

# APPENDIX REPORT

Project No.	SHT2109071201EW	Radio Specification	Bluetooth BLE
Test sample No.	YPHT21090712005	Model No.	A4100
Start test date	2021-10-14	Finish date	2021-10-14
Temperature	26.2°C	Humidity	34%
Test Engineer	Xiaoqin 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

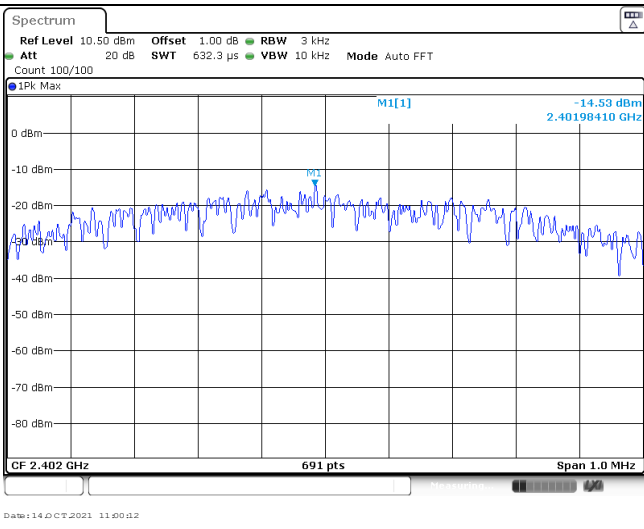
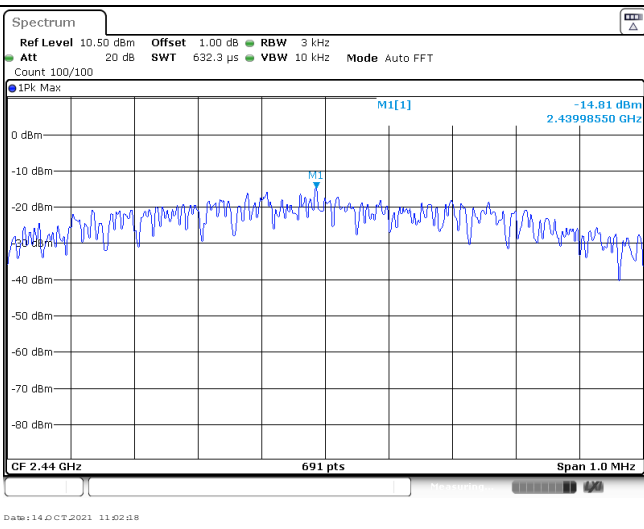
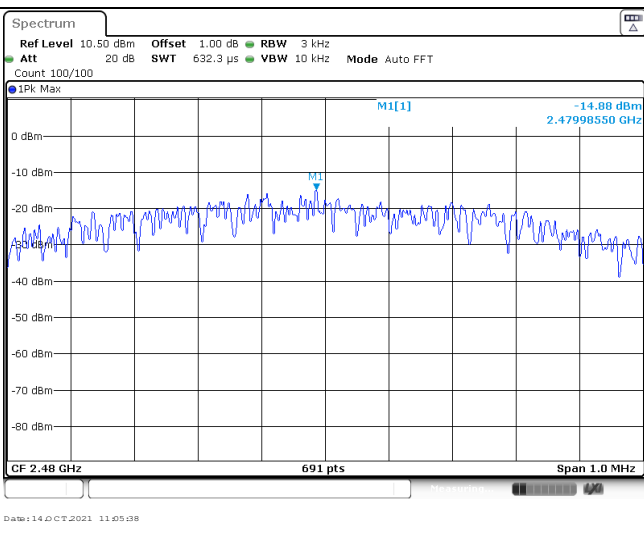
**Appendix A: Peak Output Power**

Type	Channel	Peak Output power (dBm)	Average Output power (dBm)	Limit (dBm)	Result
BT-BLE	00	2.41	2.34	≤ 30.00	Pass
	19	2.36	2.29		
	39	2.25	2.16		

CH00	<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 M1 M1[1] 2.41 dBm 2.40195660 GHz CF 2.402 GHz 691 pts Span 5.0 MHz Date: 14 OCT 2021 10:58:56</p>
CH19	<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 M1 M1[1] 2.36 dBm 2.43994210 GHz CF 2.44 GHz 691 pts Span 5.0 MHz Date: 14 OCT 2021 11:03:13</p>
CH39	<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 M1 M1[1] 2.25 dBm 2.47997830 GHz CF 2.48 GHz 691 pts Span 5.0 MHz Date: 14 OCT 2021 11:04:53</p>

**Appendix B: Power Spectral Density**

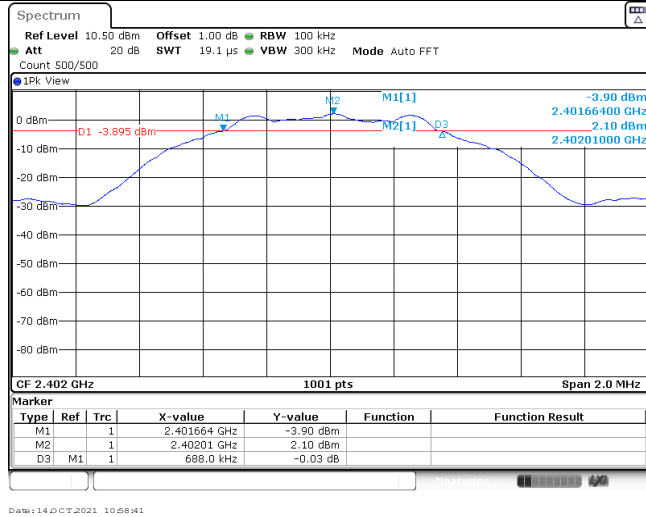
Type	Channel	Power Spectral Density(dBm/3KHz)	Limit (dBm/3KHz)	Result
BT-BLE	00	-14.53	≤8.00	Pass
	19	-14.81		
	39	-14.88		

CH00	
CH19	
CH39	

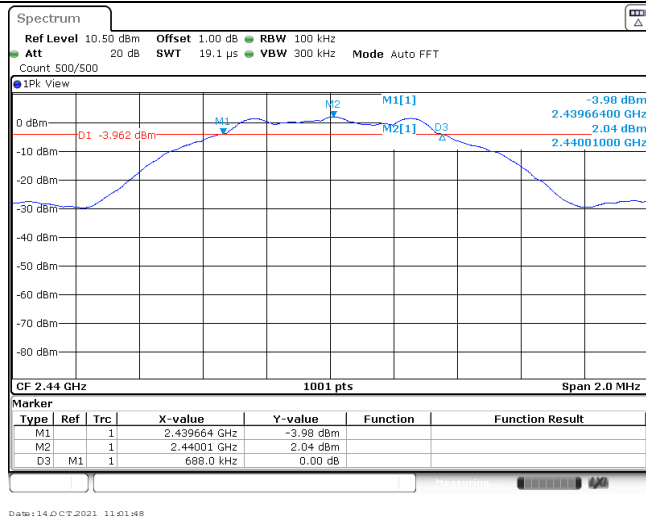
**Appendix C: 6dB bandwidth**

Type	Channel	6dB Bandwidth(kHz)	Limit (kHz)	Result
BT-BLE	00	688.00	≥500	Pass
	19	688.00		
	39	694.00		

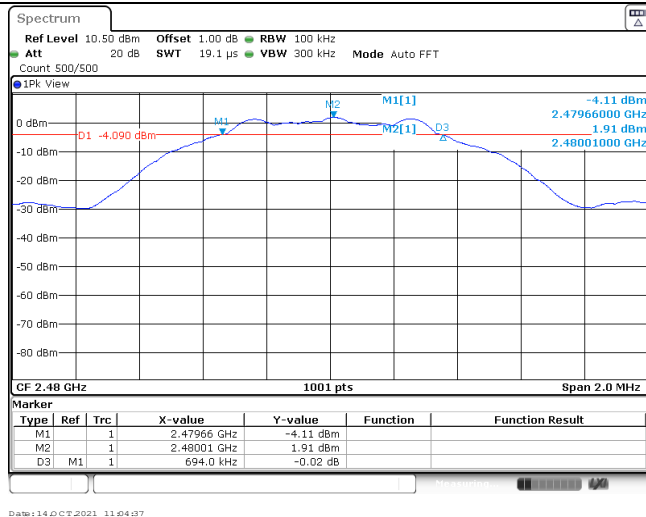
CH00



CH19



CH39

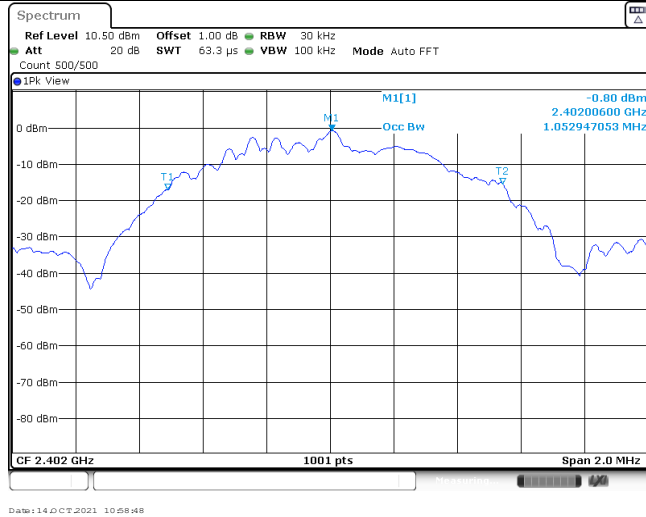


**Appendix D: 99% Occupied Bandwidth**

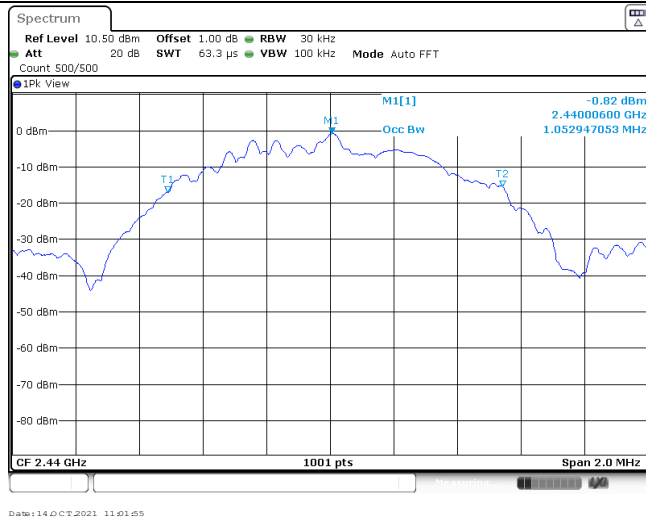
Type	Channel	99% Occupied Bandwidth(MHz)	Limit (kHz)	Result
BT-BLE	00	1.05	-	Pass
	19	1.05		
	39	1.05		



CH00



CH19

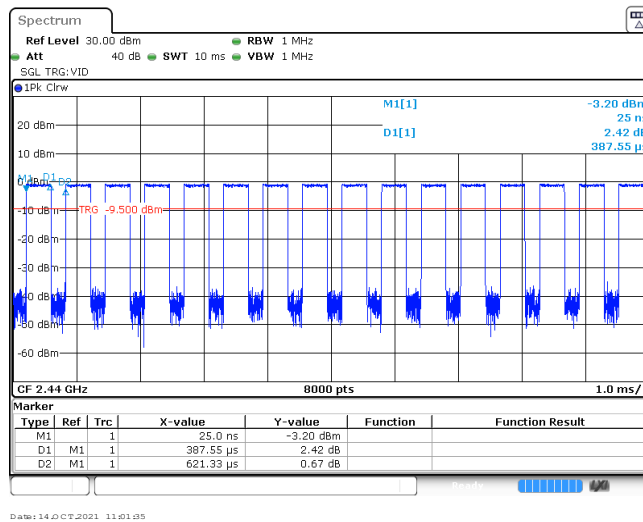


CH39

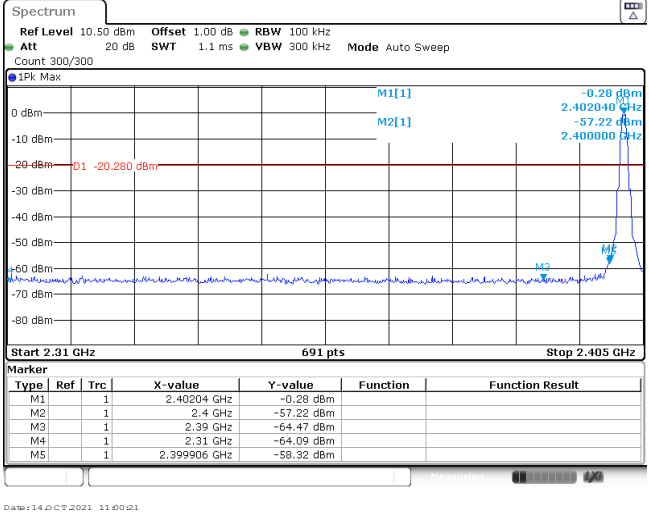
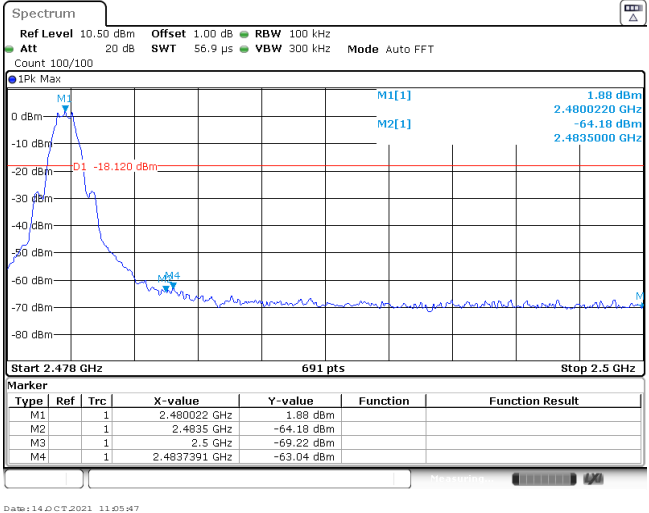


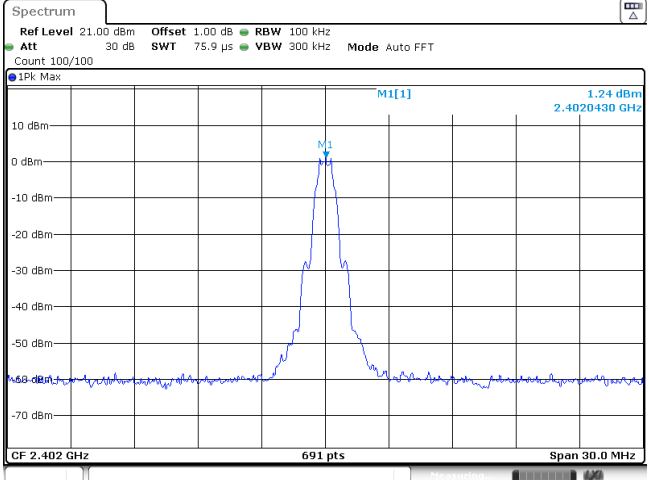
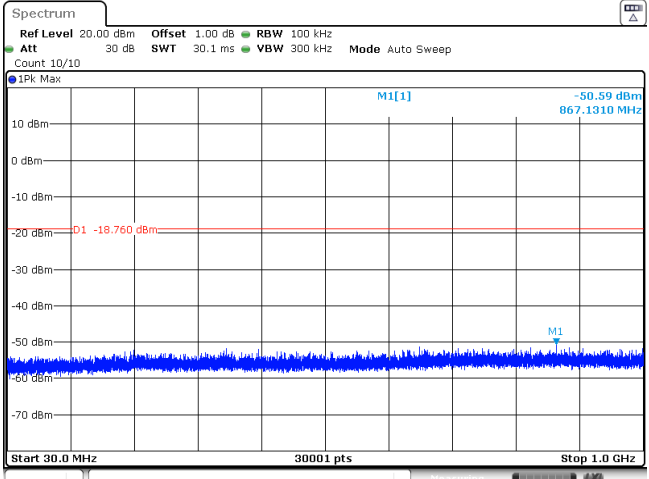
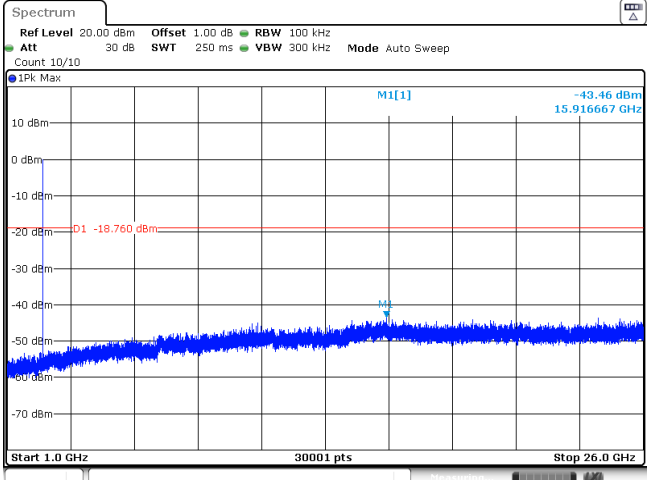
### Appendix E: Duty cycle

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

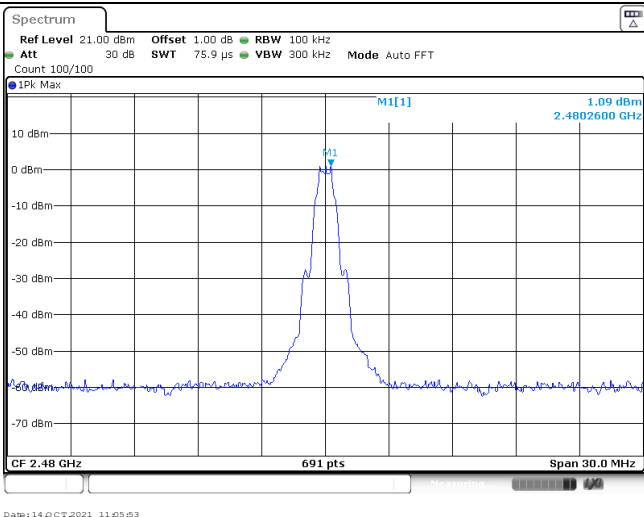
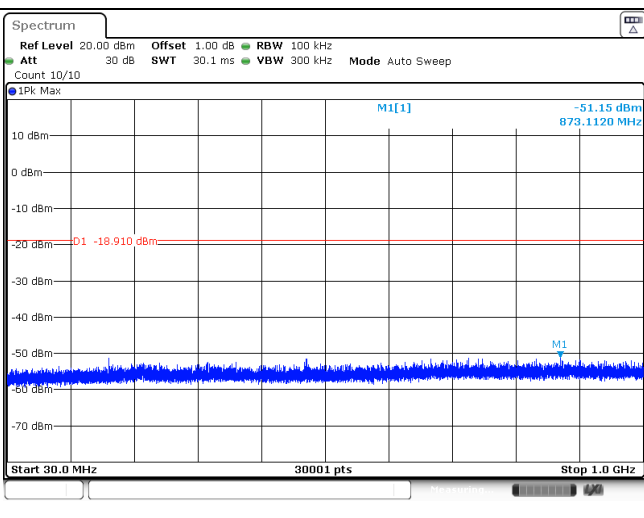
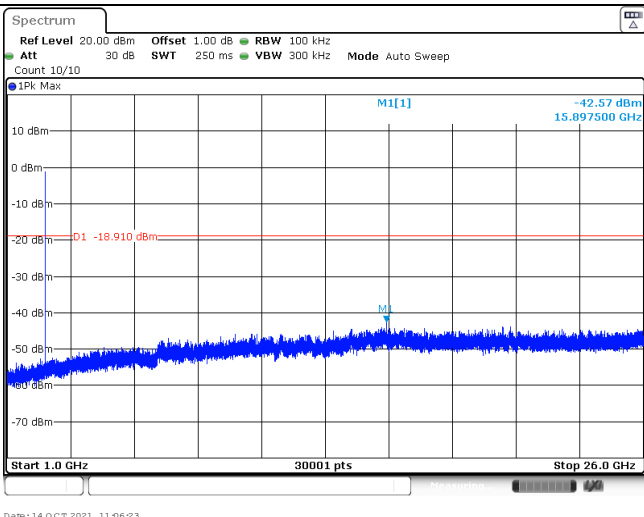


### Appendix F: Band edge and Spurious Emissions (conducted)

Test Item:	Band edge																																										
<p style="text-align: center;">CH00</p>	 <p><b>Spectrum</b>          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>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>2.40204 GHz</td> <td>-0.28 dBm</td> <td></td> <td></td> </tr> <tr> <td>M2</td> <td>1</td> <td></td> <td>2.4 GHz</td> <td>-57.22 dBm</td> <td></td> <td></td> </tr> <tr> <td>M3</td> <td>1</td> <td></td> <td>2.39 GHz</td> <td>-64.47 dBm</td> <td></td> <td></td> </tr> <tr> <td>M4</td> <td>1</td> <td></td> <td>2.31 GHz</td> <td>-64.09 dBm</td> <td></td> <td></td> </tr> <tr> <td>M5</td> <td>1</td> <td></td> <td>2.399906 GHz</td> <td>-58.32 dBm</td> <td></td> <td></td> </tr> </tbody> </table> <p>Start 2.31 GHz 691 pts Stop 2.405 GHz</p> <p>Date: 14 OCT 2021 11:00:21</p>	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		2.40204 GHz	-0.28 dBm			M2	1		2.4 GHz	-57.22 dBm			M3	1		2.39 GHz	-64.47 dBm			M4	1		2.31 GHz	-64.09 dBm			M5	1		2.399906 GHz	-58.32 dBm		
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<p style="text-align: center;">CH39</p>	 <p><b>Spectrum</b>          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</p> <p>1Pk Max</p> <table border="1"> <thead> <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> </thead> <tbody> <tr> <td>M1</td> <td>1</td> <td></td> <td>2.480022 GHz</td> <td>1.88 dBm</td> <td></td> <td></td> </tr> <tr> <td>M2</td> <td>1</td> <td></td> <td>2.4835 GHz</td> <td>-64.18 dBm</td> <td></td> <td></td> </tr> <tr> <td>M3</td> <td>1</td> <td></td> <td>2.5 GHz</td> <td>-69.22 dBm</td> <td></td> <td></td> </tr> <tr> <td>M4</td> <td>1</td> <td></td> <td>2.4837391 GHz</td> <td>-63.04 dBm</td> <td></td> <td></td> </tr> </tbody> </table> <p>Start 2.478 GHz 691 pts Stop 2.5 GHz</p> <p>Date: 14 OCT 2021 11:05:47</p>	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		2.480022 GHz	1.88 dBm			M2	1		2.4835 GHz	-64.18 dBm			M3	1		2.5 GHz	-69.22 dBm			M4	1		2.4837391 GHz	-63.04 dBm									
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M3	1		2.5 GHz	-69.22 dBm																																							
M4	1		2.4837391 GHz	-63.04 dBm																																							

Test Item:	SE
<p>CH00 Reference level</p>	 <p>1.24 dBm 2.4020430 GHz</p> <p>CF 2.402 GHz 691 pts Span 30.0 MHz</p> <p>Date: 14 OCT 2021 11:00:27</p>
<p>CH00 30MHz~1000MHz</p>	 <p>-18.760 dBm</p> <p>-50.59 dBm 867.1310 MHz</p> <p>Start 30.0 MHz 30001 pts Stop 1.0 GHz</p> <p>Date: 14 OCT 2021 11:00:42</p>
<p>CH00 1GHz~26GHz</p>	 <p>-18.760 dBm</p> <p>-43.46 dBm 15.916667 GHz</p> <p>Start 1.0 GHz 30001 pts Stop 26.0 GHz</p> <p>Date: 14 OCT 2021 11:00:57</p>

<p>CH19 Reference level</p>	
<p>CH19 30MHz~1000MHz</p>	
<p>CH19 1GHz~26GHz</p>	

<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] 1.09 dBm 2.4802600 GHz CF 2.48 GHz 691 pts Span 30.0 MHz Date: 14 OCT 2021 11:05:53</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] -51.15 dBm 873.1120 MHz D1 -18.910 dBm Start 30.0 MHz 30001 pts Stop 1.0 GHz Date: 14 OCT 2021 11:06:08</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] -42.57 dBm 15.097500 GHz D1 -18.910 dBm Start 1.0 GHz 30001 pts Stop 26.0 GHz Date: 14 OCT 2021 11:06:23</p>

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