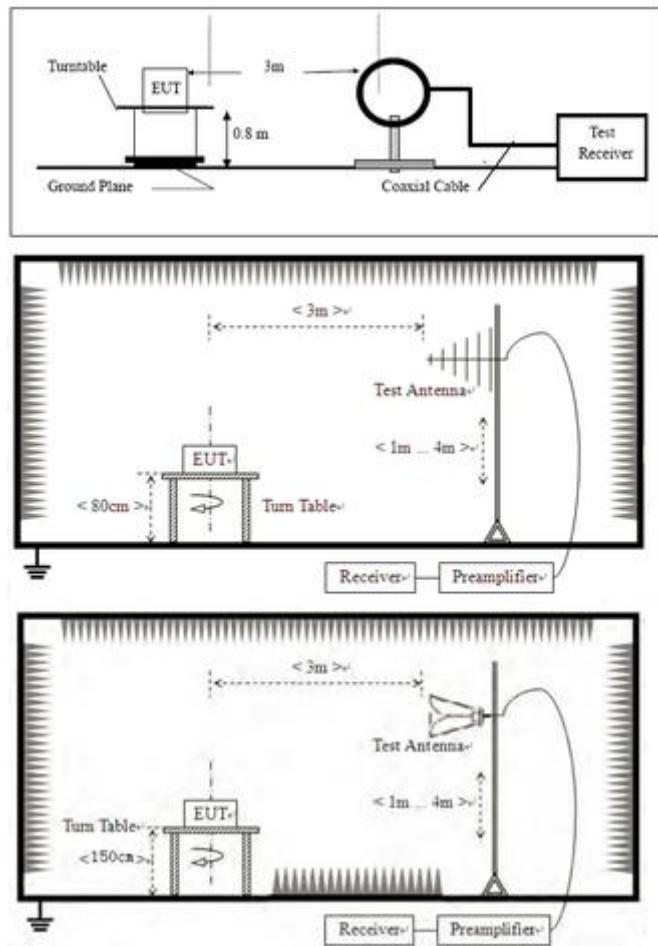


14.2 BLOCK DIAGRAM OF TEST SETUP



14.3 PROCEDURE

- For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was complete.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

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14.4 TEST DATA

[TestMode: TX low channel]; [Polarity: Horizontal]

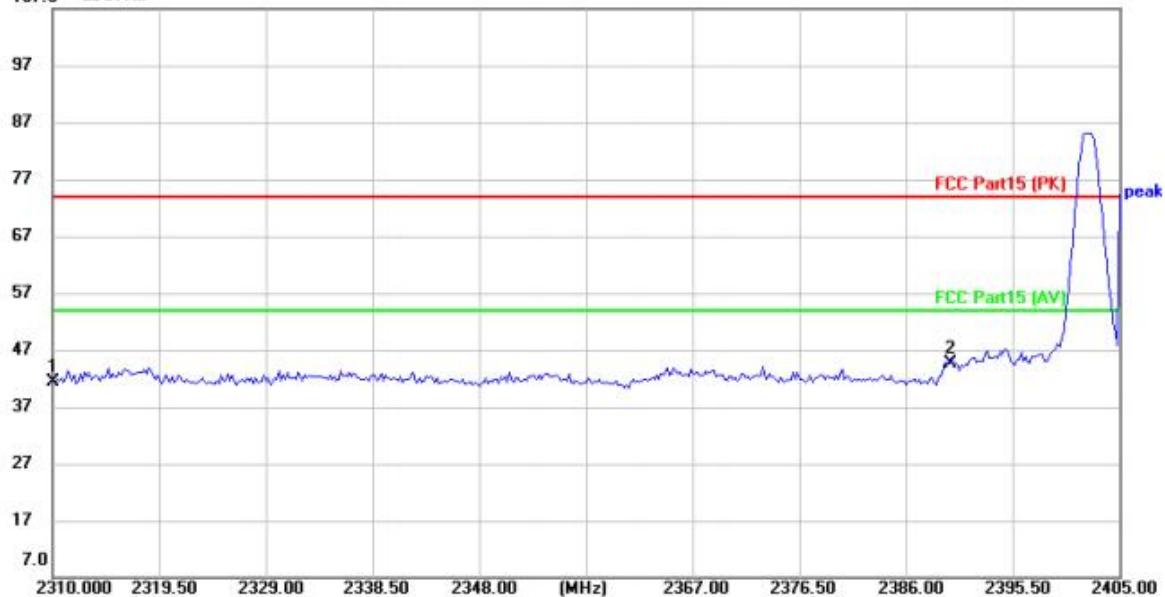
Radiated Emission Measurement

Project No.: RE

Data #:2

2023/7/14

107.0 dBuV/m



Site

Polarization: **Horizontal**

Temperature: (C)

Limit: FCC Part15 (PK)

Power:

Humidity: %RH

EUT: keilton LED controller

M/N: CS107D

Mode: BLE1M TX-L

Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dB			
1		2310.000	45.60	-4.27	41.33	74.00	-32.67	peak	
2	*	2390.000	48.38	-3.82	44.56	74.00	-29.44	peak	

Test Result: Pass

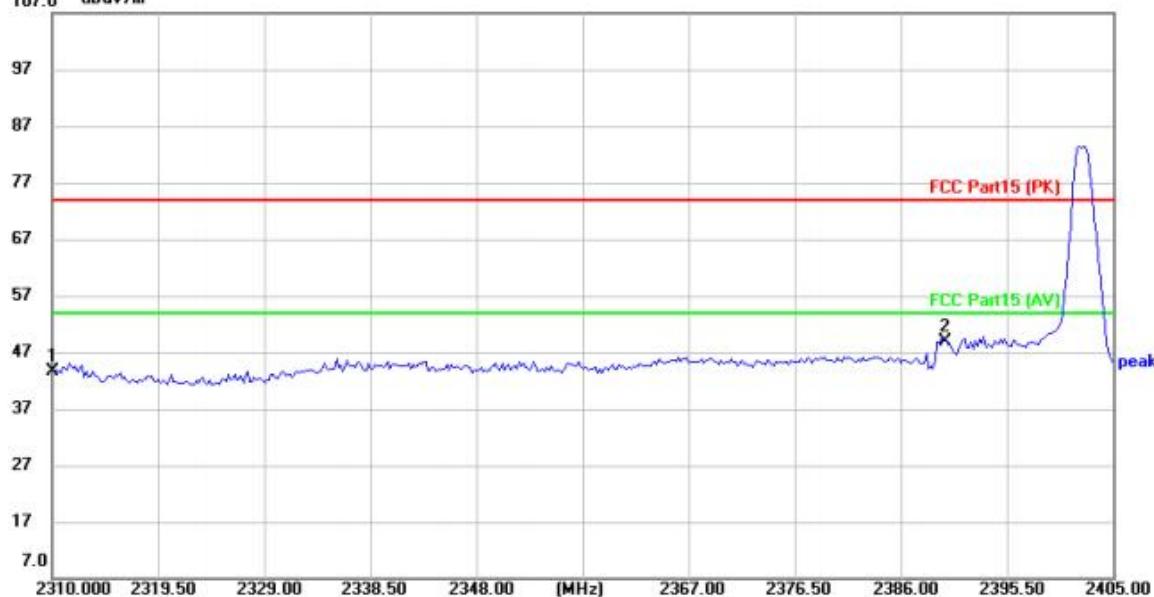
[TestMethod:TX low channel]; [Polarity: Vertical]

Radiated Emission Measurement

Project No.: RE
107.0 dBuV/m

Data :#1

2023/7/14



Site

Polarization: **Vertical**

Temperature: (C)

Limit: FCC Part15 (PK)

Power:

Humidity: %RH

EUT: keilton LED controller

M/N: CS107D

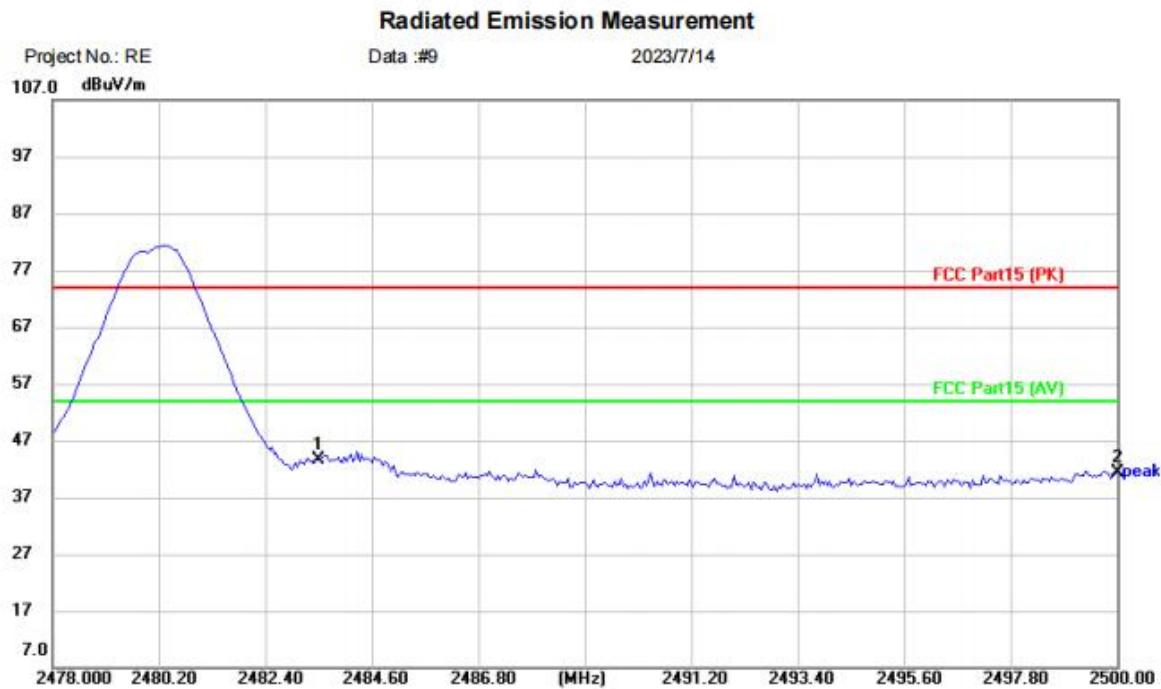
Mode: BLE1M TX-L

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB	Detector	Comment
1		2310.000	47.96	-4.27	43.69	74.00	-30.31	peak
2	*	2390.000	52.71	-3.82	48.89	74.00	-25.11	peak

Test Result: Pass

[TestMode: TX High channel]; [Polarity: Horizontal]



Site	Polarization: Horizontal	Temperature: (C)
Limit: FCC Part15 (PK)	Power:	Humidity: %RH
EUT: keilton LED controller		
M/N: CS107D		
Mode: BLE1M TX-H		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
							dB	dBuV/m	Detector
1	*	2483.500	47.58	-3.96	43.62	74.00	-30.38	peak	
2		2500.000	45.34	-4.00	41.34	74.00	-32.66	peak	

Test Result: Pass

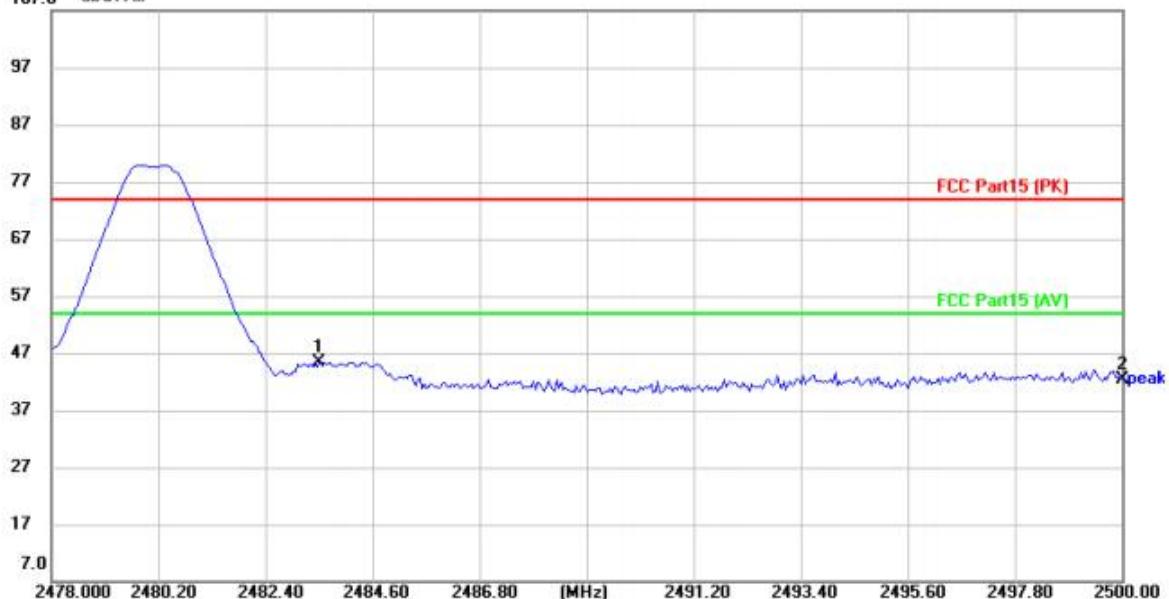
[TestMode:TX High channel]; [Polarity: Vertical]

Radiated Emission Measurement

Project No.: RE
107.0 dBuV/m

Data :#10

2023/7/14



Site

Polarization: **Vertical**

Temperature: (C)

Limit: FCC Part15 (PK)

Power:

Humidity: %RH

FUT: keilton LED controller

MN: CS107D

Mode: BLE1M TX-H

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
							dB	dBuV/m	Detector
1	*	2483.500	49.46	-3.96	45.50	74.00	-28.50		peak
2		2500.000	46.28	-4.00	42.28	74.00	-31.72		peak

Test Result: Pass

[TestMode: TX low channel]; [Polarity: Horizontal]

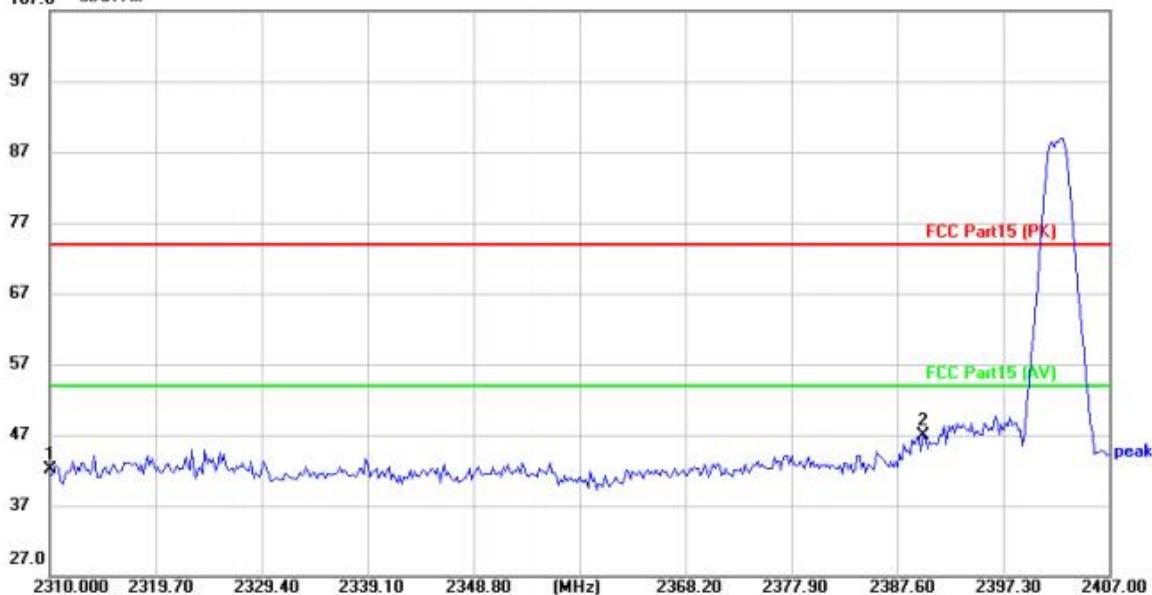
Radiated Emission Measurement

Project No.: RE

Data :#11

2023/7/14

107.0 dBuV/m



Site

Polarization: **Vertical**

Temperature: (C)

Limit: FCC Part15 (PK)

Power:

Humidity: %RH

EUT: keilton LED controller

M/N: CS107D

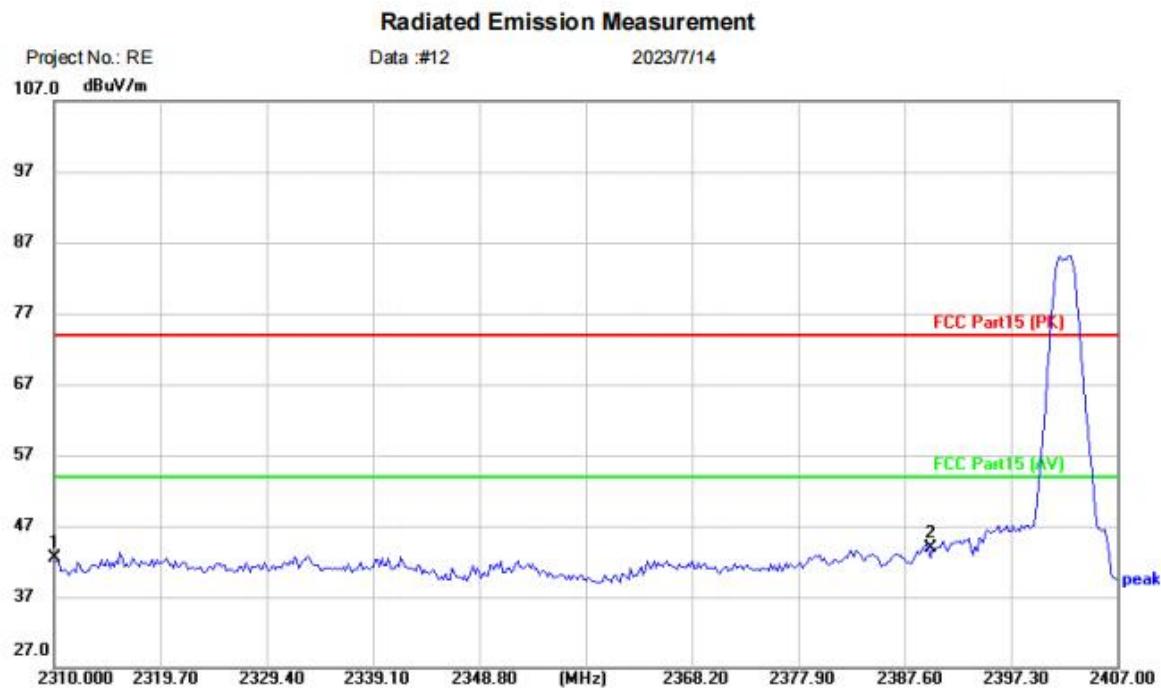
Mode: BLE2M TX-L

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		2310.000	46.38	-4.27	42.11	74.00	-31.89	peak	
2	*	2390.000	50.74	-3.82	46.92	74.00	-27.08	peak	

Test Result: Pass

[TestMode:TX low channel]; [Polarity: Vertical]

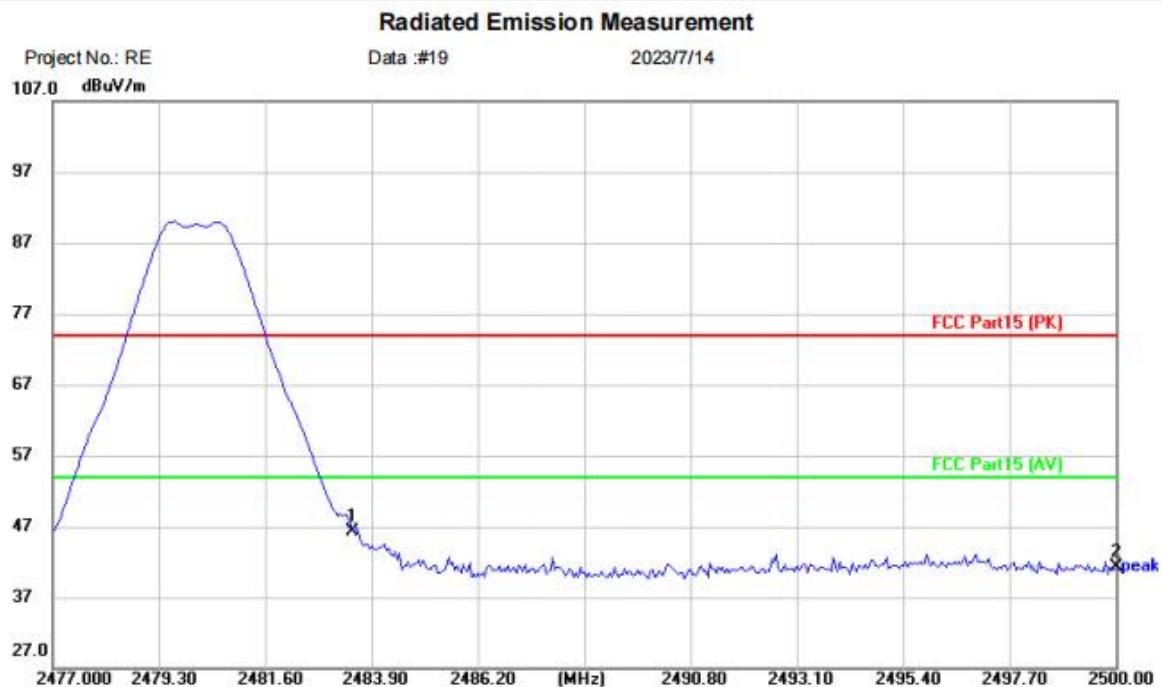


Site	Polarization: Horizontal	Temperature: (C)
Limit: FCC Part15 (PK)	Power:	Humidity: %RH
EUT: keilton LED controller		
M/N: CS107D		
Mode: BLE2M TX-L		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
							dB	dBuV/m	Detector
1		2310.000	46.82	-4.27	42.55	74.00	-31.45		peak
2	*	2390.000	47.71	-3.82	43.89	74.00	-30.11		peak

Test Result: Pass

[TestMode: TX High channel]; [Polarity: Horizontal]

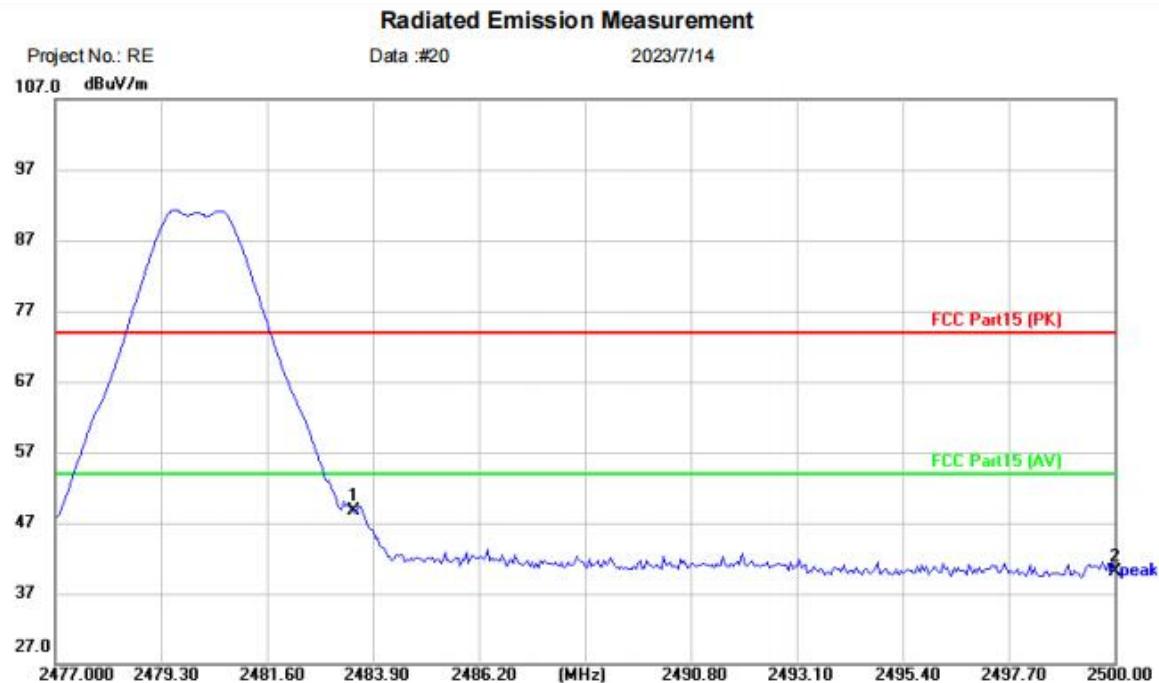


Site	Polarization: Horizontal	Temperature: (C)
Limit: FCC Part15 (PK)	Power:	Humidity: %RH
EUT: keilton LED controller		
M/N: CS107D		
Mode: BLE2M TX-H		
Note:		

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	
			Level	Factor	ment			
1	*	2483.500	50.18	-3.96	46.22	74.00	-27.78	peak
2		2500.000	45.21	-4.00	41.21	74.00	-32.79	peak

Test Result: Pass

[TestMode:TX High channel]; [Polarity: Vertical]



Site	Polarization: Vertical	Temperature: (C)
Limit: FCC Part15 (PK)	Power:	Humidity: %RH
EUT: keilton LED controller		
M/N: CS107D		
Mode: BLE2M TX-H		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
							dB	dBuV/m	Detector
1	*	2483.500	52.64	-3.96	48.68	74.00	-25.32		peak
2		2500.000	44.11	-4.00	40.11	74.00	-33.89		peak

Test Result: Pass

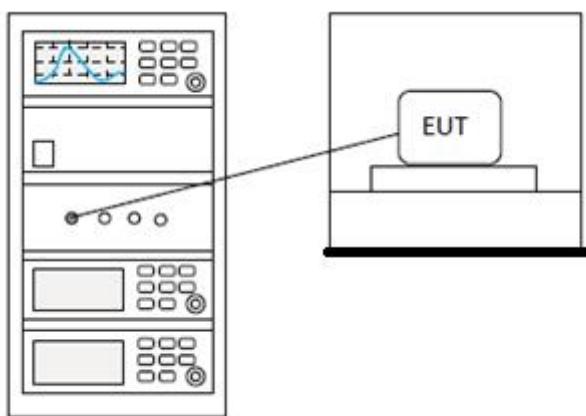
15 CONDUCTED SPURIOUS EMISSIONS

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 7.8.6 & Section 11.11
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Charlie
Temperature	25 °C
Humidity	60%

15.1 LIMITS

Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).
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15.2 BLOCK DIAGRAM OF TEST SETUP



15.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details

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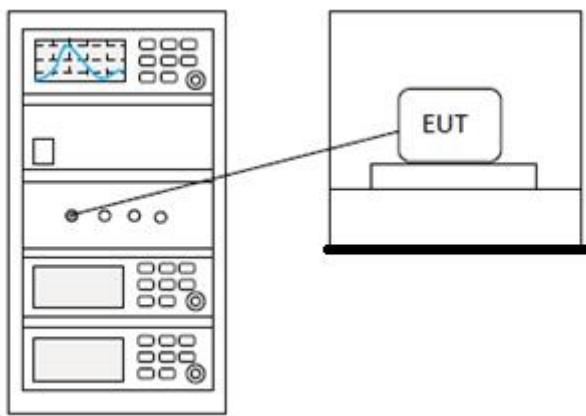
16 POWER SPECTRUM DENSITY

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 11.10.2
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Charlie
Temperature	25 °C
Humidity	60%

16.1 LIMITS

Limit: $\leq 8\text{dBm}$ in any 3 kHz band during any time interval of continuous transmission

16.2 BLOCK DIAGRAM OF TEST SETUP



16.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details

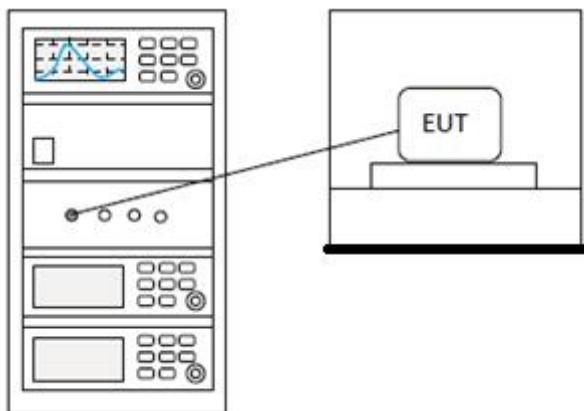
17 CONDUCTED PEAK OUTPUT POWER

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 7.8.5
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Charlie
Temperature	25 °C
Humidity	60%

17.1 LIMITS

Frequency range(MHz)	Output power of the intentional radiator(watt)
902-928	1 for ≥ 50 hopping channels
	0.25 for $25 \leq$ hopping channels < 50
	1 for digital modulation
2400-2483.5	1 for ≥ 75 non-overlapping hopping channels
	0.125 for all other frequency hopping systems
	1 for digital modulation
5725-5850	1 for frequency hopping systems and digital modulation

17.2 BLOCK DIAGRAM OF TEST SETUP



17.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details

BlueAsia

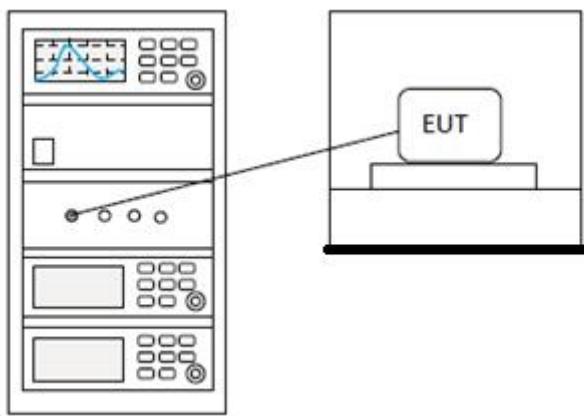
18 MINIMUM 6DB BANDWIDTH

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	Charlie
Temperature	25 °C
Humidity	60%

18.1 LIMITS

Limit: ≥ 500 kHz

18.2 BLOCK DIAGRAM OF TEST SETUP



18.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details

19 APPENDIX

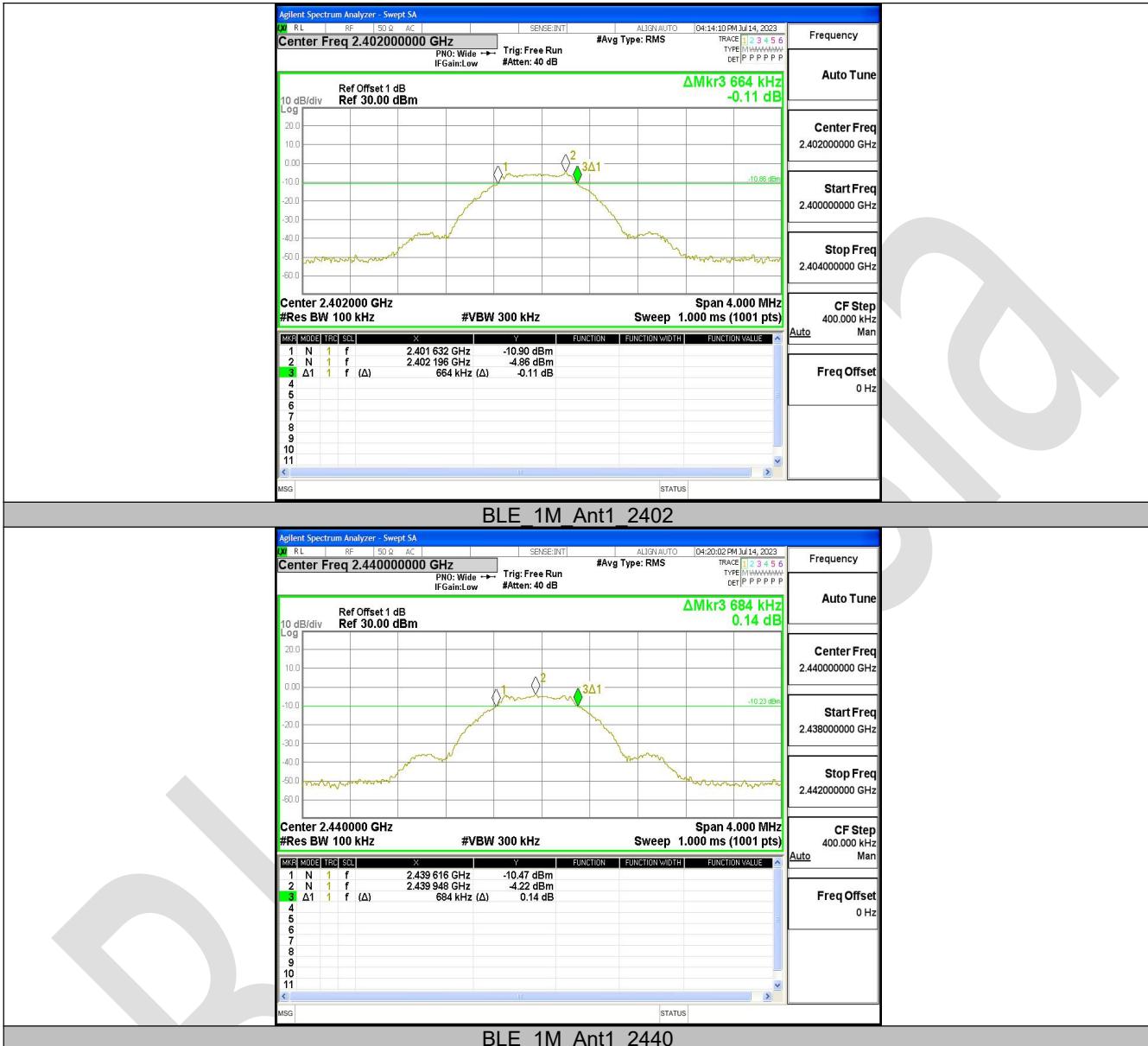
Appendix1

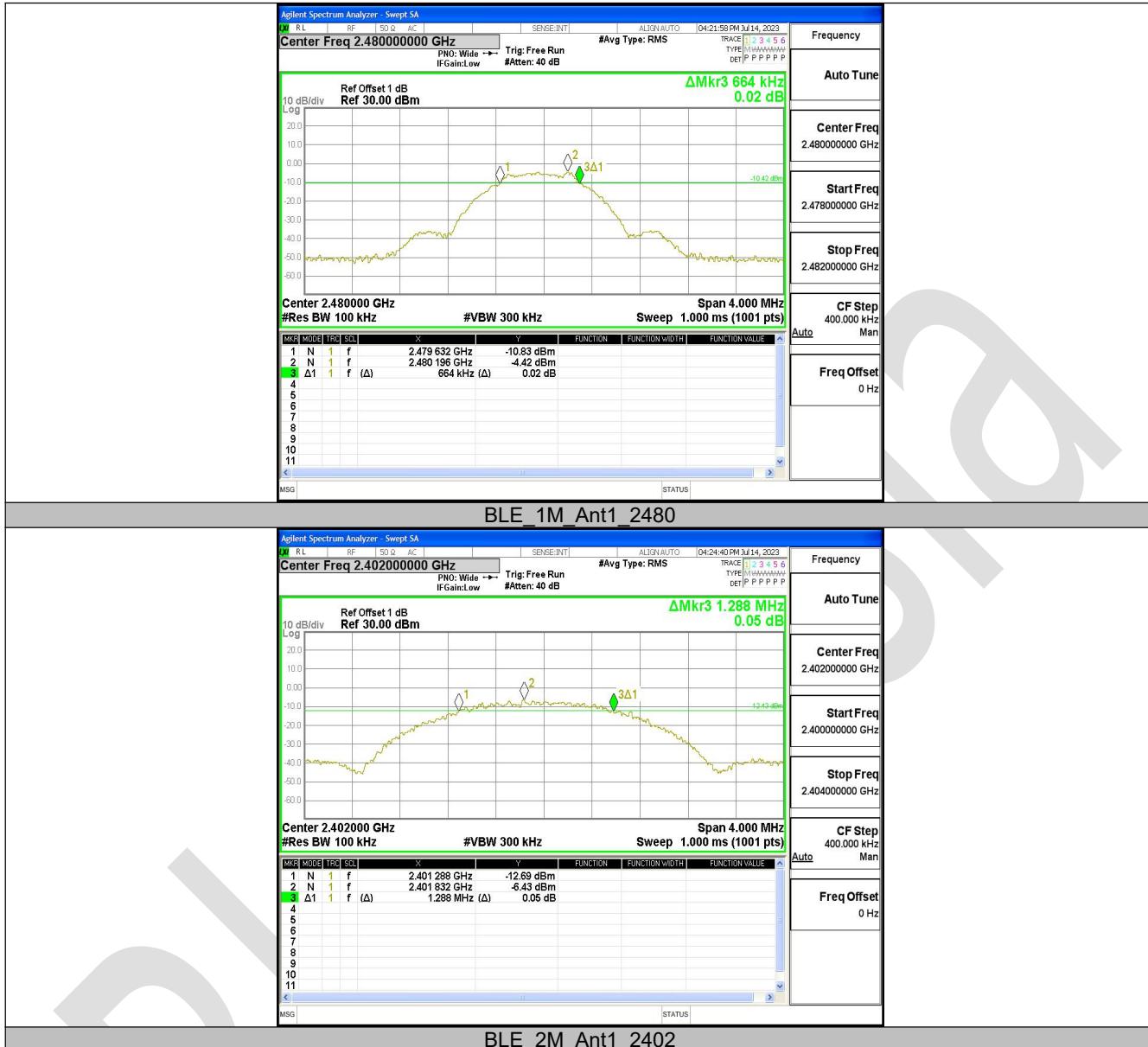
19.1 APPENDIX A: DTS BANDWIDTH

Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.664	2401.632	2402.296	≥ 0.5	PASS
		2440	0.684	2439.616	2440.300	≥ 0.5	PASS
		2480	0.664	2479.632	2480.296	≥ 0.5	PASS
BLE_2M	Ant1	2402	1.288	2401.288	2402.576	≥ 0.5	PASS
		2440	1.340	2439.300	2440.640	≥ 0.5	PASS
		2480	1.388	2479.268	2480.656	≥ 0.5	PASS

Test Graphs







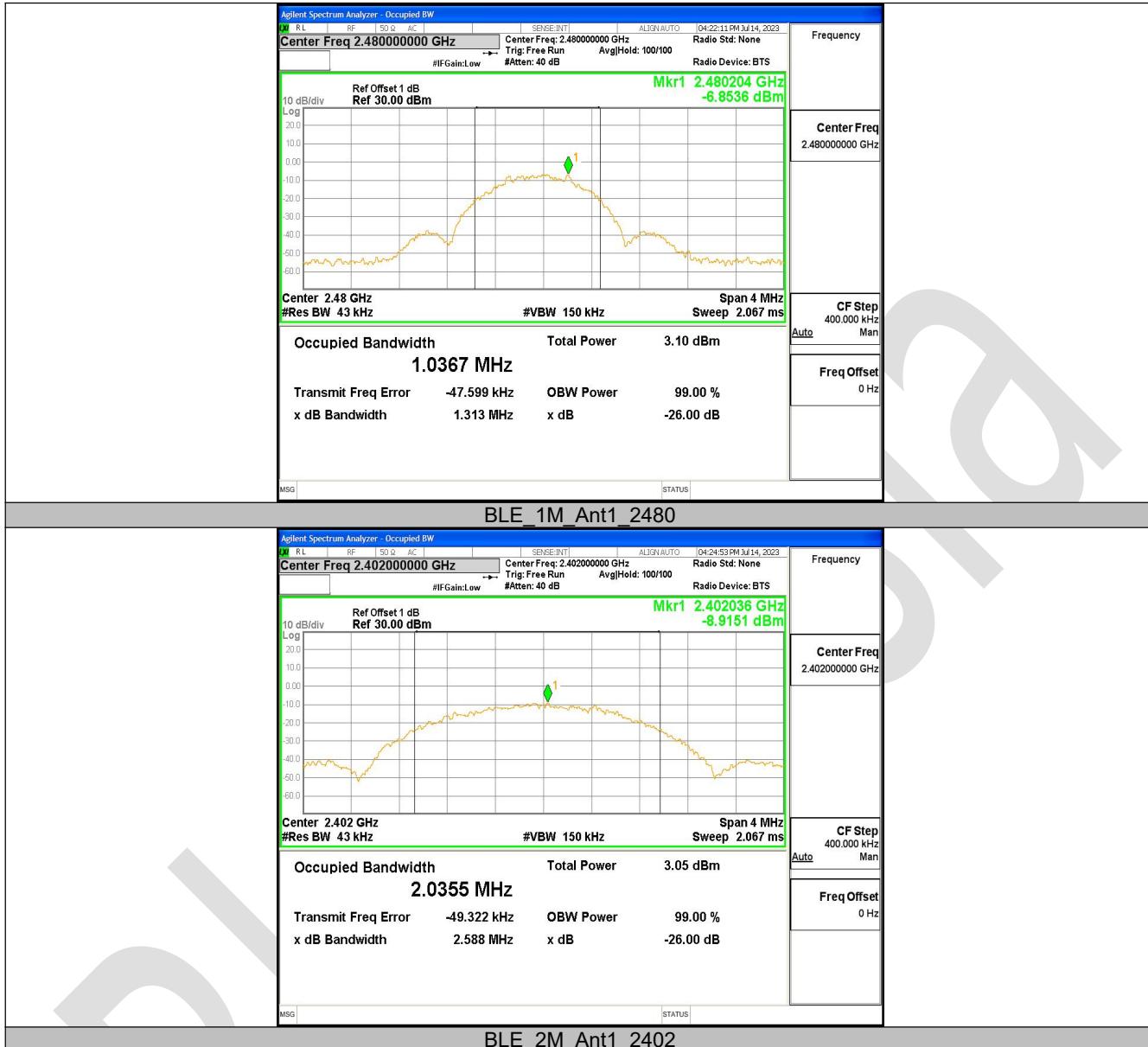
19.2 APPENDIX B: OCCUPIED CHANNEL BANDWIDTH

Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0195	2401.447	2402.466	---	PASS
		2440	1.0208	2439.443	2440.463	---	PASS
		2480	1.0367	2479.434	2480.471	---	PASS
BLE_2M	Ant1	2402	2.0355	2400.933	2402.968	---	PASS
		2440	2.0766	2438.932	2441.009	---	PASS
		2480	2.0401	2478.939	2480.979	---	PASS

Test Graphs





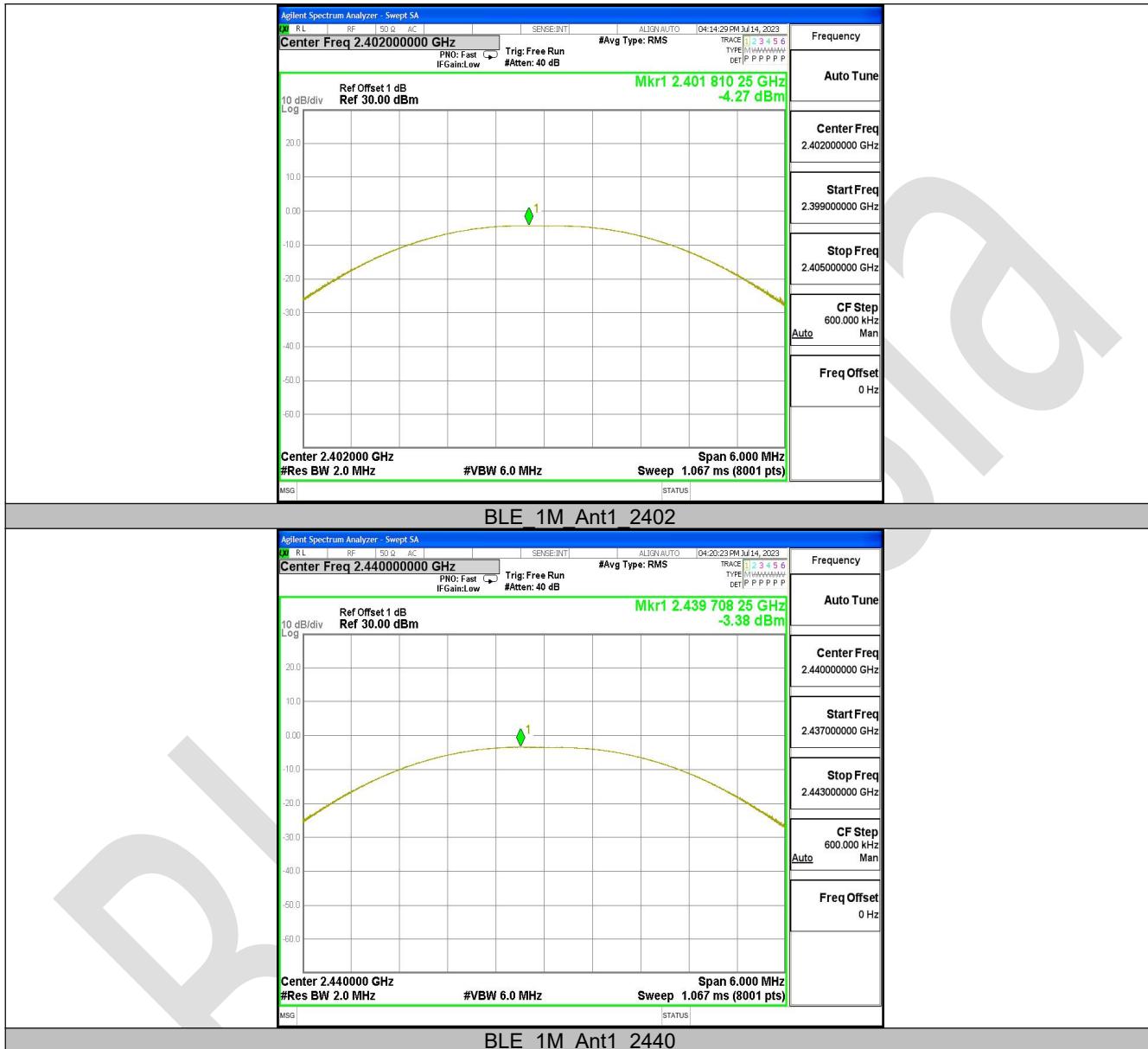


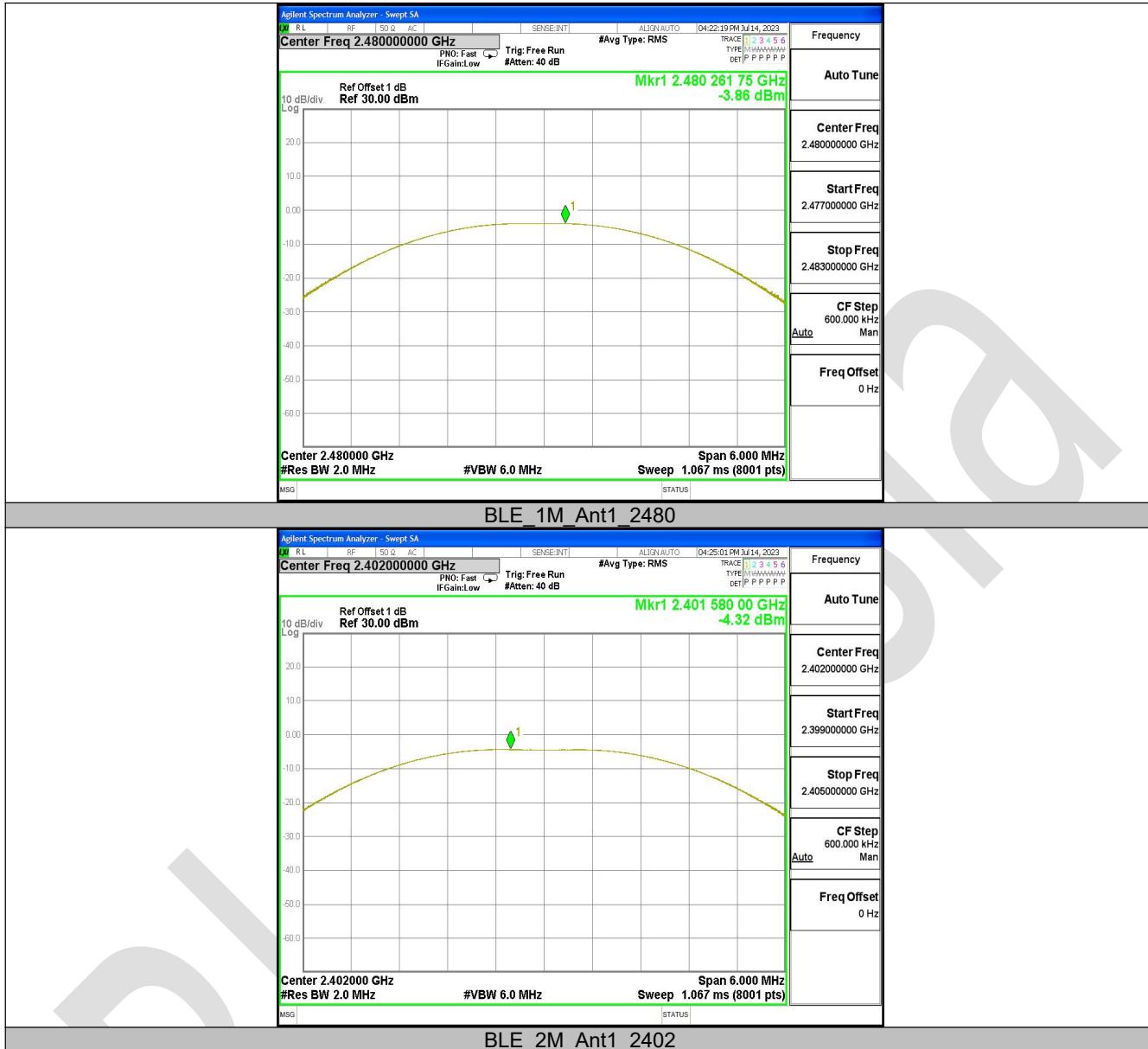
19.3 APPENDIX C: MAXIMUM CONDUCTED OUTPUT POWER

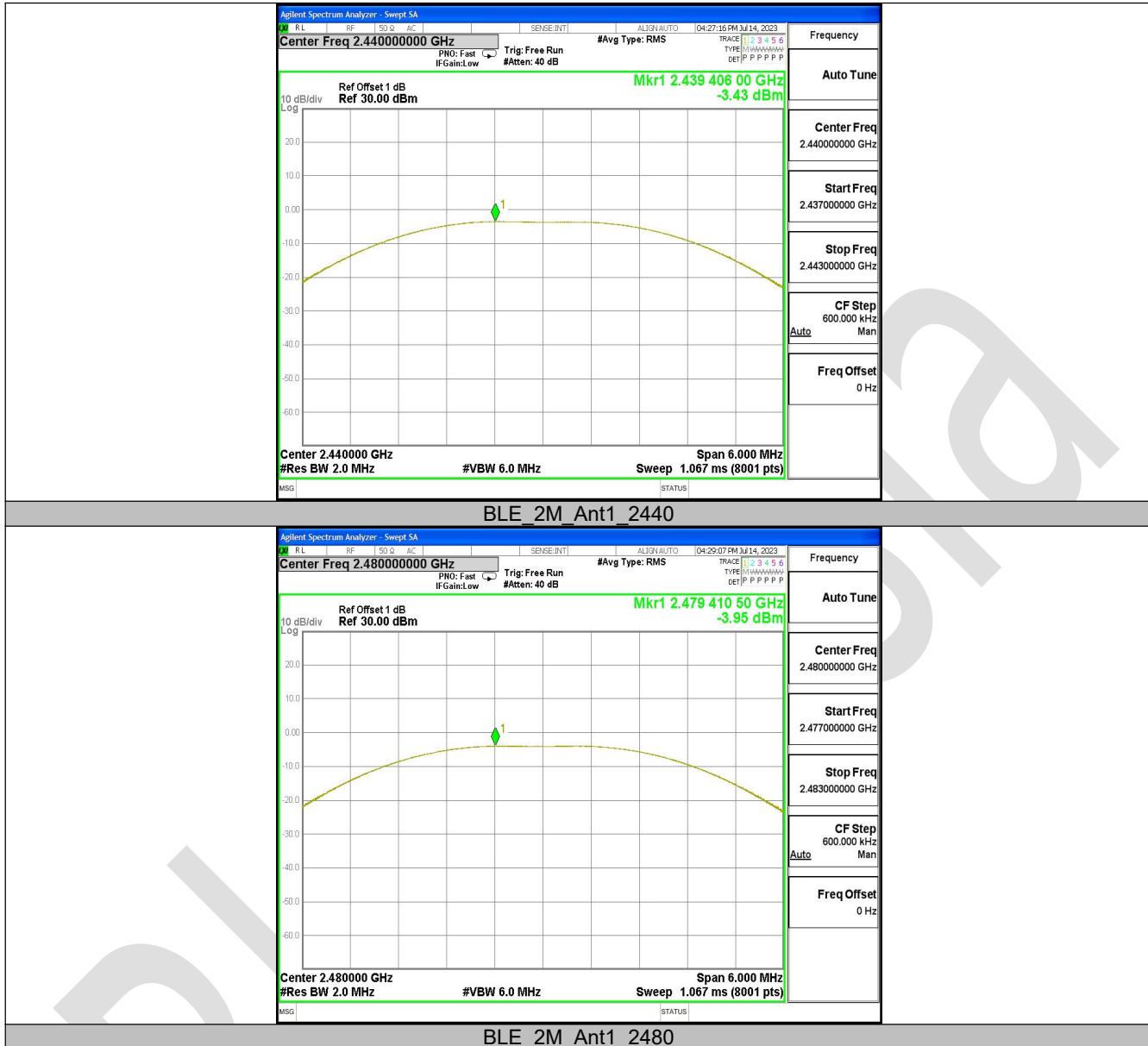
Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-4.27	<=30	PASS
		2440	-3.38	<=30	PASS
		2480	-3.86	<=30	PASS
BLE_2M	Ant1	2402	-4.32	<=30	PASS
		2440	-3.43	<=30	PASS
		2480	-3.95	<=30	PASS

Test Graphs







19.4 APPENDIX D: MAXIMUM POWER SPECTRAL DENSITY

Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-10.35	<=8	PASS
		2440	-10.41	<=8	PASS
		2480	-9.93	<=8	PASS
BLE_2M	Ant1	2402	-13.12	<=8	PASS
		2440	-10.94	<=8	PASS
		2480	-12.33	<=8	PASS

Test Graphs

