



Test Report No.:  
FCC2025-0016-RF1

## TEST REPORT

**FCC ID** : 2AYXT61100004  
**Applicant** : Eight Sleep Inc  
**Product Name** : Pod Hub  
**Model No.** : 11504

**CVC Testing Technology Co., Ltd.**

<b>Product Name</b>	Pod Hub	<b>Trade Mark</b>	Eight Sleep
<b>Type/Model</b>	11504	<b>Sample Status</b>	/
<b>Applicant</b>	Eight Sleep Inc		
<b>Applicant Address</b>	915 Broadway STE 1301 New York, New York 10010		
<b>Manufacturer</b>	BoShiJie Technology Co., Ltd		
<b>Manufacturer Address</b>	Boshijie Industrial Park, No. 1 Huifeng West Third Road, Zhongkai High-tech Zone, Huizhou City, Guangdong, China. 516006		
<b>Factory</b>	BoShiJie Technology Co., Ltd		
<b>Factory Address</b>	Boshijie Industrial Park, No. 1 Huifeng West Third Road, Zhongkai High-tech Zone, Huizhou City, Guangdong, China. 516006		
<b>Sample Identification</b>	1-1	<b>Test Item</b>	See page 9
<b>Tested According To</b>	FCC CFR47 Part 15C Radio Frequency Devices ANSI C63.10-2020/Cor1-2023 KDB 558074 D01 15.247 Meas Guidance v05r02 KDB 662911 D01 Multiple Transmitter Output v02r01		
<b>Receiving Date</b>	March.19,2025	<b>Completing Date</b>	March.28,2025~April.30,2025
<b>Test conclusion</b>	<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: <b>June.25,2025</b></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.			

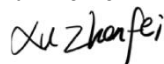
Approved by:

Chen Huawen



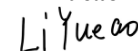
Reviewed by:

Xu Zhenfei



Tested by:

Li Yueao



# TABLE OF CONTENTS

<b>RELEASE CONTROL RECORD .....</b>	<b>4</b>
<b>1. GENERAL PRODUCT INFORMATION .....</b>	<b>5</b>
1.1 GENERAL INFORMATION .....	5
<b>2. TEST SITES .....</b>	<b>6</b>
2.1 TEST FACILITIES .....	6
2.2 DESCRIPTION OF NON-STANDARD METHOD AND DEVIATIONS .....	6
2.3 LIST OF TEST AND MEASUREMENT INSTRUMENTS .....	6
<b>3. TEST CONFIGURATION .....</b>	<b>7</b>
3.1 TEST MODE .....	7
3.2 DUTY CYCLE .....	9
<b>4. SUMMARY OF MEASUREMENT RESULTS .....</b>	<b>10</b>
<b>5. MEASUREMENT PROCEDURE .....</b>	<b>11</b>
5.1 CONDUCTED EMISSION .....	11
5.2 RADIATED EMISSION .....	17
5.3 MAXIMUM CONDUCTED OUTPUT POWER .....	35
5.4 MINIMUM 6 DB BANDWIDTH .....	37
5.5 OCCUPIED CHANNEL BANDWIDTH .....	38
5.6 BAND EDGE MEASUREMENT .....	39
5.7 MAXIMUM POWER SPECTRAL DENSITY .....	40
5.8 SPURIOUS RF CONDUCTED EMISSIONS .....	41
<b>6. APPENDIX X .....</b>	<b>42</b>

**RELEASE CONTROL RECORD**

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FCC2025-0016-RF1	Original release	June.25,2025

# 1. General Product Information

## 1.1 General information

Product Name	Pod Hub
Model No.	11504
Additional model	/
Power Supply	110-240V AC 50-60Hz
Serial Number(SN)	B110C3C6
specific power settings	Bluetooth(LE_1M, LE_2M): 6 IEEE 802.11b: 14 IEEE 802.11g: 16 IEEE 802.11n(HT20&HT40): 16
Antenna Type	FPC antenna
Antenna Gain	WIFI: Ant1:-2.21 dBi, Ant2:-3.02 dBi (provided by client) Bluetooth: 5.54 dBi (provided by client)
Beamforming gain	Unsupported (provided by client)
Frequency Range	Bluetooth(LE_1M, LE_2M): 2402~2480MHz IEEE 802.11b/g/n(HT20): 2412~2462MHz IEEE 802.11n(HT40): 2422~2452MHz
Channel Number	Bluetooth(LE_1M, LE_2M):40 Channels IEEE 802.11b/g/n (HT20): 11 Channels IEEE 802.11n (HT40): 7 Channels
Type of Modulation	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM GFSK for BT-LE
Max. Conducted Power	Bluetooth(LE): 0.10 dBm WIFI2.4G:22.49dBm
Operate Temp.Range	-10°C~+70°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 product models of this application are: 11504. All the tests carried out on model 11504.
4. EUT photo refer to report (Report NO.:FCC2025-0016-EUT).
5. There are two power supplies, from different manufacturers.

Power supply information		
No.	Manufacturer	MODEL
1	Meanwell	LOP-400-12
2	Megmeet	MAP400-12

6. This time, the main engine+bedspread was used for testing, and the test results covered other combinations.
7. There are four ways to sell this product in combination: 1)Host+Bed cover, 2)Host+Pillow, 3)Host+Bed cover+Pillow, 4)Host+Bed cover+blanket.

## 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)

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)	1TX / 1RX	0,19,39
Bluetooth(LE_2M)	1TX / 1RX	0,19,39
IEEE 802.11b	1TX / 1RX	1,6,11
IEEE 802.11g	1TX / 1RX	1,6,11
IEEE 802.11n 20 MIMO	2TX / 2RX	1,6,11
IEEE 802.11n 40 MIMO	2TX / 2RX	3,6,9

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)	1	/	/
Bluetooth(LE_2M)	2	/	/
IEEE 802.11b	1	1	/
IEEE 802.11g	6	6	/
IEEE 802.11n 2.4GHz 20MHz	MCS 0	MCS 0	MCS 8
IEEE 802.11n 2.4GHz 40MHz	MCS 0	MCS 0	MCS 8

Test Items	Test Antennas	Test Modes	Test Channels
Radiated Emissions	Antenna 1, Antenna 2	IEEE 802.11n 20 Bluetooth(LE_2M)	1/ 0
Radiated Emissions (Band Edge)	Antenna 1, Antenna 2	IEEE 802.11n 20 Bluetooth(LE_2M)	1,6,11/ 0,19,39
Maximum conducted output power	Antenna 1, Antenna 2	Bluetooth(LE_1M)/ Bluetooth(LE_2M)/ IEEE 802.11b/ IEEE 802.11g/ IEEE 802.11n 20/ IEEE 802.11n 40	0,19,39/ 0,19,39/ 1,6,11/ 1,6,11/ 1,6,11/ 3,6,9
Minimum 6 dB bandwidth	Antenna 1, Antenna 2	Bluetooth(LE_1M)/ Bluetooth(LE_2M)/ IEEE 802.11b/ IEEE 802.11g/ IEEE 802.11n 20/ IEEE 802.11n 40	0,19,39/ 0,19,39/ 1,6,11/ 1,6,11/ 1,6,11/ 3,6,9
Occupied Channel Bandwidth	Antenna 1, Antenna 2	Bluetooth(LE_1M)/ Bluetooth(LE_2M)/ IEEE 802.11b/ IEEE 802.11g/ IEEE 802.11n 20/ IEEE 802.11n 40	0,19,39/ 0,19,39/ 1,6,11/ 1,6,11/ 1,6,11/ 3,6,9
Band Edge Measurement	Antenna 1, Antenna 2	Bluetooth(LE_1M)/ Bluetooth(LE_2M)/ IEEE 802.11b/ IEEE 802.11g/ IEEE 802.11n 20/ IEEE 802.11n 40	0,39/ 0,39/ 1,11/ 1,11/ 1,11/ 3,9
Maximum Power spectral density	Antenna 1, Antenna 2	Bluetooth(LE_1M)/ Bluetooth(LE_2M)/ IEEE 802.11b/ IEEE 802.11g/ IEEE 802.11n 20/ IEEE 802.11n 40	0,19,39/ 0,19,39/ 1,6,11/ 1,6,11/ 1,6,11/ 3,6,9
Spurious RF Conducted Emissions	Antenna 1, Antenna 2	Bluetooth(LE_1M)/ Bluetooth(LE_2M)/ IEEE 802.11b/ IEEE 802.11g/ IEEE 802.11n 20/ IEEE 802.11n 40	0,19,39/ 0,19,39/ 1,6,11/ 1,6,11/ 1,6,11/ 3,6,9



## 3.2 Duty cycle

Appendix G of WIFI2.4G\_ 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	PASS	/
Radiated Emissions	15.247(d),15.205,15.209	PASS	/
Maximum conducted output power	15.247(b)(3)	PASS	Appendix C of WIFI2.4G_ diagram and Appendix C of BLE_ diagram
Minimum 6 dB bandwidth	15.247(a)(2)	PASS	Appendix A of WIFI2.4G_ diagram and Appendix A of BLE_ diagram
Occupied Channel Bandwidth	15.247(a)(2)	PASS	Appendix B of WIFI2.4G_ diagram and Appendix B of BLE_ diagram
Band Edge Measurement	15.247(d)	PASS	Appendix E of WIFI2.4G_ diagram and Appendix E of BLE_ diagram
Maximum Power spectral density	15.247(e)	PASS	Appendix D of WIFI2.4G_ diagram and Appendix D of BLE_ diagram
Spurious RF Conducted Emissions	15.247(d)	PASS	Appendix F of WIFI2.4G_ diagram and Appendix F of BLE_ diagram
Antenna Requirement	15.203	PASS	See note 1

Note 1: 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%	101.2kPa

#### 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.

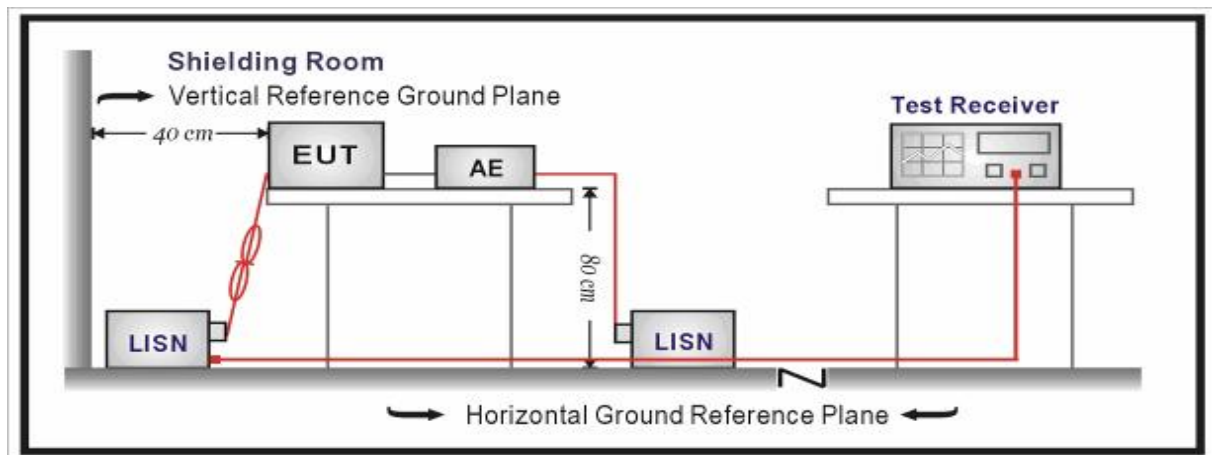
#### Limits:

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:

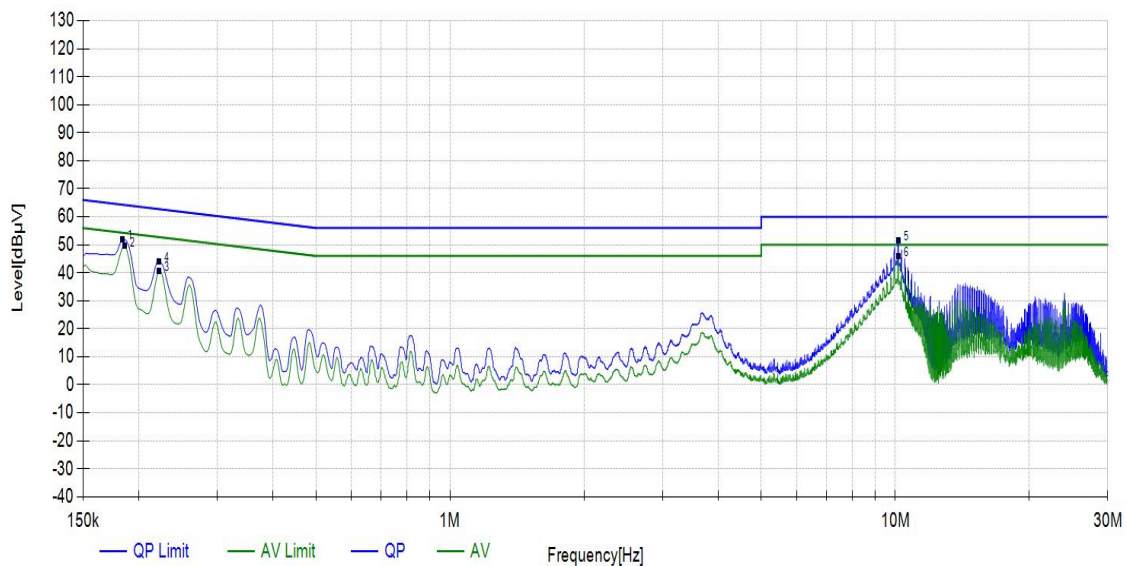
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 1.96$ .  $U = 3.12$  dB.

## Test Results:

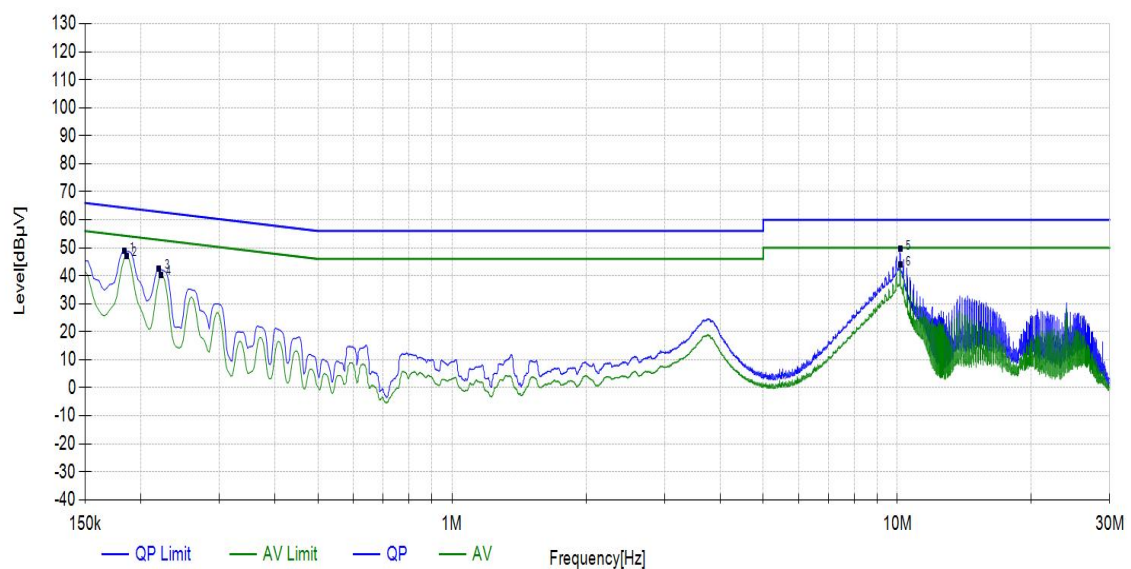
**WIFI:**

During the test, the Conducted Emission from 150kHz to 30MHz was carried out in 2 power modes, in all modes of WIFI, on all channels and all antennas. Power supply 1#,802.11n20, Channel 1, MIMO are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

Radiates Emission		150k~30MHz						
Power Line		L						
Test channel		Worst-Case						
Suspected List								
Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV]	Limit [dBμV]	Margin [dB]	Det ecto r	Type	Pass/Fail
0.1838	10.20	41.78	51.98	64.31	12.33	QP	L	PASS
0.2220	10.20	33.98	44.18	62.74	18.56	QP	L	PASS
10.1558	10.81	40.85	51.66	60.00	8.34	QP	L	PASS
0.1860	10.20	39.31	49.51	54.21	4.70	AV	L	PASS
10.1603	10.81	35.22	46.03	50.00	3.97	AV	L	PASS
0.2220	10.20	30.44	40.64	52.74	12.10	AV	L	PASS



Radiates Emission		150k~30MHz						
Power Line		N						
Test channel		Worst-Case						
Suspected List								
Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV]	Limit [dBμV]	Margin [dB]	Dete ctor	Typ e	Pass/Fail
0.1838	10.19	38.58	48.77	64.31	15.54	QP	N	PASS
0.2198	10.19	32.37	42.56	62.83	20.27	QP	N	PASS
10.1558	10.77	38.82	49.59	60.00	10.41	QP	N	PASS
0.1860	10.19	37.01	47.20	54.21	7.01	AV	N	PASS
0.2220	10.19	30.11	40.30	52.74	12.44	AV	N	PASS
10.1603	10.77	33.14	43.91	50.00	6.09	AV	N	PASS

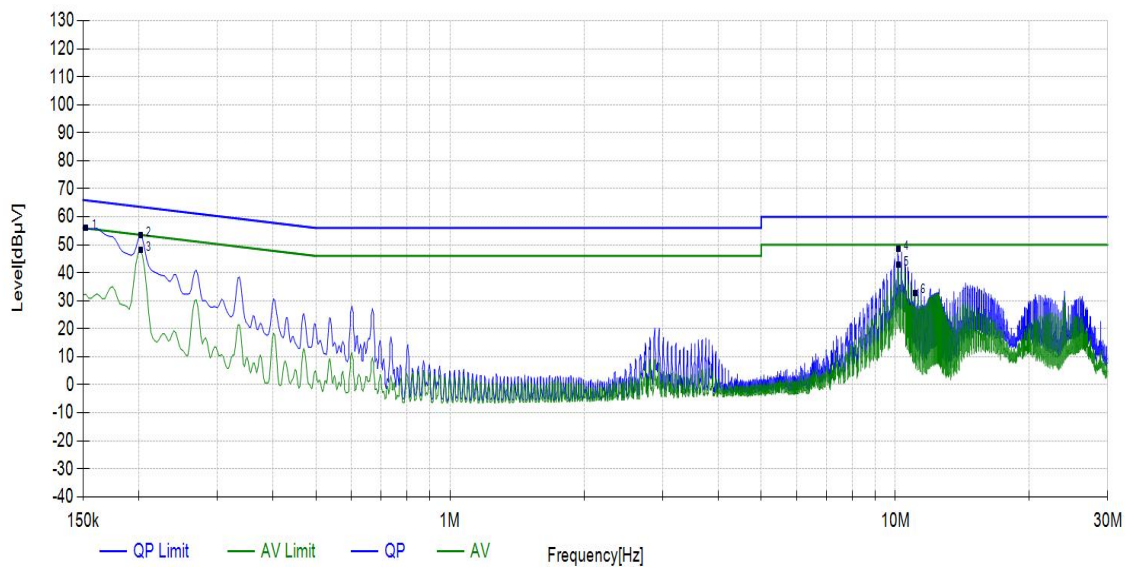


## Test Results:

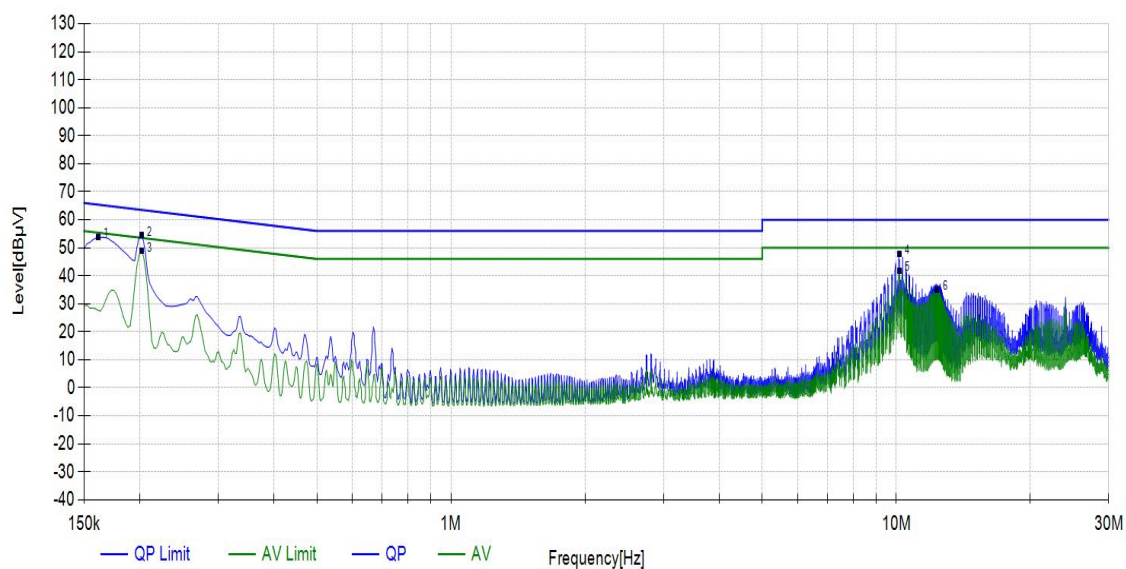
**Bluetooth(Low Energy):**

During the test, the Conducted Emission from 150kHz to 30MHz was carried out in 2 power modes, in all modes of WIFI, on all channels and all antennas. Power supply 1#,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	150k~30MHz							
Power Line	L							
Test channel	Worst-Case							
Suspected List								
Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV]	Limit [dBμV]	Margin [dB]	Detector	Type	Pass/Fail
0.1523	10.20	45.82	56.02	65.88	9.86	QP	L	PASS
0.2018	10.20	43.06	53.26	63.54	10.28	QP	L	PASS
10.1558	10.81	37.61	48.42	60.00	11.58	QP	L	PASS
11.0828	11.00	21.90	32.90	50.00	17.10	AV	L	PASS
10.1603	10.81	31.94	42.75	50.00	7.25	AV	L	PASS
0.2018	10.20	37.88	48.08	53.54	5.46	AV	L	PASS



Radiates Emission		150k~30MHz						
Power Line		N						
Test channel		Worst-Case						
Suspected List								
Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV]	Limit [dBμV]	Margin [dB]	Detector	Type	Pass/Fail
0.1613	10.19	43.60	53.79	65.40	11.61	QP	N	PASS
0.2018	10.19	44.33	54.52	63.54	9.02	QP	N	PASS
10.1535	10.77	36.99	47.76	60.00	12.24	QP	N	PASS
12.3518	11.23	23.83	35.06	50.00	14.94	AV	N	PASS
10.1603	10.77	31.13	41.90	50.00	8.10	AV	N	PASS
0.2018	10.19	38.58	48.77	53.54	4.77	AV	N	PASS





## 5.2 Radiated Emission

Ambient condition:

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.2kPa

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)).

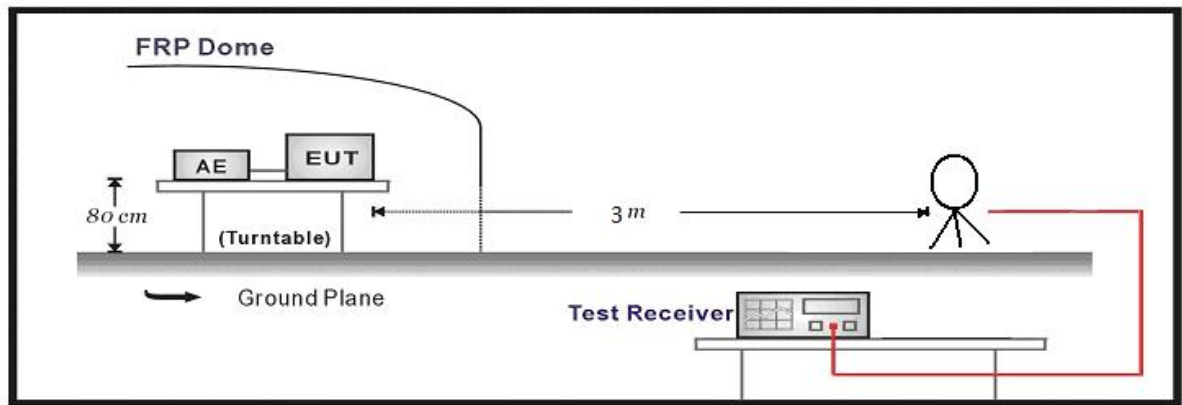
Frequency	Limit (μV/m )	Limit (dBμV/m @3m)	Remark
0.009MHz-0.490MHz	2400/F(kHz)@300m	20lg(24000000/F(kHz))	Quasi-peak Level
0.490MHz~1.705MHz	24000/F(kHz)@30m	20lg(2400000/F(kHz))	Quasi-peak Level
1.705MHz~30.0MHz	30@30m	69.54	Quasi-peak Level
30MHz-88MHz	100@3m	40.0	Quasi-peak Level
88MHz-216MHz	150@3m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

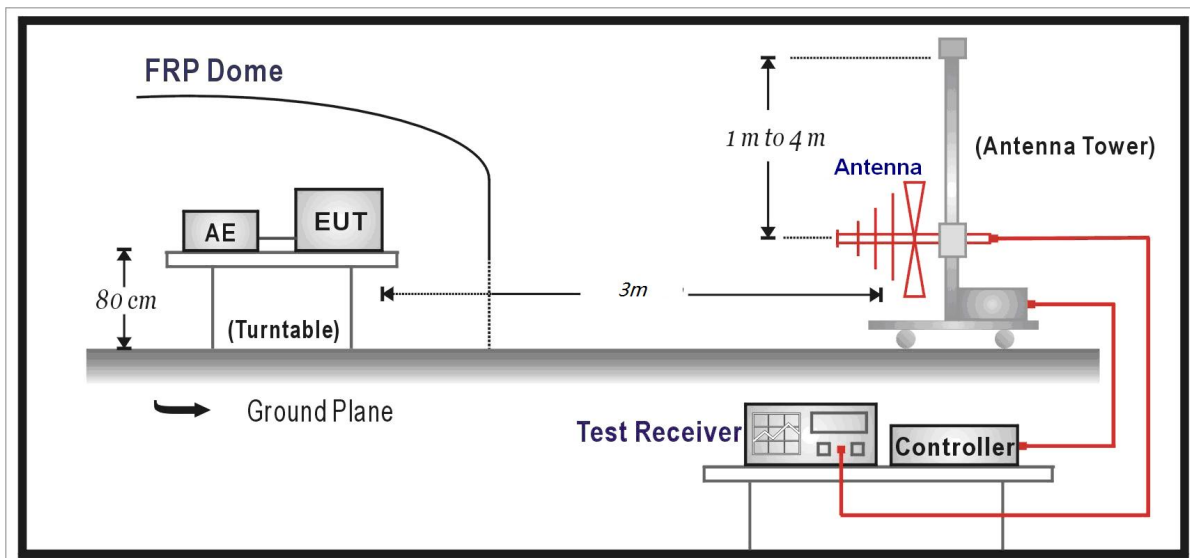
MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218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

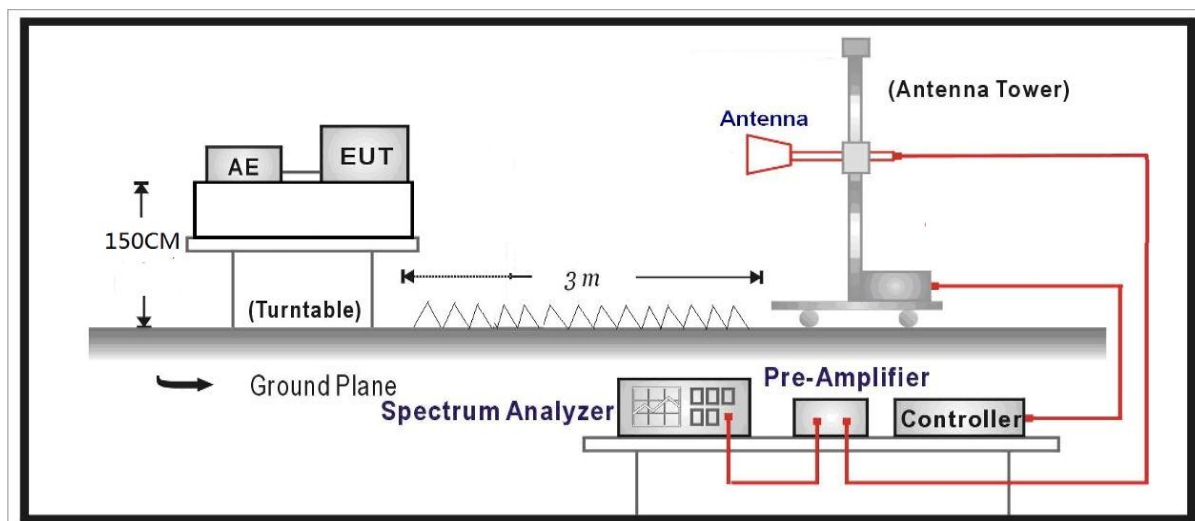
Below 30MHz Test Setup:



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:

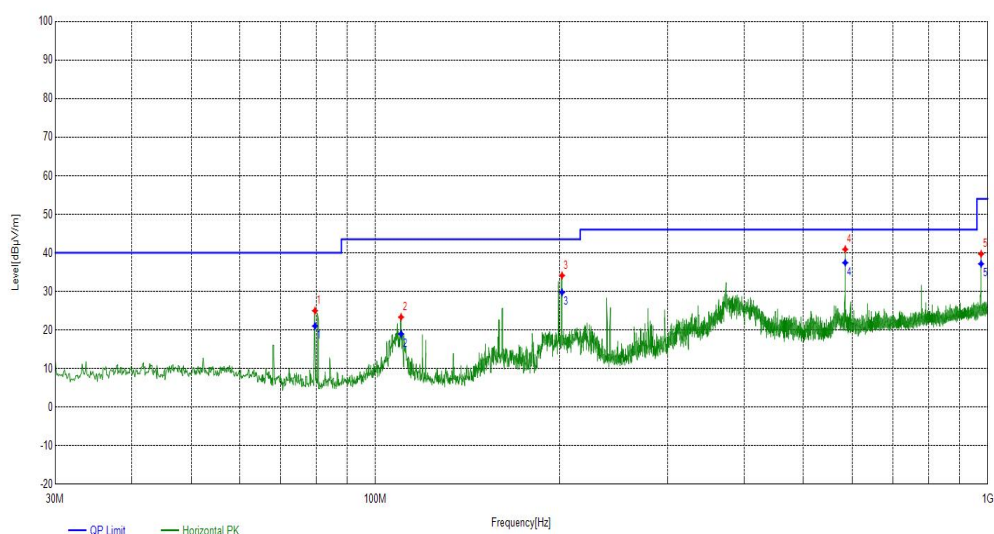
#### WIFI:

During the test, radiation emission from 9kHz to 1GHz was carried out in 2 power modes, in all modes of WIFI, on all channels and all antennas. Power supply 1#,802.11n20, Channel 1, MIMO 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
79.669	Horizontal	8.76	16.22	24.98	40.00	15.02	PK	100	359	PASS
110.13	Horizontal	11.60	11.74	23.34	43.50	20.16	PK	100	3	PASS
201.7072	Horizontal	12.93	21.19	34.12	43.50	9.38	PK	100	195	PASS
584.9925	Horizontal	21.76	19.14	40.90	46.00	5.10	PK	100	77	PASS

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

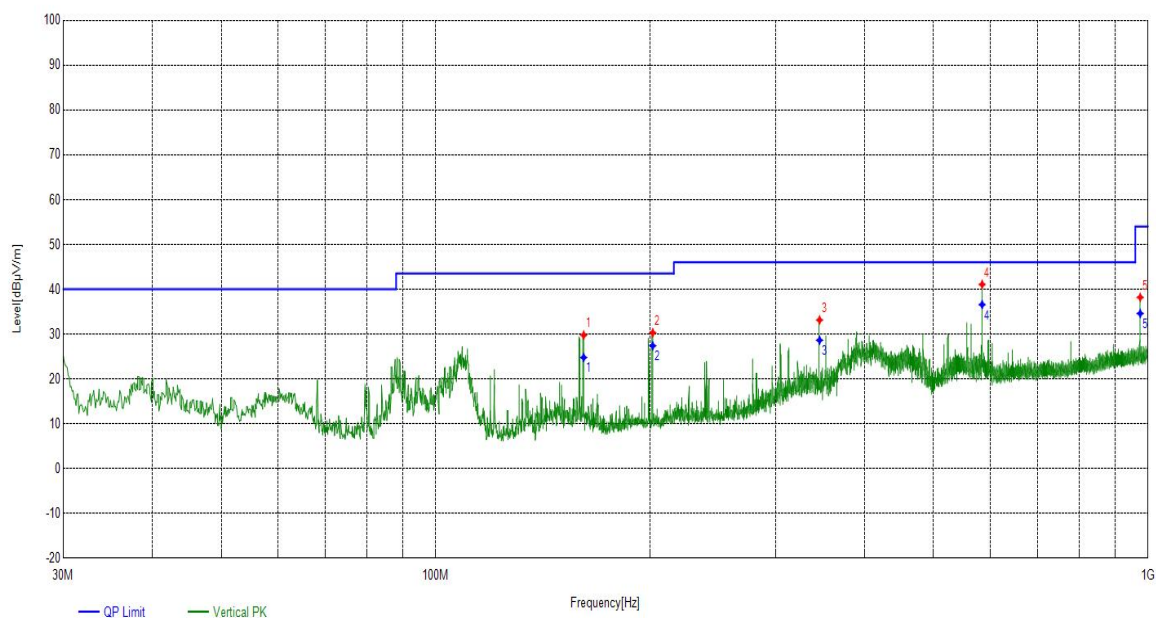
Final Data List									
Frequency [MHz]	Polarity	Factor [dB]	QP Value [dB $\mu$ V/m]	QP Limit [dB $\mu$ V/m]	QP Margin [dB]	Height [cm]	Angle [°]	Pass/Fail	
79.669	Horizontal	8.76	21.03	40.00	18.97	340	385	PASS	
110.13	Horizontal	11.60	18.98	43.50	24.52	370	36	PASS	
201.7072	Horizontal	12.93	29.76	43.50	13.74	230	218	PASS	
584.9925	Horizontal	21.76	37.44	46.00	8.56	78	98	PASS	
975.0685	Horizontal	26.57	37.14	54.00	16.86	136	126	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
161.3511	Vertical	10.13	19.64	29.77	43.50	13.73	PK	100	131	PASS
201.7072	Vertical	12.93	17.36	30.29	43.50	13.21	PK	100	150	PASS
345.8636	Vertical	16.60	16.54	33.14	46.00	12.86	PK	100	150	PASS
584.9925	Vertical	21.76	19.32	41.08	46.00	4.92	PK	100	8	PASS
975.0685	Vertical	26.57	11.63	38.20	54.00	15.80	PK	100	42	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	
161.3511	Vertical	10.13	24.78	43.50	18.72	365	189	PASS	
201.7072	Vertical	12.93	27.39	43.50	16.11	268	213	PASS	
345.8636	Vertical	16.60	28.64	46.00	17.36	158	165	PASS	
584.9925	Vertical	21.76	36.58	46.00	9.42	289	68	PASS	
975.0685	Vertical	26.57	34.60	54.00	19.40	251	58	PASS	



During the test, the Radiates Emission from 1GHz to 40GHz was carried out in 2 power modes, in all modes of WIFI, on all channels and all antennas. Power supply 1#, 802.11n20, Highest, medium, lowest channels, MIMO 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
5565.256526	3.05	38.48	41.53	74.00	32.47	PK	150	150	PASS
10146.714671	11.70	34.13	45.83	74.00	28.17	PK	150	240	PASS
16205.820582	16.85	31.30	48.15	74.00	25.85	PK	150	290	PASS
5565.256526	3.05	24.83	27.88	54.00	26.12	AV	150	250	PASS
10146.714671	11.70	22.03	33.73	54.00	20.27	AV	150	310	PASS
16205.820582	16.85	19.04	35.89	54.00	18.11	AV	150	240	PASS
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
7669.883494	5.24	34.62	39.86	74.00	34.14	PK	150	140	PASS
10566.828341	8.17	33.95	42.12	74.00	31.88	PK	150	250	PASS
14530.026501	12.70	31.49	44.19	74.00	29.81	PK	150	320	PASS
7669.883494	5.24	26.26	31.50	54.00	22.50	AV	150	10	PASS
10566.828341	8.17	21.85	30.02	54.00	23.98	AV	150	10	PASS
14530.026501	12.70	21.35	34.05	54.00	19.95	AV	150	20	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
4014.10141	-0.15	39.10	38.95	74.00	35.05	PK	150	110	PASS
6076.807681	5.01	35.50	40.51	74.00	33.49	PK	150	360	PASS
10923.792379	11.70	34.82	46.52	74.00	27.48	PK	150	70	PASS
4014.10141	-0.15	27.60	27.45	54.00	26.55	AV	150	10	PASS
6076.807681	5.01	23.07	28.08	54.00	25.92	AV	150	250	PASS
10923.792379	11.70	23.45	35.15	54.00	18.85	AV	150	10	PASS
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
7609.280464	5.23	36.82	42.05	74.00	31.95	PK	150	60	PASS
10602.230112	8.12	34.38	42.50	74.00	31.50	PK	150	270	PASS
14944.647232	12.23	32.95	45.18	74.00	28.82	PK	150	30	PASS
7609.280464	5.23	25.99	31.22	54.00	22.78	AV	150	10	PASS
10602.230112	8.12	23.02	31.14	54.00	22.86	AV	150	10	PASS
14944.647232	12.23	22.28	34.51	54.00	19.49	AV	150	10	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
3685.568557	-0.71	39.61	38.90	74.00	35.10	PK	150	340	PASS
5994.29943	4.94	36.15	41.09	74.00	32.91	PK	150	250	PASS
10191.719172	11.76	34.24	46.00	74.00	28.00	PK	150	80	PASS
3685.568557	-0.71	27.29	26.58	54.00	27.42	AV	150	40	PASS
5994.29943	4.94	24.94	29.88	54.00	24.12	AV	150	40	PASS
10191.719172	11.76	22.51	34.27	54.00	19.73	AV	150	150	PASS
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
6682.834142	3.41	36.22	39.63	74.00	34.37	PK	150	310	PASS
9789.789489	7.88	34.21	42.09	74.00	31.91	PK	150	230	PASS
14531.226561	12.69	32.93	45.62	74.00	28.38	PK	150	320	PASS
6682.834142	3.41	24.34	27.75	54.00	26.25	AV	150	30	PASS
9789.789489	7.88	21.82	29.70	54.00	24.30	AV	150	50	PASS
14531.226561	12.69	20.87	33.56	54.00	20.44	AV	150	20	PASS

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

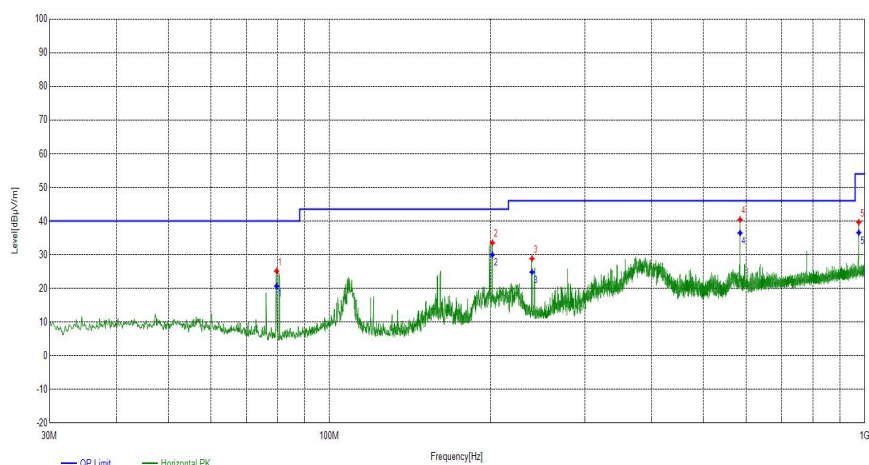
**Bluetooth(Low Energy):**

During the test, the Radiates Emission from 9kHz to 40GHz was carried out in 2 power modes, in all modes of WIFI, on all channels and all antennas. Power supply 1#, 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
79.669	Horizontal	8.76	16.39	25.15	40.00	14.85	PK	100	347	PASS
201.6102	Horizontal	12.93	20.61	33.54	43.50	9.96	PK	100	210	PASS
239.0559	Horizontal	13.94	14.87	28.81	46.00	17.19	PK	100	177	PASS
585.0895	Horizontal	21.77	18.66	40.43	46.00	5.57	PK	100	85	PASS
975.0685	Horizontal	26.57	13.06	39.63	54.00	14.37	PK	100	1	PASS

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

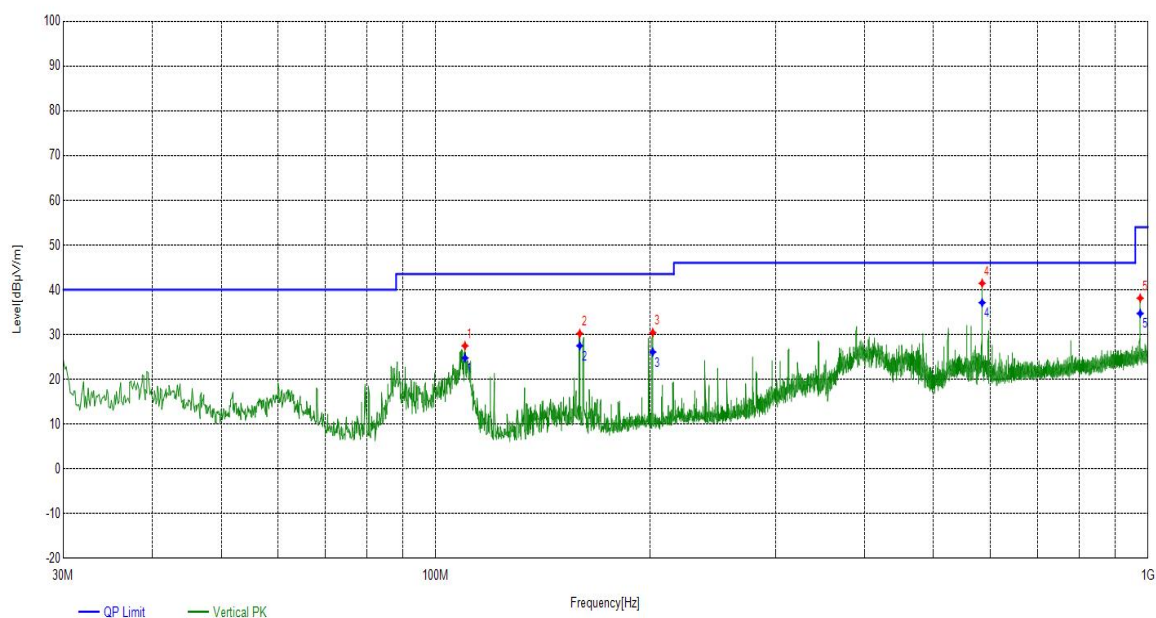
Final Data List									
Frequency [MHz]	Polarity	Factor [dB]	QP Value [dB $\mu$ V/m]	QP Limit [dB $\mu$ V/m]	QP Margin [dB]	Height [cm]	Angle [°]	Pass/Fail	
79.669	Horizontal	8.76	20.68	40.00	19.32	400	386	PASS	
201.6102	Horizontal	12.93	29.97	43.50	13.53	270	256	PASS	
239.0559	Horizontal	13.94	24.83	46.00	21.17	310	198	PASS	
585.0895	Horizontal	21.77	36.45	46.00	9.55	297	103	PASS	
975.0685	Horizontal	26.57	36.55	54.00	17.45	168	19	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
109.936	Vertical	11.62	15.87	27.49	43.50	16.01	PK	100	288	PASS
159.3139	Vertical	9.98	20.25	30.23	43.50	13.27	PK	100	122	PASS
201.7072	Vertical	12.93	17.50	30.43	43.50	13.07	PK	100	161	PASS
584.9925	Vertical	21.76	19.69	41.45	46.00	4.55	PK	100	0	PASS
975.0685	Vertical	26.57	11.57	38.14	54.00	15.86	PK	100	359	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 $\mu$ V/m]	QP Limit [dB $\mu$ V/m]	QP Margin [dB]	Height [cm]	Angle [°]	Pass/Fail	
109.936	Vertical	11.62	24.76	43.50	18.74	130	315	PASS	
159.3139	Vertical	9.98	27.50	43.50	16.00	310	156	PASS	
201.7072	Vertical	12.93	26.10	43.50	17.40	380	191	PASS	
584.9925	Vertical	21.76	37.12	46.00	8.88	384	56	PASS	
975.0685	Vertical	26.57	34.71	54.00	19.29	297	316	PASS	



During the test, the Radiates Emission from 1GHz to 40GHz was carried out in 2 power modes, in all modes of WIFI, on all channels and all antennas. Power supply 1#, 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
7620.681034	5.23	36.03	41.26	74.00	32.74	PK	150	210	PASS
10753.437672	7.98	34.33	42.31	74.00	31.69	PK	150	270	PASS
14607.430372	12.53	32.93	45.46	74.00	28.54	PK	150	320	PASS
7620.681034	5.23	23.83	29.06	54.00	24.94	AV	150	10	PASS
10753.437672	7.98	22.04	30.02	54.00	23.98	AV	150	70	PASS
14607.430372	12.53	19.74	32.27	54.00	21.73	AV	150	360	PASS
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
7700.485024	5.25	36.42	41.67	74.00	32.33	PK	100	340	PASS
10708.435422	8.02	34.98	43.00	74.00	31.00	PK	100	140	PASS
16523.926196	13.22	33.00	46.22	74.00	27.78	PK	100	360	PASS
7700.485024	5.25	24.39	29.64	54.00	24.36	AV	100	30	PASS
10708.435422	8.02	23.22	31.24	54.00	22.76	AV	100	10	PASS
16523.926196	13.22	21.65	34.87	54.00	19.13	AV	100	20	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
7670.483524	5.24	34.19	39.43	74.00	34.57	PK	150	310	PASS
9633.781689	7.83	31.42	39.25	74.00	34.75	PK	150	290	PASS
15154.057703	11.76	31.59	43.35	74.00	30.65	PK	150	290	PASS
7670.483524	5.24	24.71	29.95	54.00	24.05	AV	150	10	PASS
9633.781689	7.83	22.08	29.91	54.00	24.09	AV	150	10	PASS
15154.057703	11.76	22.56	34.32	54.00	19.68	AV	150	20	PASS
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
7660.283014	5.24	36.29	41.53	74.00	32.47	PK	150	260	PASS
10594.429721	8.13	34.58	42.71	74.00	31.29	PK	150	220	PASS
15164.858243	11.73	33.19	44.92	74.00	29.08	PK	150	130	PASS
7660.283014	5.24	24.86	30.10	54.00	23.90	AV	150	10	PASS
10594.429721	8.13	23.32	31.45	54.00	22.55	AV	150	10	PASS
15164.858243	11.73	21.29	33.02	54.00	20.98	AV	150	80	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
7672.283614	5.24	37.05	42.29	74.00	31.71	PK	150	50	PASS
10694.634732	8.04	34.25	42.29	74.00	31.71	PK	150	190	PASS
14584.029201	12.57	31.99	44.56	74.00	29.44	PK	150	190	PASS
7672.283614	5.24	25.98	31.22	54.00	22.78	AV	150	20	PASS
10694.634732	8.04	22.61	30.65	54.00	23.35	AV	150	20	PASS
14584.029201	12.57	21.01	33.58	54.00	20.42	AV	150	20	PASS
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
7650.082504	5.24	35.95	41.19	74.00	32.81	PK	150	360	PASS
10719.835992	8.01	34.20	42.21	74.00	31.79	PK	150	290	PASS
14715.435772	12.47	32.46	44.93	74.00	29.07	PK	150	160	PASS
7650.082504	5.24	24.42	29.66	54.00	24.34	AV	150	140	PASS
10719.835992	8.01	22.69	30.70	54.00	23.30	AV	150	10	PASS
14715.435772	12.47	20.34	32.81	54.00	21.19	AV	150	10	PASS

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

**Band Edge:**

During the test, the Band Edge was performed in WIFI all modes with all channels and all antennas. Power supply 1#,802.11n20,MIMO are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

Test mode			802.11n20						
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
2336.9336	36.77	17.46	54.23	74.00	19.77	PK	150	239	PASS
2372.9372	37.09	17.04	54.13	74.00	19.87	PK	150	270	PASS
2390.1390	37.25	22.33	59.58	74.00	14.42	PK	150	239	PASS
2336.9336	36.77	7.04	43.81	54.00	10.19	AV	150	74	PASS
2372.9372	37.09	4.29	41.38	54.00	12.62	AV	150	270	PASS
2390.1390	37.25	8.30	45.55	54.00	8.45	AV	150	74	PASS
Test mode			802.11n20						
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
2313.3313	36.56	13.85	50.41	74.00	23.59	PK	150	1	PASS
2348.9348	36.88	12.63	49.51	74.00	24.49	PK	150	359	PASS
2390.1390	37.25	19.16	56.41	74.00	17.59	PK	150	225	PASS
2313.3313	36.56	2.12	38.68	54.00	15.32	AV	150	256	PASS
2348.9348	36.88	2.19	39.07	54.00	14.93	AV	150	136	PASS
2390.1390	37.25	4.74	41.99	54.00	12.01	AV	150	211	PASS

Test mode			802.11n20						
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
2483.5484	37.71	21.64	59.35	74.00	14.65	PK	150	135	PASS
2489.3489	37.74	15.50	53.24	74.00	20.76	PK	150	76	PASS
2576.3576	38.10	14.59	52.69	74.00	21.31	PK	150	1	PASS
2483.5484	37.71	8.49	46.20	54.00	7.80	AV	150	105	PASS
2489.3489	37.74	4.00	41.74	54.00	12.26	AV	150	120	PASS
2576.3576	38.10	2.98	41.08	54.00	12.92	AV	150	254	PASS
Test mode			802.11n20						
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
2483.5484	37.71	24.75	62.46	74.00	11.54	PK	150	329	PASS
2485.5486	37.72	24.71	62.43	74.00	11.57	PK	150	354	PASS
2574.9575	38.09	14.34	52.43	74.00	21.57	PK	150	211	PASS
2483.5484	37.71	12.56	50.27	54.00	3.73	AV	150	359	PASS
2485.5486	37.72	13.12	50.84	54.00	3.16	AV	150	359	PASS
2574.9575	38.09	2.69	40.78	54.00	13.22	AV	150	152	PASS



During the test, the Band Edge was performed in BLE all modes with all channels and all antennas. Power supply 1#,BLE(2Mbps), 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
2326.7326	36.67	11.43	48.10	74.00	25.90	PK	150	17	PASS
2358.7358	36.97	11.94	48.91	74.00	25.09	PK	150	180	PASS
2390.1390	37.25	12.94	50.19	74.00	23.81	PK	150	314	PASS
2326.7326	36.67	2.14	38.81	54.00	15.19	AV	150	122	PASS
2358.7358	36.97	2.02	38.99	54.00	15.01	AV	150	270	PASS
2390.1390	37.25	2.49	39.74	54.00	14.26	AV	150	344	PASS
Test mode			BLE(2Mbps)						
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
2321.9321	36.63	15.14	51.77	74.00	22.23	PK	150	139	PASS
2348.1348	36.87	13.34	50.21	74.00	23.79	PK	150	9	PASS
2390.1390	37.25	13.24	50.49	74.00	23.51	PK	150	270	PASS
2321.9321	36.63	4.23	40.86	54.00	13.14	AV	150	153	PASS
2348.1348	36.87	2.25	39.12	54.00	14.88	AV	150	2	PASS
2390.1390	37.25	2.48	39.73	54.00	14.27	AV	150	36	PASS

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]	Detect or	Height [cm]	Angle deg	Pass/ Fail
2483.5483	37.71	19.72	57.43	74.00	16.57	PK	150	62	PASS
2503.1503	37.81	13.65	51.46	74.00	22.54	PK	150	180	PASS
2531.1531	37.92	12.20	50.12	74.00	23.88	PK	150	353	PASS
2483.5483	37.71	7.36	45.07	54.00	8.93	AV	150	62	PASS
2503.1503	37.81	2.76	40.57	54.00	13.43	AV	150	165	PASS
2531.1531	37.92	2.80	40.72	54.00	13.28	AV	150	353	PASS
Test mode		BLE(2Mbps)							
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
2483.54835	37.71	18.67	56.38	74.00	17.62	PK	150	204	PASS
2507.35073	37.83	13.56	51.39	74.00	22.61	PK	150	307	PASS
2537.75377	37.95	14.11	52.06	74.00	21.94	PK	150	174	PASS
2483.54835	37.71	6.57	44.28	54.00	9.72	AV	150	233	PASS
2507.35073	37.83	2.81	40.64	54.00	13.36	AV	150	307	PASS
2537.75377	37.95	2.94	40.89	54.00	13.11	AV	150	189	PASS

### 5.3 Maximum conducted output power

Ambient condition:

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.2kPa

#### 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	$\leq 1W$ (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.

Frequency(MHz)	Antenna Gain(dBi)		Directional gain	Limit(dBm)
	Antenna 1	Antenna 2		
2412-2462	-2.21	-3.02	0.4	30.00

WiFi Antenna:

ANT1:FPC antenna with gain-2.21dBi

ANT2:FPC antenna with gain-3.02dBi

BLE Antenna:

FPC antenna with gain5.54dBi

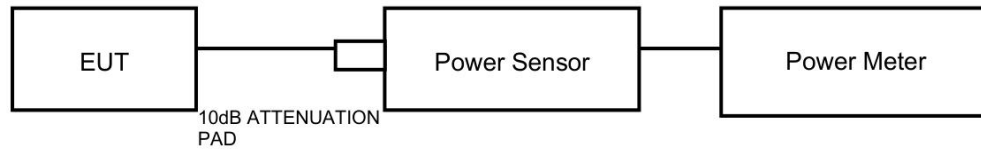
The maximum peak gain of the transmit antenna less than 6dBi

Directional gain is to be computed as follows:

transmit signals are correlated, then

Directional gain =  $10 \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2 / N_{ANT}]$  dBi [Note the “20”s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.

### 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%	101.2kPa

### 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.

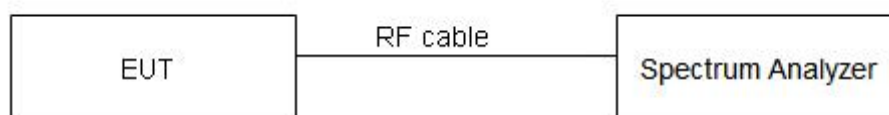
Detector=Peak, Trace mode=Max hold.

### 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:

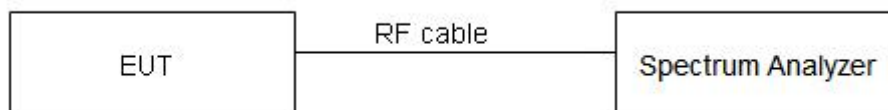
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.2kPa

### 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%	101.2kPa

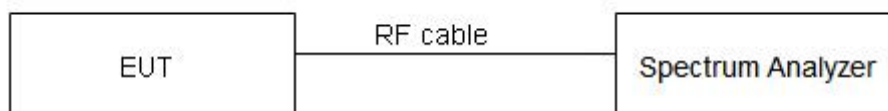
Method of Measurement:

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%	101.2kPa

### 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 Peak detector is used.

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

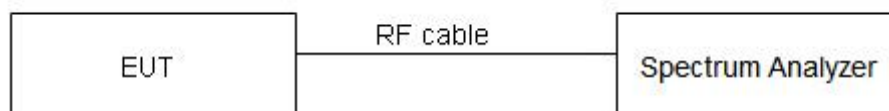
### Limits:

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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Frequency(MHz)	Antenna Gain(dBi)		Directional gain	Limit(dBm)
	Antenna 1	Antenna 2		
2412-2462	-2.21	-3.02	0.4	8.00
Directional gain is to be computed as follows: transmit signals are correlated, then $\text{Directional gain} = 10 \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2 / N_{\text{ANT}}] \text{ dBi}$ [Note the “20”s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.				

### 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%	101.2kPa

### 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 44301	/	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	KEYSIG HT	2026/04/10
5m Semi-Anechoic Chamber	SAC-5	SAC-5-2.0	EM-000557	COMTES T	2027/02/01
Spectrum Analyzer	N9010B	MY57470323	DZ-000174	KEYSIG HT	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	SCHWAR ZBECK	2026/06/02
Waveguide Horn Antenna	HF906	360306/008	EM-000093	R&S	2025/12/26
Waveguide Horn Antenna	BBHA9170	00949	DZ-000209-2	SCHWAR ZBECK	2025/08/03
Preamplifier	BBV 9721	9721-050	DZ-000209-1	SCHWAR ZBECK	2026/06/02
Bandstop Filters	SW-BSF-2400-100-7-A 1	/	EM-000495	/	2025/08/29
5.8GHz band resistance	ZBSF6-C5725-5850-16 27	1232740	DZ-000399-2	Tonscend	2026/05/29
Temperature and humidity meter	MHO-C201	/	DZ-000249-2	Seconds test	2025/07/28
Temperature and humidity meter	MHO-C201	/	DZ-000249-5	Seconds test	2025/07/28

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”.

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](mailto:office@cvc.org.cn)