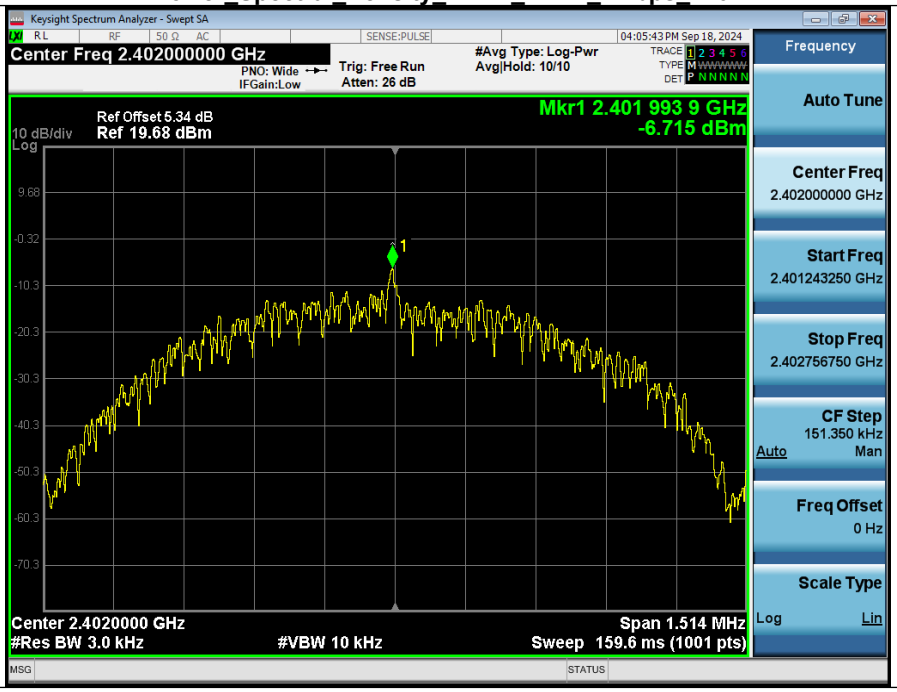
Appendix B: Test Results of Bluetooth LE

Appendix B.1: Test Results of Conducted Power Spectral Density

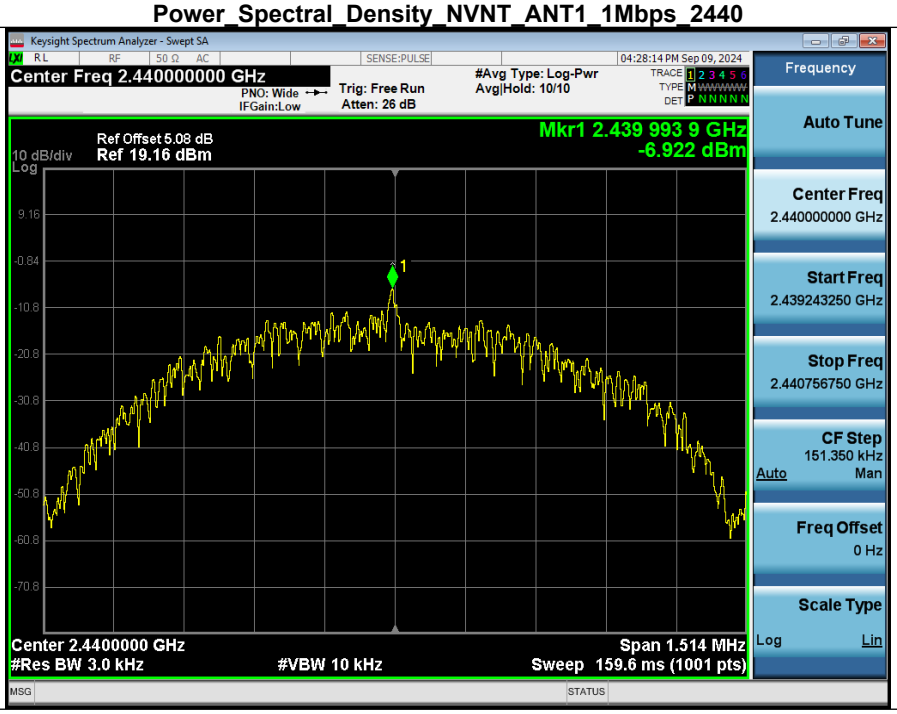
Bluetooth LE, 1Mbps

Condition	Antenna	Rate	Frequency (MHz)	Power Spectral Density (dBm)	Limit (dBm/3kHz)	Result
NVNT	ANT1	1Mbps	2402.00	-6.71	8	Pass
NVNT	ANT1	1Mbps	2440.00	-6.92	8	Pass
NVNT	ANT1	1Mbps	2480.00	-6.69	8	Pass

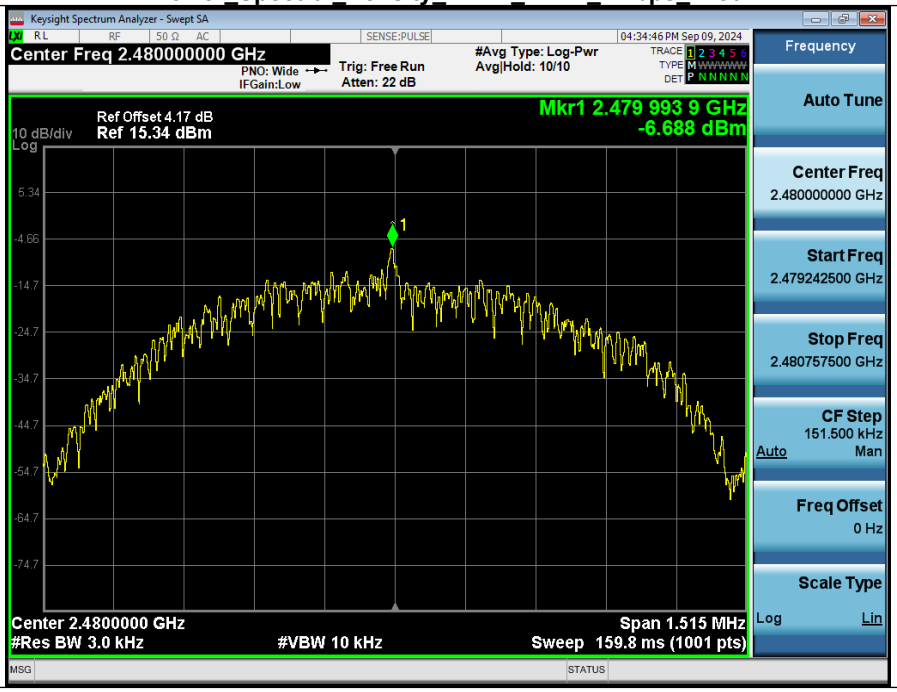
Power_Spectral_Density_NVNT_ANT1_1Mbps_2402



Power_Spectral_Density_NVNT_ANT1_1Mbps_2440



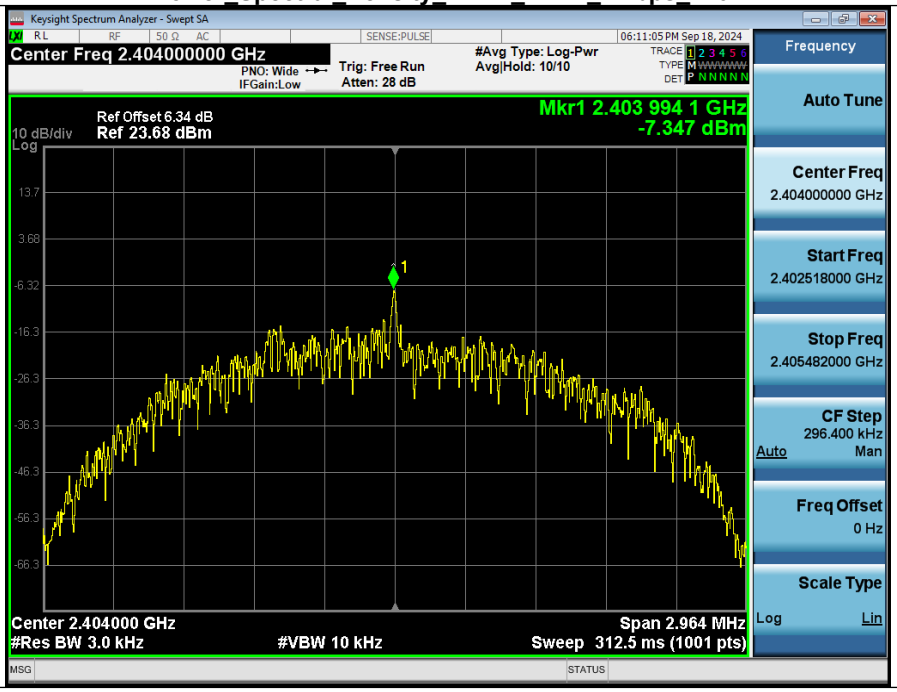
Power_Spectral_Density_NVNT_ANT1_1Mbps_2480



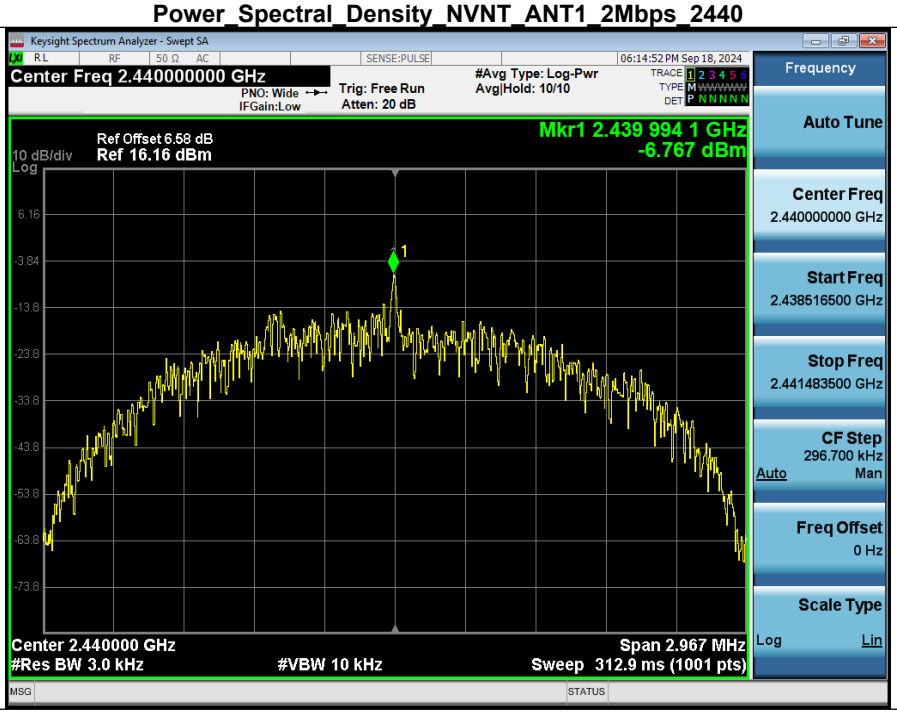
Bluetooth LE, 2Mbps

Condition	Antenna	Rate	Frequency (MHz)	Power Spectral Density (dBm)	Limit (dBm/3kHz)	Result
NVNT	ANT1	2Mbps	2404.00	-7.35	8	Pass
NVNT	ANT1	2Mbps	2440.00	-6.77	8	Pass
NVNT	ANT1	2Mbps	2478.00	-7.80	8	Pass

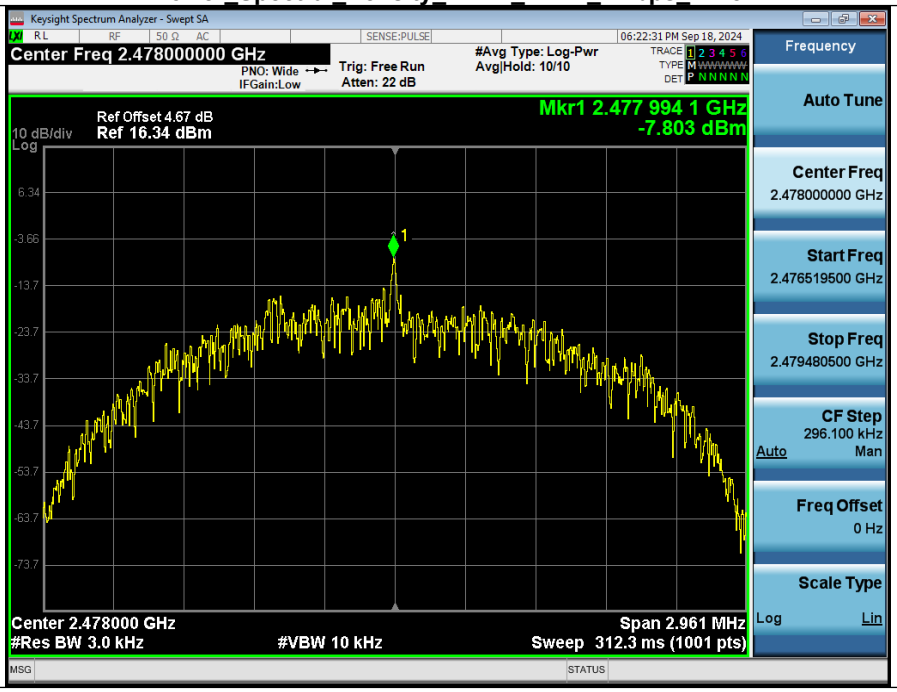
Power_Spectral_Density_NVNT_ANT1_2Mbps_2404



Power_Spectral_Density_NVNT_ANT1_2Mbps_2440



Power_Spectral_Density_NVNT_ANT1_2Mbps_2478

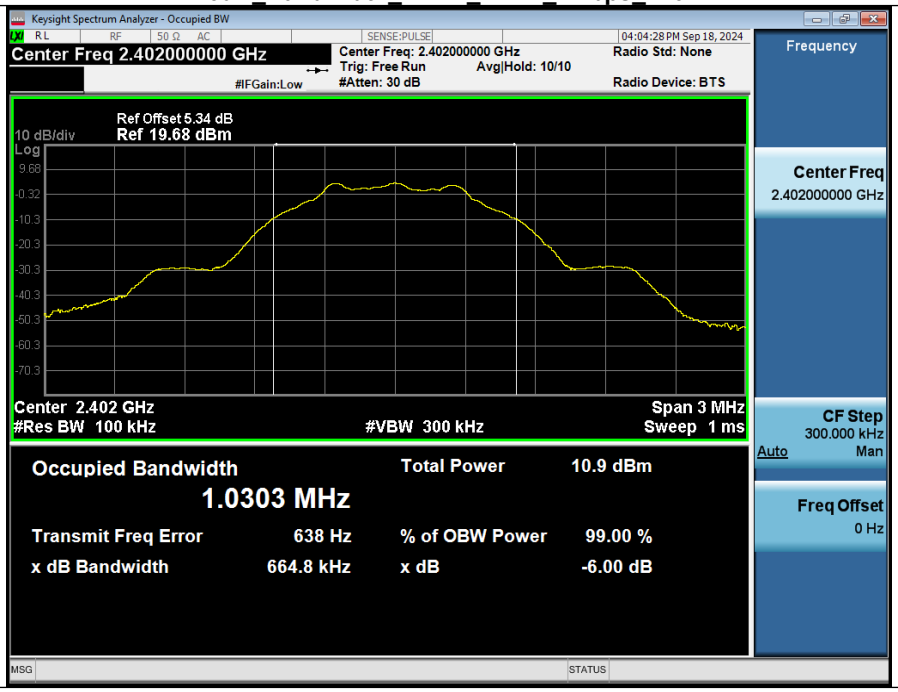


Appendix B.2: Test Results of 6dB Bandwidth

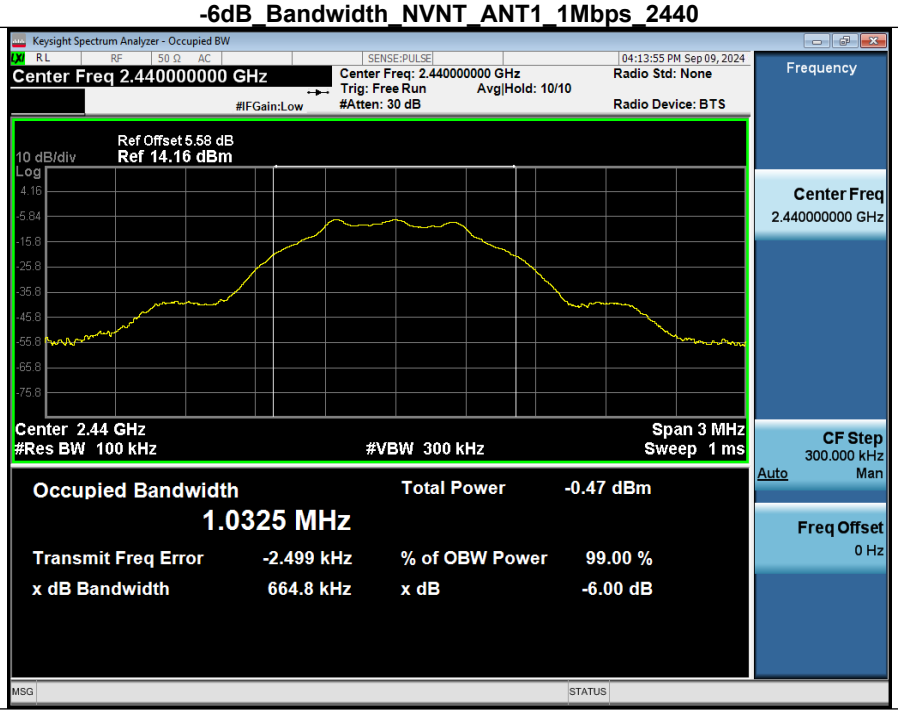
Bluetooth LE, 1Mbps

Condition	Antenna	Rate	Frequency (MHz)	-6dB BW (kHz)	Limit (kHz)	Result
NVNT	ANT1	1Mbps	2402.00	664.76	500	Pass
NVNT	ANT1	1Mbps	2440.00	664.82	500	Pass
NVNT	ANT1	1Mbps	2480.00	663.71	500	Pass

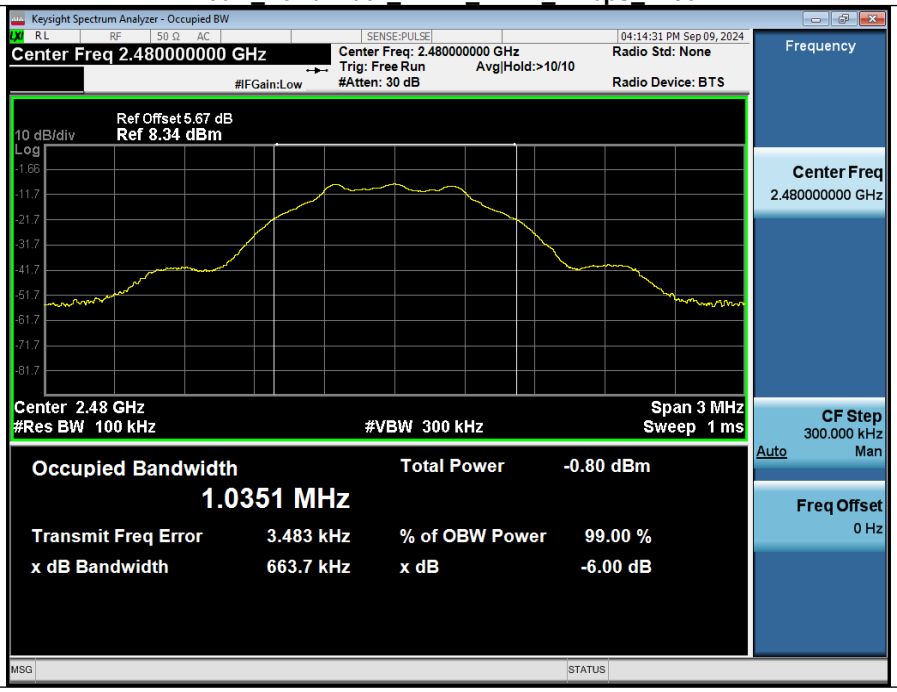
-6dB_Bandwidth_NVNT_ANT1_1Mbps_2402



-6dB_Bandwidth_NVNT_ANT1_1Mbps_2440



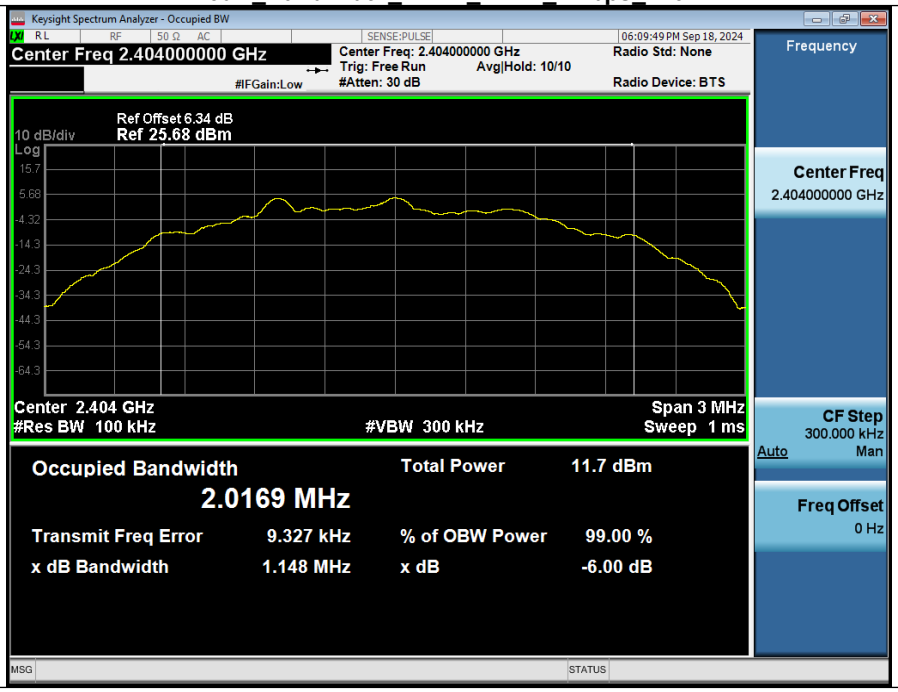
-6dB_Bandwidth_NVNT_ANT1_1Mbps_2480



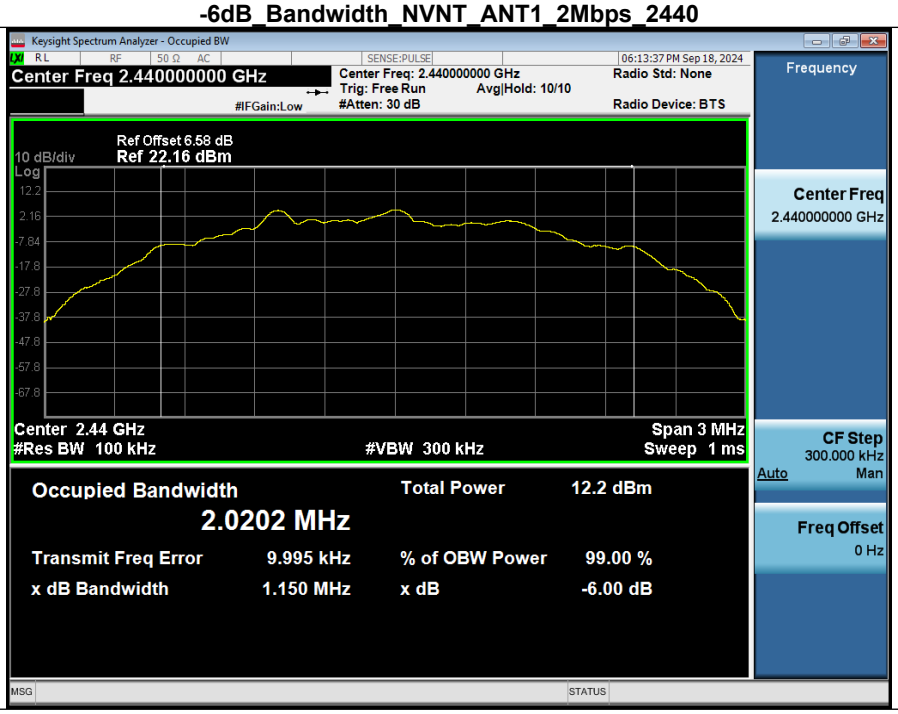
Bluetooth LE, 2Mbps

Condition	Antenna	Rate	Frequency (MHz)	-6dB BW (kHz)	Limit (kHz)	Result
NVNT	ANT1	2Mbps	2404.00	1148.23	500	Pass
NVNT	ANT1	2Mbps	2440.00	1149.71	500	Pass
NVNT	ANT1	2Mbps	2478.00	1147.68	500	Pass

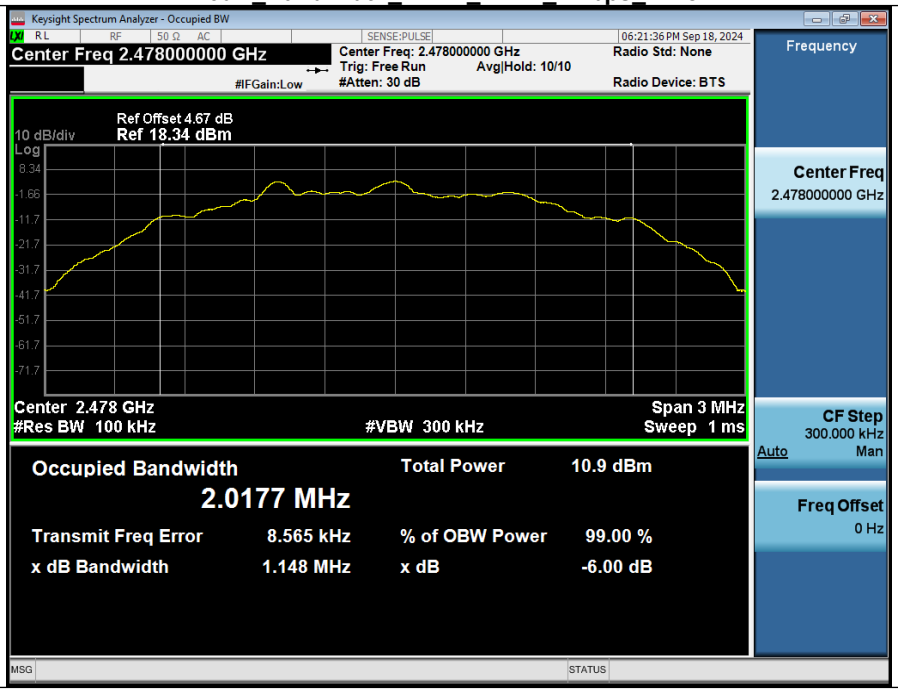
-6dB_Bandwidth_NVNT_ANT1_2Mbps_2404



-6dB_Bandwidth_NVNT_ANT1_2Mbps_2440



-6dB_Bandwidth_NVNT_ANT1_2Mbps_2478

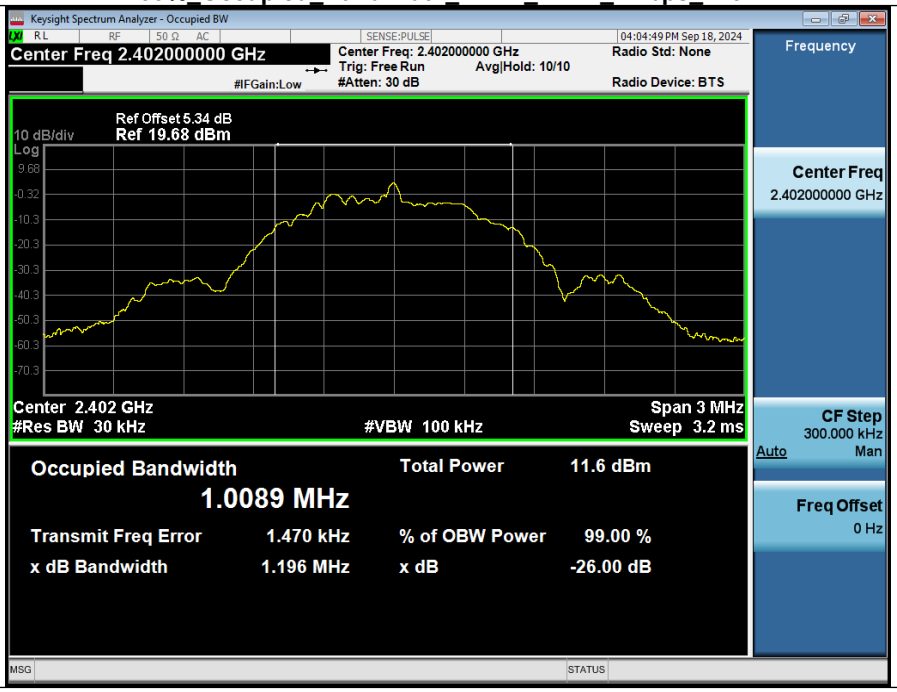


Appendix B.3: Test Results of 99% Bandwidth

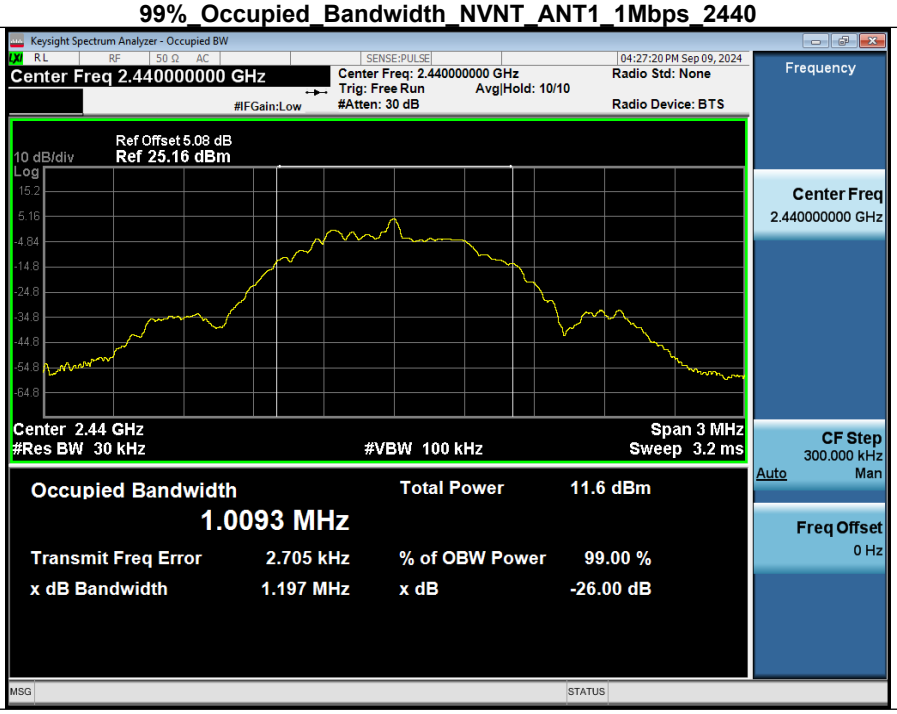
Bluetooth LE, 1Mbps

Condition	Antenna	Rate	Frequency (MHz)	99%%BW (MHz)
NVNT	ANT1	1Mbps	2402.00	1.009
NVNT	ANT1	1Mbps	2440.00	1.009
NVNT	ANT1	1Mbps	2480.00	1.010

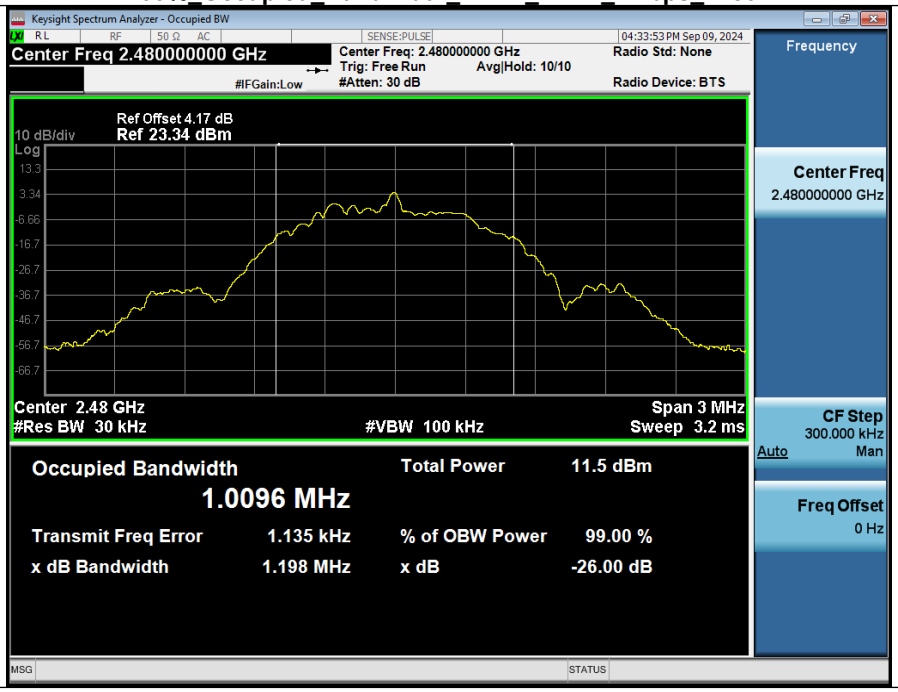
99%_Occupied_Bandwidth_NVNT_ANT1_1Mbps_2402



99%_Occupied_Bandwidth_NVNT_ANT1_1Mbps_2440



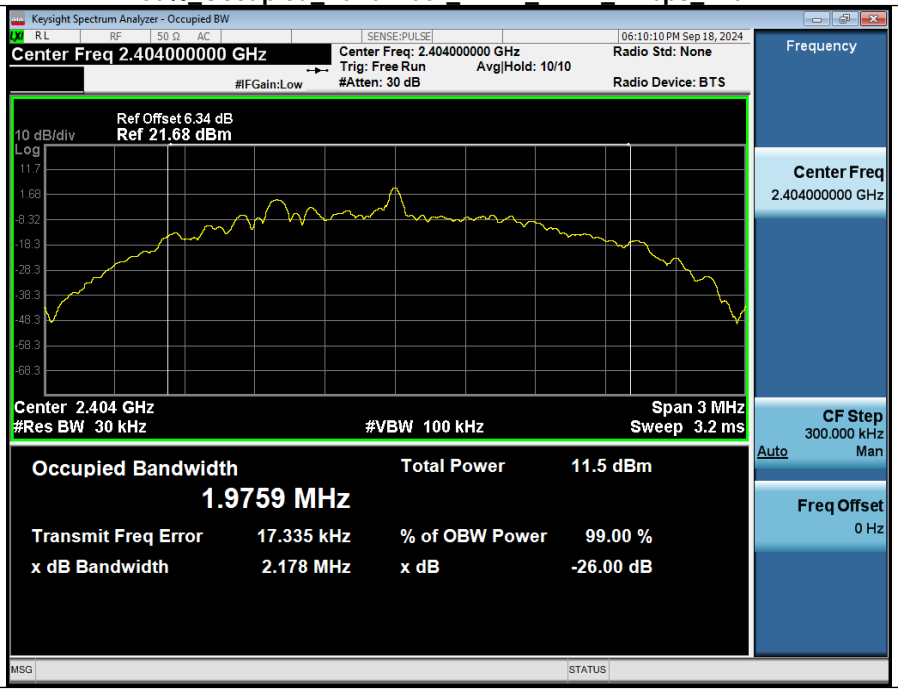
99%_Occupied_Bandwidth_NVNT_ANT1_1Mbps_2480



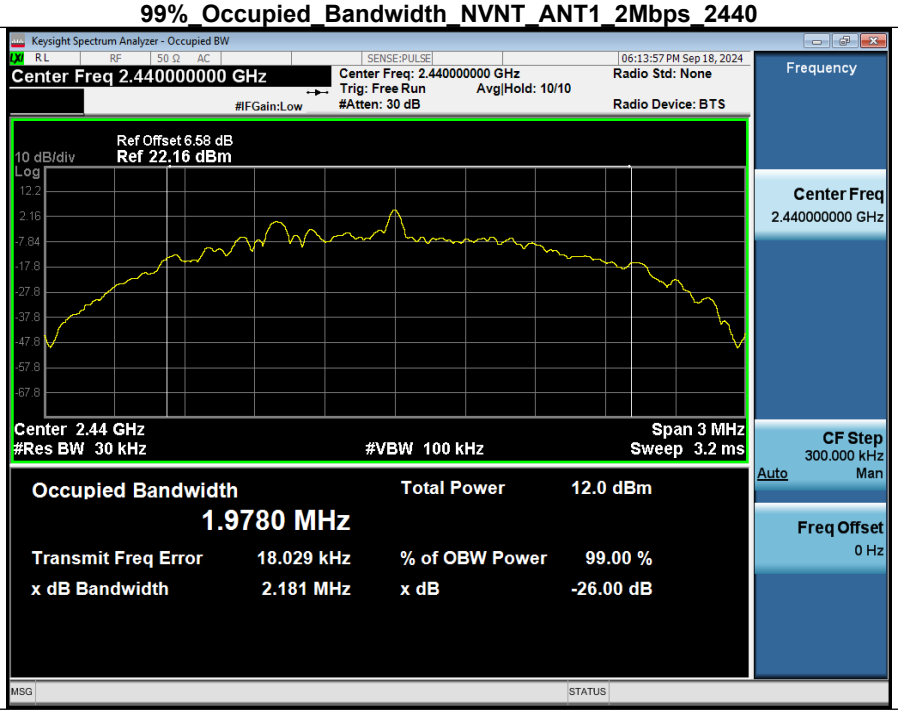
Bluetooth LE, 2Mbps

Condition	Antenna	Rate	Frequency (MHz)	99%%BW (MHz)
NVNT	ANT1	2Mbps	2404.00	1.976
NVNT	ANT1	2Mbps	2440.00	1.978
NVNT	ANT1	2Mbps	2478.00	1.974

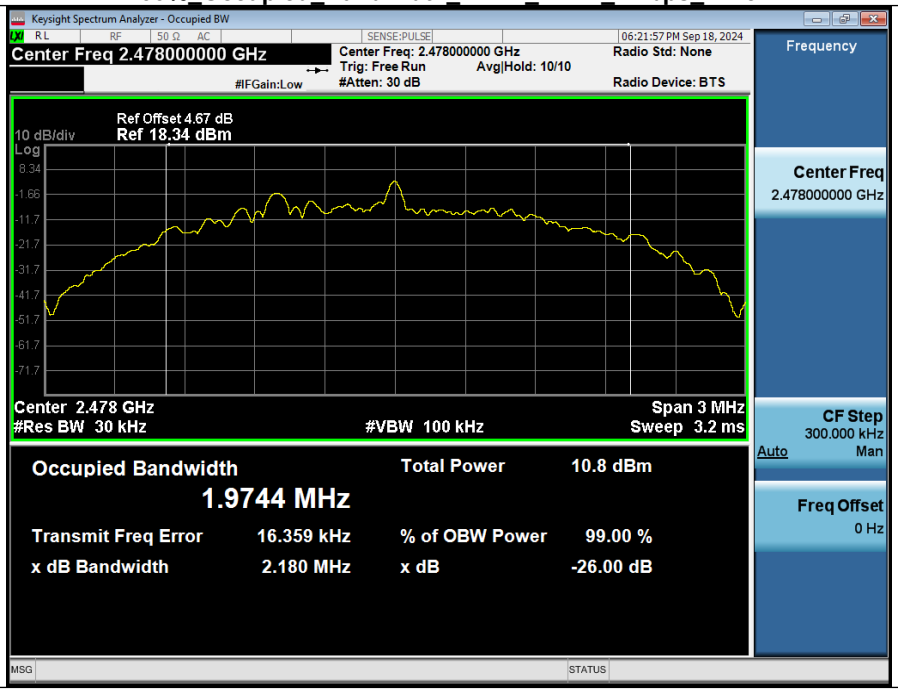
99%_Occupied_Bandwidth_NVNT_ANT1_2Mbps_2404



99%_Occupied_Bandwidth_NVNT_ANT1_2Mbps_2440



99%_Occupied_Bandwidth_NVNT_ANT1_2Mbps_2478



Appendix B.4: Test Results of Conducted Spurious Emissions Measured in 100 kHz Bandwidth

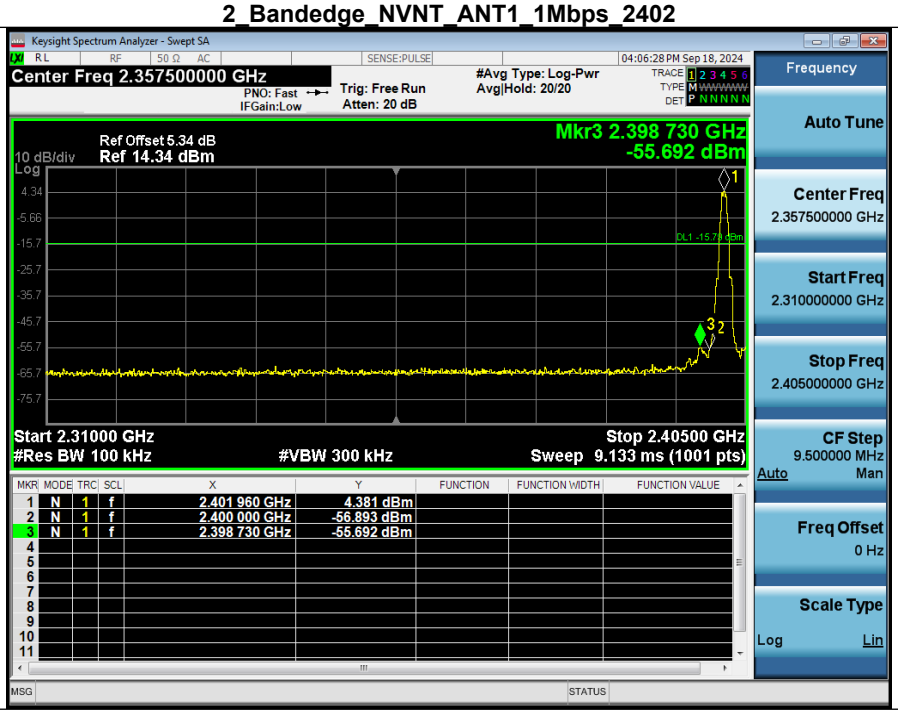
Bluetooth LE, 1Mbps

Band Edge

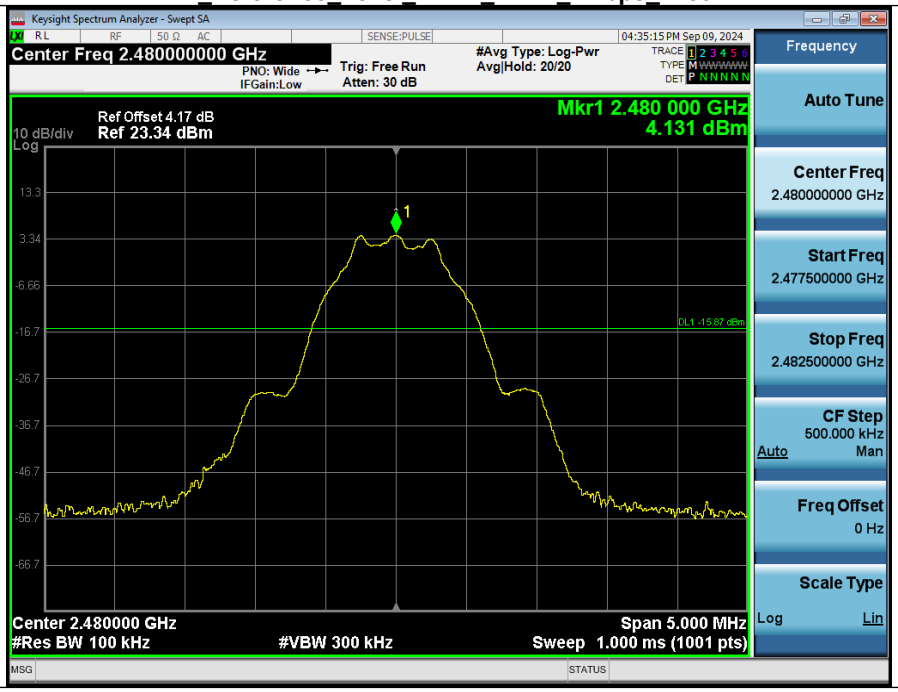
Condition	Antenna	Rate	TX_Frequency (MHz)	Max. Mark Frequency (MHz)	Spurious level (dBm)	Limit (dBm)	Result
NVNT	ANT1	1Mbps	2402.00	2398.730	-55.692	-15.789	Pass
NVNT	ANT1	1Mbps	2480.00	2483.525	-56.632	-15.869	Pass

1_Reference_Level_NVNT_ANT1_1Mbps_2402

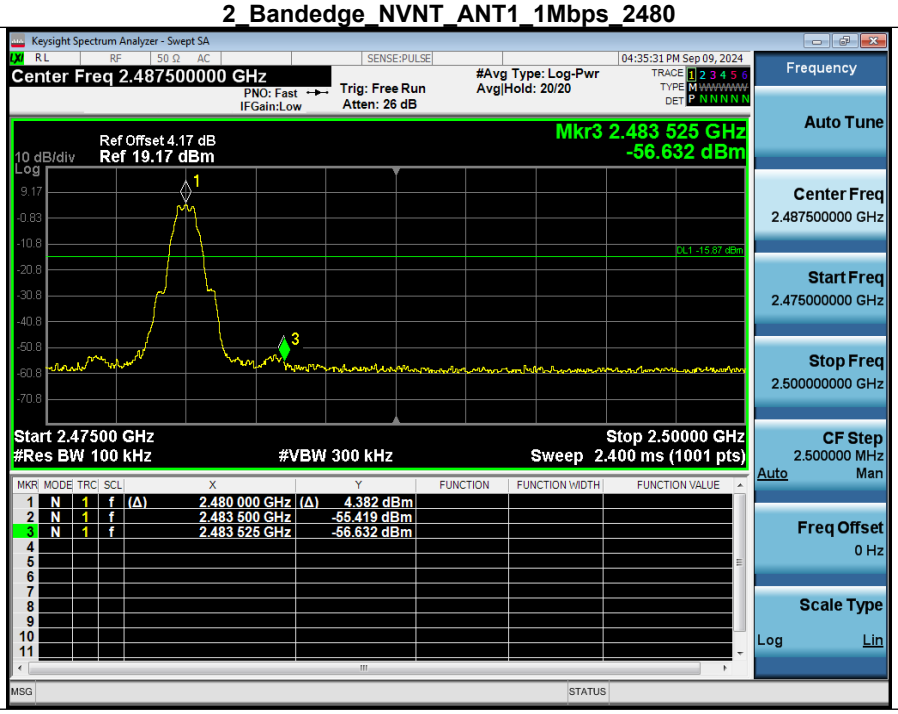
2_Bandedge_NVNT_ANT1_1Mbps_2402



1_Reference_Level_NVNT_ANT1_1Mbps_2480



2_Bandedge_NVNT_ANT1_1Mbps_2480

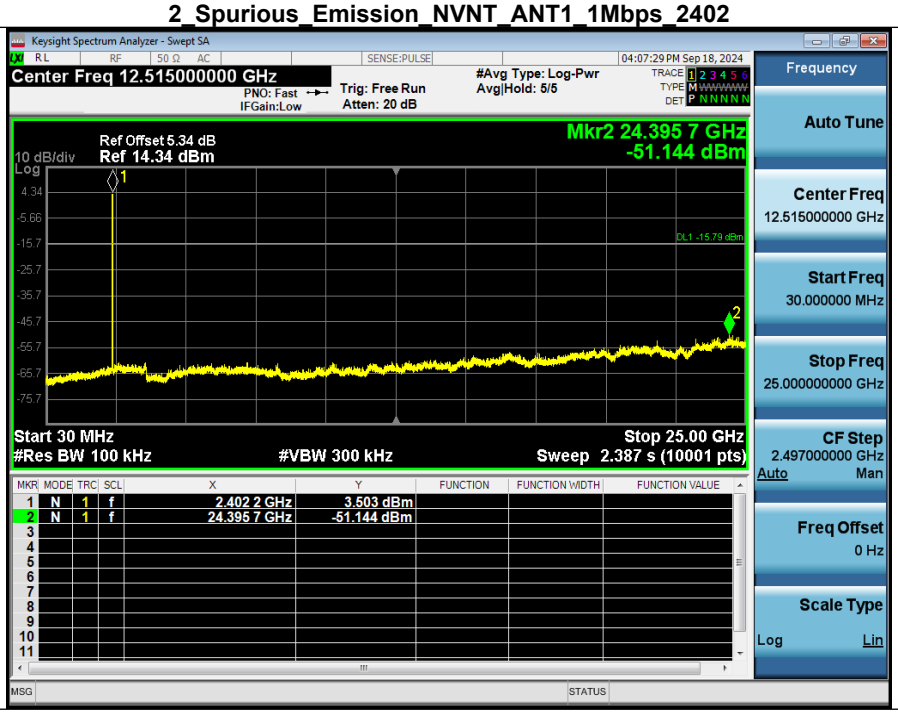


Conducted Spurious Emission

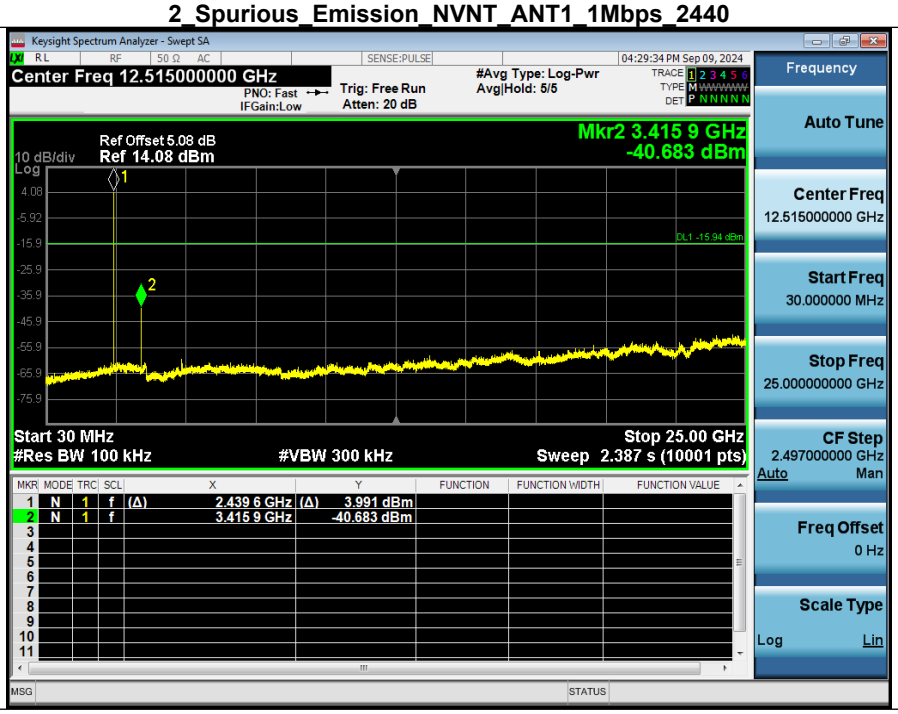
Condition	Antenna	Rate	TX_Frequency (MHz)	Spurious MAX.Value (dBm)	Limit	Result
NVNT	ANT1	1Mbps	2402.00	-51.144	-15.789	Pass
NVNT	ANT1	1Mbps	2440.00	-40.683	-15.937	Pass
NVNT	ANT1	1Mbps	2480.00	-46.142	-15.869	Pass

1_Reference_Level_NVNT_ANT1_1Mbps_2402

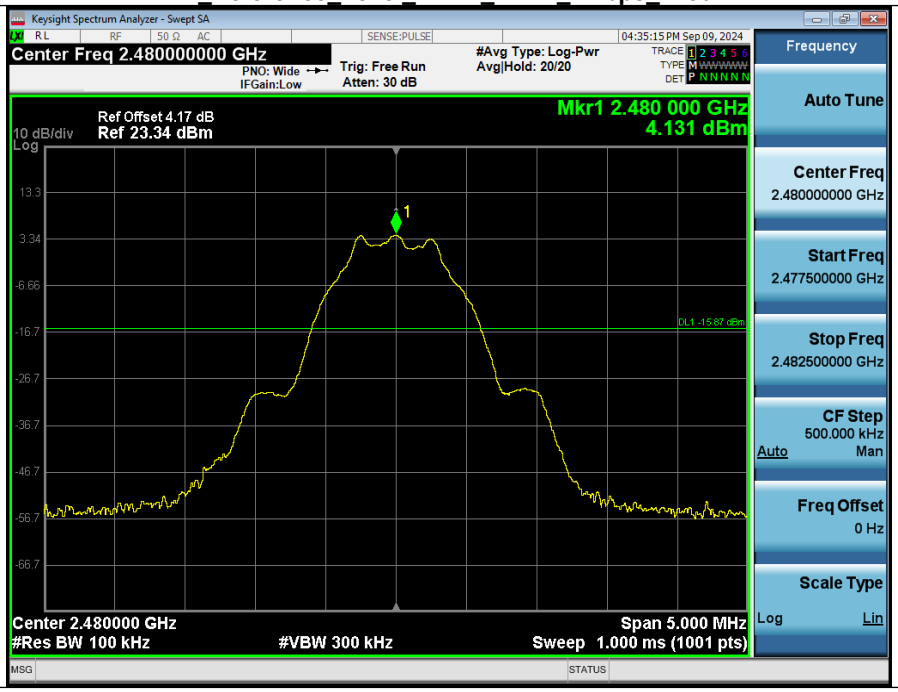
2_Spurious_Emission_NVNT_ANT1_1Mbps_2402



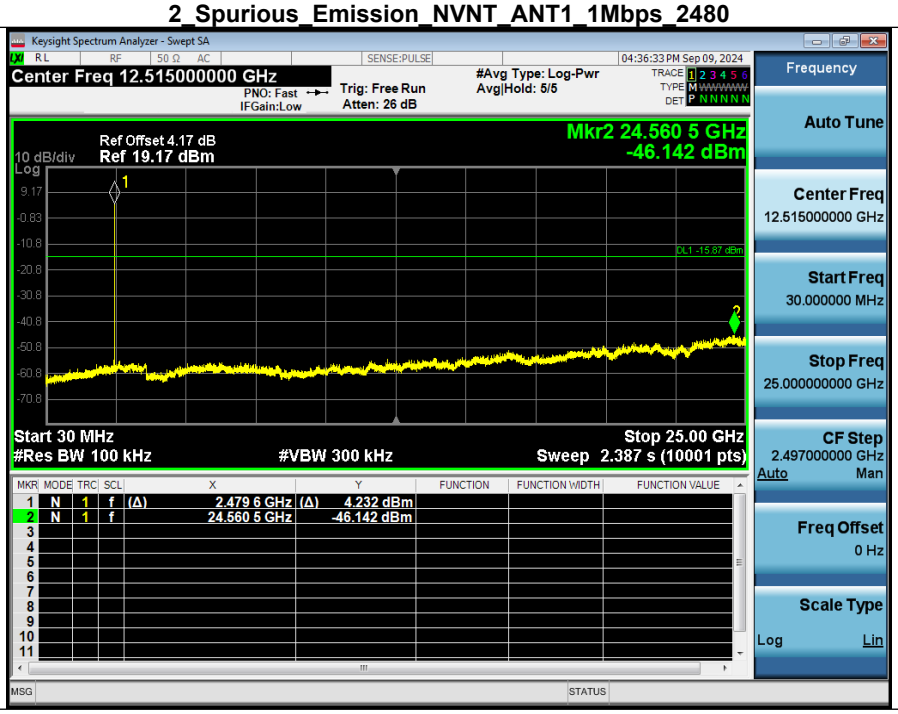
1_Reference_Level_NVNT_ANT1_1Mbps_2440


2_Spurious_Emission_NVNT_ANT1_1Mbps_2440


1_Reference_Level_NVNT_ANT1_1Mbps_2480



2_Spurious_Emission_NVNT_ANT1_1Mbps_2480



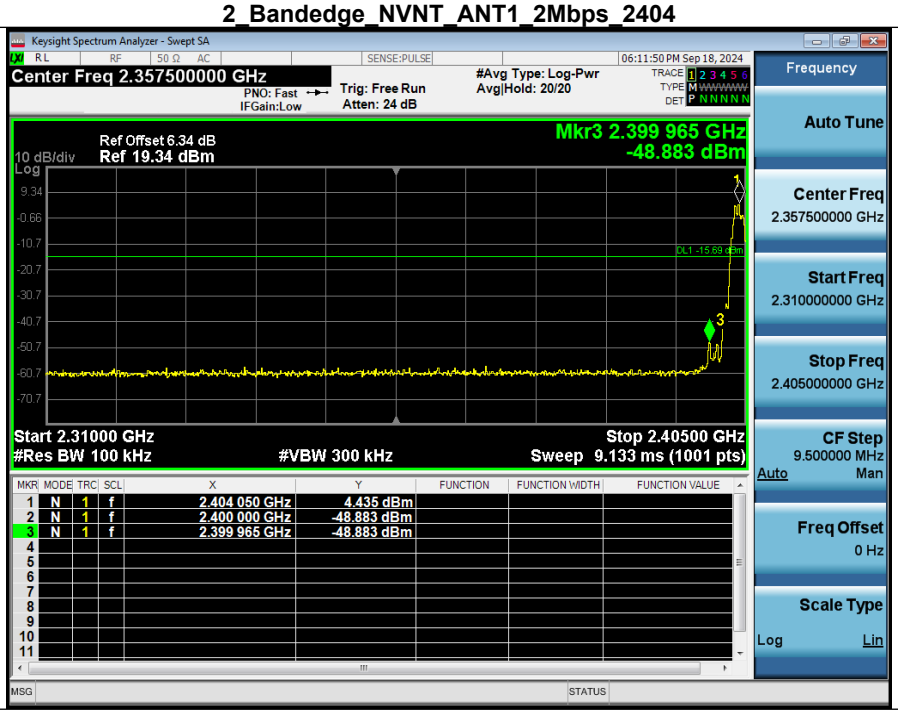
Bluetooth LE, 2Mbps

Band Edge

Condition	Antenna	Rate	TX_Frequency (MHz)	Max. Mark Frequency (MHz)	Spurious level (dBm)	Limit (dBm)	Result
NVNT	ANT1	2Mbps	2404.00	2399.965	-48.883	-15.694	Pass
NVNT	ANT1	2Mbps	2478.00	2483.700	-62.216	-16.374	Pass

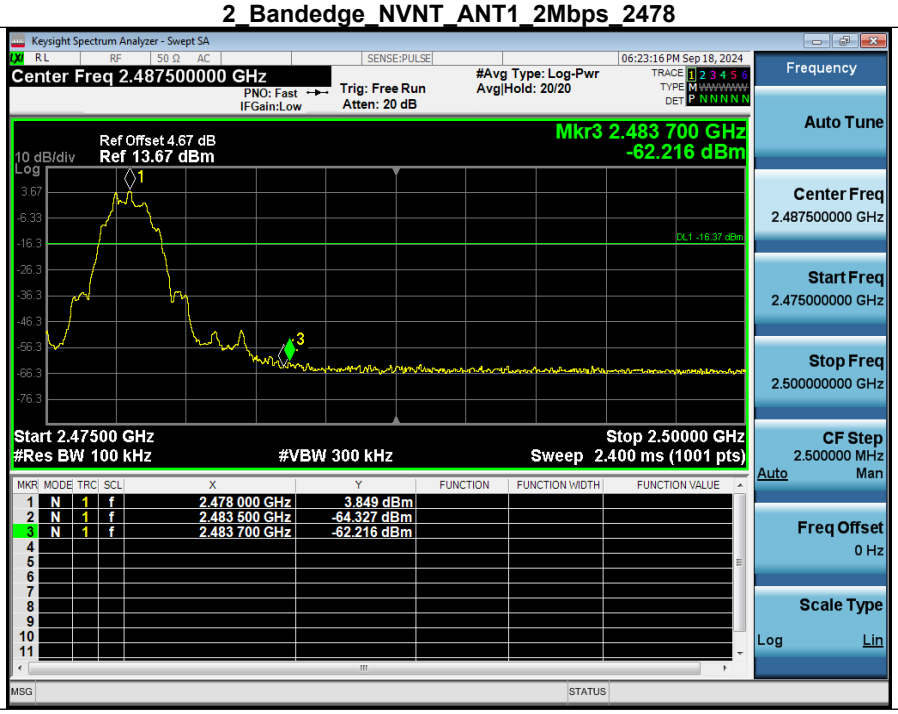
1_Reference_Level_NVNT_ANT1_2Mbps_2404

2_Bandedge_NVNT_ANT1_2Mbps_2404



1_Reference_Level_NVNT_ANT1_2Mbps_2478

2_Bandedge_NVNT_ANT1_2Mbps_2478

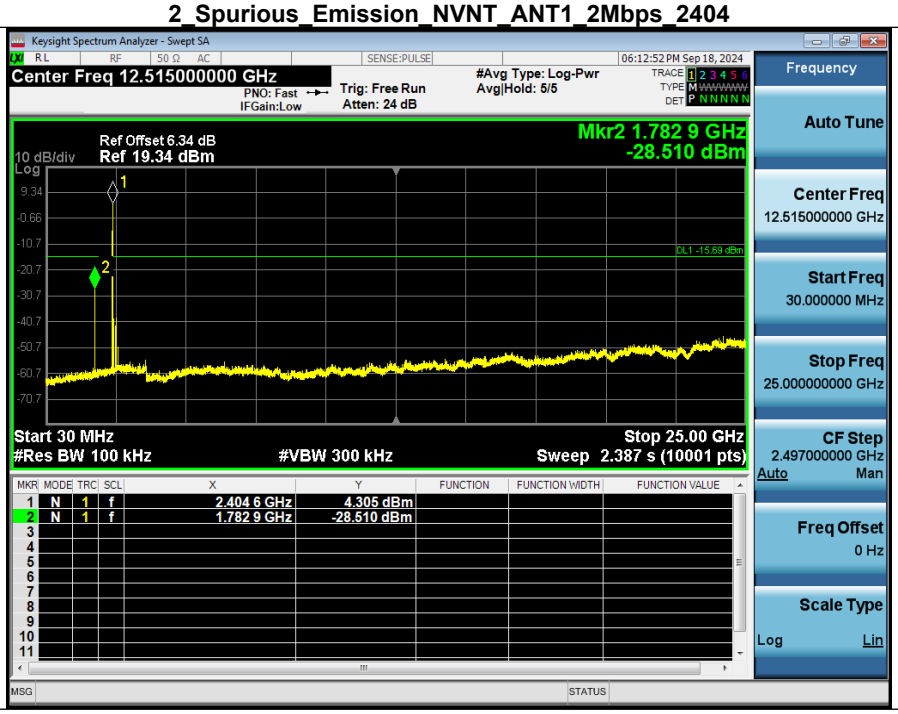


Conducted Spurious Emission

Condition	Antenna	Rate	TX_Frequency (MHz)	Spurious MAX.Value (dBm)	Limit	Result
NVNT	ANT1	2Mbps	2404.00	-28.510	-15.694	Pass
NVNT	ANT1	2Mbps	2440.00	-50.388	-15.174	Pass
NVNT	ANT1	2Mbps	2478.00	-51.510	-16.374	Pass

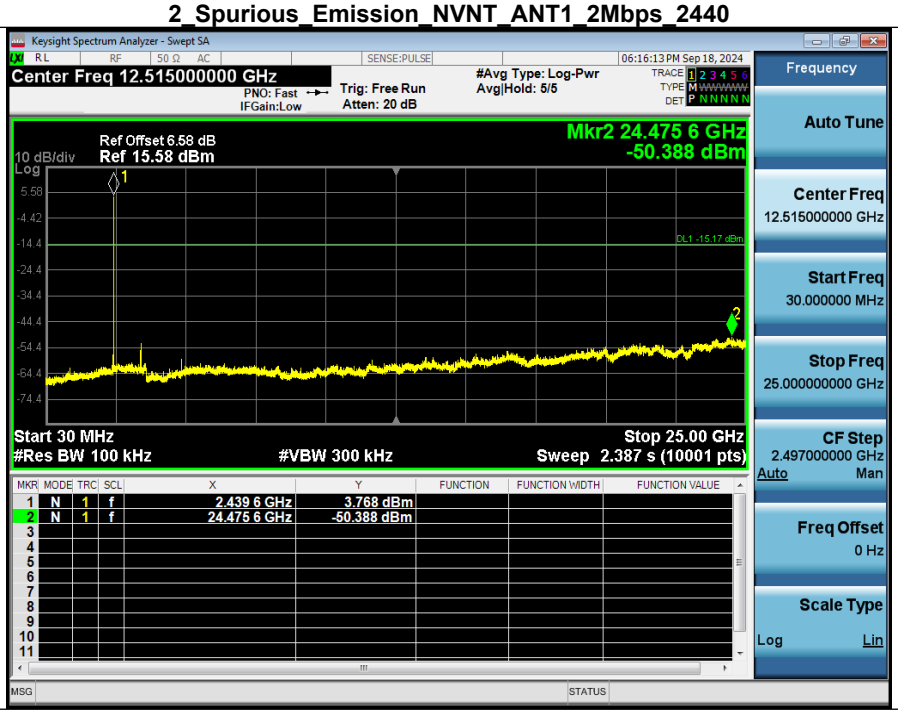
1_Reference_Level_NVNT_ANT1_2Mbps_2404

2_Spurious_Emission_NVNT_ANT1_2Mbps_2404



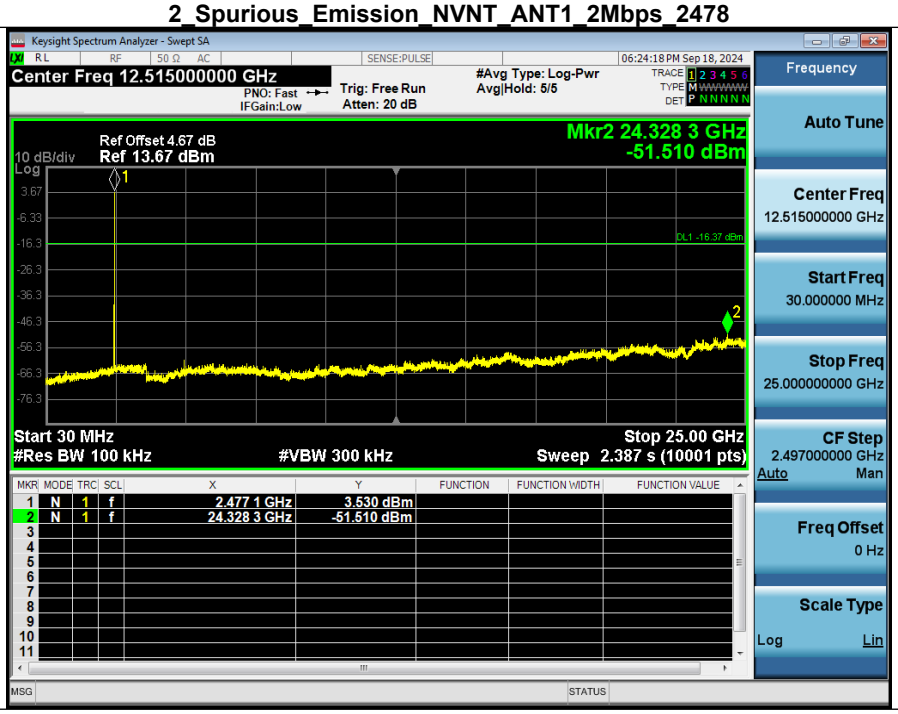
1_Reference_Level_NVNT_ANT1_2Mbps_2440

2_Spurious_Emission_NVNT_ANT1_2Mbps_2440



1_Reference_Level_NVNT_ANT1_2Mbps_2478

2_Spurious_Emission_NVNT_ANT1_2Mbps_2478



Appendix B.5: Test Results of Radiated Spurious Emissions

Note:
1) This testing was carried out on different modulations, but only the worst case was presented in this report.
2) Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and 18GHz - 26.5GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported.

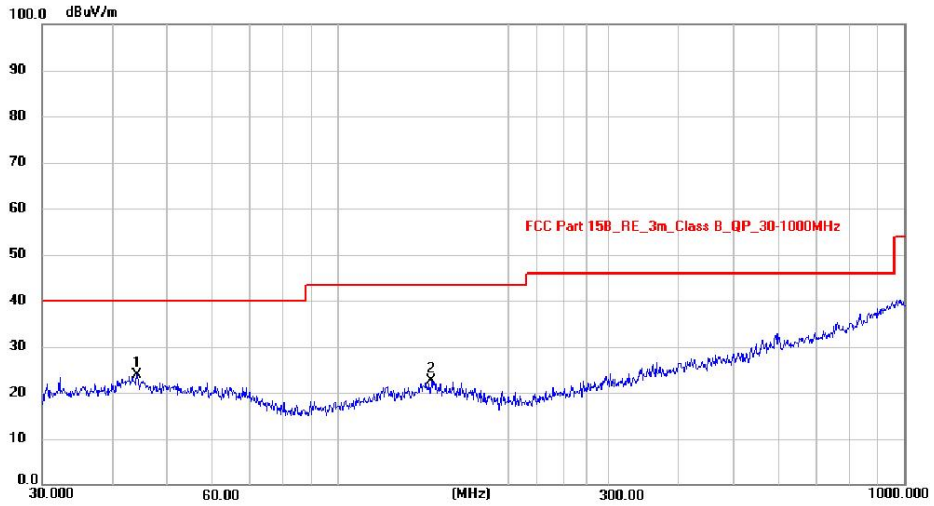
30 MHz - 1GHz

Shenzhen PSI Testing Co., Ltd.
1-2F, Building 5, Yudafu Industrial Park, No. 10, Xingye West Road,
Shajing Street, Bao'an District, Shenzhen, Guangdong, China 518104

Test Site: PSI EMC Lab-3m Chamber	Polarization: ***Horizontal***	Temperature: 26 ℃
EUT: RIC Behind-the-ear Hearing Aids	Distance: 3m	Humidity: 54 %RH
M/N: ZTQ01ZT	Test Engineer: Felix Pang	
Test Mode: 1M 2402MHz		
Test Voltage: DC 3.7V		
Note:		

Radiated Emission Measurement

Test Date: 2024/10/10 11:50:29



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1 *	44.1202	9.48	14.39	23.87	40.00	-16.13	peak	200	213	P	
2	145.8611	8.70	14.03	22.73	43.50	-20.77	peak	200	177	P	

Note: *:Maximum data x:Over limit !:over margin Level = Reading + Factor Margin = Level - Limit

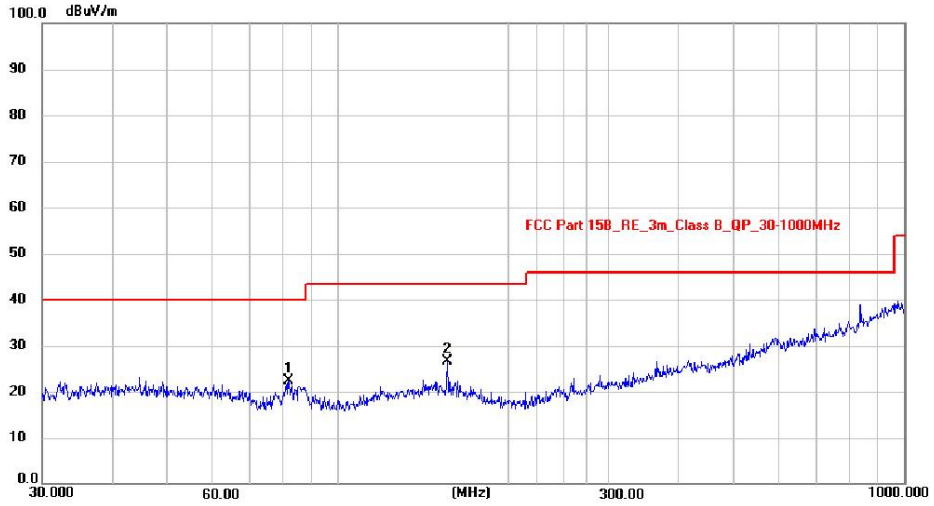
File: BLE TX 30-1000M\Data :#1 *Page: 1* Engineer Signature:

Shenzhen PSI Testing Co., Ltd.
1-2F, Building 5, Yudafu Industrial Park, No. 10, Xingye West Road,
Shajing Street, Bao'an District, Shenzhen, Guangdong, China 518104

Test Site: PSI EMC Lab-3m Chamber	Polarization: ***Vertical***	Temperature: 26 ℃
EUT: RIC Behind-the-ear Hearing Aids	Distance: 3m	Humidity: 54 %RH
M/N: ZTQ01ZT	Test Engineer: Felix Pang	
Test Mode: 1M 2402MHz		
Test Voltage: DC 3.7V		
Note:		

Radiated Emission Measurement

Test Date: 2024/10/10 11:54:06



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	81.7833	12.99	9.51	22.50	40.00	-17.50	peak	100	150	P	
2 *	155.9101	12.37	14.26	26.63	43.50	-16.87	peak	100	235	P	

Note: *:Maximum data x:Over limit !:over margin Level = Reading + Factor Margin = Level - Limit

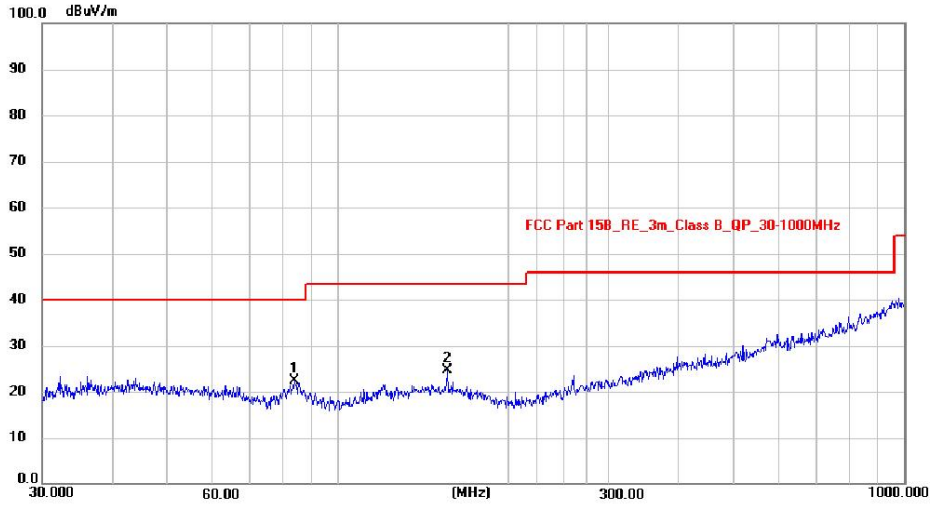
File: BLE TX 30-1000M\Data :#2 *Page: 1* Engineer Signature:

Shenzhen PSI Testing Co., Ltd.
1-2F, Building 5, Yudafu Industrial Park, No. 10, Xingye West Road,
Shajing Street, Bao'an District, Shenzhen, Guangdong, China 518104

Test Site: PSI EMC Lab-3m Chamber	Polarization: ***Vertical***	Temperature: 26 ℃
EUT: RIC Behind-the-ear Hearing Aids	Distance: 3m	Humidity: 54 %RH
M/N: ZTQ01ZT	Test Engineer: Felix Pang	
Test Mode: 1M 2440MHz		
Test Voltage: DC 3.7V		
Note:		

Radiated Emission Measurement

Test Date: 2024/10/10 12:02:52



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1 *	83.5222	12.88	9.55	22.43	40.00	-17.57	peak	100	154	P	
2	155.9101	10.33	14.26	24.59	43.50	-18.91	peak	100	237	P	

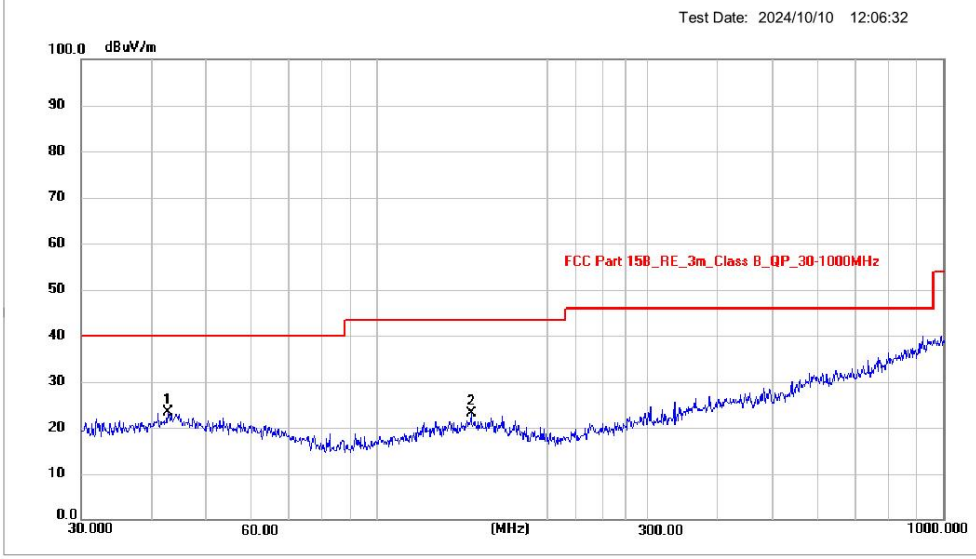
Note: *:Maximum data x:Over limit !:over margin Level = Reading + Factor Margin = Level - Limit

File: BLE TX 30-1000M\Data :#3 *Page: 1* Engineer Signature:

Shenzhen PSI Testing Co., Ltd.
1-2F, Building 5, Yudafu Industrial Park, No. 10, Xingye West Road,
Shajing Street, Bao'an District, Shenzhen, Guangdong, China 518104

Test Site: PSI EMC Lab-3m Chamber	Polarization: ***Horizontal***	Temperature: 26 ℃
EUT: RIC Behind-the-ear Hearing Aids	Distance: 3m	Humidity: 54 %RH
M/N: ZTQ01ZT	Test Engineer: Felix Pang	
Test Mode: 1M 2440MHz		
Test Voltage: DC 3.7V		
Note:		

Radiated Emission Measurement



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1 *	42.6000	8.98	14.46	23.44	40.00	-16.56	peak	200	156	P	
2	146.3735	9.08	14.05	23.13	43.50	-20.37	peak	200	237	P	

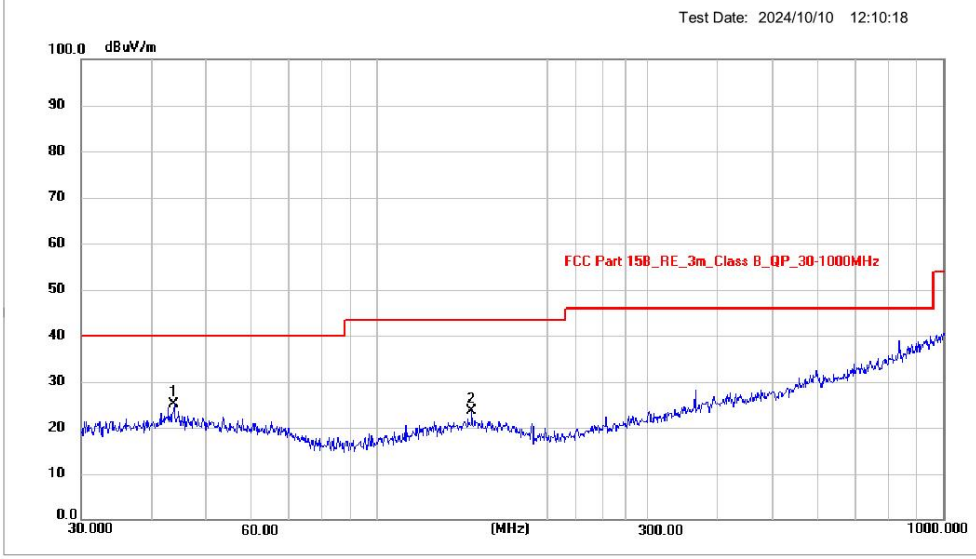
Note: *:Maximum data x:Over limit !:over margin Level = Reading + Factor Margin = Level - Limit

File: BLE TX 30-1000M\Data :#4 *Page: 1* Engineer Signature:

Shenzhen PSI Testing Co., Ltd.
1-2F, Building 5, Yudafu Industrial Park, No. 10, Xingye West Road,
Shajing Street, Bao'an District, Shenzhen, Guangdong, China 518104

Test Site: PSI EMC Lab-3m Chamber	Polarization: ***Horizontal***	Temperature: 26 ℃
EUT: RIC Behind-the-ear Hearing Aids	Distance: 3m	Humidity: 54 %RH
M/N: ZTQ01ZT	Test Engineer: Felix Pang	
Test Mode: 1M 2480MHz		
Test Voltage: DC 3.7V		
Note:		

Radiated Emission Measurement



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1 *	43.8119	10.77	14.41	25.18	40.00	-14.82	peak	200	282	P	
2	146.8877	9.69	14.06	23.75	43.50	-19.75	peak	200	197	P	

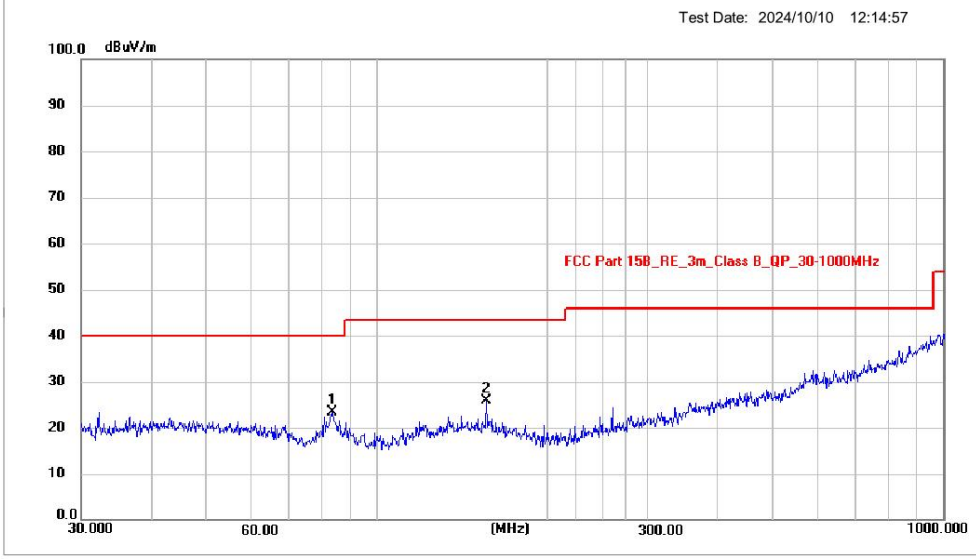
Note: *:Maximum data x:Over limit !:over margin Level = Reading + Factor Margin = Level - Limit

File: BLE TX 30-1000M\Data :#5 *Page: 1* Engineer Signature:

Shenzhen PSI Testing Co., Ltd.
1-2F, Building 5, Yudafu Industrial Park, No. 10, Xingye West Road,
Shajing Street, Bao'an District, Shenzhen, Guangdong, China 518104

Test Site: PSI EMC Lab-3m Chamber	Polarization: ***Vertical***	Temperature: 26 ℃
EUT: RIC Behind-the-ear Hearing Aids	Distance: 3m	Humidity: 54 %RH
M/N: ZTQ01ZT	Test Engineer: Felix Pang	
Test Mode: 1M 2480MHz		
Test Voltage: DC 3.7V		
Note:		

Radiated Emission Measurement



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1 *	83.2298	13.82	9.54	23.36	40.00	-16.64	peak	100	254	P	
2	155.9101	11.56	14.26	25.82	43.50	-17.68	peak	100	172	P	

Note: *:Maximum data x:Over limit !:over margin Level = Reading + Factor Margin = Level - Limit

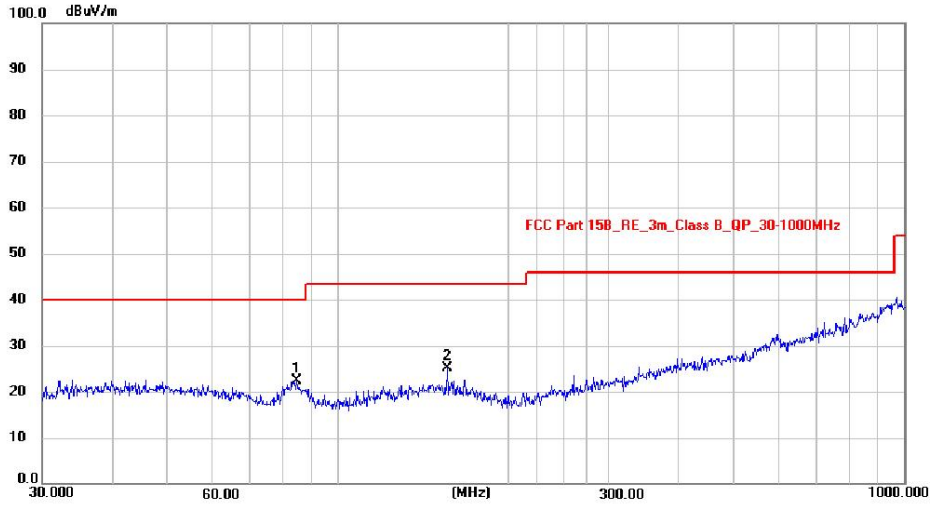
File: BLE TX 30-1000M\Data :#6 *Page: 1* Engineer Signature:

Shenzhen PSI Testing Co., Ltd.
1-2F, Building 5, Yudafu Industrial Park, No. 10, Xingye West Road,
Shajing Street, Bao'an District, Shenzhen, Guangdong, China 518104

Test Site: PSI EMC Lab-3m Chamber	Polarization: ***Vertical***	Temperature: 26 ℃
EUT: RIC Behind-the-ear Hearing Aids	Distance: 3m	Humidity: 54 %RH
M/N: ZTQ01ZT	Test Engineer: Felix Pang	
Test Mode: 2M 2404MHz		
Test Voltage: DC 3.7V		
Note:		

Radiated Emission Measurement

Test Date: 2024/10/10 12:18:42



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1 *	84.4054	12.82	9.58	22.40	40.00	-17.60	peak	100	267	P	
2	155.9101	10.93	14.26	25.19	43.50	-18.31	peak	100	231	P	

Note: *:Maximum data x:Over limit !:over margin Level = Reading + Factor Margin = Level - Limit

File: BLE TX 30-1000M\Data :#7 *Page: 1* Engineer Signature: