

APPENDIX REPORT

Project No.	SHT2107001001EW	Radio Specification	Bluetooth BLE
Test sample No.	YPHT21070010027	Model No.	E485
Start test date	2021-07-07	Finish date	202-07-07
Temperature	26.4°C	Humidity	35%
Test Engineer	Qizhi Zhang	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

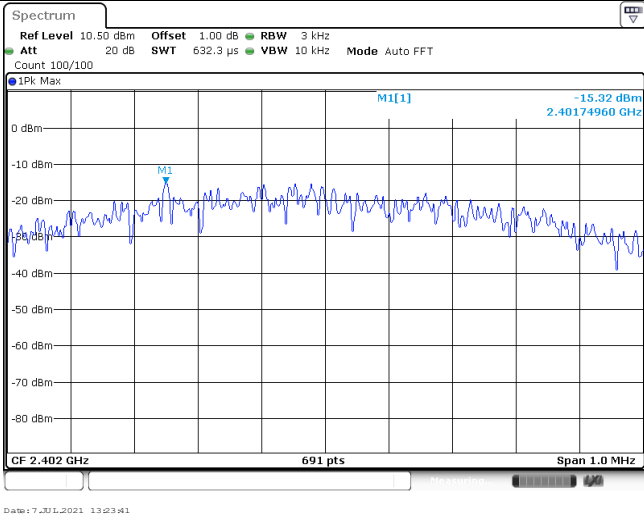
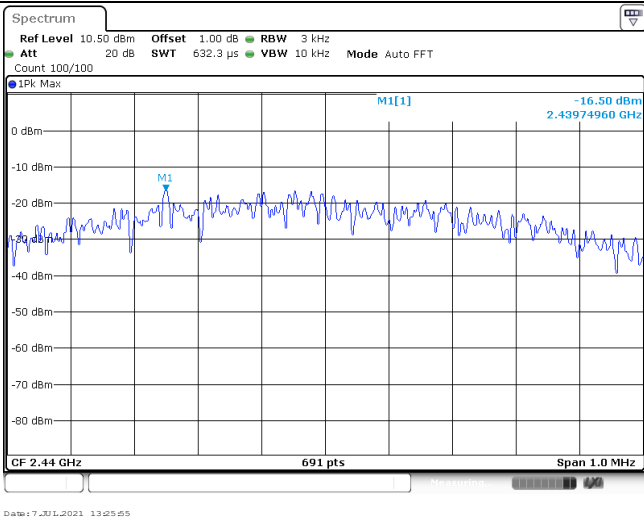
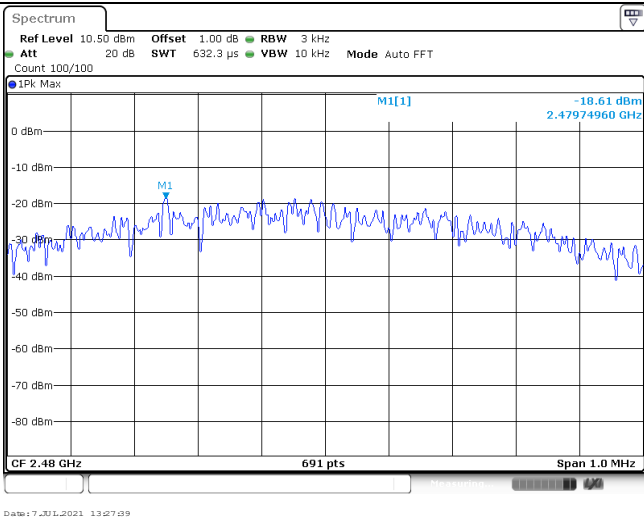
Appendix A: Peak Output Power

Type	Channel	Output power (dBm)	Average Output power (dBm)	Limit (dBm)	Result
BT-BLE	00	0.32	0.31	≤ 30.00	Pass
	19	-0.87	-0.88		
	39	-2.99	-3.00		

<p>CH00</p>	<p>Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 2 MHz Att 20 dB SWT 1 ms VBW 5 MHz Mode Auto Sweep Count 500/500 IPK View 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm CF 2.402 GHz 691 pts Span 5.0 MHz 0.32 dBm 2.40194930 GHz M1[1] M1</p> <p>Date: 7 Jul 2021 13:23:27</p>
<p>CH19</p>	<p>Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 2 MHz Att 20 dB SWT 1 ms VBW 5 MHz Mode Auto Sweep Count 500/500 IPK View 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm CF 2.44 GHz 691 pts Span 5.0 MHz -0.87 dBm 2.43975400 GHz M1[1] M1</p> <p>Date: 7 Jul 2021 13:25:41</p>
<p>CH39</p>	<p>Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 2 MHz Att 20 dB SWT 1 ms VBW 5 MHz Mode Auto Sweep Count 500/500 IPK View 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm CF 2.48 GHz 691 pts Span 5.0 MHz -2.99 dBm 2.48003620 GHz M1[1] M1</p> <p>Date: 7 Jul 2021 13:27:25</p>

Appendix B: Power Spectral Density

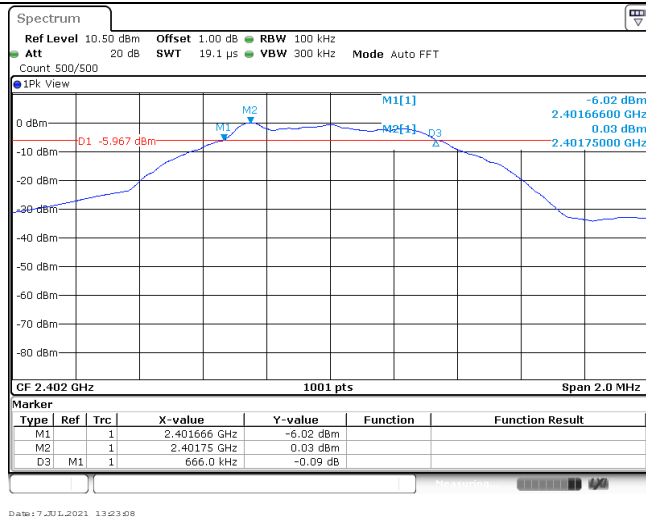
Type	Channel	Power Spectral Density(dBm/3KHz)	Limit (dBm/3KHz)	Result
BT-BLE	00	-15.32	≤8.00	Pass
	19	-16.50		
	39	-18.61		

CH00	 <p>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] -15.32 dBm 2.40174960 GHz CF 2.402 GHz 691 pts Span 1.0 MHz Date: 7_Nov.2021 13:23:41</p>
CH19	 <p>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] -16.50 dBm 2.43974960 GHz CF 2.44 GHz 691 pts Span 1.0 MHz Date: 7_Nov.2021 13:25:55</p>
CH39	 <p>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] -18.61 dBm 2.47974960 GHz CF 2.48 GHz 691 pts Span 1.0 MHz Date: 7_Nov.2021 13:27:29</p>

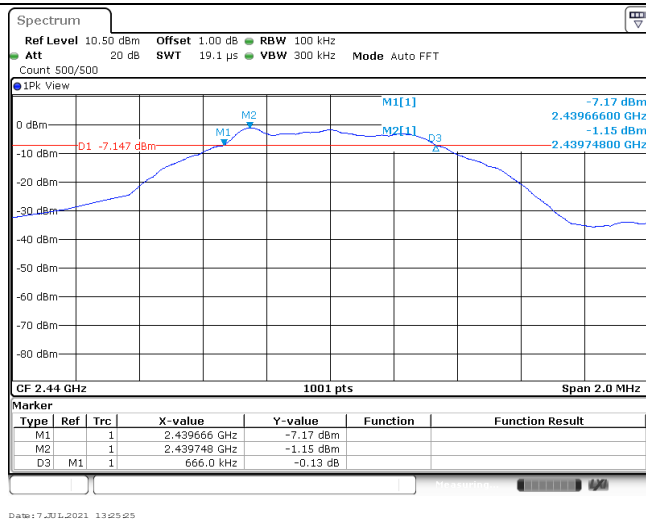
Appendix C: 6dB bandwidth

Type	Channel	6dB Bandwidth(kHz)	Limit (kHz)	Result
BT-BLE	00	666.00	≥500	Pass
	19	666.00		
	39	666.00		

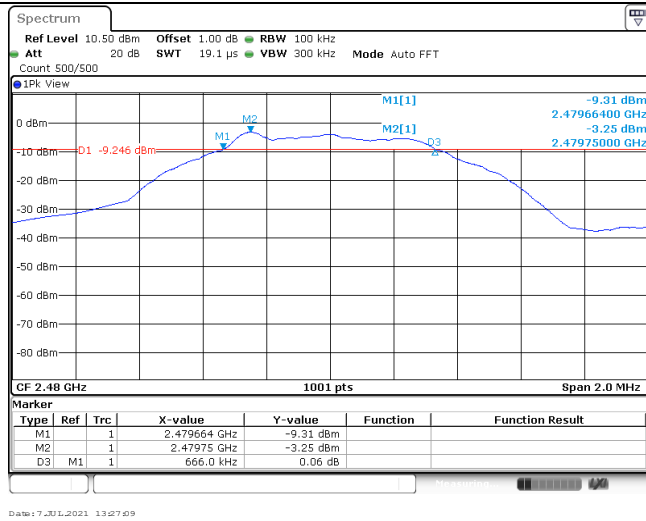
CH00



CH19

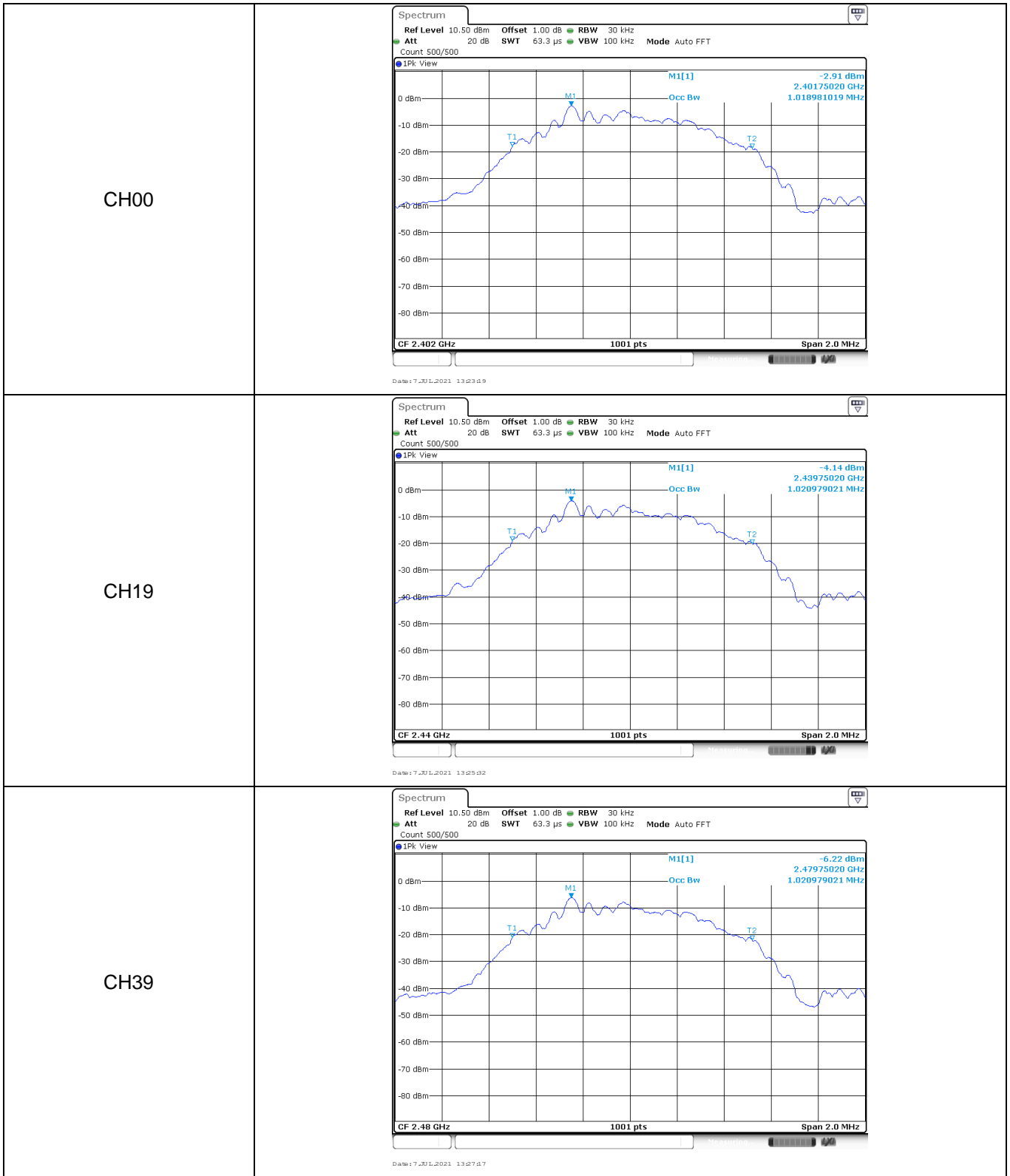


CH39



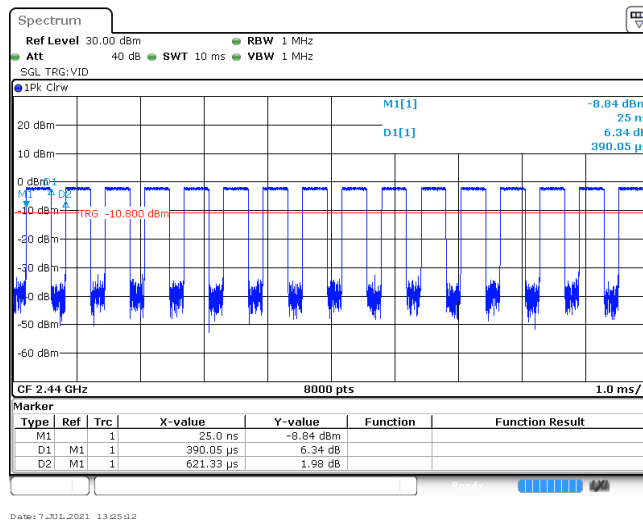
Appendix D: 99% Occupied Bandwidth

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



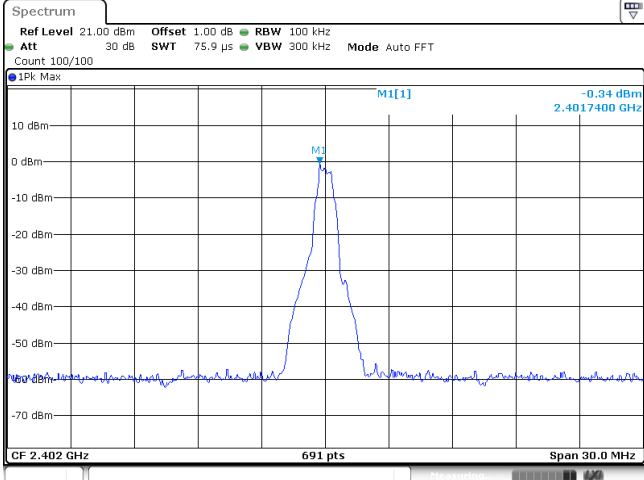
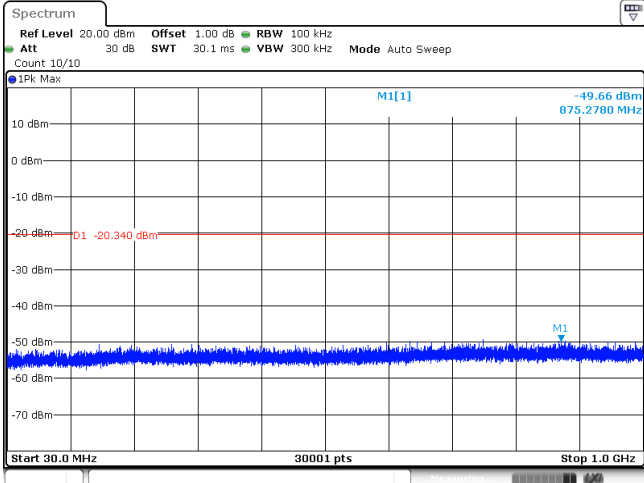
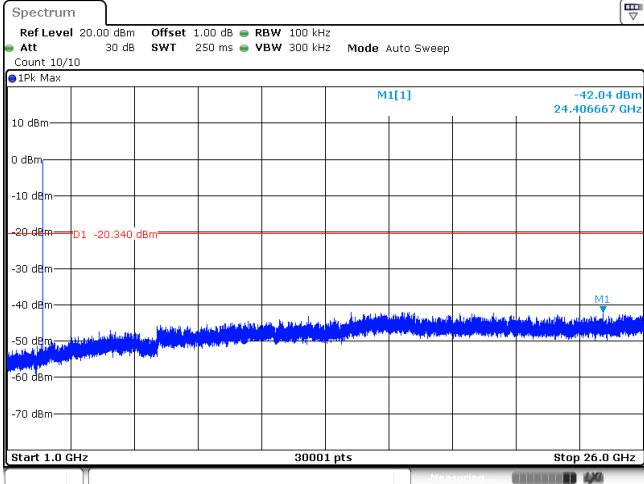
Appendix E: Duty cycle

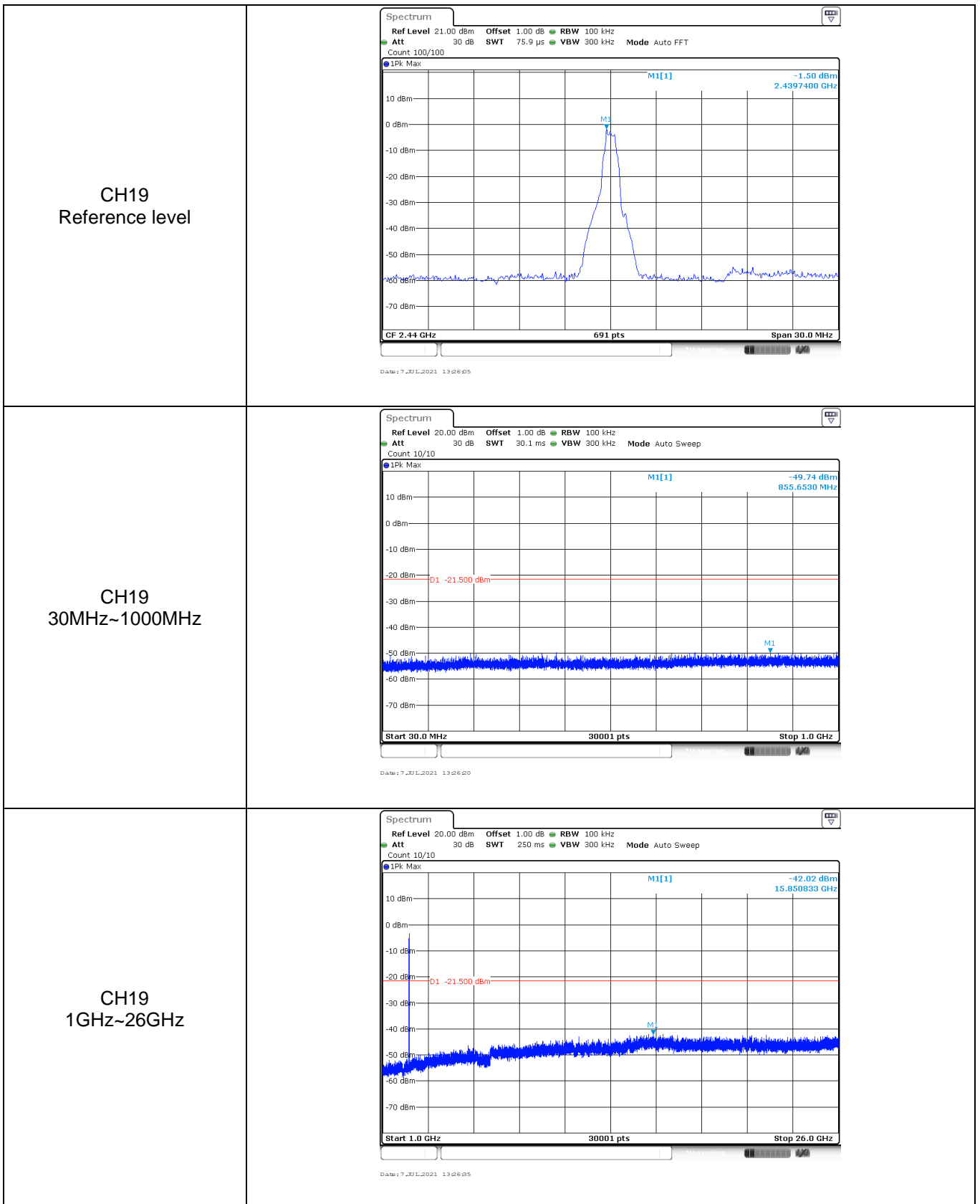
Test Frequency (MHz)	T _{on} time for single burst (ms)	T _{period} (ms)	Duty cycle	1/T _{on} time (kHz)
2440	0.39	0.62	62.9%	2.6



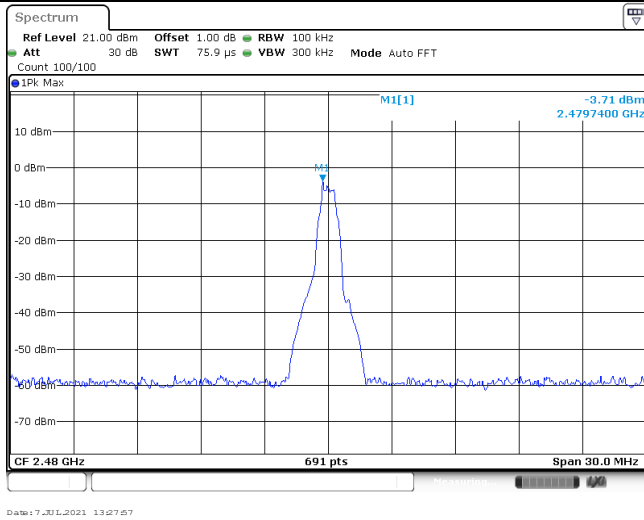
Appendix F: Band edge and Spurious Emissions (conducted)

Test Item:	Band edge																																																
<p style="text-align: center;">CH00</p>	 <p>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</p> <p>1Pk Max</p> <table border="1"> <thead> <tr> <th>Marker</th> <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> </thead> <tbody> <tr> <td>M1</td> <td>1</td> <td></td> <td></td> <td>2.40177 GHz</td> <td>-0.06 dBm</td> <td></td> <td></td> </tr> <tr> <td>M2</td> <td>1</td> <td></td> <td></td> <td>2.4 GHz</td> <td>-58.93 dBm</td> <td></td> <td></td> </tr> <tr> <td>M3</td> <td>1</td> <td></td> <td></td> <td>2.39 GHz</td> <td>-62.83 dBm</td> <td></td> <td></td> </tr> <tr> <td>M4</td> <td>1</td> <td></td> <td></td> <td>2.31 GHz</td> <td>-63.04 dBm</td> <td></td> <td></td> </tr> <tr> <td>M5</td> <td>1</td> <td></td> <td></td> <td>2.399906 GHz</td> <td>-59.59 dBm</td> <td></td> <td></td> </tr> </tbody> </table> <p>Start 2.31 GHz 691 pts Stop 2.405 GHz</p> <p>Date: 7/30/2021 13:23:51</p>	Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1			2.40177 GHz	-0.06 dBm			M2	1			2.4 GHz	-58.93 dBm			M3	1			2.39 GHz	-62.83 dBm			M4	1			2.31 GHz	-63.04 dBm			M5	1			2.399906 GHz	-59.59 dBm		
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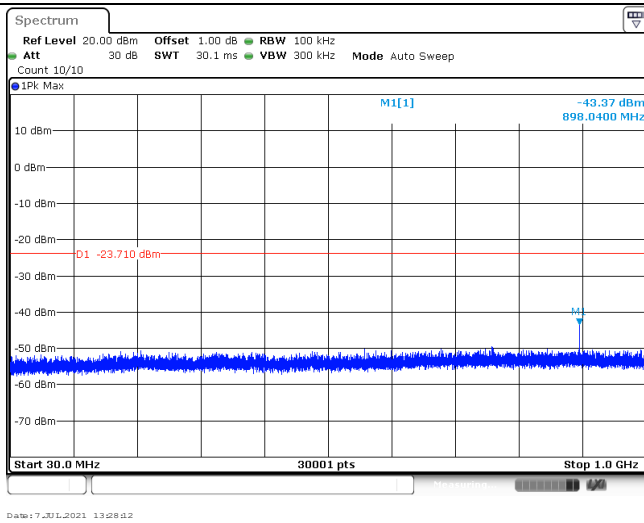
Test Item:	SE
<p>CH00 Reference level</p>	 <p>Ref Level 21.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWT 75.9 μs VBW 300 kHz Mode Auto FFT Count 100/100</p> <p>1Pk Max: -0.34 dBm @ 2.4017400 GHz</p> <p>CF 2.402 GHz 691 pts Span 30.0 MHz</p> <p>Date: 7 Jul 2021 13:24:00</p>
<p>CH00 30MHz~1000MHz</p>	 <p>Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWT 30.1 ms VBW 300 kHz Mode Auto Sweep Count 10/10</p> <p>1Pk Max: -49.66 dBm @ 875.2780 MHz</p> <p>D1: -20.340 dBm</p> <p>Start 30.0 MHz 30001 pts Stop 1.0 GHz</p> <p>Date: 7 Jul 2021 13:24:15</p>
<p>CH00 1GHz~26GHz</p>	 <p>Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWT 250 ms VBW 300 kHz Mode Auto Sweep Count 10/10</p> <p>1Pk Max: -42.04 dBm @ 24.406667 GHz</p> <p>D1: -20.340 dBm</p> <p>Start 1.0 GHz 30001 pts Stop 26.0 GHz</p> <p>Date: 7 Jul 2021 13:24:31</p>



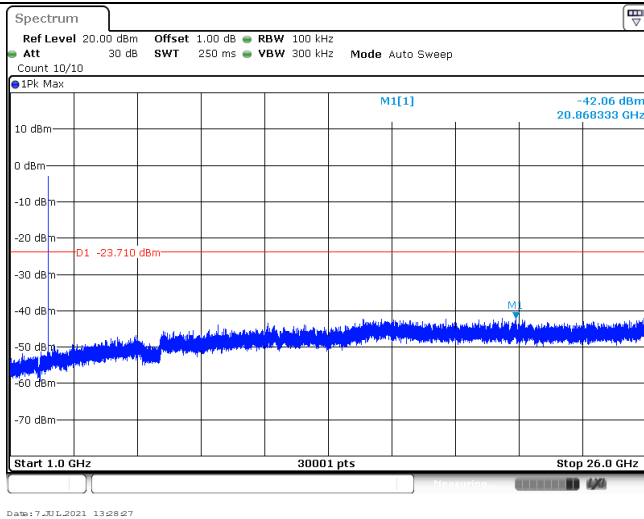
CH39
Reference level



CH39
30MHz~1000MHz



CH39
1GHz~26GHz



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