



Test Report No.:
FCC2025-0043-RF

TEST REPORT

FCC ID : 2BHB8-NSA302
Applicant : NAMI.AI PTE. LTD.
Product Name : PIR Motion Sensor
Model No. : NSA302

CVC Testing Technology Co., Ltd.

Product Name	PIR Motion Sensor	Trade Mark	---
Type/Model	NSA302	Sample Status	---
Applicant	NAMI.AI PTE. LTD.		
Applicant Address	#03-01, 25 Duxton Hill Singapore 089608 Singapore		
Manufacturer	NAMI.AI PTE. LTD.		
Manufacturer Address	#03-01, 25 Duxton Hill Singapore 089608 Singapore		
Factory	Huizhou Weston Electronic Technology Co LTD		
Factory Address	Floor7-8, Building 27, No.29 Litchi City Industrial Avenue, Shuikou Street, Huicheng District, Huizhou City, P.R. China		
Sample Identification	1-1	Test Item	See page 08
Tested According To	FCC CFR47 Part 15C Radio Frequency Devices ANSI C63.10-2020+Cor1-2023 KDB 558074 D01 15.247 Meas Guidance v05r02		
Receiving Date	Jul.17,2025	Completing Date	Jul.23,2025~Aug.22,2025
Test conclusion	<p>The equipment under test was found to comply with the requirements of the standards applied.</p> <p>Final Verdict: Pass.</p> <p>Seal of CVC</p> <p>Date of issue: Sep.09,2025</p>		
Abbreviations: / Pass= passed Fail = failed N/A= not applicable			
This test report relates only to the EUT, and shall not be reproduced except in full, without written approval of CVC.			

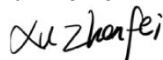
Approved by:

Chen Huawen



Reviewed by:

Xu Zhenfei



Tested by:

Li Yueao

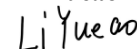


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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FCC2025-0043-RF	Original release	Sep.09,2025

1. General Product Information

1.1 General information

Product Name	PIR Motion Sensor
Model No.	NSA302
Additional model	N/A
Power Supply	DC 3.0V
Hardware Version	V4.0
Software Version	V2.4
Bluetooth Version	5.0
Specific power settings	Bluetooth(LE_1M,2M): 80 Thread:10
Antenna Type	PCB Antenna
Antenna Gain	Bluetooth: 2.07 dBi (provided by client) Thread: 2.07 dBi (provided by client)
Beamforming gain	Unsupported (provided by client)
Frequency Range	Bluetooth(LE_1MHz,2MHz): 2402~2480MHz Thread: 2405~2480MHz
Channel Number	Bluetooth(LE_1MHz,2MHz):40 Channels Thread: 16 Channels
Type of Modulation	Bluetooth(LE_1MHz,2MHz):GFSK Thread:OQPSK
Max. Conducted Power	Bluetooth: 6.35dBm Thread:13.04dBm
Operate Temp.Range	0°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. EUT photo refer to report (Report NO.:FCC2025-0043-EUT).
4. The EUT have SISO function, provides 1 completed transmitter and 1 receiver.
5. The product models of this application are NSA302.All the tests carried out on model NSA302.

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.

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FCC(Test firm designation number: CN1282)

IC(Test firm CAB identifier number: CN0103)

CNAS(Test firm designation number: L0095)

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,2M)	1TX / 1RX	0,19,39
Thread	1TX / 1RX	11,18,26

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_1M,2M)	1	/	/
Thread	1	/	/

Test Items	Test Antennas	Test Modes	Test Channels
Radiated Emissions	Antenna 1	Thread Bluetooth(LE_1M)	11,18,26/ 0,19,39
Radiated Emissions (Band Edge)	Antenna 1	Thread Bluetooth(LE_1M,2M)	11,18,26/ 0,19,39
Maximum conducted output power	Antenna 1	Thread Bluetooth(LE_1M,2M)	11,18,26/ 0,19,39
Minimum 6 dB bandwidth	Antenna 1	Thread Bluetooth(LE_1M,2M)	11,18,26/ 0,19,39
Occupied Channel Bandwidth	Antenna 1	Thread Bluetooth(LE_1M,2M)	11,18,26/ 0,19,39
Band Edge Measurement	Antenna 1	Thread Bluetooth(LE_1M,2M)	11,26/ 0,39
Maximum Power spectral density	Antenna 1	Thread Bluetooth(LE_1M,2M)	11,18,26/ 0,19,39
Spurious RF Conducted Emissions	Antenna 1	Thread Bluetooth(LE_1M,2M)	11,18,26/ 0,19,39

3.2 Duty cycle

Appendix G of Thread_diagram and Appendix G of BLE_diagram

4. Summary of measurement results

Summary of measurements of results	Clause in FCC rules	Verdict	Note
Conducted Emissions	15.207	N/A	See note 1
Radiated Emissions	15.247(d),15.205,15.209	PASS	/
Maximum conducted output power	15.247(b)(3)	PASS	Appendix C of BLE_ diagram and Appendix C of Thread_ diagram
Minimum 6 dB bandwidth	15.247(a)(2)	PASS	Appendix A of BLE_ diagram and Appendix A of Thread_ diagram
Occupied Channel Bandwidth	15.247(a)(2)	PASS	Appendix B of BLE_ diagram and Appendix B of Thread_ diagram
Band Edge Measurement	15.247(d)	PASS	Appendix E of BLE_ diagram and Appendix E of Thread_ diagram
Maximum Power spectral density	15.247(e)	PASS	Appendix D of BLE_ diagram and Appendix D of Thread_ diagram
Spurious RF Conducted Emissions	15.247(d)	PASS	Appendix F of BLE_ diagram and Appendix F of Thread_ diagram
Antenna Requirement	15.203	PASS	See note 2

Note 1: This device does not work on the AC power cord.

Note 2: 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%	101.3kPa

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.

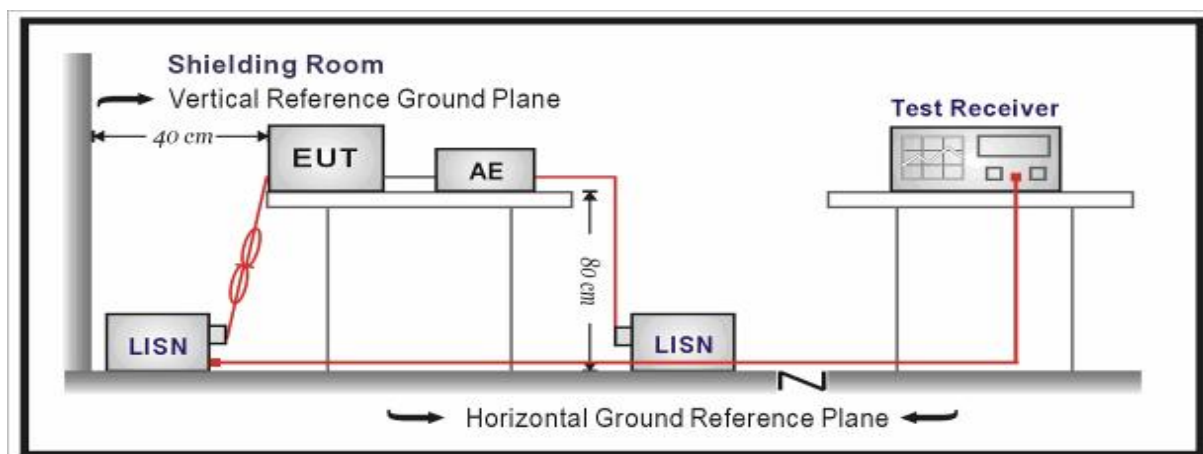
Limits:

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:

Conducted Emission applies to an intentional radiator that is designed to be connected to the public utility (AC) power line. Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines.

5.2 Radiated Emission

Ambient condition:

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.3kPa

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)).

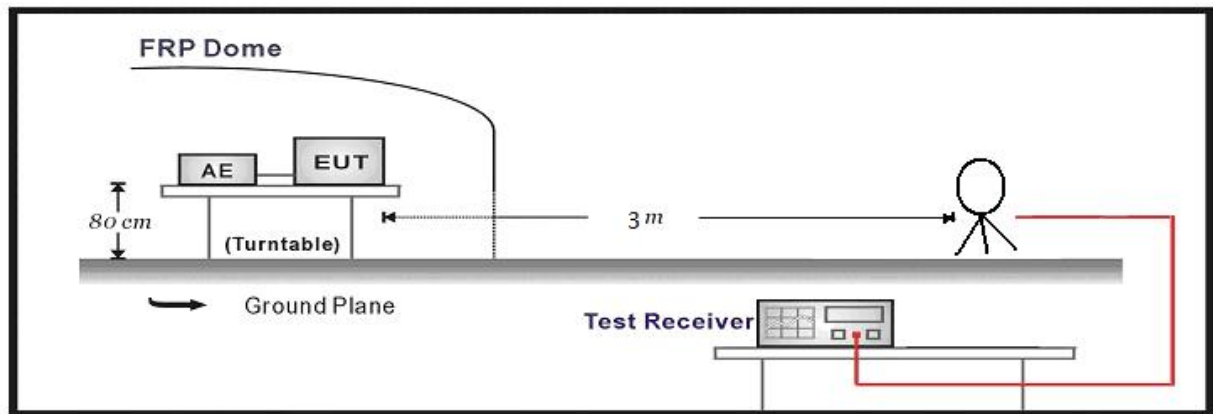
Frequency	Limit (μV/m)	Limit (dBμV/m @3m)	Remark
0.009MHz-0.490MHz	2400/F(kHz)@300m	20lg(24000000/F(kHz))	Quasi-peak Level
0.490MHz~1.705MHz	24000/F(kHz)@30m	20lg(2400000/F(kHz))	Quasi-peak Level
1.705MHz~30.0MHz	30@30m	69.54	Quasi-peak Level
30MHz-88MHz	100@3m	40.0	Quasi-peak Level
88MHz-216MHz	150@3m	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:

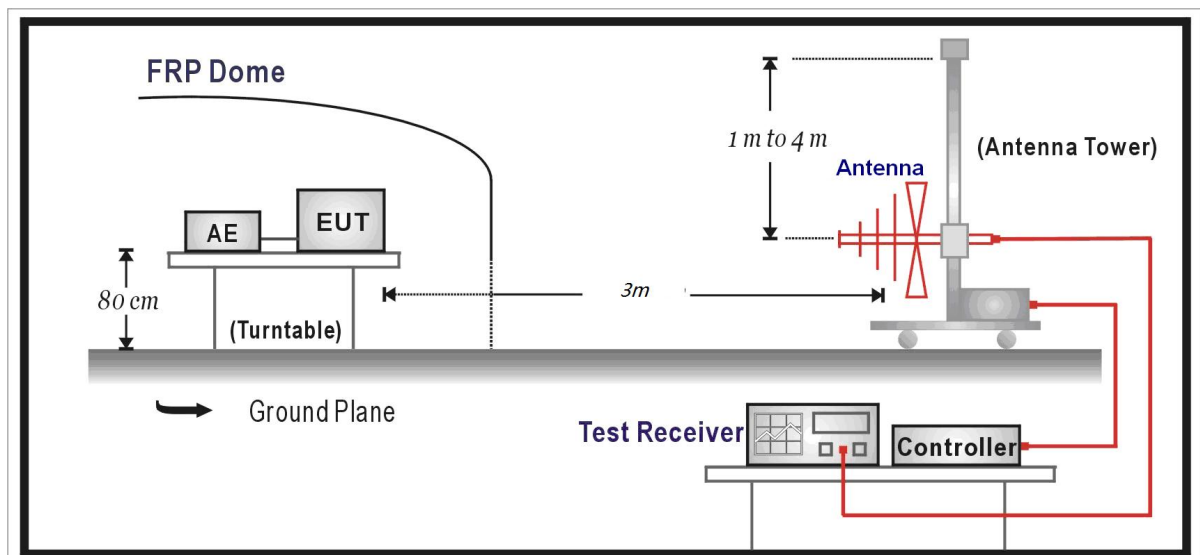
MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	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:

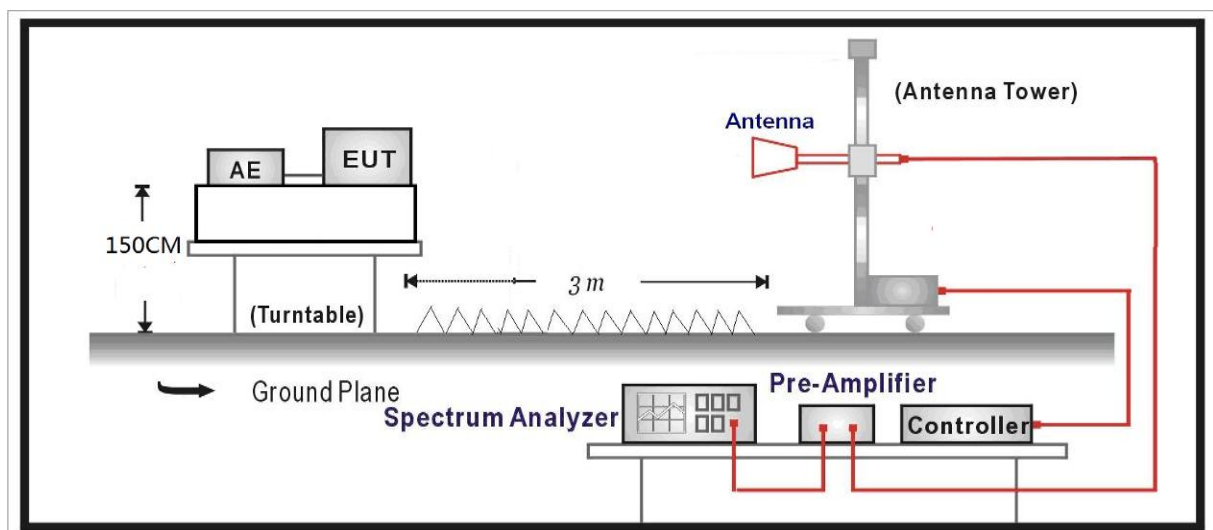
Below 30MHz Test Setup:



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:

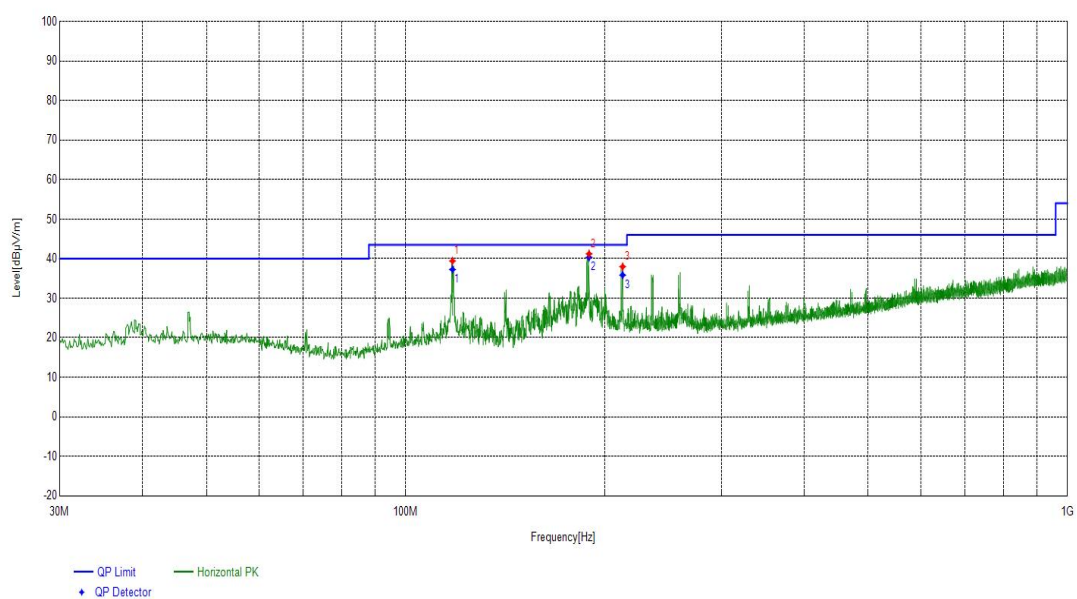
Bluetooth(Low Energy):

During the test, the Radiates Emission from 9kHz to 1GHz was performed in Bluetooth(Low Energy) all modes with all channels and all antennas. BLE(2Mbps), channel 0, antenna 1 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

Radiates Emission		9k~1G								
Test channel		Worst-Case								
Suspected List										
Frequency [MHz]	Polarity	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detect or	Height [cm]	Angle deg	Pass/ Fail
117.70	Horizontal	10.58	28.81	39.39	43.50	4.11	PK	100	161	PASS
189.29	Horizontal	12.68	28.53	41.21	43.50	2.29	PK	100	47	PASS
212.77	Horizontal	13.23	24.74	37.97	43.50	5.53	PK	100	24	PASS

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

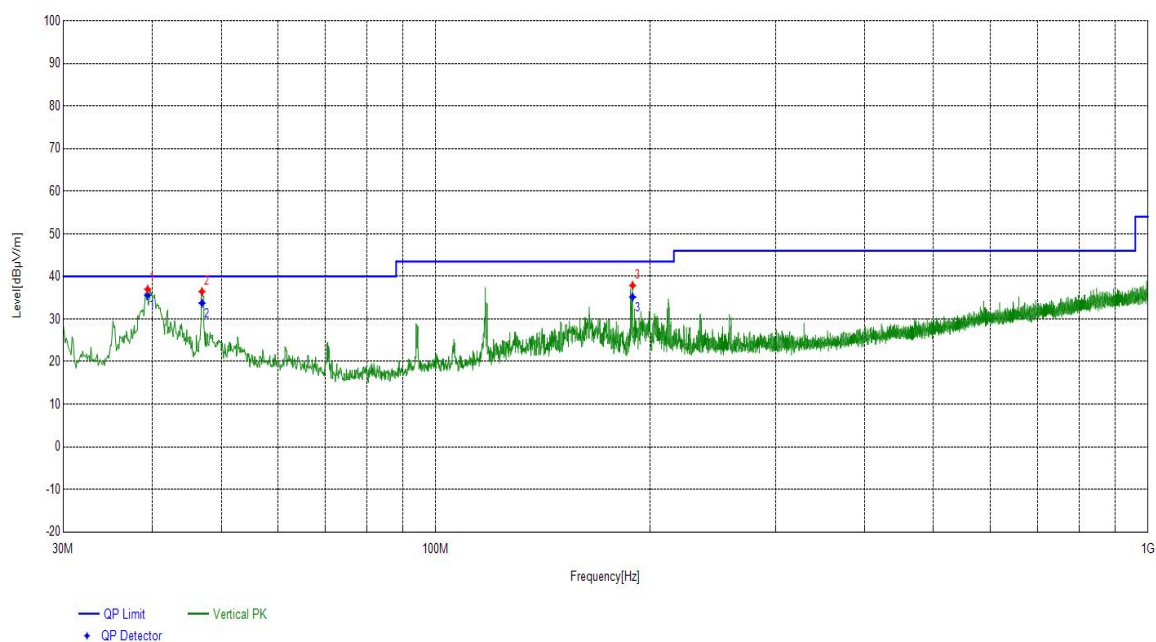
Final Data List								
Frequency [MHz]	Polarity	Factor [dB]	QP Value [dB μ V/m]	QP Limit [dB μ V/m]	QP Margin [dB]	Height [cm]	Angle [°]	Pass/Fail
117.69677	Horizontal	10.58	37.25	43.50	6.25	100	161	PASS
189.267979	Horizontal	12.68	40.32	43.50	3.18	320	52	PASS
212.766277	Horizontal	13.23	35.83	43.50	7.67	100	24	PASS



Radiates Emission			9k~1G							
Test channel			Worst-Case							
Suspected List										
Frequency [MHz]	Polarity	Factor [dB]	Reading [dBμV/ m]	Level [dBμV/ m]	Limit [dBμV/ m]	Margin [dB]	Detect or	Height [cm]	Angle deg	Pass/ Fail
39.41	Vertical	11.99	24.99	36.98	40.00	3.02	PK	100	206	PASS
46.98	Vertical	12.81	23.62	36.43	40.00	3.57	PK	100	107	PASS
189.00	Vertical	12.64	25.23	37.87	43.50	5.63	PK	100	122	PASS

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

Final Data List									
Frequency [MHz]	Polarity	Factor [dB]	QP Value [dB μ V/m]	QP Limit [dB μ V/m]	QP Margin [dB]	Height [cm]	Angle [°]	Pass/Fail	
39.409941	Vertical	11.99	35.56	40.00	4.44	100	203	PASS	
46.976698	Vertical	12.81	33.72	40.00	6.28	100	115	PASS	
188.9989	Vertical	12.64	35.16	43.50	8.34	100	131	PASS	



During the test, the Radiates Emission from Above 1G was performed in Bluetooth(Low Energy) all modes with all channels and all antennas. BLE(2Mbps), Highest, medium, lowest channels, antenna 1 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

Radiates Emission		Above 1G							
Test channel		Lowest							
polarization		Horizontal							
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/ m]	Level [dBμV/ m]	Limit [dBμV/ m]	Margin [dB]	Detect or	Height [cm]	Angle deg	Pass/ Fail
4959.39	0.60	43.82	44.42	74.00	29.58	PK	150	238	PASS
6404.18	5.23	36.60	41.83	74.00	32.17	PK	150	35	PASS
9905.88	10.17	35.20	45.37	74.00	28.63	PK	150	35	PASS
4962.39	0.62	35.15	35.77	54.00	18.23	AV	150	238	PASS
6584.22	5.59	24.56	30.15	54.00	23.85	AV	150	317	PASS
8597.62	8.34	25.14	33.48	54.00	20.52	AV	150	207	PASS

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

Radiates Emission		Above 1G							
Test channel		Lowest							
polarization		Vertical							
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/ m]	Level [dBμV/ m]	Limit [dBμV/ m]	Margin [dB]	Detect or	Height [cm]	Angle deg	Pass/ Fail
4803.36	0.05	56.99	57.04	74.00	16.96	PK	150	165	PASS
7620.92	7.20	36.67	43.87	74.00	30.13	PK	150	66	PASS
12007.80	9.53	42.04	51.57	74.00	22.43	PK	150	128	PASS
4804.86	0.05	46.53	46.58	54.00	7.42	AV	150	165	PASS
7848.97	7.38	25.08	32.46	54.00	21.54	AV	150	318	PASS
12009.30	9.53	30.56	40.09	54.00	13.91	AV	150	128	PASS

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

Radiates Emission		Above 1G							
Test channel		Medium							
polarization		Horizontal							
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/ m]	Level [dBμV/ m]	Limit [dBμV/ m]	Margin [dB]	Detect or	Height [cm]	Angle deg	Pass/ Fail
4803.36	0.05	61.55	61.60	74.00	12.40	PK	150	177	PASS
7316.36	6.96	36.87	43.83	74.00	30.17	PK	150	134	PASS
11002.60	10.17	36.28	46.45	74.00	27.55	PK	150	1	PASS
4806.36	0.07	48.85	48.92	54.00	5.08	AV	150	134	PASS
7208.34	6.89	26.20	33.09	54.00	20.91	AV	150	147	PASS
10674.03	10.40	24.52	34.92	54.00	19.08	AV	150	214	PASS

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

Radiates Emission		Above 1G							
Test channel		Medium							
polarization		Vertical							
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/ m]	Level [dBμV/ m]	Limit [dBμV/ m]	Margin [dB]	Detect or	Height [cm]	Angle deg	Pass/ Fail
4804.86	0.05	51.69	51.74	74.00	22.26	PK	150	164	PASS
11557.71	9.69	36.65	46.34	74.00	27.66	PK	150	219	PASS
12009.30	9.53	37.25	46.78	74.00	27.22	PK	150	140	PASS
4806.36	0.07	41.95	42.02	54.00	11.98	AV	150	164	PASS
11034.11	10.14	25.18	35.32	54.00	18.68	AV	150	110	PASS
12010.80	9.53	26.86	36.39	54.00	17.61	AV	150	140	PASS

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

Radiates Emission		Above 1G							
Test channel		Highest							
polarization		Horizontal							
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/ m]	Level [dBμV/ m]	Limit [dBμV/ m]	Margin [dB]	Detect or	Height [cm]	Angle deg	Pass/ Fail
4879.88	0.33	59.40	59.73	74.00	14.27	PK	150	176	PASS
7580.42	7.18	36.94	44.12	74.00	29.88	PK	150	251	PASS
10025.91	10.23	35.94	46.17	74.00	27.83	PK	150	263	PASS
4881.38	0.33	49.53	49.86	54.00	4.14	AV	150	152	PASS
7320.86	6.97	27.06	34.03	54.00	19.97	AV	150	146	PASS
10747.55	10.35	25.03	35.38	54.00	18.62	AV	150	115	PASS

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

Radiates Emission		Above 1G							
Test channel		Highest							
polarization		Vertical							
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/ m]	Level [dBμV/ m]	Limit [dBμV/ m]	Margin [dB]	Detect or	Height [cm]	Angle deg	Pass/ Fail
4881.38	0.33	54.34	54.67	74.00	19.33	PK	150	182	PASS
7826.47	7.37	36.29	43.66	74.00	30.34	PK	150	195	PASS
10397.98	10.45	35.45	45.90	74.00	28.10	PK	150	79	PASS
4882.88	0.34	39.86	40.20	54.00	13.80	AV	150	182	PASS
7610.42	7.19	25.39	32.58	54.00	21.42	AV	150	324	PASS
10039.41	10.23	24.39	34.62	54.00	19.38	AV	150	342	PASS

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

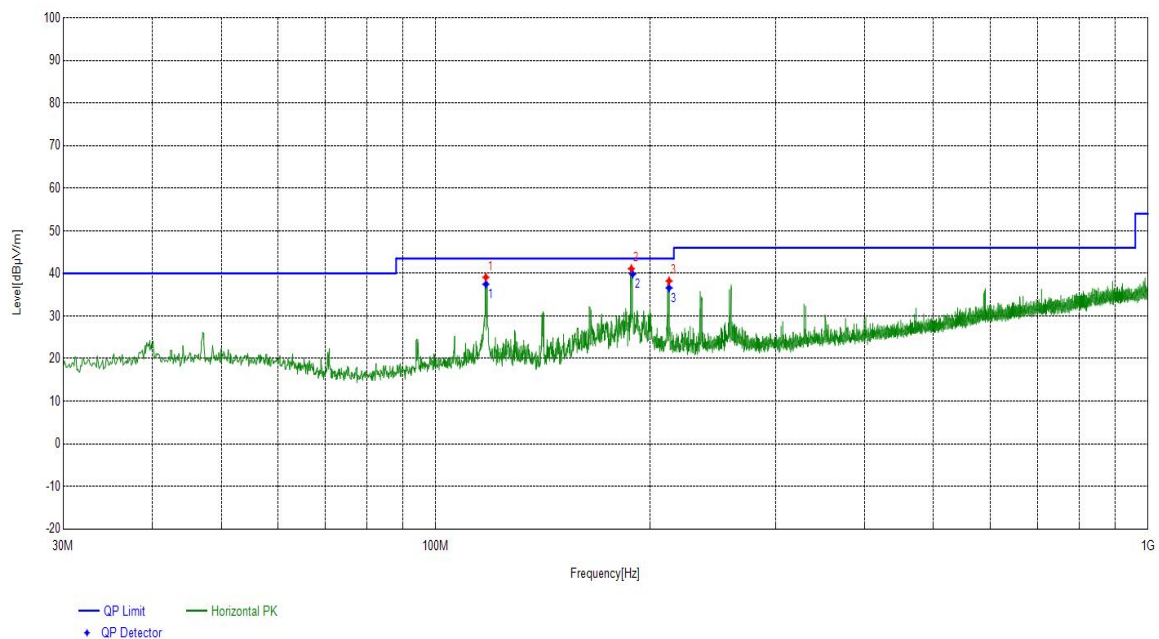
Thread:

During the test, the Radiates Emission from 9kHz to 1GHz was performed in Thread all modes with all channels and all antennas. Thread channel 0, antenna 1 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

Radiates Emission			9k~1G							
Test channel			Worst-Case							
Suspected List										
Frequency [MHz]	Polarity	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detect or	Height [cm]	Angle deg	Pass/ Fail
117.60	Horizontal	10.60	28.48	39.08	43.50	4.42	PK	100	189	PASS
188.22	Horizontal	12.57	28.53	41.10	43.50	2.40	PK	100	69	PASS
212.67	Horizontal	13.23	25.00	38.23	43.50	5.27	PK	100	189	PASS

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

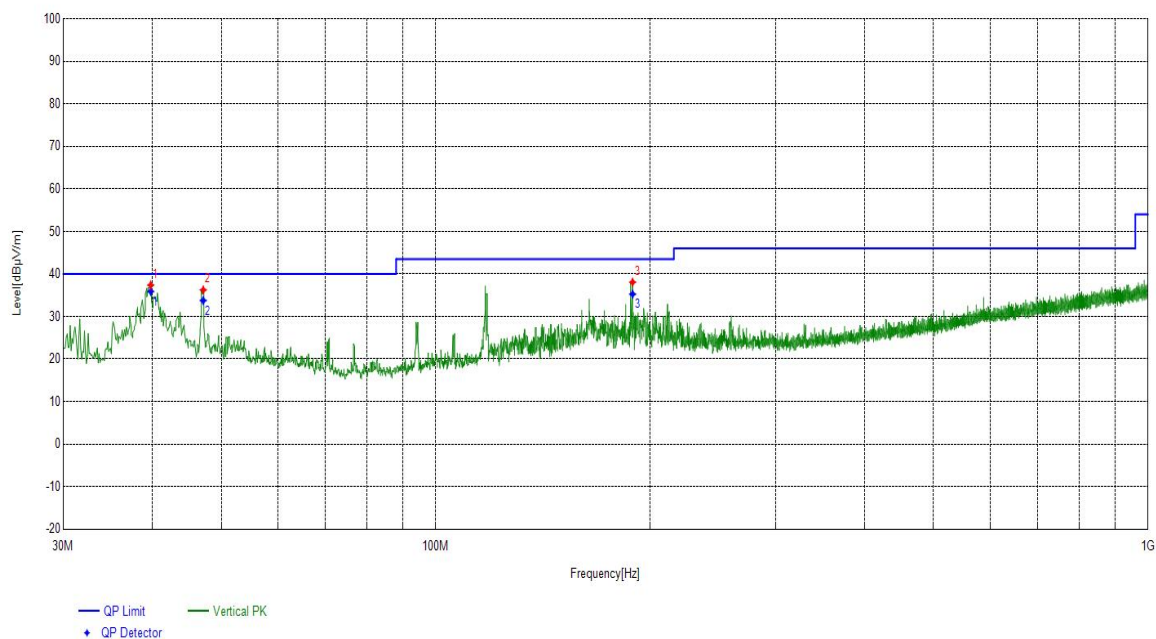
Final Data List									
Frequency [MHz]	Polarity	Factor [dB]	QP Value [dB μ V/m]	QP Limit [dB μ V/m]	QP Margin [dB]	Height [cm]	Angle [°]	Pass/Fail	
117.59976	Horizontal	10.60	37.45	43.50	6.05	100	182	PASS	
189.023608	Horizontal	12.57	39.84	43.50	3.66	110	65	PASS	
212.669267	Horizontal	13.23	36.60	43.50	6.90	100	195	PASS	



Radiates Emission			9k~1G							
Test channel			Worst-Case							
Suspected List										
Frequency [MHz]	Polarity	Factor [dB]	Reading [dBμV/ m]	Level [dBμV/ m]	Limit [dBμV/ m]	Margin [dB]	Detect or	Height [cm]	Angle deg	Pass/ Fail
39.80	Vertical	12.07	25.30	37.37	40.00	2.63	PK	100	214	PASS
47.17	Vertical	12.83	23.41	36.24	40.00	3.76	PK	100	85	PASS
189.00	Vertical	12.64	25.42	38.06	43.50	5.44	PK	100	100	PASS

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

Final Data List								
Frequency [MHz]	Polarity	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Pass/Fail
39.79798	Vertical	12.07	35.88	40.00	4.12	100	214	PASS
47.170717	Vertical	12.83	33.75	40.00	6.25	100	106	PASS
188.9989	Vertical	12.64	35.25	43.50	8.25	100	118	PASS



During the test, the Radiates Emission from Above 1G was performed in Thread all modes with all channels and all antennas. Thread, Highest, medium, lowest channels, antenna 1 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

Radiates Emission		Above 1G							
Test channel		Lowest							
polarization		Horizontal							
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/ m]	Level [dBμV/ m]	Limit [dBμV/ m]	Margin [dB]	Detect or	Height [cm]	Angle deg	Pass/ Fail
4809.36	0.07	42.93	43.00	74.00	31.00	PK	150	159	PASS
7212.84	6.89	36.79	43.68	74.00	30.32	PK	150	257	PASS
8605.12	8.35	37.12	45.47	74.00	28.53	PK	150	221	PASS
4810.86	0.08	33.58	33.66	54.00	20.34	AV	150	159	PASS
7217.34	6.89	27.71	34.60	54.00	19.40	AV	150	221	PASS
8507.60	8.24	25.13	33.37	54.00	20.63	AV	150	245	PASS

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

Radiates Emission		Above 1G							
Test channel		Lowest							
polarization		Vertical							
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/ m]	Level [dBμV/ m]	Limit [dBμV/ m]	Margin [dB]	Detect or	Height [cm]	Angle deg	Pass/ Fail
4809.36	0.07	46.39	46.46	74.00	27.54	PK	150	201	PASS
7217.34	6.89	37.72	44.61	74.00	29.39	PK	150	250	PASS
11554.71	9.69	36.43	46.12	74.00	27.88	PK	150	359	PASS
4810.86	0.08	38.43	38.51	54.00	15.49	AV	150	195	PASS
7214.34	6.89	27.35	34.24	54.00	19.76	AV	150	250	PASS
11199.14	9.99	24.71	34.70	54.00	19.30	AV	150	355	PASS

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

Radiates Emission		Above 1G							
Test channel		medium							
polarization		Horizontal							
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/ m]	Level [dBμV/ m]	Limit [dBμV/ m]	Margin [dB]	Detect or	Height [cm]	Angle deg	Pass/ Fail
4959.39	0.60	43.82	44.42	74.00	29.58	PK	150	190	PASS
6404.18	5.23	36.60	41.83	74.00	32.17	PK	150	40	PASS
9905.88	10.17	35.20	45.37	74.00	28.63	PK	150	200	PASS
4962.39	0.62	35.15	35.77	54.00	18.23	AV	150	150	PASS
6584.22	5.59	24.56	30.15	54.00	23.85	AV	150	220	PASS
8597.62	8.34	25.14	33.48	54.00	20.52	AV	150	120	PASS

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

Radiates Emission		Above 1G							
Test channel		medium							
polarization		Vertical							
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/ m]	Level [dBμV/ m]	Limit [dBμV/ m]	Margin [dB]	Detect or	Height [cm]	Angle deg	Pass/ Fail
4960.89	0.61	48.45	49.06	74.00	24.94	PK	150	213	PASS
6020.10	4.71	36.62	41.33	74.00	32.67	PK	150	305	PASS
8651.63	8.41	36.43	44.84	74.00	29.16	PK	150	348	PASS
4960.89	0.61	40.28	40.89	54.00	13.11	AV	150	213	PASS
6248.15	5.01	25.38	30.39	54.00	23.61	AV	150	275	PASS
8503.10	8.22	25.34	33.56	54.00	20.44	AV	150	54	PASS

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

Radiates Emission		Above 1G							
Test channel		Highest							
polarization		Horizontal							
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/ m]	Level [dBμV/ m]	Limit [dBμV/ m]	Margin [dB]	Detect or	Height [cm]	Angle deg	Pass/ Fail
4891.88	0.37	43.46	43.83	74.00	30.17	PK	150	238	PASS
7332.87	6.99	37.56	44.55	74.00	29.45	PK	150	251	PASS
8611.12	8.36	37.53	45.89	74.00	28.11	PK	150	104	PASS
4891.88	0.37	34.61	34.98	54.00	19.02	AV	150	238	PASS
7334.37	6.99	26.34	33.33	54.00	20.67	AV	150	251	PASS
8507.60	8.24	25.18	33.42	54.00	20.58	AV	150	359	PASS

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

Radiates Emission		Above 1G							
Test channel		Highest							
polarization		Vertical							
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/ m]	Level [dBμV/ m]	Limit [dBμV/ m]	Margin [dB]	Detect or	Height [cm]	Angle deg	Pass/ Fail
4890.38	0.36	47.74	48.10	74.00	25.90	PK	150	198	PASS
6228.65	4.99	37.39	42.38	74.00	31.62	PK	150	273	PASS
8686.14	8.45	36.21	44.66	74.00	29.34	PK	150	30	PASS
4891.88	0.37	39.28	39.65	54.00	14.35	AV	150	198	PASS
6038.11	4.74	25.71	30.45	54.00	23.55	AV	150	141	PASS
8503.10	8.22	25.52	33.74	54.00	20.26	AV	150	354	PASS

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

Band Edge:

During the test, the Band Edge was performed in BLE all modes with all channels and all antennas.

BLE(2Mbps), Highest and lowest channels, Antenna 1 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

Test mode			BLE(2Mbps)						
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]	Angle deg	Pass/ Fail
2384.28	-3.77	45.54	41.77	74.00	32.23	PK	150	214	PASS
2390.08	-3.75	44.02	40.27	74.00	33.73	PK	150	226	PASS
2401.88	-3.73	102.46	98.73	---	---	PK	150	232	---
2384.28	-3.77	34.36	30.59	54.00	23.41	AV	150	91	PASS
2390.08	-3.75	33.95	30.20	54.00	23.80	AV	150	110	PASS
2402.08	-3.73	97.30	93.57	---	---	AV	150	239	---
Test mode			802.11ax20						
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]	Angle deg	Pass/ Fail
2373.27	-3.78	45.35	41.57	74.00	32.43	PK	150	299	PASS
2389.88	-3.75	44.40	40.65	74.00	33.35	PK	150	243	PASS
2402.28	-3.73	101.33	97.60	---	---	PK	150	225	---
2373.27	-3.78	34.03	30.25	54.00	23.75	AV	150	48	PASS
2389.88	-3.75	33.77	30.02	54.00	23.98	AV	150	341	PASS
2402.08	-3.73	93.66	89.93	---	---	AV	150	146	---

The signal beyond the limit is carrier.

Test mode			BLE(2Mbps)						
Test channel			Highest channel						
polarization			Horizontal						
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/ Fail
2479.90	-3.59	99.91	96.32	---	---	PK	150	238	---
2483.50	-3.59	53.17	49.58	74.00	24.42	PK	150	232	PASS
2495.70	-3.56	45.53	41.97	74.00	32.03	PK	150	91	PASS
2479.90	-3.59	93.83	90.24	---	---	AV	150	244	---
2483.50	-3.59	37.34	33.75	54.00	20.25	AV	150	110	PASS
2495.50	-3.56	34.10	30.54	54.00	23.46	AV	150	208	PASS
Test mode			802.11ax20						
Test channel			Highest channel						
polarization			Vertical						
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/ Fail
2479.30	-3.59	97.94	94.35	---	---	PK	150	215	---
2483.50	-3.59	50.19	46.60	74.00	27.40	PK	150	233	PASS
2509.70	-3.52	45.57	42.05	74.00	31.95	PK	150	257	PASS
2479.90	-3.59	91.27	87.68	---	---	AV	150	134	---
2483.50	-3.59	38.47	34.88	54.00	19.12	AV	150	49	PASS
2509.70	-3.52	33.83	30.31	54.00	23.69	AV	150	215	PASS

The signal beyond the limit is carrier.

During the test, the Band Edge was performed in Thread all modes with all channels and all antennas. Thread, Highest and lowest channels, Antenna 1 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

Test mode			Thread						
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]	Angle deg	Pass/ Fail
2371.87	-3.78	45.41	41.63	74.00	32.37	PK	150	342	PASS
2390.08	-3.75	44.80	41.05	74.00	32.95	PK	150	201	PASS
2399.88	-3.73	45.88	42.15	74.00	31.85	PK	150	243	PASS
2405.08	-3.73	95.62	91.89	---	---	PK	150	243	---
2371.87	-3.78	33.70	29.92	54.00	24.08	AV	150	237	PASS
2390.08	-3.75	33.96	30.21	54.00	23.79	AV	150	237	PASS
2400.08	-3.73	36.39	32.66	54.00	21.34	AV	150	243	PASS
2405.08	-3.72	91.46	87.74	---	---	AV	150	243	---
Test mode			Thread						
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]	Angle deg	Pass/ Fail
2382.68	-3.77	45.90	42.13	74.00	31.87	PK	150	67	PASS
2390.08	-3.75	44.10	40.35	74.00	33.65	PK	150	250	PASS
2399.88	-3.73	45.30	41.57	74.00	32.43	PK	150	220	PASS
2405.08	-3.73	91.53	87.80	---	---	PK	150	226	---
2382.48	-3.77	33.95	30.18	54.00	23.82	AV	150	110	PASS
2390.08	-3.75	33.95	30.20	54.00	23.80	AV	150	354	PASS
2399.88	-3.73	35.03	31.30	54.00	22.70	AV	150	226	PASS
2405.28	-3.71	87.65	83.94	---	---	AV	150	226	---

The signal beyond the limit is carrier.

Test mode			Thread						
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]	Angle deg	Pass/ Fail
2480.30	-3.59	94.53	90.94	---	---	PK	150	244	---
2483.50	-3.59	51.08	47.49	74.00	26.51	PK	150	238	PASS
2515.10	-3.50	45.99	42.49	74.00	31.51	PK	150	36	PASS
2480.30	-3.59	90.57	86.98	---	---	AV	150	244	---
2483.50	-3.59	40.29	36.70	54.00	17.30	AV	150	238	PASS
2514.90	-3.50	34.30	30.80	54.00	23.20	AV	150	319	PASS

Test mode			Thread						
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]	Angle deg	Pass/ Fail
2480.10	-3.59	88.08	84.49	---	---	PK	150	221	---
2483.50	-3.59	45.13	41.54	74.00	32.46	PK	150	227	PASS
2508.50	-3.53	45.39	41.86	74.00	32.14	PK	150	294	PASS
2480.10	-3.59	83.90	80.31	---	---	AV	150	227	---
2483.50	-3.59	35.82	32.23	54.00	21.77	AV	150	239	PASS
2508.50	-3.53	34.03	30.50	54.00	23.50	AV	150	288	PASS

The signal beyond the limit is carrier.

5.3 Maximum conducted output power

Ambient condition:

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.3kPa

Method of Measurement:

a. A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor and set the detector to PEAK. Record the power level.

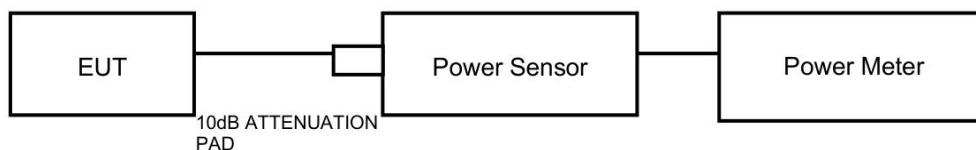
Limits:

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 of the antennas with directional gains that do not exceed 6 dBi. If antennas with directional gains greater than 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 the 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 $k = 2$, $U = 0.44$ dB.

5.4 Minimum 6 dB Bandwidth

Ambient condition:

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.3kPa

Method of Measurement:

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable. Set RBW = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz; VBW is set to greater than 3 times RBW on spectrum analyzer.

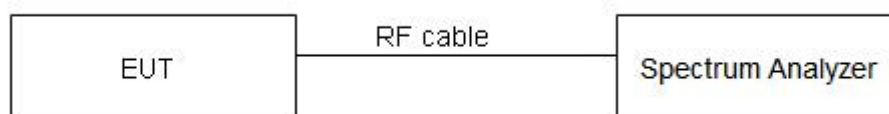
Detector=Peak, Trace mode=Max hold.

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.

5.5 Occupied Channel Bandwidth

Ambient condition:

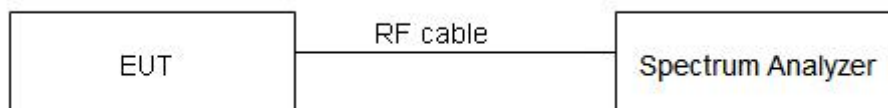
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.3kPa

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 1% to 5% of the OBW; video bandwidth (VBW) shall be at least three times RBW 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.

5.6 Band Edge Measurement

Ambient condition:

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.3kPa

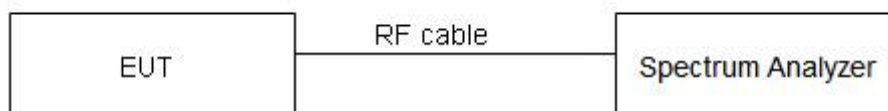
Method of Measurement:

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 $k = 1.96$, $U = 936 \text{ Hz}$, $2 \text{ GHz} - 3 \text{ GHz} = 1.407 \text{ dB}$.

5.7 Maximum Power Spectral Density

Ambient condition:

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.3kPa

Method of Measurement:

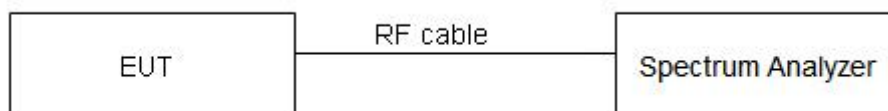
During the process of the testing, The EUT was connected to Spectrum Analyzer with a known loss. The EUT is max power transmission with proper modulation. The Average detector is used. We use Method AVGPS-2 in KDB 558074 D01 for this test.

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 $k = 2$, $U = 0.75\text{dB}$.

5.8 Spurious RF Conducted Emissions

Ambient condition:

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.3kPa

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

6. Appendix X

Test Equipment	Type/Mode	SERIAL NO.	Equipment No.	Manufacturer	Cal. Due
Communication Shielded Room 2	4m*3m*3m	CRTDSWKS R44301	/	CRT	2027/04/22
Spectrum Analyzer	FSV40	101580	DZ-000238-3	R&S	2026/03/27
Power Meter	JS0806-2	19H9080187	DZ-000241	Tonscend	2026/03/27
Programmable DC Power Supply	E3644A	MY58036222	DZ-000178	KEYSIGHT	2026/04/10
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	2026/06/02
Broadband Antenna	VULB 9163	9163-530	EM-000342	SCHWARZBECK	2026/06/02
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
2.4GHz band stop	ZBSF6-C2400-2483.5-543	1232723	DZ-000399-1	Tonscend	2026/06/10
5.8GHz band resistance	ZBSF6-C5725-5850-1627	1232740	DZ-000399-2	Tonscend	2026/05/29
Temperature and humidity meter	MHO-C201	/	DZ-000249-2	Seconds test	2026/07/24
Temperature and humidity meter	MHO-C201	/	DZ-000249-5	Seconds test	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

————— No Body Text Below —————

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”.

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