

Appendix B

RF Test Data for BT V5.0(DTS) (Conducted Measurement)

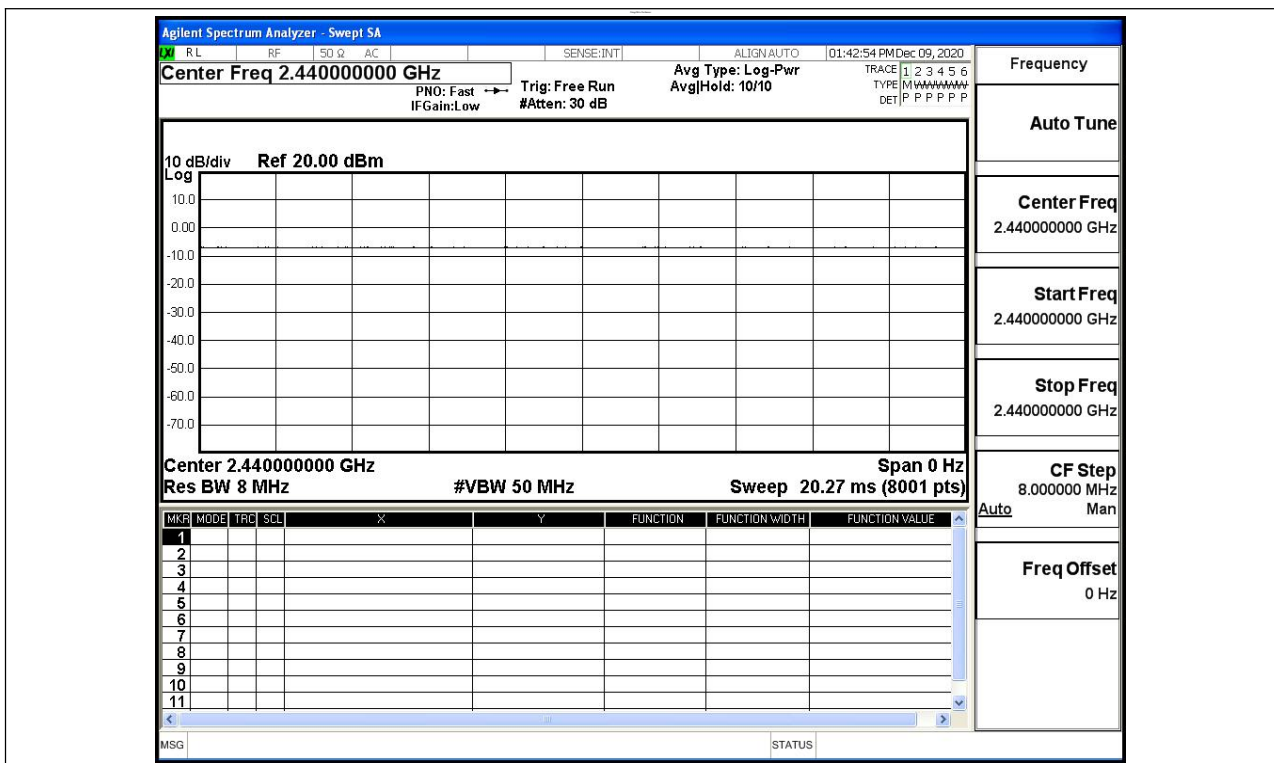
Product Name: Wireless headphone
Trade Mark: Origaudio
Test Model: Beebop

Environmental Conditions

Temperature:	22.3 ° C
Relative Humidity:	53.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Ken He
Supervised by:	Li Huan

B.1 Duty Cycle

Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
BT LE	2440	Ant1	100	PASS

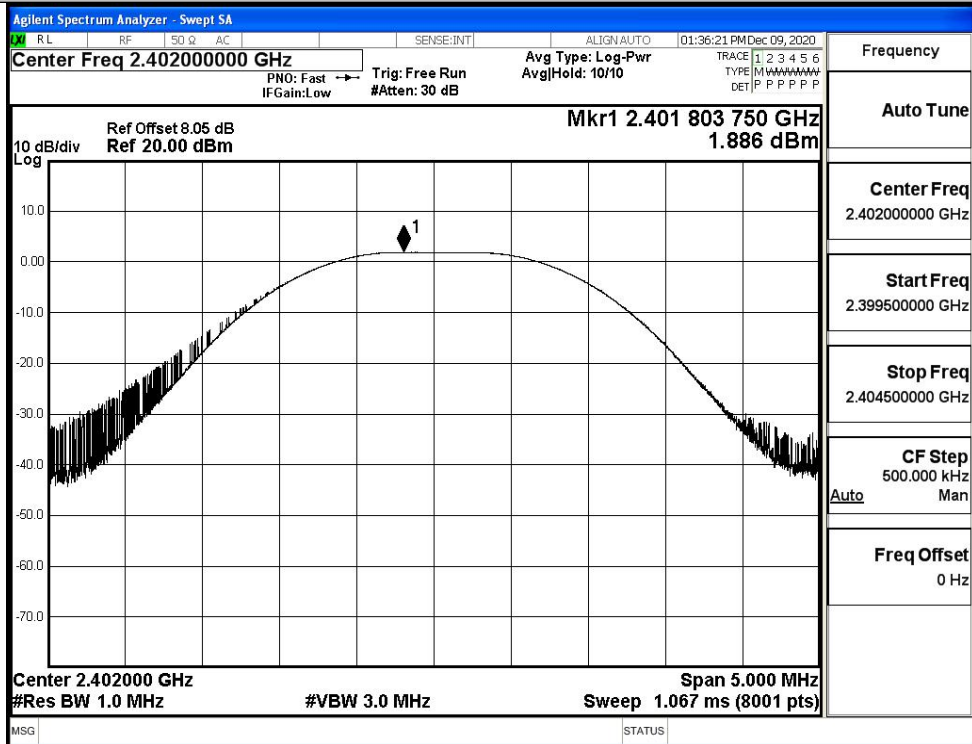


B.2 Maximum Conducted Peak Output Power

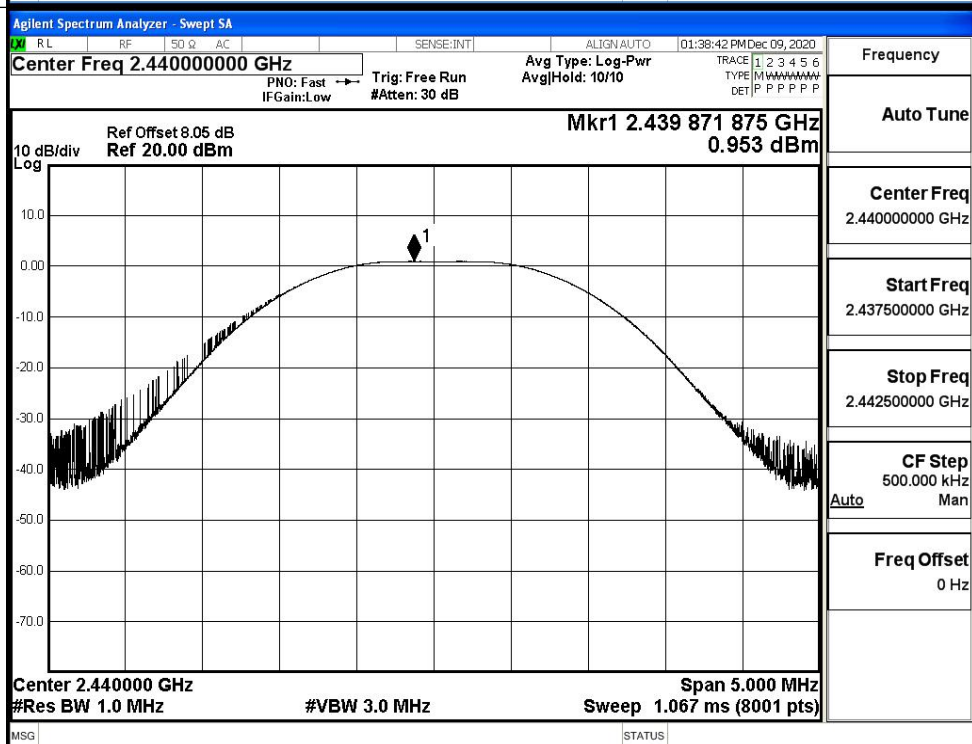
Mode	Channel	Conduct Peak Power[dBm]	Limit [dBm]	Verdict
BT LE	LCH	1.886	30	PASS
BT LE	MCH	0.953	30	PASS
BT LE	HCH	-0.381	30	PASS

Test Graphs

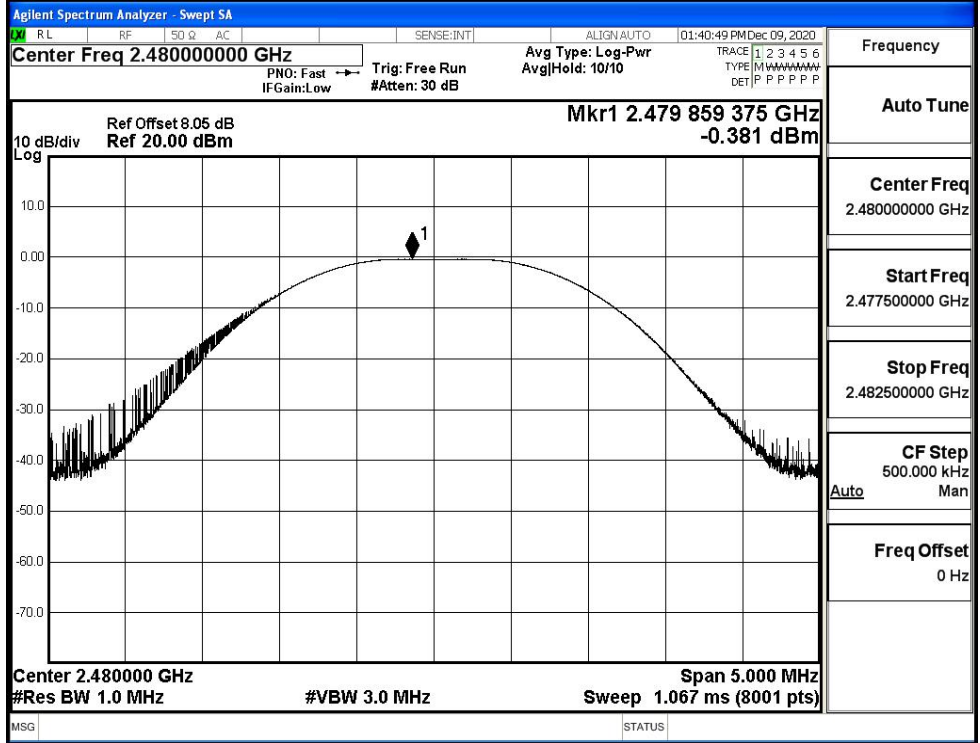
LCH



MCH



HCH



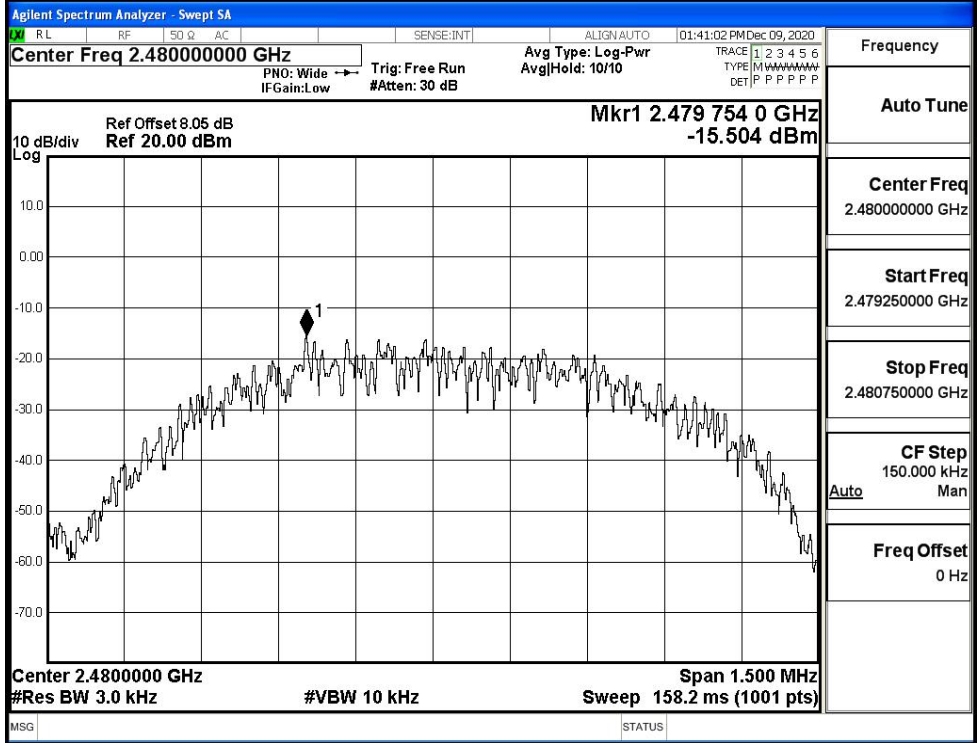
B.3 Maximum Power Spectral Density

Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
BT LE	LCH	-13.300	8	PASS
BT LE	MCH	-14.410	8	PASS
BT LE	HCH	-15.504	8	PASS

Test Graphs

LCH		<p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.40200000 GHz</p> <p>Mkr1 2.401 986 5 GHz -13.300 dBm</p> <p>Ref Offset 8.05 dB Ref 20.00 dBm</p> <p>10 dB/div Log</p> <p>Center 2.4020000 GHz #Res BW 3.0 kHz</p> <p>#VBW 10 kHz</p> <p>Span 1.500 MHz Sweep 158.2 ms (1001 pts)</p>	<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.40200000 GHz</p> <p>Start Freq 2.401250000 GHz</p> <p>Stop Freq 2.402750000 GHz</p> <p>CF Step 150.000 kHz Auto</p> <p>Freq Offset 0 Hz</p>
	MCH		<p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.44000000 GHz</p> <p>Mkr1 2.439 754 0 GHz -14.410 dBm</p> <p>Ref Offset 8.05 dB Ref 20.00 dBm</p> <p>10 dB/div Log</p> <p>Center 2.4400000 GHz #Res BW 3.0 kHz</p> <p>#VBW 10 kHz</p> <p>Span 1.500 MHz Sweep 158.2 ms (1001 pts)</p>

HCH



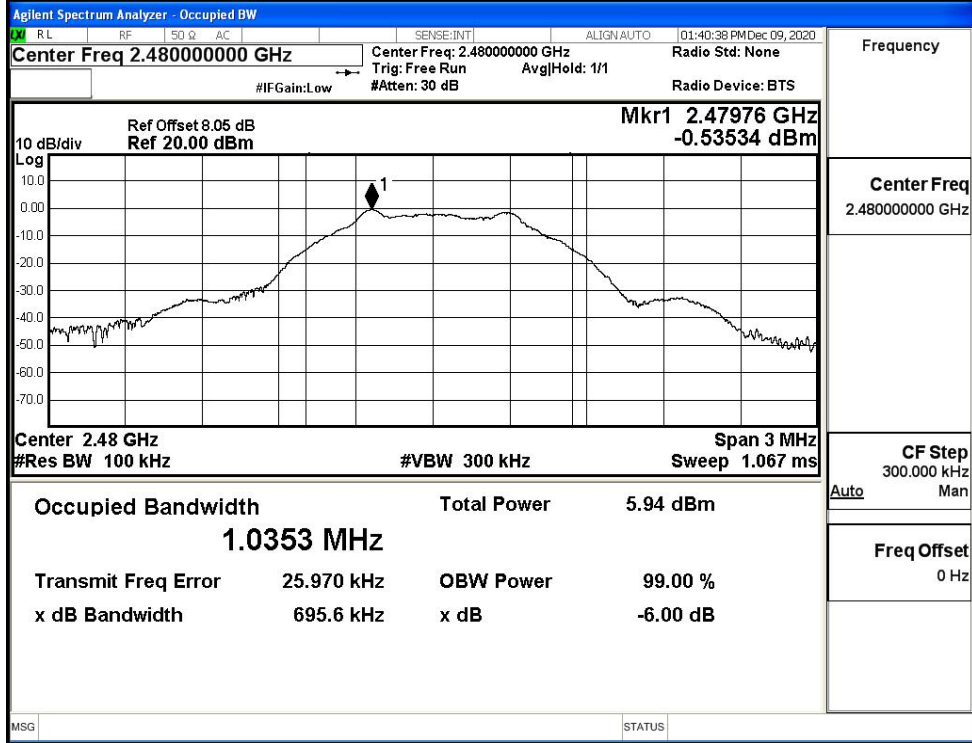
B.4 6dB Bandwidth

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
BT LE	LCH	0.6962	≥0.5	PASS
BT LE	MCH	0.6958	≥0.5	PASS
BT LE	HCH	0.6956	≥0.5	PASS

Test Graphs

LCH	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.40200000 GHz</p> <p>Mkr1 2.401766 GHz 1.7122 dBm</p> <p>Occupied Bandwidth 1.0352 MHz</p> <p>Total Power 8.22 dBm</p> <p>Transmit Freq Error 26.925 kHz</p> <p>x dB Bandwidth 696.2 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB -6.00 dB</p>	<p>Frequency</p> <p>Center Freq 2.40200000 GHz</p> <p>CF Step 300.000 kHz</p> <p>Freq Offset 0 Hz</p>
	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.44000000 GHz</p> <p>Mkr1 2.4397604 GHz 0.80130 dBm</p> <p>Occupied Bandwidth 1.0348 MHz</p> <p>Total Power 7.27 dBm</p> <p>Transmit Freq Error 25.849 kHz</p> <p>x dB Bandwidth 695.8 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB -6.00 dB</p>	<p>Frequency</p> <p>Center Freq 2.44000000 GHz</p> <p>CF Step 300.000 kHz</p> <p>Freq Offset 0 Hz</p>

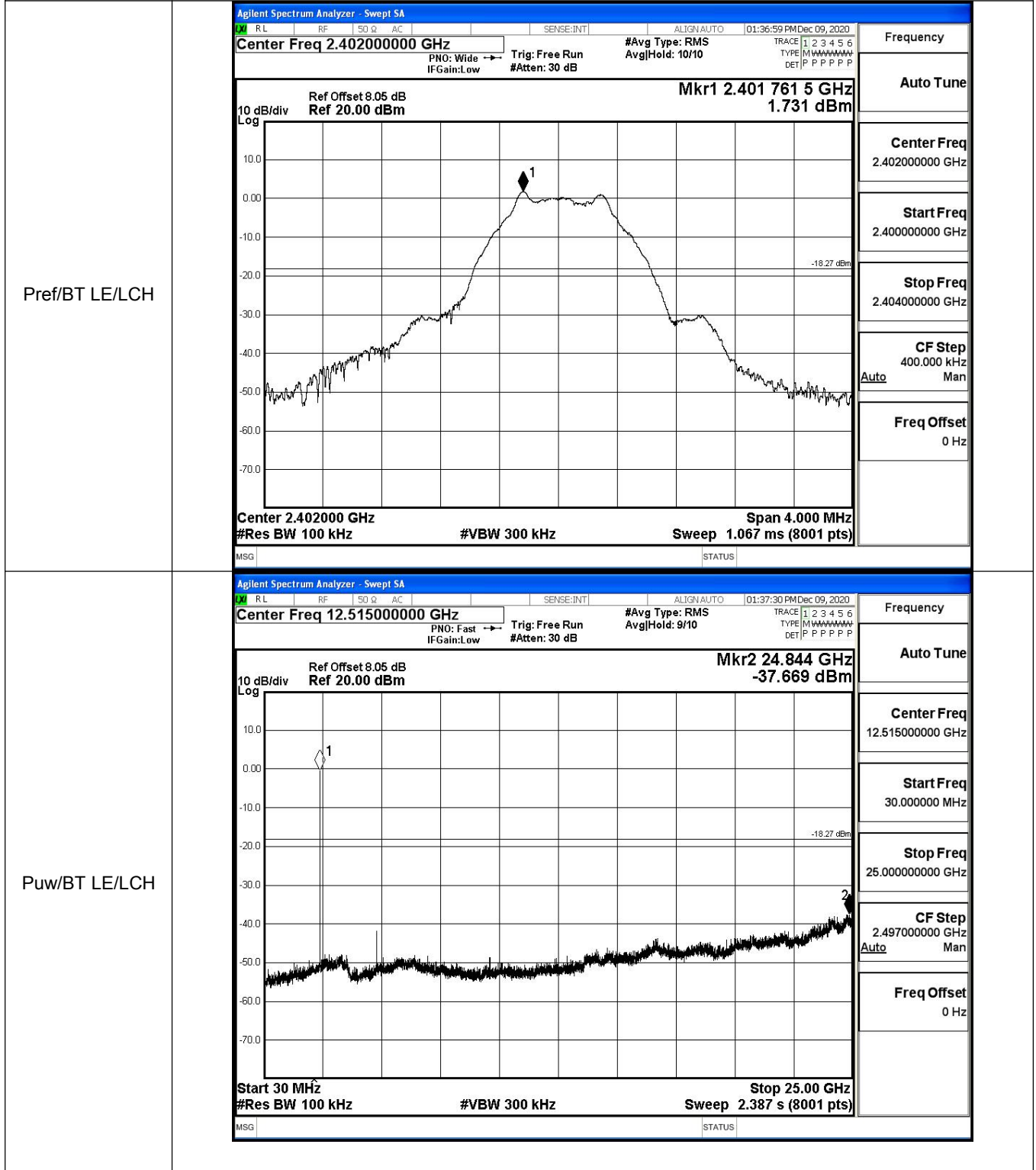
HCH



B.5 RF Conducted Spurious Emissions

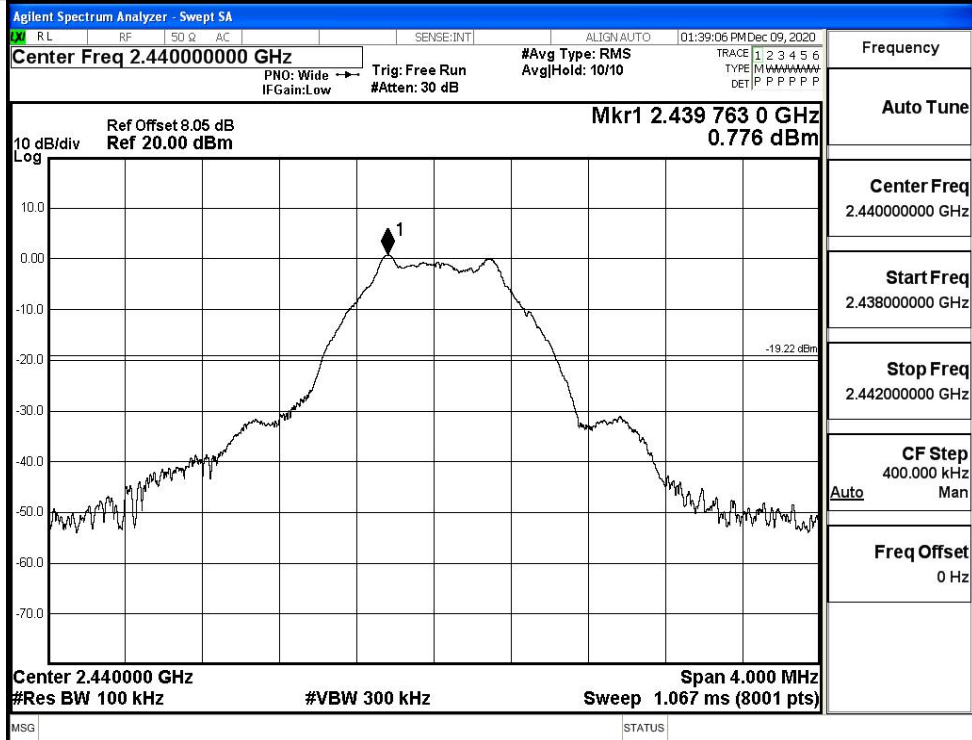
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	1.731	-37.669	-18.269	PASS
BT LE	MCH	0.776	-37.198	-19.224	PASS
BT LE	HCH	-0.529	-36.514	-20.529	PASS

BT LE_LCH_Graphs

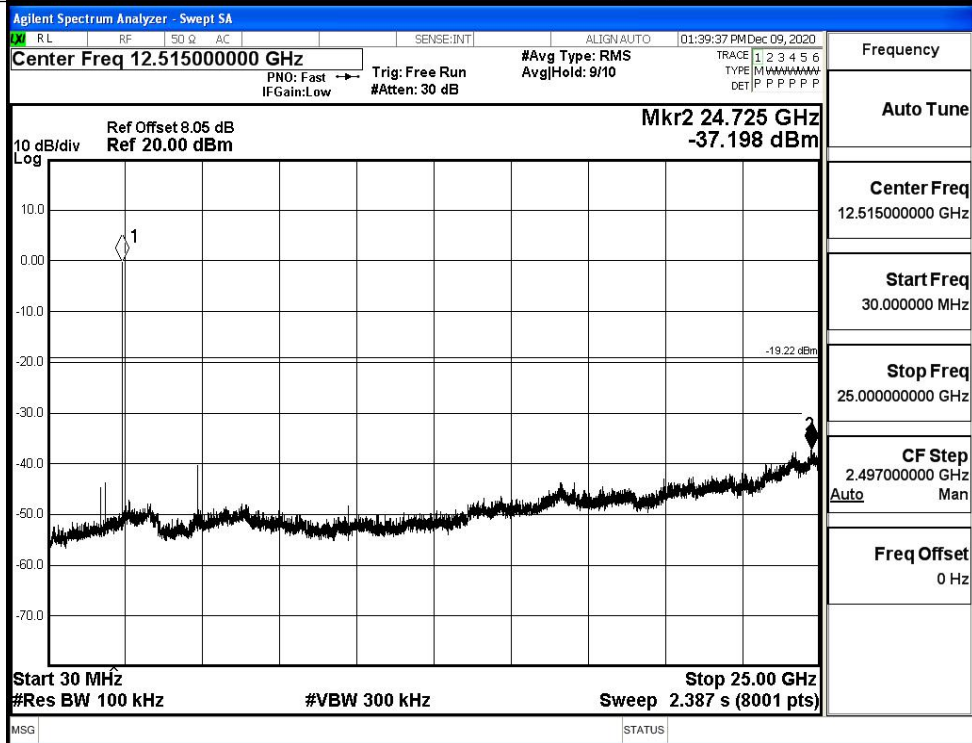


BT LE MCH Graphs

Pref/BT LE/MCH

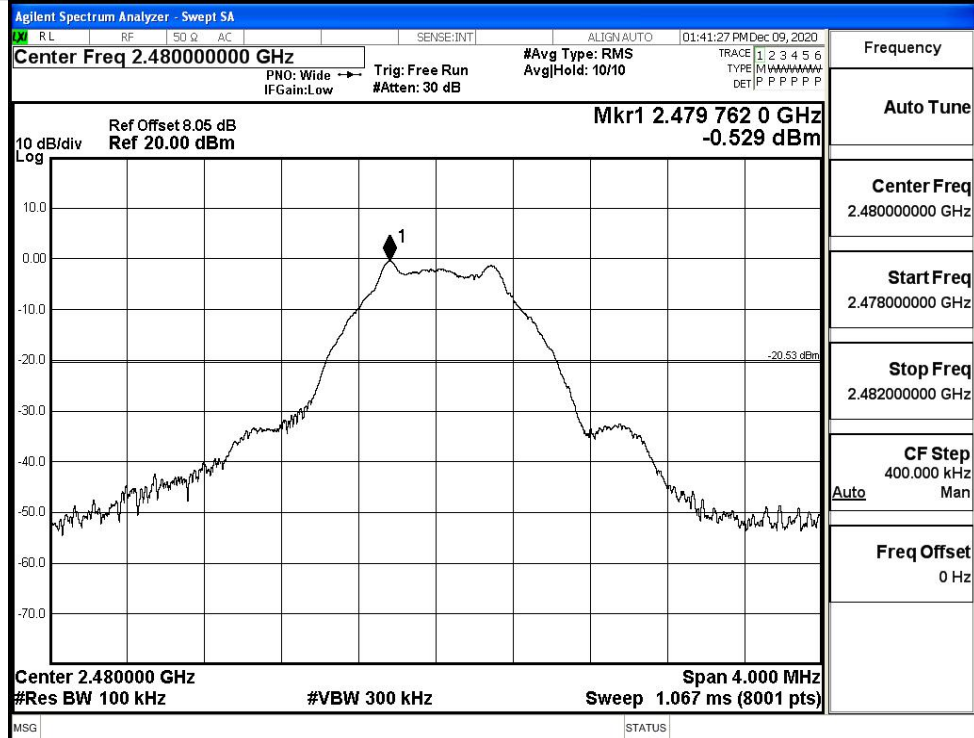


Puw/BT LE/MCH

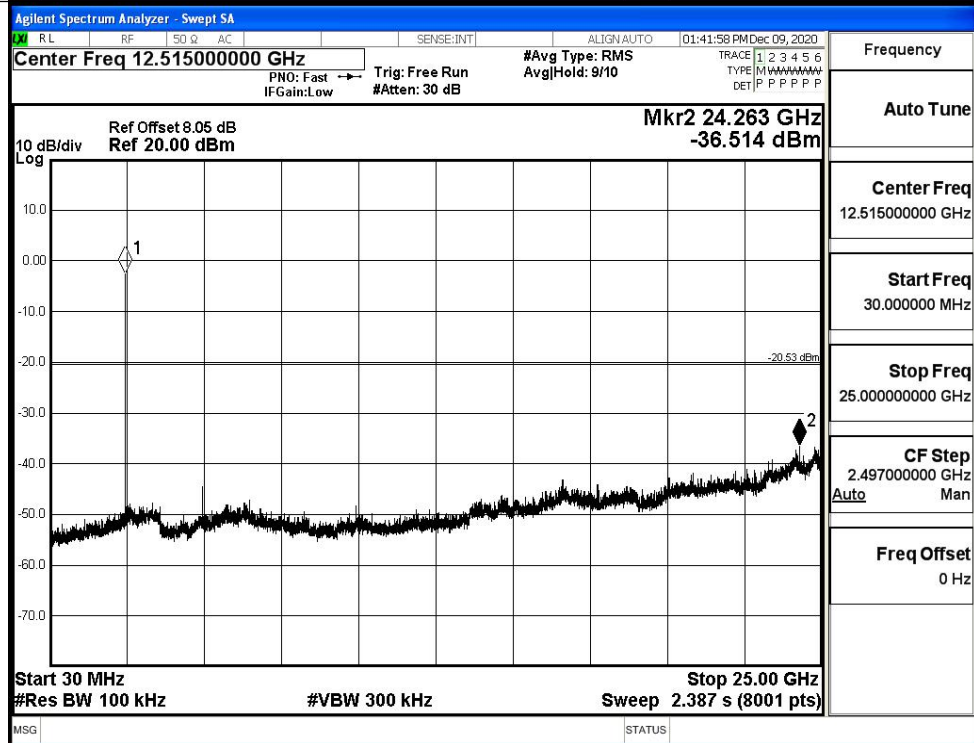


BT LE HCH Graphs

Pref/BT LE/HCH



Puw/BT LE/HCH



B.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	1.143	-47.458	-18.86	PASS
BT LE	HCH	-0.524	-49.444	-20.52	PASS

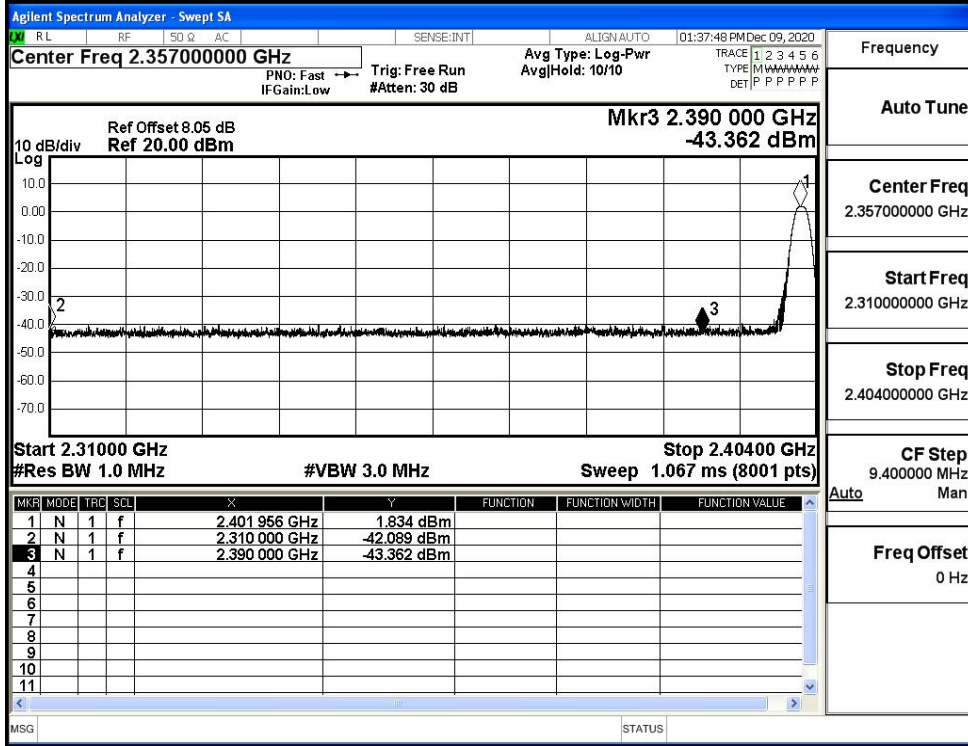
Test Graphs

LCH	<p>Agilent Spectrum Analyzer - Swept SA Center Freq 2.357000000 GHz Ref Offset 8.05 dB, Ref 20.00 dBm Mkr4 2.349 880 GHz -47.458 dBm Start 2.31000 GHz, Stop 2.40400 GHz #Res BW 100 kHz, #VBW 300 kHz, Sweep 9.067 ms (8001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</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>2.401 779 GHz</td><td>-1.143 dBm</td><td></td><td></td><td></td></tr> <tr><td>2</td><td>N</td><td>1</td><td>f</td><td>2.400 000 GHz</td><td>-50.322 dBm</td><td></td><td></td><td></td></tr> <tr><td>3</td><td>N</td><td>1</td><td>f</td><td>2.390 000 GHz</td><td>-53.303 dBm</td><td></td><td></td><td></td></tr> <tr><td>4</td><td>N</td><td>1</td><td>f</td><td>2.349 880 GHz</td><td>-47.458 dBm</td><td></td><td></td><td></td></tr> </tbody> </table>	MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	2.401 779 GHz	-1.143 dBm				2	N	1	f	2.400 000 GHz	-50.322 dBm				3	N	1	f	2.390 000 GHz	-53.303 dBm				4	N	1	f	2.349 880 GHz	-47.458 dBm				Frequency Auto Tune Center Freq 2.357000000 GHz Start Freq 2.310000000 GHz Stop Freq 2.404000000 GHz CF Step 9.400000 MHz Freq Offset 0 Hz
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HCH	<p>Agilent Spectrum Analyzer - Swept SA Center Freq 2.489000000 GHz Ref Offset 8.05 dB, Ref 20.00 dBm Mkr4 2.488 909 25 GHz -49.444 dBm Start 2.47800 GHz, Stop 2.50000 GHz #Res BW 100 kHz, #VBW 300 kHz, Sweep 2.133 ms (8001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</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>2.479 765 50 GHz</td><td>-0.524 dBm</td><td></td><td></td><td></td></tr> <tr><td>2</td><td>N</td><td>1</td><td>f</td><td>2.483 500 00 GHz</td><td>-53.254 dBm</td><td></td><td></td><td></td></tr> <tr><td>3</td><td>N</td><td>1</td><td>f</td><td>2.500 000 00 GHz</td><td>-53.073 dBm</td><td></td><td></td><td></td></tr> <tr><td>4</td><td>N</td><td>1</td><td>f</td><td>2.488 909 25 GHz</td><td>-49.444 dBm</td><td></td><td></td><td></td></tr> </tbody> </table>	MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	2.479 765 50 GHz	-0.524 dBm				2	N	1	f	2.483 500 00 GHz	-53.254 dBm				3	N	1	f	2.500 000 00 GHz	-53.073 dBm				4	N	1	f	2.488 909 25 GHz	-49.444 dBm				Frequency Auto Tune Center Freq 2.489000000 GHz Start Freq 2.478000000 GHz Stop Freq 2.500000000 GHz CF Step 2.200000 MHz Freq Offset 0 Hz
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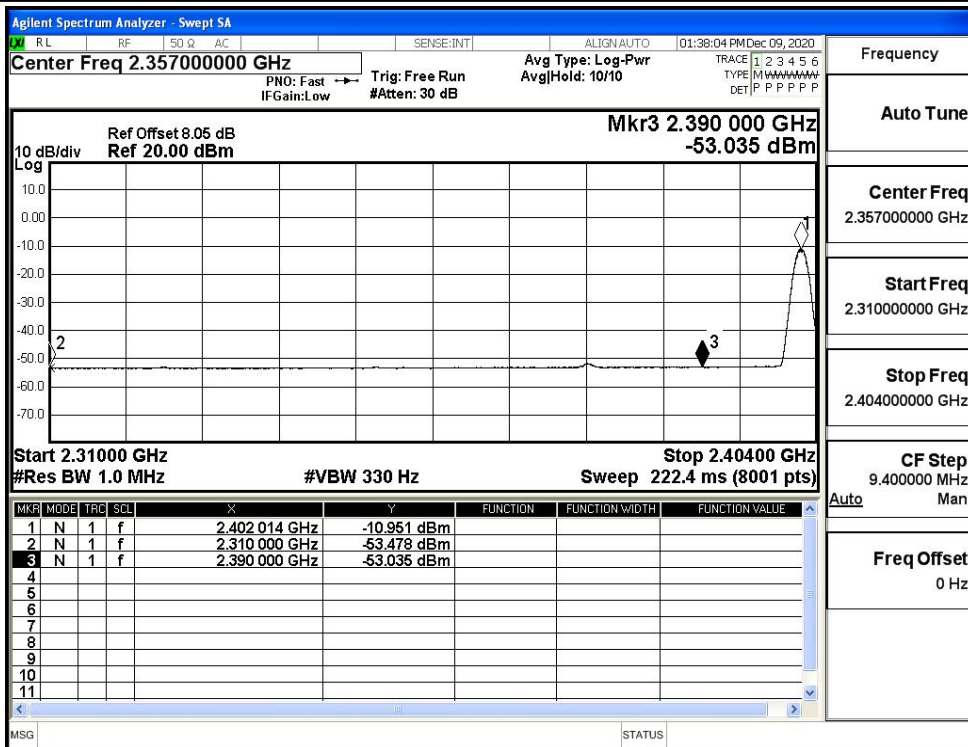
B.7 Restrict-band band-edge measurements

Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdi
BT LE	2402	Ant1	2310.0	-42.09	3.19	0	56.33	PEAK	74	PASS
		Ant1	2310.0	-53.48	3.19	0	44.94	AV	54	PASS
		Ant1	2390.0	-43.36	3.19	0	55.06	PEAK	74	PASS
		Ant1	2390.0	-53.04	3.19	0	45.38	AV	54	PASS
	2480	Ant1	2483.5	-40.64	3.19	0	57.78	PEAK	74	PASS
		Ant1	2483.5	-52.47	3.19	0	45.95	AV	54	PASS
		Ant1	2500.0	-42.60	3.19	0	55.82	PEAK	74	PASS
		Ant1	2500.0	-52.35	3.19	0	46.07	AV	54	PASS

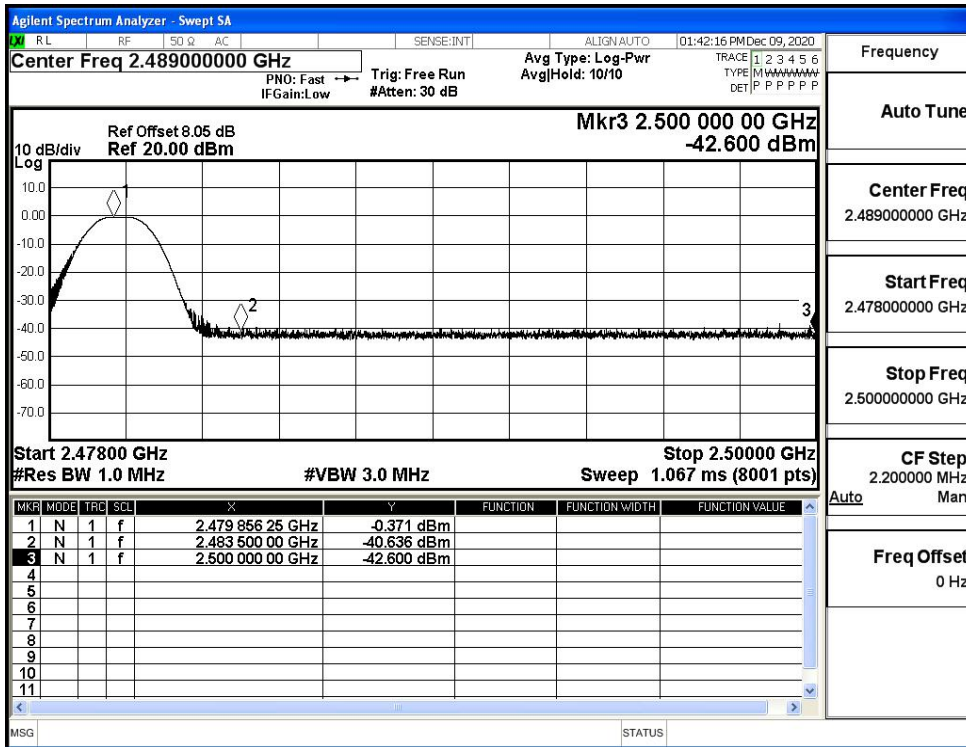
Restrict-band band-edge measurements_BT LE_2402_Ant1_PEAK



Restrict-band band-edge measurements_BT LE_2402_Ant1_AV



Restrict-band band-edge measurements_BT LE_2480_Ant1_PEAK



Restrict-band band-edge measurements_BT LE_2480_Ant1_AV

