

APPENDIX REPORT

Project No.	SHT2009015201EW	Radio Specification	Bluetooth BLE
Test sample No.	YPHT20090152004	Model No.	ABX00032
Start test date	2020/9/17	Finish date	2020/9/17
Temperature	25°C	Humidity	50%
Test Engineer	Jiongsheng.Feng	Auditor	Xiaodong Zheo

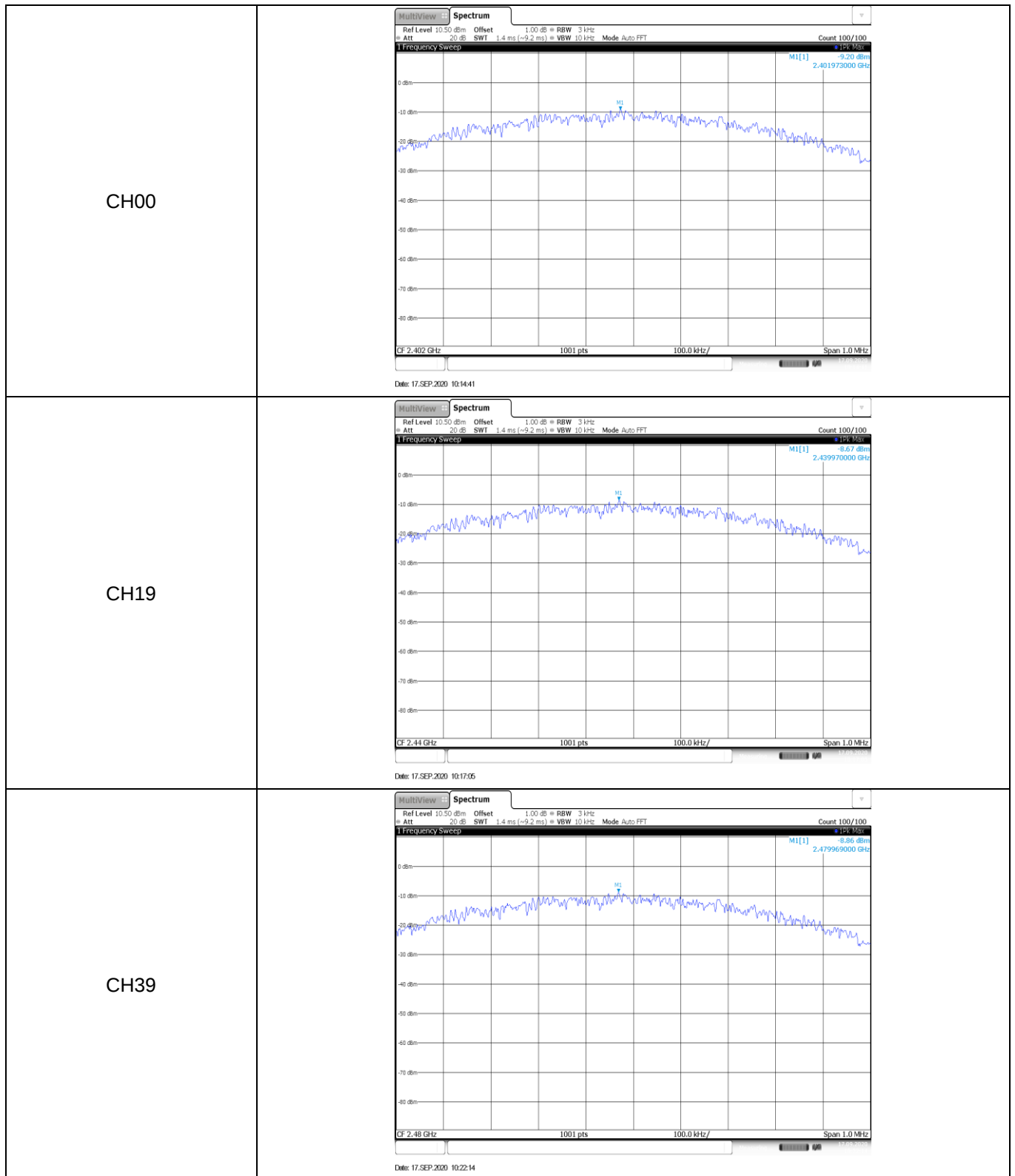
Appendix clause	Test item	Result
A	Peak Output Power	PASS
B	Power Spectral Density	PASS
C	6 dB Bandwidth	PASS
D	99% Occupied Bandwidth	PASS
E	Duty cycle	PASS
F	Band edge and Spurious Emissions (conducted)	PASS

Appendix A: Peak Output Power

Type	Channel	Output power (dBm)	Average Output power (dBm)	Limit (dBm)	Result
BT-BLE	00	7.08	7.05	≤ 30.00	Pass
	19	7.33	7.30		
	39	7.35	7.32		

Appendix B: Power Spectral Density

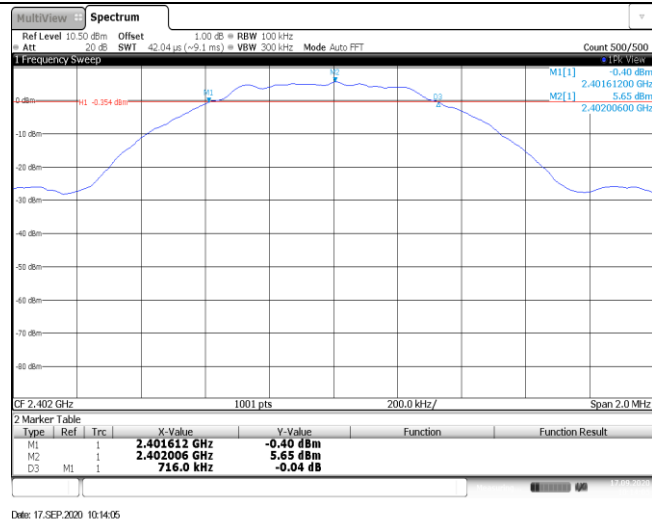
Type	Channel	Power Spectral Density(dBm/3KHz)	Limit (dBm/3KHz)	Result
BT-BLE	00	-9.20	≤8.00	Pass
	19	-8.67		
	39	-8.86		



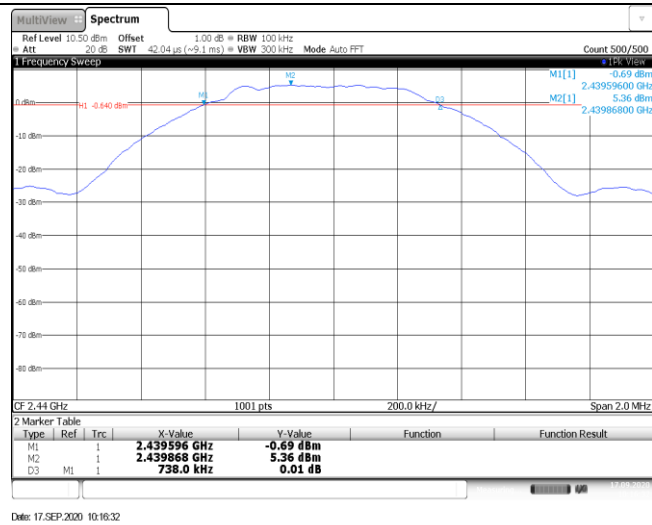
Appendix C: 6dB bandwidth

Type	Channel	6dB Bandwidth(kHz)	Limit (kHz)	Result
BT-BLE	00	716.00	≥500	Pass
	19	738.00		
	39	684.00		

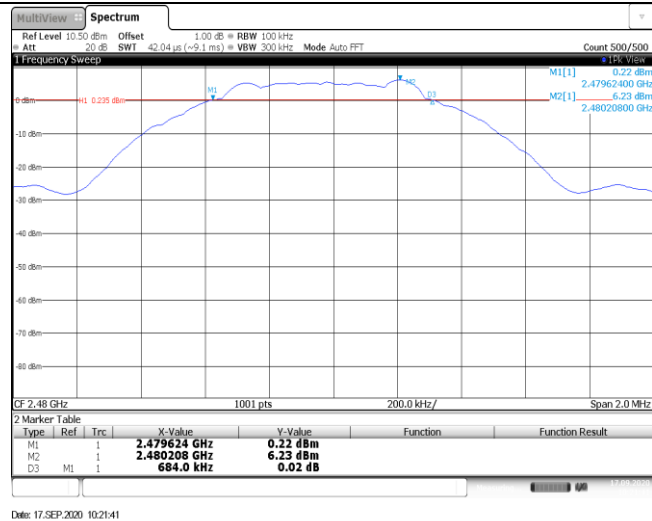
CH00



CH19



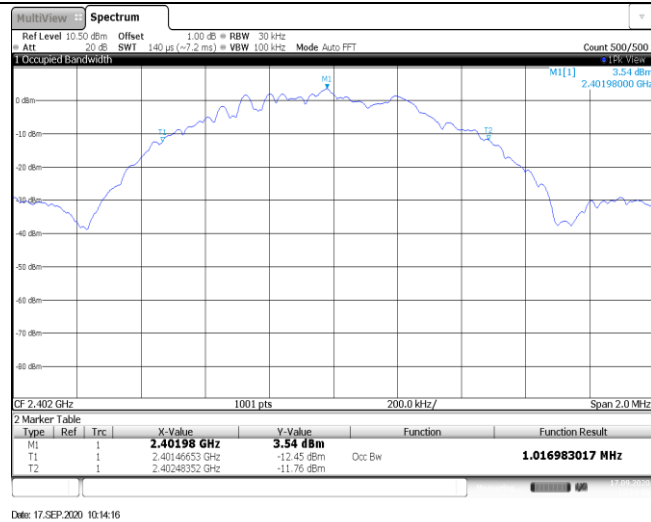
CH39



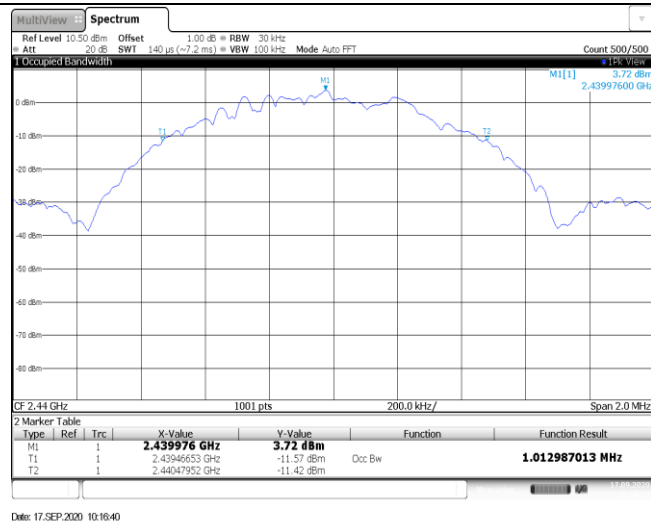
Appendix D: 99% Occupied Bandwidth

Type	Channel	99% Occupied Bandwidth(MHz)	Limit (kHz)	Result
BT-BLE	00	1.02	-	Pass
	19	1.01		
	39	1.02		

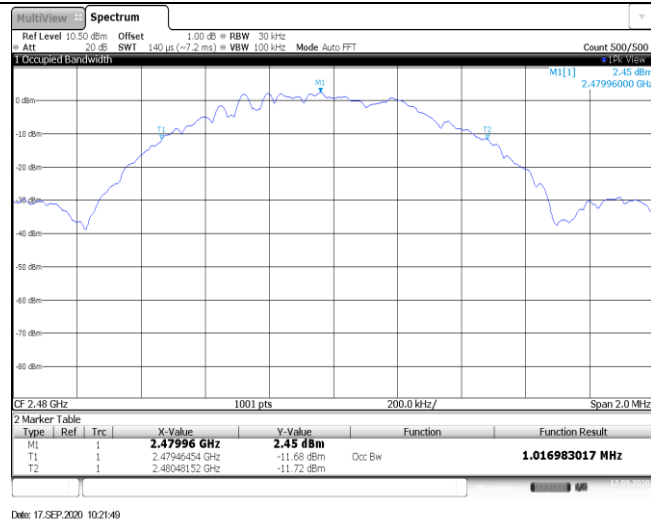
CH00



CH19

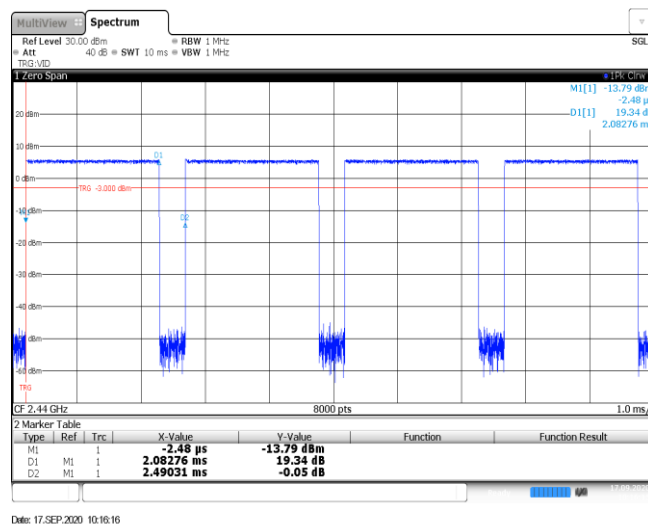


CH39



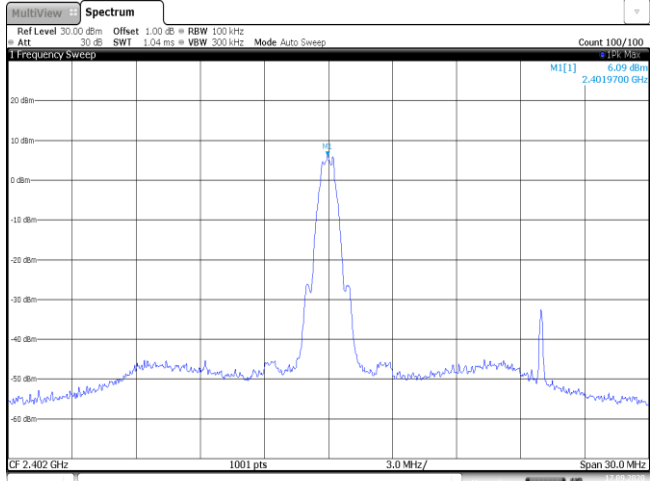
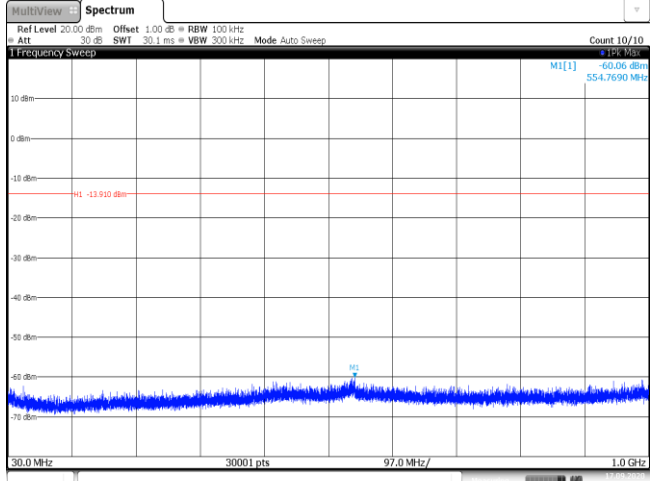
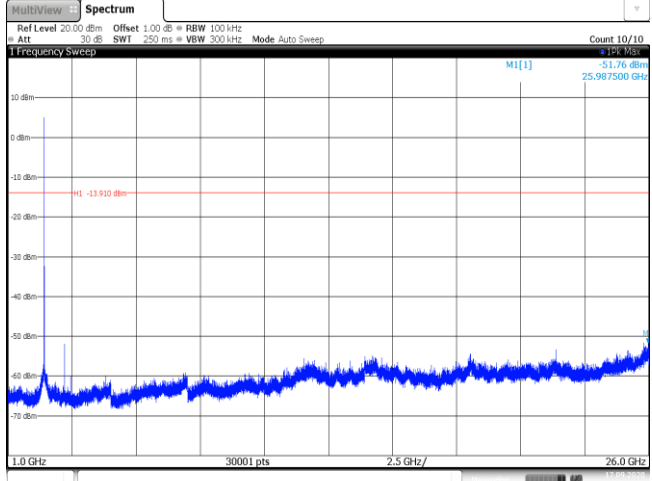
Appendix E: Duty cycle

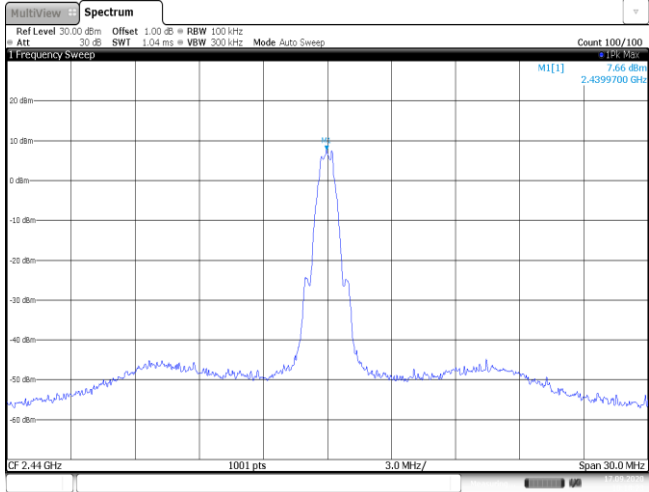
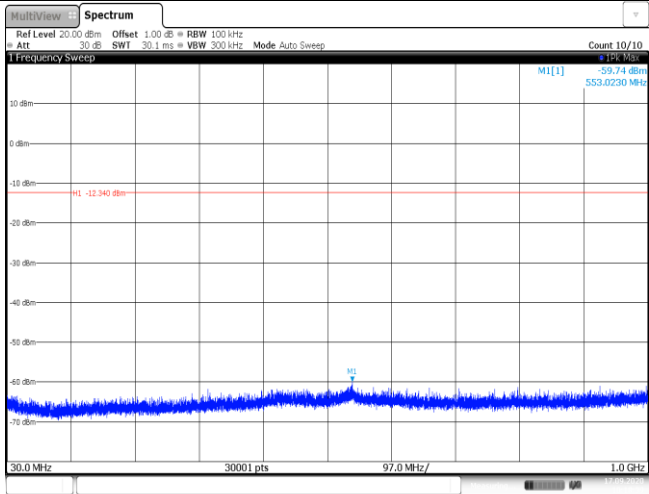
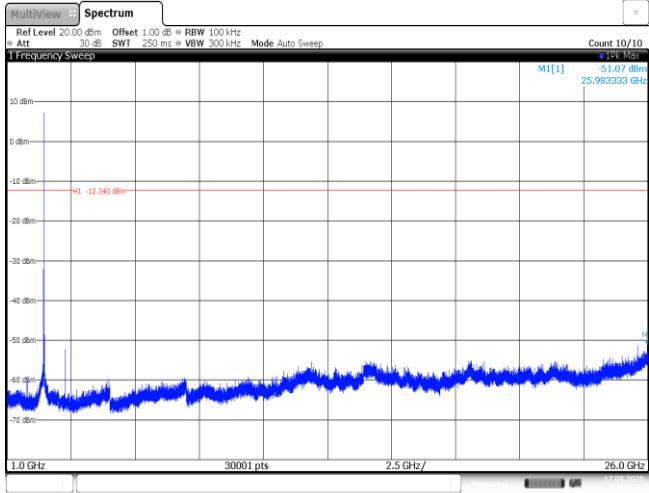
Test Frequency (MHz)	T _{on} time for single burst (ms)	T _{period} (ms)	Duty cycle	1/T _{on} time (kHz)
2440	2.08	2.49	83.5%	0.5

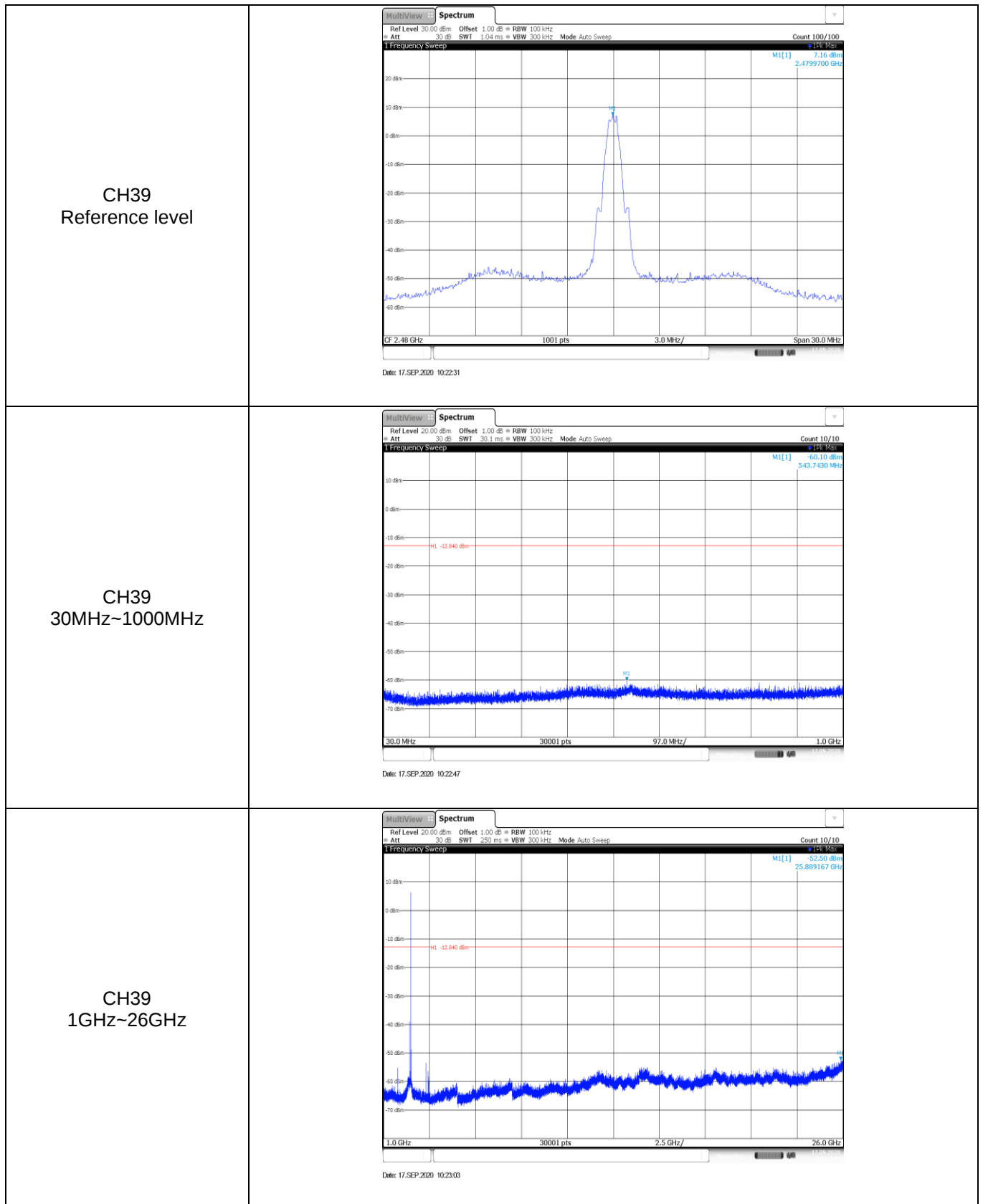


Appendix F: Band edge and Spurious Emissions (conducted)

Test Item:	Band edge																																										
CH00	MultiViewSpectrum 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 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 6.63 dBm 2.401916 GHz M2 -46.91 dBm 2.400000 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>6.63 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-46.91 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-54.94 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-62.32 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.3993 GHz</td><td>-44.19 dBm</td><td></td><td></td></tr></table> Date: 17-SEP-2020 10:14:51	Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.401916 GHz	6.63 dBm			M2	1		2.4 GHz	-46.91 dBm			M3	1		2.39 GHz	-54.94 dBm			M4	1		2.31 GHz	-62.32 dBm			M5	1		2.3993 GHz	-44.19 dBm		
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CH39	MultiViewSpectrum 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 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 6.91 dBm 2.479945 GHz M2 -50.56 dBm 2.483500 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>2.479945 GHz</td><td>6.91 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4835 GHz</td><td>-50.56 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.5 GHz</td><td>-62.37 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.487416 GHz</td><td>-47.46 dBm</td><td></td><td></td></tr></table> Date: 17-SEP-2020 10:22:24	Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.479945 GHz	6.91 dBm			M2	1		2.4835 GHz	-50.56 dBm			M3	1		2.5 GHz	-62.37 dBm			M4	1		2.487416 GHz	-47.46 dBm									
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M4	1		2.487416 GHz	-47.46 dBm																																							

Test Item:	SE
CH00 Reference level	 17 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] 6.09 dBm 2.4019700 GHz 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm CF 2.402 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Date: 17.SEP.2020 10:14:59
CH00 30MHz~1000MHz	 17 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] -60.06 dBm 554.7690 MHz 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm 30.0 MHz 30001 pts 97.0 MHz/ 1.0 GHz Date: 17.SEP.2020 10:15:15
CH00 1GHz~26GHz	 17 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] -51.76 dBm 25.987500 GHz 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm 1.0 GHz 30001 pts 2.5 GHz/ 26.0 GHz Date: 17.SEP.2020 10:15:31

CH19 Reference level	 The spectrum plot shows a single sharp peak at 2.4399700 GHz. The y-axis represents power in dBm, ranging from -60 to 20. The x-axis represents frequency in GHz, ranging from 2.44 to 2.45. The peak is labeled M1[1] with a value of 7.66 dBm. The plot title is 'Spectrum' and it includes parameters: Ref Level 30.00 dBm, Offset 1.00 dB, RBW 100 kHz, Att 30 dB, SWF 1.04 ms, VSW 300 kHz, Mode Auto Sweep. The date is 17-SEP-2020 10:18:23.
CH19 30MHz~1000MHz	 The spectrum plot shows a noisy baseline across the 30 MHz to 1000 MHz range. A small peak is visible at 553.0230 MHz, labeled M1[1] with a value of -59.74 dBm. The y-axis ranges from -70 to 10 dBm. The x-axis ranges from 30.0 MHz to 1.0 GHz. The plot title is 'Spectrum' and it includes parameters: Ref Level 20.00 dBm, Offset 1.00 dB, RBW 100 kHz, Att 30 dB, SWF 30.1 ms, VSW 300 kHz, Mode Auto Sweep. The date is 17-SEP-2020 10:18:30.
CH19 1GHz~26GHz	 The spectrum plot shows a noisy baseline across the 1 GHz to 26 GHz range. A small peak is visible at 25.983333 GHz, labeled M1[1] with a value of -51.07 dBm. The y-axis ranges from -70 to 10 dBm. The x-axis ranges from 1.0 GHz to 26.0 GHz. The plot title is 'Spectrum' and it includes parameters: Ref Level 20.00 dBm, Offset 1.00 dB, RBW 100 kHz, Att 30 dB, SWF 250 ms, VSW 300 kHz, Mode Auto Sweep. The date is 17-SEP-2020 10:18:55.



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