

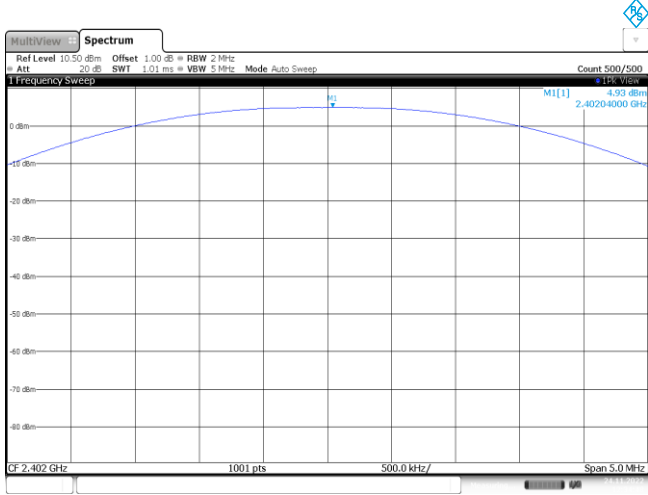
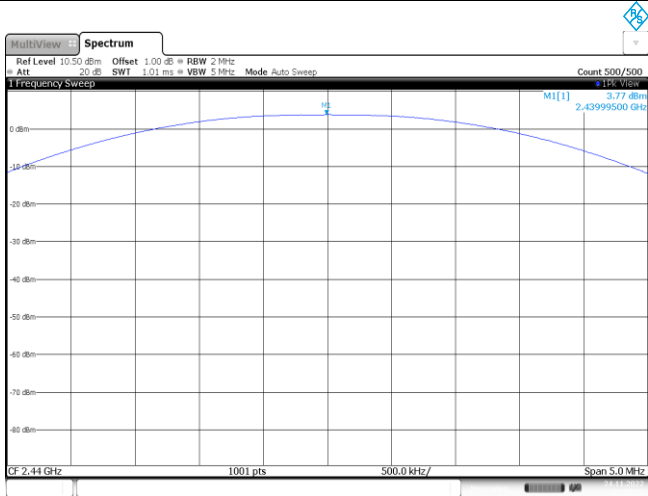
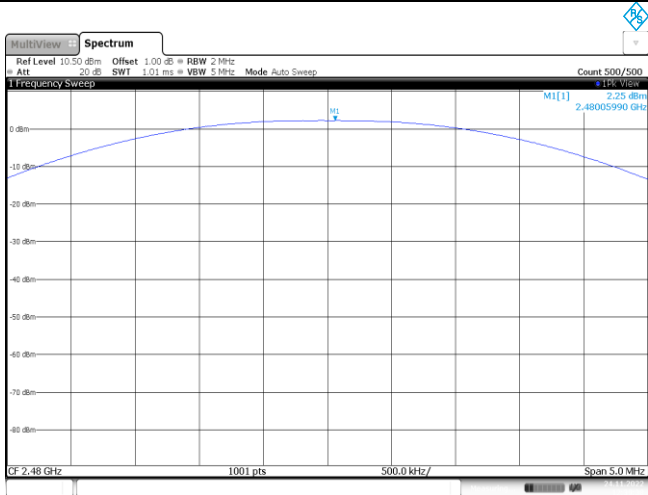
APPENDIX REPORT

Project No.	SHT2112010901EW	Radio Specification	Bluetooth BLE
Test sample No.	YPHT21120109002	Model No.	SE-200PB
Start test date	2022-11-24	Finish date	2022-11-24
Temperature	25.8℃	Humidity	36%
Test Engineer	Xiaoxiao Li	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

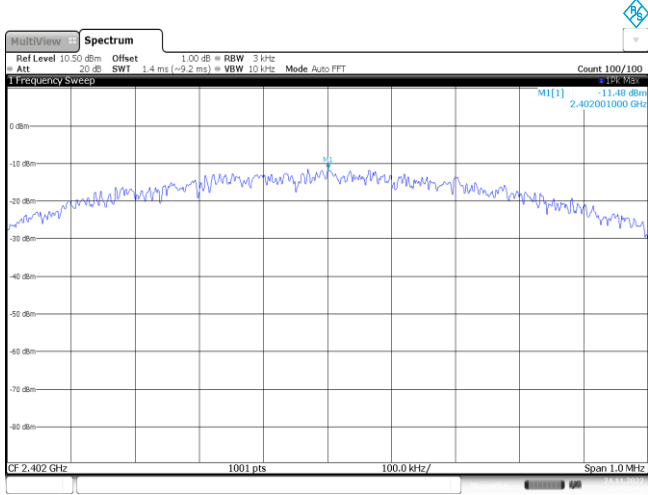
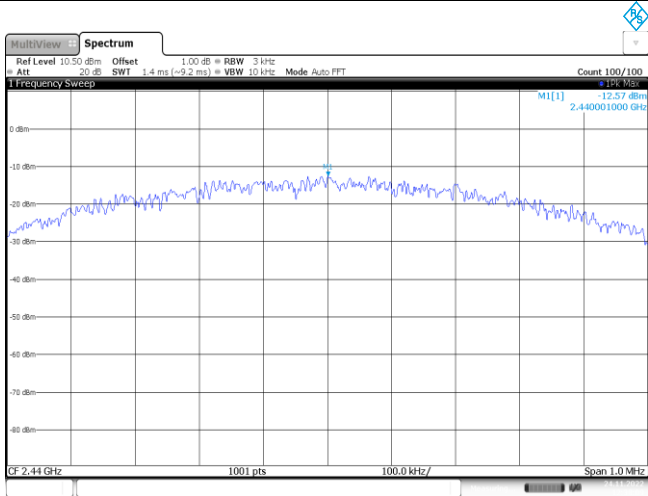
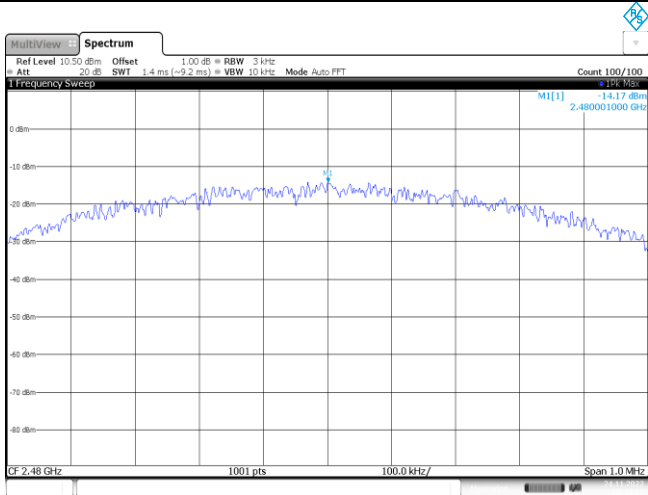
Appendix A: Peak Output Power

Type	Channel	Peak Output power (dBm)	Average Output power (dBm)	Limit (dBm)	Result
BT-BLE	00	4.93	4.83	≤ 30.00	Pass
	19	3.77	3.66		
	39	2.25	2.04		

CH00	 Ref Level 10.50 dBm Att 20 dB Offset 1.00 dB RBW 2 MHz SW1 1.01 ms VBW 5 MHz Mode Auto Sweep Count 500/500 1 Frequency Sweep 4.30 dBm 2.40204000 GHz CF 2.402 GHz 1001 pts 500.0 kHz/ Span 5.0 MHz Date: 24.10.2022 12:04:48
CH19	 Ref Level 10.50 dBm Att 20 dB Offset 1.00 dB RBW 2 MHz SW1 1.01 ms VBW 5 MHz Mode Auto Sweep Count 500/500 1 Frequency Sweep 3.77 dBm 2.43995000 GHz CF 2.44 GHz 1001 pts 500.0 kHz/ Span 5.0 MHz Date: 24.10.2022 12:07:07
CH39	 Ref Level 10.50 dBm Att 20 dB Offset 1.00 dB RBW 2 MHz SW1 1.01 ms VBW 5 MHz Mode Auto Sweep Count 500/500 1 Frequency Sweep 2.55 dBm 2.48005990 GHz CF 2.48 GHz 1001 pts 500.0 kHz/ Span 5.0 MHz Date: 24.10.2022 12:09:08

Appendix B: Power Spectral Density

Type	Channel	Power Spectral Density(dBm/3KHz)	Limit (dBm/3KHz)	Result
BT-BLE	00	-11.48	≤8.00	Pass
	19	-12.57		
	39	-14.17		

CH00	 Ref Level 10.50 dBm Offset 20 dB SWI 1.4 ms (~9.2 ms) VBW 10 kHz Mode Auto FFT Count 100/100 1 Frequency Sweep 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm CF 2.402 GHz 1001 pts 100.0 kHz/ Span 1.0 MHz Date: 24.10.2022 12:05:29
CH19	 Ref Level 10.50 dBm Offset 20 dB SWI 1.4 ms (~9.2 ms) VBW 10 kHz Mode Auto FFT Count 100/100 1 Frequency Sweep 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm CF 2.44 GHz 1001 pts 100.0 kHz/ Span 1.0 MHz Date: 24.10.2022 12:08:09
CH39	 Ref Level 10.50 dBm Offset 20 dB SWI 1.4 ms (~9.2 ms) VBW 10 kHz Mode Auto FFT Count 100/100 1 Frequency Sweep 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm CF 2.48 GHz 1001 pts 100.0 kHz/ Span 1.0 MHz Date: 24.10.2022 12:00:17

Appendix C: 6dB bandwidth

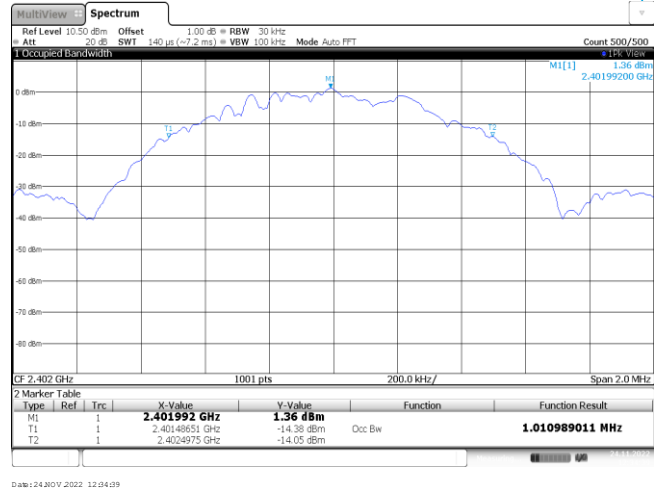
Type	Channel	6dB Bandwidth(kHz)	Limit (kHz)	Result
BT-BLE	00	684.00	≥500	Pass
	19	712.00		
	39	708.00		

CH00	MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 100 kHz Att 20 dB SWI 42.04 μs (≈0.1 ms) VBW 300 kHz Mode Auto FFT Count 500/500 1 Frequency Sweep 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm M1 M2 M3 M1[1] 2.4016460 GHz 2.63 dBm M2[1] 2.4016460 GHz 3.38 dBm M3[1] 2.4022280 GHz -0.05 dB CF 2.402 GHz 1001 pts 200.0 kHz/ Span 2.0 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>2.401646 GHz</td><td>-2.63 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.402228 GHz</td><td>3.38 dBm</td><td></td><td></td></tr><tr><td>D3</td><td>M1</td><td>1</td><td>684.0 kHz</td><td>-0.05 dB</td><td></td><td></td></tr></table> Date: 24.10.17.2022 12:04:30	Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.401646 GHz	-2.63 dBm			M2	1		2.402228 GHz	3.38 dBm			D3	M1	1	684.0 kHz	-0.05 dB		
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																							
M1	1		2.401646 GHz	-2.63 dBm																									
M2	1		2.402228 GHz	3.38 dBm																									
D3	M1	1	684.0 kHz	-0.05 dB																									
CH19	MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 100 kHz Att 20 dB SWI 42.04 μs (≈0.1 ms) VBW 300 kHz Mode Auto FFT Count 500/500 1 Frequency Sweep 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm M1 M2 M3 M1[1] 2.4396300 GHz -3.76 dBm M2[1] 2.4396300 GHz 2.27 dBm M3[1] 2.4399940 GHz -0.01 dB CF 2.44 GHz 1001 pts 200.0 kHz/ Span 2.0 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>2.43963 GHz</td><td>-3.76 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.439994 GHz</td><td>2.27 dBm</td><td></td><td></td></tr><tr><td>D3</td><td>M1</td><td>1</td><td>712.0 kHz</td><td>-0.01 dB</td><td></td><td></td></tr></table> Date: 24.10.17.2022 12:07:00	Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.43963 GHz	-3.76 dBm			M2	1		2.439994 GHz	2.27 dBm			D3	M1	1	712.0 kHz	-0.01 dB		
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																							
M1	1		2.43963 GHz	-3.76 dBm																									
M2	1		2.439994 GHz	2.27 dBm																									
D3	M1	1	712.0 kHz	-0.01 dB																									
CH39	MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 100 kHz Att 20 dB SWI 42.04 μs (≈0.1 ms) VBW 300 kHz Mode Auto FFT Count 500/500 1 Frequency Sweep 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm M1 M2 M3 M1[1] 2.4796320 GHz -5.30 dBm M2[1] 2.4796320 GHz 0.72 dBm M3[1] 2.4799880 GHz -0.07 dB CF 2.48 GHz 1001 pts 200.0 kHz/ Span 2.0 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>2.479632 GHz</td><td>-5.30 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.479988 GHz</td><td>0.72 dBm</td><td></td><td></td></tr><tr><td>D3</td><td>M1</td><td>1</td><td>708.0 kHz</td><td>-0.07 dB</td><td></td><td></td></tr></table> Date: 24.10.17.2022 12:09:20	Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.479632 GHz	-5.30 dBm			M2	1		2.479988 GHz	0.72 dBm			D3	M1	1	708.0 kHz	-0.07 dB		
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																							
M1	1		2.479632 GHz	-5.30 dBm																									
M2	1		2.479988 GHz	0.72 dBm																									
D3	M1	1	708.0 kHz	-0.07 dB																									

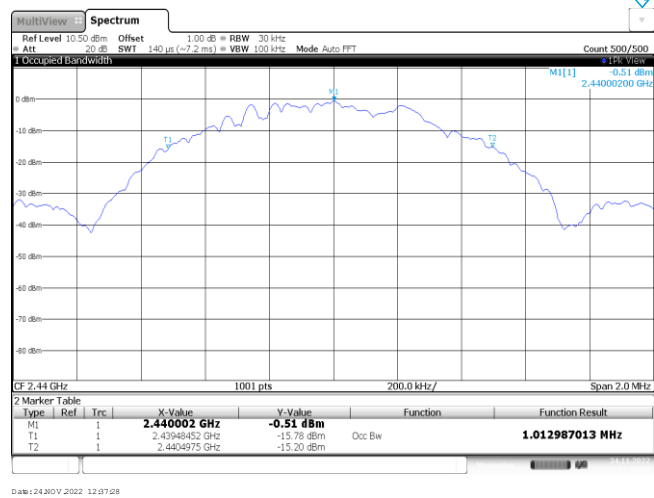
Appendix D: 99% Occupied Bandwidth

Type	Channel	99% Occupied Bandwidth(MHz)	Limit (kHz)	Result
BT-BLE	00	1.01	-	Pass
	19	1.01		
	39	1.01		

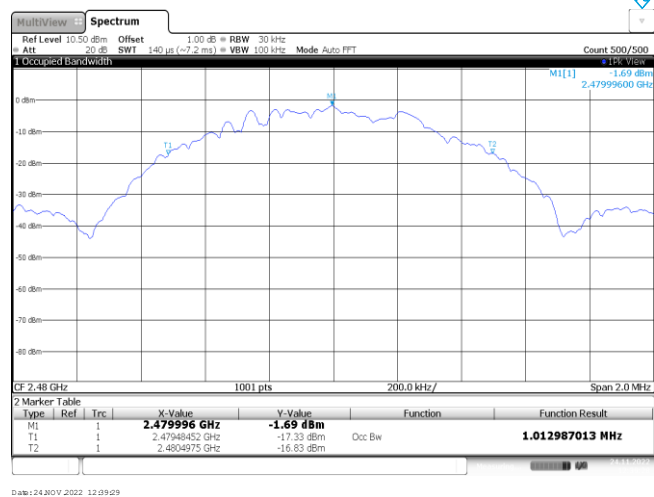
CH00



CH19

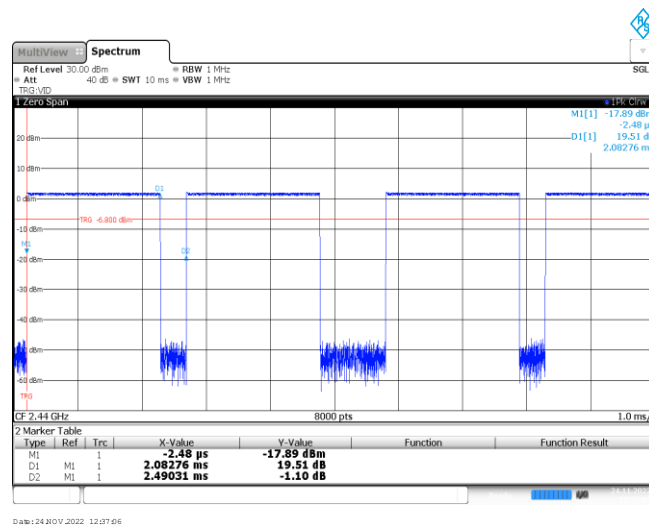


CH39



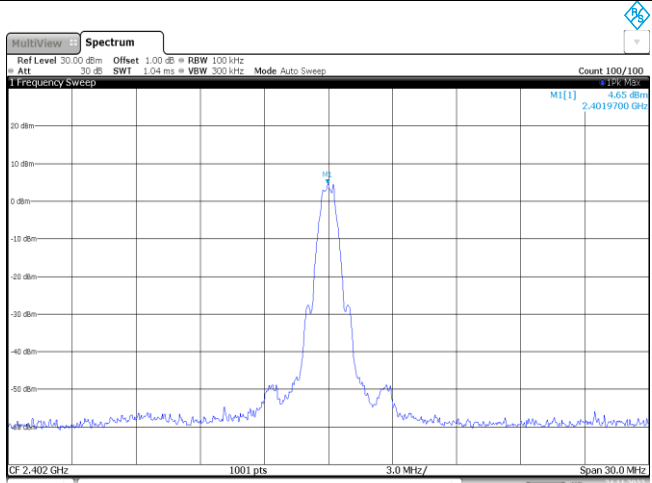
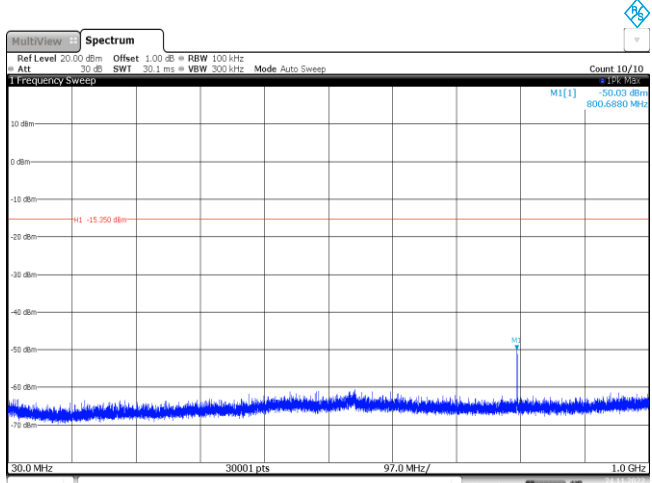
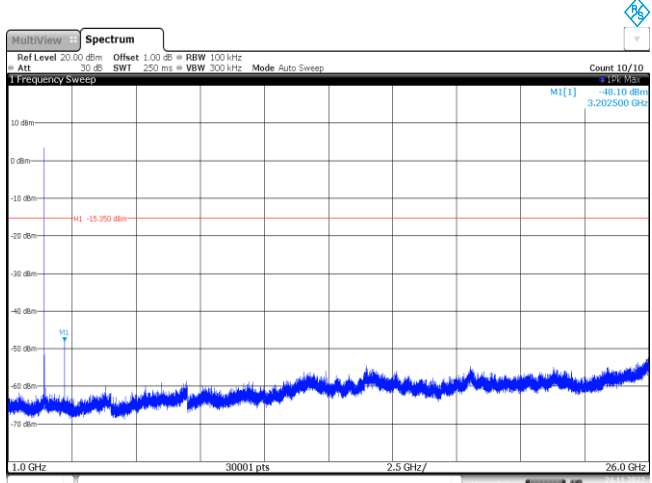
Appendix E: Duty cycle

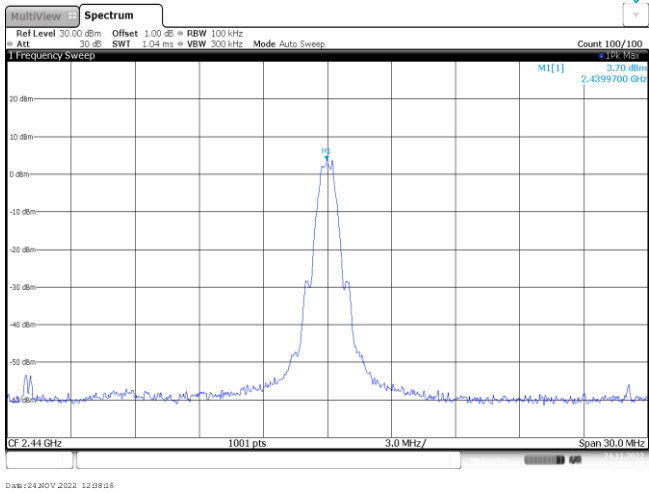
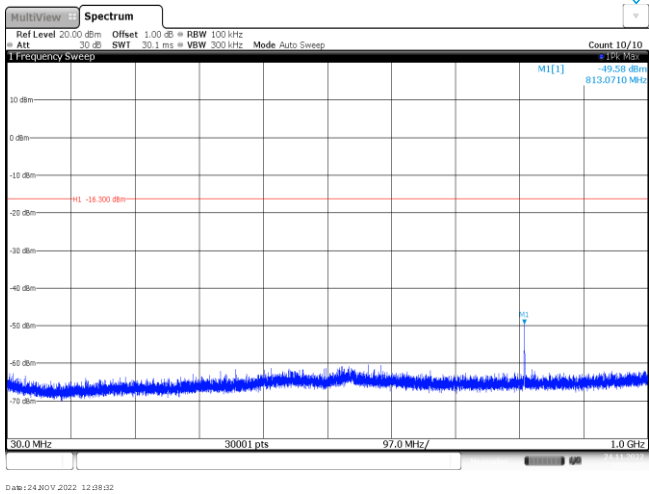
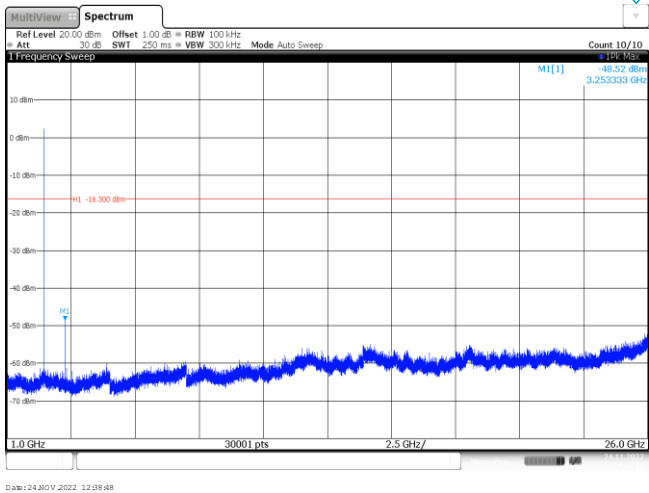
Test Frequency (MHz)	T _{on} time for single burst (ms)	T _{period} (ms)	Duty cycle	1/T _{on} time (kHz)
2440	2.08	2.49	83.5%	0.5

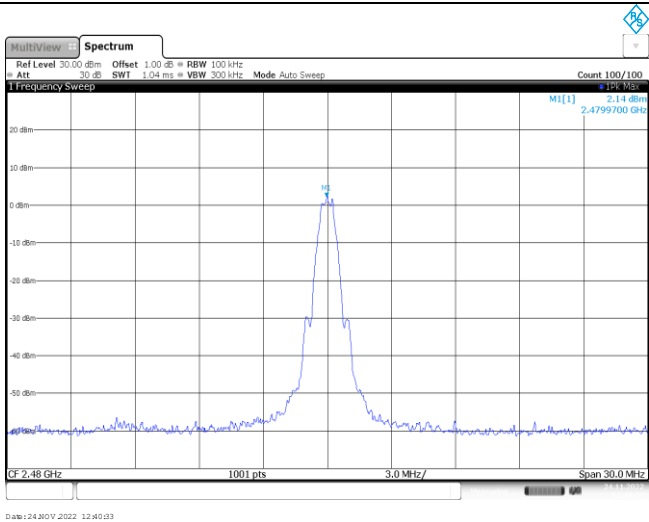
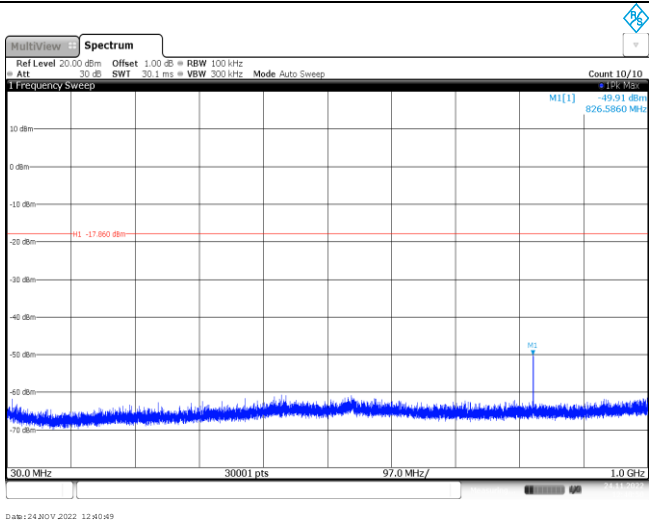
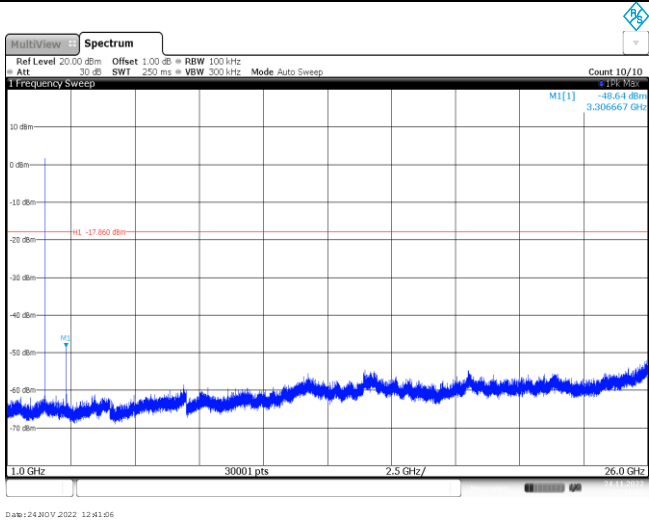


Appendix F: Band edge and Spurious Emissions (conducted)

Test Item:	Band edge																																										
CH00	MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 100 kHz Att 20 dB SWT 1.05 ms VBW 300 kHz Mode Auto Sweep Count 300/300 Frequency Sweep 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm M1 -15.630 dBm M1 2.40201 GHz M2[1] -54.46 dBm M2[1] 2.40201 GHz M2[1] -54.46 dBm M2[1] 2.400000 GHz 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>2.40201 GHz</td><td>4.17 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-54.46 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-67.00 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-71.86 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.399585 GHz</td><td>-50.18 dBm</td><td></td><td></td></tr></table> Date: 24.10.2022 12:05:09	Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.40201 GHz	4.17 dBm			M2	1		2.4 GHz	-54.46 dBm			M3	1		2.39 GHz	-67.00 dBm			M4	1		2.31 GHz	-71.86 dBm			M5	1		2.399585 GHz	-50.18 dBm		
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																																					
M1	1		2.40201 GHz	4.17 dBm																																							
M2	1		2.4 GHz	-54.46 dBm																																							
M3	1		2.39 GHz	-67.00 dBm																																							
M4	1		2.31 GHz	-71.86 dBm																																							
M5	1		2.399585 GHz	-50.18 dBm																																							
CH39	MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 100 kHz Att 20 dB SWT 1.02 ms VBW 300 kHz Mode Auto Sweep Count 100/100 Frequency Sweep 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm M1 1.80 dBm M1 2.479989 GHz M2[1] -63.37 dBm M2[1] 2.483500 GHz 2.476 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>2.479989 GHz</td><td>1.80 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4835 GHz</td><td>-63.37 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.5 GHz</td><td>-68.10 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.483632 GHz</td><td>-62.58 dBm</td><td></td><td></td></tr></table> Date: 24.10.2022 12:00:27	Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.479989 GHz	1.80 dBm			M2	1		2.4835 GHz	-63.37 dBm			M3	1		2.5 GHz	-68.10 dBm			M4	1		2.483632 GHz	-62.58 dBm									
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																																					
M1	1		2.479989 GHz	1.80 dBm																																							
M2	1		2.4835 GHz	-63.37 dBm																																							
M3	1		2.5 GHz	-68.10 dBm																																							
M4	1		2.483632 GHz	-62.58 dBm																																							

Test Item:	SE
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] -4.43 dBm 2.4019700 GHz CF 2.402 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 24.NOV.2022 12:05:47
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] -50.03 dBm 800.6880 MHz HI -15.250 dBm 30.0 MHz 30001 pts 97.0 MHz/ 1.0 GHz Date: 24.NOV.2022 12:06:03
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] -48.10 dBm 3.202500 GHz HI -15.250 dBm 1.0 GHz 30001 pts 2.5 GHz/ 26.0 GHz Date: 24.NOV.2022 12:06:19

CH19 Reference level	 The spectrum plot shows a single sharp peak at 2.4399700 GHz with a power level of 3.70 dBm. The y-axis represents power in dBm, ranging from -50 to 20. The x-axis represents frequency in GHz, with a span of 30.0 MHz. The plot is titled 'Spectrum' and includes parameters: Ref Level 30.00 dBm, Offset 1.00 dB, RBW 100 kHz, Att 30 dB, SWI 1.04 ms, VBW 300 kHz, Mode Auto Sweep. The date is 24.10.2022 12:28:16.
CH19 30MHz~1000MHz	 The spectrum plot shows a noise floor around -70 dBm with a small peak at 813.6710 MHz. The y-axis represents power in dBm, ranging from -70 to 20. The x-axis represents frequency in GHz, with a span of 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, SWI 30.1 ms, VBW 300 kHz, Mode Auto Sweep. The date is 24.10.2022 12:28:02.
CH19 1GHz~26GHz	 The spectrum plot shows a noise floor around -70 dBm with a small peak at 3.253333 GHz. The y-axis represents power in dBm, ranging from -70 to 20. The x-axis represents frequency in GHz, with a span of 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, SWI 250 ms, VBW 300 kHz, Mode Auto Sweep. The date is 24.10.2022 12:28:48.

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

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