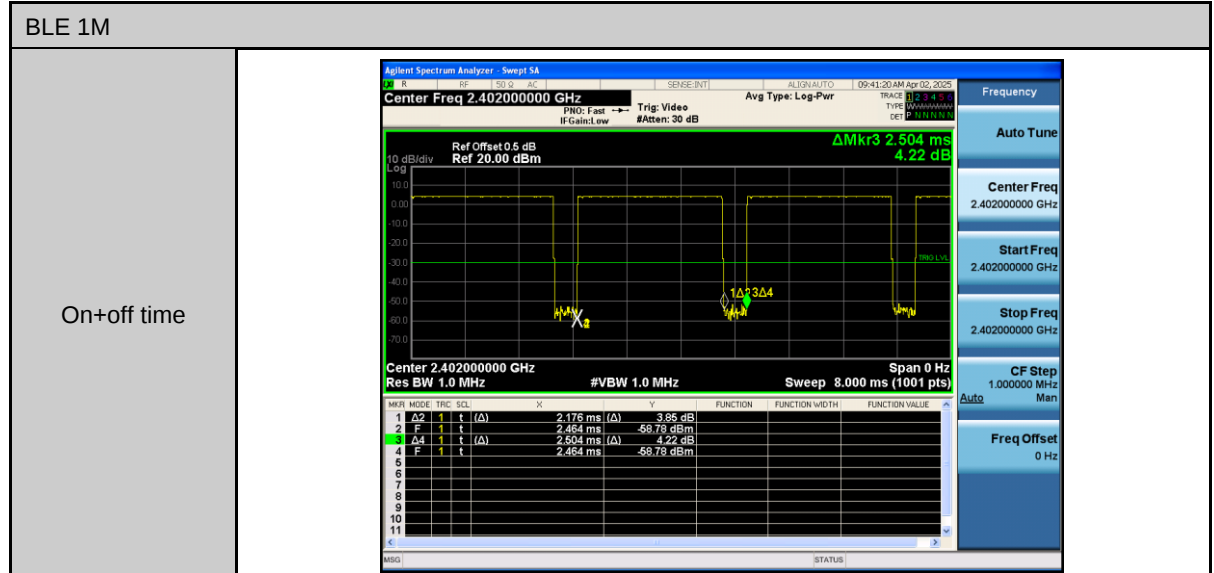


Appendix B. Test Plots

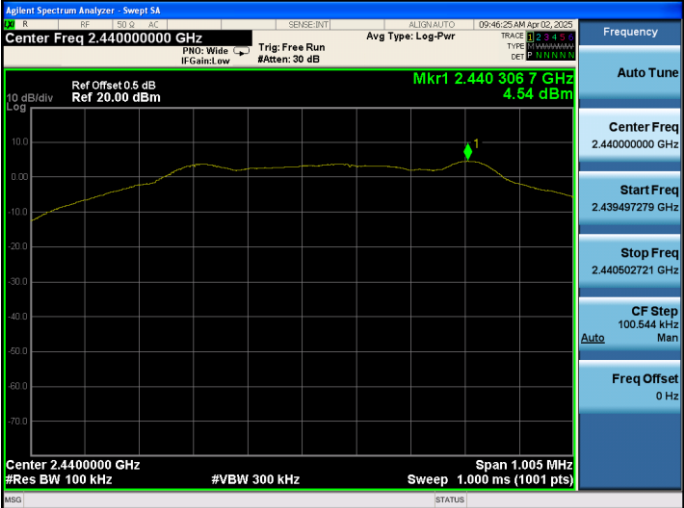
Duty cycle



Out of Band Conducted Spurious Emission

BLE 1M																																																																																																													
Low ch	Agilent Spectrum Analyzer - Sweep SA Center Freq 12.515000000 GHz SENSE:INT ALIGN:Auto 09:44:49 AM Apr 02, 2025 PRIO: Fast IF Gain: Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr TYPE: E-WWWWWWW DET: P-MINMAX Ref Offset 0.5 dB Ref 20.00 dBm Mkr2 2.354 1 GHz -38.40 dBm 10 dB/div Log 1 2 Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 25.00 GHz Sweep 2.387 s (40001 pts) <table><thead><tr><th>MNR</th><th>MODE</th><th>TRC</th><th>SCL</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr></thead><tbody><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2.4022 GHz</td><td>2.97 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>2.3541 GHz</td><td>-38.40 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>7</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>9</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>10</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>11</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table> MSG STATUS Frequency Auto Tune Center Freq 12.515000000 GHz Start Freq 30.0000000 MHz Stop Freq 25.000000000 GHz CF Step 2.497000000 GHz Auto Man Freq Offset 0 Hz	MNR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	2.4022 GHz	2.97 dBm				2	N	1	f	2.3541 GHz	-38.40 dBm				3									4									5									6									7									8									9									10									11								
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Mid ch	Agilent Spectrum Analyzer - Sweep SA Center Freq 12.515000000 GHz SENSE:INT ALIGN:Auto 09:47:25 AM Apr 02, 2025 PRIO: Fast IF Gain: Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr TRACE 1 2 3 4 5 TYPE: E-WWWWWWW DET: P-MINMAX Ref Offset 0.5 dB Ref 20.00 dBm Mkr2 7.320 0 GHz -44.56 dBm 10 dB/div Log 1 2 Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 25.00 GHz Sweep 2.387 s (40001 pts) <table><thead><tr><th>MNR</th><th>MODE</th><th>TRC</th><th>SCL</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr></thead><tbody><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2.4402 GHz</td><td>3.75 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>7.3200 GHz</td><td>-44.56 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>7</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>9</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>10</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>11</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table> MSG STATUS Frequency Auto Tune Center Freq 12.515000000 GHz Start Freq 30.0000000 MHz Stop Freq 25.000000000 GHz CF Step 2.497000000 GHz Auto Man Freq Offset 0 Hz	MNR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	2.4402 GHz	3.75 dBm				2	N	1	f	7.3200 GHz	-44.56 dBm				3									4									5									6									7									8									9									10									11								
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High ch	Agilent Spectrum Analyzer - Sweep SA Center Freq 12.515000000 GHz SENSE:INT ALIGN:Auto 09:51:39 AM Apr 02, 2025 PRIO: Fast IF Gain: Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr TRACE 1 2 3 4 5 TYPE: E-WWWWWWW DET: P-MINMAX Ref Offset 0.5 dB Ref 20.00 dBm Mkr2 2.528 2 GHz -37.92 dBm 10 dB/div Log 1 2 Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 25.00 GHz Sweep 2.387 s (40001 pts) <table><thead><tr><th>MNR</th><th>MODE</th><th>TRC</th><th>SCL</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr></thead><tbody><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2.4802 GHz</td><td>3.71 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>2.5282 GHz</td><td>-37.92 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>7</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>9</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>10</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>11</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table> MSG STATUS Frequency Auto Tune Center Freq 12.515000000 GHz Start Freq 30.0000000 MHz Stop Freq 25.000000000 GHz CF Step 2.497000000 GHz Auto Man Freq Offset 0 Hz	MNR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	2.4802 GHz	3.71 dBm				2	N	1	f	2.5282 GHz	-37.92 dBm				3									4									5									6									7									8									9									10									11								
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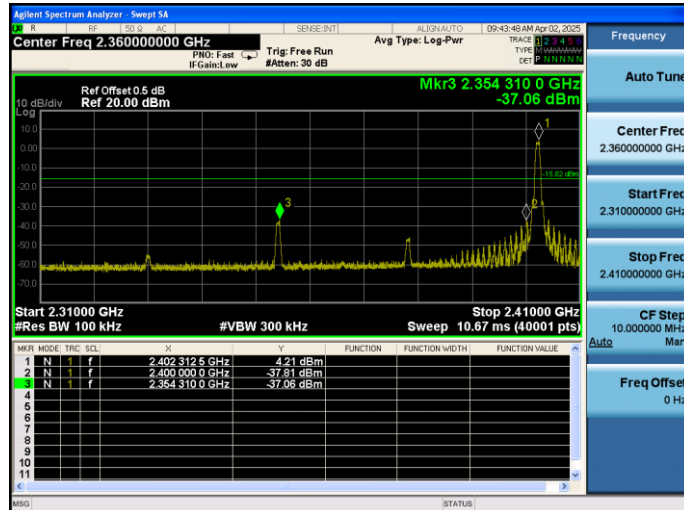
Reference level

BLE 1M Low ch	
Mid ch	
High ch	

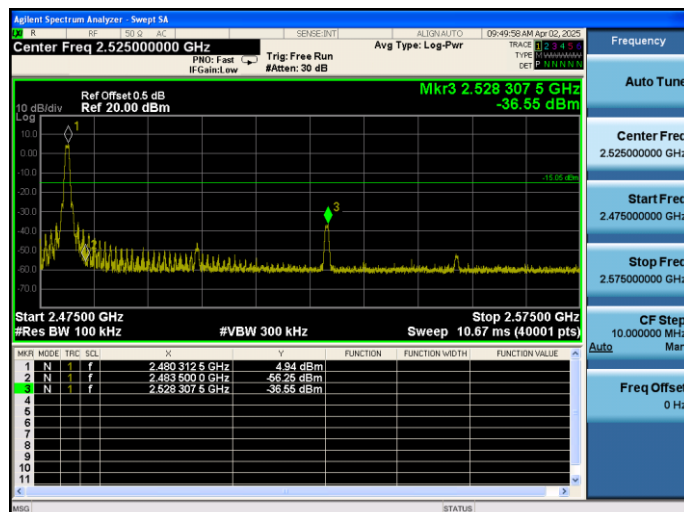
Conducted Band Edge

BLE 1M

Low ch



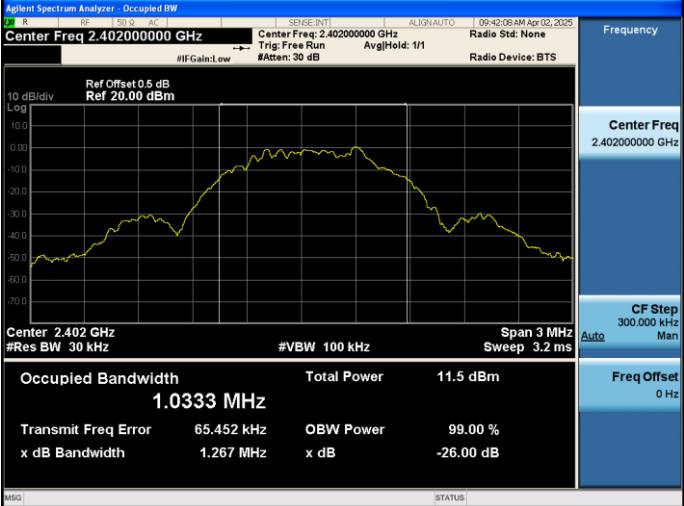
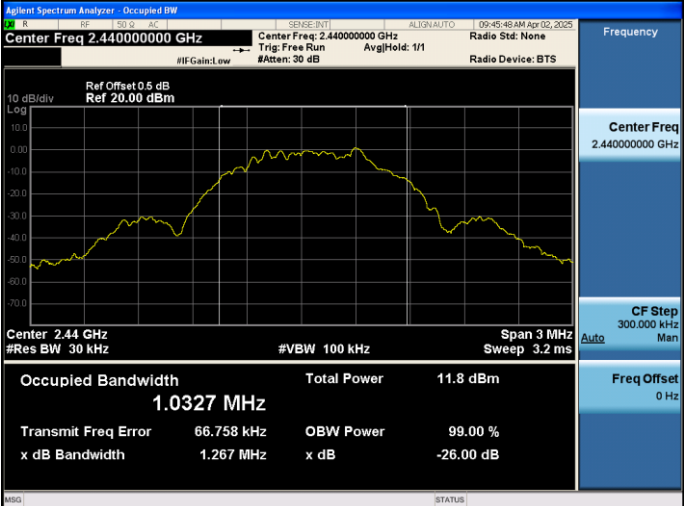
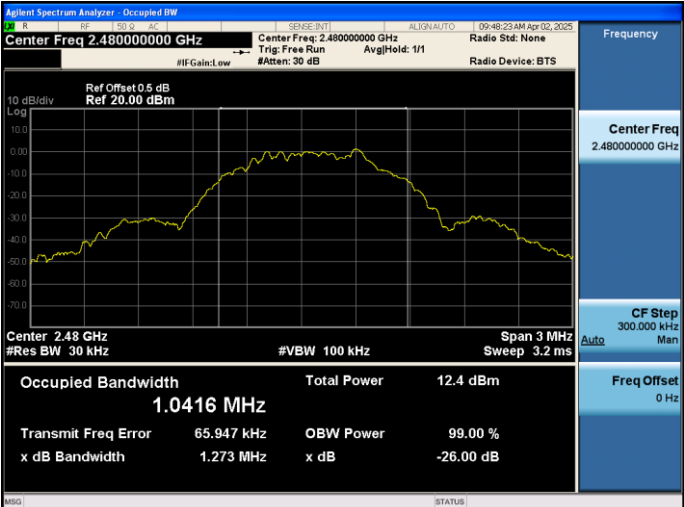
High ch



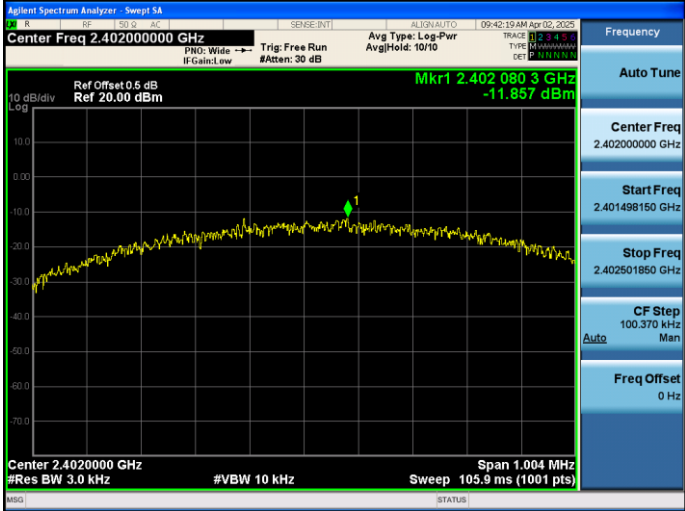
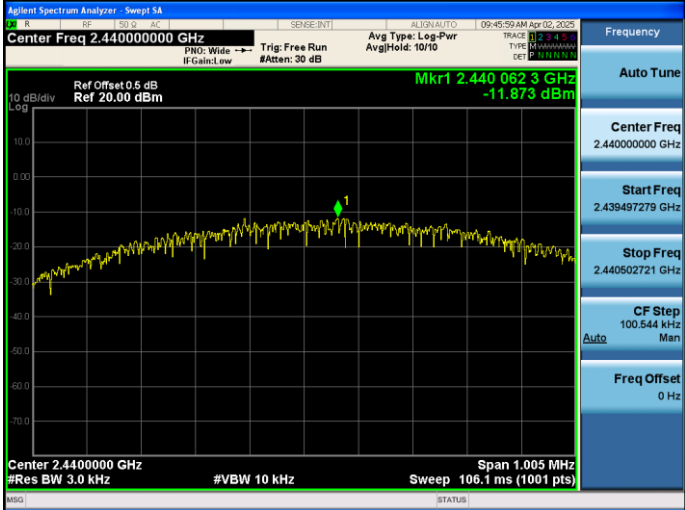
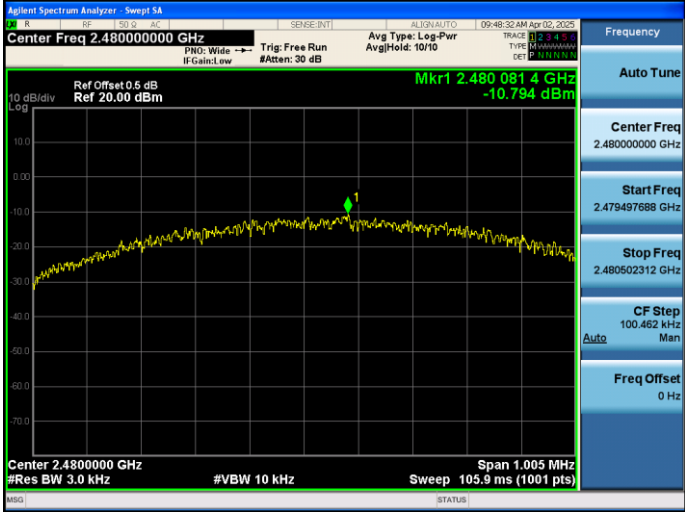
6 dB Bandwidth

BLE 1M	
Low ch	Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.402000000 GHz Ref Offset: 0.5 dB, Ref: 20.00 dBm Occupied Bandwidth: 1.0462 MHz Total Power: 11.0 dBm Transmit Freq Error: 61.206 kHz x dB Bandwidth: 669.1 kHz OBW Power: 99.00 % x dB: -6.00 dB
Mid ch	Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.440000000 GHz Ref Offset: 0.5 dB, Ref: 20.00 dBm Occupied Bandwidth: 1.0457 MHz Total Power: 11.3 dBm Transmit Freq Error: 61.206 kHz x dB Bandwidth: 670.3 kHz OBW Power: 99.00 % x dB: -6.00 dB
High ch	Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.480000000 GHz Ref Offset: 0.5 dB, Ref: 20.00 dBm Occupied Bandwidth: 1.0497 MHz Total Power: 11.8 dBm Transmit Freq Error: 62.958 kHz x dB Bandwidth: 669.7 kHz OBW Power: 99.00 % 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 Device: BTS Ref Offset: 0.5 dB Ref: 20.00 dBm 10 dB/div Log Center 2.402 GHz #Res BW 30 kHz #VBW 100 kHz Span 3 MHz Sweep 3.2 ms Occupied Bandwidth 1.0333 MHz Total Power 11.5 dBm Transmit Freq Error 65.452 kHz OBW Power 99.00 % x dB Bandwidth 1.267 MHz x dB -26.00 dB Frequency Center Freq 2.402000000 GHz CF Step 300.000 kHz Auto Freq Offset 0 Hz
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 Device: BTS Ref Offset: 0.5 dB Ref: 20.00 dBm 10 dB/div Log Center 2.44 GHz #Res BW 30 kHz #VBW 100 kHz Span 3 MHz Sweep 3.2 ms Occupied Bandwidth 1.0327 MHz Total Power 11.8 dBm Transmit Freq Error 66.758 kHz OBW Power 99.00 % x dB Bandwidth 1.267 MHz x dB -26.00 dB Frequency Center Freq 2.440000000 GHz CF Step 300.000 kHz Auto Freq Offset 0 Hz
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 Device: BTS Ref Offset: 0.5 dB Ref: 20.00 dBm 10 dB/div Log Center 2.48 GHz #Res BW 30 kHz #VBW 100 kHz Span 3 MHz Sweep 3.2 ms Occupied Bandwidth 1.0416 MHz Total Power 12.4 dBm Transmit Freq Error 65.947 kHz OBW Power 99.00 % x dB Bandwidth 1.273 MHz x dB -26.00 dB Frequency Center Freq 2.480000000 GHz CF Step 300.000 kHz Auto Freq Offset 0 Hz

Power Density

BLE 1M	
Low ch	 Agilent Spectrum Analyzer - Sweep 1A Center Freq 2.40200000 GHz Ref Offset 0.6 dB Ref 20.00 dBm Mkr1 2.402 080 3 GHz -11.857 dBm Center 2.4020000 GHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 105.9 ms (1001 pts) Frequency Auto Tune Center Freq 2.40200000 GHz Start Freq 2.401498150 GHz Stop Freq 2.402501850 GHz CF Step 100.370 kHz Auto Freq Offset 0 Hz
Mid ch	 Agilent Spectrum Analyzer - Sweep 1A Center Freq 2.44000000 GHz Ref Offset 0.6 dB Ref 20.00 dBm Mkr1 2.440 062 3 GHz -11.873 dBm Center 2.4400000 GHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 106.1 ms (1001 pts) Frequency Auto Tune Center Freq 2.440000000 GHz Start Freq 2.439457279 GHz Stop Freq 2.440502721 GHz CF Step 100.544 kHz Auto Freq Offset 0 Hz
High ch	 Agilent Spectrum Analyzer - Sweep 1A Center Freq 2.48000000 GHz Ref Offset 0.6 dB Ref 20.00 dBm Mkr1 2.480 081 4 GHz -10.794 dBm Center 2.4800000 GHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 105.9 ms (1001 pts) Frequency Auto Tune Center Freq 2.480000000 GHz Start Freq 2.479497688 GHz Stop Freq 2.480502312 GHz CF Step 100.462 kHz Auto Freq Offset 0 Hz