7.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details

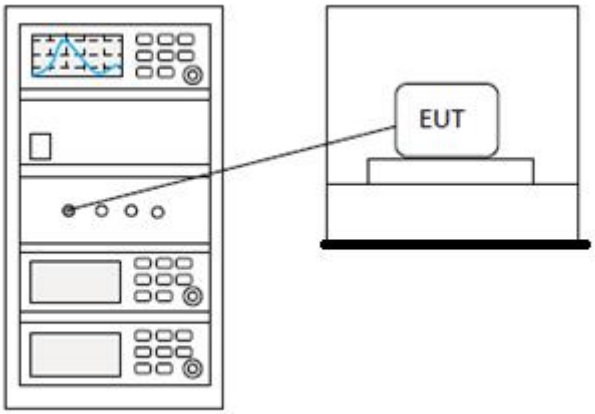
8 MINIMUM 6DB BANDWIDTH

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 11.8.1
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25℃
Humidity	60%

8.1 LIMITS

Limit:	≥500 kHz

8.2 BLOCK DIAGRAM OF TEST SETUP



8.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details

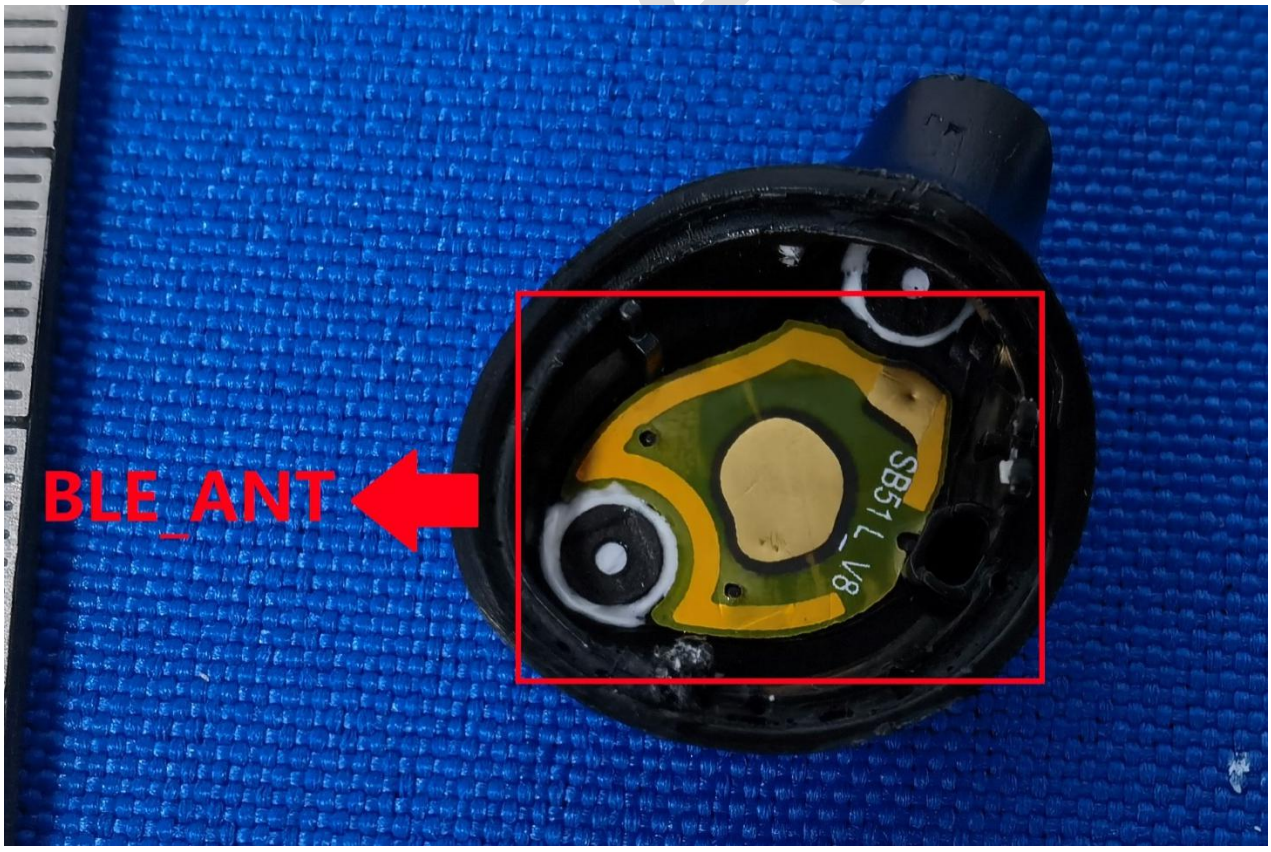
9 ANTENNA REQUIREMENT

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	N/A

9.1 CONCLUSION

Standard Requirement:
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of an so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:
The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is -1.84dBi.



10 APPENDIX

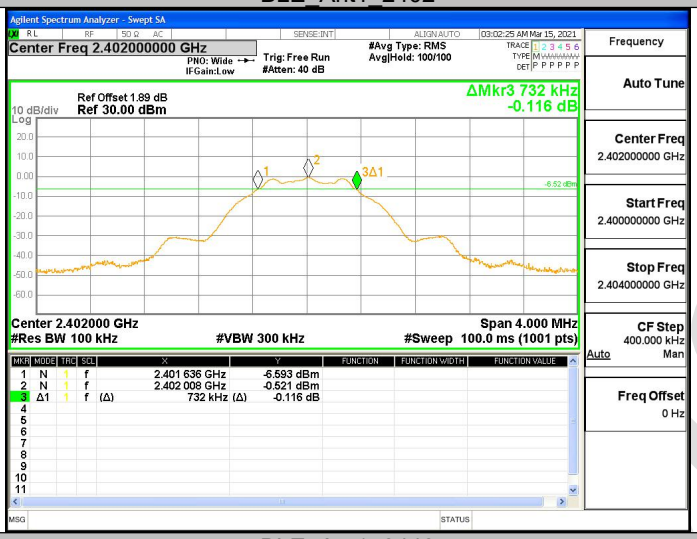
10.1 APPENDIX A: DTS BANDWIDTH

Test Result

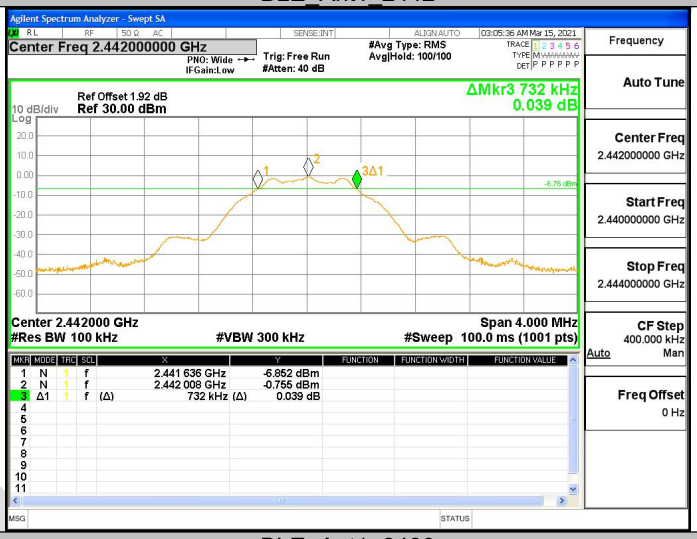
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE	Ant1	2402	0.732	2401.636	2402.368	>=0.5	PASS
		2442	0.732	2441.636	2442.368	>=0.5	PASS
		2480	0.732	2479.636	2480.368	>=0.5	PASS

Test Graphs

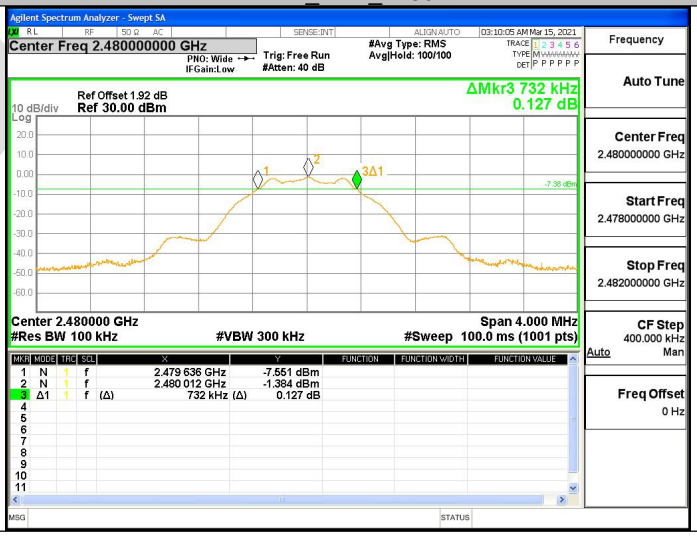
BLE_Ant1_2402



BLE_Ant1_2442



BLE_Ant1_2480



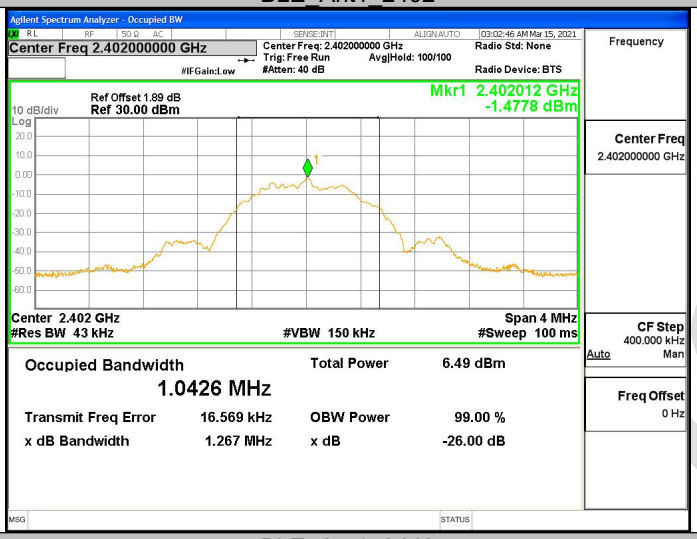
10.2 APPENDIX B: OCCUPIED CHANNEL BANDWIDTH

Test Result

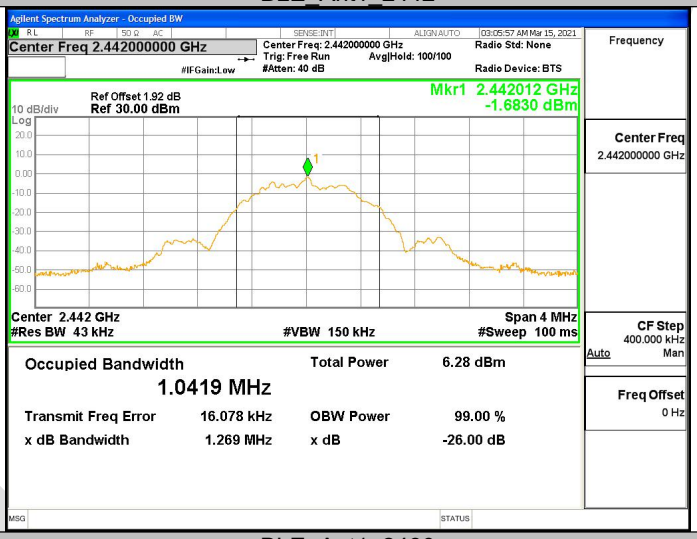
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE	Ant1	2402	1.0426	2401.495	2402.538	---	PASS
		2442	1.0419	2441.495	2442.537	---	PASS
		2480	1.0407	2479.496	2480.537	---	PASS

Test Graphs

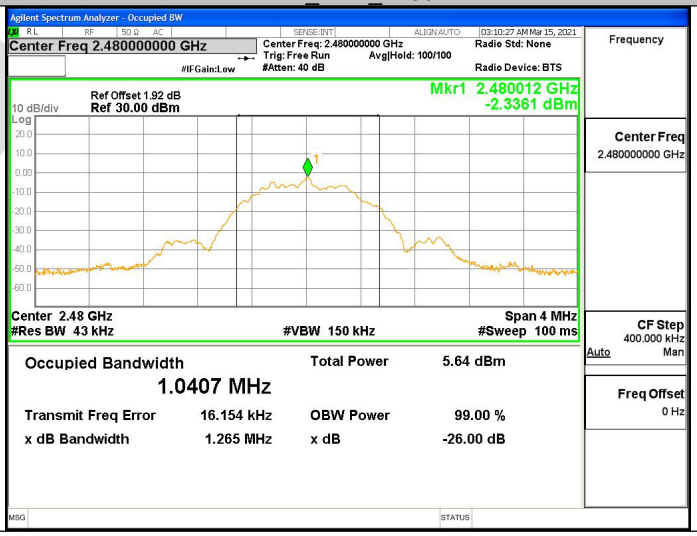
BLE_Ant1_2402



BLE_Ant1_2442



BLE_Ant1_2480



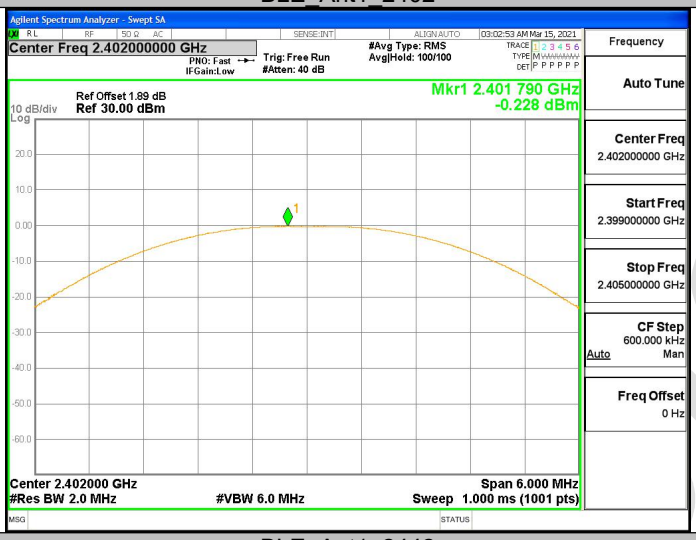
10.3 APPENDIX C: MAXIMUM CONDUCTED OUTPUT POWER

Test Result

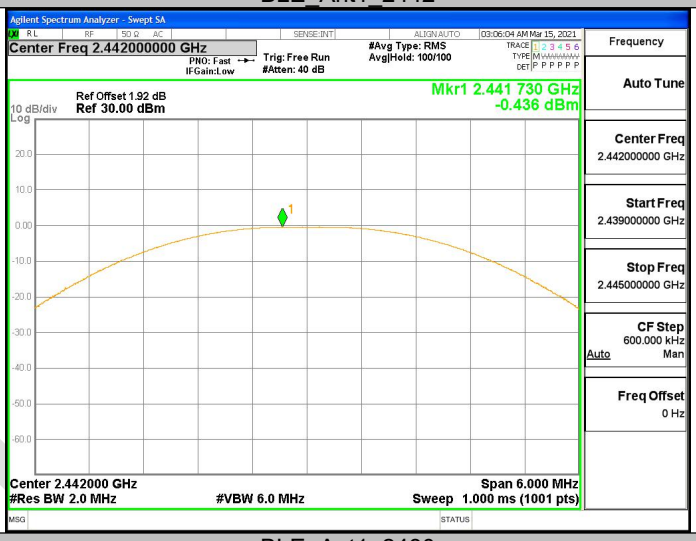
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant1	2402	-0.23	<=30	PASS
		2442	-0.44	<=30	PASS
		2480	-1.04	<=30	PASS

Test Graphs

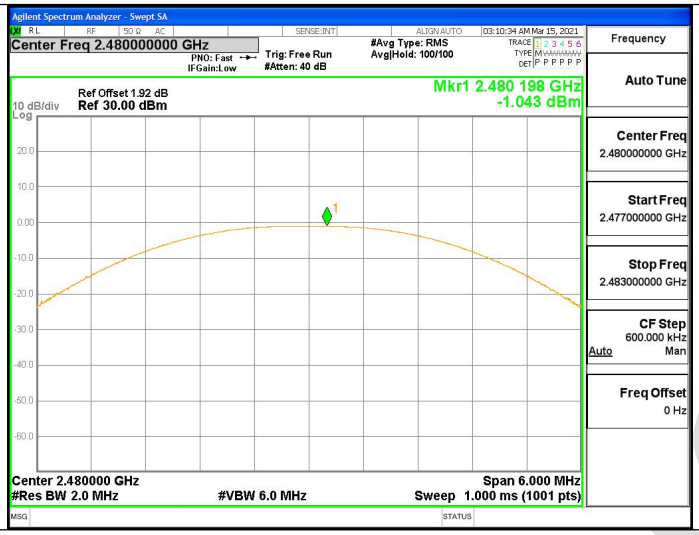
BLE_Ant1_2402



BLE_Ant1_2442



BLE_Ant1_2480


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.480000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
#Avg Type: RMS
Avg|Hold: 100/100
03:10:34 AM Mar 15, 2021
Ref Offset 1.92 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr1 2.480 198 GHz
-1.043 dBm
Center 2.480000 GHz
#Res BW 2.0 MHz
#VBW 6.0 MHz
Span 6.000 MHz
Sweep 1.000 ms (1001 pts)
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.477000000 GHz
Stop Freq
2.483000000 GHz
CF Step
600.000 kHz
Auto
Man
Freq Offset
0 Hz

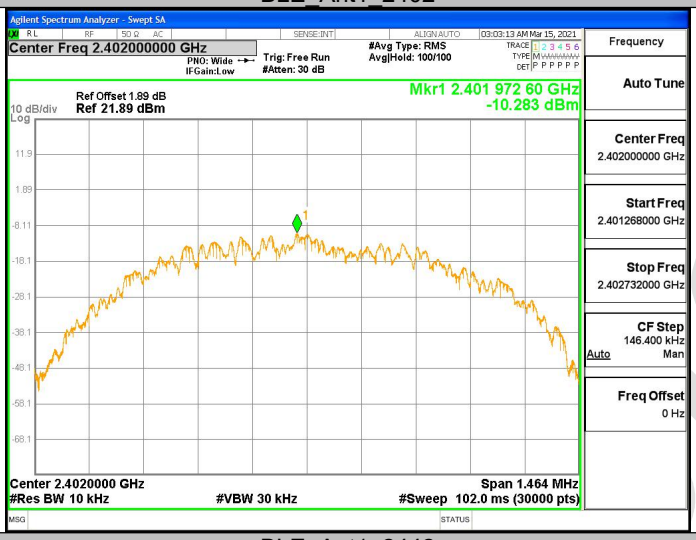
10.4 APPENDIX D: MAXIMUM POWER SPECTRAL DENSITY

Test Result

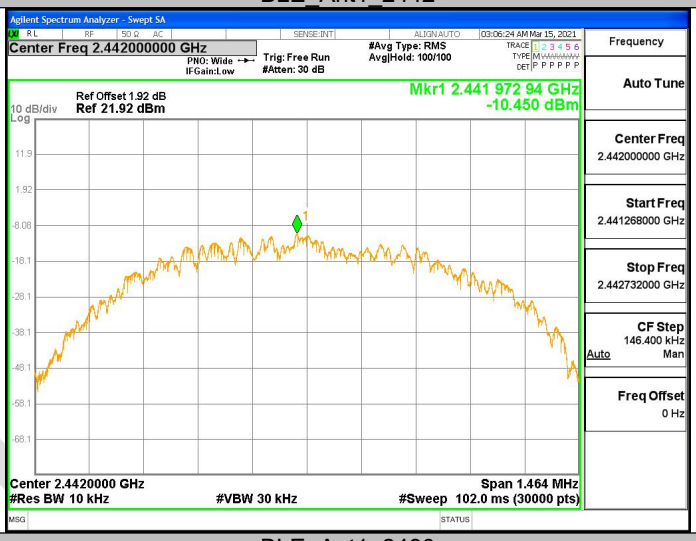
TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE	Ant1	2402	-10.28	<=8	PASS
		2442	-10.45	<=8	PASS
		2480	-11.03	<=8	PASS

Test Graphs

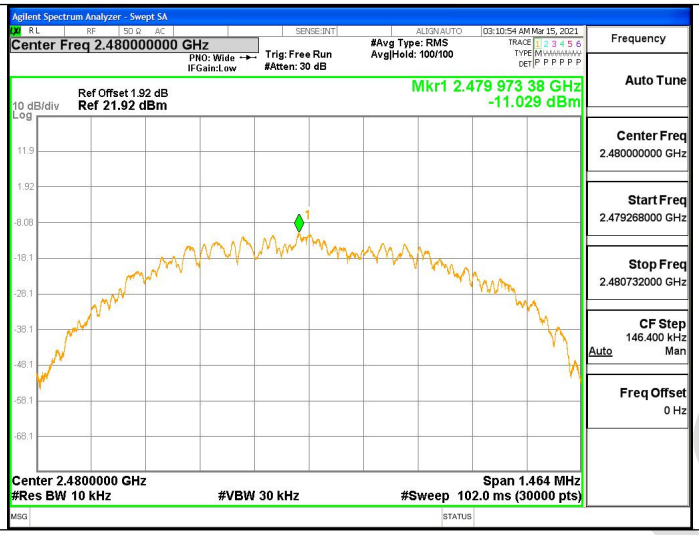
BLE_Ant1_2402



BLE_Ant1_2442



BLE_Ant1_2480


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.480000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 100/100
03:10:54 AM Mar 15, 2021
Frequency
Auto Tune
Mkr1 2.479 973 38 GHz
-11.029 dBm
Ref Offset 1.92 dB
10 dB/div
Ref 21.92 dBm
Log
11.9
1.92
-8.08
-18.1
-28.1
-38.1
-48.1
-58.1
-68.1
Center Freq
2.480000000 GHz
Start Freq
2.479268000 GHz
Stop Freq
2.480732000 GHz
CF Step
146.400 kHz
Auto
Man
Freq Offset
0 Hz
Center 2.4800000 GHz
#Res BW 10 kHz
#VBW 30 kHz
Span 1.464 MHz
#Sweep 102.0 ms (30000 pts)
MSG
STATUS

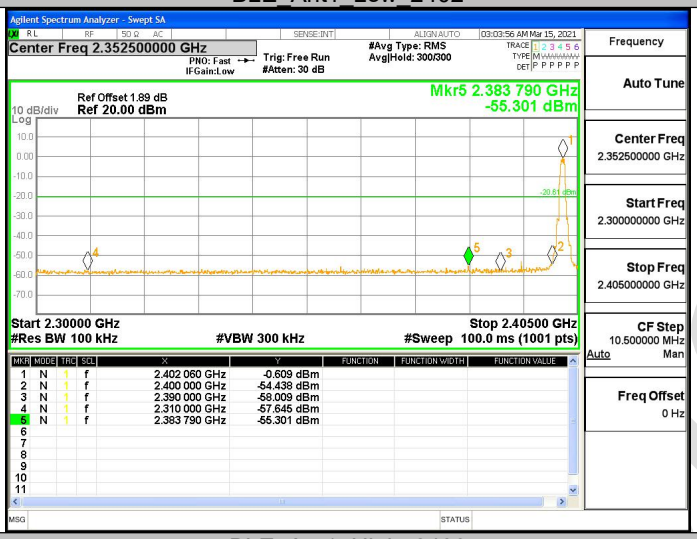
10.5APPENDIX E: BAND EDGE MEASUREMENTS

Test Result

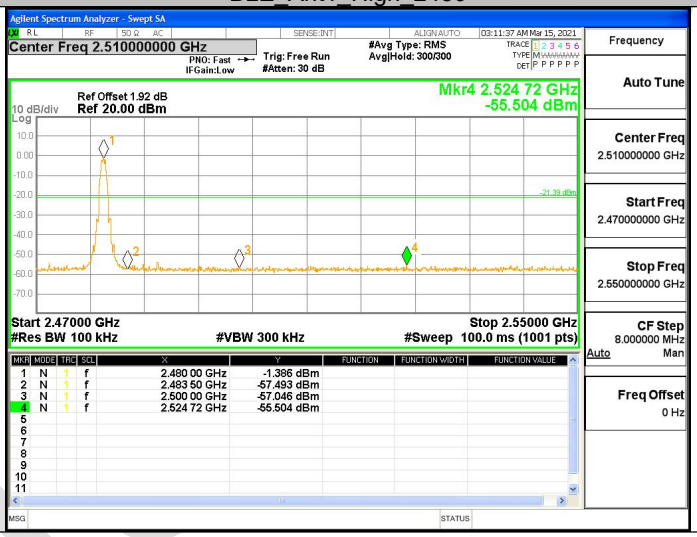
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant1	Low	2402	-0.61	-55.3	<=-20.61	PASS
		High	2480	-1.39	-55.5	<=-21.39	PASS

Test Graphs

BLE_Ant1_Low_2402



BLE_Ant1_High_2480



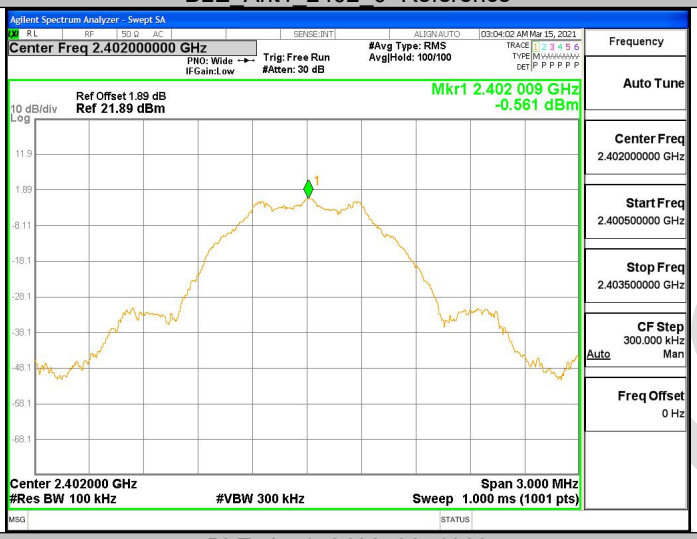
10.6 APPENDIX F: CONDUCTED SPURIOUS EMISSION

Test Result

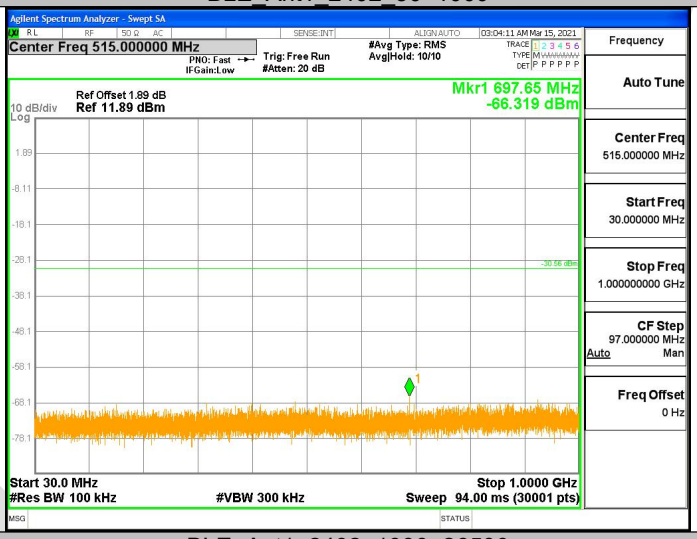
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant1	2402	Reference	-0.56	-0.56	---	PASS
			30~1000	30~1000	-66.319	<=-30.561	PASS
			1000~26500	1000~26500	-42.201	<=-30.561	PASS
		2442	Reference	-0.91	-0.91	---	PASS
			30~1000	30~1000	-66.991	<=-30.912	PASS
			1000~26500	1000~26500	-40.31	<=-30.912	PASS
		2480	Reference	-1.63	-1.63	---	PASS
			30~1000	30~1000	-67.092	<=-31.628	PASS
			1000~26500	1000~26500	-39.298	<=-31.628	PASS

Test Graphs

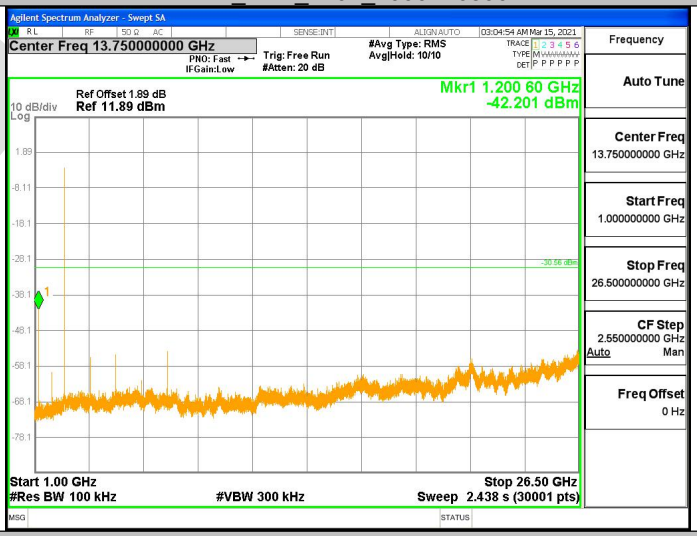
BLE_Ant1_2402_0~Reference



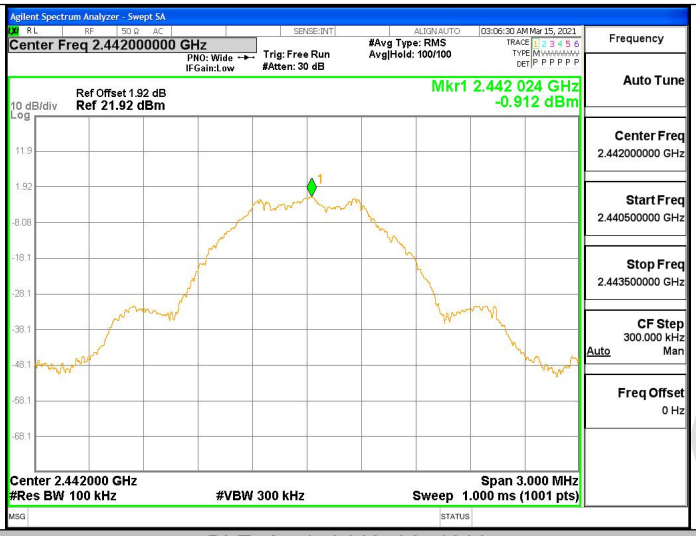
BLE_Ant1_2402_30~1000



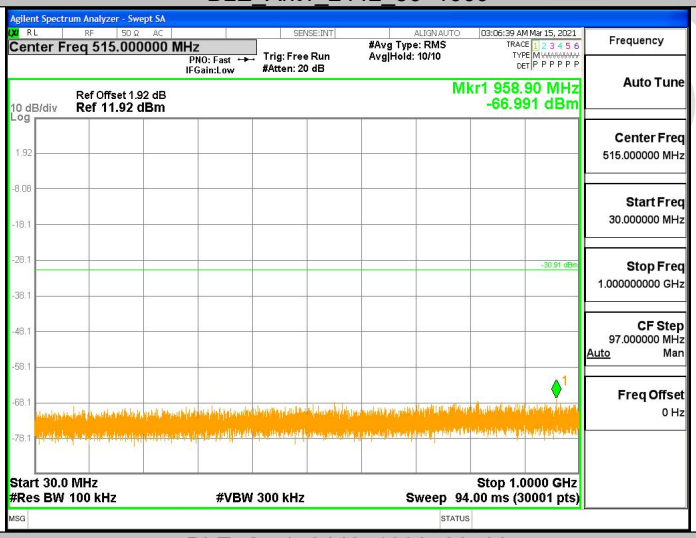
BLE_Ant1_2402_1000~26500



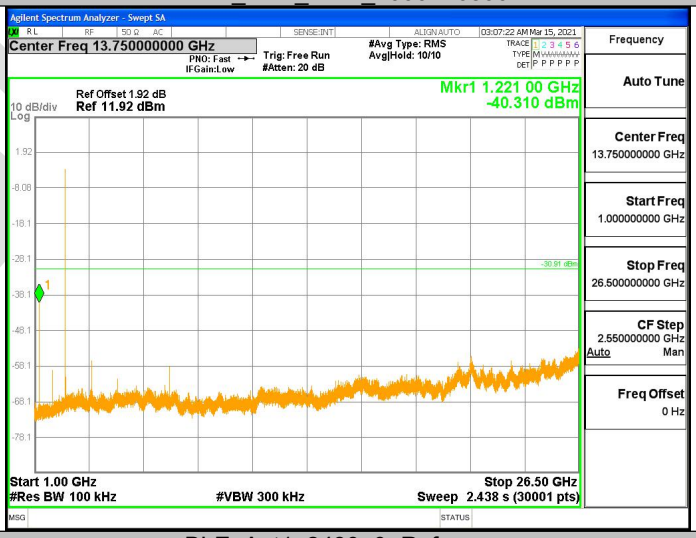
BLE_Ant1_2442_0~Reference



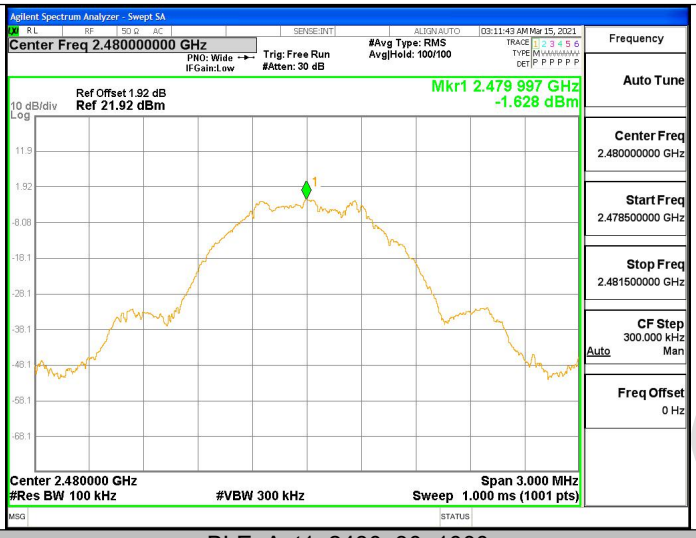
BLE_Ant1_2442_30~1000



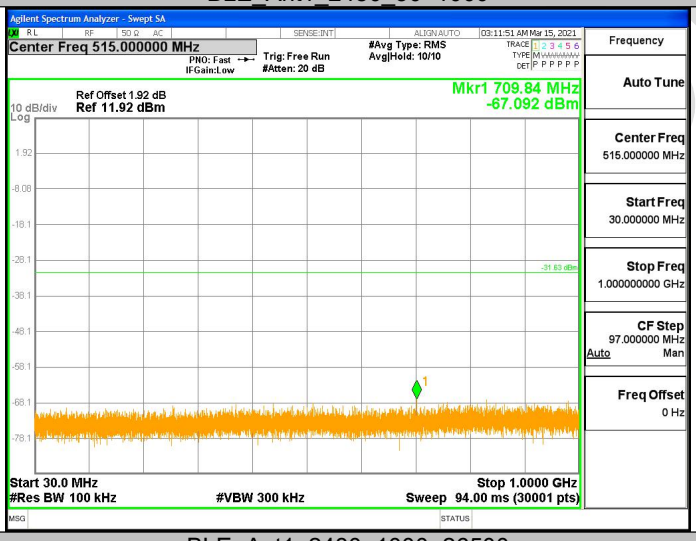
BLE_Ant1_2442_1000~26500



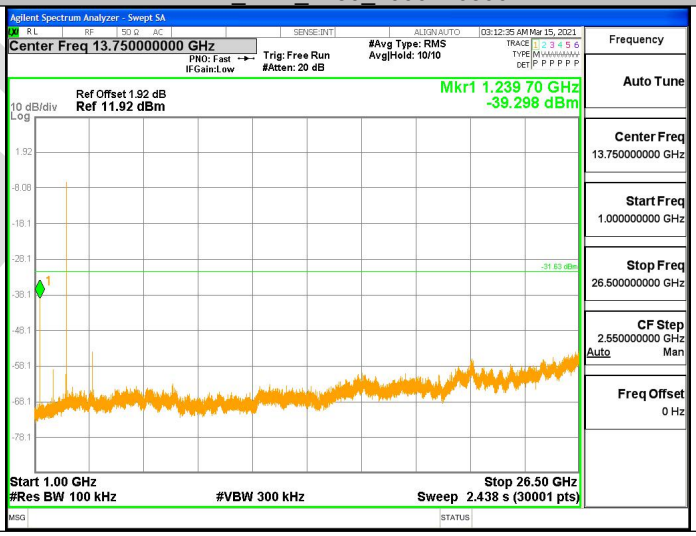
BLE_Ant1_2480_0~Reference



BLE_Ant1_2480_30~1000

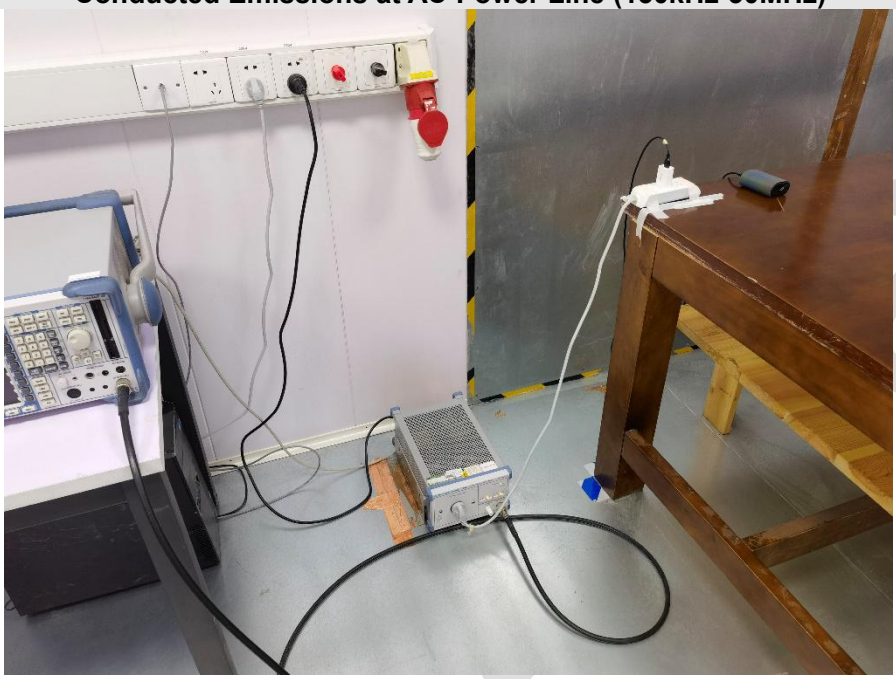


BLE_Ant1_2480_1000~26500

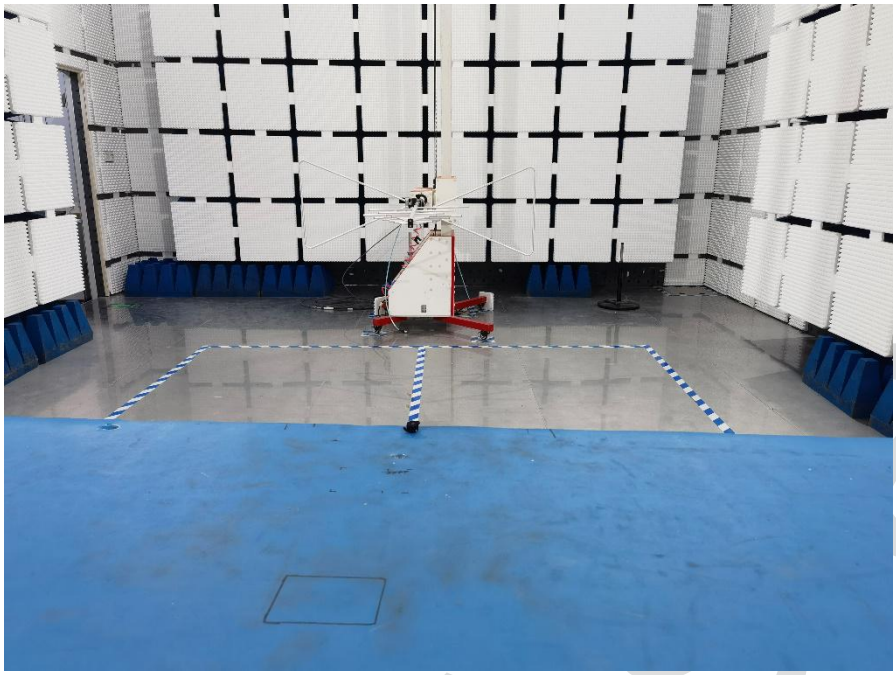


APPENDIX A: PHOTOGRAPHS OF TEST SETUP

Conducted Emissions at AC Power Line (150kHz-30MHz)



Radiated Spurious Emissions



APPENDIX B: PHOTOGRAPHS OF EUT

Reference to the test report No. BLA-EMC-202103-A3601

----END OF REPORT----