

APPENDIX REPORT

Project No.	SHT2009103701EW	Radio Specification	Bluetooth BLE
Test sample No.	YPHT20091037018	Model No.	M5+
Start test date	2020/11/06	Finish date	2020/11/06
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	-4.74	-4.75	≤ 30.00	Pass
	19	-6.10	-6.11		
	39	-8.15	-8.17		

Appendix B: Power Spectral Density

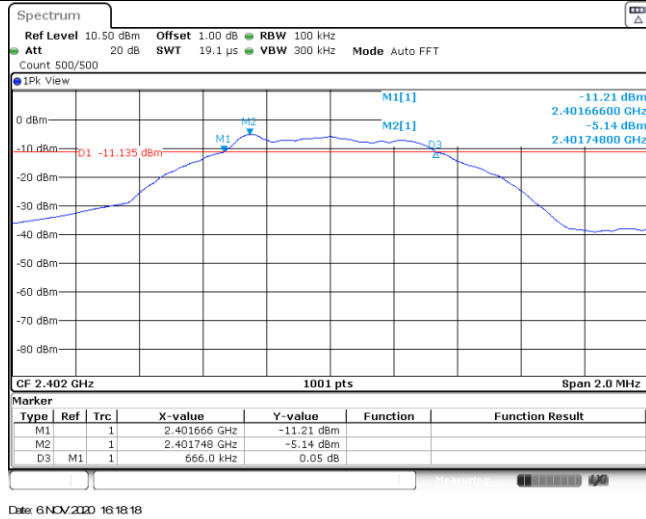
Type	Channel	Power Spectral Density(dBm/3KHz)	Limit (dBm/3KHz)	Result
BT-BLE	00	-20.52	≤8.00	Pass
	19	-21.93		
	39	-23.94		

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] -20.52 dBm 2.40174960 GHz CF 2.402 GHz 691 pts Span 1.0 MHz Date: 6 NOV 2020 16:18:54</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] -21.93 dBm 2.43975110 GHz CF 2.44 GHz 691 pts Span 1.0 MHz Date: 6 NOV 2020 16:21:44</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] -23.94 dBm 2.47975110 GHz CF 2.48 GHz 691 pts Span 1.0 MHz Date: 6 NOV 2020 16:24:53</p>

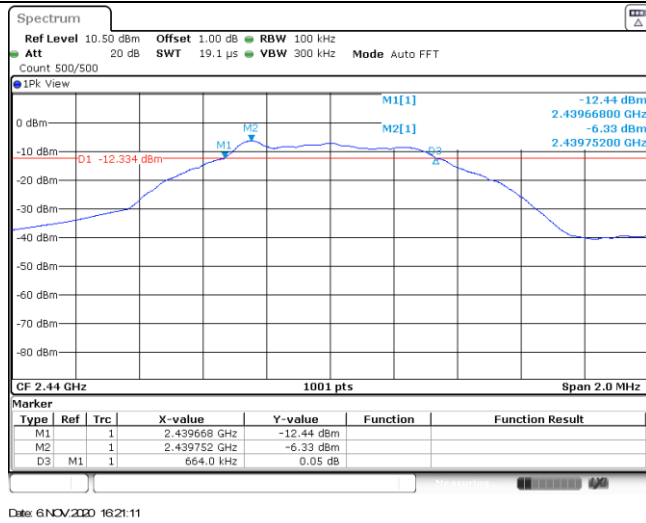
Appendix C: 6dB bandwidth

Type	Channel	6dB Bandwidth(kHz)	Limit (kHz)	Result
BT-BLE	00	666.00	≥500	Pass
	19	664.00		
	39	666.00		

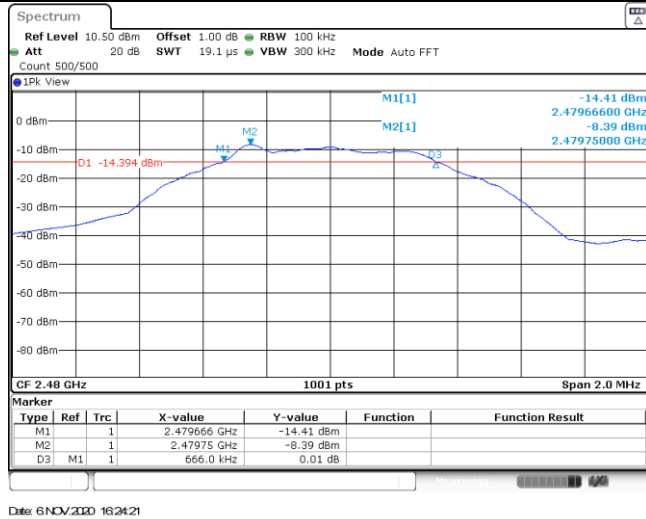
CH00



CH19

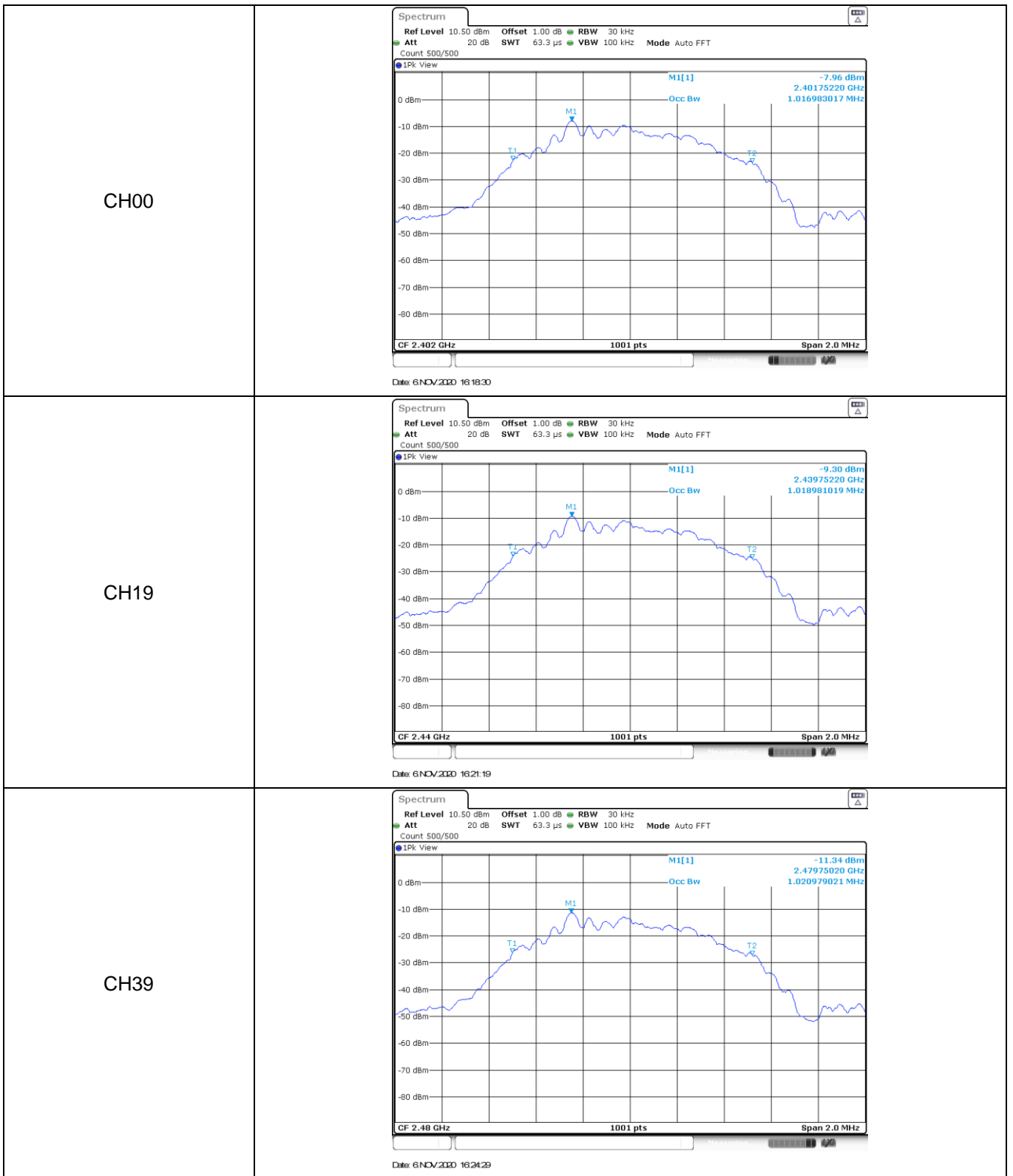


CH39



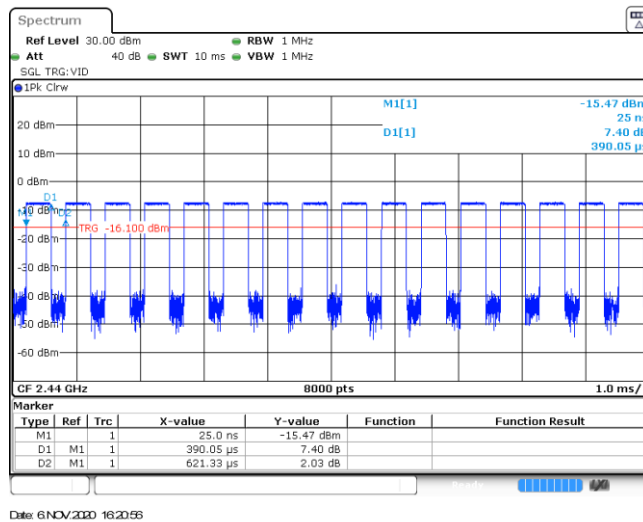
Appendix D: 99% Occupied Bandwidth

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

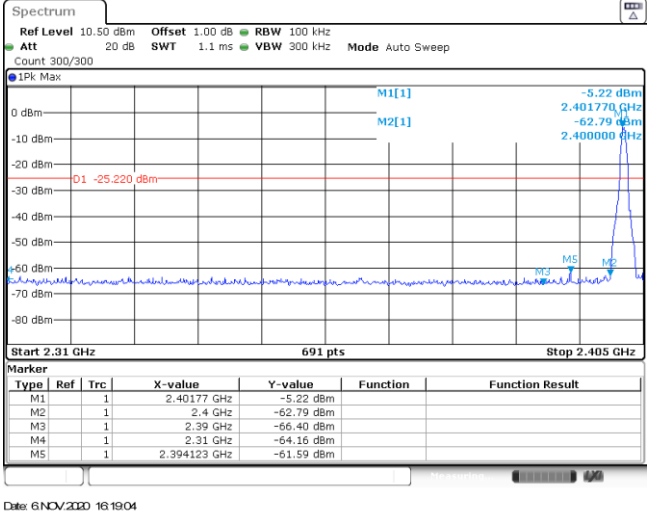
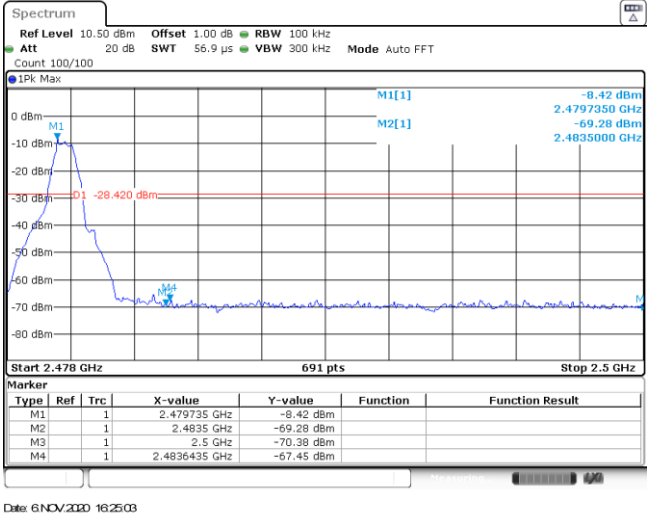


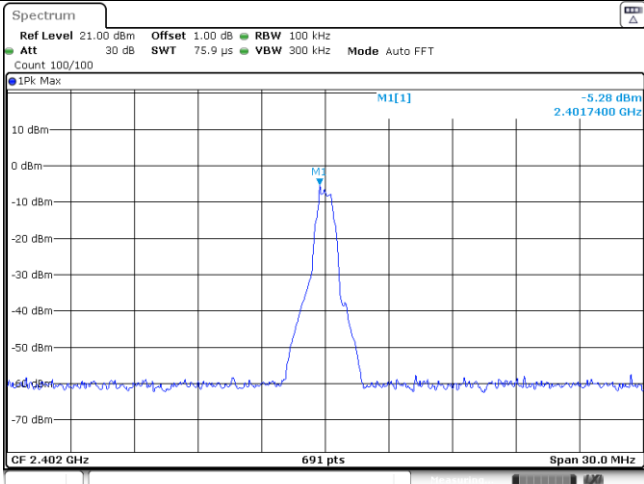
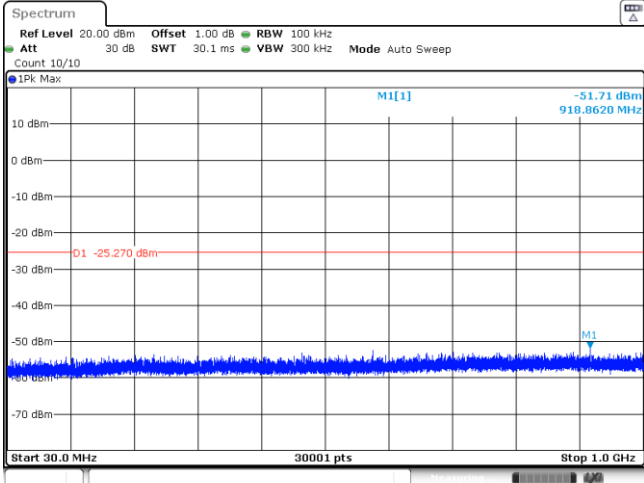
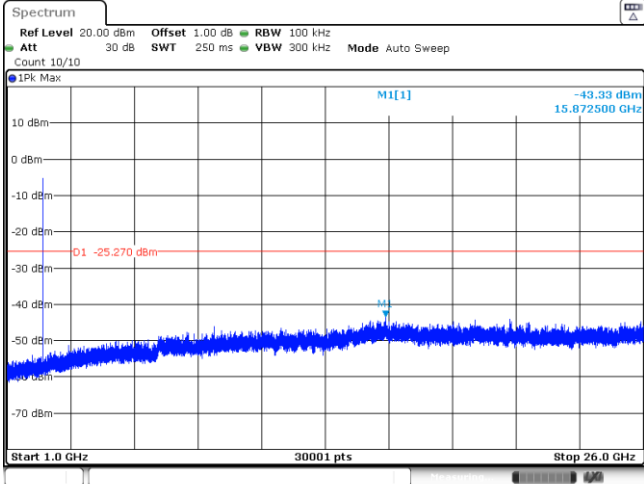
Appendix E: Duty cycle

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

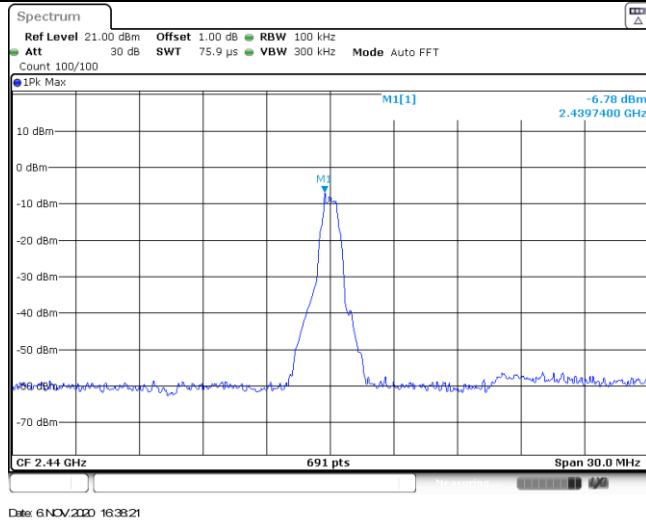


Appendix F: Band edge and Spurious Emissions (conducted)

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 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>-5.22 dBm</td> <td></td> <td></td> </tr> <tr> <td>M2</td> <td>1</td> <td></td> <td></td> <td>2.4 GHz</td> <td>-62.79 dBm</td> <td></td> <td></td> </tr> <tr> <td>M3</td> <td>1</td> <td></td> <td></td> <td>2.39 GHz</td> <td>-66.40 dBm</td> <td></td> <td></td> </tr> <tr> <td>M4</td> <td>1</td> <td></td> <td></td> <td>2.31 GHz</td> <td>-64.16 dBm</td> <td></td> <td></td> </tr> <tr> <td>M5</td> <td>1</td> <td></td> <td></td> <td>2.394123 GHz</td> <td>-61.59 dBm</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date 6 NOV 2020 16:19:04</p>	Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1			2.40177 GHz	-5.22 dBm			M2	1			2.4 GHz	-62.79 dBm			M3	1			2.39 GHz	-66.40 dBm			M4	1			2.31 GHz	-64.16 dBm			M5	1			2.394123 GHz	-61.59 dBm		
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<p style="text-align: center;">CH39</p>	 <p>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</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>2.479735 GHz</td> <td>-8.42 dBm</td> <td></td> <td></td> </tr> <tr> <td>M2</td> <td>1</td> <td></td> <td></td> <td>2.4835 GHz</td> <td>-69.28 dBm</td> <td></td> <td></td> </tr> <tr> <td>M3</td> <td>1</td> <td></td> <td></td> <td>2.5 GHz</td> <td>-70.38 dBm</td> <td></td> <td></td> </tr> <tr> <td>M4</td> <td>1</td> <td></td> <td></td> <td>2.4836435 GHz</td> <td>-67.45 dBm</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date 6 NOV 2020 16:25:03</p>	Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1			2.479735 GHz	-8.42 dBm			M2	1			2.4835 GHz	-69.28 dBm			M3	1			2.5 GHz	-70.38 dBm			M4	1			2.4836435 GHz	-67.45 dBm										
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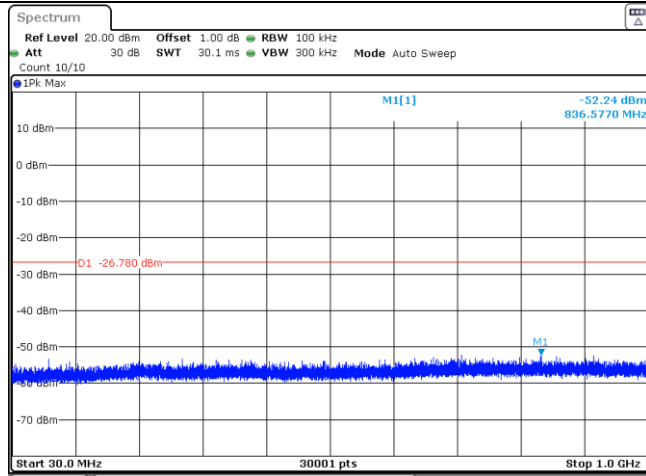
Test Item:	SE
<p>CH00 Reference level</p>	 <p>Spectrum</p> <p>Ref Level 21.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWT 75.9 μs VBW 300 kHz Mode Auto FFT Count 100/100</p> <p>1Pk Max</p> <p>M1[1] -5.28 dBm 2.4017400 GHz</p> <p>CF 2.402 GHz 691 pts Span 30.0 MHz</p> <p>Date: 6 NOV 2020 16:19:12</p>
<p>CH00 30MHz~1000MHz</p>	 <p>Spectrum</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</p> <p>M1[1] -51.71 dBm 918.8620 MHz</p> <p>D1 -25.270 dBm</p> <p>Start 30.0 MHz 30001 pts Stop 1.0 GHz</p> <p>Date: 6 NOV 2020 16:19:28</p>
<p>CH00 1GHz~26GHz</p>	 <p>Spectrum</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</p> <p>M1[1] -43.33 dBm 15.872500 GHz</p> <p>D1 -25.270 dBm</p> <p>Start 1.0 GHz 30001 pts Stop 26.0 GHz</p> <p>Date: 6 NOV 2020 16:19:44</p>

CH19
Reference level



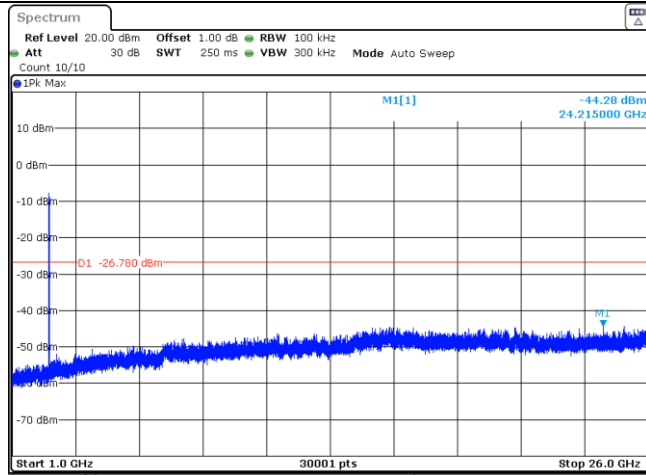
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CH19
30MHz~1000MHz

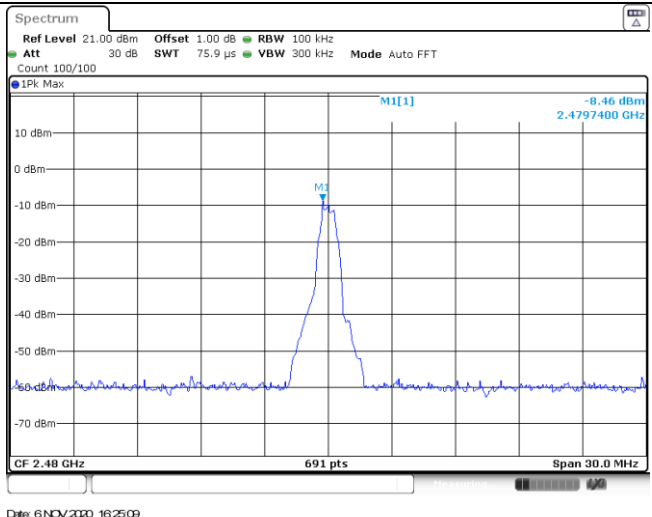
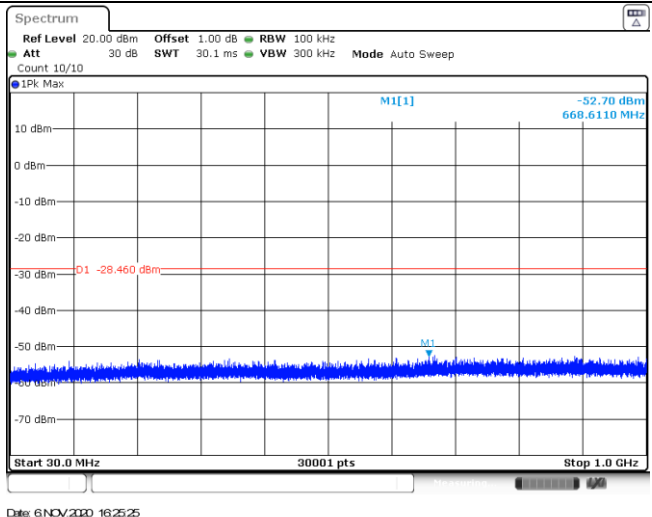
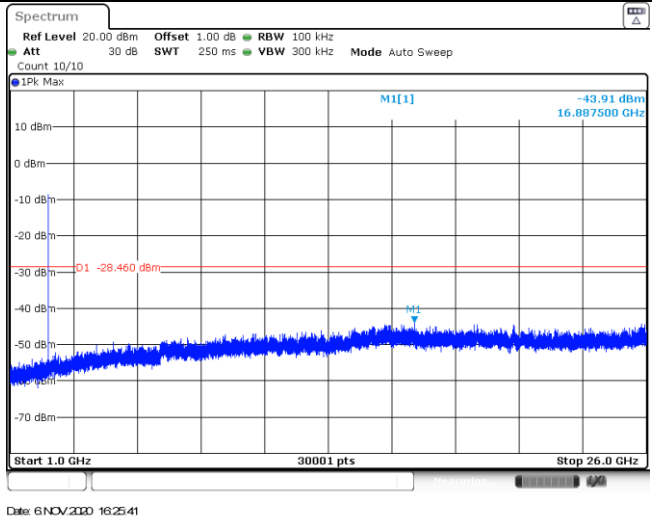


Date: 6 NOV 2010 16:38:37

CH19
1GHz~26GHz



Date: 6 NOV 2010 16:38:53

<p>CH39 Reference level</p>	 <p>Spectrum 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 IPK Max M1[1] -8.46 dBm 2.4797400 GHz CF 2.48 GHz 691 pts Span 30.0 MHz Date: 6 NOV 2020 16:25:09</p>
<p>CH39 30MHz~1000MHz</p>	 <p>Spectrum 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 IPK Max M1[1] -52.70 dBm 668.6110 MHz D1 -28.460 dBm Start 30.0 MHz 30001 pts Stop 1.0 GHz Date: 6 NOV 2020 16:25:25</p>
<p>CH39 1GHz~26GHz</p>	 <p>Spectrum 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 IPK Max M1[1] -43.91 dBm 16.887500 GHz D1 -28.460 dBm Start 1.0 GHz 30001 pts Stop 26.0 GHz Date: 6 NOV 2020 16:25:41</p>

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