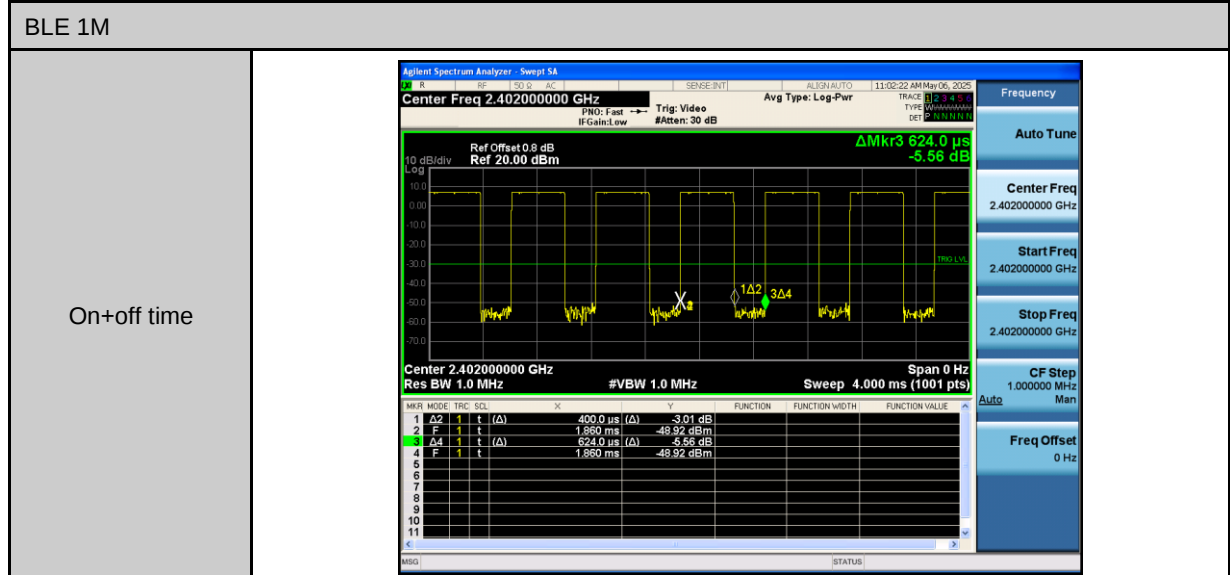


Appendix B. Test Plots

Duty cycle



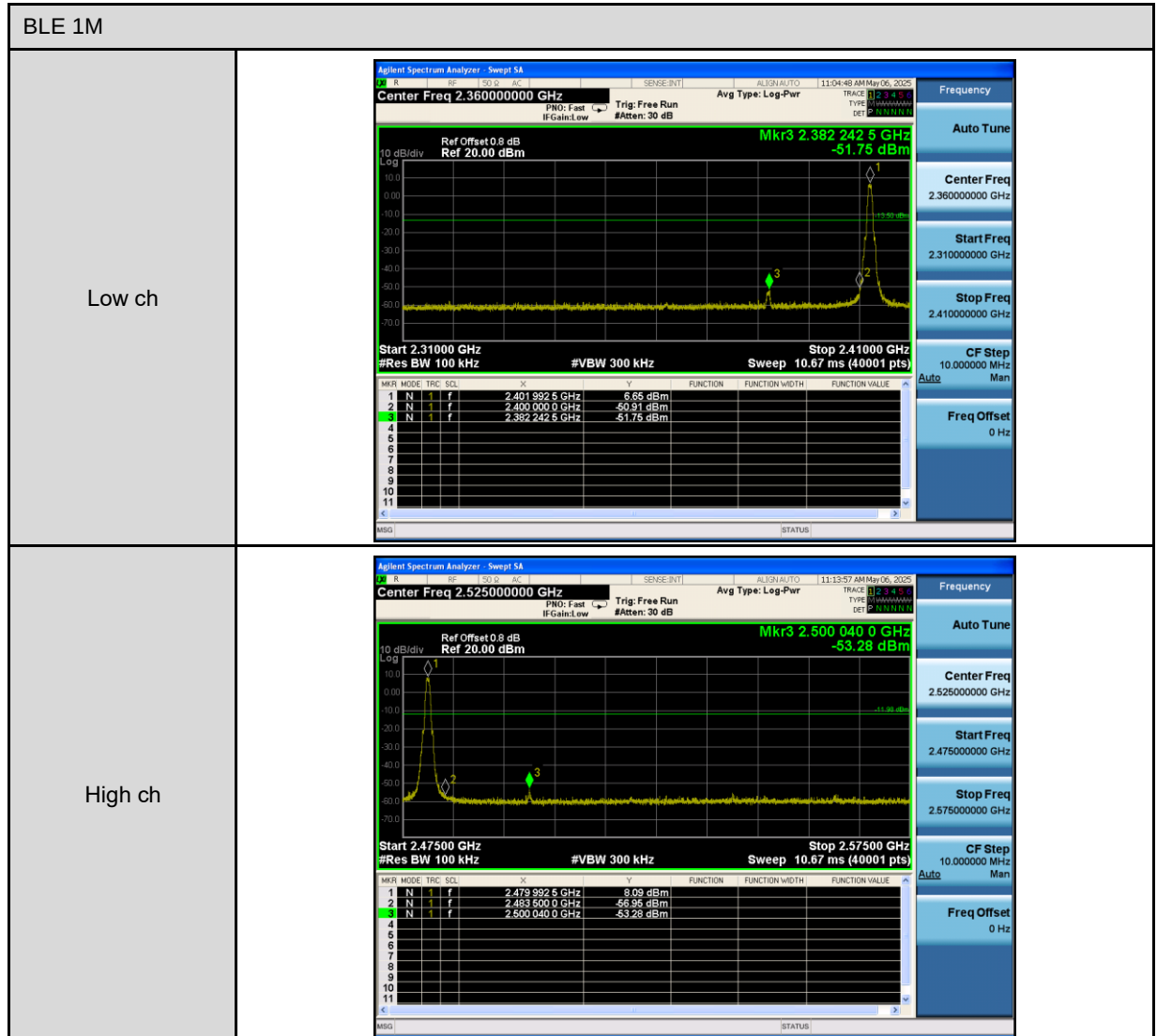
Out of Band Conducted Spurious Emission

BLE 1M																												
Low ch	Agilent Spectrum Analyzer - Sweep SA 1 2 3 4 5 6 7 8 9 10 11 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz Center Freq 12.515000000 GHz Ref Offset 0.8 dB Ref 20.00 dBm Mkr2 24.224 7 GHz -47.61 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.387 s (40001 pts) <table><tr><th>MKR</th><th>MODE</th><th>TRC</th><th>SOL</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2.402 2 GHz</td><td>6.35 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>24.224 7 GHz</td><td>-47.61 dBm</td><td></td><td></td><td></td></tr></table> Frequency Auto Tune Center Freq 12.515000000 GHz Start Freq 30.000000 MHz Stop Freq 25.000000000 GHz CF Step 2.497000000 GHz Auto Man Freq Offset 0 Hz	MKR	MODE	TRC	SOL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	2.402 2 GHz	6.35 dBm				2	N	1	f	24.224 7 GHz	-47.61 dBm			
MKR	MODE	TRC	SOL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																				
1	N	1	f	2.402 2 GHz	6.35 dBm																							
2	N	1	f	24.224 7 GHz	-47.61 dBm																							
Mid ch	Agilent Spectrum Analyzer - Sweep SA 1 2 3 4 5 6 7 8 9 10 11 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz Center Freq 12.515000000 GHz Ref Offset 0.8 dB Ref 20.00 dBm Mkr2 23.985 6 GHz -47.32 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.387 s (40001 pts) <table><tr><th>MKR</th><th>MODE</th><th>TRC</th><th>SOL</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2.439 6 GHz</td><td>5.85 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>23.985 6 GHz</td><td>-47.32 dBm</td><td></td><td></td><td></td></tr></table> Frequency Auto Tune Center Freq 12.515000000 GHz Start Freq 30.000000 MHz Stop Freq 25.000000000 GHz CF Step 2.497000000 GHz Auto Man Freq Offset 0 Hz	MKR	MODE	TRC	SOL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	2.439 6 GHz	5.85 dBm				2	N	1	f	23.985 6 GHz	-47.32 dBm			
MKR	MODE	TRC	SOL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																				
1	N	1	f	2.439 6 GHz	5.85 dBm																							
2	N	1	f	23.985 6 GHz	-47.32 dBm																							
High ch	Agilent Spectrum Analyzer - Sweep SA 1 2 3 4 5 6 7 8 9 10 11 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz 12.515000000 GHz Center Freq 12.515000000 GHz Ref Offset 0.8 dB Ref 20.00 dBm Mkr2 24.008 7 GHz -47.11 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.387 s (40001 pts) <table><tr><th>MKR</th><th>MODE</th><th>TRC</th><th>SOL</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2.480 2 GHz</td><td>7.71 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>24.008 7 GHz</td><td>-47.11 dBm</td><td></td><td></td><td></td></tr></table> Frequency Auto Tune Center Freq 12.515000000 GHz Start Freq 30.000000 MHz Stop Freq 25.000000000 GHz CF Step 2.497000000 GHz Auto Man Freq Offset 0 Hz	MKR	MODE	TRC	SOL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	2.480 2 GHz	7.71 dBm				2	N	1	f	24.008 7 GHz	-47.11 dBm			
MKR	MODE	TRC	SOL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																				
1	N	1	f	2.480 2 GHz	7.71 dBm																							
2	N	1	f	24.008 7 GHz	-47.11 dBm																							

Reference level

BLE 1M	
Low ch	Agilent Spectrum Analyzer - Sweep SA Center Freq 2.402000000 GHz Ref Offset 0.8 dB Ref 20.00 dBm Mkr1 2.402 001 1 GHz 6.50 dBm Span 1.078 MHz Res BW 100 kHz VBW 300 kHz Sweep 1.000 ms (1001 pts)
Mid ch	Agilent Spectrum Analyzer - Sweep SA Center Freq 2.440000000 GHz Ref Offset 0.8 dB Ref 20.00 dBm Mkr1 2.440 007 6 GHz 7.25 dBm Span 1.088 MHz Res BW 100 kHz VBW 300 kHz Sweep 1.000 ms (1001 pts)
High ch	Agilent Spectrum Analyzer - Sweep SA Center Freq 2.480000000 GHz Ref Offset 0.8 dB Ref 20.00 dBm Mkr1 2.480 015 2 GHz 8.02 dBm Span 1.088 MHz Res BW 100 kHz VBW 300 kHz Sweep 1.000 ms (1001 pts)

Conducted Band Edge



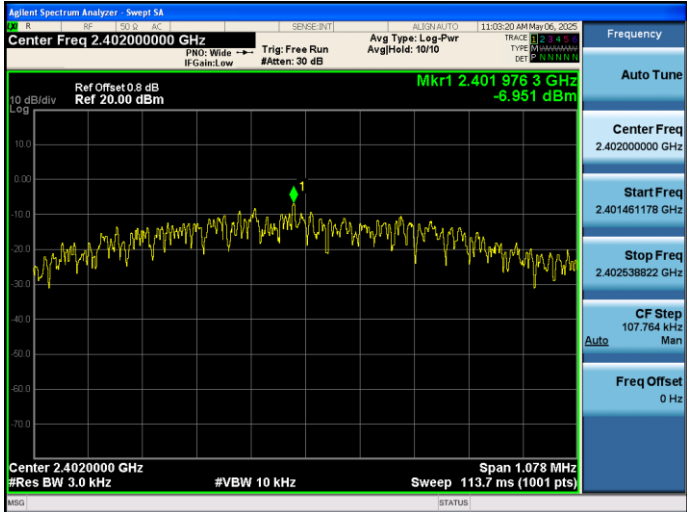
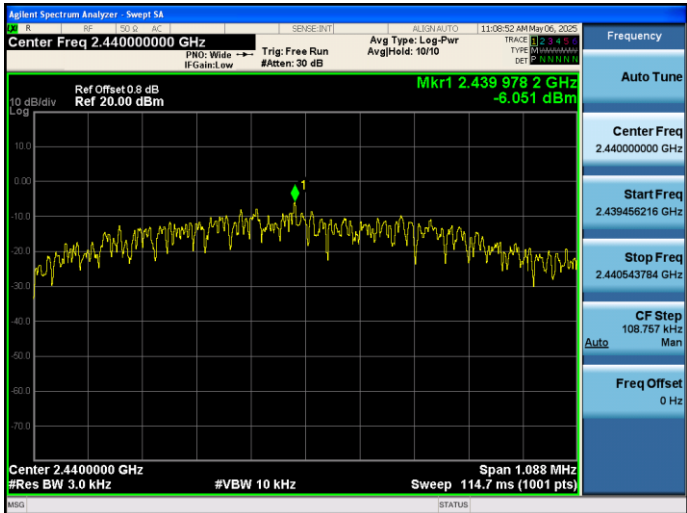
6 dB Bandwidth

BLE 1M	
Low ch	Agilent Spectrum Analyzer - Occupied BW Center Freq 2.40200000 GHz Center Freq: 2.40200000 GHz Trig: Free Run Avg/Hold: 1/1 Radio Std: None Radio Device: BTS Ref Offset 0.8 dB Ref 20.00 dBm Center 2.402 GHz #Res BW 100 kHz #VBW 300 kHz Span 3 MHz Sweep 1 ms Occupied Bandwidth 1.0894 MHz Total Power 13.8 dBm Transmit Freq Error 1.658 kHz OBW Power 99.00 % x dB Bandwidth 718.4 kHz x dB -6.00 dB
Mid ch	Agilent Spectrum Analyzer - Occupied BW Center Freq 2.44000000 GHz Center Freq: 2.44000000 GHz Trig: Free Run Avg/Hold: 1/1 Radio Std: None Radio Device: BTS Ref Offset 0.8 dB Ref 20.00 dBm Center 2.44 GHz #Res BW 100 kHz #VBW 300 kHz Span 3 MHz Sweep 1 ms Occupied Bandwidth 1.0914 MHz Total Power 14.6 dBm Transmit Freq Error 4.191 kHz OBW Power 99.00 % x dB Bandwidth 725.0 kHz x dB -6.00 dB
High ch	Agilent Spectrum Analyzer - Occupied BW Center Freq 2.48000000 GHz Center Freq: 2.48000000 GHz Trig: Free Run Avg/Hold: 1/1 Radio Std: None Radio Device: BTS Ref Offset 0.8 dB Ref 20.00 dBm Center 2.48 GHz #Res BW 100 kHz #VBW 300 kHz Span 3 MHz Sweep 1 ms Occupied Bandwidth 1.0948 MHz Total Power 15.4 dBm Transmit Freq Error 6.321 kHz OBW Power 99.00 % x dB Bandwidth 725.4 kHz x dB -6.00 dB

99 % Occupied Bandwidth

BLE 1M	
Low ch	Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.402000000 GHz Center Freq: 2.402000000 GHz Trig: Free Run Avg/Hold: 1/1 Radio Std: None Radio Device: BTS Ref Offset 0.8 dB Ref 20.00 dBm Center 2.402 GHz #Res BW 30 kHz #VBW 100 kHz Span 3 MHz Sweep 3.2 ms Occupied Bandwidth 1.0655 MHz Total Power 14.0 dBm Transmit Freq Error 2.939 kHz OBW Power 99.00 % x dB Bandwidth 1.274 MHz x dB -26.00 dB
Mid ch	Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.440000000 GHz Center Freq: 2.440000000 GHz Trig: Free Run Avg/Hold: 1/1 Radio Std: None Radio Device: BTS Ref Offset 0.8 dB Ref 20.00 dBm Center 2.44 GHz #Res BW 30 kHz #VBW 100 kHz Span 3 MHz Sweep 3.2 ms Occupied Bandwidth 1.0652 MHz Total Power 14.9 dBm Transmit Freq Error 5.611 kHz OBW Power 99.00 % x dB Bandwidth 1.277 MHz x dB -26.00 dB
High ch	Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.480000000 GHz Center Freq: 2.480000000 GHz Trig: Free Run Avg/Hold: 1/1 Radio Std: None Radio Device: BTS Ref Offset 0.8 dB Ref 20.00 dBm Center 2.48 GHz #Res BW 30 kHz #VBW 100 kHz Span 3 MHz Sweep 3.2 ms Occupied Bandwidth 1.0670 MHz Total Power 15.6 dBm Transmit Freq Error 8.128 kHz OBW Power 99.00 % x dB Bandwidth 1.281 MHz x dB -26.00 dB

Power Density

BLE 1M	
Low ch	
Mid ch	
High ch	