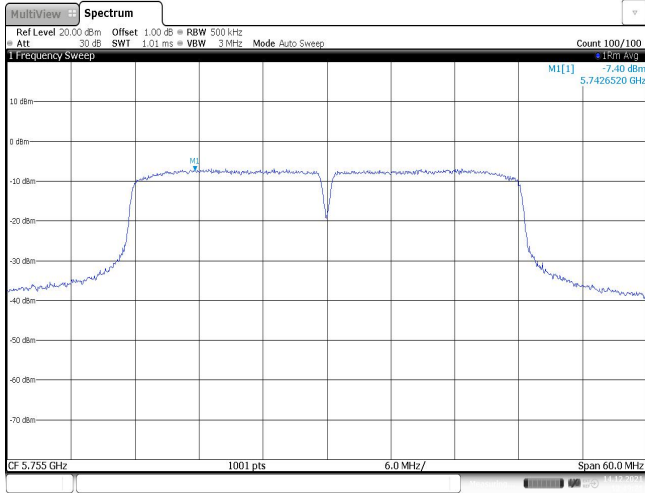
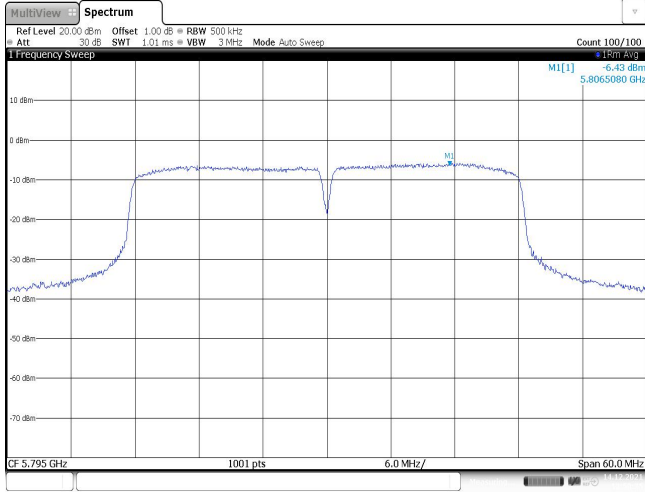






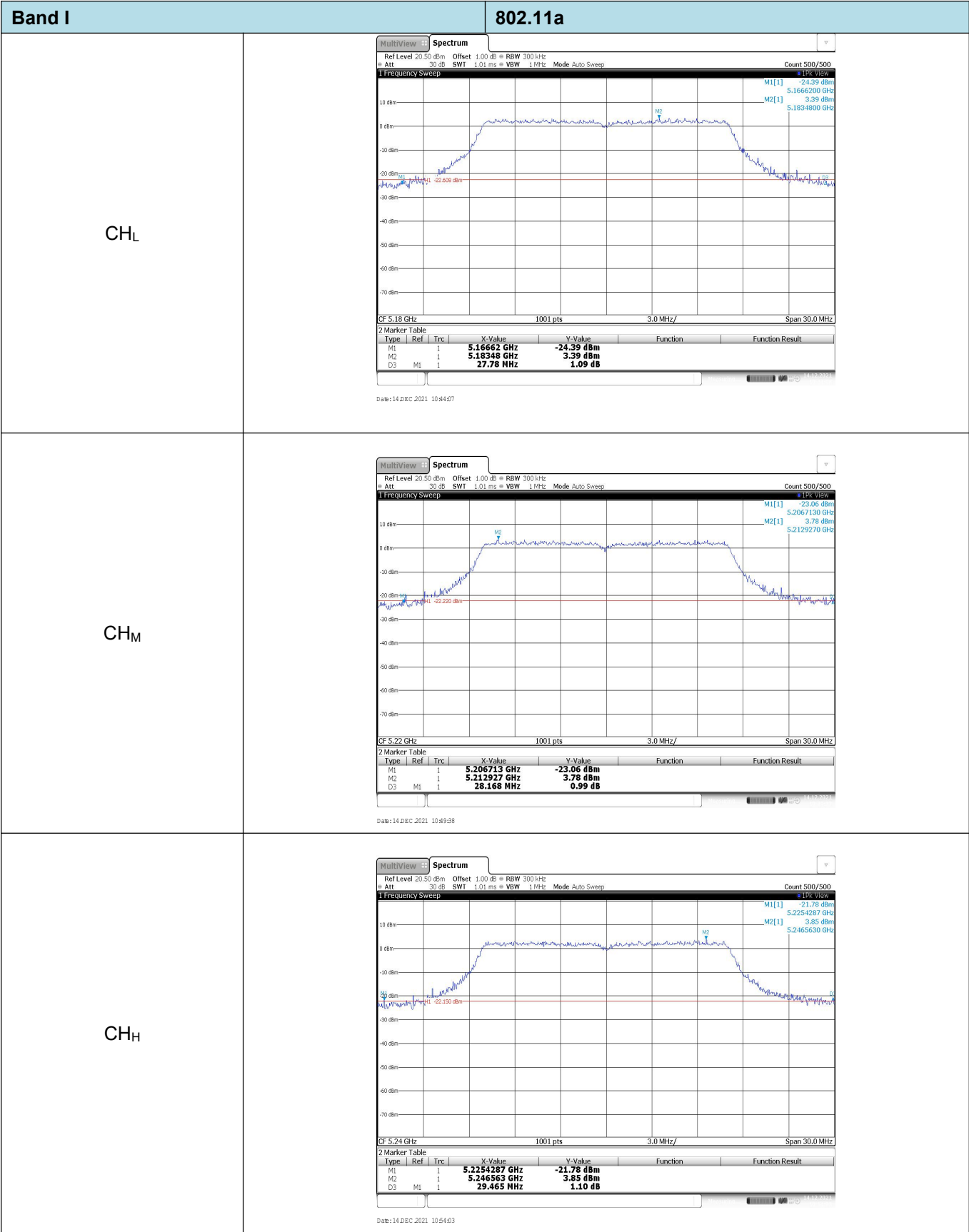


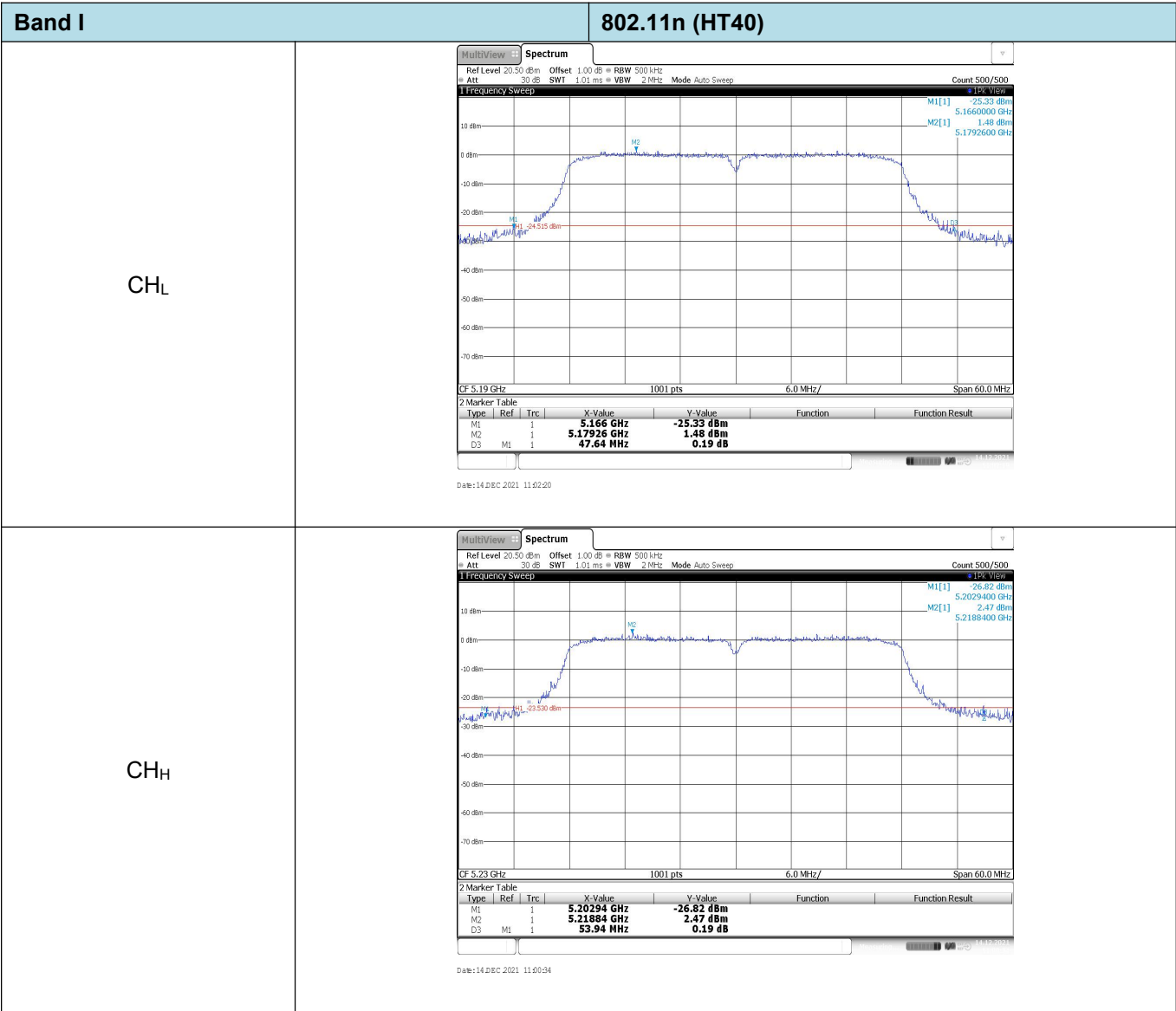


Band IV		802.11n (HT40)	
CH _L	 MultiView Spectrum Ref Level 20.00 dBm Offset 1.00 dB RBW 500 kHz Att 30 dB SWT 1.01 ms VBW 3 MHz Mode Auto Sweep Count 100/100 1 Frequency Sweep M1[1] -7.40 dBm 5.7426520 GHz CF 5.755 GHz 1001 pts 6.0 MHz/ Span 60.0 MHz Date: 14 DEC 2021 13:49:22		
CH _H	 MultiView Spectrum 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 M1[1] -6.43 dBm 5.8065080 GHz CF 5.795 GHz 1001 pts 6.0 MHz/ Span 60.0 MHz Date: 14 DEC 2021 13:50:04		

Appendix C: 26dB bandwidth

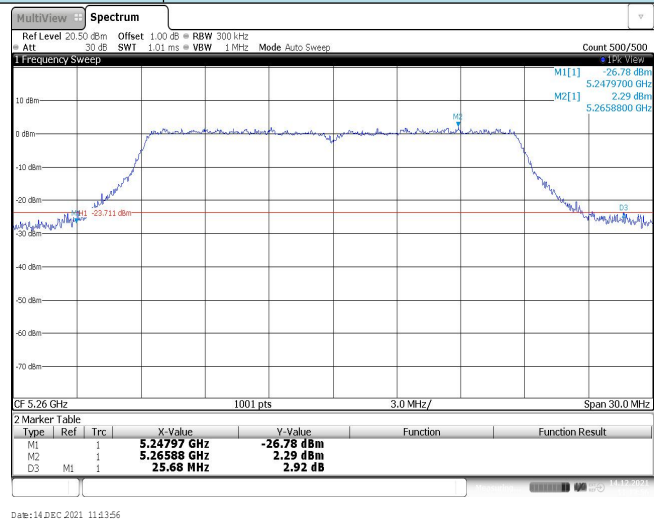
Band	Bandwidth (MHz)	Type	Channel	26dB bandwidth (MHz)	Result
I	20	802.11n	CH _L	24.03	Pass
			CH _M	28.68	
			CH _H	27.63	
		802.11a	CH _L	27.78	Pass
			CH _M	28.17	
			CH _H	29.47	
	40	802.11n	CH _L	47.64	Pass
			CH _H	53.94	
II	20	802.11n	CH _L	25.68	Pass
			CH _M	28.89	
			CH _H	29.35	
		802.11a	CH _L	25.50	Pass
			CH _M	26.13	
			CH _H	28.83	
	40	802.11n	CH _L	58.26	Pass
			CH _H	55.56	
III	20	802.11n	CH _L	29.26	Pass
			CH _M	28.32	
			CH _H	24.27	
		802.11a	CH _L	28.10	Pass
			CH _M	28.17	
			CH _H	23.55	
	40	802.11n	CH _L	55.26	Pass
			CH _M	52.32	
			CH _H	50.16	



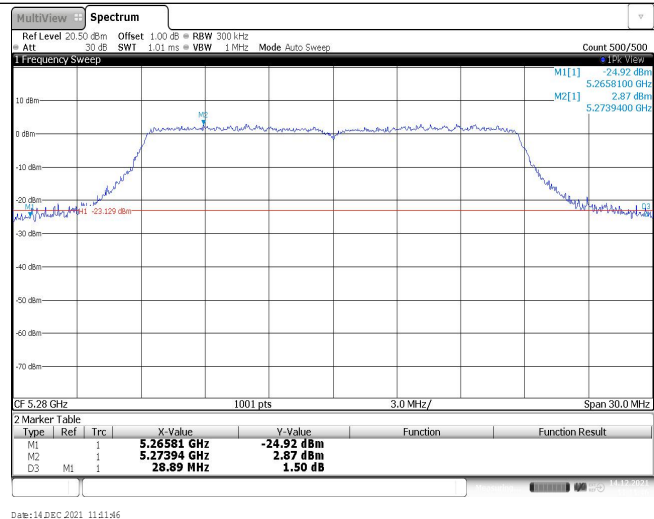


Band II

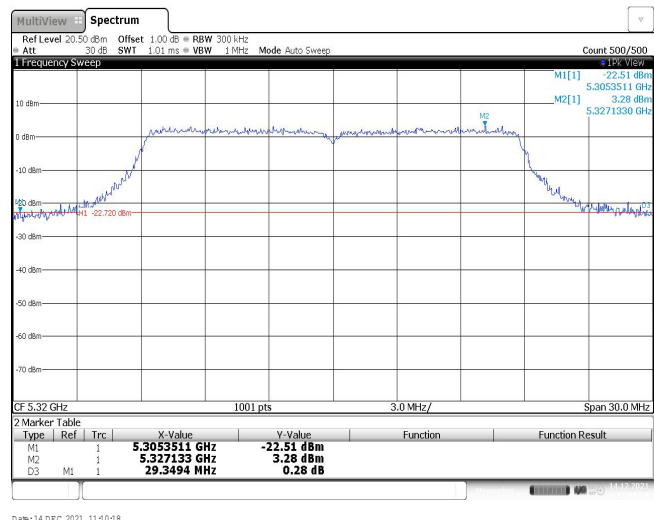
802.11n (HT20)

$$\text{CH}_L$$


Date:14 DEC 2021 11:13:56

$$\text{CH}_M$$


Date:14 DEC 2021 11:11:46

$$\text{CH}_H$$


Date: 14 DEC 2021 11:10:18

