TEST REPORT

Applicant:	Shenzhen Hysiry Technology Co., Ltd.
Address of Applicant:	2403D, 24th floor, coast huanqing building, no.24 futian road, xu town community, futian street, futian district, shenzhen
Manufacturer/Factory:	Shenzhen Hysiry Technology Co., Ltd.
Address of Manufacturer/Factory:	2403D, 24th floor, coast huanqing building, no.24 futian road, xu town community, futian street, futian district, shenzhen

Equipment Under Test (EUT)

Product Name:	SMART BULB
Model No.:	BQ10CWM, BQ10WM, BQ10CM
Trade Mark:	HYSIRY 汇思锐
FCC ID:	2AKBP-BQ10CWM
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.247
Date of sample receipt:	2019-10-12
Date of Test:	2019-10-12 to 2019-10-23
Date of report issued:	2019-11-20
Test Result :	PASS *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Robinson Lo
Laboratory Manager

This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

2 Version

Version No.	Date	Description
00	*2019-11-20*	*Original*

Prepared By: ***Date:*** 2019-11-20

Project Engineer

Check By: ***Date:*** 2019-11-20

Reviewer

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4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	15.207	Pass
Conducted Output Power	15.247 (b)(3)	Pass
Channel Bandwidth	15.247 (a)(2)	Pass
Power Spectral Density	15.247 (e)	Pass
Band Edge	15.247(d)	Pass
Spurious Emission	15.205/15.209	Pass

Remarks:

1. Pass: The EUT complies with the essential requirements in the standard.

2. Test according to ANSI C63.10:2013

Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	30MHz-200MHz	3.8039dB	(1)
Radiated Emission	200MHz-1GHz	3.9679dB	(1)
Radiated Emission	1GHz-18GHz	4.29dB	(1)
Radiated Emission	18GHz-40GHz	3.30dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	3.44dB	(1)
Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.			

5 General Information

5.1 General Description of EUT

Product Name:	SMART BULB
Model No.:	BQ10CWM
Test sample(s) ID:	GTS201911000110-1
Sample(s) Status:	Engineer sample
Serial No.:	BQ10WM, BQ10CM
Hardware Version:	V1.0
Software Version:	V1.0
Operation Frequency:	2402MHz~2480MHz
Channel Numbers:	40
Bluetooth version:	Bluetooth 5.0
RF Output Power:	GFSK 1M:11.17dBm GFSK 2M:11.16dBm
Modulation Type:	GFSK
Antenna Type:	PCB Antenna
Antenna Gain:	1.7dBi
Power Supply:	Input: AC 100V-240V~50/60Hz

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2402 MHz	11	2422 MHz	21	2442 MHz	31	2462 MHz
2	2404 MHz	12	2424 MHz	22	2444 MHz	32	2464 MHz
3	2406 MHz	13	2426 MHz	23	2446 MHz	33	2466 MHz
4	2408 MHz	14	2428 MHz	24	2448 MHz	34	2468 MHz
5	2410 MHz	15	2430 MHz	25	2450 MHz	35	2470 MHz
6	2412 MHz	16	2432 MHz	26	2452 MHz	36	2472 MHz
7	2414 MHz	17	2434 MHz	27	2454 MHz	37	2474 MHz
8	2416 MHz	18	2436 MHz	28	2456 MHz	38	2476 MHz
9	2418 MHz	19	2438 MHz	29	2458 MHz	39	2478 MHz
10	2420 MHz	20	2440 MHz	30	2460 MHz	40	2480 MHz

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The lowest channel	2402MHz
The middle channel	2442MHz
The Highest channel	2480MHz

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode

Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.

5.3 Description of Support Units

None.

5.4 Deviation from Standards

None.

5.5 Abnormalities from Standard Conditions

None.

5.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC —Registration No.: 381383**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 381383.

● **IC —Registration No.: 9079A**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A

● **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). LAB CODE:600179-0

5.7 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.
Address: No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102
Tel: 0755-27798480
Fax: 0755-27798960

6 Test Instruments list

Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July. 03 2015	July. 02 2020
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 26 2019	June. 25 2020
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 26 2019	June. 25 2020
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 26 2019	June. 25 2020
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 26 2019	June. 25 2020
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 26 2019	June. 25 2020
9	Coaxial Cable	GTS	N/A	GTS211	June. 26 2019	June. 25 2020
10	Coaxial cable	GTS	N/A	GTS210	June. 26 2019	June. 25 2020
11	Coaxial Cable	GTS	N/A	GTS212	June. 26 2019	June. 25 2020
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 26 2019	June. 25 2020
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 26 2019	June. 25 2020
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 26 2019	June. 25 2020
15	Band filter	Amindeon	82346	GTS219	June. 26 2019	June. 25 2020
16	Power Meter	Anritsu	ML2495A	GTS540	June. 26 2019	June. 25 2020
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 26 2019	June. 25 2020
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 26 2019	June. 25 2020
19	Splitter	Agilent	11636B	GTS237	June. 26 2019	June. 25 2020
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 26 2019	June. 25 2020
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 19 2019	Oct. 18 2020
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 19 2019	Oct. 18 2020
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 19 2019	Oct. 18 2020
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June. 26 2019	June. 25 2020

Conducted Emission						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May.15 2019	May.14 2022
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 26 2019	June. 25 2020
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 26 2019	June. 25 2020
4	Artificial Mains Network	SCHWARZBECK MESS	NSLK8127	GTS226	June. 26 2019	June. 25 2020
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	KTJ	TA328	GTS233	June. 26 2019	June. 25 2020
8	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	June. 26 2019	June. 25 2020
9	ISN	SCHWARZBECK	NTFM 8158	GTD565	June. 26 2019	June. 25 2020

RF Conducted Test:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	June. 26 2019	June. 25 2020
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 26 2019	June. 25 2020
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 26 2019	June. 25 2020
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 26 2019	June. 25 2020
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 26 2019	June. 25 2020
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 26 2019	June. 25 2020
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 26 2019	June. 25 2020
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 26 2019	June. 25 2020

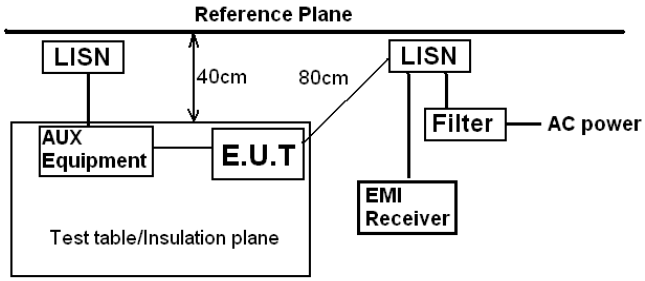
General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 26 2019	June. 25 2020
2	Barometer	ChangChun	DYM3	GTS255	June. 26 2019	June. 25 2020

7 Test results and Measurement Data

7.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203 /247(c)
15.203 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 permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. **15.247(c) (1)(i) requirement:** (i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.	
E.U.T Antenna:	
The antennas are PCB antenna, the best case gain of the antennas are 1.7dBi, reference to the appendix II for details	

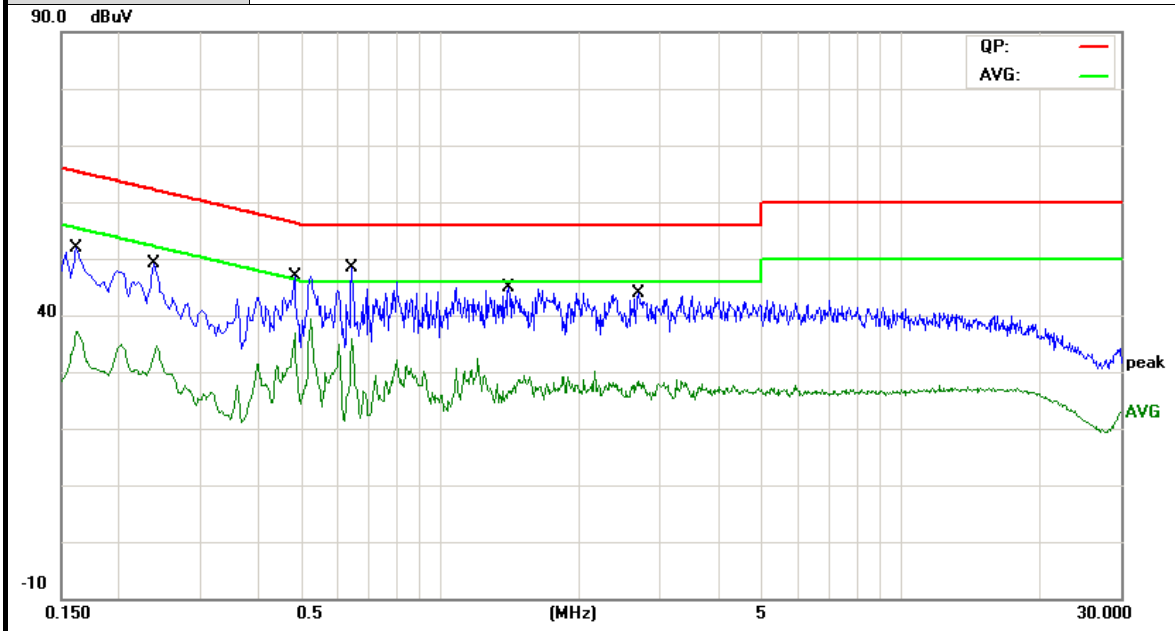
7.2 Conducted Emissions

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.207</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>Test Frequency Range:</td><td>150KHz to 30MHz</td></tr>
<tr><td>Class / Severity:</td><td>Class B</td></tr>
<tr><td>Receiver setup:</td><td>RBW=9KHz, VBW=30KHz, Sweep time=auto</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr>
<tr><td>Quasi-peak</td><td>Average</td></tr>
<tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr>
<tr><td>0.5-5</td><td>56</td><td>46</td></tr>
<tr><td>5-30</td><td>60</td><td>50</td></tr>
</table>
* Decreases with the logarithm of the frequency.
</td></tr>
<tr><td>Test setup:</td><td>


Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m
</td></tr>
<tr><td>Test procedure:</td><td>1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.
2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).
3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2009 on conducted measurement.</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 6.0 for details</td></tr>
<tr><td>Test mode:</td><td>Refer to section 5.2 for details</td></tr>
<tr><td>Test environment:</td><td>Temp.:</td><td>26 °C</td><td>Humid.:</td><td>55%</td><td>Press.:</td><td>1002mbar</td></tr>
<tr><td>Test voltage:</td><td>AC 120V/60Hz</td></tr>
<tr><td>Test results:</td><td>Pass</td></tr>
</table>

Measurement data

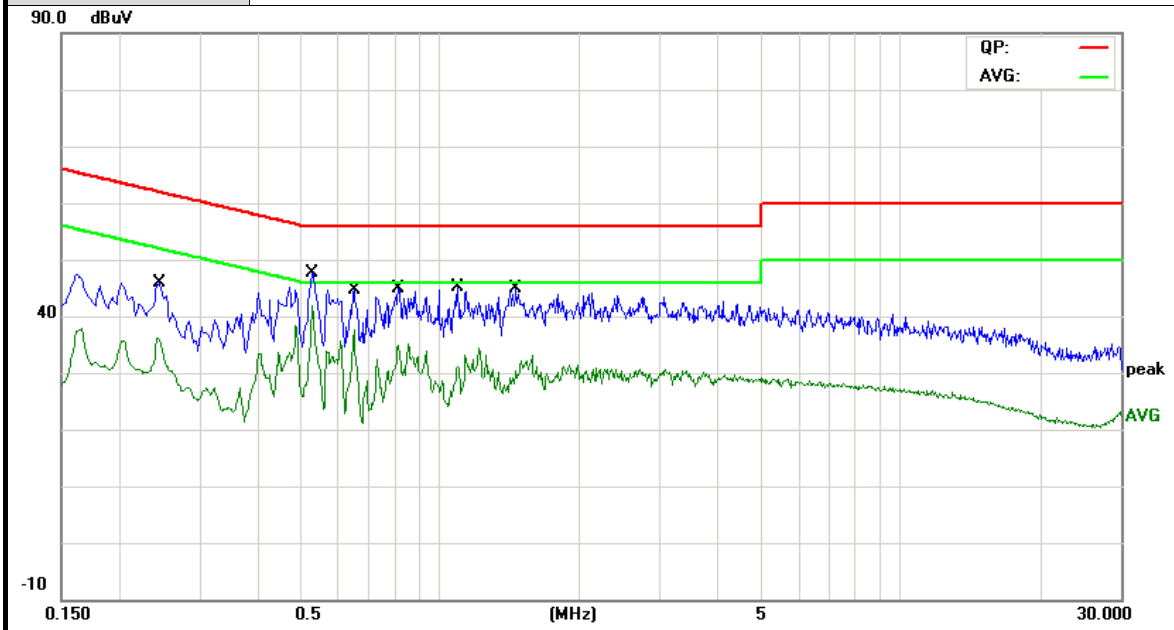
Terminal:	Line
Test Mode:	Normal working with TX BLE 1M Mode
Remark:	Only worse case is reported



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1620	36.93	9.77	46.70	65.36	-18.66	QP
2		0.1620	27.07	9.77	36.84	55.36	-18.52	AVG
3		0.2380	29.75	9.80	39.55	62.16	-22.61	QP
4		0.2380	21.54	9.80	31.34	52.16	-20.82	AVG
5		0.4820	30.60	9.93	40.53	56.30	-15.77	QP
6	*	0.4820	24.84	9.93	34.77	46.30	-11.53	AVG
7		0.6419	27.78	9.89	37.67	56.00	-18.33	QP
8		0.6419	21.23	9.89	31.12	46.00	-14.88	AVG
9		1.4060	26.87	9.79	36.66	56.00	-19.34	QP
10		1.4060	15.28	9.79	25.07	46.00	-20.93	AVG
11		2.6940	26.54	9.84	36.38	56.00	-19.62	QP
12		2.6940	17.36	9.84	27.20	46.00	-18.80	AVG

Emission Level= Read Level+ Correct Factor

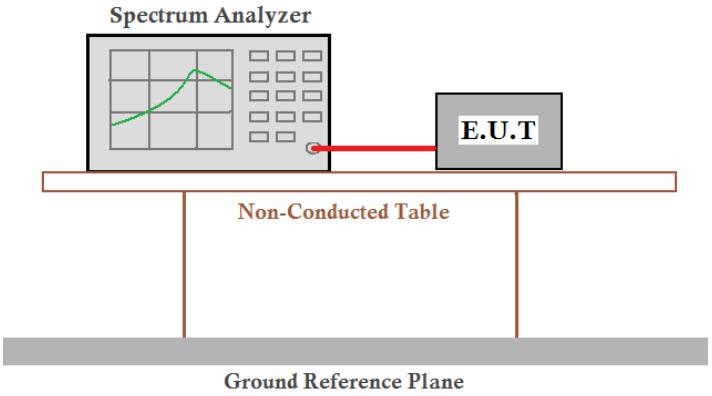
Terminal:	Neutral
Test Mode:	Normal working with TX BLE 1M Mode
Remark:	Only worse case is reported



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.2460	33.02	9.80	42.82	61.89	-19.07	QP
2		0.2460	25.94	9.80	35.74	51.89	-16.15	AVG
3		0.5260	35.70	9.95	45.65	56.00	-10.35	QP
4	*	0.5260	32.46	9.95	42.41	46.00	-3.59	AVG
5		0.6500	32.04	9.88	41.92	56.00	-14.08	QP
6		0.6500	28.19	9.88	38.07	46.00	-7.93	AVG
7		0.8100	31.60	9.70	41.30	56.00	-14.70	QP
8		0.8100	25.31	9.70	35.01	46.00	-10.99	AVG
9		1.0900	28.68	9.66	38.34	56.00	-17.66	QP
10		1.0900	20.63	9.66	30.29	46.00	-15.71	AVG
11		1.4580	29.74	9.82	39.56	56.00	-16.44	QP
12		1.4580	20.71	9.82	30.53	46.00	-15.47	AVG

Emission Level= Read Level+ Correct Factor

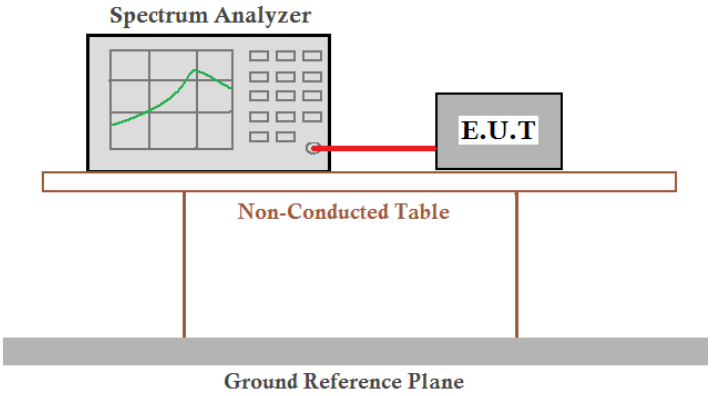
7.3 Conducted Output Power

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance V05r02
Limit:	30dBm
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

Test Mode	Test channel	Peak Output Power (dBm)	Limit(dBm)	Result
BLE 1M	Lowest	11.167	30.00	Pass
	Middle	10.911		
	Highest	10.513		
BLE 2M	Lowest	11.160		
	Middle	10.898		
	Highest	10.497		

7.4 Channel Bandwidth

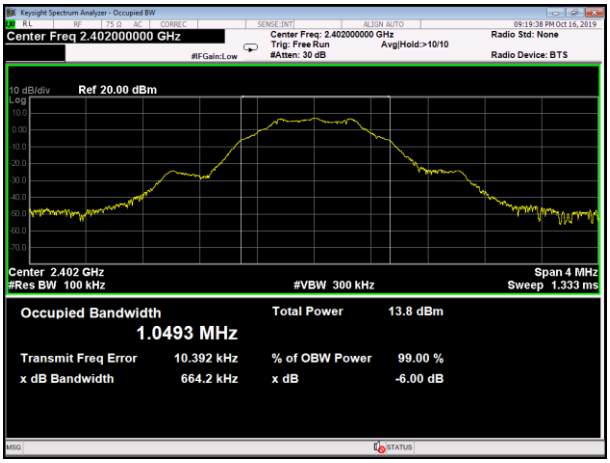
Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance V05r02
Limit:	>500KHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

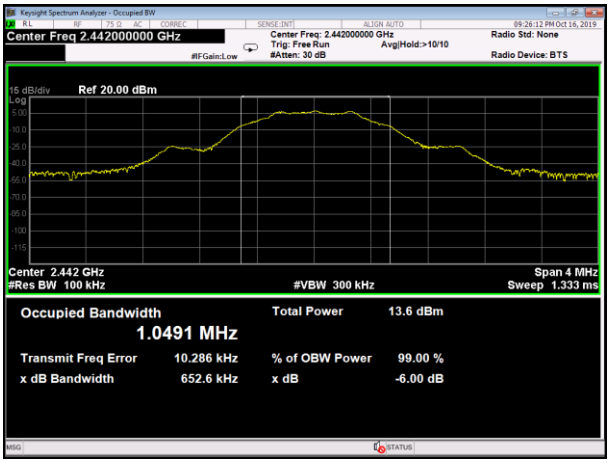
Test Mode	Test channel	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit(KHz)	Result
BLE 1M	Lowest	0.664	1.049	>500	Pass
	Middle	0.653	1.049		
	Highest	0.665	1.050		
BLE 2M	Lowest	1.125	2.067		
	Middle	1.121	2.061		
	Highest	1.113	2.063		

Test plot as follows:

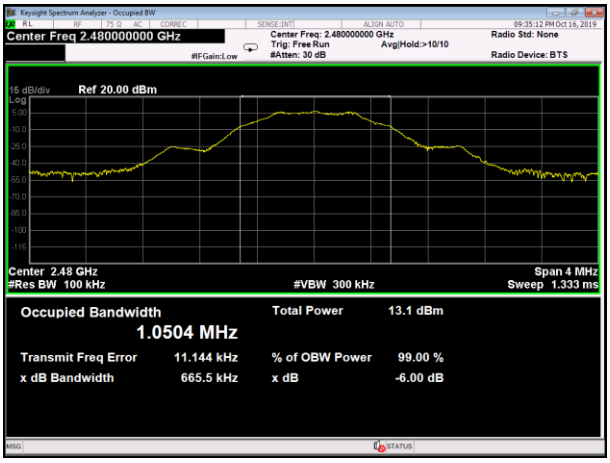
BLE 1M :



Lowest channel

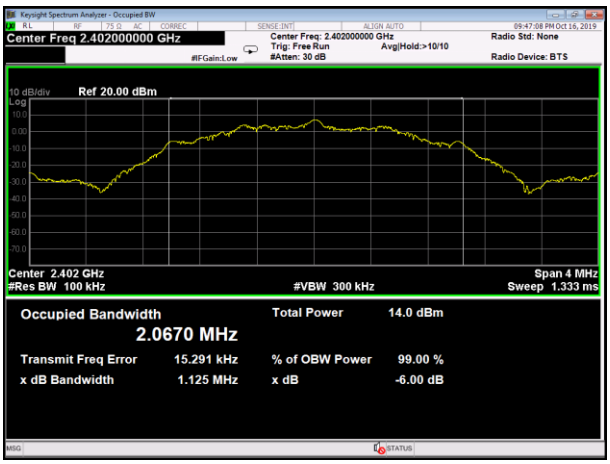


Middle channel

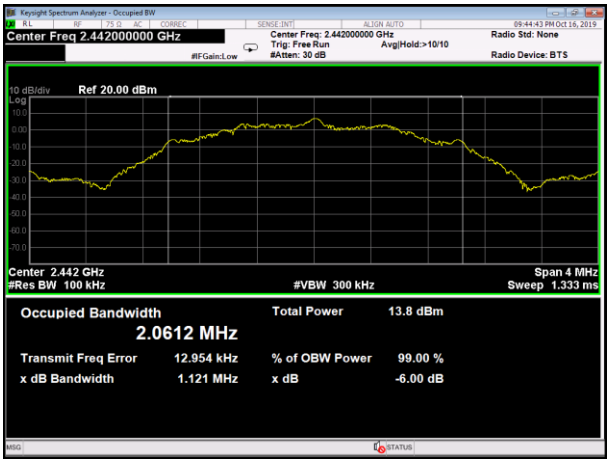


Highest channel

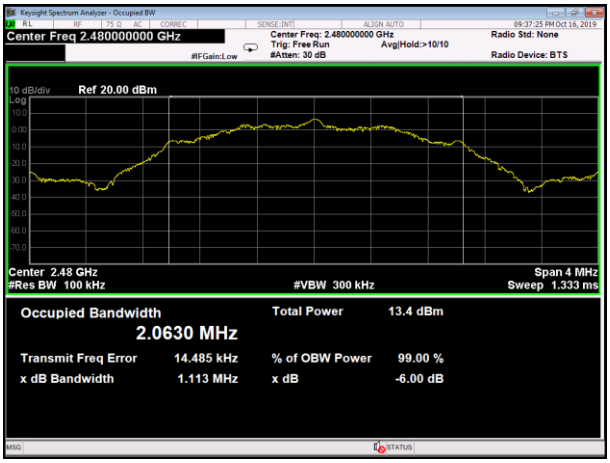
BLE 2M :



Lowest channel

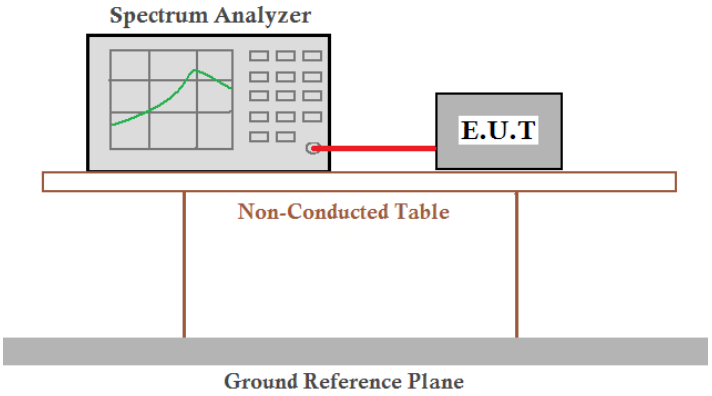


Middle channel



Highest channel

7.5 Power Spectral Density

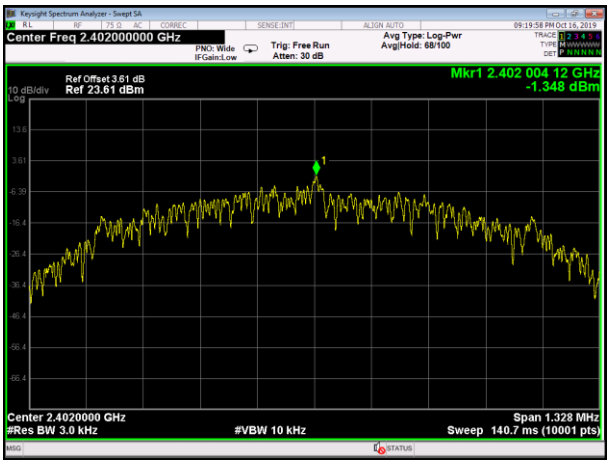
Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance V05r02
Limit:	8dBm/3kHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

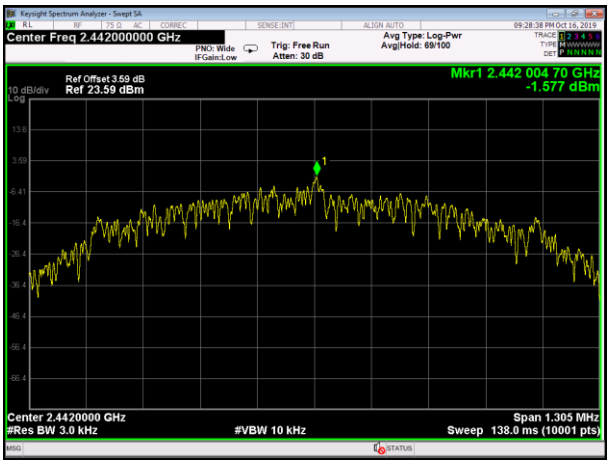
Test Mode	Test channel	Power Spectral Density (dBm/3kHz)	Limit(dBm/3kHz)	Result
BLE 1M	Lowest	-1.348	8.00	Pass
	Middle	-1.577		
	Highest	-1.997		
BLE 2M	Lowest	-5.593		
	Middle	-5.593		
	Highest	-6.365		

Test plot as follows:

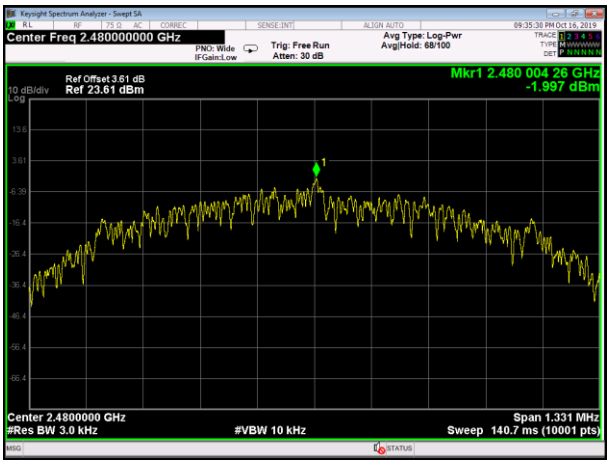
BLE 1M :



Lowest channel

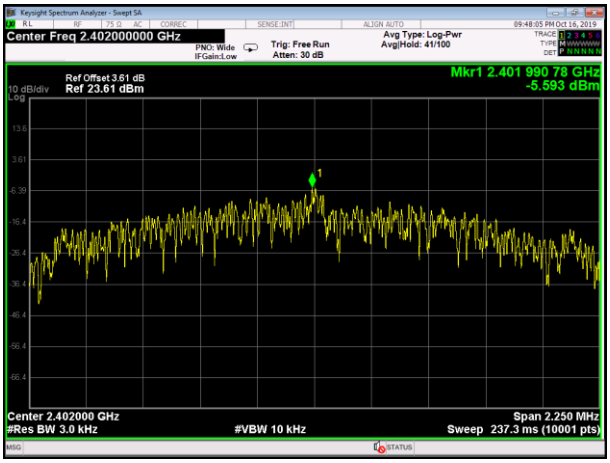


Middle channel

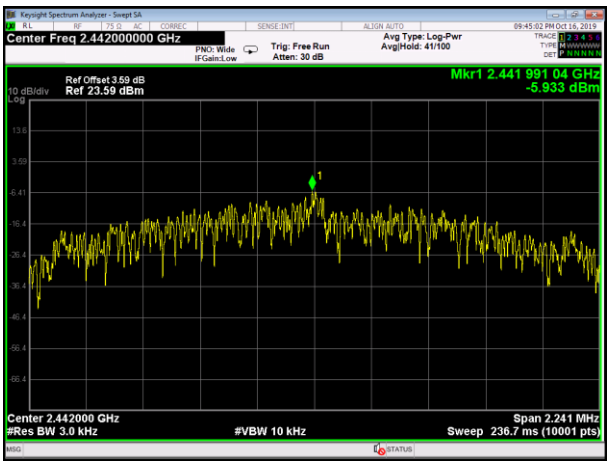


Highest channel

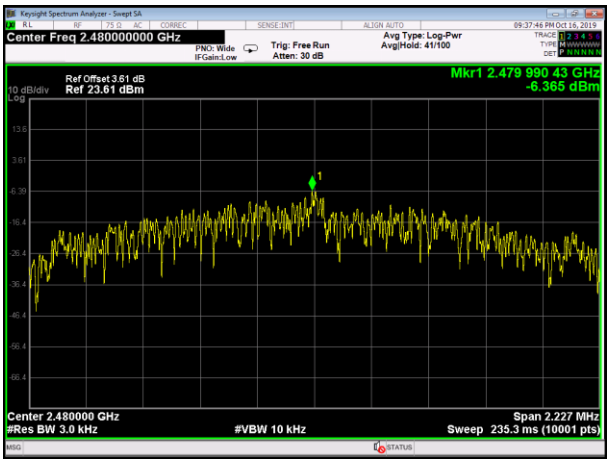
BLE 2M :



Lowest channel



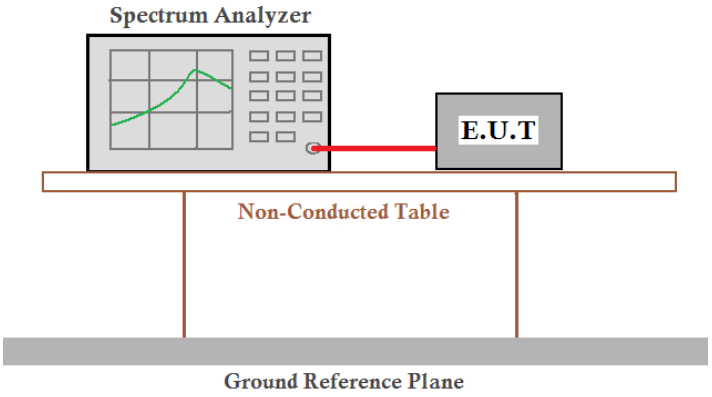
Middle channel



Highest channel

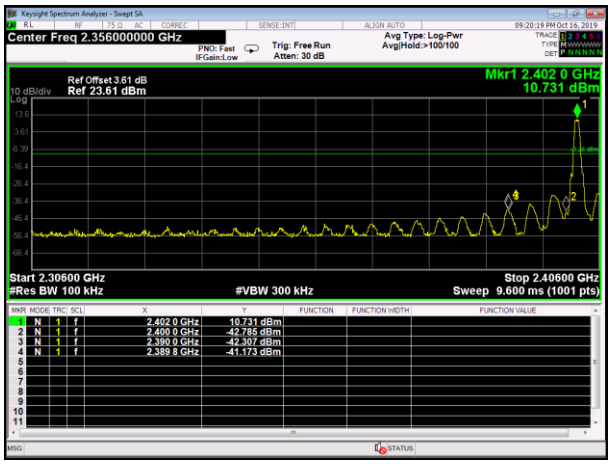
7.6 Band edges

7.6.1 Conducted Emission Method

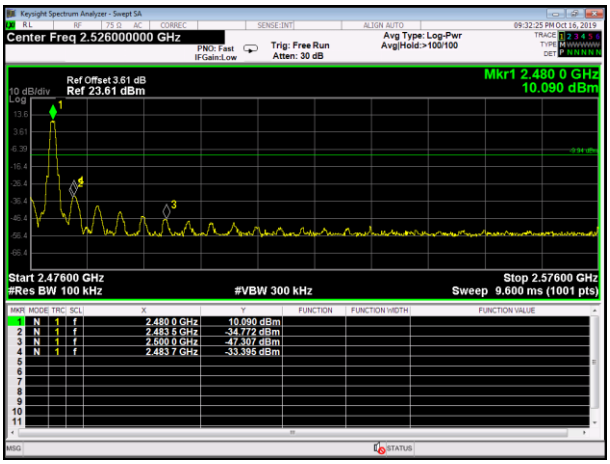
Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance V05r02
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional 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.
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Test plot as follows:

BLE 1M :

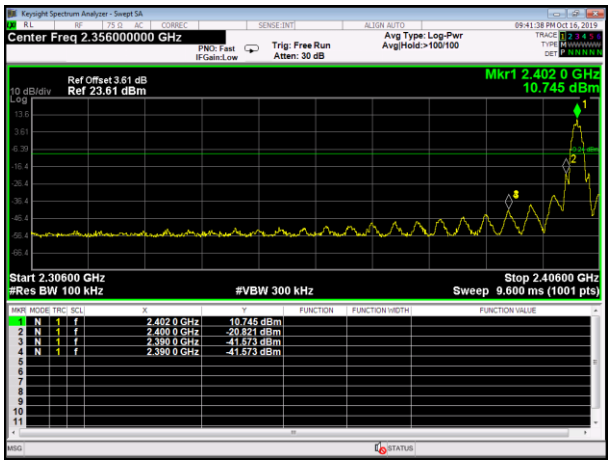


Lowest channel

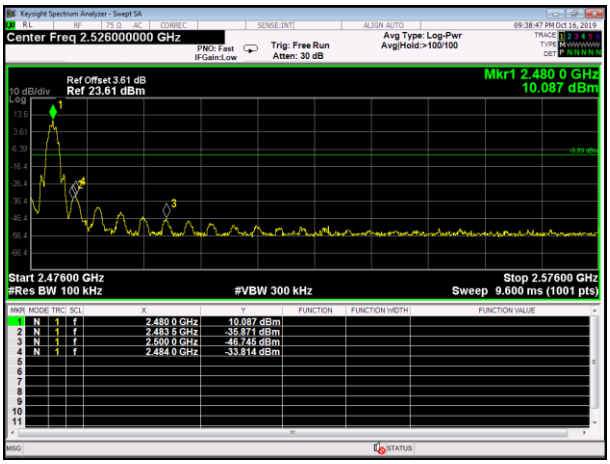


Highest channel

BLE 2M :

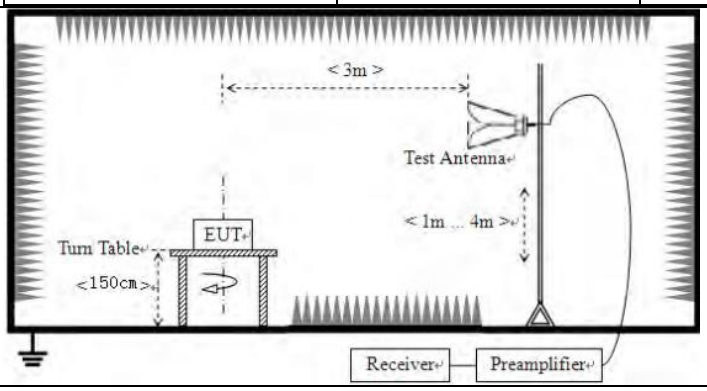


Lowest channel



Highest channel

7.6.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209 and 15.205
Test Method:	ANSI C63.10:2013
Test Frequency Range:	All of the restrict bands were tested, only the worst band's (2310MHz to 2500MHz) data was showed.
Test site:	Measurement Distance: 3m
Receiver setup:	Frequency: Above 1GHz — Detector: Peak — RBW: 1MHz — VBW: 3MHz — Value: Peak Frequency: Above 1GHz — Detector: RMS — RBW: 1MHz — VBW: 3MHz — Value: Average
Limit:	Frequency: Above 1GHz — Limit (dBuV/m @3m): 54.00 — Value: Average Frequency: Above 1GHz — Limit (dBuV/m @3m): 74.00 — Value: Peak
Test setup:	
Test Procedure:	1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. 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. 4. 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 and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. 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. 7. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

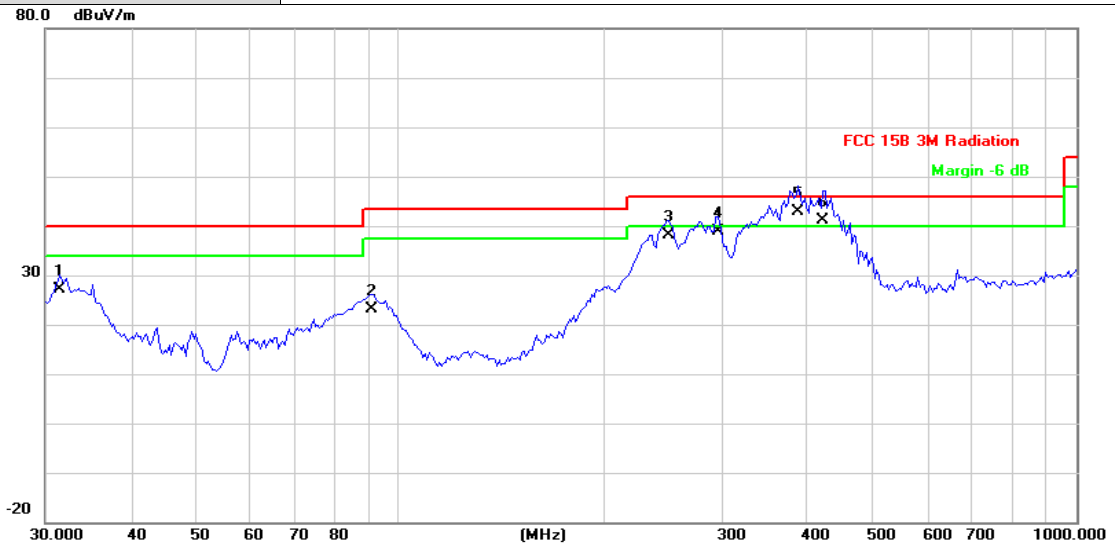
9KHz~30MHz

From 9KHz to 30MHz: Conclusion: PASS

Note: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

30MHz~1GHz

Ant. Pol.	Horizontal
Test Mode:	TX BLE 1M Mode 2402MHz
Remark:	Only worse case is reported



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		31.5095	41.28	-14.15	27.13	40.00	-12.87	QP
2		90.8554	45.17	-22.02	23.15	43.50	-20.35	QP
3		249.4250	55.12	-17.08	38.04	46.00	-7.96	QP
4		295.1469	55.05	-16.10	38.95	46.00	-7.05	QP
5	*	387.9920	55.65	-12.65	43.00	46.00	-3.00	QP
6	!	422.0577	53.20	-11.95	41.25	46.00	-4.75	QP

Emission Level= Read Level+ Correct Factor

Ant. Pol.	Vertical
Test Mode:	TX BLE 1M Mode 2402MHz
Remark:	Only worse case is reported

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	33.7986	51.54	-15.88	35.66	40.00	-4.34	QP
2		43.8119	49.26	-21.07	28.19	40.00	-11.81	QP
3		247.6819	44.11	-17.18	26.93	46.00	-19.07	QP
4		295.1469	48.25	-16.10	32.15	46.00	-13.85	QP
5		379.9141	46.61	-13.01	33.60	46.00	-12.40	QP
6		425.0280	47.76	-11.94	35.82	46.00	-10.18	QP

Emission Level= Read Level+ Correct Factor

Above 1G

Ant. Pol.	Horizontal
Test Mode:	TX BLE 1M Mode 2402MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4804.078	37.71	12.42	50.13	54.00	-3.87	AVG
2		4804.492	48.50	12.43	60.93	74.00	-13.07	peak

Ant. Pol.	Vertical
Test Mode:	TX BLE 1M Mode 2402MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4803.394	47.89	12.41	60.30	74.00	-13.70	peak
2	*	4803.922	37.28	12.42	49.70	54.00	-4.30	AVG

Ant. Pol.	Horizontal
Test Mode:	TX BLE 1M Mode 2442MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4884.142	33.87	13.35	47.85	54.00	-6.15	AVG
2		4884.134	49.01	13.34	62.35	74.00	-11.65	peak

Ant. Pol.	Vertical
Test Mode:	TX BLE 1M Mode 2442MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4884.047	46.63	13.34	59.97	74.00	-14.03	peak
2	*	4884.013	35.29	13.35	48.64	54.00	-5.36	AVG

Ant. Pol.	Horizontal
Test Mode:	TX BLE 1M Mode 2480MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB
1	*	4959.922	33.78	13.37	47.15	54.00	-6.85
2		4960.624	49.02	13.38	62.40	74.00	-11.60

Ant. Pol.	Vertical
Test Mode:	TX BLE 1M Mode 2480MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4959.466	46.76	13.37	60.13	74.00	-13.87	peak
2	*	4960.078	35.35	13.37	48.72	54.00	-5.28	AVG

Ant. Pol.	Horizontal
Test Mode:	TX BLE 2M Mode 2402MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4803.604	47.71	12.42	60.13	74.00	-13.87	peak
2	*	4804.558	35.24	12.43	47.67	54.00	-6.33	AVG

Ant. Pol.	Vertical
Test Mode:	TX BLE 2M Mode 2402MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4803.532	48.71	12.42	61.13	74.00	-12.87	peak
2	*	4804.078	38.67	12.42	51.09	54.00	-2.91	AVG

Ant. Pol.	Horizontal
Test Mode:	TX BLE 2M Mode 2442MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4884.014	33.60	13.34	46.94	54.00	-7.06	AVG
2		4884.018	44.79	13.35	58.14	74.00	-15.86	peak

Ant. Pol.	Vertical
Test Mode:	TX BLE 2M Mode 2442MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4884.017	47.14	13.35	60.49	74.00	-13.51	peak
2	*	4884.024	34.46	13.34	47.80	54.00	-6.20	AVG

Ant. Pol.	Horizontal
Test Mode:	TX BLE 2M Mode 2480MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4959.922	33.58	13.37	46.95	54.00	-7.05	AVG
2		4960.588	44.82	13.38	58.20	74.00	-15.80	peak

Ant. Pol.	Vertical
Test Mode:	TX BLE 2M Mode 2480MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4960.444	47.07	13.38	60.45	74.00	-13.55	peak
2	*	4960.444	34.41	13.38	47.79	54.00	-6.21	AVG

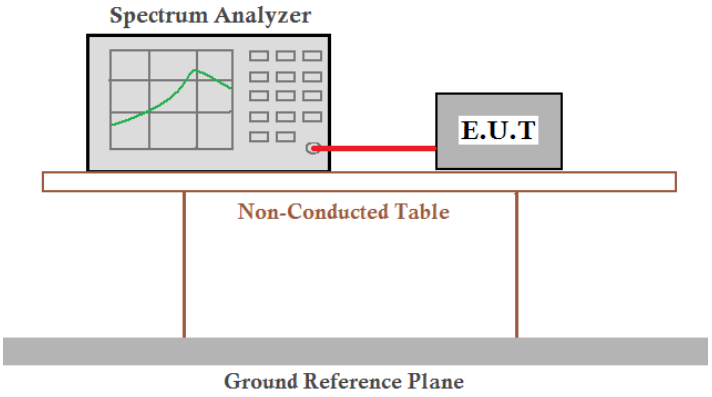
Remark:

1.No report for the emission which more than 10 dB below the prescribed limit.

2.Emission Level= Read Level+ Correct Factor

7.7 Spurious Emission

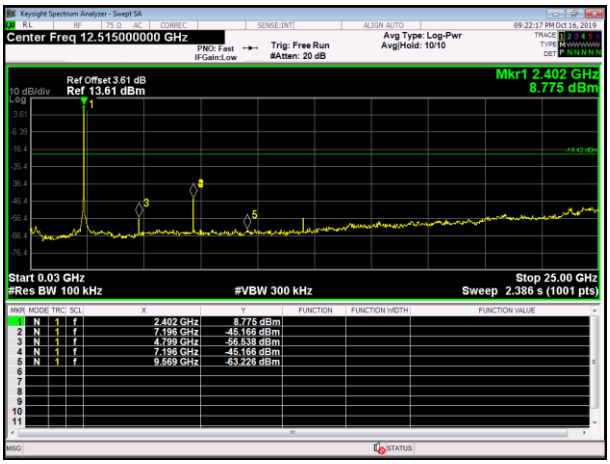
7.7.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance V05r02
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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.
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Test plot as follows:

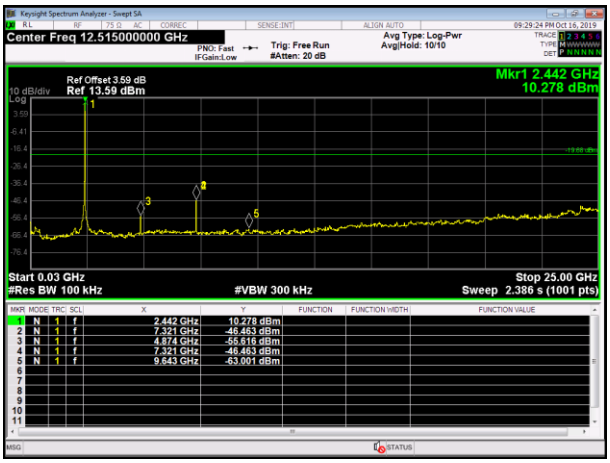
BLE 1M:

Lowest channel



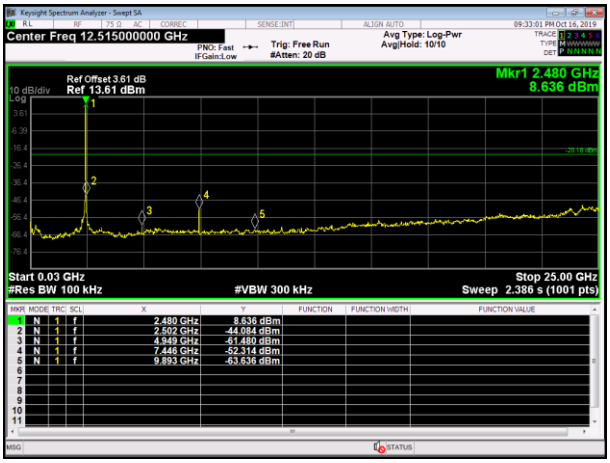
30MHz~25GHz

Middle channel



30MHz~25GHz

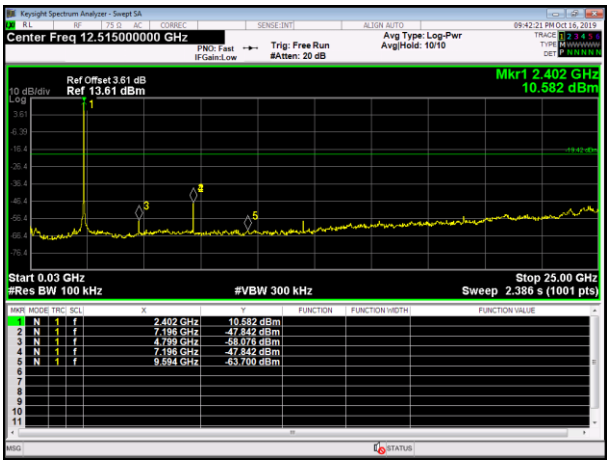
Highest channel



30MHz~25GHz

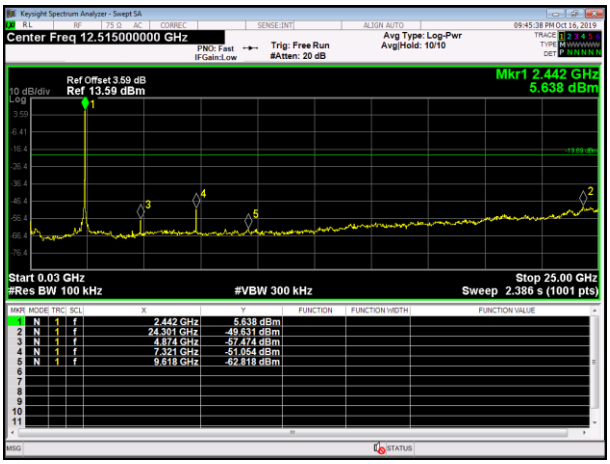
BLE 2M:

Lowest channel



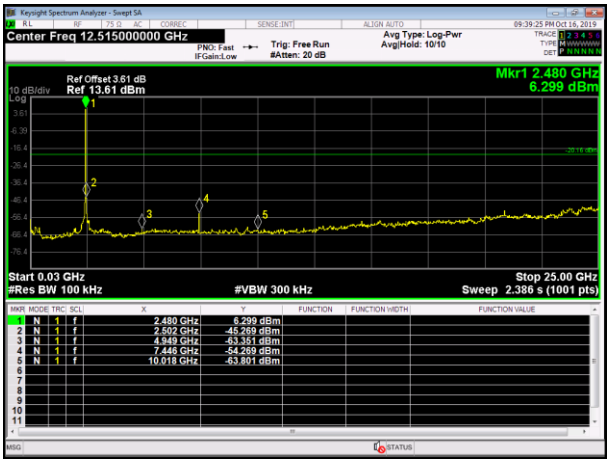
30MHz~25GHz

Middle channel



30MHz~25GHz

Highest channel



30MHz~25GHz

8 Test Setup Photo

Reference to the **appendix I** for details.

9 EUT Constructional Details

Reference to the **appendix II** for details.

------End------