

APPENDIX REPORT

Project No.	SHT2409005202W	Radio Specification	Bluetooth BLE
Test sample No.	YPHT24090052001	Model No.	425HD
Start test date	2024-10-25	Finish date	2024-10-28
Temperature	23.8℃	Humidity	43%
Test Engineer	Chenxin Ling	Auditor	Xiaodong Zheo

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

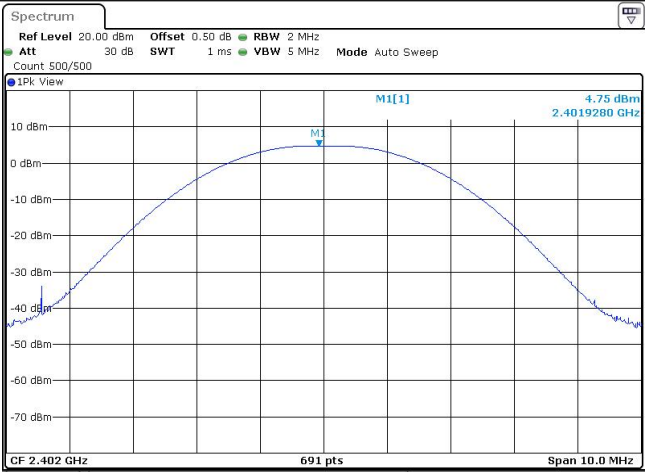
Appendix A: Peak Output Power

Test rate	Channel	Peak Output power (dBm)	Average Output power (dBm)	Limit (dBm)	Result
1Mbps	00	4.75	4.64	≤ 30.00	Pass
	19	4.43	4.34		
	39	3.91	3.82		
2Mbps	00	4.69	4.60	≤ 30.00	Pass
	19	4.41	4.33		
	39	4.05	3.95		

Test rate:

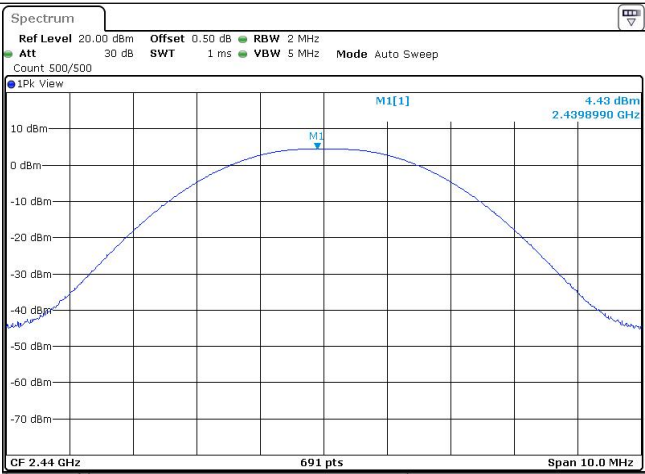
1Mbps

CH00



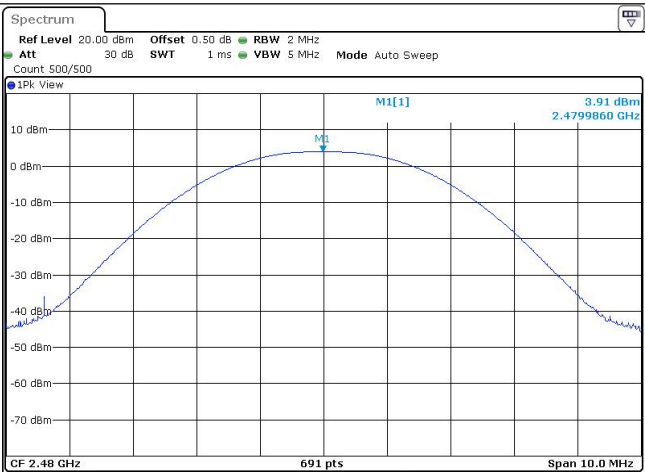
Date: 25 OCT 2024 16:00:33

CH19



Date: 25 OCT 2024 16:03:06

CH39

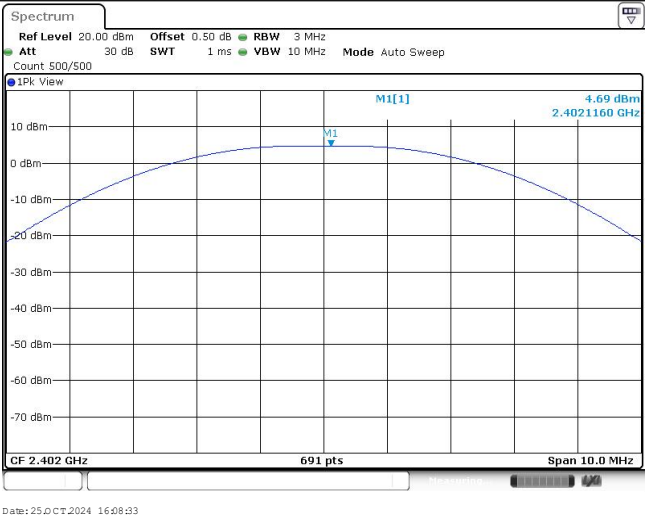


Date: 25 OCT 2024 16:05:59

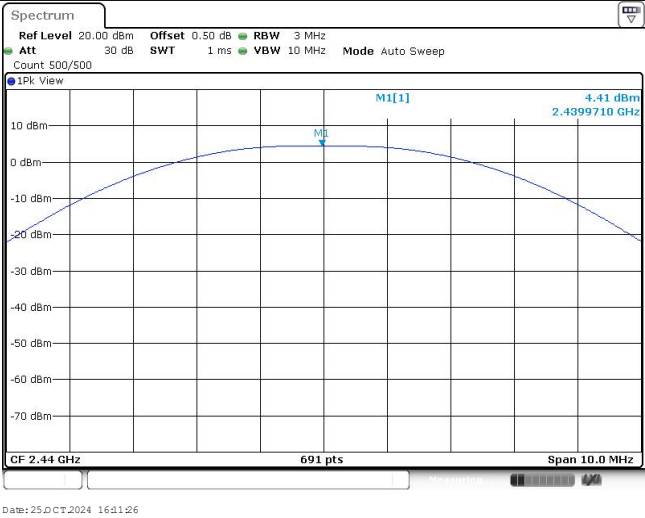
Test rate:

2Mbps

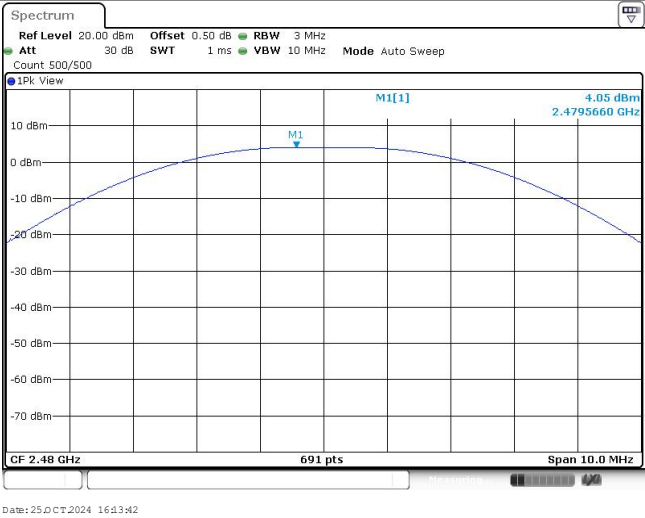
CH00



CH19



CH39



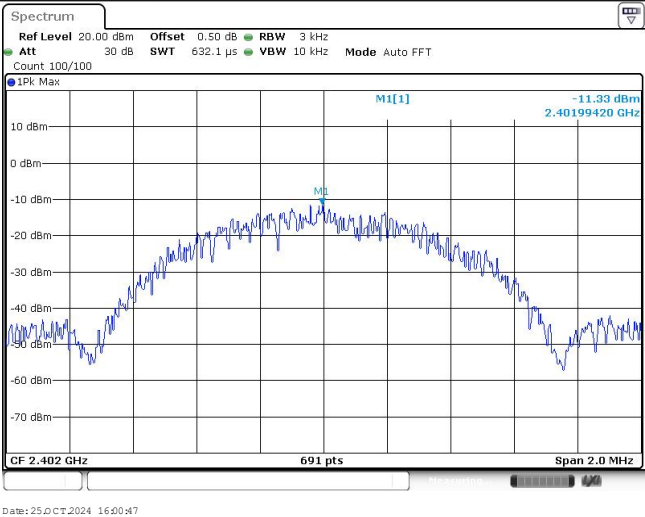
Appendix B: Power Spectral Density

Test rate	Channel	Power Spectral Density(dBm/3KHz)	Limit (dBm/3KHz)	Result
1Mbps	00	-11.33	≤8.00	Pass
	19	-10.39		
	39	-12.26		
2Mbps	00	-14.34	≤8.00	Pass
	19	-15.01		
	39	-14.33		

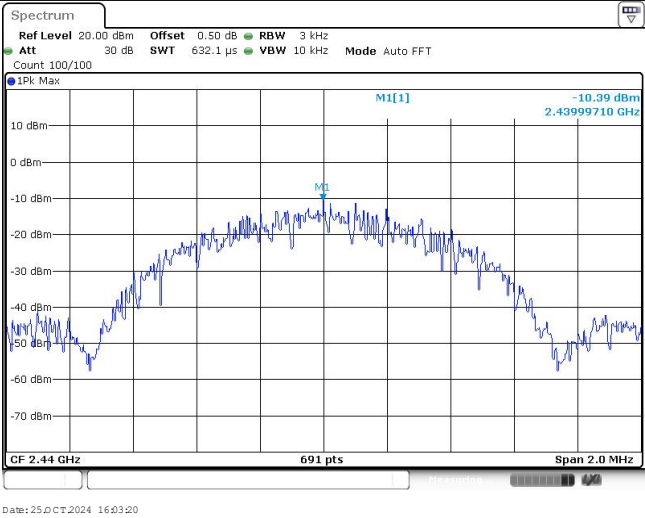
Test rate:

1Mbps

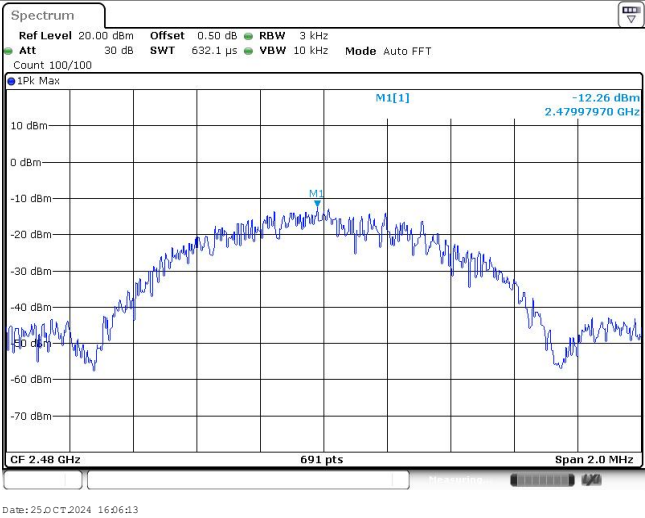
CH00



CH19



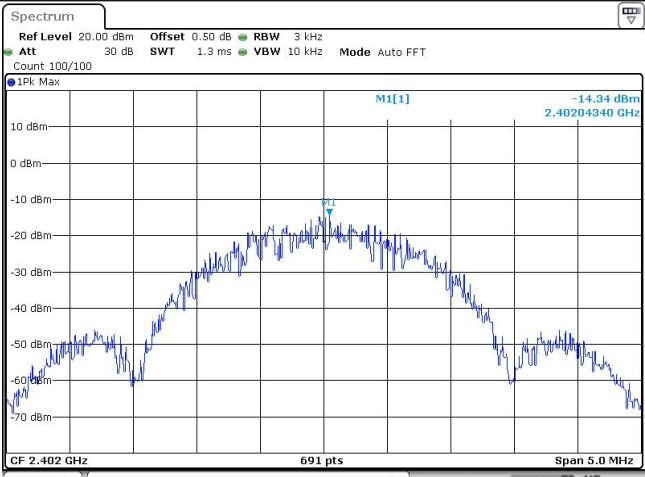
CH39



Test rate:

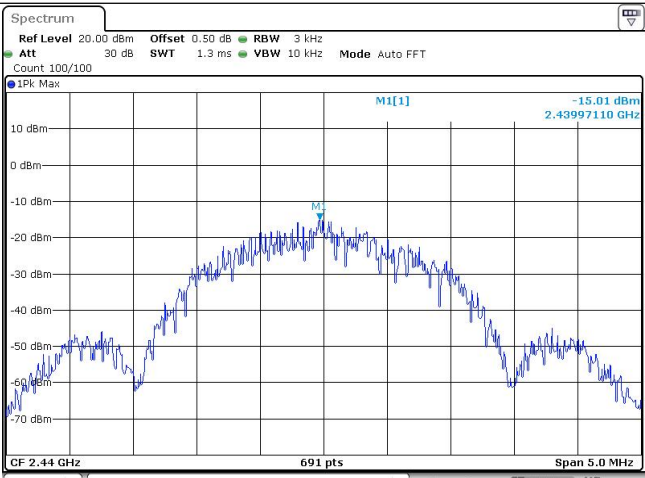
2Mbps

CH00



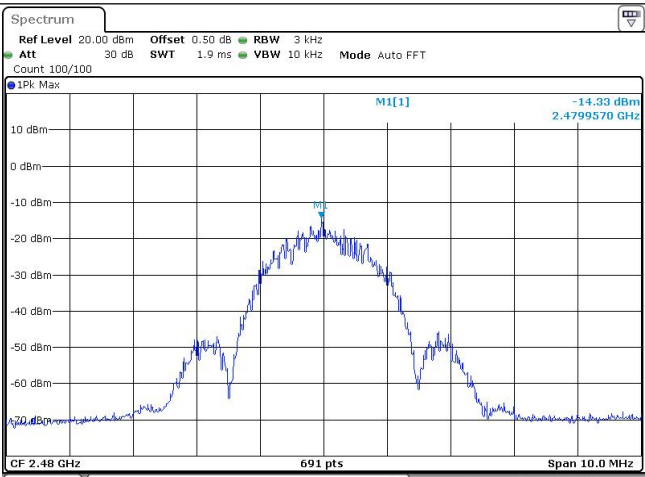
Date: 25 OCT 2024 16:08:47

CH19



Date: 25 OCT 2024 16:11:40

CH39



Date: 25 OCT 2024 16:13:56

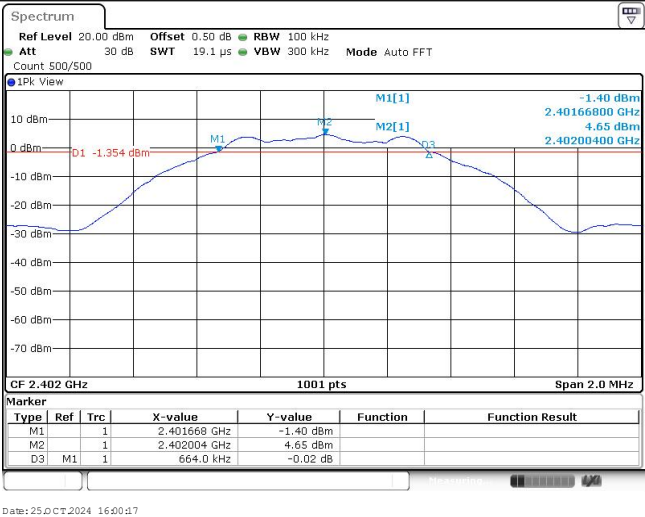
Appendix C: 6dB bandwidth

Type	Channel	6dB Bandwidth(kHz)	Limit (kHz)	Result
1Mbps	00	664.00	≥500	Pass
	19	660.00		
	39	670.00		
2Mbps	00	1140.00	≥500	Pass
	19	970.00		
	39	1125.00		

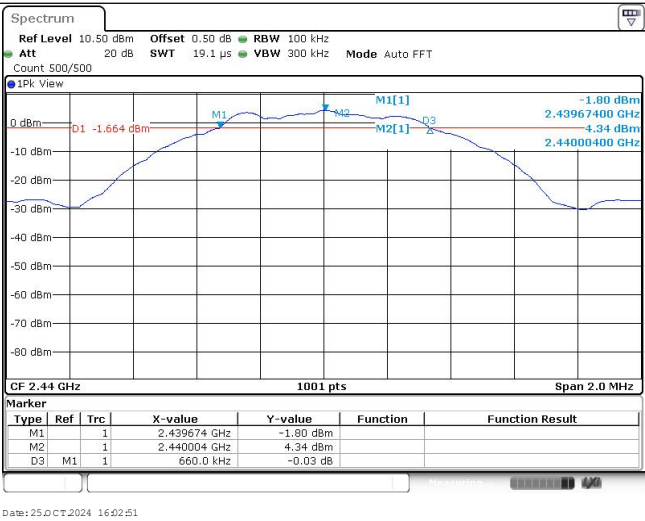
Test rate:

1Mbps

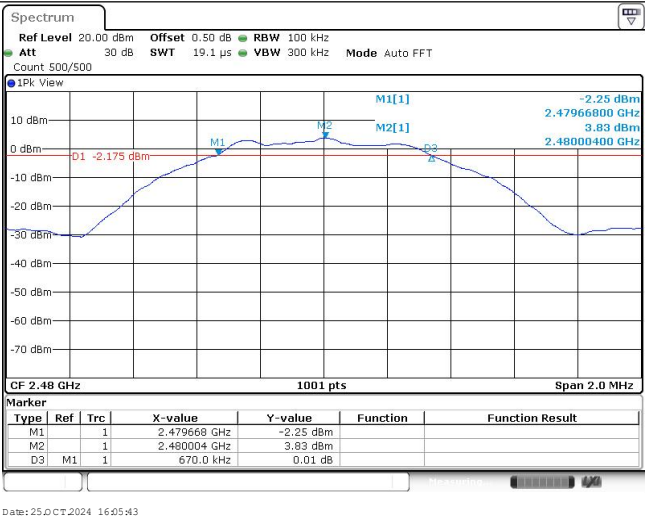
CH00



CH19



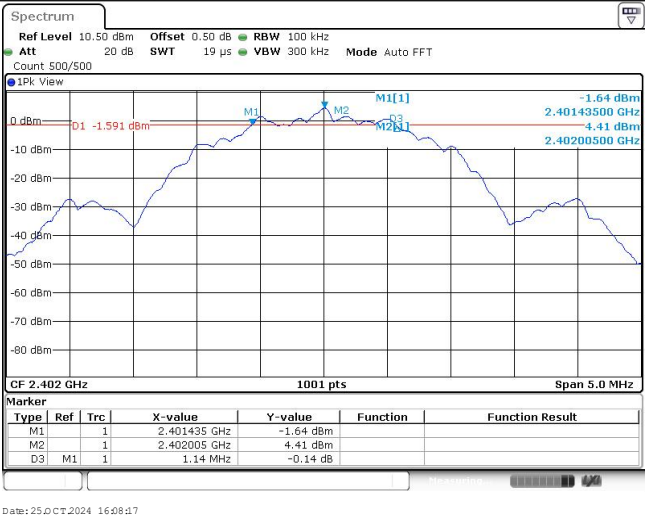
CH39



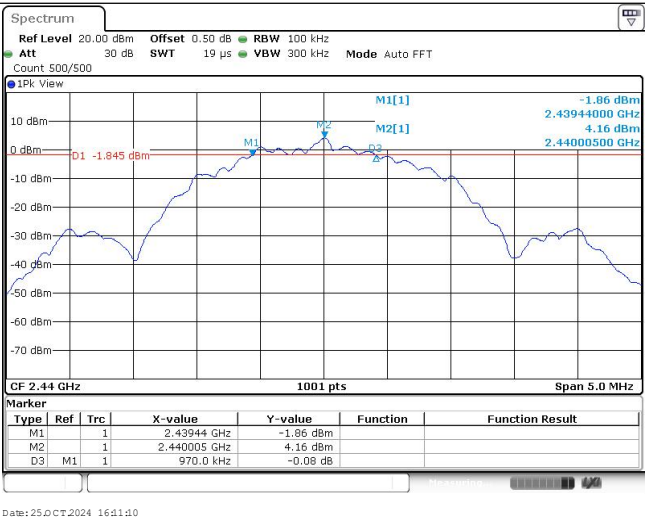
Test rate:

2Mbps

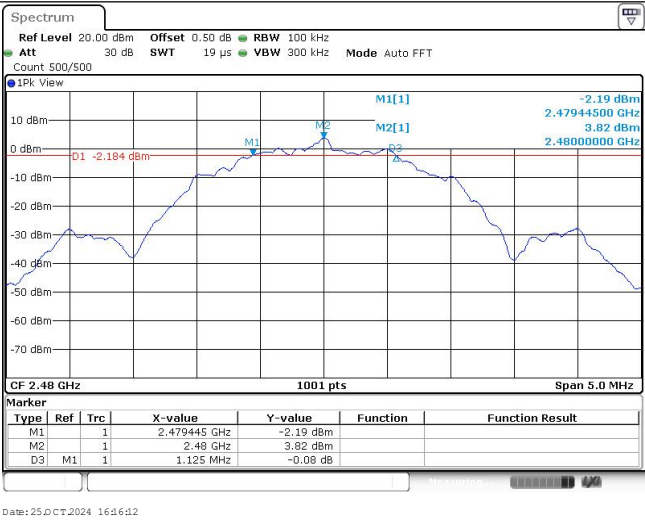
CH00



CH19



CH39

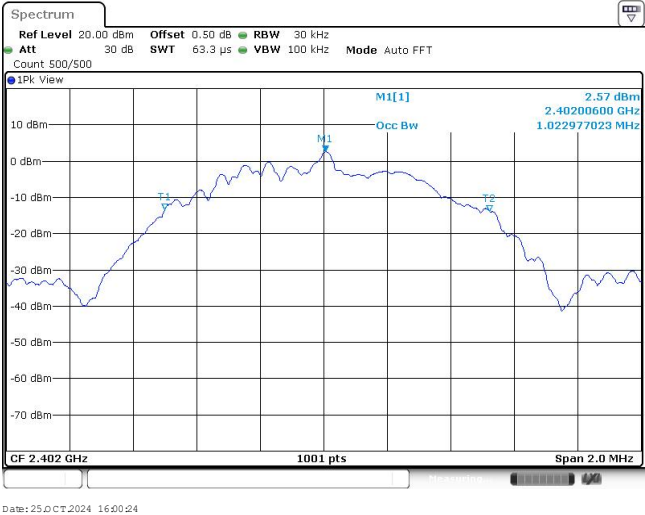


Appendix D: 99% Occupied Bandwidth

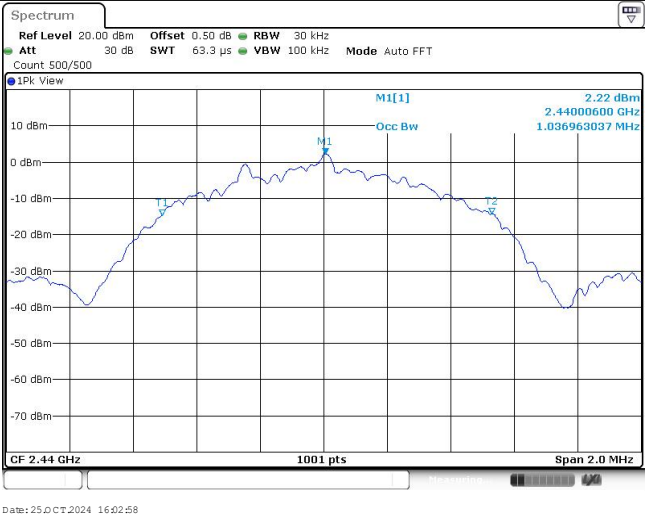
Test rate	Channel	99% Occupied Bandwidth(MHz)	Limit (kHz)	Result
1Mbps	00	1.02	-	Pass
	19	1.04		
	39	1.03		
2Mbps	00	2.07	-	Pass
	19	2.06		
	39	2.04		

Test rate: 1Mbps

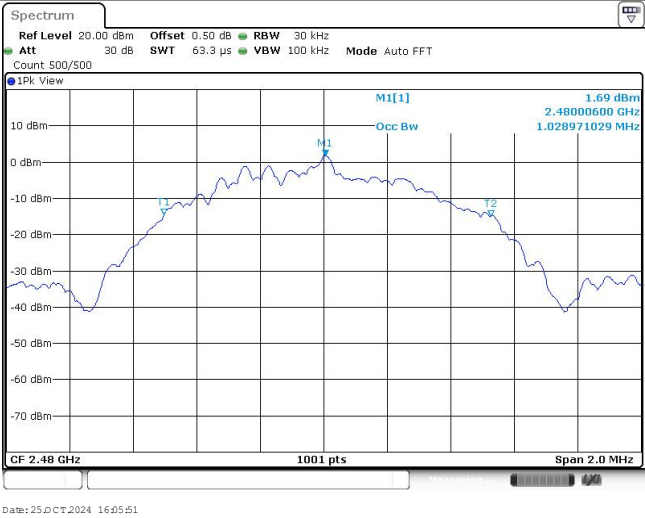
CH00



CH19



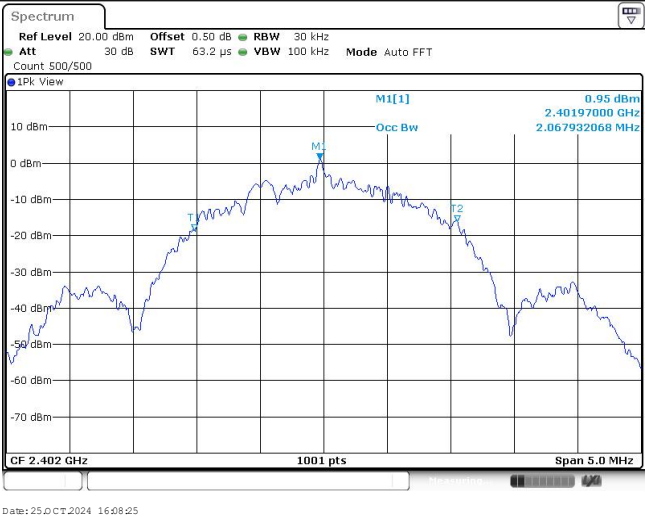
CH39



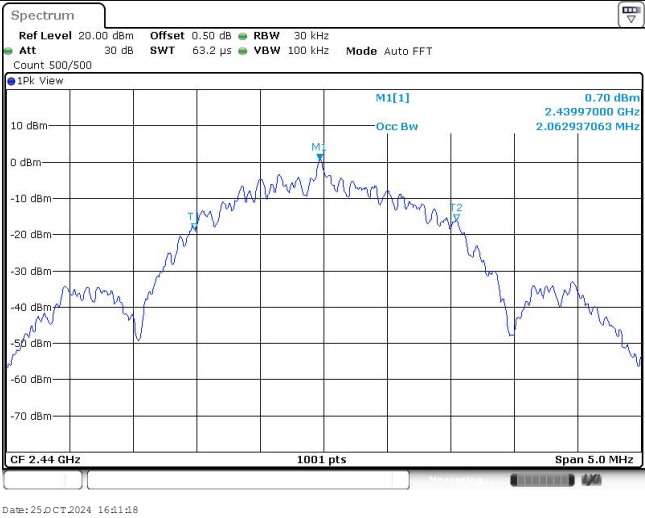
Test rate:

2Mbps

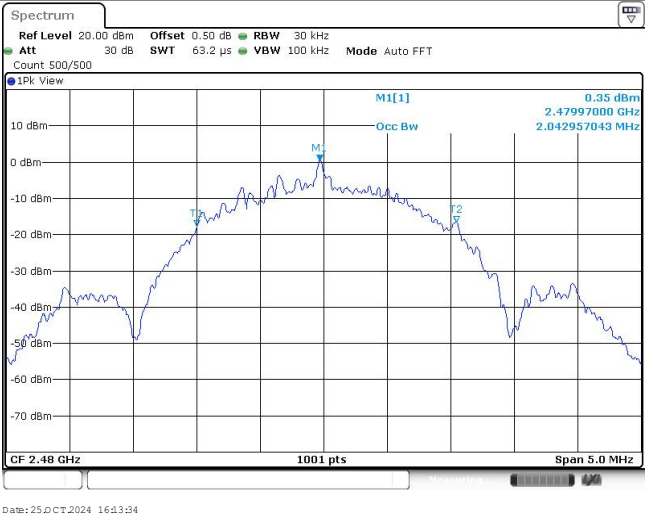
CH00



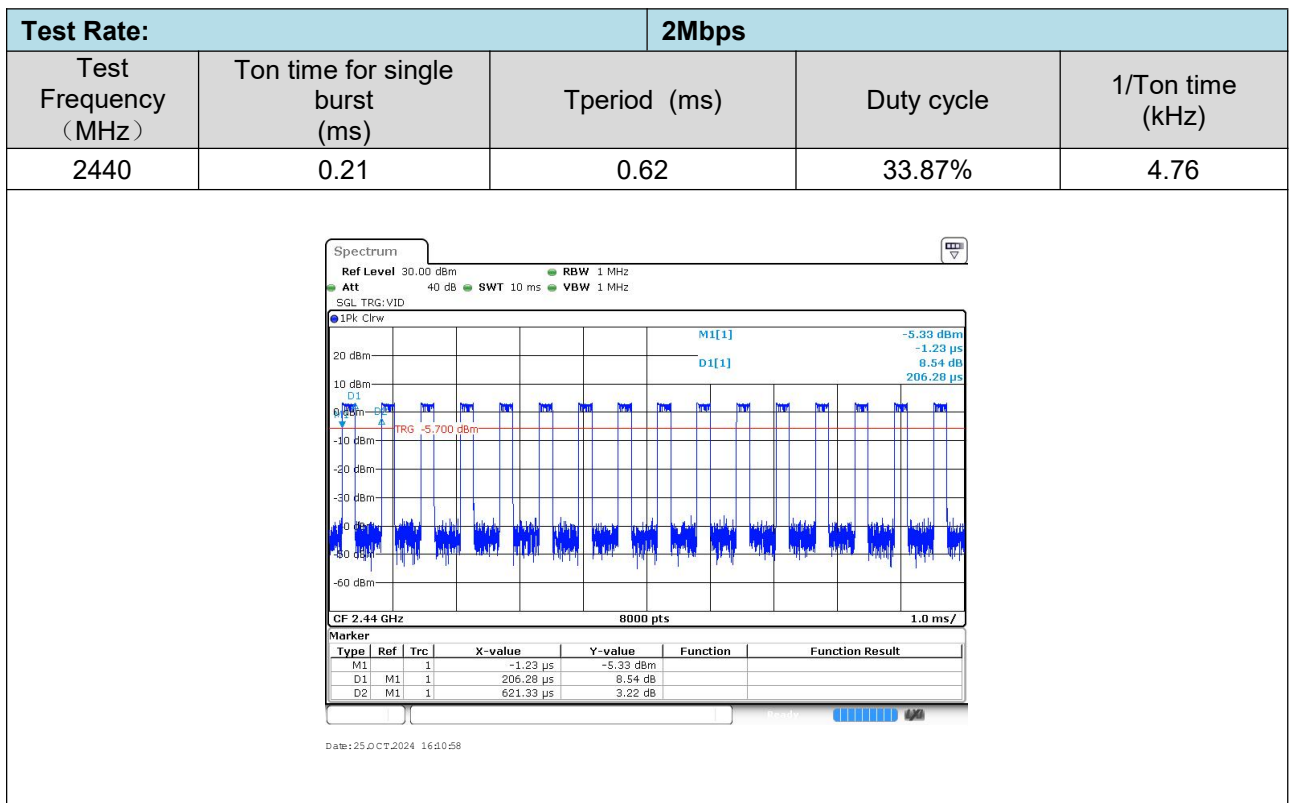
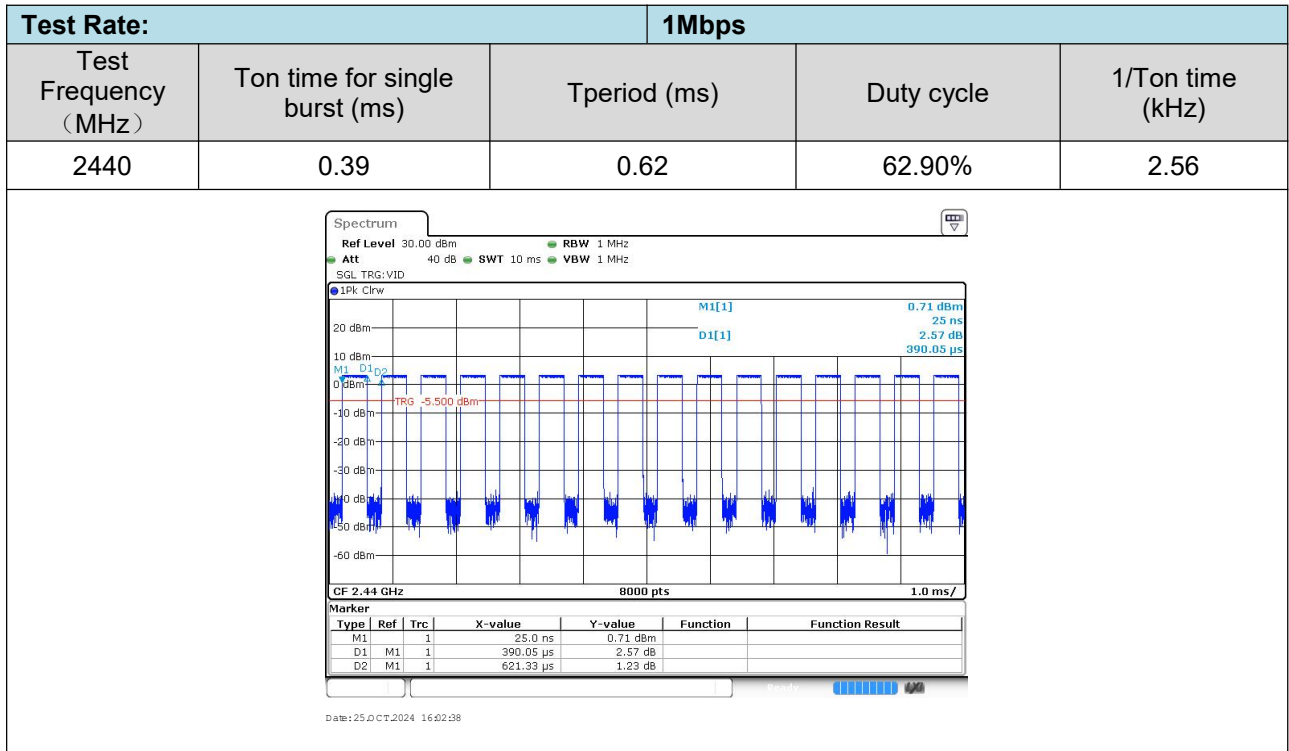
CH19



CH39



Appendix E: Duty cycle

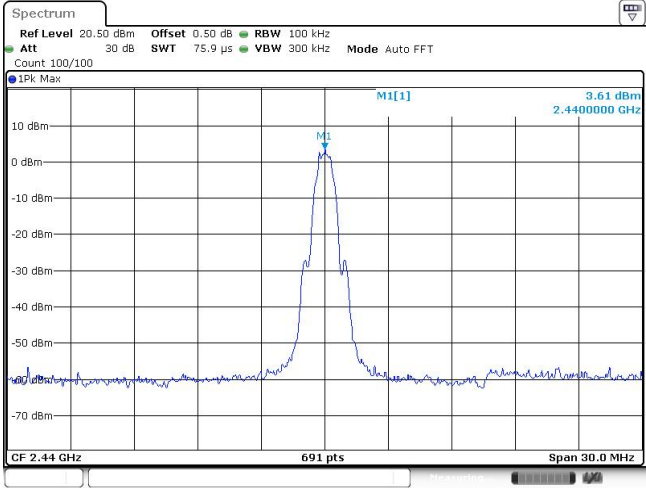
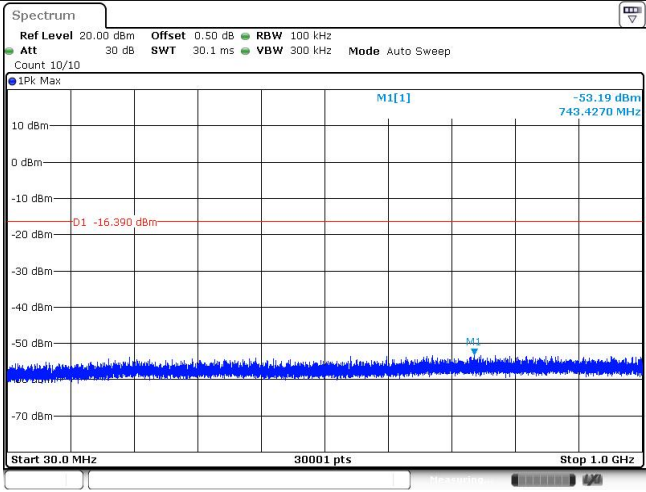
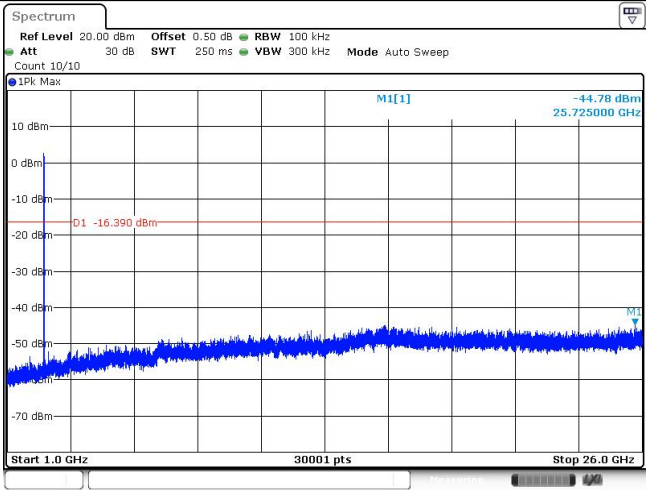


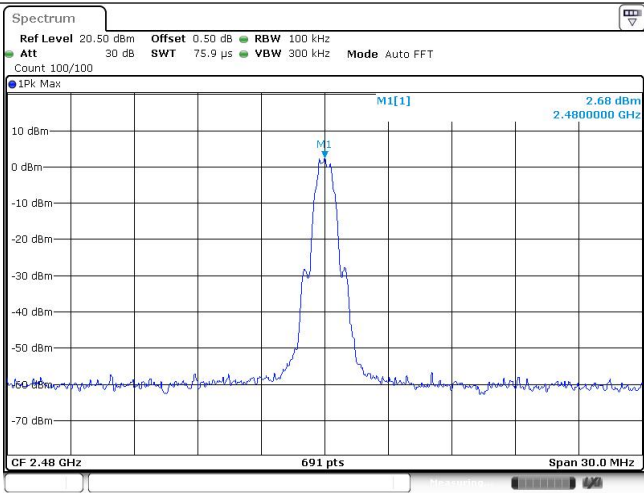
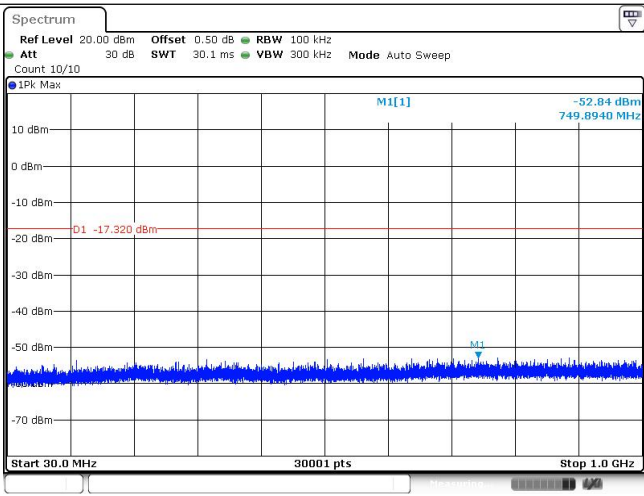
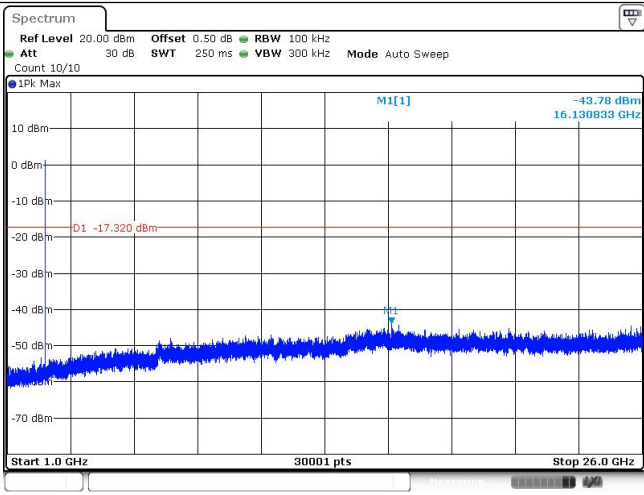
Appendix F: Band edge and Spurious Emissions (conducted)

Test Item:	Band edge	Test Rate:	1Mbps																																										
CH00	Spectrum Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz Att 20 dB SWT 1.1 ms VBW 300 kHz Mode Auto Sweep Count 300/300 1Pk Max 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm M1[1] M2[1] D1 -16.230 dBm 3.77 dBm 2.402040 GHz -57.06 dBm 2.400000 GHz Start 2.31 GHz 691 pts Stop 2.405 GHz Marker <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>2.40204 GHz</td><td>3.77 dBm</td><td></td><td></td></tr><tr><td>M2</td><td></td><td>1</td><td>2.4 GHz</td><td>-57.06 dBm</td><td></td><td></td></tr><tr><td>M3</td><td></td><td>1</td><td>2.39 GHz</td><td>-64.15 dBm</td><td></td><td></td></tr><tr><td>M4</td><td></td><td>1</td><td>2.31 GHz</td><td>-65.45 dBm</td><td></td><td></td></tr><tr><td>M5</td><td></td><td>1</td><td>2.399906 GHz</td><td>-58.65 dBm</td><td></td><td></td></tr></table> Date: 25 OCT 2024 16:00:56			Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1		1	2.40204 GHz	3.77 dBm			M2		1	2.4 GHz	-57.06 dBm			M3		1	2.39 GHz	-64.15 dBm			M4		1	2.31 GHz	-65.45 dBm			M5		1	2.399906 GHz	-58.65 dBm		
	Type	Ref	Trc	X-value	Y-value	Function	Function Result																																						
M1		1	2.40204 GHz	3.77 dBm																																									
M2		1	2.4 GHz	-57.06 dBm																																									
M3		1	2.39 GHz	-64.15 dBm																																									
M4		1	2.31 GHz	-65.45 dBm																																									
M5		1	2.399906 GHz	-58.65 dBm																																									
CH39	Spectrum Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz Att 20 dB SWT 56.9 μs VBW 300 kHz Mode Auto FFT Count 100/100 1Pk Max 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm M1 M2[1] D1 -16.300 dBm 3.70 dBm 2.4799900 GHz -62.61 dBm 2.4835000 GHz Start 2.478 GHz 691 pts Stop 2.5 GHz Marker <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>2.47999 GHz</td><td>3.70 dBm</td><td></td><td></td></tr><tr><td>M2</td><td></td><td>1</td><td>2.4835 GHz</td><td>-62.61 dBm</td><td></td><td></td></tr><tr><td>M3</td><td></td><td>1</td><td>2.5 GHz</td><td>-66.91 dBm</td><td></td><td></td></tr><tr><td>M4</td><td></td><td>1</td><td>2.4835159 GHz</td><td>-62.78 dBm</td><td></td><td></td></tr></table> Date: 25 OCT 2024 16:06:22			Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1		1	2.47999 GHz	3.70 dBm			M2		1	2.4835 GHz	-62.61 dBm			M3		1	2.5 GHz	-66.91 dBm			M4		1	2.4835159 GHz	-62.78 dBm									
	Type	Ref	Trc	X-value	Y-value	Function	Function Result																																						
M1		1	2.47999 GHz	3.70 dBm																																									
M2		1	2.4835 GHz	-62.61 dBm																																									
M3		1	2.5 GHz	-66.91 dBm																																									
M4		1	2.4835159 GHz	-62.78 dBm																																									

Test Item:	Band edge	Test Rate:	2Mbps																																										
CH00	Spectrum Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz Att 20 dB SWT 1.1 ms VBW 300 kHz Mode Auto Sweep Count 300/300 1Pk Max Start 2.31 GHz 691 pts Stop 2.405 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>2.40204 GHz</td><td>3.75 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-28.39 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-63.88 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-65.63 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.399906 GHz</td><td>-35.72 dBm</td><td></td><td></td></tr></table> Date: 25 OCT 2024 16:08:56			Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		2.40204 GHz	3.75 dBm			M2	1		2.4 GHz	-28.39 dBm			M3	1		2.39 GHz	-63.88 dBm			M4	1		2.31 GHz	-65.63 dBm			M5	1		2.399906 GHz	-35.72 dBm		
Type	Ref	Trc	X-value	Y-value	Function	Function Result																																							
M1	1		2.40204 GHz	3.75 dBm																																									
M2	1		2.4 GHz	-28.39 dBm																																									
M3	1		2.39 GHz	-63.88 dBm																																									
M4	1		2.31 GHz	-65.63 dBm																																									
M5	1		2.399906 GHz	-35.72 dBm																																									
CH39	Spectrum Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz Att 20 dB SWT 56.9 μs VBW 300 kHz Mode Auto FFT Count 100/100 1Pk Max Start 2.478 GHz 691 pts Stop 2.5 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>2.47999 GHz</td><td>3.76 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4835 GHz</td><td>-58.51 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.5 GHz</td><td>-67.72 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.4835159 GHz</td><td>-59.04 dBm</td><td></td><td></td></tr></table> Date: 25 OCT 2024 16:14:05			Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		2.47999 GHz	3.76 dBm			M2	1		2.4835 GHz	-58.51 dBm			M3	1		2.5 GHz	-67.72 dBm			M4	1		2.4835159 GHz	-59.04 dBm									
Type	Ref	Trc	X-value	Y-value	Function	Function Result																																							
M1	1		2.47999 GHz	3.76 dBm																																									
M2	1		2.4835 GHz	-58.51 dBm																																									
M3	1		2.5 GHz	-67.72 dBm																																									
M4	1		2.4835159 GHz	-59.04 dBm																																									

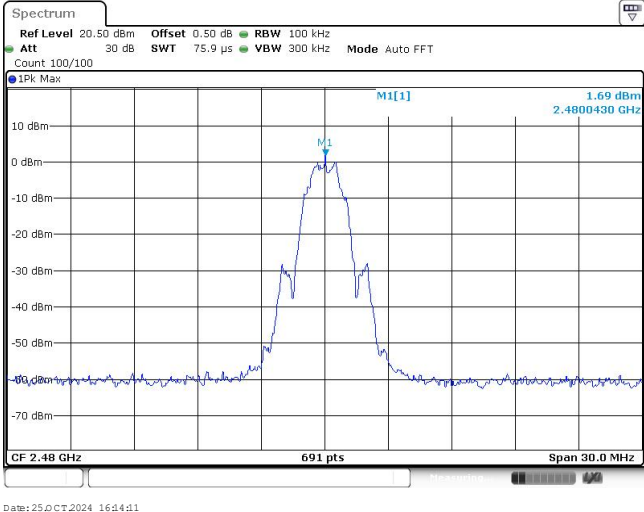
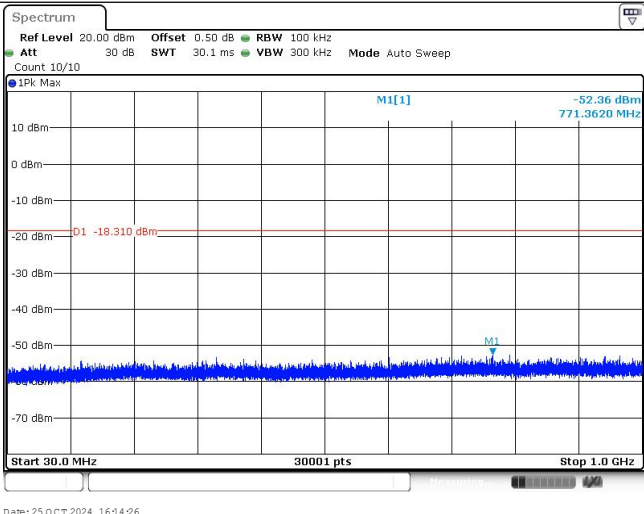
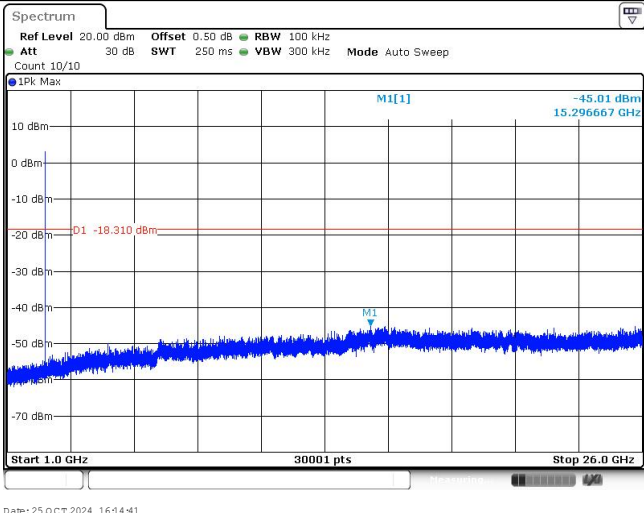
Test Item:	SE	Test Rate:	1Mbps
CH00 Reference level	Spectrum Ref Level 20.50 dBm Att 30 dB Count 100/100 Offset 0.50 dB SWT 75.9 μs RBW 100 kHz VBW 300 kHz Mode Auto FFT 1Pk Max M1[1] 3.47 dBm 2.4022600 GHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 2.402 GHz 691 pts Span 30.0 MHz Date: 25/OCT/2024 16:01:03		
CH00 30MHz~1000MHz	Spectrum Ref Level 20.00 dBm Att 30 dB Count 10/10 Offset 0.50 dB SWT 30.1 ms RBW 100 kHz VBW 300 kHz Mode Auto Sweep 1Pk Max M1[1] -52.85 dBm 683.1920 MHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm Start 30.0 MHz 30001 pts Stop 1.0 GHz Date: 25/OCT/2024 16:01:18		
CH00 1GHz~26GHz	Spectrum Ref Level 20.00 dBm Att 30 dB Count 10/10 Offset 0.50 dB SWT 250 ms RBW 100 kHz VBW 300 kHz Mode Auto Sweep 1Pk Max M1[1] -44.89 dBm 20.457500 GHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm Start 1.0 GHz 30001 pts Stop 26.0 GHz Date: 25/OCT/2024 16:01:34		

CH19 Reference level	 Spectrum Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz Att 30 dB SWT 75.9 μs VBW 300 kHz Mode Auto FFT Count 100/100 IPk Max M1[1] 3.61 dBm 2.440000 GHz CF 2.44 GHz 691 pts Span 30.0 MHz Date: 25 OCT 2024 16:03:26
CH19 30MHz~1000MHz	 Spectrum Ref Level 20.00 dBm Offset 0.50 dB RBW 100 kHz Att 30 dB SWT 30.1 ms VBW 300 kHz Mode Auto Sweep Count 10/10 IPk Max M1[1] -53.19 dBm 743.4270 MHz D1 -16.390 dBm Start 30.0 MHz 30001 pts Stop 1.0 GHz Date: 25 OCT 2024 16:03:41
CH19 1GHz~26GHz	 Spectrum Ref Level 20.00 dBm Offset 0.50 dB RBW 100 kHz Att 30 dB SWT 250 ms VBW 300 kHz Mode Auto Sweep Count 10/10 IPk Max M1[1] -44.78 dBm 25.725000 GHz D1 -16.390 dBm Start 1.0 GHz 30001 pts Stop 26.0 GHz Date: 25 OCT 2024 16:03:56

CH39 Reference level	 Date: 25 OCT 2024 16:06:28
CH39 30MHz~1000MHz	 Date: 25 OCT 2024 16:06:43
CH39 1GHz~26GHz	 Date: 25 OCT 2024 16:06:58

Test Item:	SE	Test Rate:	2Mbps
CH00 Reference level	Spectrum Ref Level 20.50 dBm Att 30 dB Count 100/100 Offset 0.50 dB SWT 75.9 μs RBW 100 kHz VBW 300 kHz Mode Auto FFT 1Pk Max M1[1] 1.45 dBm 2.4015220 GHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 2.402 GHz 691 pts Span 30.0 MHz Date: 25.OCT.2024 16:09:02		
CH00 30MHz~1000MHz	Spectrum Ref Level 20.00 dBm Att 30 dB Count 10/10 Offset 0.50 dB SWT 30.1 ms RBW 100 kHz VBW 300 kHz Mode Auto Sweep 1Pk Max M1[1] -51.91 dBm 884.1050 MHz -20 dBm -18.550 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm Start 30.0 MHz 30001 pts Stop 1.0 GHz Date: 25.OCT.2024 16:09:17		
CH00 1GHz~26GHz	Spectrum Ref Level 20.00 dBm Att 30 dB Count 10/10 Offset 0.50 dB SWT 250 ms RBW 100 kHz VBW 300 kHz Mode Auto Sweep 1Pk Max M1[1] -44.95 dBm 19.375833 GHz -20 dBm -18.550 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm Start 1.0 GHz 30001 pts Stop 26.0 GHz Date: 25.OCT.2024 16:09:32		

CH19 Reference level	
CH19 30MHz~1000MHz	
CH19 1GHz~26GHz	

CH39 Reference level	
CH39 30MHz~1000MHz	
CH39 1GHz~26GHz	

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