

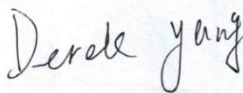
FCC TEST REPORT

Application No.: ZR/2020/C0047
Applicant: Sony Corporation
Address of Applicant: 1-7-1 Konan Minato-ku Tokyo, 108-0075 Japan
Manufacturer: Sony Corporation
Address of Manufacturer: 1-7-1 Konan Minato-ku Tokyo, 108-0075 Japan
EUT Description: GSM/WCDMA/LTE Phone with BT, DTS/UNII a/b/g/n/ac, GPS and NFC
Trade Mark: Sony
FCC ID: PY7-63649Q
Standards: 47 CFR FCC Part 2, Subpart J
 47 CFR Part 15, Subpart C
Date of Receipt: 2021/1/10
Date of Test: 2021/1/11 to 2021/3/31
Date of Issue: 2021/4/22

Test Result :	PASS *
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* In the configuration tested, the EUT detailed in this report complied with the standards specified above.

Authorized Signature:





Derek Yang
 Wireless Laboratory Manager



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1 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2021-04-07		Original
02		2021-04-22		Comment Revised

Authorized for issue by:	
Prepared By	 _____ (Dee Zheng) / Engineer
Checked By	 _____ (Jim Huang) / Reviewer



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2 Test Summary

Test Item	Test Requirement	Test Method	Result	Remark	Test Lab*
AC Power Line Conducted Emission	15.207	ANSI C63.10 2013	-	See Note	-
Duty cycle	-	-	PASS	-	A
Conducted Output Power	15.247 (b)(3)	ANSI C63.10 2013	PASS	-	A
DTS (6 dB) Bandwidth	15.247 (a)(2)	ANSI C63.10 2013	-	See Note	-
Power Spectral Density	15.247 (e)	ANSI C63.10 2013	-	See Note	-
Band-edge for RF Conducted Emissions	15.247(d)	ANSI C63.10 2013	-	See Note	-
RF Conducted Spurious Emissions	15.247(d)	ANSI C63.10 2013	-	See Note	-
Radiated Spurious Emissions	15.205/15.209	ANSI C63.10 2013	PASS	-	B
Restricted bands around fundamental frequency (Radiated Emission)	15.205/15.209	ANSI C63.10 2013	PASS	-	B

Note: The RF circuit, output power level and antenna performance is the same in BT function across all two FCC ID PY7-54955X and PY7-63649Q, since the change, only verify RF output power and radiated spurious emission test data the worst mode was reported in this report.

Remark :

All test were performed by Lab A and B.

Parts of test items above were subcontracted to Lab B.

Lab A: SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Lab B: SGS-CSTC STANDARDS TECHNICAL SERVICES (XI 'AN) CO., LTD.



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3 General Information

3.1 Details of Client

Applicant:	Sony Corporation
Address of Applicant	1-7-1 Konan Minato-ku Tokyo, 108-0075 Japan
Manufacturer:	Sony Corporation
Address of Manufacturer	1-7-1 Konan Minato-ku Tokyo, 108-0075 Japan

3.2 Test Location

Lab A:

Company:	SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
Address:	No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China
Post code:	518057
Test engineer	Dee Zheng, Swing Hu

Lab B:

Company:	SGS-CSTC STANDARDS TECHNICAL SERVICES (XI 'AN) CO., LTD.
Address:	1/F, Unit D, Building 1, Kanghong Orange Technology Park, No.137, Keyuan 3rd Road, Fengdong New City, Xi'an, Shaanxi China
Post code:	710086
Test engineer	Leah Chen, Ken Liu, Andy Yao



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3.3 Test Facility

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

Lab A:

• **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• **VCCI**

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• **FCC –Designation Number: CN1178**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

• **Innovation, Science and Economic Development Canada**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

Lab B:

A2LA (Certificate No. 4854.01)

SGS-CSTC STANDARDS TECHNICAL SERVICES (XI 'AN) CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 4854.01.

FCC Designation Number: CN1271.



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3.4 General Description of EUT

EUT Description:	GSM/WCDMA/LTE Phone with BT, DTS/UNII a/b/g/n/ac, GPS and NFC
Trade Mark:	Sony
S/N:	005129ADNVM2
Operation Frequency:	2400MHz~2483.5MHz $f_c = 2402 \text{ MHz} + N * 2 \text{ MHz}$, where: - f_c = "Operating Frequency" in MHz, - N = "Channel Number" with the range from 0 to 39.
Bluetooth version:	Bluetooth V5.1
Modulation Type:	GFSK
Number of Channel:	40
Sample Type:	<input checked="" type="checkbox"/> Portable Device, <input type="checkbox"/> Module
Antenna Type:	<input type="checkbox"/> External, <input checked="" type="checkbox"/> Integrated
Antenna Gain:	2.0 dBi

Operation Frequency of each channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
0	2402MHz	10	2422MHz	20	2442MHz	30	2462MHz
1	2404MHz	11	2424MHz	21	2444MHz	31	2464MHz
2	2406MHz	12	2426MHz	22	2446MHz	32	2466MHz
3	2408MHz	13	2428MHz	23	2448MHz	33	2468MHz
4	2410MHz	14	2430MHz	24	2450MHz	34	2470MHz
5	2412MHz	15	2432MHz	25	2452MHz	35	2472MHz
6	2414MHz	16	2434MHz	26	2454MHz	36	2474MHz
7	2416MHz	17	2436MHz	27	2456MHz	37	2476MHz
8	2418MHz	18	2438MHz	28	2458MHz	38	2478MHz
9	2420MHz	19	2440MHz	29	2460MHz	39	2480MHz



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Remark:

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(CH0)	2402MHz
The Middle channel(CH19)	2440MHz
The Highest channel(CH39)	2480MHz

3.5 Test Environment

Operating Environment:	
Temperature:	25.0 °C
Humidity:	50 % RH
Atmospheric Pressure:	101.30 KPa

3.6 Description of Support Units

The EUT has been tested independent unit.



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4 Test results and Measurement Data

4.1 Antenna Requirement

Standard requirement:	47 CFR Part 15C Section 15.203 /247(c)
<p>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.</p> <p>15.247(b) (4) requirement: The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.</p>	
<p>The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 2.0 dBi.</p>	



4.2 Duty Cycle

4.2.1 Test Results

Test Mode	TX Freq. [MHz]	Duty cycle [%]	T(ms)	1/T(kHz)	VBW(kHz)
BLE_1M	CH0, CH19, CH39	61.66	0.386	2.591	3
BLE_2M	CH0, CH19, CH39	31.94	0.199	5.025	10

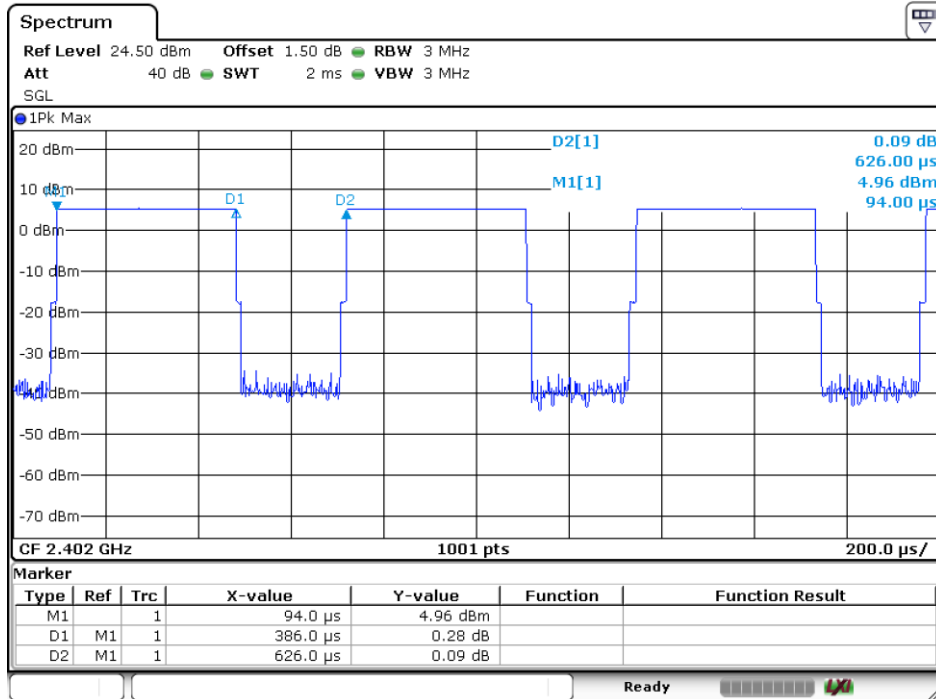


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4.2.2 Test Plots

4.2.2.1 ANT1

4.2.2.1.1 BLE_1M

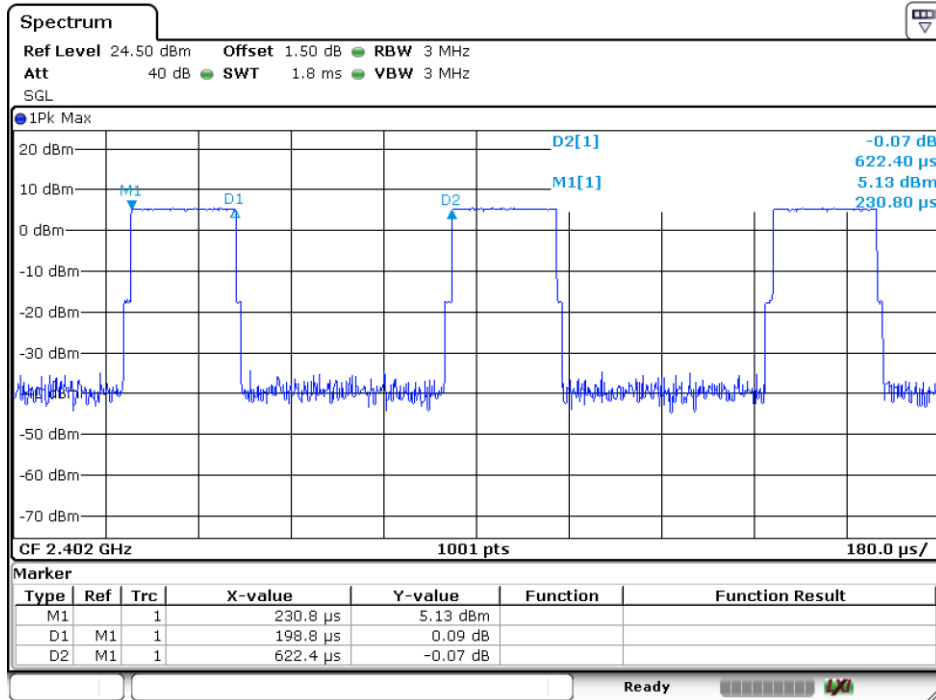


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4.2.2.1.2 BLE 2M



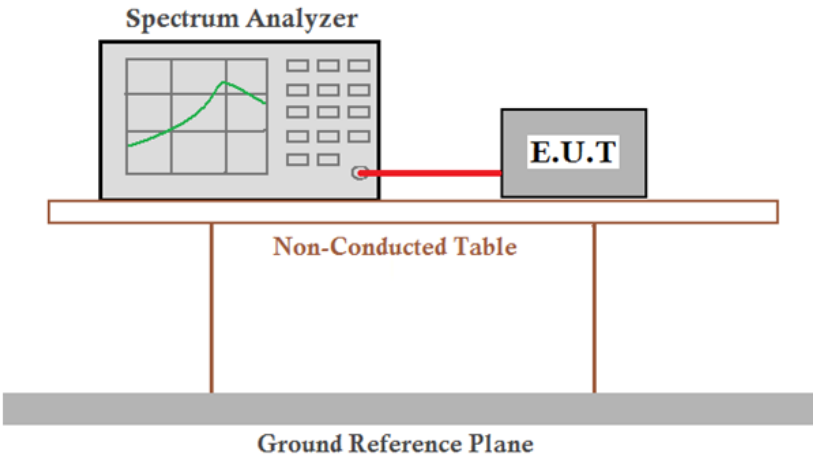
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4.3 Conducted Output Power

Test Requirement:	47 CFR Part 15C Section 15.247 (b)(3)
Test Method:	ANSI C63.10 :2013 Section 11.9.1.1
Test Setup:	
Test Instruments:	Refer to section 6 for details
Test Mode:	Transmitting with GFSK modulation.
Limit:	30dBm
Test Results:	Pass



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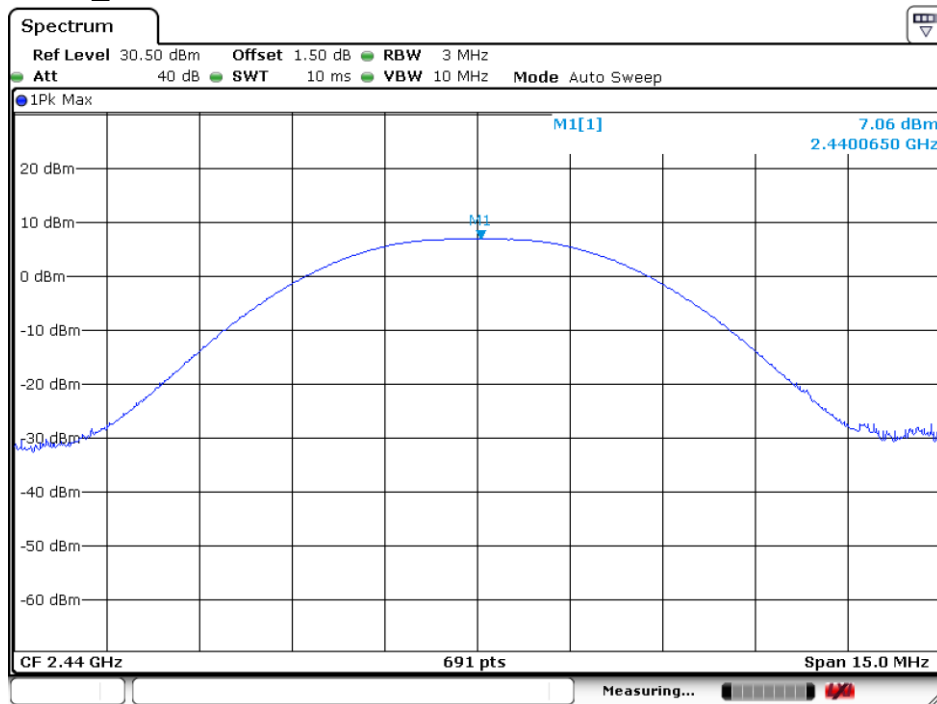
4.3.1 Test Results

Measurement Data of Peak Power:

GFSK_2M mode			
Test Channel	Peak Output Power (dBm)	Limit (dBm)	Result
Middle	7.06	30.00	Pass

4.3.2 Test Plots

4.3.2.1 GFSK 2M_Middle Channel



Date: 1.MAR.2021 10:11:02



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4.4 Radiated Spurious Emissions

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205				
Test Method:	ANSI C63.10 :2013 Section 11.12				
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)				
Limit:	Frequency	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
	0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
	1.705MHz-30MHz	30	-	-	30
	30MHz-88MHz	100	40.0	Quasi-peak	3
	88MHz-216MHz	150	43.5	Quasi-peak	3
	216MHz-960MHz	200	46.0	Quasi-peak	3
	960MHz-1GHz	500	54.0	Quasi-peak	3
	Above 1GHz	500	54.0	Average	3
Remark: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.					



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<p>Test Setup:</p>	
<p>Figure 1. Below 30MHz</p>	<p>Figure 2. 30MHz to 1GHz</p>
<p>Figure 3. Above 1 GHz</p>	
<p>Test Procedure:</p>	<ol style="list-style-type: none"> 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 semi-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



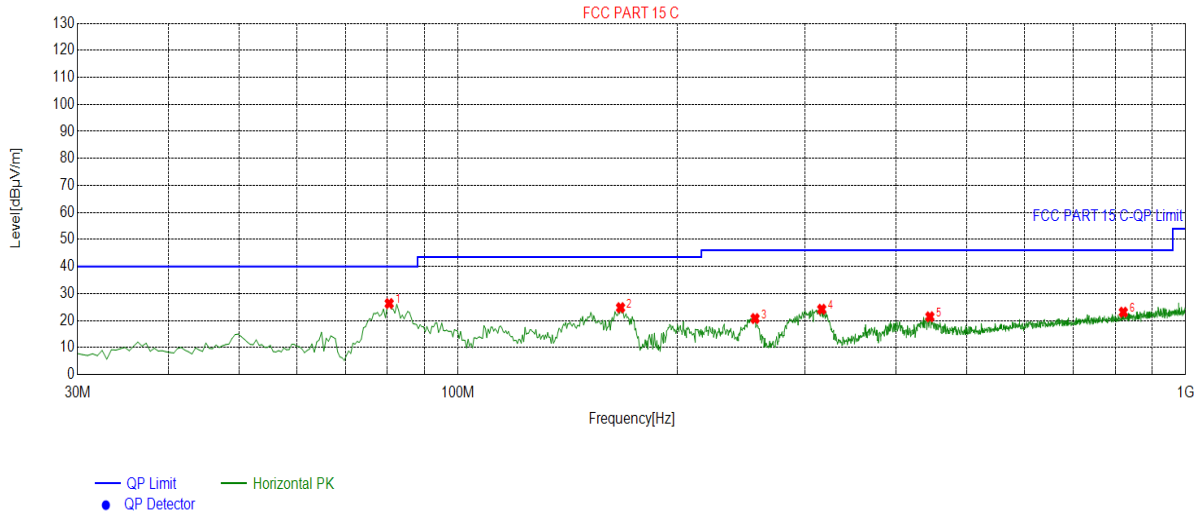
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	<p>would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</p> <p>h. Test the EUT in the lowest channel, the middle channel ,the Highest channel.</p> <p>i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, And found the X axis positioning which it is worse case.</p> <p>j. Repeat above procedures until all frequencies measured was complete.</p>
Test Configuration:	<p>Measurements Below 1000MHz</p> <ul style="list-style-type: none"> • RBW = 120 kHz • VBW = 300 kHz • Detector = Peak • Trace mode = max hold <p>Peak Measurements Above 1000 MHz</p> <ul style="list-style-type: none"> • RBW = 1 MHz • VBW \geq 3 MHz • Detector = Peak • Sweep time = auto • Trace mode = max hold <p>Average Measurements Above 1000MHz</p> <ul style="list-style-type: none"> • RBW = 1 MHz • VBW = 10 Hz, when duty cycle is no less than 98 percent. • VBW \geq 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
Exploratory Test Mode:	Transmitting with GFSK modulation. Charge + Transmitting mode.
Final Test Mode:	Transmitting with GFSK modulation. Pretest the EUT at Charge + Transmitting mode, For below 1GHz part, through pre-scan, the worst case is the lowest channel. Only the worst case is recorded in the report.
Instruments Used:	Refer to section 6 for details
Test Results:	Pass
Remark:	The Emission Test is performed by the Lab B



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4.4.1 Radiated Emission below 1GHz
4.4.1.1 Charge + Transmitting
Test Graph



Suspected List

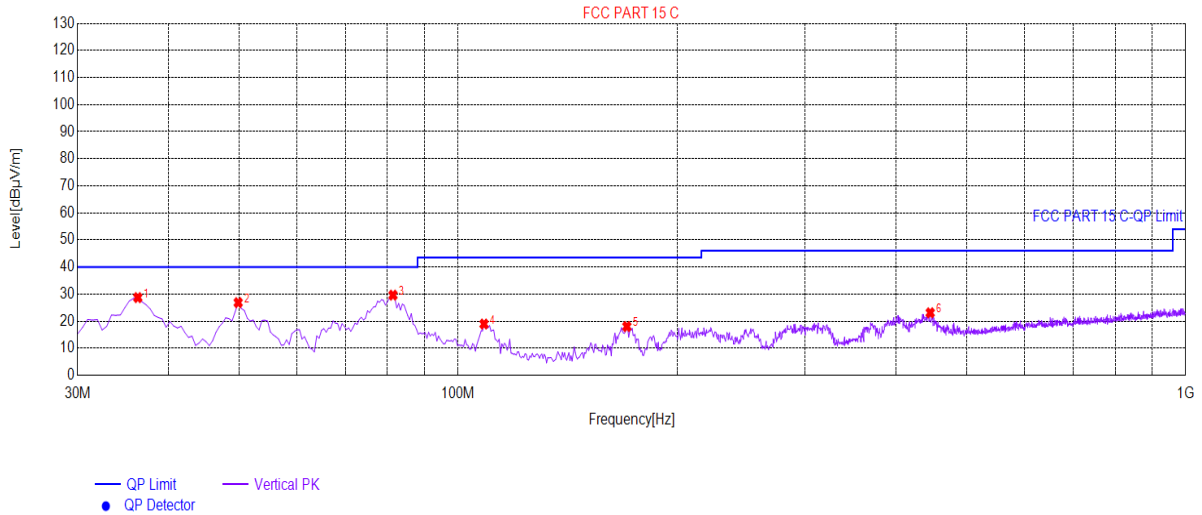
Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	80.4400	26.30	-34.23	40.00	13.70	245	300	Horizontal
2	167.255	24.77	-32.12	43.50	18.73	147	261	Horizontal
3	256.010	20.74	-27.32	46.00	25.26	236	83	Horizontal
4	316.150	24.17	-25.85	46.00	21.83	248	147	Horizontal
5	445.160	21.40	-22.57	46.00	24.60	296	134	Horizontal
6	821.035	23.09	-15.56	46.00	22.91	264	319	Horizontal

Final Data List



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Test Graph



Suspected List

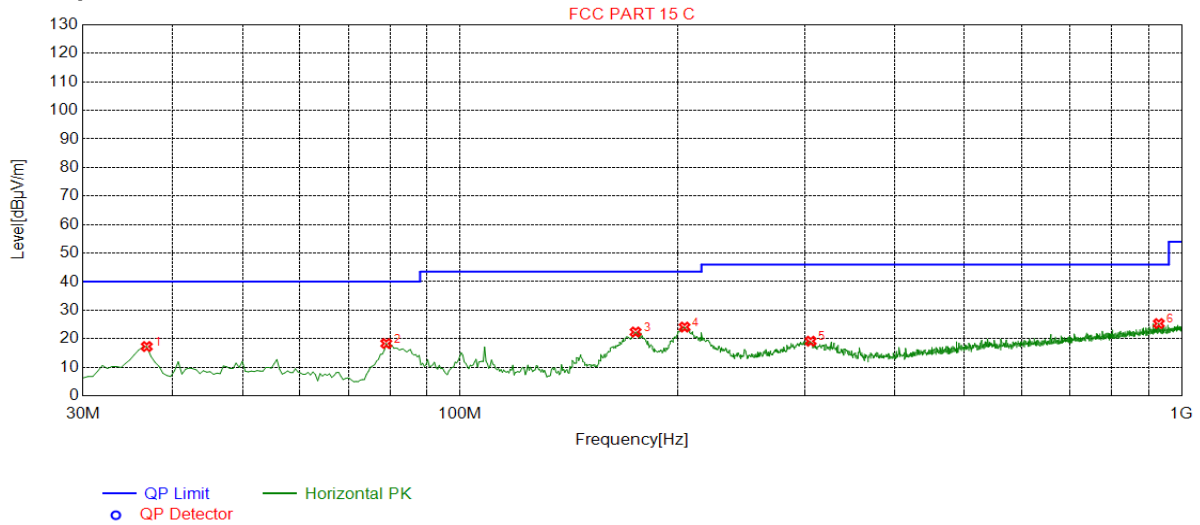
Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	36.3050	28.71	-30.18	40.00	11.29	174	277	Vertical
2	49.8850	26.84	-28.32	40.00	13.16	263	33	Vertical
3	81.4100	29.61	-33.98	40.00	10.39	345	33	Vertical
4	108.570	18.95	-29.44	43.50	24.55	286	194	Vertical
5	170.650	18.02	-32.15	43.50	25.48	274	168	Vertical
6	445.645	23.09	-22.56	46.00	22.91	174	187	Vertical

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Test Graph



Suspected List

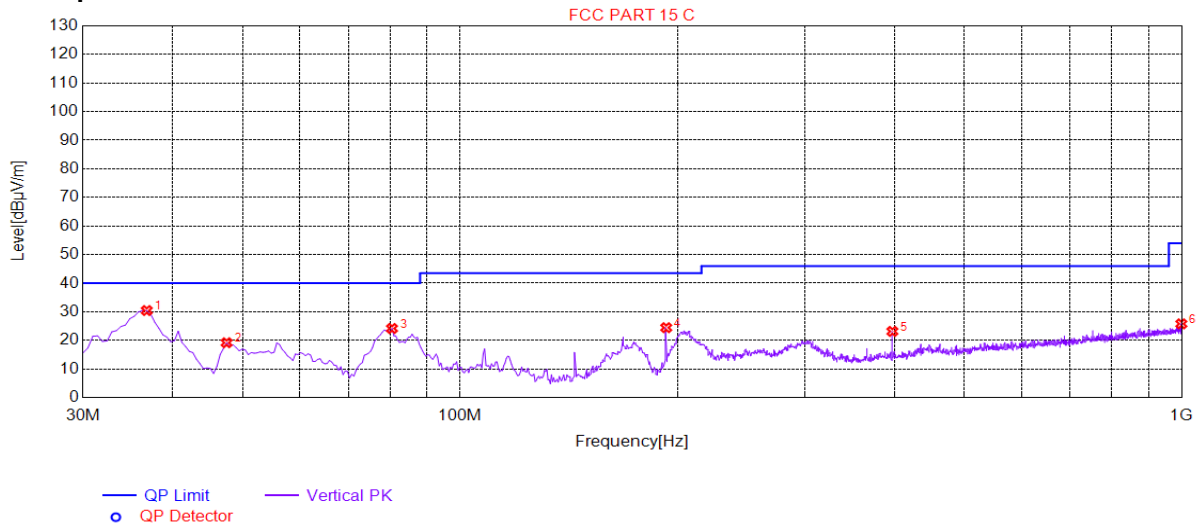
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	36.7934	17.29	-32.19	40.00	22.71	154	242	Horizontal
2	79.0095	18.35	-35.71	40.00	21.65	213	106	Horizontal
3	175.0875	22.37	-33.25	43.50	21.13	351	208	Horizontal
4	204.6873	24.10	-30.72	43.50	19.40	112	10	Horizontal
5	306.1031	19.16	-27.68	46.00	26.84	143	344	Horizontal
6	929.6398	25.34	-14.78	46.00	20.66	176	7	Horizontal

Final Data List



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Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	36.7934	30.45	-32.19	40.00	9.55	241	290	Vertical
2	47.4687	19.20	-30.20	40.00	20.80	353	281	Vertical
3	80.4652	24.18	-35.76	43.50	15.82	164	247	Vertical
4	193.041	24.46	-31.55	43.50	19.04	241	247	Vertical
5	397.328	23.16	-25.02	46.00	22.84	275	247	Vertical
6	999.029	25.80	-13.88	46.00	28.20	194	333	Vertical

Final Data List

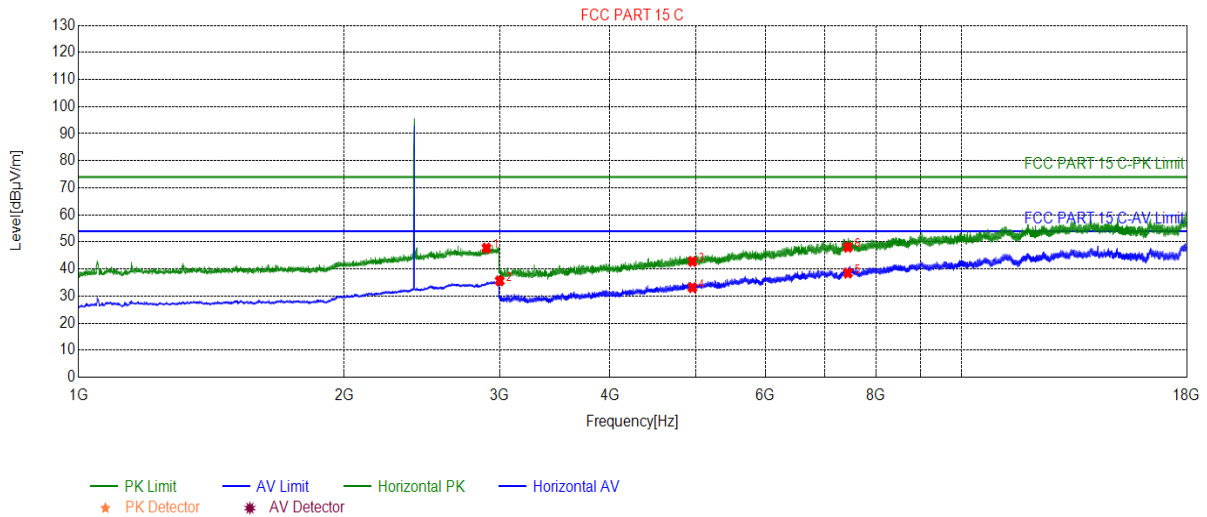


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4.4.2 Transmitter Emission above 1GHz 4.4.2.1 BLE-1M_Channel 39

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2897.97	47.75	10.12	74.00	26.25	159	48	Horizontal
2	3000.00	35.64	10.81	54.00	18.36	162	332	Horizontal
3	4960.00	42.79	-14.40	74.00	31.21	174	81	Horizontal
4	4960.00	33.13	-14.40	54.00	20.87	163	350	Horizontal
5	7440.00	38.49	-7.31	54.00	15.51	189	116	Horizontal
6	7440.00	48.06	-7.31	74.00	25.94	156	342	Horizontal

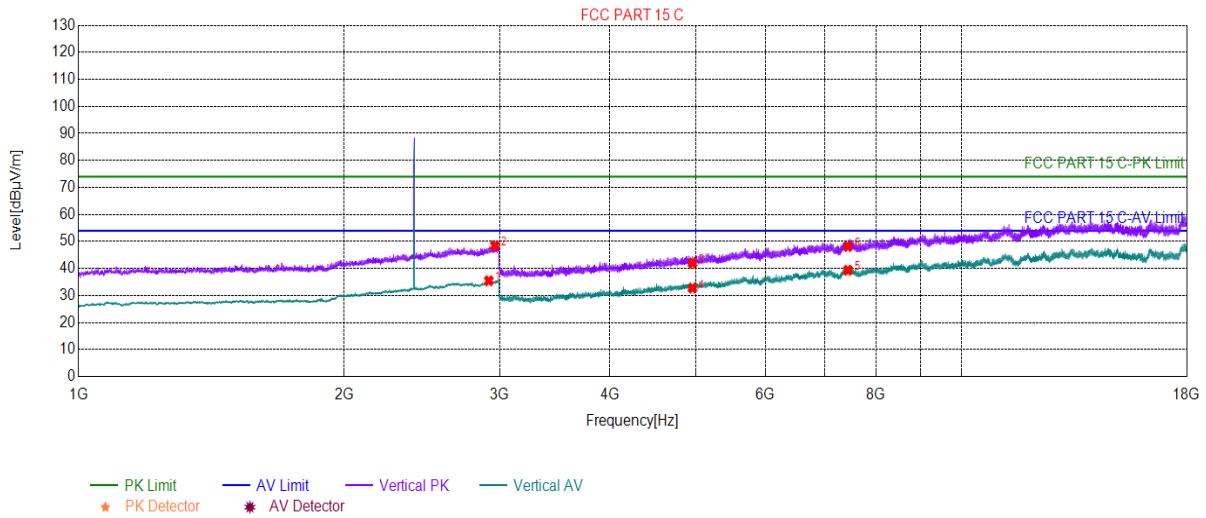
Final Data List



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4.4.2.2 BLE-1M_Channel 39

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2915.97	35.45	10.32	54.00	18.55	278	202	Vertical
2	2961.99	48.43	10.48	74.00	25.57	246	312	Vertical
3	4960.00	42.03	-14.40	74.00	31.97	253	2	Vertical
4	4960.00	32.77	-14.40	54.00	21.23	247	54	Vertical
5	7440.00	39.35	-7.31	54.00	14.65	246	63	Vertical
6	7440.00	48.14	-7.31	74.00	25.86	222	358	Vertical

Final Data List

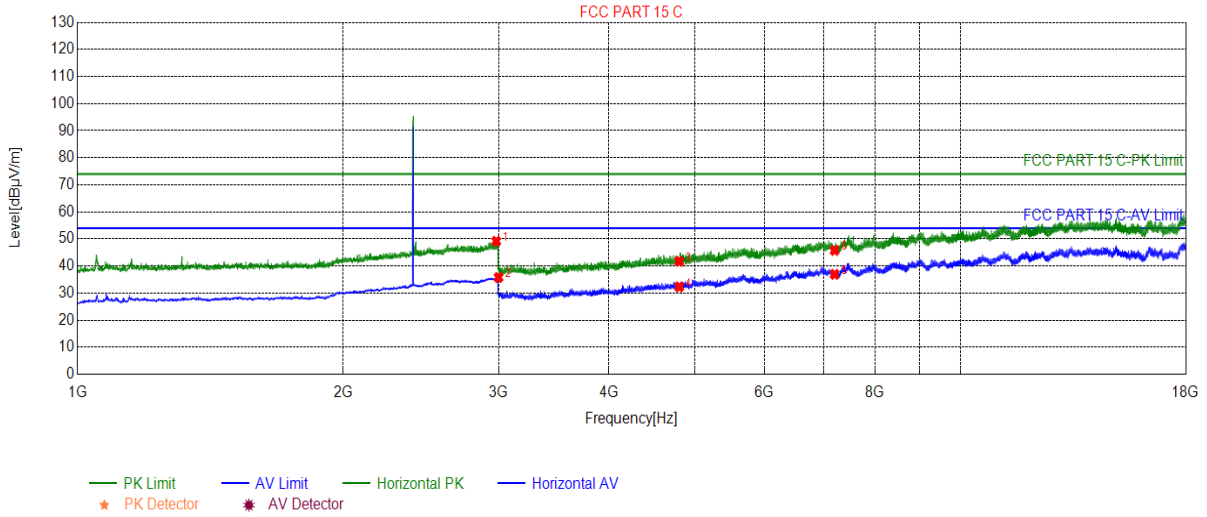
(This section is intentionally left blank in the provided image.)



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4.4.2.3 BLE-2M_Channel 0

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2980.49	49.16	10.55	74.00	24.84	157	76	Horizontal
2	2998.49	35.79	10.76	54.00	18.21	163	95	Horizontal
3	4804.00	41.74	-15.41	74.00	32.26	179	149	Horizontal
4	4804.00	32.31	-15.41	54.00	21.69	184	184	Horizontal
5	7206.00	36.94	-8.59	54.00	17.06	163	358	Horizontal
6	7206.00	45.77	-8.59	74.00	28.23	175	210	Horizontal

Final Data List

Final Data List								
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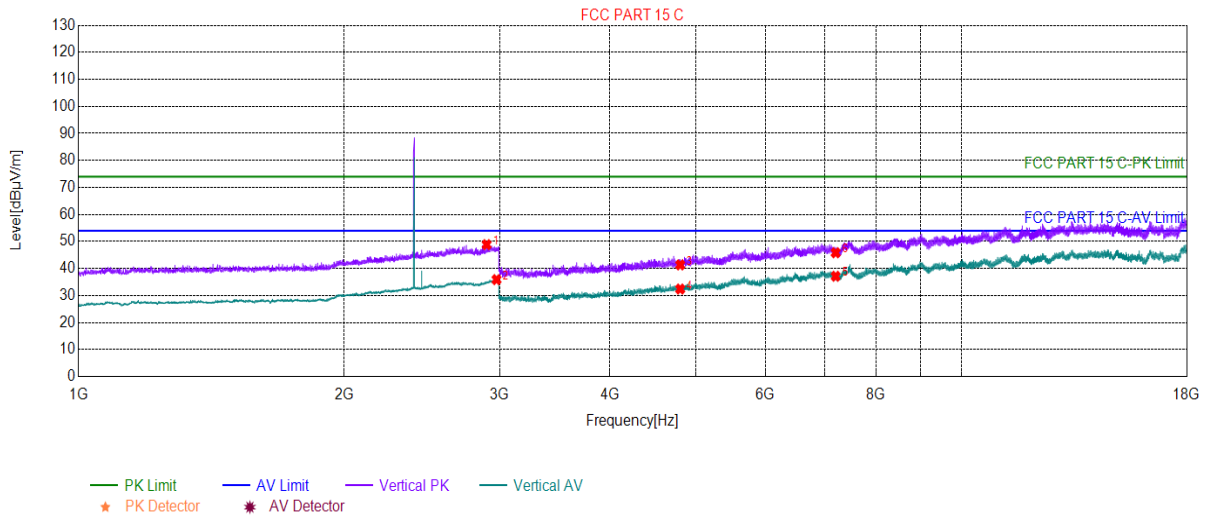


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4.4.2.4 BLE-2M_Channel 0

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2899.47	48.84	10.15	74.00	25.16	221	115	Vertical
2	2974.99	35.89	10.44	54.00	18.11	236	166	Vertical
3	4804.00	41.34	-15.41	74.00	32.66	247	358	Vertical
4	4804.00	32.40	-15.41	54.00	21.60	256	18	Vertical
5	7206.00	37.14	-8.59	54.00	16.86	249	123	Vertical
6	7206.00	45.83	-8.59	74.00	28.17	256	10	Vertical

Final Data List

Remark:

- 1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
 Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
- 2) Scan from 9kHz to 25GHz, the disturbance between 9KHz to 30MHz was very low, and the above harmonics were the highest point could be found when testing, The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
- 3) As shown in this section, 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. So, only the peak measurements were shown in the report.
- 4) All Modes have been tested, but only the worst case data displayed in this report.



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4.5 Restricted bands around fundamental frequency

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205		
Test Method:	ANSI C63.10: 2013 Section 11.12		
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)		
Limit:	Frequency	Limit (dBuV/m)	Remark
	30MHz-88MHz	40.0	Quasi-peak
	88MHz-216MHz	43.5	Quasi-peak
	216MHz-960MHz	46.0	Quasi-peak
	960MHz-1GHz	54.0	Quasi-peak
Above 1GHz		54.0	Average Value
		74.0	Peak Value
Test Setup:			

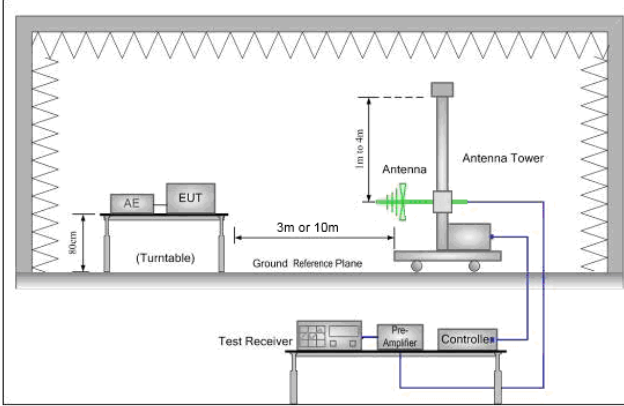


Figure 1. 30MHz to 1GHz

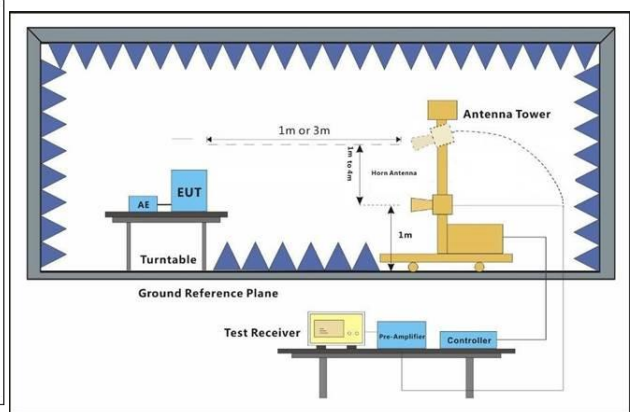


Figure 2. Above 1 GHz



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<p>Test Procedure:</p>	<ol style="list-style-type: none"> a. 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. b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. c. 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. d. 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. e. 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 rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. g. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel h. Test the EUT in the lowest 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 worse case. j. Repeat above procedures until all frequencies measured was complete.
<p>Test Configuration:</p>	<p>Measurements Below 1000MHz</p> <ul style="list-style-type: none"> • RBW = 120 kHz • VBW = 300 kHz • Detector = Peak • Trace mode = max hold <p>Peak Measurements Above 1000 MHz</p> <ul style="list-style-type: none"> • RBW = 1 MHz • VBW ≥ 3 MHz • Detector = Peak • Sweep time = auto • Trace mode = max hold <p>Average Measurements Above 1000MHz</p> <ul style="list-style-type: none"> • RBW = 1 MHz • VBW = 10 Hz, when duty cycle is no less than 98 percent. • VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
<p>Exploratory Test Mode:</p>	<p>Transmitting with GFSK modulation. Charge + Transmitting mode.</p>



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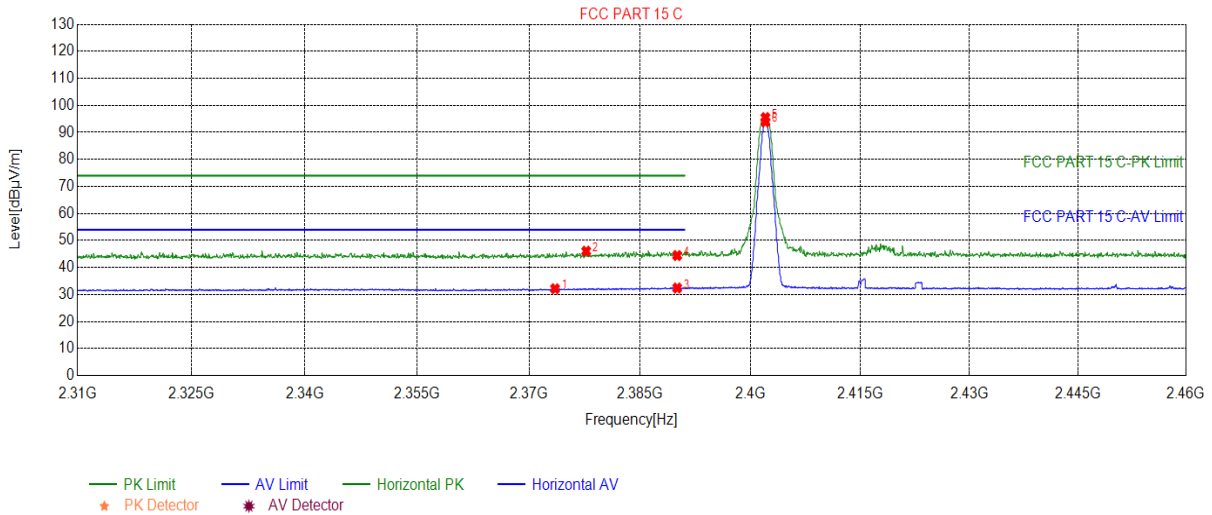
Final Test Mode:	Transmitting with GFSK modulation. Pretest the EUT at Charge + Transmitting mode. Only the worst case is recorded in the report.
Instruments Used:	Refer to section 6 for details
Test Results:	Pass
Remark:	The Emission Test is performed by the Lab B



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4.5.1 Test Plots
4.5.1.1 BLE-1M_Channel 0

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2373.48	32.14	7.75	54.00	21.86	175	11	Horizontal
2	2377.68	46.05	7.82	74.00	27.95	162	169	Horizontal
3	2390.00	32.42	8.18	54.00	21.58	178	333	Horizontal
4	2390.00	44.43	8.18	74.00	29.57	169	192	Horizontal
5	2402.00	95.50	8.39	0.00	-95.50	174	175	Horizontal
6	2402.00	93.88	8.39	0.00	-93.88	149	189	Horizontal

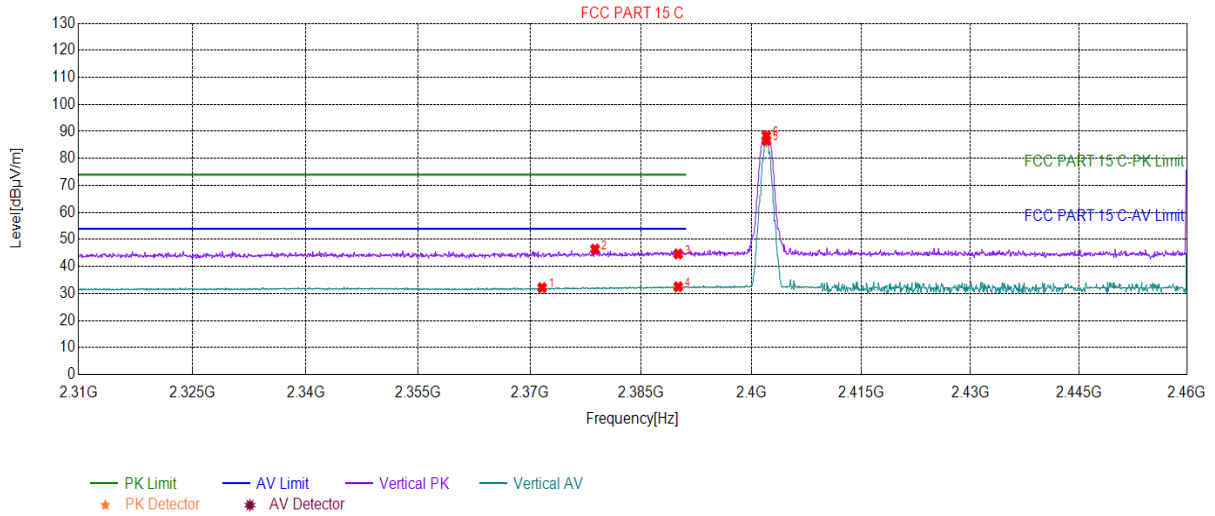
Final Data List



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4.5.1.2 BLE-1M_Channel 0

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2371.60	32.14	7.72	54.00	21.86	222	181	Vertical
2	2378.73	46.43	7.84	74.00	27.57	213	208	Vertical
3	2390.00	44.64	8.18	74.00	29.36	241	294	Vertical
4	2390.00	32.50	8.18	54.00	21.50	263	63	Vertical
5	2402.00	86.60	8.39	0.00	-86.60	274	304	Vertical
6	2402.00	88.44	8.39	0.00	-88.44	229	301	Vertical

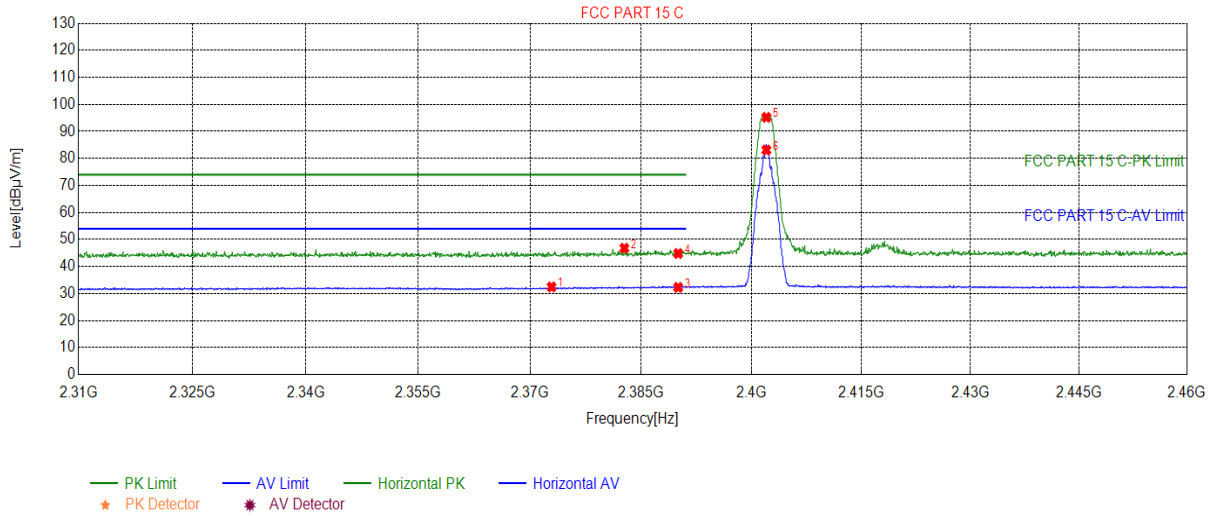
Final Data List



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4.5.1.3 BLE-2M_Channel 0

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2372.88	32.43	7.74	54.00	21.57	157	98	Horizontal
2	2382.71	46.77	7.94	74.00	27.23	163	258	Horizontal
3	2390.00	32.28	8.18	54.00	21.72	179	258	Horizontal
4	2390.00	44.81	8.18	74.00	29.19	159	258	Horizontal
5	2402.00	95.20	8.39	0.00	-95.20	164	190	Horizontal
6	2402.00	83.12	8.39	0.00	-83.12	187	149	Horizontal

Final Data List

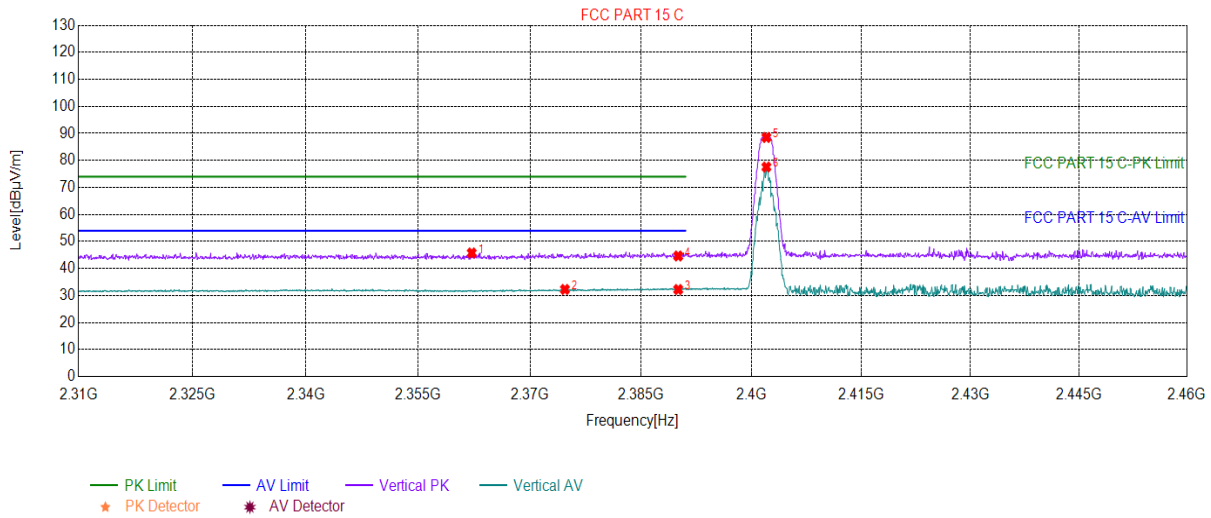
Final Data List table content is not visible in the provided image.



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4.5.1.4 BLE-2M_Channel 0

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2362.15	45.74	7.58	74.00	28.26	224	256	Vertical
2	2374.68	32.25	7.77	54.00	21.75	263	171	Vertical
3	2390.00	32.22	8.18	54.00	21.78	241	171	Vertical
4	2390.00	44.62	8.18	74.00	29.38	279	144	Vertical
5	2402.00	88.50	8.39	0.00	-88.50	249	304	Vertical
6	2402.00	77.56	8.39	0.00	-77.56	268	256	Vertical

Final Data List

Remark:

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

All Modes have been tested, but only the worst case data displayed in this report.



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5 Measurement Uncertainty (95% confidence levels, k=2)

Lab A:

No.	Item	Measurement Uncertainty
1	Total RF power, conducted	±0.41dB
2	Duty Cycle	±0.49%

Lab B:

No.	Item	Measurement Uncertainty
1	Conduction Emission	± 3.0dB (150kHz to 30MHz)
2	Radiated Emission	± 4.8dB (Below 1GHz)
		± 4.8dB (1GHz to 6GHz)
		± 4.5dB (6GHz to 18GHz)
		± 5.02dB (Above 18GHz)



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6 Equipment List

RF conducted					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (yyyy-mm-dd)	Cal. Due date (yyyy-mm-dd)
Signal Analyzer	Rohde & Schwarz	FSV	W025-05	2020/4/16	2021/4/15
DC Power Supply	Rohde & Schwarz	HMP2020	W009-08	2020/7/15	2021/7/15
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2020/7/14	2021/7/13
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	HTC-1	W006-17	2020/4/21	2021/4/20



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RSE Test System					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Semi-Anechoic Chamber	Brilliant-emc	N/A	XAW03-35-01	2019-09-11	2022-09-10
MXA signal analyzer	Keysight	N9020A	XAW01-06-01	2020-04-02	2021-04-01
Test receiver	ROHDE&SCHWARZ	ESR	XAW01-08-01	2020-09-11	2021-09-10
Receiving antenna (30MHz-3GHz)	Schwarzbeck	VULB 9163	XAW01-09-01	2019-10-13	2021-10-12
Receiving antenna (1GHz~18GHz)	Schwarzbeck	BBHA 9120D	XAW01-09-02	2019-10-13	2021-10-12
Receiving antenna (15GHz~40GHz)	Schwarzbeck	BBHA 9170	XAW01-09-03	2019-10-13	2021-10-12
Directional antenna rack controller	Max-Full	MF-7802BS	XAW03-03-01	NCR	NCR
High-speed antenna rack controller	Max-Full	MF-7802	XAW03-04-01	NCR	NCR
Filter bank	Tonscend	JS0806-F	XAW03-05-01	NCR	NCR
Filter bank	Tonscend	JS0806s	XAW03-05-02	NCR	NCR
Amplifier	Tonscend	TAP00903040	XAW01-41-01	2020-10-26	2021-10-25
Amplifier	Tonscend	TAP01018048	XAW01-41-02	2020-10-26	2021-10-25
Amplifier	Tonscend	TAP18040048	XAW01-41-03	2020-10-27	2021-10-26
Amplifier	Shanghai Steed	YX28980930	XAW01-41-06	2020-10-26	2021-10-25
Temperature and humidity meter	MingGao	TH101B	XAW01-01-01	2020-11-06	2021-11-05
Measurement Software	Tonscend	TS+ RSE V3.0.0.2	XAW02-05-01	NCR	NCR



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7 Photographs - EUT Constructional Details

Refer to Appendix A PCE&NII&DTS&DSS Setup Photos.

The End



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