

APPENDIX REPORT

Project No.	SHT2309011202EW	Radio Specification	Bluetooth BLE
Test sample No.	YPHT23090112001	Model No.	TM2210-B1
Start test date	2023/10/23	Finish date	2023/10/24
Temperature	24.5℃	Humidity	46%
Test Engineer	<i>Casper Chen</i>	Auditor	<i>Xiaodong Zhao</i>

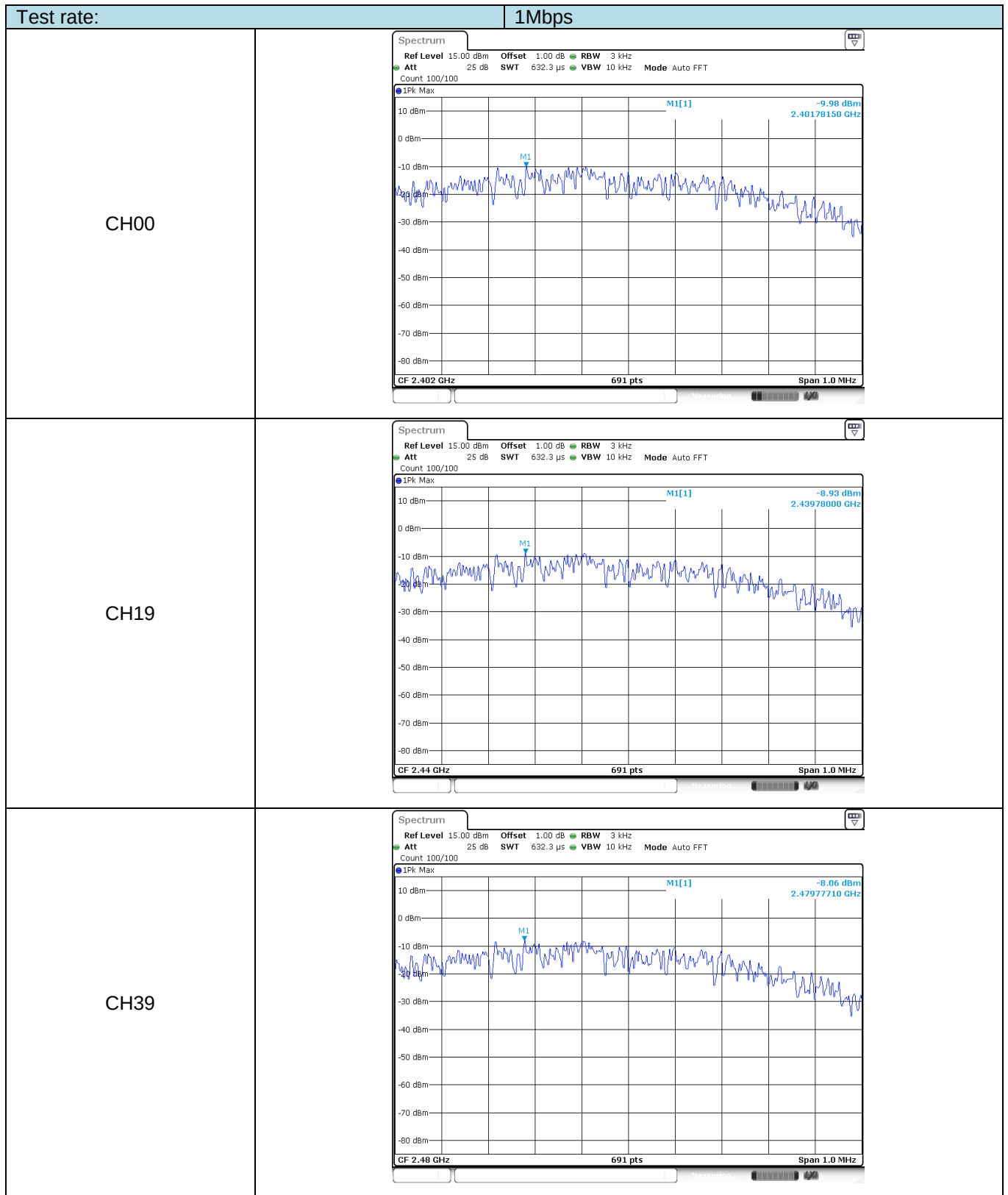
Appendix clause	Test item	Result
A	Peak Output Power	PASS
B	Power Spectral Density	PASS
C	6 dB Bandwidth	PASS
D	99% Occupied Bandwidth	PASS
E	Duty cycle	PASS
F	Band edge and Spurious Emissions (conducted)	PASS

Appendix A: Peak Output Power

Type	Channel	Peak Output power (dBm)	Average Output power (dBm)	Limit (dBm)	Antenna Gain (dBi)	Maximum e.r.i.p. (dBm)	EIRP Limit (dBm)	Result
1Mbps	00	5.86	5.85	≤ 30.00	2.00	7.86	≤ 36.00	Pass
	19	6.89	6.87		2.00	8.89		
	39	7.67	7.64		2.00	9.67		
2Mbps	00	6.42	6.41	≤ 30.00	2.00	8.42	≤ 36.00	Pass
	19	6.49	6.48		2.00	8.49		
	39	6.25	6.23		2.00	8.25		

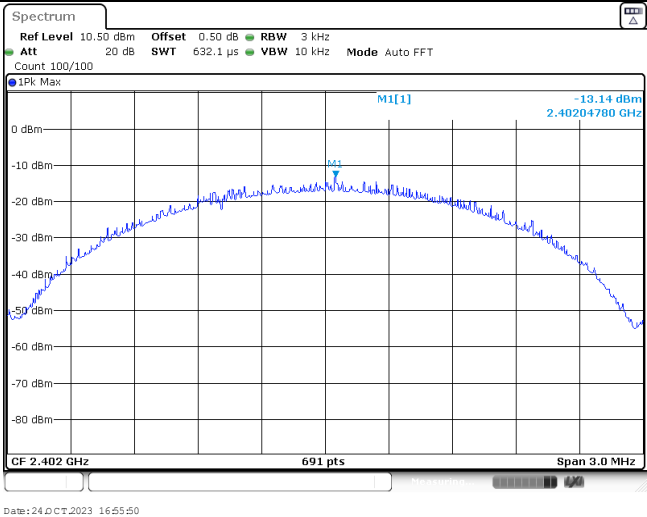
Appendix B: Power Spectral Density

Type	Channel	Power Spectral Density(dBm/3KHz)	Limit (dBm/3KHz)	Result
1Mbps	00	-9.98	≤8.00	Pass
	19	-8.93		
	39	-8.06		
2Mbps	00	-13.14	≤8.00	Pass
	19	-13.10		
	39	-13.44		

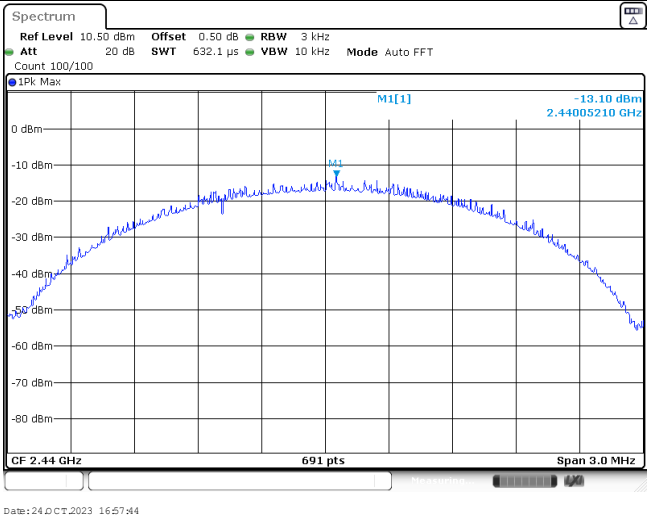


Test rate: 2Mbps

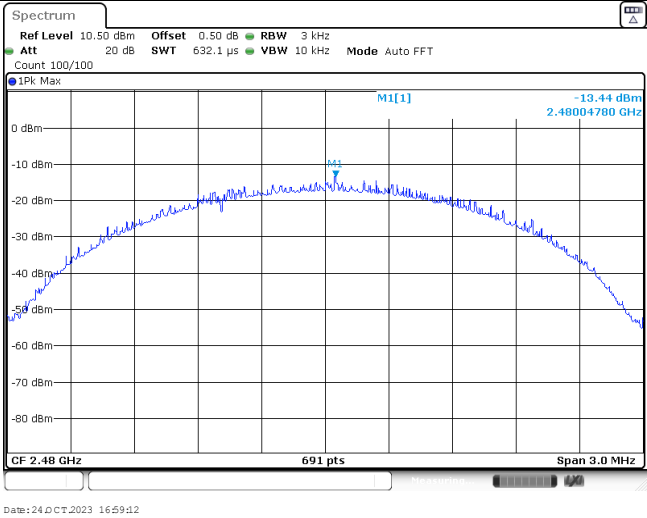
CH00



CH19

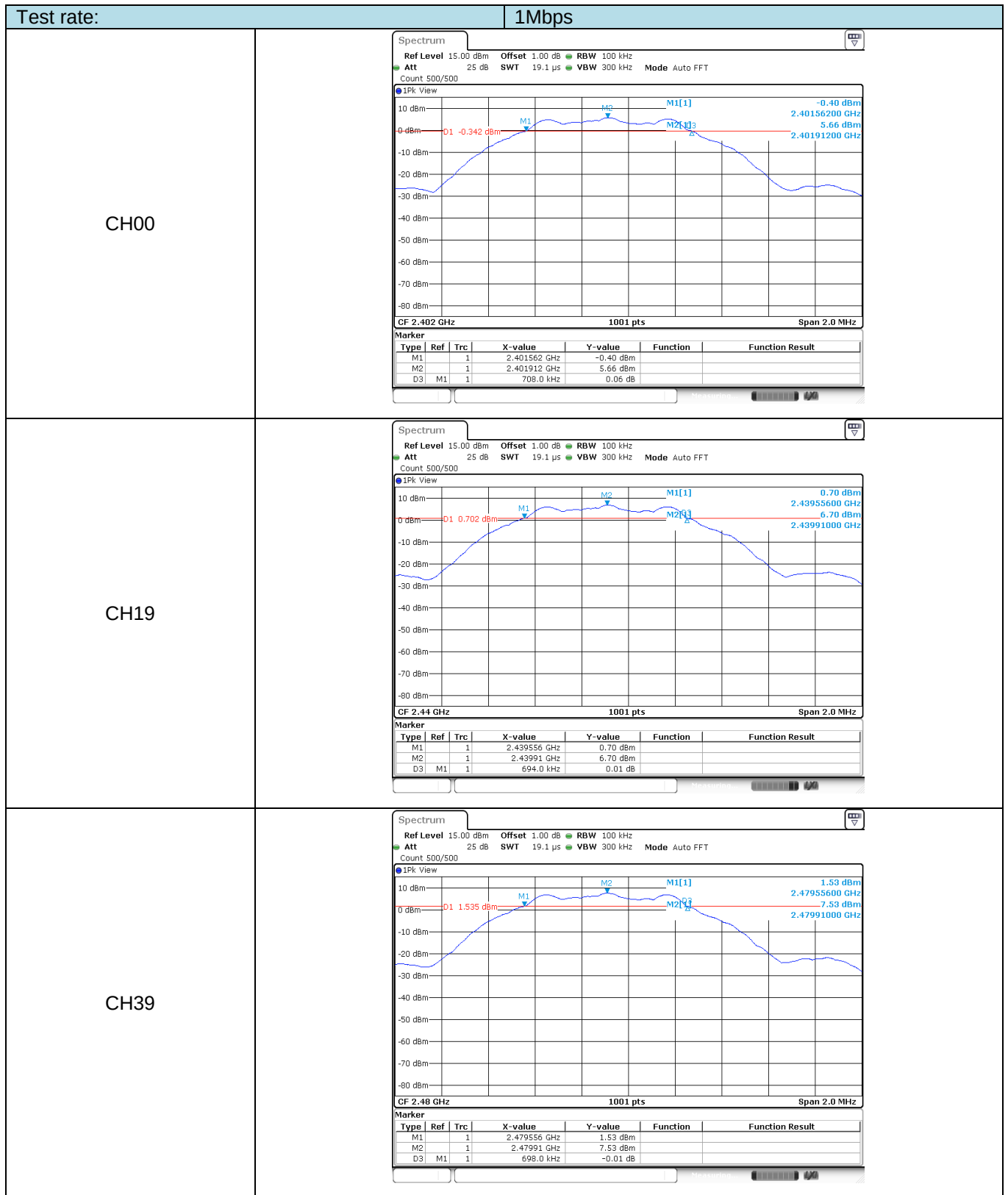


CH39



Appendix C: 6dB bandwidth

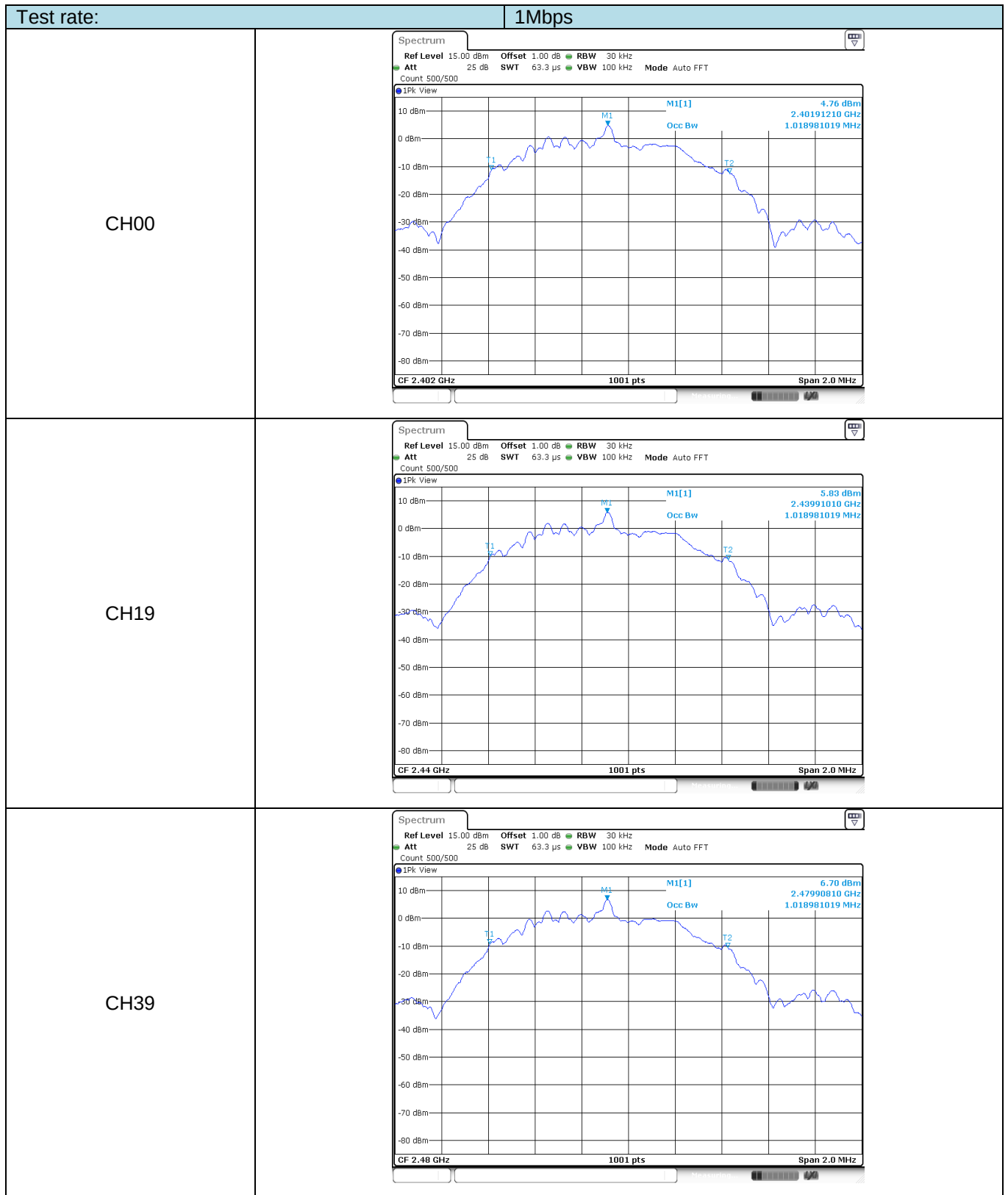
Type	Channel	6dB Bandwidth(kHz)	Limit (kHz)	Result
1Mbps	00	710.00	≥500	Pass
	19	690.00		
	39	700.00		
2Mbps	00	1180.00	≥500	Pass
	19	1245.00		
	39	1180.00		





Appendix D: 99% Occupied Bandwidth

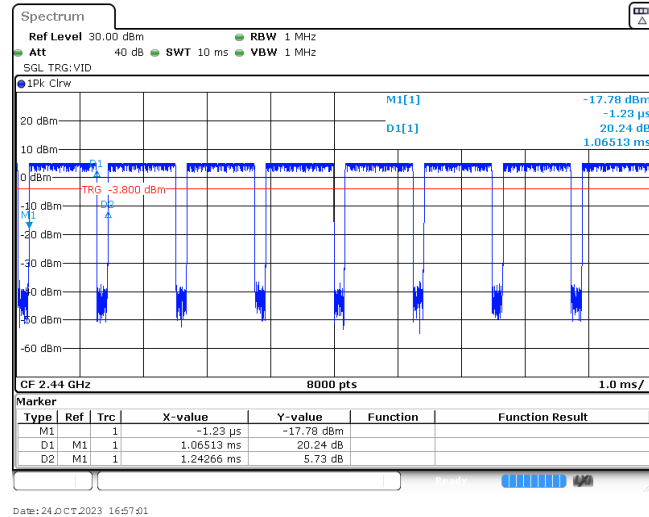
Test rate	Channel	99% Occupied Bandwidth(MHz)	Limit (kHz)	Result
1Mbps	00	1.02	-	Pass
	19	1.02		
	39	1.02		
2Mbps	00	2.04	-	Pass
	19	2.05		
	39	2.05		



Test rate: 2Mbps	
CH00	Spectrum Ref Level 10.50 dBm Offset 0.50 dB RBW 30 kHz Att 20 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT Count 500/500 IPk View 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm M1 M1[1] Occ Bw T1 T2 -1.20 dBm 2.40205490 GHz 2.042957043 MHz CF 2.402 GHz 1001 pts Span 5.0 MHz Date:24 OCT 2023 16:55:27
CH19	Spectrum Ref Level 10.50 dBm Offset 0.50 dB RBW 30 kHz Att 20 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT Count 500/500 IPk View 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm M1 M1[1] Occ Bw T1 T2 -1.16 dBm 2.44005990 GHz 2.047952048 MHz CF 2.44 GHz 1001 pts Span 5.0 MHz Date:24 OCT 2023 16:57:21
CH39	Spectrum Ref Level 10.50 dBm Offset 0.50 dB RBW 30 kHz Att 20 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT Count 500/500 IPk View 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm M1 M1[1] Occ Bw T1 T2 -1.34 dBm 2.48005990 GHz 2.052947053 MHz CF 2.48 GHz 1001 pts Span 5.0 MHz Date:24 OCT 2023 16:58:50

Appendix E: Duty cycle

Test Frequency (MHz)	Ton time for single burst (ms)	Tperiod (ms)	Duty cycle	1/Ton time (kHz)
2440	1.07	1.24	0.86	0.93

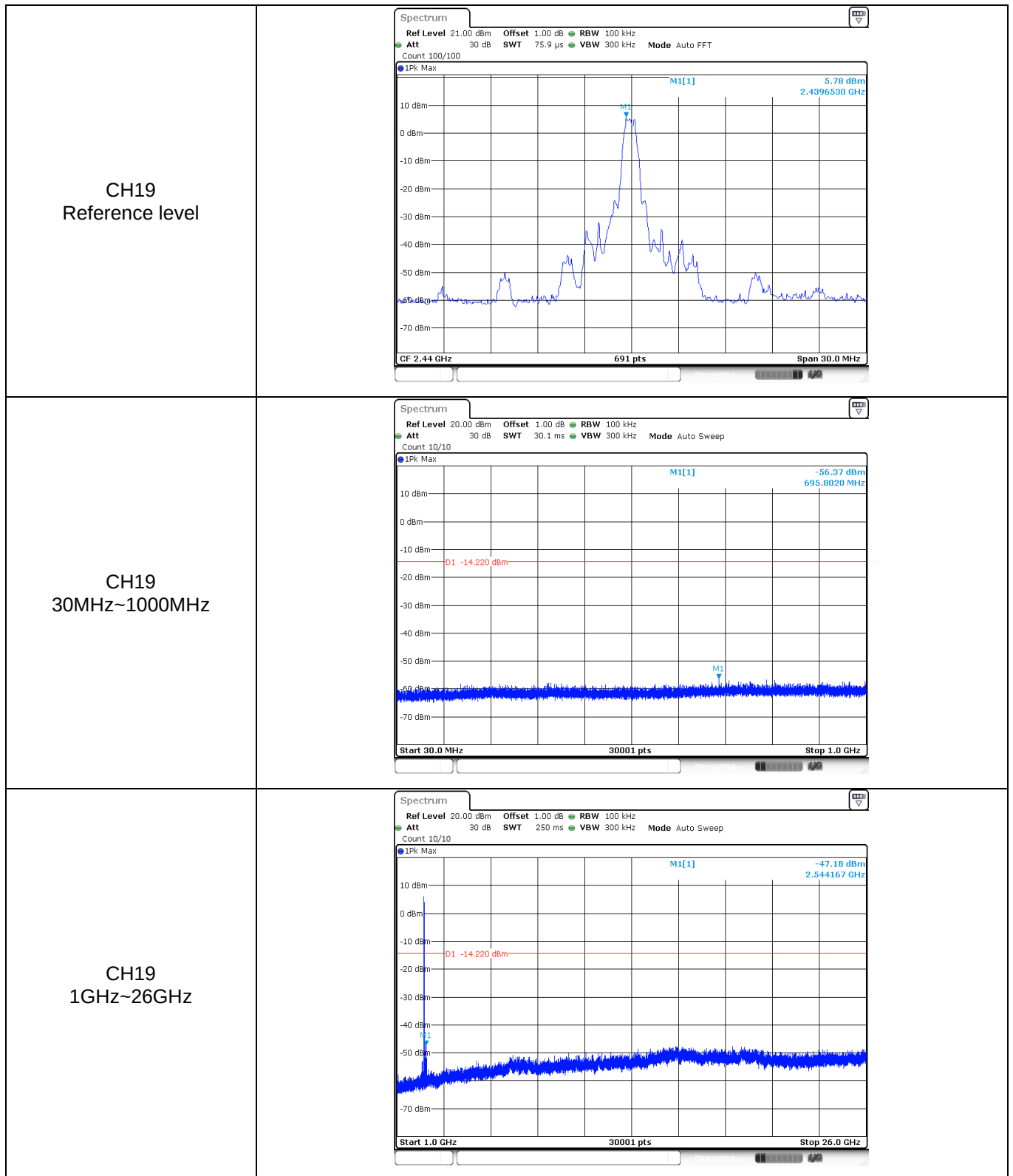


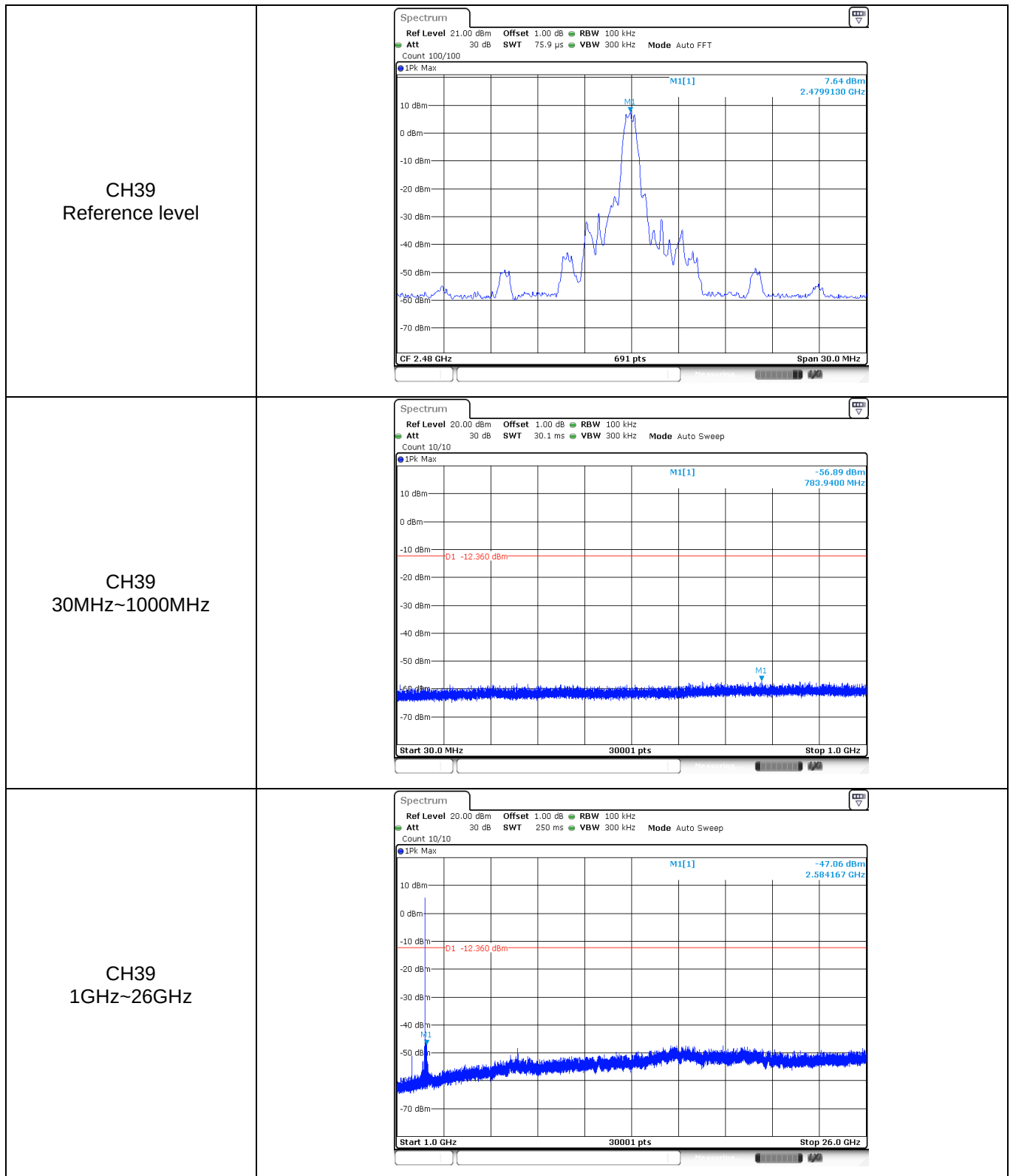
Appendix F: Band edge and Spurious Emissions (conducted)

Test Item:	Band edge	Test Rate:	1Mbps																																										
CH00	Spectrum Ref Level 15.00 dBm Offset 1.00 dB RBW 100 kHz Att 25 dB SWT 1.1 ms VBW 300 kHz Mode Auto Sweep Count 300/300 1Pk Max 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm M1[1] M2[1] D1 -14.600 dBm M3 M4 M5 5.42 dBm 2.401910 GHz -39.28 dBm 2.400000 GHz Start 2.31 GHz 691 pts Stop 2.405 GHz Marker <table><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>2.40191 GHz</td><td>5.42 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-39.28 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-59.36 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-62.39 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.398667 GHz</td><td>-43.42 dBm</td><td></td><td></td></tr></tbody></table>			Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		2.40191 GHz	5.42 dBm			M2	1		2.4 GHz	-39.28 dBm			M3	1		2.39 GHz	-59.36 dBm			M4	1		2.31 GHz	-62.39 dBm			M5	1		2.398667 GHz	-43.42 dBm		
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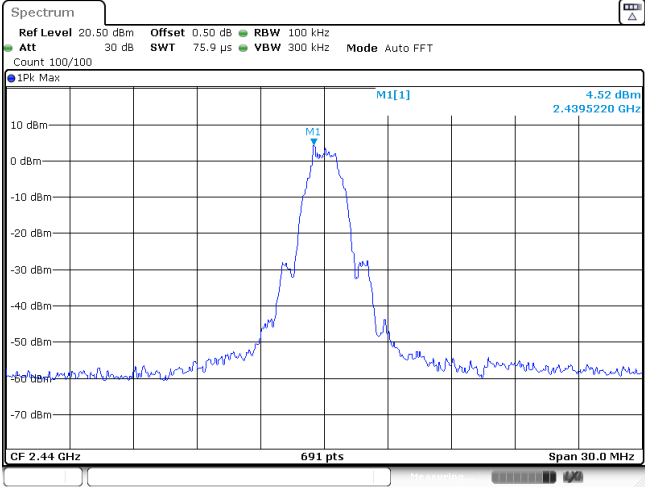
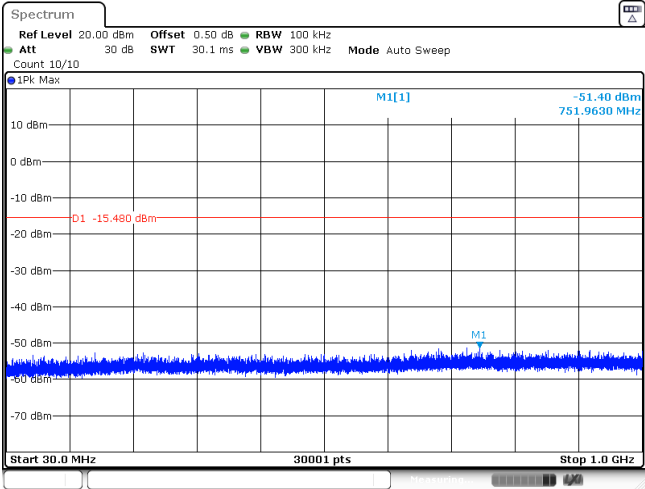
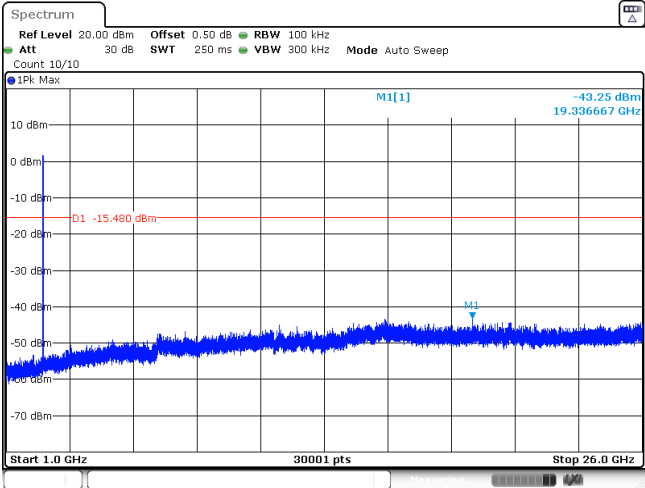
Test Item:	Band edge	Test Rate:	2Mbps																																										
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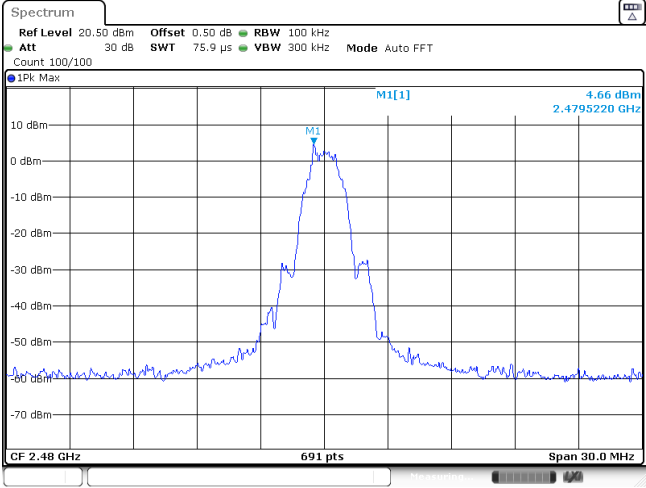
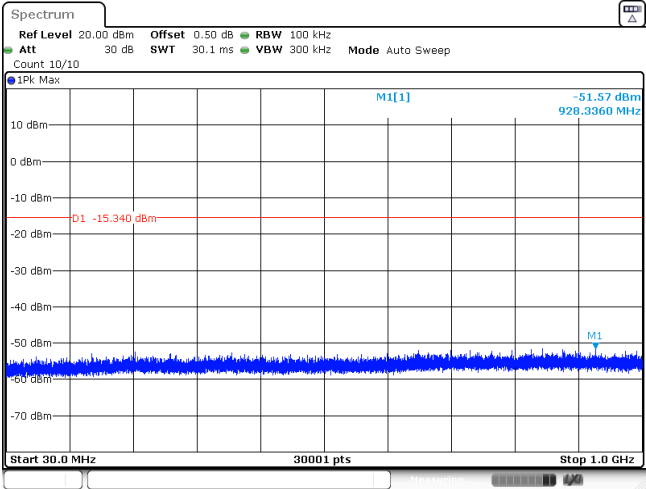
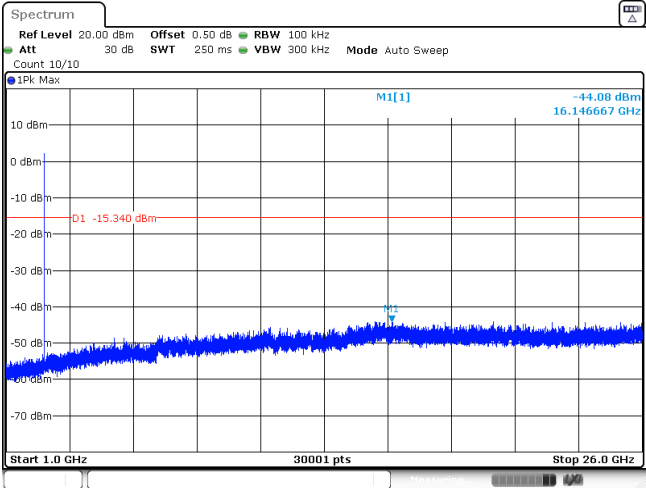
Test Item:	SE	Test Rate:	1Mbps
CH00 Reference level	Spectrum Ref Level 21.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWT 75.9 μs VBW 300 kHz Mode Auto FFT Count 100/100 1Pk Max M1[1] 5.76 dBm 2.4019130 GHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 2.402 GHz 691 pts Span 30.0 MHz		
CH00 30MHz~1000MHz	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 1Pk Max M1[1] -57.00 dBm 944.2430 MHz D1 -14.240 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1 Start 30.0 MHz 30001 pts Stop 1.0 GHz		
CH00 1GHz~26GHz	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 1Pk Max M1[1] -45.86 dBm 2.505833 GHz D1 -14.240 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1 Start 1.0 GHz 30001 pts Stop 26.0 GHz		





Test Item:	SE	Test Rate:	2Mbps
CH00 Reference level	Spectrum Ref Level 20.50 dBm Att 30 dB Offset 0.50 dB SWT 75.9 μs RBW 100 kHz VBW 300 kHz Mode Auto FFT Count 100/100 1Pk Max M1 4.55 dBm 2.4015220 GHz M1[1] CF 2.402 GHz 691 pts Span 30.0 MHz Date: 24.OCT.2023 16:56:06		
CH00 30MHz~1000MHz	Spectrum Ref Level 20.00 dBm Att 30 dB Offset 0.50 dB SWT 30.1 ms RBW 100 kHz VBW 300 kHz Mode Auto Sweep Count 10/10 1Pk Max M1 -51.71 dBm 877.9150 MHz M1[1] D1 -15.450 dBm Start 30.0 MHz 30001 pts Stop 1.0 GHz Date: 24.OCT.2023 16:56:21		
CH00 1GHz~26GHz	Spectrum Ref Level 20.00 dBm Att 30 dB Offset 0.50 dB SWT 250 ms RBW 100 kHz VBW 300 kHz Mode Auto Sweep Count 10/10 1Pk Max M1 -49.45 dBm 16.213333 GHz M1[1] D1 -15.450 dBm Start 1.0 GHz 30001 pts Stop 26.0 GHz Date: 24.OCT.2023 16:56:36		

CH19 Reference level	 Date: 24 OCT 2023 16:57:49
CH19 30MHz~1000MHz	 Date: 24 OCT 2023 16:58:04
CH19 1GHz~26GHz	 Date: 24 OCT 2023 16:58:19

CH39 Reference level	 Date: 24/07/2023 16:59:27
CH39 30MHz~1000MHz	 Date: 24/07/2023 16:59:42
CH39 1GHz~26GHz	 Date: 24/07/2023 16:59:57

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