



Test Report No.:
FCC2025-0037-RF

TEST REPORT

FCC ID	2AX5I-003
Applicant	: ECO(Xiamen)TECHNOLOGY INC
Product Name	: Intelligent toilet
Model No.	: RDWM-RSC-ECO

CVC Testing Technology Co., Ltd.

Applicant	Name: ECO(Xiamen)TECHNOLOGY INC Address: No.2,Xiafei East Road, Haicang District,Xiamen City		
Manufacturer	Name: ECO(Xiamen)TECHNOLOGY INC Address: No.2,Xiafei East Road, Haicang District,Xiamen City		
Producer	Name: Changtai Yike Technology Co.,LTD. Address: Yingtang Industry park, Gunong Farm, Economic Development zone,Changtai County, Zhangzhou City, China		
Equipment Under Test	Product Name : Intelligent toilet Model No. : RDWM-RSC-ECO Trade mark : WDI Serial no. : — Sampling : 1-1		
Date of Receipt.	2025.7.14	Date of Testing	2025.7.15~2025.9.10
Test Specification		Test Result	
FCC CFR47 Part 15C Radio Frequency Devices ANSI C63.10-2020/Cor1-2023 KDB 558074 D01 15.247 Meas Guidance v05r02		PASS	
Evaluation of Test Result	The equipment under test was found to comply with the requirements of the standards applied. Seal of CVC Date of issue:2025-09-19		
Approved by: Chen Huawen 	Reviewed by: Xu Zhenfei 	Tested by: Lu Weiji 	
Other Aspects: NONE.			
Abbreviations: Pass= passed Fail = failed N/A= not applicable EUT= equipment, sample(s) under tested			
Note1: This test report relates only to the EUT, and shall not be reproduced except in full, without written approval of CVC.			

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1. General Product Information

1.1 General information

Product Name	Intelligent toilet
Model No.	RDWM-RSC-ECO
Additional model	—
Power Supply	AC 120V 60Hz
Serial Number(SN)	/
HW-Release NO	/
SW-Release NO	/
specific power settings	11
Antenna Type	PCB Antenna
Antenna Gain	3 dBi (provided by client)
Beamforming gain	Unsupported (provided by client)
Frequency Range	2402~2480MHz
Channel Number	40 Channels
Type of Modulation	GFSK
Operate Temp.Range	4°C-40°C
Note: 1. The information of the EUT is declared by the manufacturer. 2. The laboratory is not responsible for the product technical specification provided by the client. 3. The conductive method of this test are all tested on the whole Bluetooth module, and its power supply voltage is 3.3V. 4. Product photo reference report:FCC2025-0037-EUT.	

2. Test Sites

2.1 Test Facilities

The tests and measurements refer to this report were performed by RF testing Lab. of CVC Testing Technology Co., Ltd.

Add.: No.3, Tiantaiyi Road, Kaitai Avenue, Science City, Guangzhou,Guangdong,510663, People's Republic of China

Telephone : +86-20-32293888

Fax : +86-20-32293889

FCC(Test firm designation number: CN1282)

IC(Test firm CAB identifier number: CN0103)

2.2 Description of Non-standard Method and Deviations

The testing and measurement methods used in this report are applied by all standard methods. Not any non-standard method or deviation from the used standards was used.

2.3 List of Test and Measurement Instruments

Refer to **Appendix X**.

3. Test Configuration

3.1 Test Mode

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

Test Mode	Antenna Delivery	Test Channel
Bluetooth-LE 1M	1TX / 1RX	0,19,39
Bluetooth-LE 2M	1TX / 1RX	0,19,39

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in lie-down position (X axis) and the worst case was recorded.

In order to find the worst case condition, Pre-tests are needed at the presence of different data rate and different channels. Preliminary tests have been done on all the configurations for confirming worst case. Data rate below means worst-case rate of each test item.

Worst-case data rates and channels are shown as following table.

Test Mode	Data Rate		
	Antenna 1	Antenna 2	MIMO
Bluetooth-LE	1Mbps	—	—
Bluetooth-LE	2Mbps	—	—

Test Items	Test Antennas	Test Modes	Test Channels
Conducted Emissions	Antenna 1	Bluetooth-LE 1M Bluetooth-LE 2M	0
Radiated Emissions	Antenna 1	Bluetooth-LE 1M Bluetooth-LE 2M	0,39
Radiated Emissions (Band Edge)	Antenna 1	Bluetooth-LE 1M Bluetooth-LE 2M	0,39
Maximum conducted output power	Antenna 1	Bluetooth-LE 1M Bluetooth-LE 2M	0,19,39
Minimum 6 dB bandwidth	Antenna 1	Bluetooth-LE 1M Bluetooth-LE 2M	0,19,39
Occupied Channel Bandwidth	Antenna 1	Bluetooth-LE 1M Bluetooth-LE 2M	0,19,39
Band Edge Measurement	Antenna 1	Bluetooth-LE 1M Bluetooth-LE 2M	0,39
Maximum Power spectral density	Antenna 1	Bluetooth-LE 1M Bluetooth-LE 2M	0,19,39
Spurious RF Conducted Emissions	Antenna 1	Bluetooth-LE 1M Bluetooth-LE 2M	0,19,39

3.2 Duty cycle

TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Limit	Verdict
BLE_1M	Ant1	2402	0.39	0.63	61.90	---	---
		2440	0.39	0.63	61.90	---	---
		2480	0.39	0.63	61.90	---	---
BLE_2M	Ant1	2402	0.20	0.63	31.75		
		2440	0.20	0.63	31.75		
		2480	0.20	0.63	31.75		

4. Summary of measurement results

Summary of measurements of results	Clause in FCC rules	Verdict	Note
Conducted Emissions	15.207	Pass	—
Radiated Emissions	15.247(d),15.205,15.209	PASS	—
Maximum conducted output power	15.247(b)(3)	PASS	—
Minimum 6 dB bandwidth	15.247(a)(2)	PASS	Appendix A of Bluetooth-LE diagram
Occupied Channel Bandwidth	15.247(a)(2)	PASS	Appendix B of Bluetooth-LE diagram
Band Edge Measurement	15.247(d)	PASS	Appendix E of Bluetooth-LE diagram
Maximum Power spectral density	15.247(e)	PASS	Appendix D of Bluetooth-LE diagram
Spurious RF Conducted Emissions	15.247(d)	PASS	Appendix F of Bluetooth-LE diagram
Antenna Requirement	15.203	PASS	See Note

Note : According to 15.203, it is considered sufficient to comply with the provisions of this section.

5. Measurement procedure

5.1 Conducted Emission

Ambient condition:

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement:

The EUT was setup according to ANSI C63.10-2020/Cor1-2023 for compliance to FCC 47CFR 15.247 requirements. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs) Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.

The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

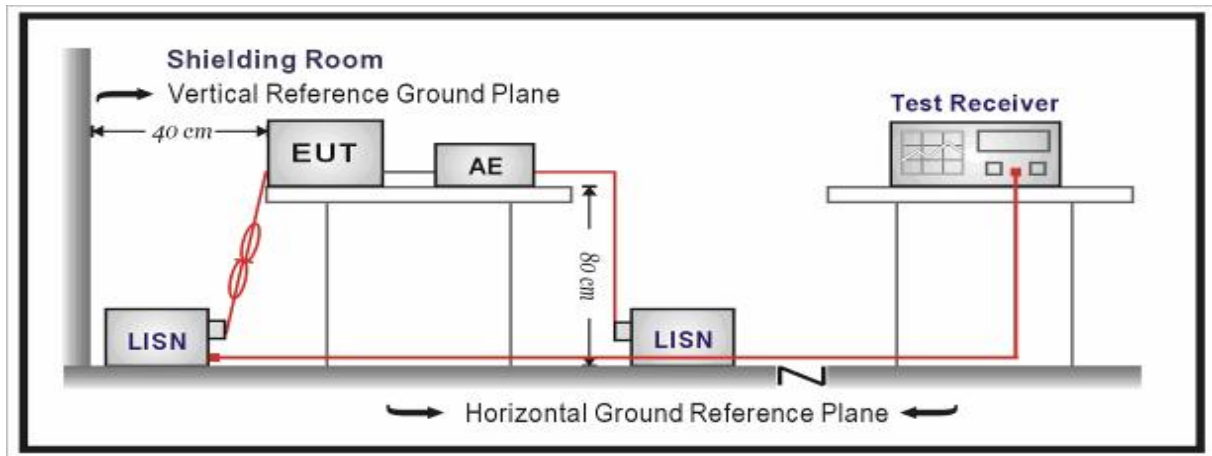
Limits:

Frequency (MHz)	Conducted Limits(dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46*
0.5 - 5	56	46
5 - 30	60	50

Note 1: The lower limit shall apply at the transition frequencies.

Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

Test Setup:



Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Level = Reading + Factor.

Measurement Uncertainty:

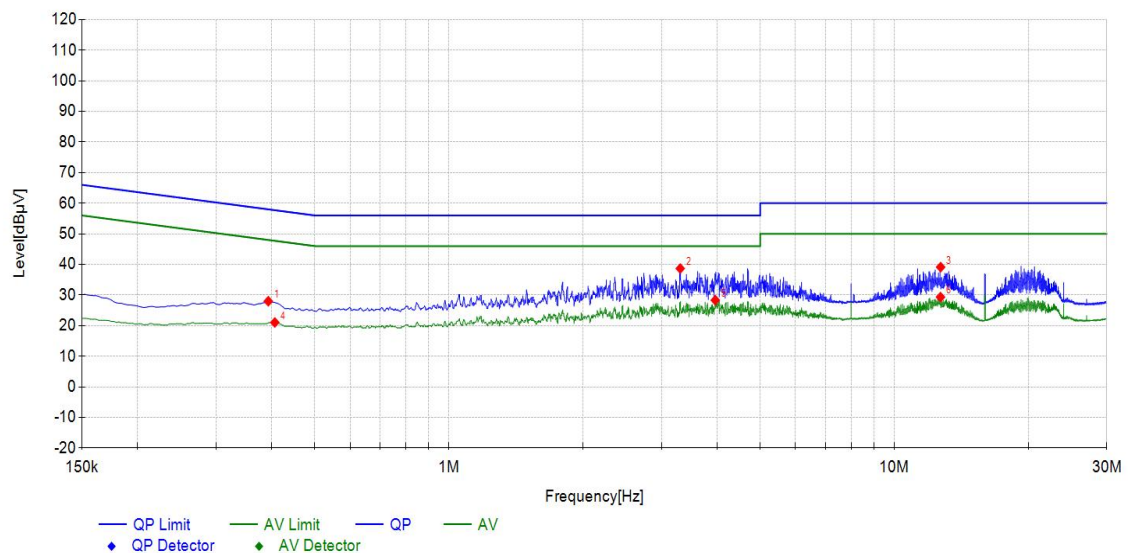
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$. $U = 3.12$ dB.

Test Results:

During the test, the Conducted Emission from 150kHz to 30MHz was performed in all modes with all channels, and all antenna. Bluetooth-LE 1M, lowest channel, Antenna1 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

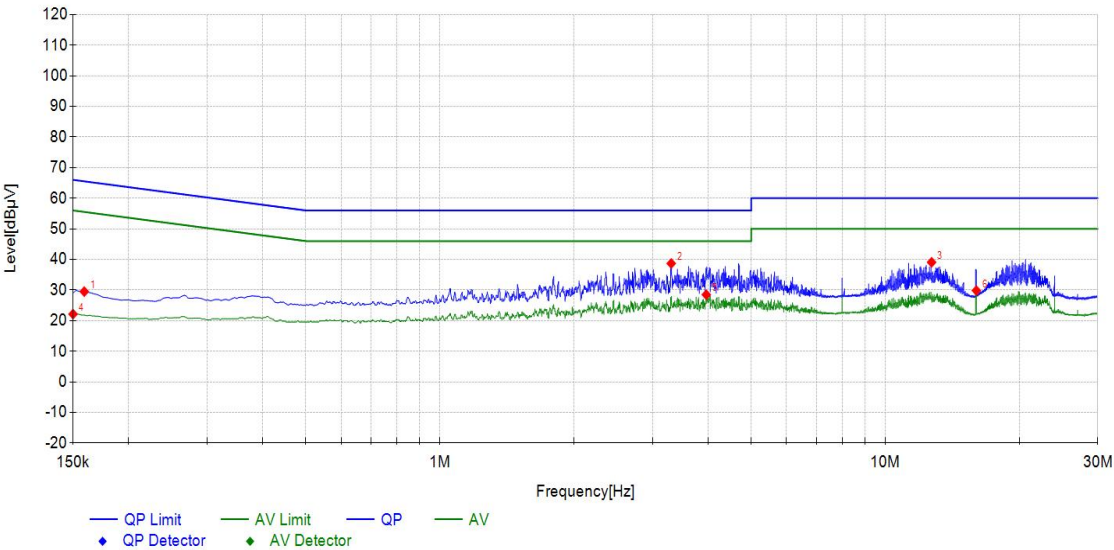
Power Line	L
Test channel	Worst-Case

Suspected List						
NO.	Freq. [MHz]	Level [dBμV]	Limit [dBμV]	Margin [dB]	Detector	Pass/Fail
1	0.3930	27.98	58.00	30.02	QP	PASS
2	3.3068	38.67	56.00	17.33	QP	PASS
3	12.7095	39.13	60.00	20.87	QP	PASS
4	0.4065	21.05	47.72	26.67	AV	PASS
5	3.9638	28.33	46.00	17.67	AV	PASS
6	12.7028	29.33	50.00	20.67	AV	PASS



Power Line	N
Test channel	Worst-Case

Suspected List						
NO.	Freq. [MHz]	Level [dBμV]	Limit [dBμV]	Margin [dB]	Detector	Pass/Fail
1	0.1590	29.49	65.52	36.03	QP	PASS
2	3.3068	38.69	56.00	17.31	QP	PASS
3	12.7095	39.07	60.00	20.93	QP	PASS
4	0.1500	22.14	56.00	33.86	AV	PASS
5	3.9638	28.49	46.00	17.51	AV	PASS
6	16.017	29.84	50.00	20.16	AV	PASS



5.2 Radiated Emission

Ambient condition:

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement:

The EUT was setup and tested according to ANSI C63.10-2020/Cor1-2023.

The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from Antenna to the EUT was 3 meters.

The Antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the Antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2020/Cor1-2023 on radiated measurement. The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

The frequency range from 30MHz to 10th harmonic is checked.

Note: When doing emission measurement above 1GHz, the horn Antenna will be bended down a little (as horn Antenna has the narrow beamwidth) in order to keeping the Antenna in the “cone of radiation” of EUT. The 3dB beamwidth is 10~60 degrees for H-plane and 10~90 degrees for E-plane.

Limits:

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

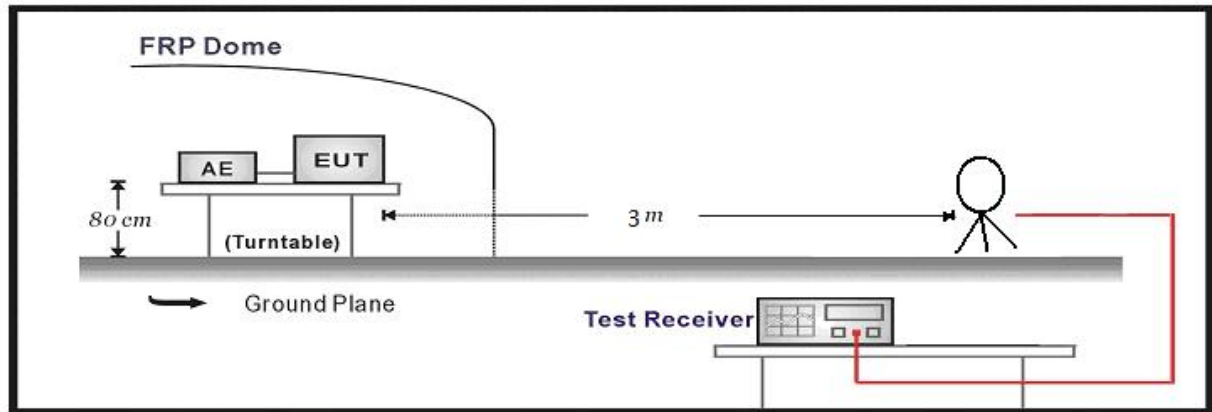
Frequency	Limit ($\mu\text{V/m}$)	Limit ($\text{dB}\mu\text{V/m @3m}$)	Remark
0.009MHz-0.490MHz	2400/F(kHz)@300m	20lg(24000000/F(kHz))	Quasi-peak Level
0.490MHz~1.705MHz	24000/F(kHz)@30m	20lg(2400000/F(kHz))	Quasi-peak Level
1.705MHz~30.0MHz	30@30m	49.54	Quasi-peak Level
30MHz-88MHz	100@3m	40.0	Quasi-peak Level
88MHz-216MHz	150@3m	43.5	Quasi-peak Level
216MHz-960MHz	200@3m	46.0	Quasi-peak Level
960MHz-1GHz	500@3m	54.0	Quasi-peak Level
Above 1GHz	500@3m	54.0	Average Level
	5000@3m	74.0	Peak Level

Spurious Radiated Emissions are permitted in any of the frequency bands listed below:

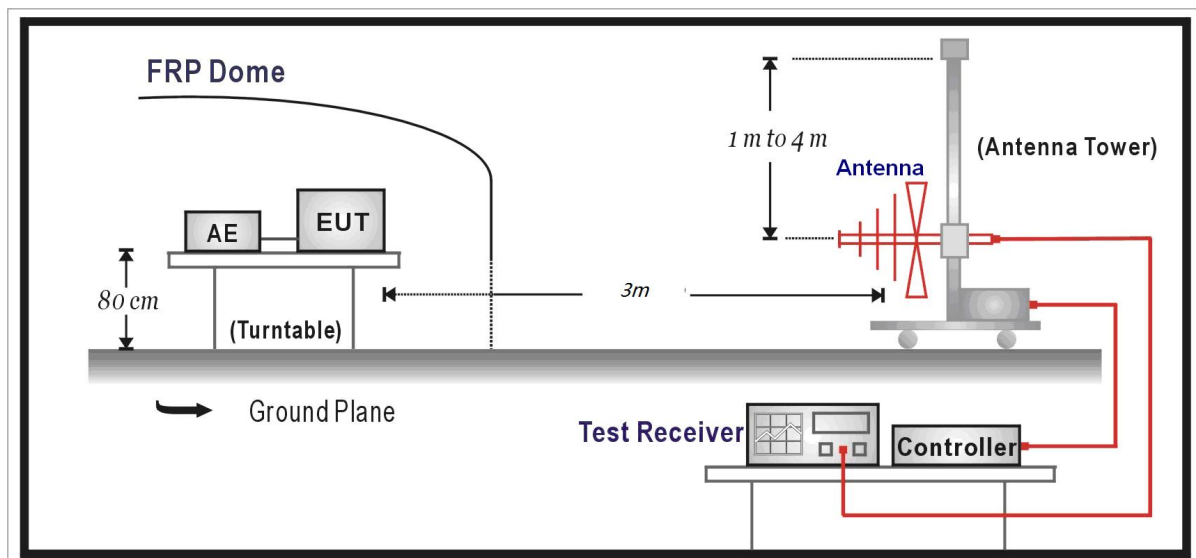
MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.
12.57675-12.57725	322-335.4	3600-4400	/
13.36-13.41	/	/	/

Test Setup:

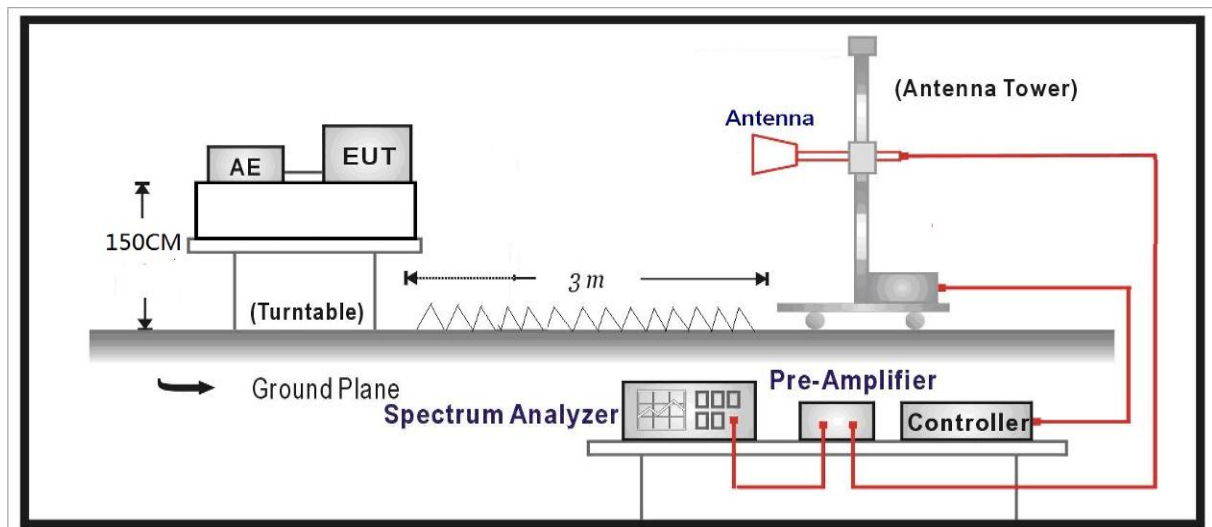
Below 30MHz Test Setup:



Below 1GHz Test Setup:



Above 1GHz Test Setup:



Measurement Data:

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

Final Level = Reading - Factor

Factor = Preamplifier Factor – Antenna Factor–Cable Loss

Measurement Uncertainty:

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

Frequency	Uncertainty
9KHz-30MHz	3.55 dB
30MHz-200MHz	4.19 dB
200MHz-1GHz	3.63 dB
Above 1GHz	3.68 dB

Test Results:

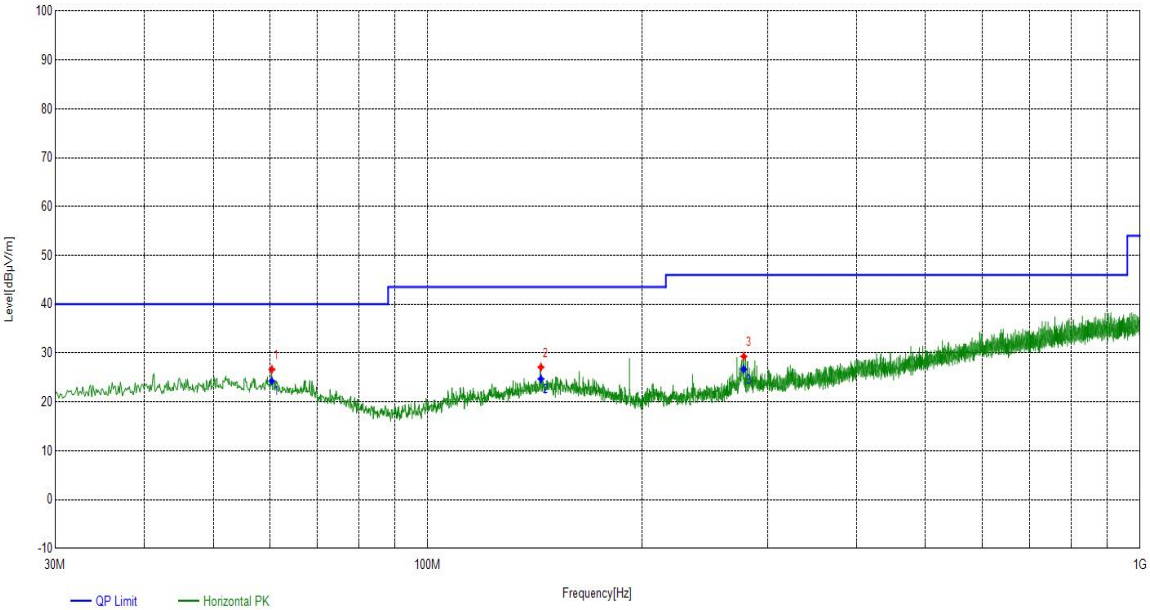
SPURIOUS EMISSIONS:

During the test, the Radiates Emission from 9kHz to 40GHz was performed in Bluetooth-LE 1M. 2402MHz, antenna 1 are selected as the worst condition in 9kHz to 1GHz. Highest and lowest channels, antenna 1 are selected as the worst condition in 1GHz to 40GHz. The test data of the worst-case condition was recorded in this report.

Radiates Emission		9kHz~1GHz							
Test channel		Worst-Case							
Polarity		Horizontal							
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Dete ctor	Height [cm]	Angle deg	Pass/ Fail
60.4338	19.83	6.82	26.65	—	—	PK	100	270	—
144.2175	20.38	6.73	27.11	—	—	PK	100	90	—
277.835	20.56	8.75	29.31	—	—	PK	100	180	—

Note: 9kHz~30MHz have been test and test data more than 20dB margin.

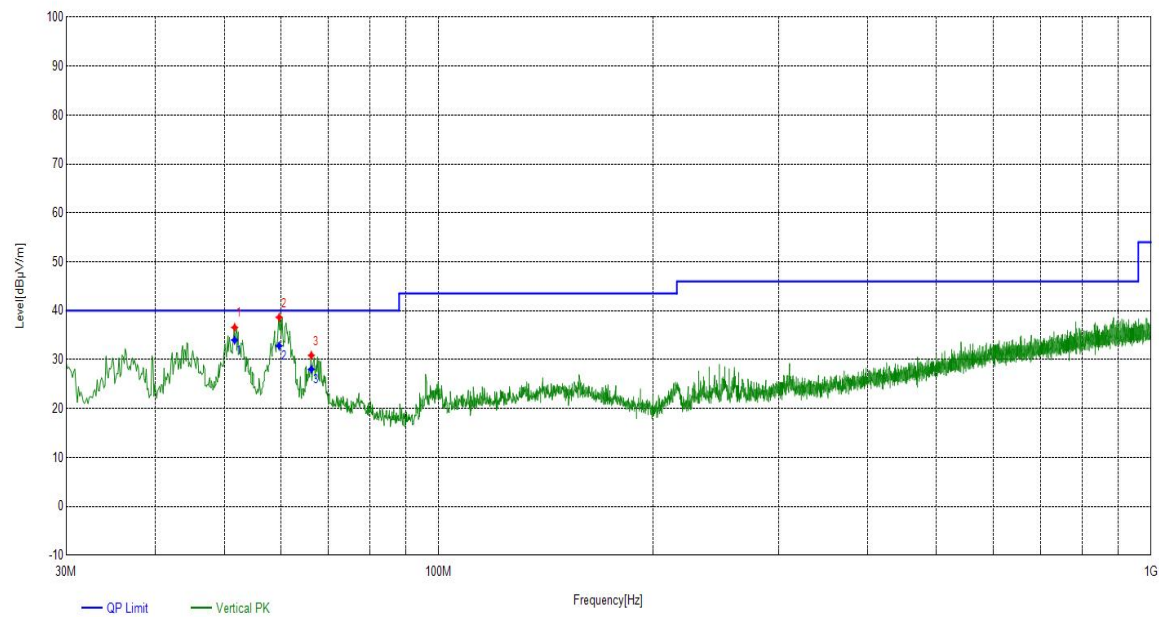
Final Data List							
Frequency [MHz]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Pass/Fail
60.4338	19.83	24.25	40.00	15.75	190	270	PASS
144.2175	20.38	24.71	43.50	18.79	320	90	PASS
277.835	20.56	26.67	46.00	19.33	240	180	PASS



Radiates Emission		9kHz~1GHz							
Test channel		Worst-Case							
Polarity		Vertical							
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Dete ctor	Height [cm]	Angle deg	Pass/ Fail
51.7038	20.48	16.10	36.58	—	—	PK	100	190	—
59.7062	19.92	18.72	38.64	—	—	PK	100	290	—
66.2538	19.00	11.87	30.87	—	—	PK	100	180	—

Note: 9kHz~30MHz have been test and test data more than 20dB margin.

Final Data List							
Frequency [MHz]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Pass/Fail
51.7038	20.48	33.99	40.00	6.01	180	190	PASS
59.7062	19.92	32.80	40.00	7.20	360	290	PASS
66.2538	19.00	28.03	40.00	11.97	310	180	PASS



Radiates Emission		Above 1G						
Test channel		2402						
polarization		Horizontal						
Suspected List								
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detect or	Height [cm]	Pass/ Fail
3583.62	0.09	40.22	40.31	74.00	33.69	PK	150	PASS
4683.34	1.10	40.18	41.28	74.00	32.72	PK	150	PASS
6270.65	6.83	38.15	44.98	74.00	29.02	PK	150	PASS
8527.11	10.15	37.66	47.81	74.00	26.19	PK	150	PASS
10282.46	12.51	37.04	49.55	74.00	24.45	PK	150	PASS
14727.85	18.07	40.15	58.22	74.00	15.78	PK	150	PASS
3594.12	0.10	29.63	29.73	54.00	24.27	AV	150	PASS
4773.35	1.45	27.91	29.36	54.00	24.64	AV	150	PASS
6251.15	6.81	27.44	34.25	54.00	19.75	AV	150	PASS
8611.12	10.30	26.24	36.54	54.00	17.46	AV	150	PASS
10369.47	12.55	26.47	39.02	54.00	14.98	AV	150	PASS
14447.29	18.76	28.06	46.82	54.00	7.18	AV	150	PASS

Note: The emission levels of other frequencies were greater than 20dB margin.

Radiates Emission		Above 1G						
Test channel		2402						
polarization		Vertical						
Suspected List								
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detect or	Height [cm]	Pass/ Fail
3583.62	0.09	41.27	41.36	74.00	32.64	PK	150	PASS
4902.38	1.96	38.69	40.65	74.00	33.35	PK	150	PASS
8527.11	10.15	38.41	48.56	74.00	25.44	PK	150	PASS
10482.00	12.57	37.76	50.33	74.00	23.67	PK	150	PASS
10986.10	12.53	37.58	50.11	74.00	23.89	PK	150	PASS
14460.79	18.79	38.79	57.58	74.00	16.42	PK	150	PASS
3592.62	0.10	29.80	29.90	54.00	24.10	AV	150	PASS
4960.89	2.19	29.88	32.07	54.00	21.93	AV	150	PASS
8482.10	10.07	26.67	36.74	54.00	17.26	AV	150	PASS
10723.54	12.56	26.39	38.95	54.00	15.05	AV	150	PASS
11293.66	12.25	26.22	38.47	54.00	15.53	AV	150	PASS
14405.28	18.66	28.02	46.68	54.00	7.32	AV	150	PASS

Note: The emission levels of other frequencies were greater than 20dB margin.

Radiates Emission		Above 1G						
Test channel		2480						
polarization		Horizontal						
Suspected List								
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detect or	Height [cm]	Pass/ Fail
4306.76	0.47	40.25	40.72	74.00	33.28	PK	150	PASS
5660.03	4.97	38.84	43.81	74.00	30.19	PK	150	PASS
6584.22	7.36	38.11	45.47	74.00	28.53	PK	150	PASS
10370.97	12.55	37.63	50.18	74.00	23.82	PK	150	PASS
12885.48	14.04	37.52	51.56	74.00	22.44	PK	150	PASS
15398.48	16.36	41.39	57.75	74.00	16.25	PK	150	PASS
4095.22	0.58	29.06	29.64	54.00	24.36	AV	150	PASS
5672.03	5.03	27.21	32.24	54.00	21.76	AV	150	PASS
6864.77	8.04	26.91	34.95	54.00	19.05	AV	150	PASS
10369.47	12.55	26.47	39.02	54.00	14.98	AV	150	PASS
13416.58	15.72	26.53	42.25	54.00	11.75	AV	150	PASS
14447.29	18.76	28.06	46.82	54.00	7.18	AV	150	PASS

Note: The emission levels of other frequencies were greater than 20dB margin.

Radiates Emission		Above 1G						
Test channel		2480						
polarization		Vertical						
Suspected List								
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detect or	Height [cm]	Pass/ Fail
3705.14	0.25	41.26	41.51	74.00	32.49	PK	150	PASS
4768.85	1.43	38.62	40.05	74.00	33.95	PK	150	PASS
5847.57	5.79	38.74	44.53	74.00	29.47	PK	150	PASS
6938.29	8.21	38.83	47.04	74.00	26.96	PK	150	PASS
8807.66	10.65	37.45	48.10	74.00	25.90	PK	150	PASS
14769.85	17.91	39.85	57.76	74.00	16.24	PK	150	PASS
3706.64	0.26	30.05	30.31	54.00	23.69	AV	150	PASS
5352.47	3.70	27.54	31.24	54.00	22.76	AV	150	PASS
6221.14	6.76	27.02	33.78	54.00	20.22	AV	150	PASS
6549.71	7.27	27.22	34.49	54.00	19.51	AV	150	PASS
8165.53	9.63	26.44	36.07	54.00	17.93	AV	150	PASS
15372.97	16.41	30.09	46.50	54.00	7.50	AV	150	PASS

Note: The emission levels of other frequencies were greater than 20dB margin.

Band Edge:

During the test, the Band Edge was performed in Bluetooth-LE 1M. Antenna 1, Highest and lowest channels are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

Radiates Emission		Bluetooth-LE 1M						
Test channel		Lowest channel						
polarization		Horizontal						
Suspected List								
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detect or	Height [cm]	Pass/ Fail
1995.80	-4.45	48.39	43.94	74.00	30.06	PK	150	PASS
2257.85	-3.97	42.02	38.05	74.00	35.95	PK	150	PASS
2389.88	-3.75	45.47	41.72	74.00	32.28	PK	150	PASS
1723.14	-6.27	29.02	22.75	54.00	31.25	AV	150	PASS
2258.05	-3.97	38.12	34.15	54.00	19.85	AV	150	PASS
2389.88	-3.75	35.59	31.84	54.00	22.16	AV	150	PASS

Radiates Emission		Bluetooth-LE 1M						
Test channel		Lowest channel						
polarization		Vertical						
Suspected List								
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detect or	Height [cm]	Pass/ Fail
1330.07	-9.13	50.25	41.12	74.00	32.88	PK	150	PASS
1994.60	-4.45	55.86	51.41	74.00	22.59	PK	150	PASS
2389.88	-3.75	39.71	35.96	74.00	38.04	PK	150	PASS
1330.27	-9.13	36.45	27.32	54.00	26.68	AV	150	PASS
2258.05	-3.97	30.31	26.34	54.00	27.66	AV	150	PASS
2390.08	-3.75	29.43	25.68	54.00	28.32	AV	150	PASS

Radiates Emission		Bluetooth-LE 1M						
Test channel		Highest channel						
polarization		Horizontal						
Suspected List								
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detect or	Height [cm]	Pass/ Fail
2483.50	-3.59	47.26	43.67	74.00	30.33	PK	150	PASS
2695.54	-2.84	42.04	39.20	74.00	34.80	PK	150	PASS
2958.99	-1.88	40.78	38.90	74.00	35.10	PK	150	PASS
2483.50	-3.59	31.64	28.05	54.00	25.95	AV	150	PASS
2682.94	-2.89	30.67	27.78	54.00	26.22	AV	150	PASS
2919.58	-2.03	30.37	28.34	54.00	25.66	AV	150	PASS

Radiates Emission		Bluetooth-LE 1M						
Test channel		Highest channel						
polarization		Vertical						
Suspected List								
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detect or	Height [cm]	Pass/ Fail
2483.50	-3.59	48.37	44.78	74.00	29.22	PK	150	PASS
2728.95	-2.72	42.04	39.32	74.00	34.68	PK	150	PASS
2972.99	-1.84	41.30	39.46	74.00	34.54	PK	150	PASS
2483.50	-3.59	31.77	28.18	54.00	25.82	AV	150	PASS
2682.34	-2.90	30.70	27.80	54.00	26.20	AV	150	PASS
2987.00	-1.78	30.12	28.34	54.00	25.66	AV	150	PASS

5.3 Maximum conducted output power

Ambient condition:

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement:

The EUT was tested according to DTS test procedure of ANSI C63.10 for compliance to FCC 47CFR 15.247 requirements. The maximum conducted output power using ANSI C63.10 section 11.9.1.2 PKPM1 Peak power meter method method.

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall use a fast responding diode detector.

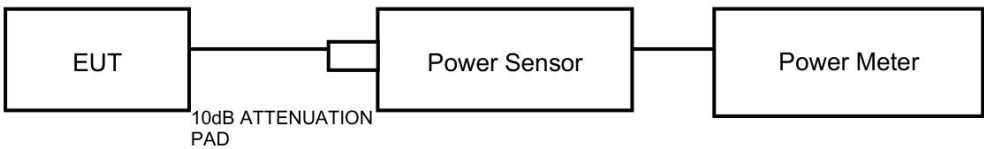
Limits:

Average Output Power	$\leq 1\text{W}$ (30dBm)
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Note: the conducted output power limit specified above is based on the use the antennas with directional gains that do not exceed 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated Levels above, as appropriate, by the amount in dB that the directional gain of antenna exceeds 6 dBi.

Systems operating in the 2400-2483.5 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi 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 6 dBi.

Test Setup:



Measurement Uncertainty:

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.44 \text{ dB}$.

Test Results:

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0.16	≤30	PASS
	Ant1	2440	0.14	≤30	PASS
	Ant1	2480	-0.08	≤30	PASS
BLE_2M	Ant1	2402	0.15	≤30	PASS
	Ant1	2440	0.11	≤30	PASS
	Ant1	2480	-6.09	≤30	PASS

5.4 Minimum 6 dB Bandwidth

Ambient condition:

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement:

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable. RBW is set to 100 kHz; VBW is set to 300 kHz on spectrum analyzer.

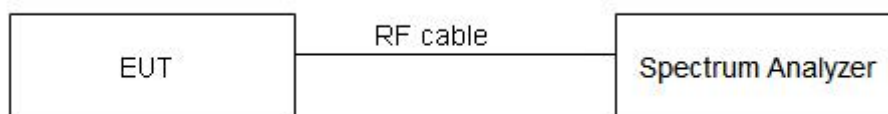
Detector=Peak, Trace mode=Max hold.

Limits:

Rule Part 15.247 (a) (2) specifies that “Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.”

Minimum 6dB Bandwidth	≥ 500 kHz
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Test Setup:



Measurement Uncertainty:

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 936$ Hz.

Test Results:

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.73	2401.56	2402.29	≥ 0.5	PASS
	Ant1	2440	0.72	2439.56	2440.29	≥ 0.5	PASS
	Ant1	2480	0.72	2479.56	2480.28	≥ 0.5	PASS
BLE_2M	Ant1	2402	1.22	2401.29	2402.51	≥ 0.5	PASS
	Ant1	2440	1.22	2439.28	2440.50	≥ 0.5	PASS
	Ant1	2480	1.21	2479.29	2480.50	≥ 0.5	PASS

5.5 Occupied Channel Bandwidth

Ambient condition:

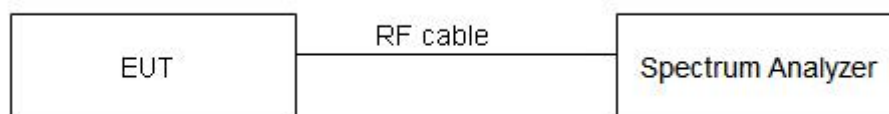
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement:

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable. RBW is set to 50 kHz; VBW is set to 200 kHz on spectrum analyzer.

Detector=Peak, Trace mode=Max hold.

Test Setup:



Measurement Uncertainty:

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 936$ Hz.

Test Results:

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.059	2401.4086	2402.4675	---	---
	Ant1	2440	1.067	2439.4006	2440.4675	---	---
	Ant1	2480	1.067	2479.4006	2480.4675	---	---
BLE_2M	Ant1	2402	2.126	2400.8851	2403.0110	---	---
	Ant1	2440	2.138	2438.8771	2441.0150	---	---
	Ant1	2480	2.142	2478.8731	2481.0150	---	---

5.6 Band Edge Measurement

Ambient condition:

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

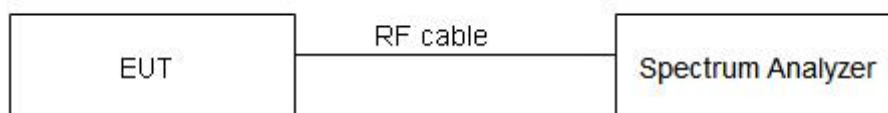
Method of Measurement:

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable the band edge of the lowest and highest channels were measured. The peak detector is used and RBW is set to 100 kHz and VBW is set to 300 kHz on spectrum analyzer.

Limits:

Rule Part 15.247(d) specifies that “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.

Test Setup:



Measurement Uncertainty:

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$, $U = 936 \text{ Hz}$, $2 \text{ GHz}-3 \text{ GHz} = 1.407 \text{ dB}$.

Test Results:

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-0.87	-41.89	≤ -20.87	PASS
	Ant1	High	2480	-0.86	-45.16	≤ -20.86	PASS
BLE_2M	Ant1	Low	2402	-1.21	-30.3	≤ -21.21	PASS
	Ant1	High	2480	-7.11	-47.1	≤ -27.11	PASS

5.7 Maximum Power Spectral Density

Ambient condition:

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement:

During the process of the testing, The EUT was connected to Spectrum Analyzer with a known loss. The EUT is max power transmission with proper modulation. The Average detector is used. We use Method AVGPSD-2 in KDB 558074 D01 for this test.

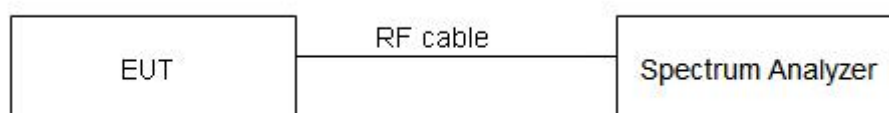
The conducted Power is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically.

Limits:

Rule Part 15.247(e) specifies that" For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Maximum Power Spectral Density	$\leq 8 \text{ dBm} / 3\text{kHz}$
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Test Setup:



Measurement Uncertainty:

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.75\text{dB}$.

Test Results:

TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-15.27	≤8	PASS
	Ant1	2440	-15.27	≤8	PASS
	Ant1	2480	-15.41	≤8	PASS
BLE_2M	Ant1	2402	-16.93	≤8	PASS
	Ant1	2440	-16.92	≤8	PASS
	Ant1	2480	-23.08	≤8	PASS

5.8 Spurious RF Conducted Emissions

Ambient condition:

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement:

The EUT was connected to the spectrum analyzer with a known loss. The spectrum analyzer scans from 30MHz to the 10th harmonic of the carrier. The peak detector is used. Set RBW to 100kHz and VBW to 300 kHz, Sweep is set to AUTO. The test is in transmitting mode.

Limits:

Rule Part 15.247(d) specifies that "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."

Test Setup:



Measurement Uncertainty:

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

Frequency	Uncertainty
100kHz-2GHz	0.684 dB
2GHz-26GHz	1.407 dB

Test Results:

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-0.85	-0.85	---	---
			30~1000	-0.85	-59.47	≤ -20.85	PASS
			1000~26500	-0.85	-47.44	≤ -20.85	PASS
		2440	Reference	-0.95	-0.95	---	---
			30~1000	-0.95	-59.6	≤ -20.95	PASS
			1000~26500	-0.95	-47.67	≤ -20.95	PASS
		2480	Reference	-1.15	-1.15	---	---
			30~1000	-1.15	-59.62	≤ -21.15	PASS
			1000~26500	-1.15	-47.65	≤ -21.15	PASS
BLE_2M	Ant1	2402	Reference	-1.19	-1.19	---	---
			30~1000	-1.19	-59.1	≤ -21.19	PASS
			1000~26500	-1.19	-47.87	≤ -21.19	PASS
		2440	Reference	-1.27	-1.27	---	---
			30~1000	-1.27	-58.68	≤ -21.27	PASS
			1000~26500	-1.27	-47.84	≤ -21.27	PASS
		2480	Reference	-7.47	-7.47	---	---
			30~1000	-7.47	-59.37	≤ -27.47	PASS
			1000~26500	-7.47	-48.13	≤ -27.47	PASS

6. Appendix X

Test Equipment	Type/Mode	SERIAL NO.	Equipment No.	Manufacturer	Cal. Due
Spectrum Analyzer	FSV40	101580	DZ-000238-3	R&S	2026/03/27
RF Radio Frequency Switch	JS0806-2	19H9080187	DZ-000241	Tonscend	2026/03/27
5m Semi-Anechoic Chamber	SAC-5	SAC-5-2.0	EM-000557	COMTEST	2027/02/01
Spectrum Analyzer	N9010B	MY57470323	DZ-000174	KEYSIGHT	2026/01/01
EMI Test Receiver	N9038A-508	MY532290079	EM-000397	Agilent	2025/12/26
EMI Test Receiver	ESR7	102235	EM-000574	R&S	2026/01/05
loop antenna	HLA 6121	540046	EM-000546	TESEQ	2026/06/01
Broadband Antenna	VULB 9163	9163-530	EM-000342	SCHWARZBECK	2026/06/06
Waveguide Horn Antenna	HF906	360306/008	EM-000093	R&S	2025/12/26
Waveguide Horn Antenna	BBHA9170	00949	DZ-000209-2	SCHWARZBECK	2026/08/02
Preamplifier	BBV 9721	9721-050	DZ-000209-1	SCHWARZBECK	2026/06/02
Temperature and humidity meter	UT330THC	C231446122	DZ-000249-2	UNI-T	2026/07/24

Dynacomm	Software Release	Software Developer
TS1120-3 Test System(Conduction test)	3.3.38	Tonscend
TS+ (5m,Radiation test)	JS32-RE 5.0.0	Tonscend

The End

Important

1. The test report is invalid without the official stamp of CVC;
2. Any part photocopies of the test report are forbidden without the written permission from CVC;
3. The test report is invalid without the signatures of Author and Reviewer;
4. The test report is invalid if altered;
5. Objections to the test report must be submitted to CVC within 15 days;
6. Generally, commission test is responsible for the tested samples only;
7. As for the test result, “—” or “ N/A” means “not applicable”, “ / ”means “not testing”, “P” means “pass” and “F” means “fail”.

Address: No.3,Tiantaiyi Road, Kaitai Avenue, Science City, Guangzhou, China (Test location)

Post Code: 510663 Tel: 020-32293888

FAX: 020 32293889 E-mail: office@cvc.org.cn