

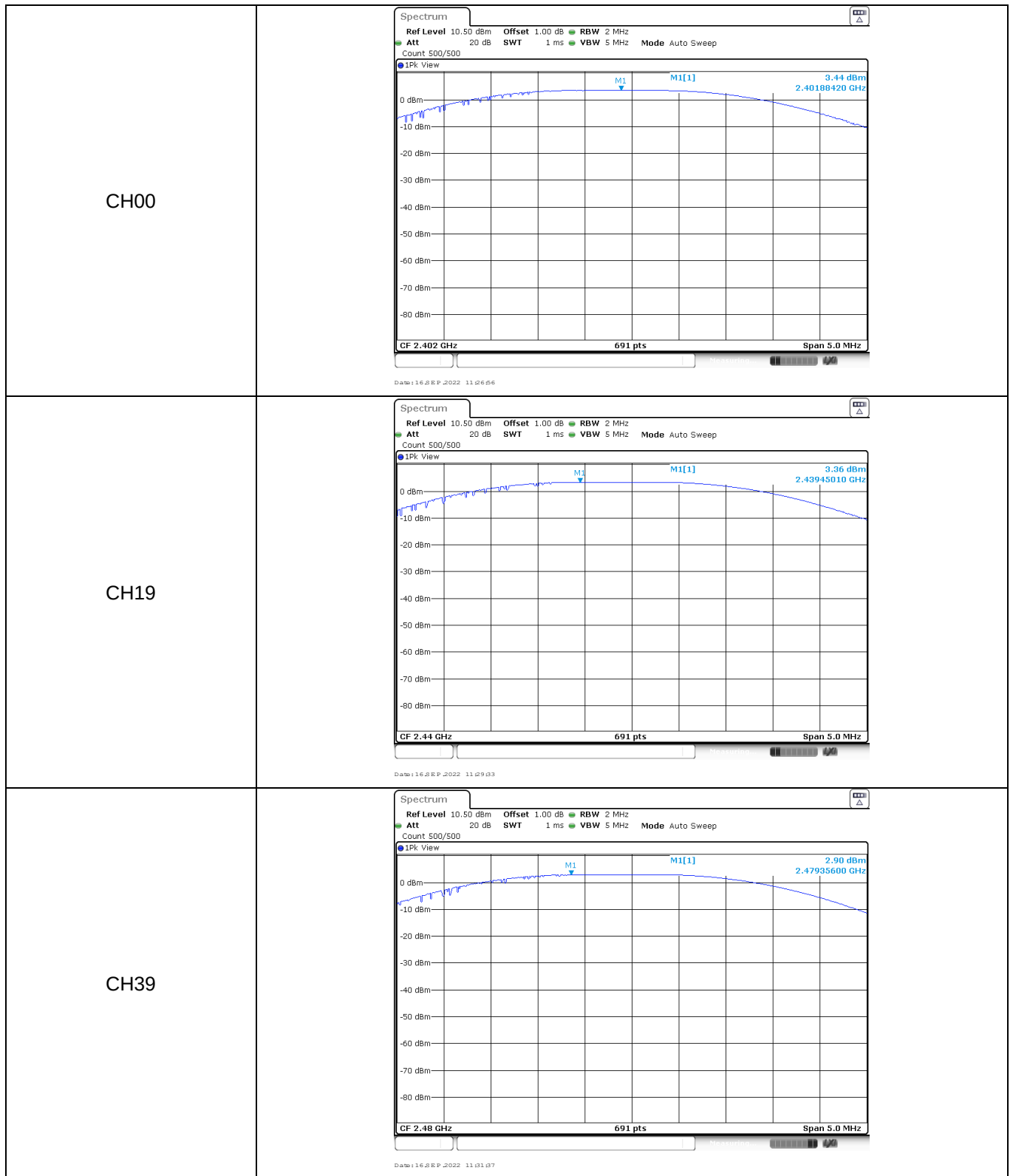
APPENDIX REPORT

Project No.	SHT2206102901EW	Radio Specification	Bluetooth BLE
Test sample No.	YPHT22061029001	Model No.	AES-U393
Start test date	2022-09-02	Finish date	2022-09-16
Temperature	25.4℃	Humidity	30%
Test Engineer	Xiaoxiao Li	Auditor	Xiaodong Zhu

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

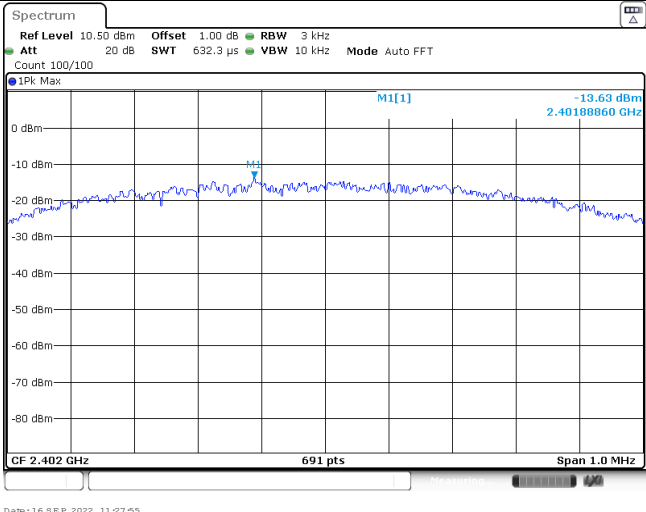
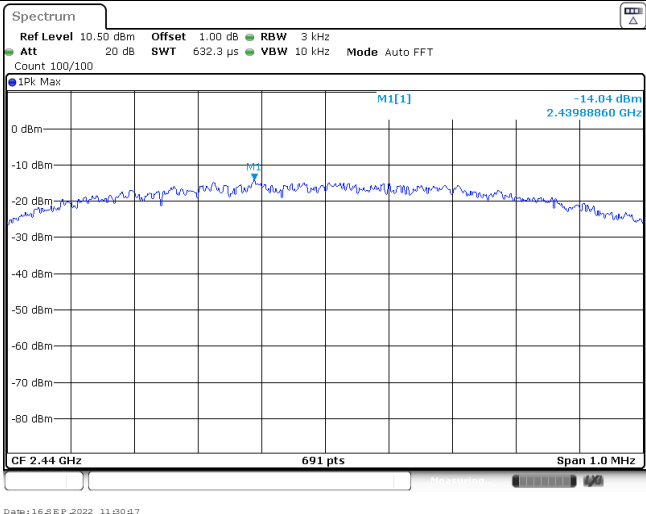
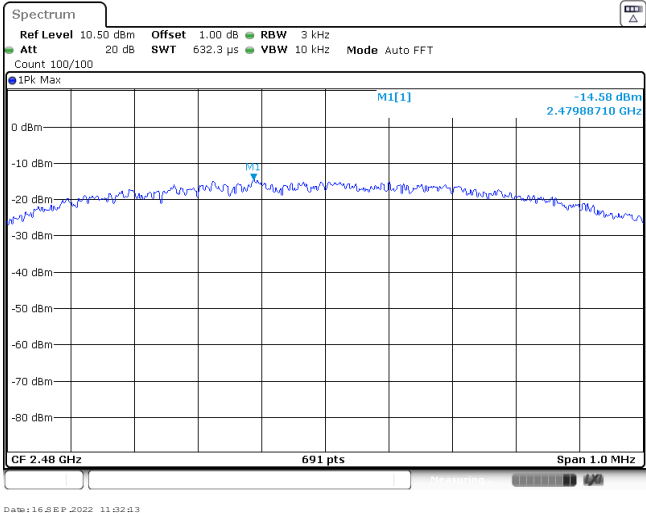
Appendix A: Peak Output Power

Type	Channel	Peak Output power (dBm)	Average Output power (dBm)	Limit (dBm)	Result
BT-BLE	00	3.44	3.43	≤ 30.00	Pass
	19	3.36	3.35		
	39	2.90	2.88		



Appendix B: Power Spectral Density

Type	Channel	Power Spectral Density(dBm/3KHz)	Limit (dBm/3KHz)	Result
BT-BLE	00	-13.63	≤8.00	Pass
	19	-14.04		
	39	-14.58		

CH00	 Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 3 kHz Att 20 dB SWT 632.3 μs VBW 10 kHz Mode Auto FFT Count 100/100 IPk Max M1[1] -13.63 dBm 2.40198860 GHz CF 2.402 GHz 691 pts Span 1.0 MHz Date: 16 SEP 2022 11:27:55
CH19	 Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 3 kHz Att 20 dB SWT 632.3 μs VBW 10 kHz Mode Auto FFT Count 100/100 IPk Max M1[1] -14.04 dBm 2.43988860 GHz CF 2.44 GHz 691 pts Span 1.0 MHz Date: 16 SEP 2022 11:30:17
CH39	 Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 3 kHz Att 20 dB SWT 632.3 μs VBW 10 kHz Mode Auto FFT Count 100/100 IPk Max M1[1] -14.58 dBm 2.47988710 GHz CF 2.48 GHz 691 pts Span 1.0 MHz Date: 16 SEP 2022 11:32:13

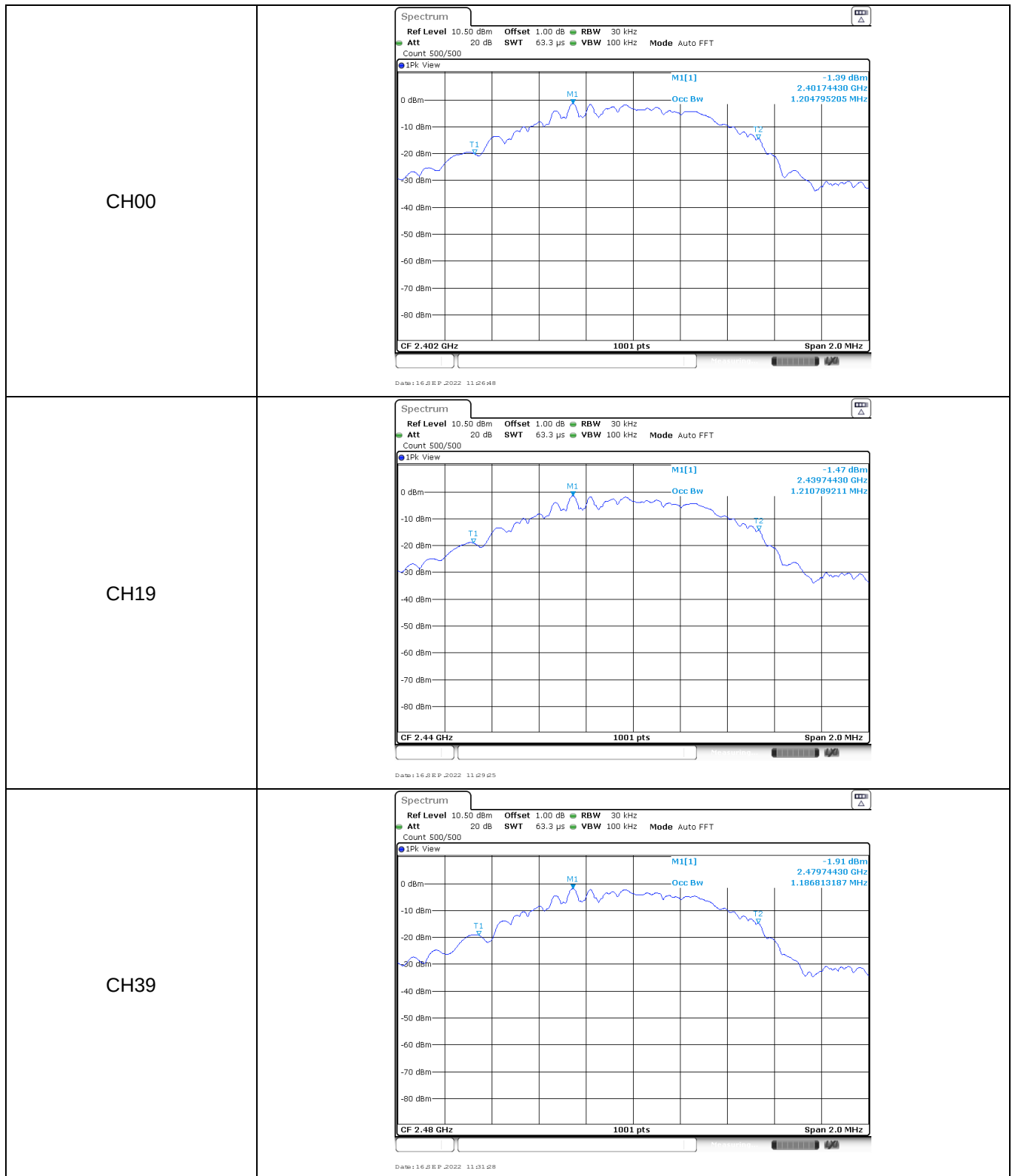
Appendix C: 6dB bandwidth

Type	Channel	6dB Bandwidth(kHz)	Limit (kHz)	Result
BT-BLE	00	778.00	≥500	Pass
	19	786.00		
	39	784.00		

CH00	Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 100 kHz Att 20 dB SWT 19.1 μs VBW 300 kHz Mode Auto FFT Count 500/500 1Pk View 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm CF 2.402 GHz 1001 pts Span 2.0 MHz 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>2.401604 GHz</td><td>-3.46 dBm</td><td></td><td></td></tr><tr><td>M2</td><td></td><td>1</td><td>2.40225 GHz</td><td>2.57 dBm</td><td></td><td></td></tr><tr><td>D3</td><td>M1</td><td>1</td><td>778.0 kHz</td><td>-0.06 dB</td><td></td><td></td></tr></table> Date: 16 SEP 2022 11:26:39	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1		1	2.401604 GHz	-3.46 dBm			M2		1	2.40225 GHz	2.57 dBm			D3	M1	1	778.0 kHz	-0.06 dB		
Type	Ref	Trc	X-value	Y-value	Function	Function Result																							
M1		1	2.401604 GHz	-3.46 dBm																									
M2		1	2.40225 GHz	2.57 dBm																									
D3	M1	1	778.0 kHz	-0.06 dB																									
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Type	Ref	Trc	X-value	Y-value	Function	Function Result																							
M1		1	2.439598 GHz	-3.58 dBm																									
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Type	Ref	Trc	X-value	Y-value	Function	Function Result																							
M1		1	2.4796 GHz	-3.95 dBm																									
M2		1	2.48025 GHz	2.07 dBm																									
D3	M1	1	784.0 kHz	-0.08 dB																									

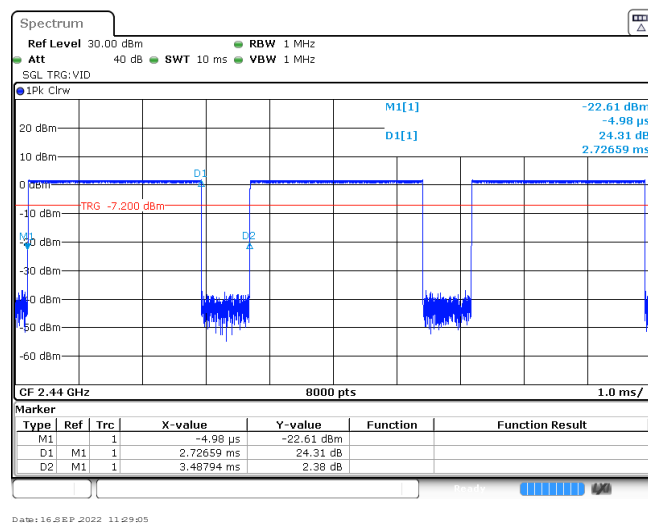
Appendix D: 99% Occupied Bandwidth

Type	Channel	99% Occupied Bandwidth(MHz)	Limit (kHz)	Result
BT-BLE	00	1.20	-	Pass
	19	1.21		
	39	1.19		



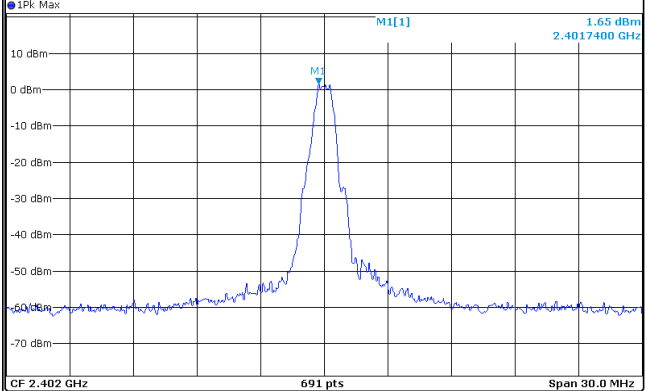
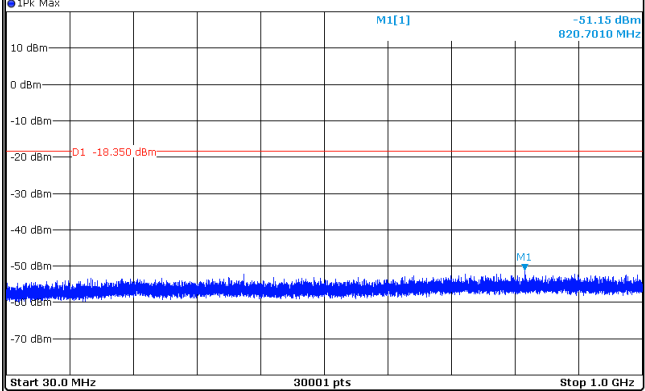
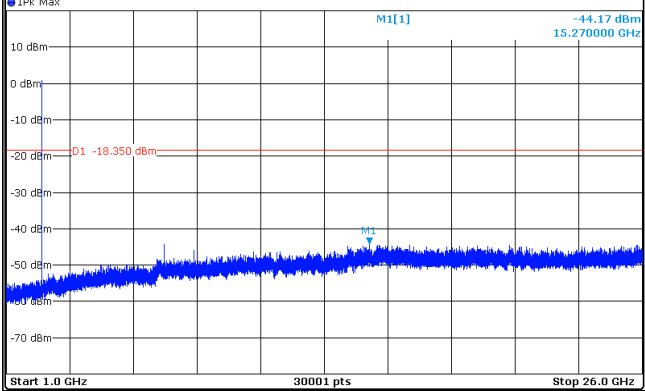
Appendix E: Duty cycle

Test Frequency (MHz)	T _{on} time for single burst (ms)	T _{period} (ms)	Duty cycle	1/T _{on} time (kHz)
2440	2.73	3.49	78.2%	0.4

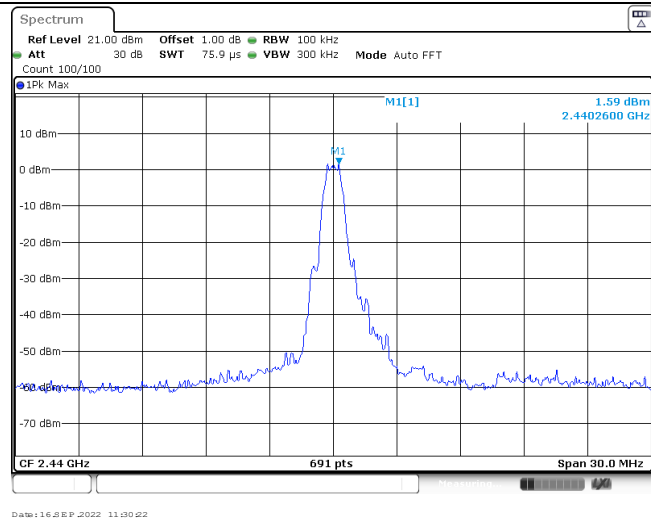


Appendix F: Band edge and Spurious Emissions (conducted)

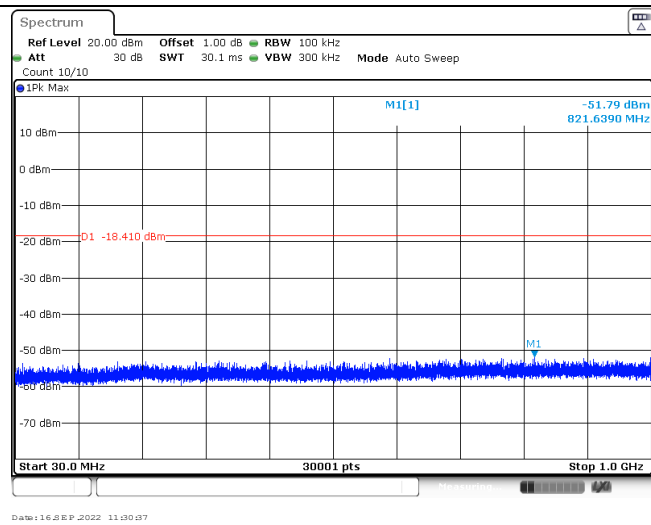
Test Item:	Band edge																																										
CH00	Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 100 kHz Att 20 dB SWT 1.1 ms VBW 300 kHz Mode Auto Sweep Count 300/300 1Pk Max 0 dBm 2.09 dBm M1[1] 2.402320 GHz -10 dBm -46.70 dBm M2[1] 2.400000 GHz -20 dBm -18.010 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm 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>1</td><td></td><td>2.40232 GHz</td><td>2.09 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-46.70 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-63.94 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-64.62 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.399906 GHz</td><td>-48.06 dBm</td><td></td><td></td></tr></table> Date: 16 SEP 2022 11:28:04	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		2.40232 GHz	2.09 dBm			M2	1		2.4 GHz	-46.70 dBm			M3	1		2.39 GHz	-63.94 dBm			M4	1		2.31 GHz	-64.62 dBm			M5	1		2.399906 GHz	-48.06 dBm		
Type	Ref	Trc	X-value	Y-value	Function	Function Result																																					
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M5	1		2.399906 GHz	-48.06 dBm																																							
CH39	Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 100 kHz Att 20 dB SWT 56.9 μs VBW 300 kHz Mode Auto FFT Count 100/100 1Pk Max 0 dBm 1.96 dBm M1[1] 2.4802450 GHz -10 dBm -57.42 dBm M2[1] 2.4835000 GHz -20 dBm -18.040 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm 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>1</td><td></td><td>2.480245 GHz</td><td>1.96 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4835 GHz</td><td>-57.42 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.5 GHz</td><td>-69.30 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.4835478 GHz</td><td>-57.17 dBm</td><td></td><td></td></tr></table> Date: 16 SEP 2022 11:02:22	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		2.480245 GHz	1.96 dBm			M2	1		2.4835 GHz	-57.42 dBm			M3	1		2.5 GHz	-69.30 dBm			M4	1		2.4835478 GHz	-57.17 dBm									
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M1	1		2.480245 GHz	1.96 dBm																																							
M2	1		2.4835 GHz	-57.42 dBm																																							
M3	1		2.5 GHz	-69.30 dBm																																							
M4	1		2.4835478 GHz	-57.17 dBm																																							

Test Item:	SE
CH00 Reference level	Spectrum Ref Level 21.00 dBm Att 30 dB Count 100/100 Offset 1.00 dB SWT 75.9 μs RBW 100 kHz VBW 300 kHz Mode Auto FFT 1Pk Max M1[1] 1.65 dBm 2.4017400 GHz  CF 2.402 GHz 691 pts Span 30.0 MHz Date: 16 SEP 2022 11:28:13
CH00 30MHz~1000MHz	Spectrum Ref Level 20.00 dBm Att 30 dB Count 10/10 Offset 1.00 dB SWT 30.1 ms RBW 100 kHz VBW 300 kHz Mode Auto Sweep 1Pk Max M1[1] -51.15 dBm 820.7010 MHz  Start 30.0 MHz 30001 pts Stop 1.0 GHz Date: 16 SEP 2022 11:28:28
CH00 1GHz~26GHz	Spectrum Ref Level 20.00 dBm Att 30 dB Count 10/10 Offset 1.00 dB SWT 250 ms RBW 100 kHz VBW 300 kHz Mode Auto Sweep 1Pk Max M1[1] -44.17 dBm 15.270000 GHz  Start 1.0 GHz 30001 pts Stop 26.0 GHz Date: 16 SEP 2022 11:28:43

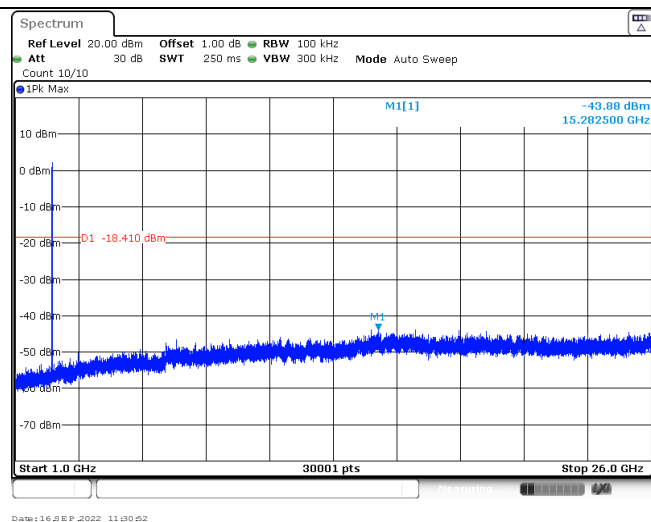
CH19
Reference level



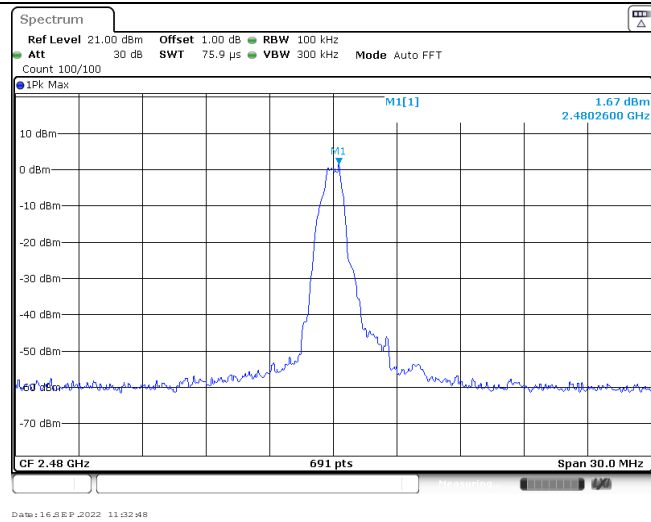
CH19
30MHz~1000MHz



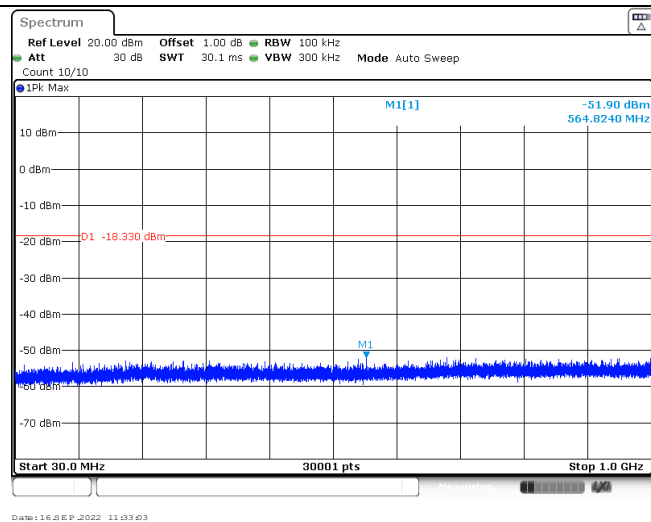
CH19
1GHz~26GHz



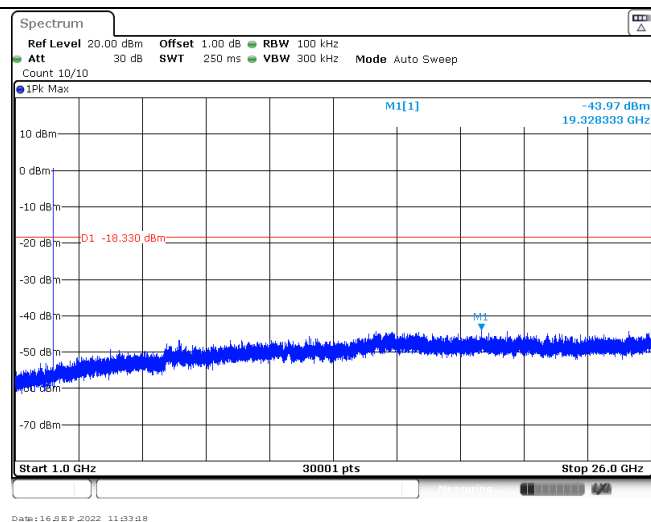
CH39
Reference level



CH39
30MHz~1000MHz



CH39
1GHz~26GHz



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