

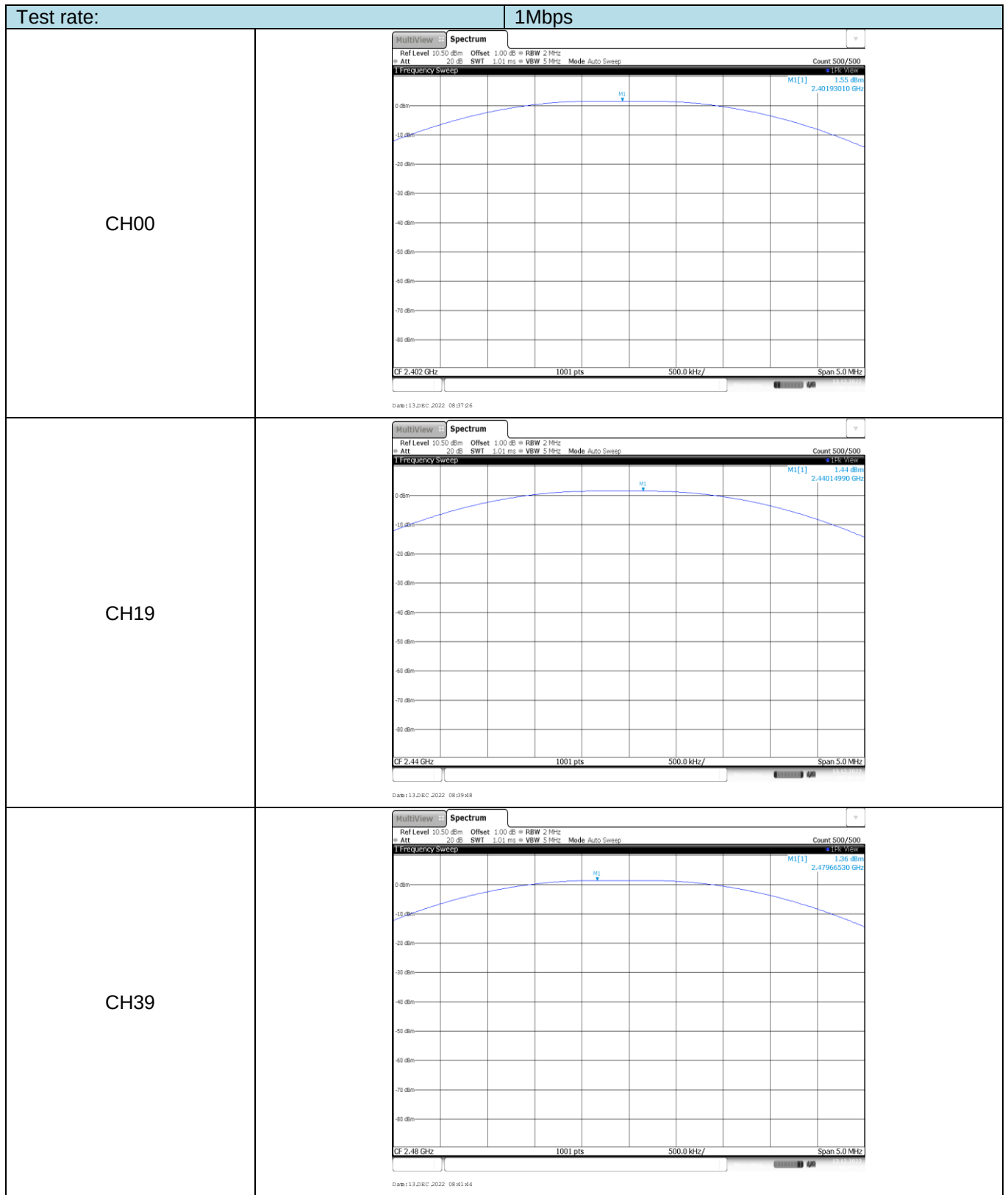
APPENDIX REPORT

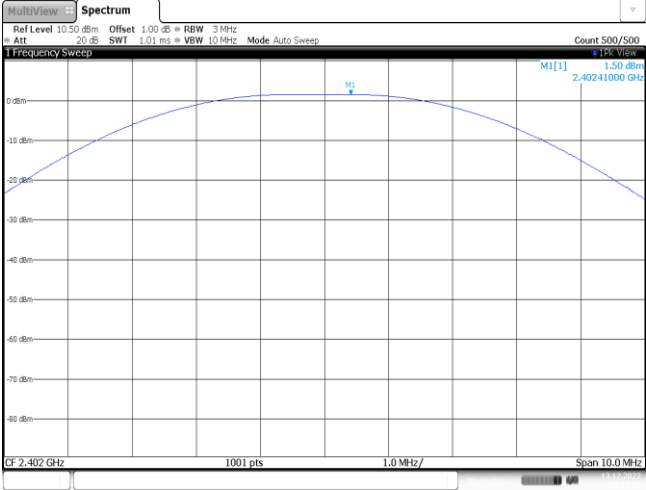
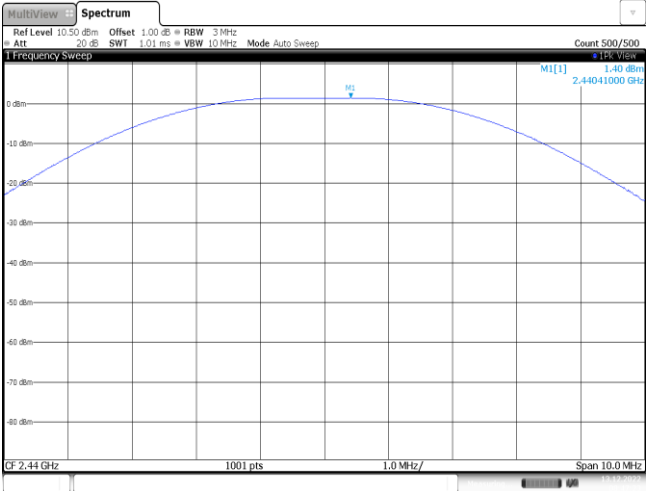
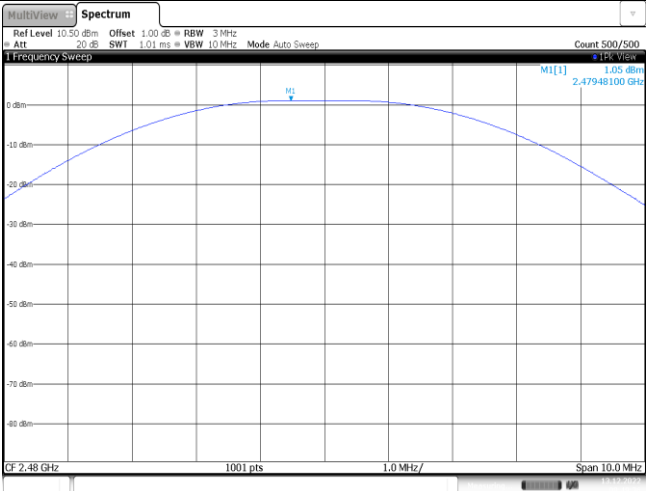
Project No.	SHT2210002307EW	Radio Specification	Bluetooth BLE
Test sample No.	YPHT22100023004	Model No.	HC-03U
Start test date	2022-12-13	Finish date	2022-12-13
Temperature	24.8℃	Humidity	32%
Test Engineer	Xiaoxiao Li	Auditor	Xiaodong Zhao

Appendix clause	Test item	Result
A	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 (conducted)	PASS

Appendix A: Peak Output Power

Test rate	Channel	Peak Output power (dBm)	Average Output power (dBm)	Limit (dBm)	Result
1Mbps	00	1.55	1.53	≤ 30.00	Pass
	19	1.44	1.43		
	39	1.36	1.34		
2Mbps	00	1.50	1.49	≤ 30.00	Pass
	19	1.40	1.39		
	39	1.05	1.03		

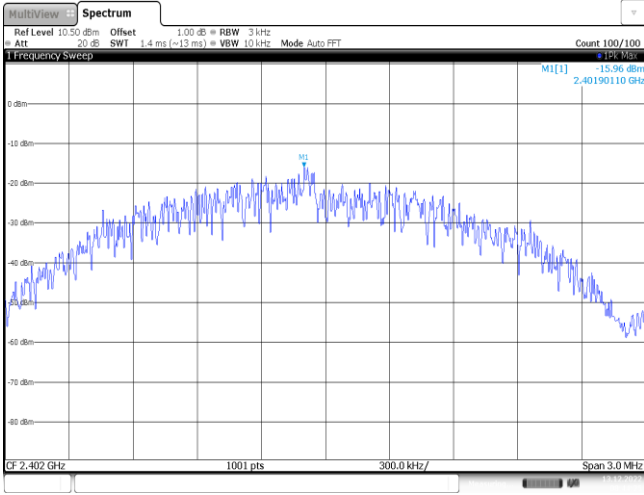
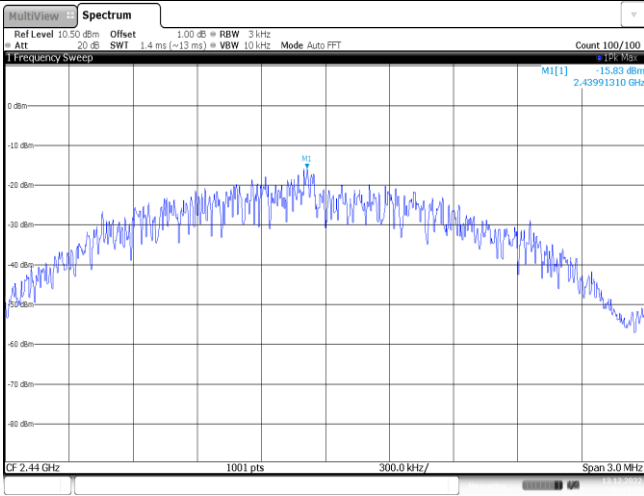
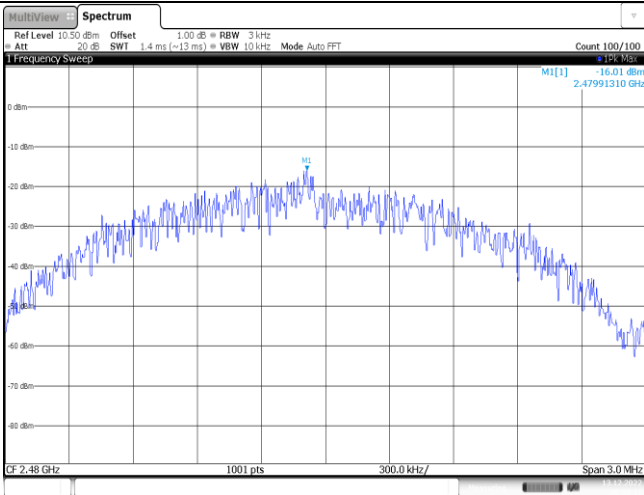


Test rate: 2Mbps	
CH00	 Ref Level 10.50 dBm Offset 1.00 dB RBW 3 MHz Att 20 dB SWF 1.01 ms VBW 10 MHz Mode Auto Sweep Count 500/500 1 Frequency Sweep M1[1] 1.50 dBm 2.40241000 GHz CF 2.402 GHz 1001 pts 1.0 MHz/ Span 10.0 MHz Date:13 DEC 2022 08:43:51
CH19	 Ref Level 10.50 dBm Offset 1.00 dB RBW 3 MHz Att 20 dB SWF 1.01 ms VBW 10 MHz Mode Auto Sweep Count 500/500 1 Frequency Sweep M1[1] 1.40 dBm 2.44041000 GHz CF 2.44 GHz 1001 pts 1.0 MHz/ Span 10.0 MHz Date:13 DEC 2022 08:47:23
CH39	 Ref Level 10.50 dBm Offset 1.00 dB RBW 3 MHz Att 20 dB SWF 1.01 ms VBW 10 MHz Mode Auto Sweep Count 500/500 1 Frequency Sweep M1[1] 1.05 dBm 2.47948100 GHz CF 2.48 GHz 1001 pts 1.0 MHz/ Span 10.0 MHz Date:13 DEC 2022 08:49:26

Appendix B: Power Spectral Density

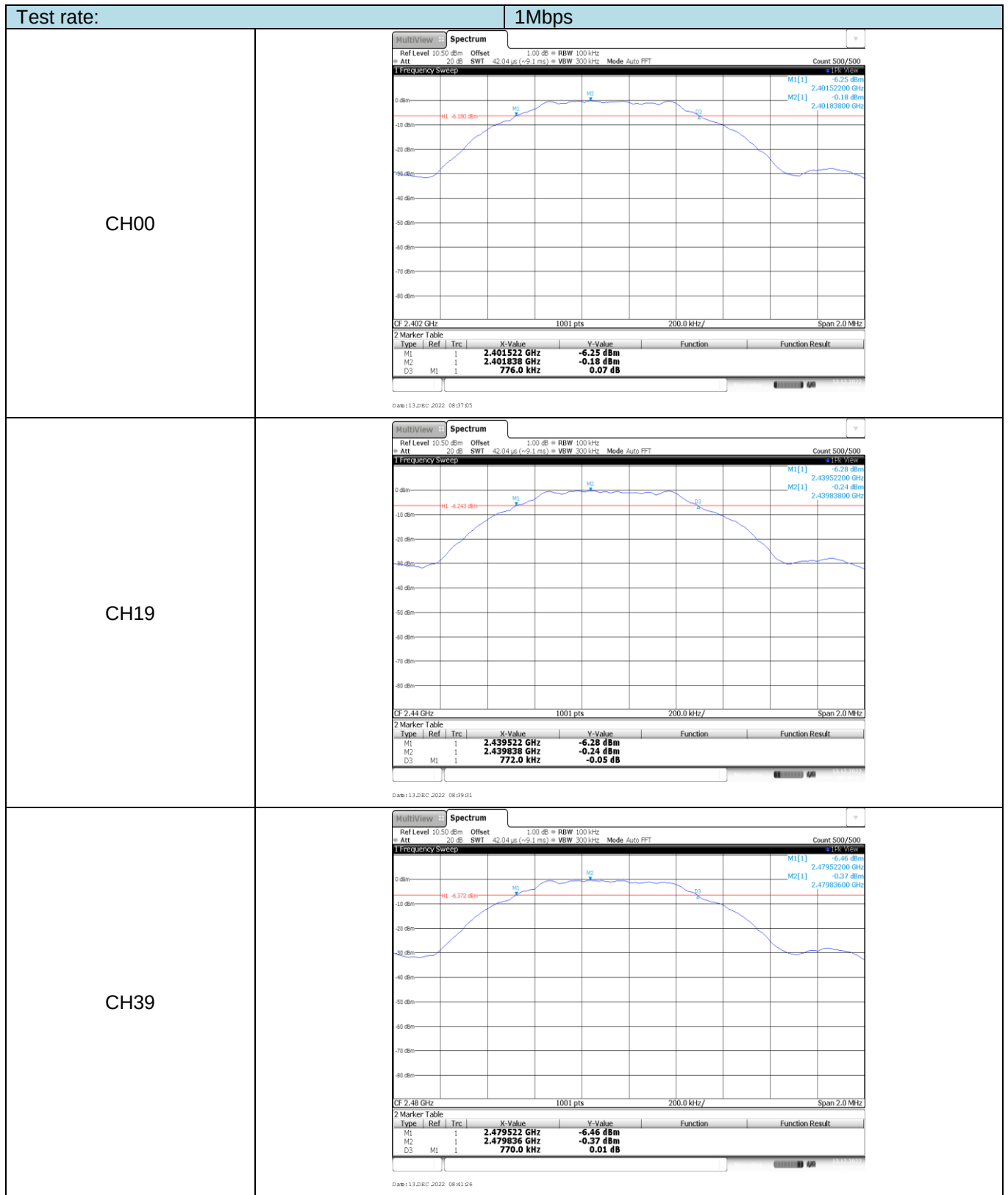
Test rate	Channel	Power Spectral Density(dBm/3KHz)	Limit (dBm/3KHz)	Result
1Mbps	00	-13.85	≤8.00	Pass
	19	-13.64		
	39	-13.80		
2Mbps	00	-15.96	≤8.00	Pass
	19	-15.83		
	39	-16.01		

Test rate:	1Mbps
CH00	MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB BW 3 kHz Att 20 dB SWT 1.4 ms (~9.2 ms) VBW 10 kHz Mode Auto FFT Count 100/100 1 Frequency Sweep M1[1] -13.65 dBm 2.401880100 GHz CF 2.402 GHz 1001 pts 100.0 kHz/ Span 1.0 MHz Date: 13 DEC 2022 08:07:59
CH19	MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB BW 3 kHz Att 20 dB SWT 1.4 ms (~9.2 ms) VBW 10 kHz Mode Auto FFT Count 100/100 1 Frequency Sweep M1[1] -13.64 dBm 2.439878100 GHz CF 2.44 GHz 1001 pts 100.0 kHz/ Span 1.0 MHz Date: 13 DEC 2022 08:40:00
CH39	MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB BW 3 kHz Att 20 dB SWT 1.4 ms (~9.2 ms) VBW 10 kHz Mode Auto FFT Count 100/100 1 Frequency Sweep M1[1] -13.80 dBm 2.479876100 GHz CF 2.48 GHz 1001 pts 100.0 kHz/ Span 1.0 MHz Date: 13 DEC 2022 08:42:05

Test rate:		2Mbps
CH00	 13 DEC 2022 08:44:25	
CH19	 13 DEC 2022 08:47:53	
CH39	 13 DEC 2022 08:50:11	

Appendix C: 6dB bandwidth

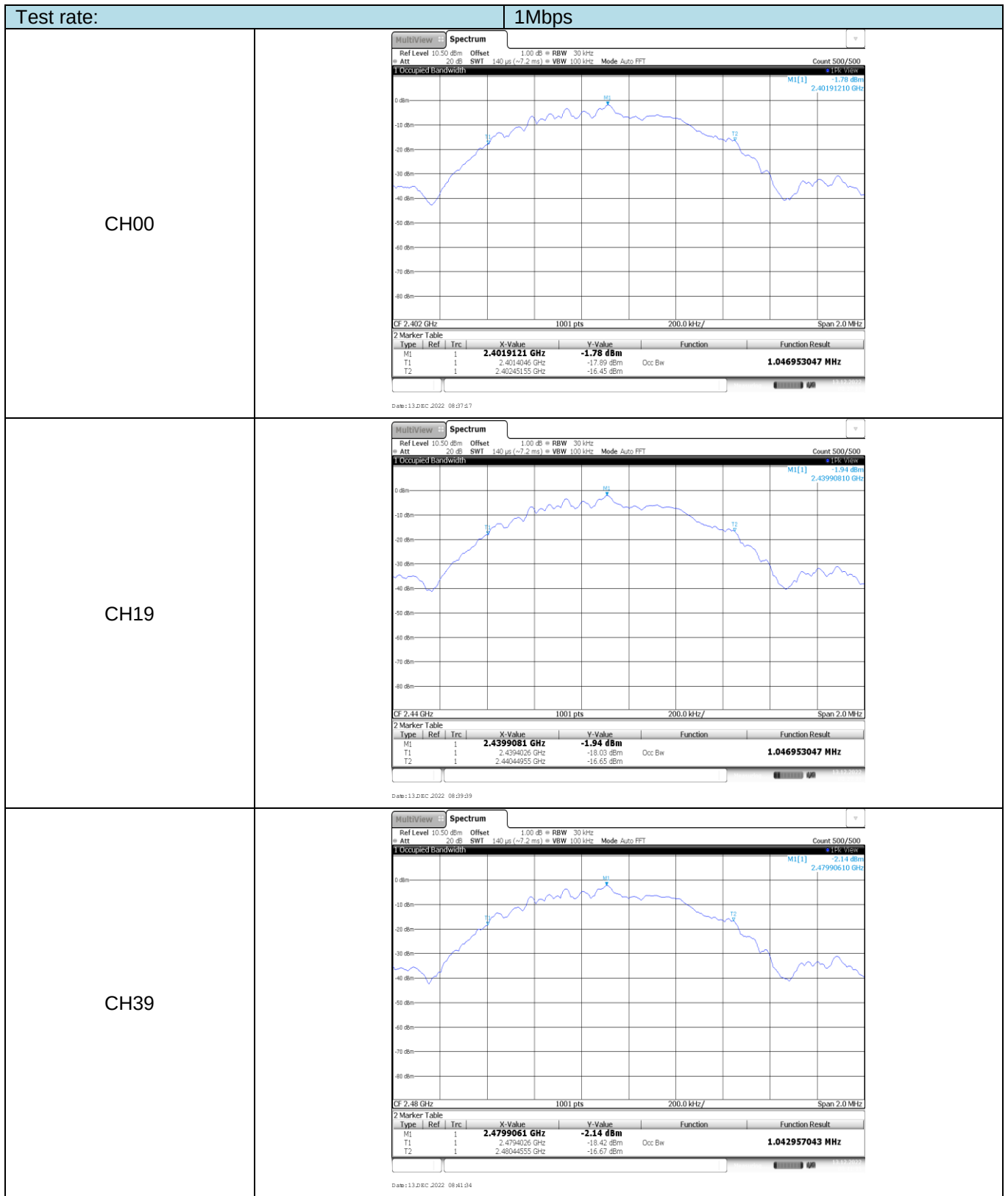
Type	Channel	6dB Bandwidth(kHz)	Limit (kHz)	Result
1Mbps	00	776.00	≥500	Pass
	19	772.00		
	39	770.00		
2Mbps	00	1395.00	≥500	Pass
	19	1380.00		
	39	1385.00		

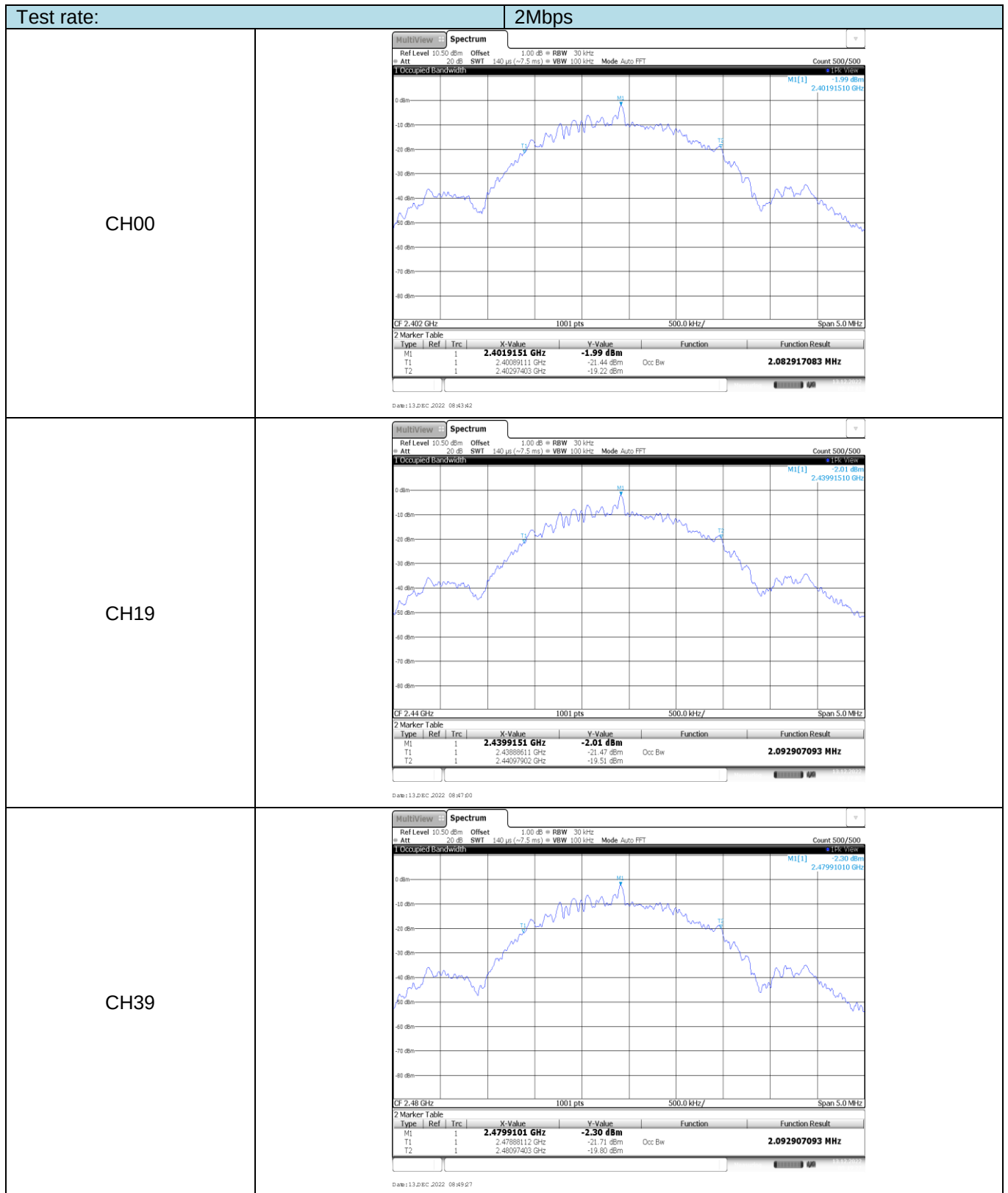


Appendix report page: 10 of 22

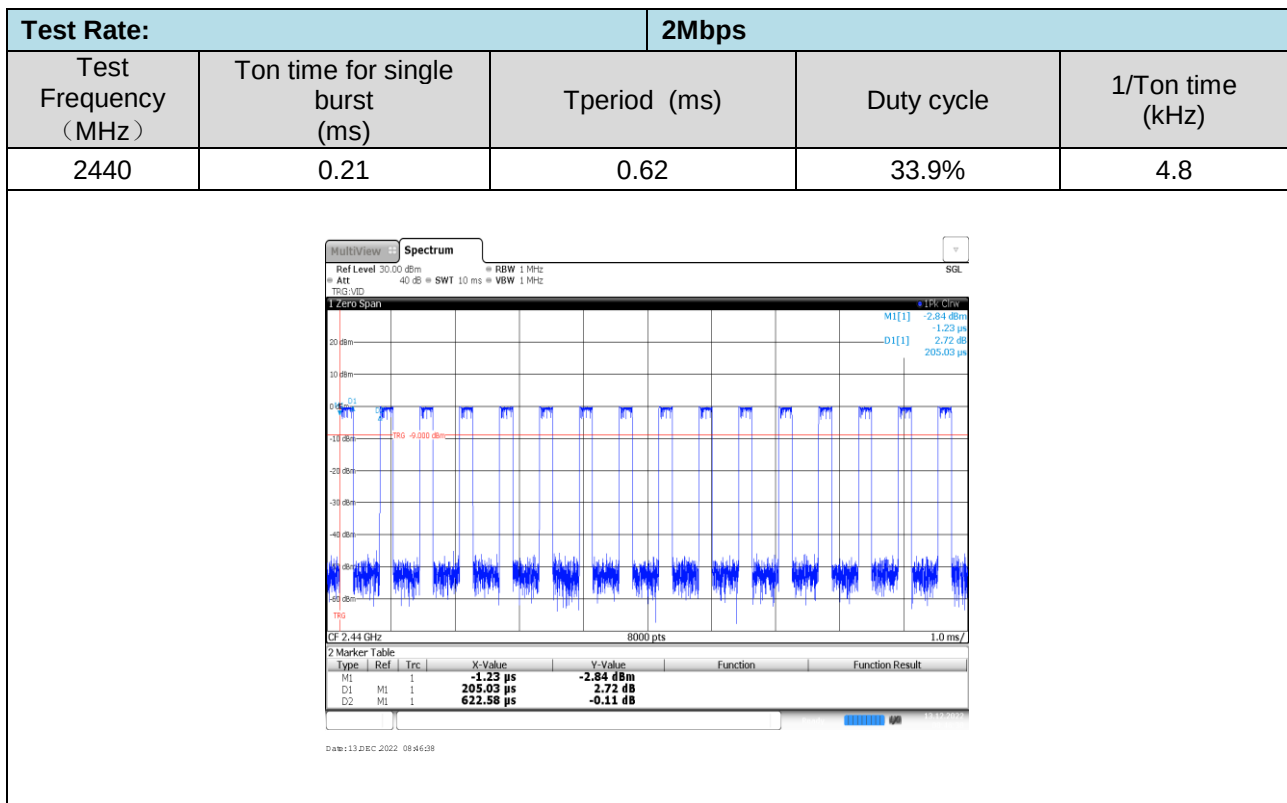
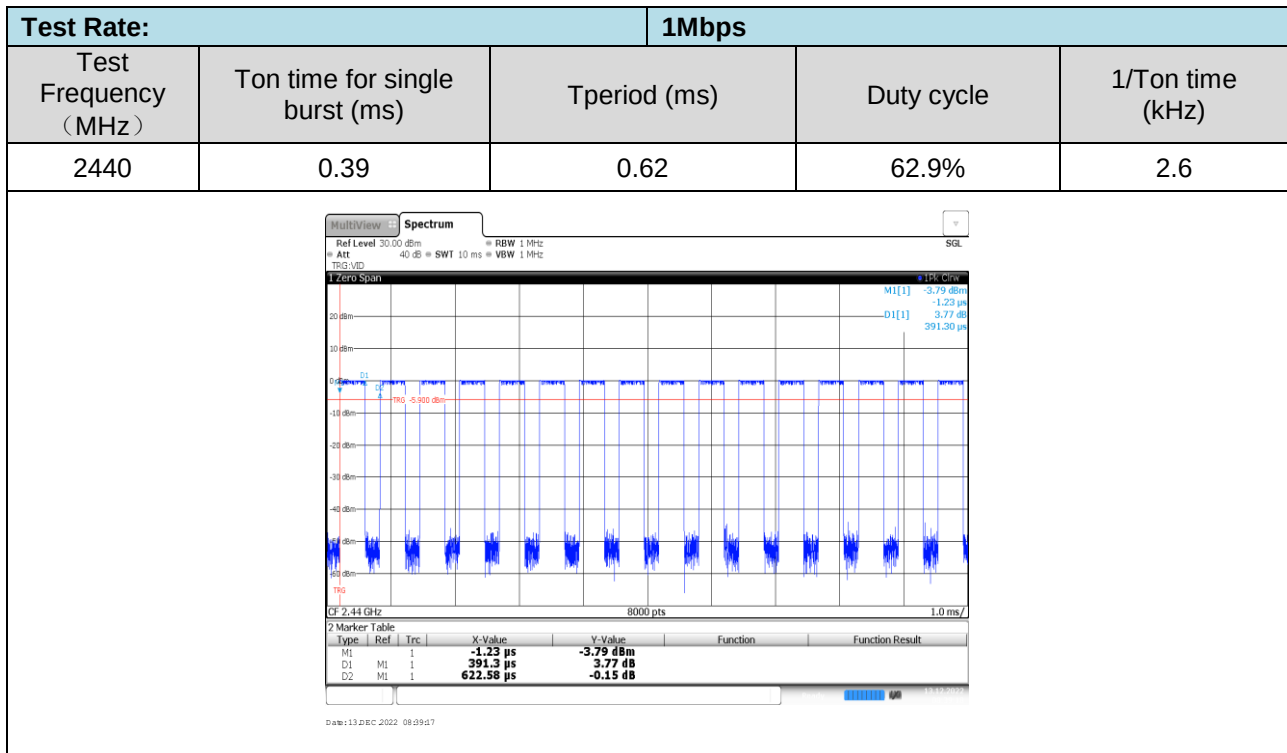
Appendix D: 99% Occupied Bandwidth

Test rate	Channel	99% Occupied Bandwidth(MHz)	Limit (kHz)	Result
1Mbps	00	1.05	-	Pass
	19	1.05		
	39	1.04		
2Mbps	00	2.08	-	Pass
	19	2.09		
	39	2.09		





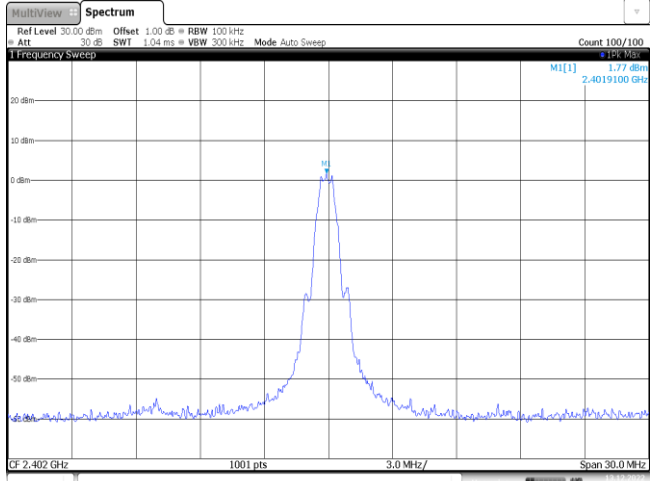
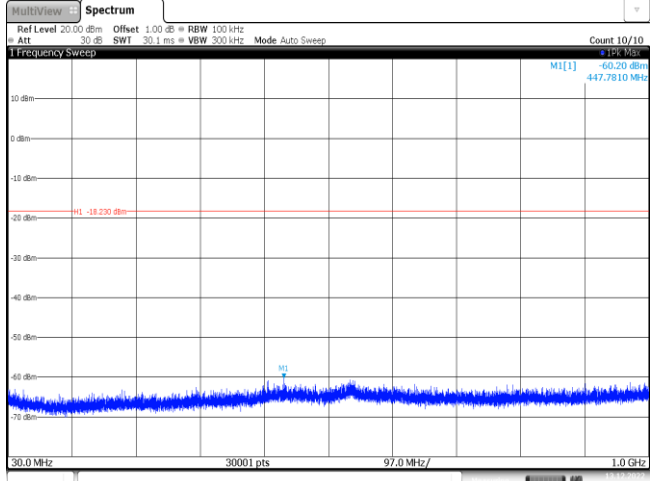
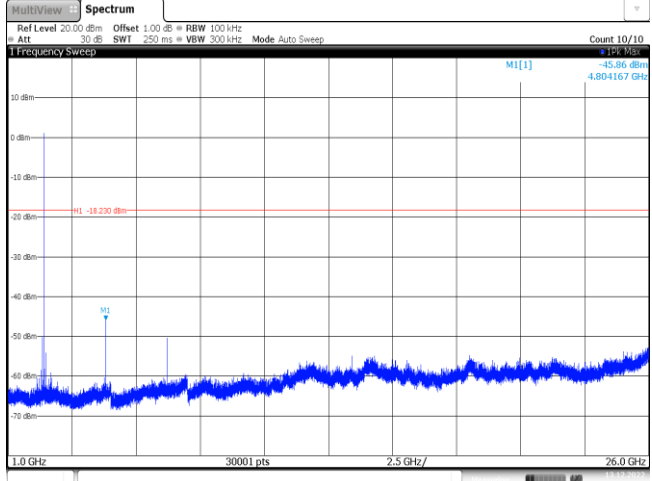
Appendix E: Duty cycle

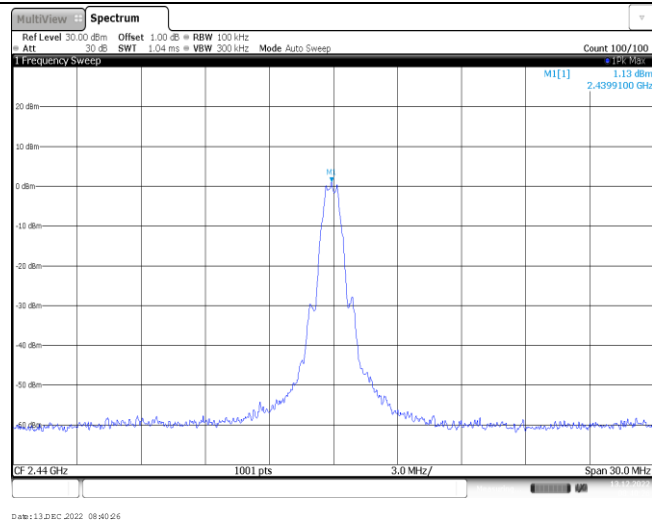
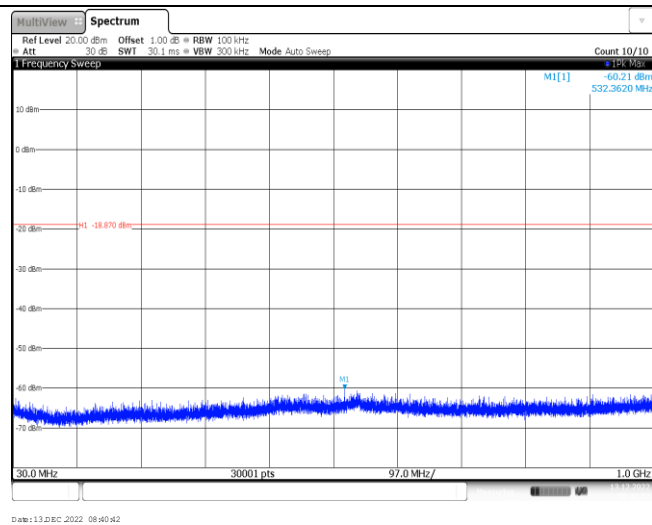
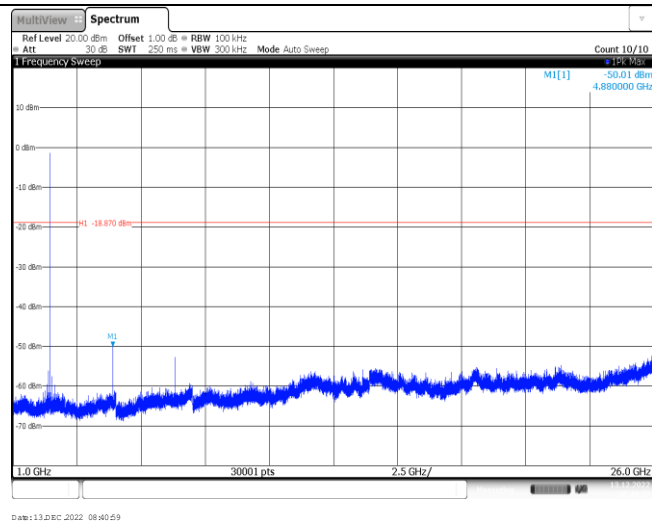


Appendix F: Band edge and Spurious Emissions (conducted)

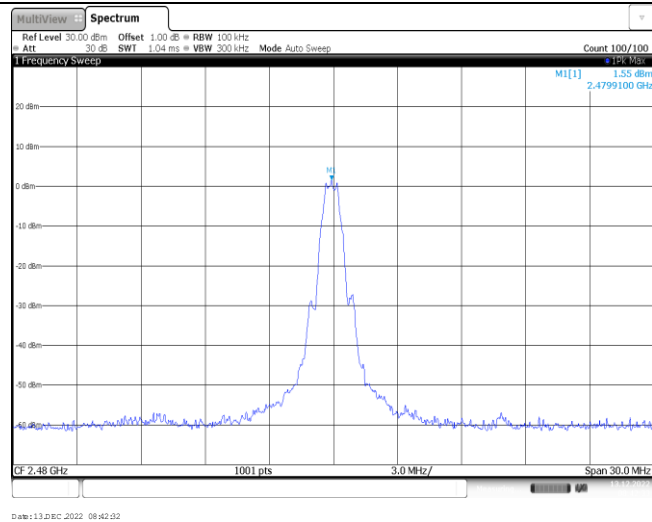
Test Item:	Band edge	Test Rate:	1Mbps																																										
CH00	MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB BW 100 kHz ATT 20 dB SW 1.05 ms VBW 300 kHz Mode Auto Sweep Count 300/300 1 Frequency Sweep 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm 2.31 GHz 1001 pts 9.5 MHz/ 2.405 GHz M1 -18.520 dBm M1[1] 1.48 dBm 2.401916 GHz M2[1] -52.00 dBm 2.400000 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>2.401916 GHz</td><td>1.48 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-52.00 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-68.38 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-72.98 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.33793 GHz</td><td>-50.99 dBm</td><td></td><td></td></tr></table> Date: 13/DEC/2022 08:08:09			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.401916 GHz	1.48 dBm			M2	1		2.4 GHz	-52.00 dBm			M3	1		2.39 GHz	-68.38 dBm			M4	1		2.31 GHz	-72.98 dBm			M5	1		2.33793 GHz	-50.99 dBm		
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																																							
M1	1		2.401916 GHz	1.48 dBm																																									
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M4	1		2.31 GHz	-72.98 dBm																																									
M5	1		2.33793 GHz	-50.99 dBm																																									
CH39	MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB BW 100 kHz ATT 20 dB SW 1.02 ms VBW 300 kHz Mode Auto Sweep Count 100/100 1 Frequency Sweep 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm 2.478 GHz 1001 pts 2.2 MHz/ 2.5 GHz M1 -18.710 dBm M1[1] 1.29 dBm 2.479901 GHz M2[1] -60.56 dBm 2.483500 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>2.479901 GHz</td><td>1.29 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4835 GHz</td><td>-60.56 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.5 GHz</td><td>-70.97 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.483522 GHz</td><td>-60.67 dBm</td><td></td><td></td></tr></table> Date: 13/DEC/2022 08:42:25			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.479901 GHz	1.29 dBm			M2	1		2.4835 GHz	-60.56 dBm			M3	1		2.5 GHz	-70.97 dBm			M4	1		2.483522 GHz	-60.67 dBm									
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																																							
M1	1		2.479901 GHz	1.29 dBm																																									
M2	1		2.4835 GHz	-60.56 dBm																																									
M3	1		2.5 GHz	-70.97 dBm																																									
M4	1		2.483522 GHz	-60.67 dBm																																									

Test Item:	Band edge	Test Rate:	2Mbps																																									
CH00	MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 100 kHz Att 20 dB SWI 1.05 ms VBW 300 kHz Mode Auto Sweep Count 300/300 1 Frequency Sweep 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm M1 -18.630 dBm M2 1.37 dBm M3 -32.26 dBm M4 -66.50 dBm M5 -29.91 dBm 2.31 GHz 1001 pts 9.5 MHz/ 2.405 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>2.401916 GHz</td><td>1.37 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-32.26 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-66.50 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-73.66 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.399965 GHz</td><td>-29.91 dBm</td><td></td><td></td></tr></table> Date: 13 DEC 2022 08:44:05	Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.401916 GHz	1.37 dBm			M2	1		2.4 GHz	-32.26 dBm			M3	1		2.39 GHz	-66.50 dBm			M4	1		2.31 GHz	-73.66 dBm			M5	1		2.399965 GHz	-29.91 dBm			
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																																						
M1	1		2.401916 GHz	1.37 dBm																																								
M2	1		2.4 GHz	-32.26 dBm																																								
M3	1		2.39 GHz	-66.50 dBm																																								
M4	1		2.31 GHz	-73.66 dBm																																								
M5	1		2.399965 GHz	-29.91 dBm																																								
CH39	MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 100 kHz Att 20 dB SWI 1.02 ms VBW 300 kHz Mode Auto Sweep Count 100/100 1 Frequency Sweep 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm M1 1.21 dBm M2 1.21 dBm M3 -53.09 dBm M4 -51.37 dBm 2.478 GHz 1001 pts 2.2 MHz/ 2.5 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>2.479901 GHz</td><td>1.21 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4835 GHz</td><td>-53.09 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.5 GHz</td><td>-69.58 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.483896 GHz</td><td>-51.37 dBm</td><td></td><td></td></tr></table> Date: 13 DEC 2022 08:50:21	Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.479901 GHz	1.21 dBm			M2	1		2.4835 GHz	-53.09 dBm			M3	1		2.5 GHz	-69.58 dBm			M4	1		2.483896 GHz	-51.37 dBm										
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																																						
M1	1		2.479901 GHz	1.21 dBm																																								
M2	1		2.4835 GHz	-53.09 dBm																																								
M3	1		2.5 GHz	-69.58 dBm																																								
M4	1		2.483896 GHz	-51.37 dBm																																								

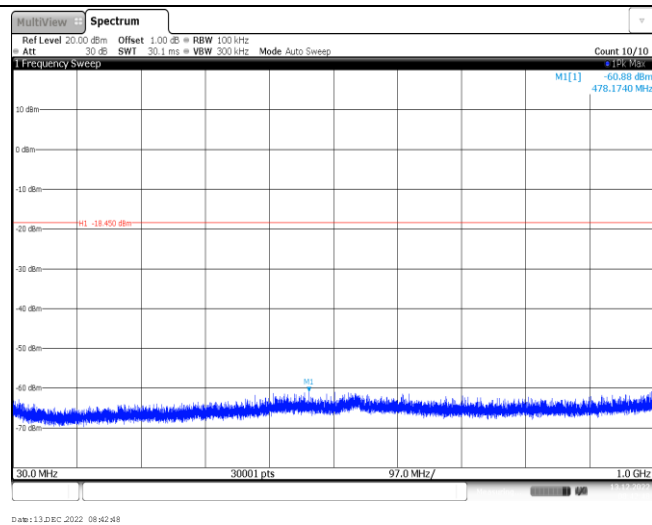
Test Item:	SE	Test Rate:	1Mbps
CH00 Reference level	 Ref Level 30.00 dBm Offset 1.00 dB BW 100 kHz Att 30 dB SWI 1.04 ms VBW 300 kHz Mode Auto Sweep Count 100/100 M1[1] 1.77 dBm 2.4019100 GHz 20 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm 2.402 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 13 DEC 2022 08:38:17		
CH00 30MHz~1000MHz	 Ref Level 20.00 dBm Offset 1.00 dB BW 100 kHz Att 30 dB SWI 30.1 ms VBW 300 kHz Mode Auto Sweep Count 10/10 M1[1] -60.20 dBm 447.7810 MHz 20 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm 30.0 MHz 30001 pts 97.0 MHz/ 1.0 GHz Date: 13 DEC 2022 08:38:33		
CH00 1GHz~26GHz	 Ref Level 20.00 dBm Offset 1.00 dB BW 100 kHz Att 30 dB SWI 250 ms VBW 300 kHz Mode Auto Sweep Count 10/10 M1[1] -43.95 dBm 4.804167 GHz 20 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm 1.0 GHz 30001 pts 2.5 GHz/ 26.0 GHz Date: 13 DEC 2022 08:38:49		

CH19
Reference levelCH19
30MHz~1000MHzCH19
1GHz~26GHz

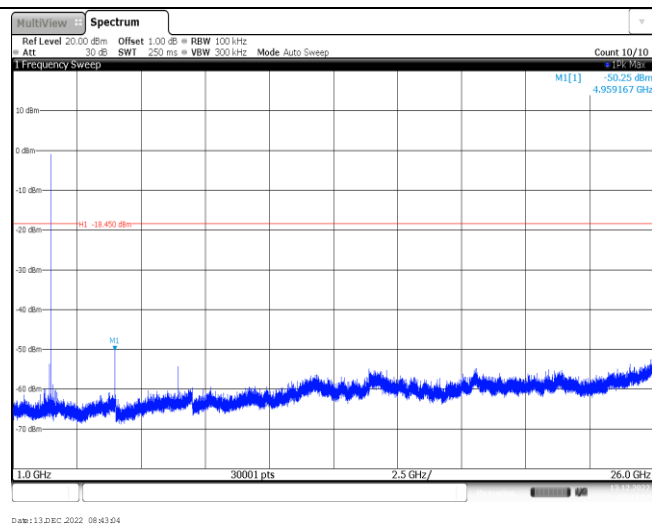
CH39
Reference level

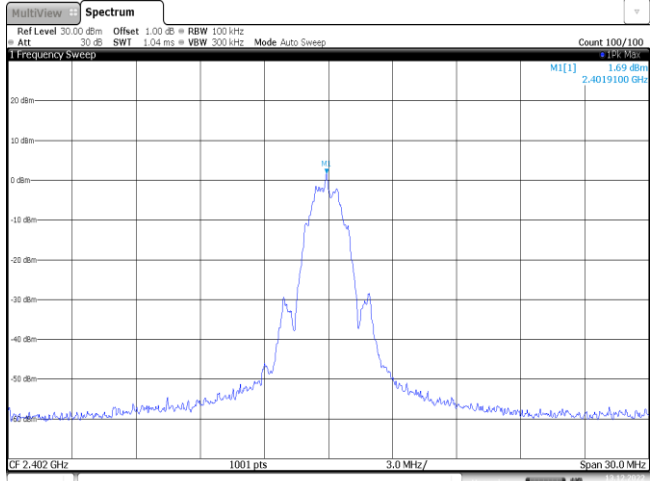
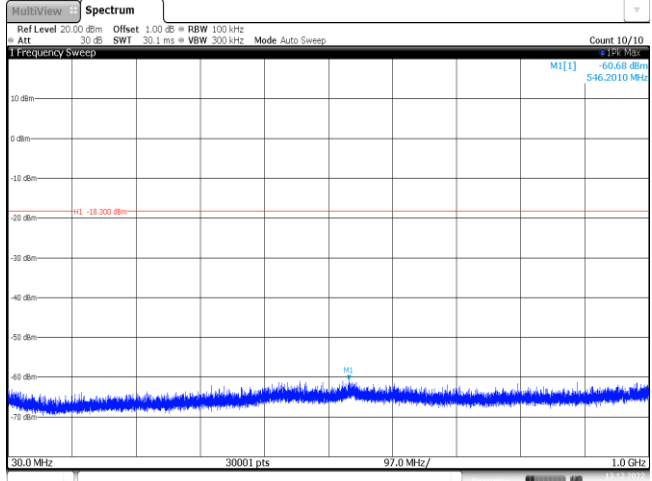
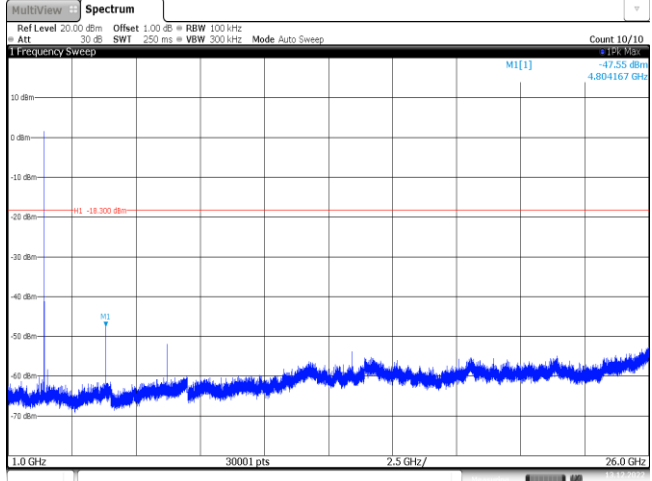


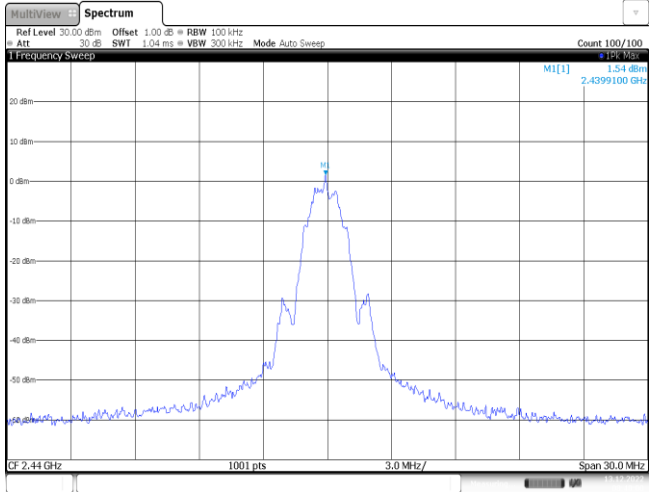
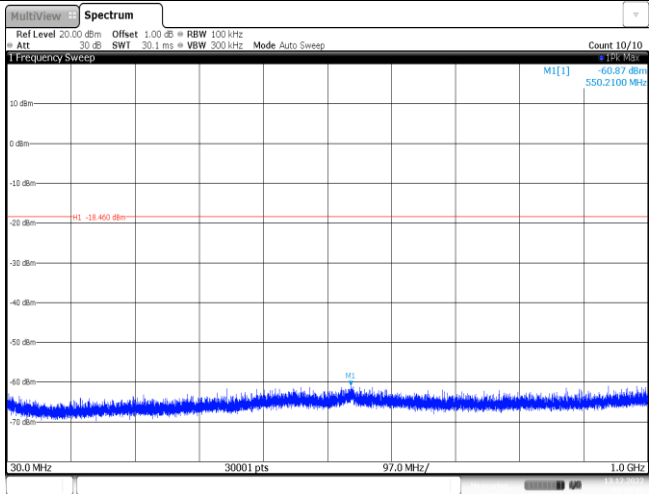
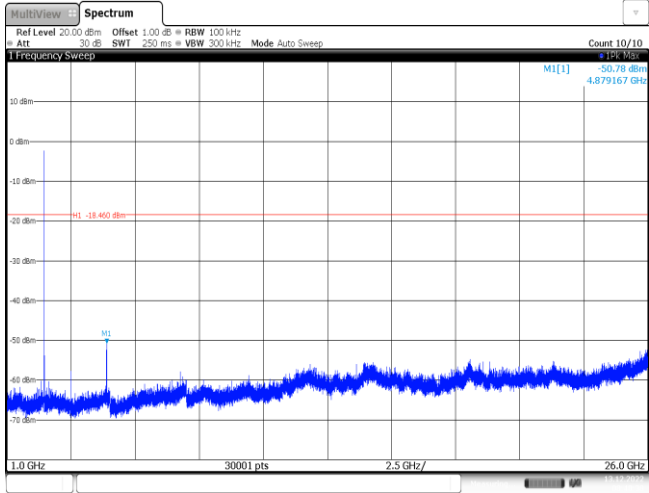
CH39
30MHz~1000MHz

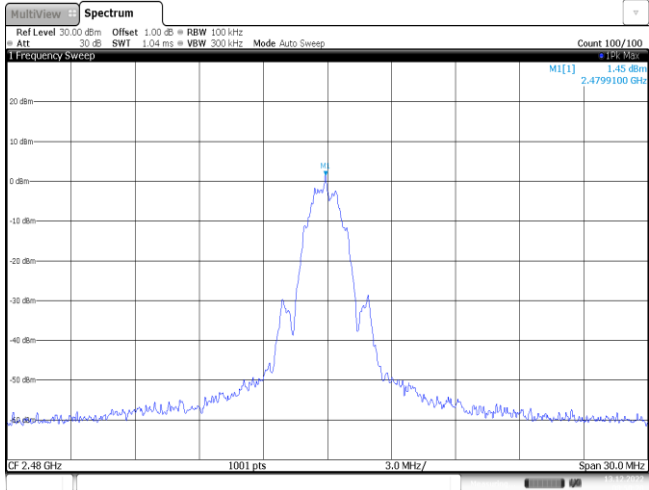
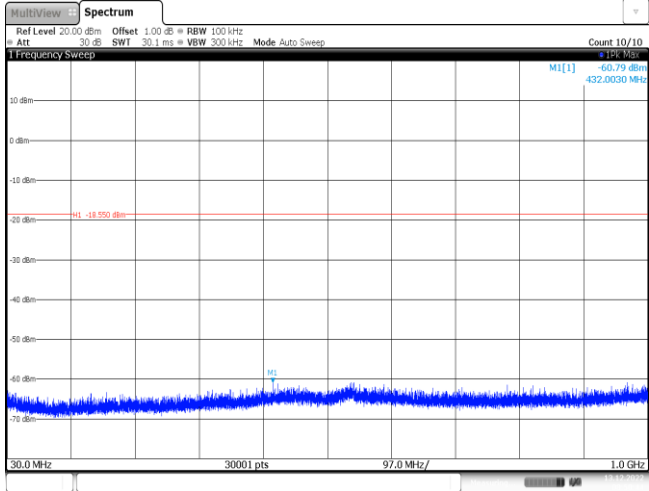
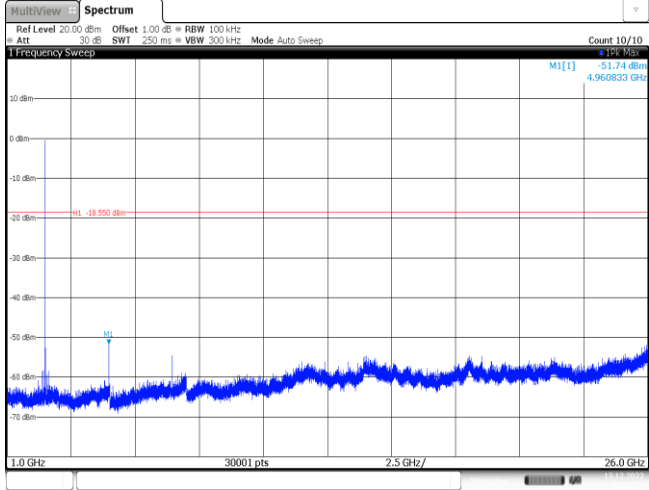


CH39
1GHz~26GHz



Test Item:	SE	Test Rate:	2Mbps
CH00 Reference level	 Ref Level 30.00 dBm Offset 1.00 dB BW 100 kHz Att 30 dB SWI 1.04 ms VBW 300 kHz Mode Auto Sweep Count 100/100 MI[1] 1.69 dBm 2.4019100 GHz CF 2.402 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date:13 DEC 2022 08:44:42		
CH00 30MHz~1000MHz	 Ref Level 20.00 dBm Offset 1.00 dB BW 100 kHz Att 30 dB SWI 30.1 ms VBW 300 kHz Mode Auto Sweep Count 10/10 MI[1] -60.68 dBm 546.2010 MHz 30.0 MHz 30001 pts 97.0 MHz/ 1.0 GHz Date:13 DEC 2022 08:44:58		
CH00 1GHz~26GHz	 Ref Level 20.00 dBm Offset 1.00 dB BW 100 kHz Att 30 dB SWI 250 ms VBW 300 kHz Mode Auto Sweep Count 10/10 MI[1] -47.55 dBm 4.804167 GHz 1.0 GHz 30001 pts 2.5 GHz/ 26.0 GHz Date:13 DEC 2022 08:45:14		

CH19 Reference level	 The spectrum plot shows a single peak at 2.4399100 GHz with a level of -1.54 dBm. The y-axis ranges from -80 dBm to 20 dBm, and the x-axis ranges from 2.44 GHz to 2.45 GHz. The plot is titled 'Spectrum' and includes parameters: Ref Level 30.00 dBm, Offset 1.00 dB, RBW 100 kHz, Att 30 dB, SWF 1.04 ms, VBW 300 kHz, Mode Auto Sweep. The date is 13 DEC 2022 08:47:59.
CH19 30MHz~1000MHz	 The spectrum plot shows a flat noise floor at approximately -60.87 dBm across the 30 MHz to 1000 MHz range. The y-axis ranges from -70 dBm to 10 dBm, and the x-axis ranges from 30.0 MHz to 1.0 GHz. The plot is titled 'Spectrum' and includes parameters: Ref Level 20.00 dBm, Offset 1.00 dB, RBW 100 kHz, Att 30 dB, SWF 30.1 ms, VBW 300 kHz, Mode Auto Sweep. The date is 13 DEC 2022 08:48:15.
CH19 1GHz~26GHz	 The spectrum plot shows a flat noise floor at approximately -50.78 dBm across the 1 GHz to 26 GHz range. The y-axis ranges from -70 dBm to 10 dBm, and the x-axis ranges from 1.0 GHz to 26.0 GHz. The plot is titled 'Spectrum' and includes parameters: Ref Level 20.00 dBm, Offset 1.00 dB, RBW 100 kHz, Att 30 dB, SWF 250 ms, VBW 300 kHz, Mode Auto Sweep. The date is 13 DEC 2022 08:48:28.

CH39 Reference level	 13 DEC 2022 08:50:29
CH39 30MHz~1000MHz	 13 DEC 2022 08:50:44
CH39 1GHz~26GHz	 13 DEC 2022 08:51:00

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