

# TEST REPORT

**Product Name** : Remote Control Page Turner for Kindle  
**Brand Name** : Stouchi  
**Model** : CGA001  
**Series Model** : CGA002, CGA003, CGA004, CGA005, CGA006, CGA007, CGA008, CGA009, CGA010  
**FCC ID** : 2BONS-CGA001  
**Applicant** : **Shenzhen Shi Qi Technology Co., Ltd**  
Room 705, Floor 7, Huari Automobile Building, No.1006 Nigang  
**Address** : West Road, Meiyuan Community, Qingshuihe Street, Luohu District, Shenzhen  
**Manufacturer** : **Shenzhen Shi Qi Technology Co., Ltd**  
Room 705, Floor 7, Huari Automobile Building, No.1006 Nigang  
**Address** : West Road, Meiyuan Community, Qingshuihe Street, Luohu District, Shenzhen  
**Standard(s)** : FCC CFR Title 47 Part 15 Subpart C Section 15.249  
**Date of Receipt** : Mar. 25, 2025  
**Date of Test** : Mar. 26, 2025~ Apr. 06, 2025  
**Issued Date** : Apr. 07, 2025

**Issued By:** **Guangdong Asia Hongke Test Technology Limited**

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Note: This device has been tested and found to comply with the standard(s) listed, this test report merely corresponds to the test sample. It is not permitted to copy extracts of these test result without the written permission of the test laboratory. This report shall not be reproduced except in full, without the written approval of Guangdong Asia Hongke Test Technology Limited. If there is a need to alter or revise this document, the right belongs to Guangdong Asia Hongke Test Technology Limited, and it should give a prior written notice of the revision document. This test report must not be used by the client to claim product endorsement.

**Guangdong Asia Hongke Test Technology Limited**

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**Report Revise Record**

Report Version	Issued Date	Notes
M1	Apr. 07, 2025	Initial Release

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## 1 TEST SUMMARY

### 1.1 Test Standards

The tests were performed according to following standards:

[FCC Rules Part 15.249](#): Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz, 5725 - 5875 MHz, and 24.0 -24.25 GHz.

[ANSI C63.10: 2013](#): American National Standard for Testing Unlicensed Wireless Devices

### 1.2 Test Summary

FCC PART 15.249		
FCC Part 15.249(a)	Field Strength of Fundamental	PASS
FCC Part 15.209	Spurious Emission	PASS
FCC Part 15.215(c)	20dB bandwidth	PASS
FCC Part 15.207	Conducted Emission	PASS
FCC Part 15.203	Antenna Requirement	PASS

## 1.3 Test Facility

### Test Laboratory:

**Guangdong Asia Hongke Test Technology Limited**

B1/F, Building 11, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

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

**FCC-Registration No.: 251906 Designation Number: CN1376**

Guangdong Asia Hongke Test Technology Limited has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

**IC —Registration No.: 31737 CAB identifier: CN0165**

The 3m Semi-anechoic chamber of Guangdong Asia Hongke Test Technology Limited has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 31737

**A2LA-Lab Cert. No.: 7133.01**

Guangdong Asia Hongke Test Technology Limited has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

## 1.4 Measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report according to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the Guangdong Asia Hongke Test Technology Limited's quality system according to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Asia Hongke laboratory is reported:

Test	Measurement Uncertainty	Notes
Power Line Conducted Emission	9KHz~30MHz $\pm$ 1.20 dB	(1)
Radiated Emission	9KHz~30MHz $\pm$ 3.10dB	(1)
Radiated Emission	30MHz~1GHz $\pm$ 3.75dB	(1)
Radiated Emission	1GHz~18GHz $\pm$ 3.88 dB	(1)
Radiated Emission	18GHz-40GHz $\pm$ 3.88dB	(1)
RF power, conducted	30MHz~6GHz $\pm$ 0.16dB	(1)
RF power density, conducted	$\pm$ 0.24dB	(1)
Spurious emissions, conducted	$\pm$ 0.21dB	(1)
Temperature	$\pm$ 1°C	(1)
Humidity	$\pm$ 3%	(1)
DC and low frequency voltages	$\pm$ 1.5%	(1)
Time	$\pm$ 2%	(1)
Duty cycle	$\pm$ 2%	(1)

The report uncertainty of measurement  $y \pm U$ , where expended uncertainty  $U$  is based on a standard uncertainty Multiplied by a coverage factor of  $k=2$  , providing a level of confidence of approximately 95%.

## 2 GENERAL INFORMATION

### 2.1 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Normal Temperature:	25°C
Relative Humidity:	55 %
Air Pressure:	101 kPa

### 2.2 General Description of EUT

Product Name:	Remote Control Page Turner for Kindle
Model/Type reference:	CGA001
Serial Model:	CGA002, CGA003, CGA004, CGA005, CGA006, CGA007, CGA008, CGA009, CGA010
Model difference:	All models except model name and appearance color, The internal structure is the same as the circuit.
Power Ratings:	Input: DC 5V DC 3.7V 750mAh 2.775Wh Rechargeable Li-ion battery
Hardware Version:	V1.0
Software Version:	V1.0
Sample(s) Status:	AiTSZ-250321018-1(Normal sample) AiTSZ-250321018-2(Engineer sample)

#### SRD:

Supported type:	Wireless 2.4G
Modulation:	GFSK
Operation frequency:	2405MHz~2470MHz
Channel number:	66
Channel separation:	1MHz
Antenna type:	PCB antenna
Antenna gain:	-1.2dBi

#### Remark:

The above DUT's information was declared by manufacturer. For more detailed features description, please refer to the manufacturer's specifications or the User's Manual..

## 2.3 Description of Test Modes and Test Frequency

The Applicant provides communication tools software to control the EUT for staying in continuous transmitting (Duty Cycle more than 98%) and receiving mode for testing.

### Operation Frequency List:

Channel	Frequency (MHz)
01	2405
02	2406
:	:
35	2439
36	2440
37	2441
:	:
65	2469
66	2470

Note: The line display in grey were the channel selected for testing

### Power setting during the test:

During testing, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

#### Power Parameters:

Test Software Version	EMI_Test_Tool.exe		
Frequency	2405MHz	2440MHz	2470MHz
2.4G	Default	Default	Default

## 2.4 Special Accessories

Follow auxiliary equipment(s) test with EUT that provided by the manufacturer or laboratory is listed as follow:

Description	Manufacturer	Model	Serial No.	Provided by	Other
Adapter	HNT	HNT-QC530	/	laboratory	/
/	/	/	/	/	/

## 2.5 Equipment List for the Test

No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Date	Cal. Due Date
1	EMI Measuring Receiver	R&S	ESR	101160	2024.09.25	2025.09.24
2	Spectrum Analyzer	R&S	FSV40	101470	2024.09.23	2025.09.22
3	Low Noise Pre Amplifier	SCHWARZBECK	BBV 9745	00282	2024.09.25	2025.09.24
4	Low Noise Pre Amplifier	CESHENG	CSKJLNA23101 6A	CSKJLNA231016 A	2024.09.25	2025.09.24
5	Passive Loop	ETS	6512	00165355	2024.08.29	2027.08.28
6	TRILOG Super Broadband test Antenna	SCHWARZBECK	VULB9168	01434	2024.08.29	2027.08.28
7	Broadband Horn Antenna	Schwarzbeck	BBHA 9120D	452	2024.08.29	2027.08.28
8	Horn Antenna 15-40GHz	SCHWARZBECK	BBHA9170	BBHA9170367	2024.08.28	2027.08.27
9	6dB Attenuator	JFW	50FPE-006	4360846-949-1	2024.09.24	2025.09.23
10	EMI Test Receiver	R&S	ESPI	100771	2024.09.25	2025.09.24
11	LISN	R&S	NNLK 8129	8130179	2024.09.24	2025.09.23
12	LISN	R&S	ESH3-Z5	892785/016	2024.09.23	2025.09.22
13	Pulse Limiter	R&S	ESH3-Z2	102789	2024.09.24	2025.09.23
14	RF Automatic Test system	TST	TSTPASS	21033016	2024.09.25	2025.09.24
15	Vector Signal Generator	Agilent	N5182A	MY50143009	2024.09.25	2025.09.24
16	Analog signal generator	Agilent	E8257	MY51554256	2024.09.25	2025.09.24
17	Spectrum Analyzer	Agilent	N9020A	MY51289843	2024.09.25	2025.09.24
18	Spectrum Analyzer	Agilent	N9020A	MY53421570	2024.09.25	2025.09.24
19	Power Sensor	Agilent	8481A	MY41097697	2024.09.25	2025.09.24
20	Wideband Radio communication tester	R&S	CMW500	1201.0002K50	2024.09.24	2025.09.23
21	DC power supply	ZHAOXIN	RXN-305D-2	28070002559	2024.09.24	2025.09.23
22	RE Software	EZ	EZ-EMC_RE	Ver.AIT-03A	N/A	N/A
23	CE Software	EZ	EZ-EMC_CE	Ver.AIT-03A	N/A	N/A
24	RF Software	TST	TSTPASS	Version 2.0	N/A	N/A
25	RF Software	cesheng	WCS-WCN	Version 2024.6.20	N/A	N/A
26	temporary antenna connector(Note)	NTS	R001	N/A	N/A	N/A

Note: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

### 3 TEST CONDITIONS AND RESULTS

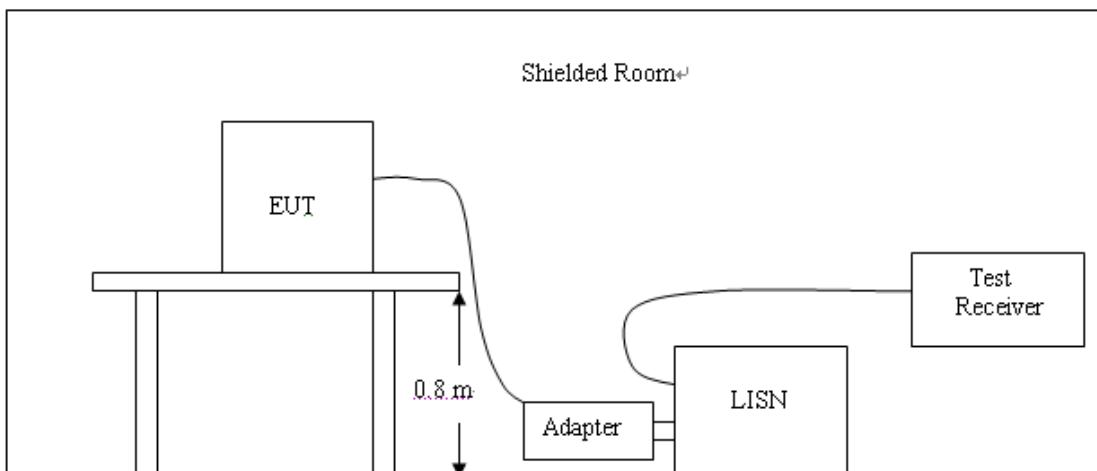
#### 3.1 Conducted Emissions Test

##### LIMIT

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

\* Decreases with the logarithm of the frequency.

##### TEST CONFIGURATION

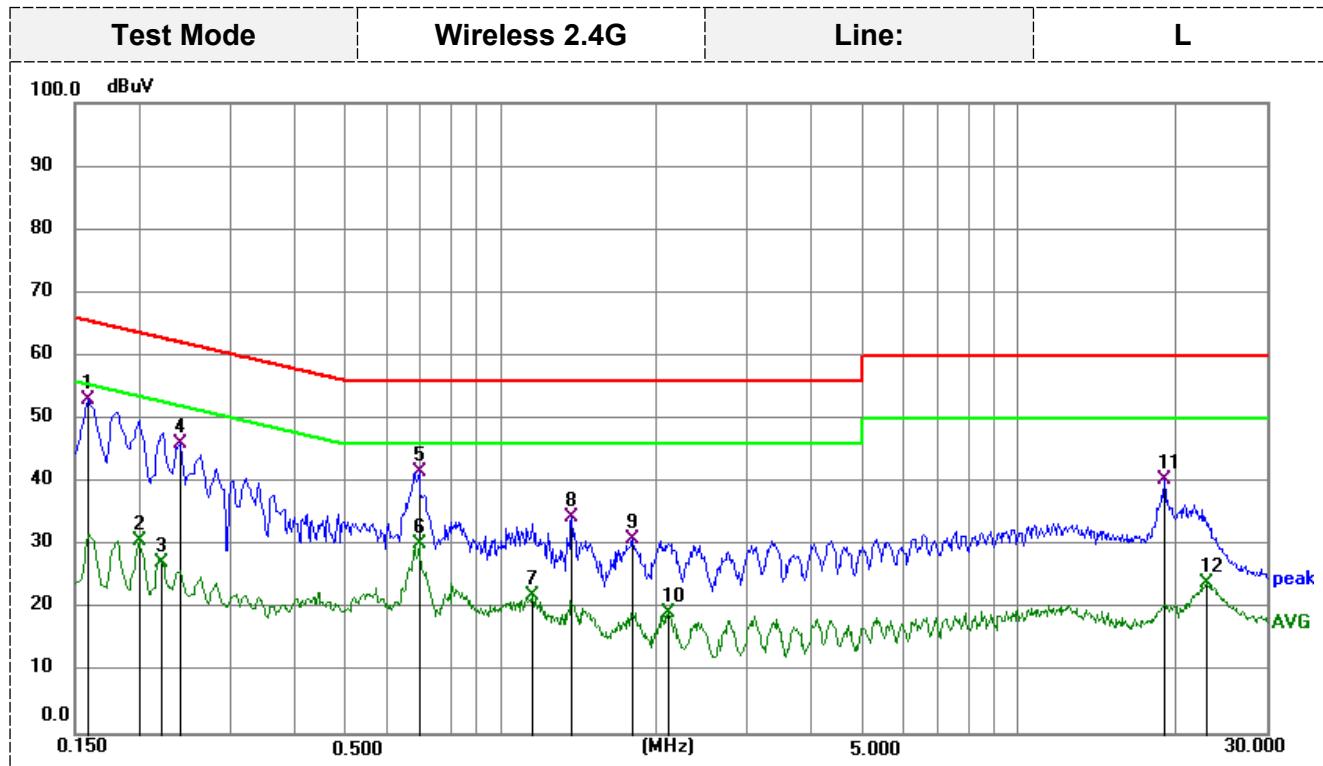


##### TEST PROCEDURE

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system; a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10:2013.
2. Support equipment, if needed, was placed as per ANSI C63.10:2013.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10:2013.
4. The adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5. All support equipments received AC power from a second LISN, if any.
6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.

## TEST RESULTS

Remark: Both 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz power supply have been tested, only the worst result of 120 VAC, 60 Hz was reported as below:

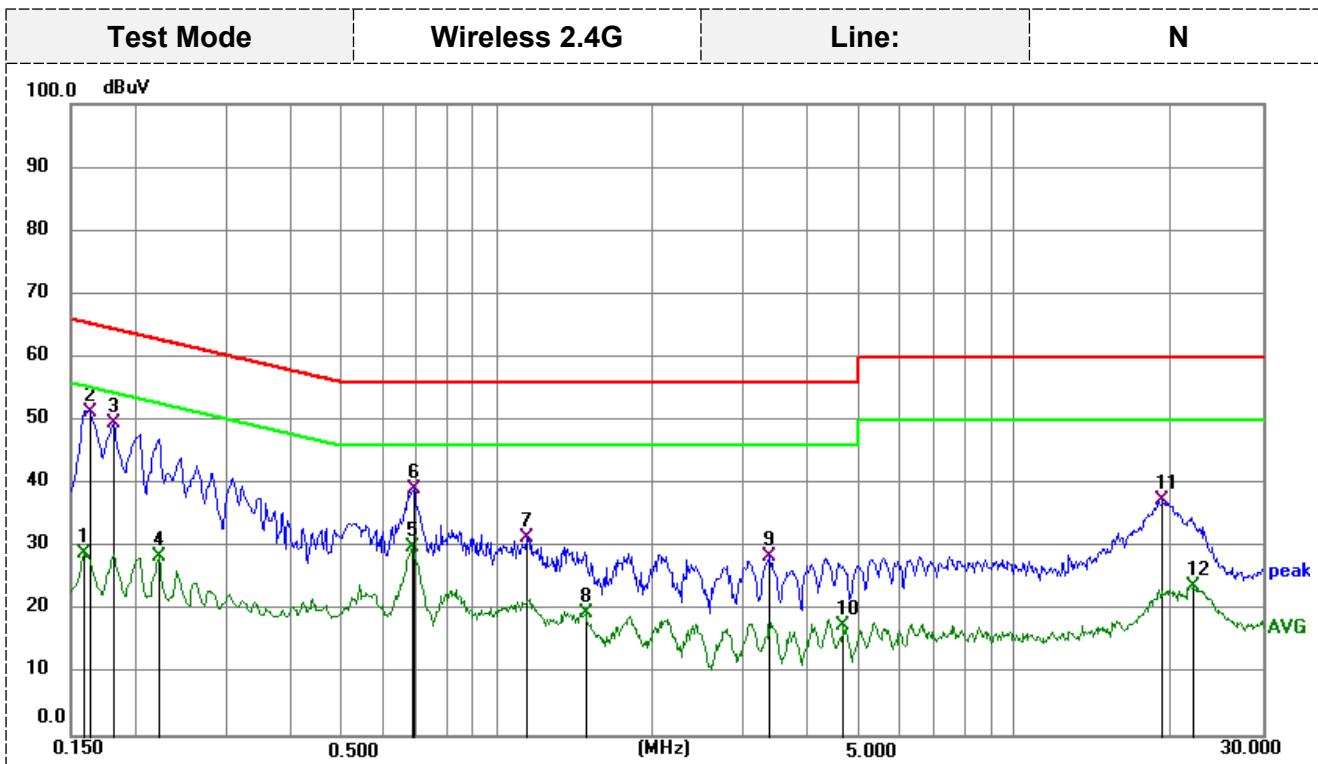


Remark: Correct Factor = Insertion loss of LISN + Cable loss + Insertion loss of Pulse Limiter;

Measurement Result = Reading Level +Correct Factor;

Margin = Measurement Result- Limit

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1590	42.20	10.78	52.98	65.52	-12.54	QP
2	0.1995	20.04	10.70	30.74	53.63	-22.89	AVG
3	0.2208	16.58	10.70	27.28	52.79	-25.51	AVG
4	0.2400	35.39	10.70	46.09	62.10	-16.01	QP
5	0.6945	31.00	10.68	41.68	56.00	-14.32	QP
6	0.6945	19.41	10.68	30.09	46.00	-15.91	AVG
7	1.1490	11.17	10.67	21.84	46.00	-24.16	AVG
8	1.3695	23.76	10.69	34.45	56.00	-21.55	QP
9	1.7925	20.06	10.76	30.82	56.00	-25.18	QP
10	2.1030	8.55	10.78	19.33	46.00	-26.67	AVG
11	19.0545	28.56	11.68	40.24	60.00	-19.76	QP
12	22.9605	12.08	11.75	23.83	50.00	-26.17	AVG



Remark: Correct Factor = Insertion loss of LISN + Cable loss + Insertion loss of Pulse Limiter;

Measurement Result = Reading Level +Correct Factor;

Margin = Measurement Result- Limit

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark					
							AVG	QP	QP	AVG	AVG	AVG
1	0.1590	18.18	10.78	28.96	55.52	-26.56	AVG					
2	0.1635	40.69	10.67	51.36	65.28	-13.92	QP					
3	0.1815	38.85	10.68	49.53	64.42	-14.89	QP					
4	0.2220	17.73	10.69	28.42	52.74	-24.32	AVG					
5	0.6855	19.28	10.67	29.95	46.00	-16.05	AVG					
6	0.6900	28.32	10.67	38.99	56.00	-17.01	QP					
7	1.1355	20.70	10.66	31.36	56.00	-24.64	QP					
8	1.4865	8.77	10.71	19.48	46.00	-26.52	AVG					
9	3.3630	17.52	10.93	28.45	56.00	-27.55	QP					
10	4.6635	6.38	11.01	17.39	46.00	-28.61	AVG					
11	19.2525	25.60	11.63	37.23	60.00	-22.77	QP					
12	22.0560	11.94	11.67	23.61	50.00	-26.39	AVG					

## 3.2 Radiated Emissions and Band Edge

### Limit

According 15.249, the field strength of emissions from intentional radiators operated within 2400-2483.5 MHz shall not exceed 94dB $\mu$ V/m (50mV/m).

FCC PART 15.249(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

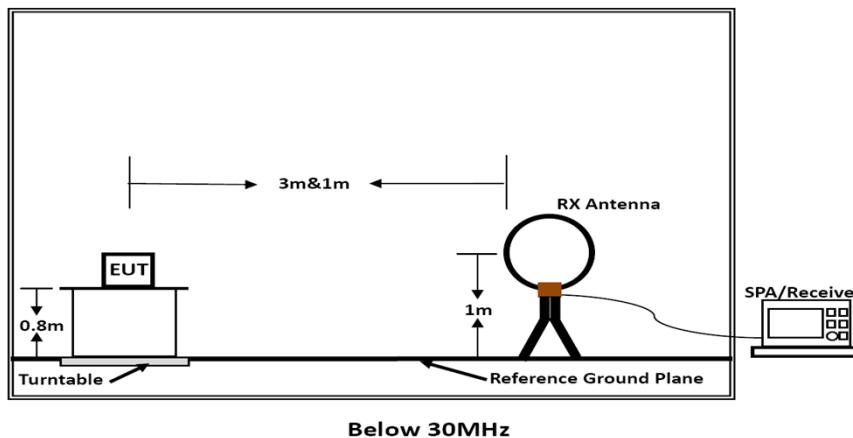
In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a)

Radiated emission limits

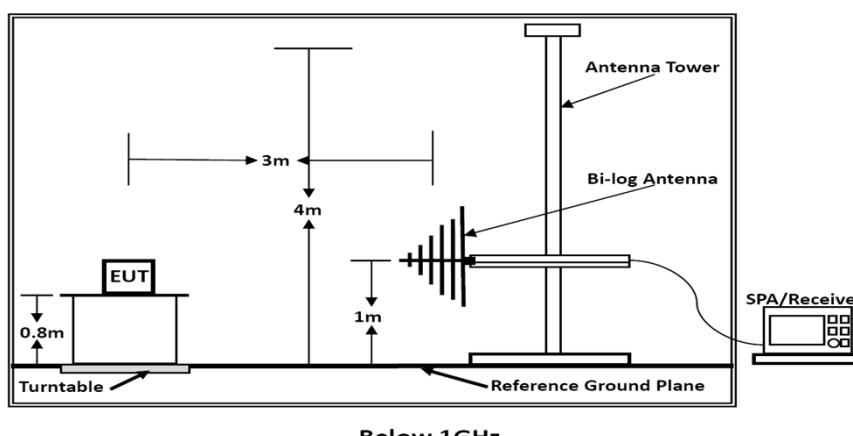
Frequency (MHz)	Distance (Meters)	Radiated (dB $\mu$ V/m)	Radiated ( $\mu$ V/m)
0.009-0.49	3	$20\log(2400/F(\text{kHz}))+40\log(300/3)$	$2400/F(\text{kHz})$
0.49-1.705	3	$20\log(24000/F(\text{kHz}))+40\log(30/3)$	$24000/F(\text{kHz})$
1.705-30	3	$20\log(30)+40\log(30/3)$	30
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

### TEST CONFIGURATION

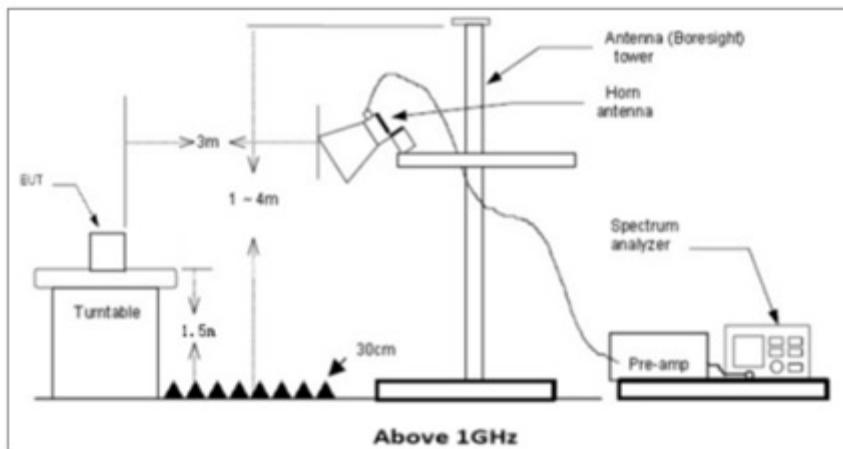
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



(B) Radiated Emission Test Set-Up, Frequency below 1000MHz



(C) Radiated Emission Test Set-Up, Frequency above 1000MHz



### Test Procedure

1. Below 1GHz measurement the EUT is placed on a turntable which is 0.8m above ground plane, and above 1GHz measurement EUT was placed on a low permittivity and low loss tangent turn table which is 1.5m above ground plane.
2. Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0°C to 360°C to acquire the highest emissions from EUT
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measurements have been completed.
5. Radiated emission test frequency band from 9KHz to 25GHz.
6. The distance between test antenna and EUT as following table states:

Test Frequency range	Test Antenna Type	Test Distance
9KHz-30MHz	Active Loop Antenna	3
30MHz-1GHz	Bilog Antenna	3
1GHz-18GHz	Horn Antenna	3
18GHz-25GHz	Horn Antenna	1

7. Setting test receiver/spectrum as following table states:

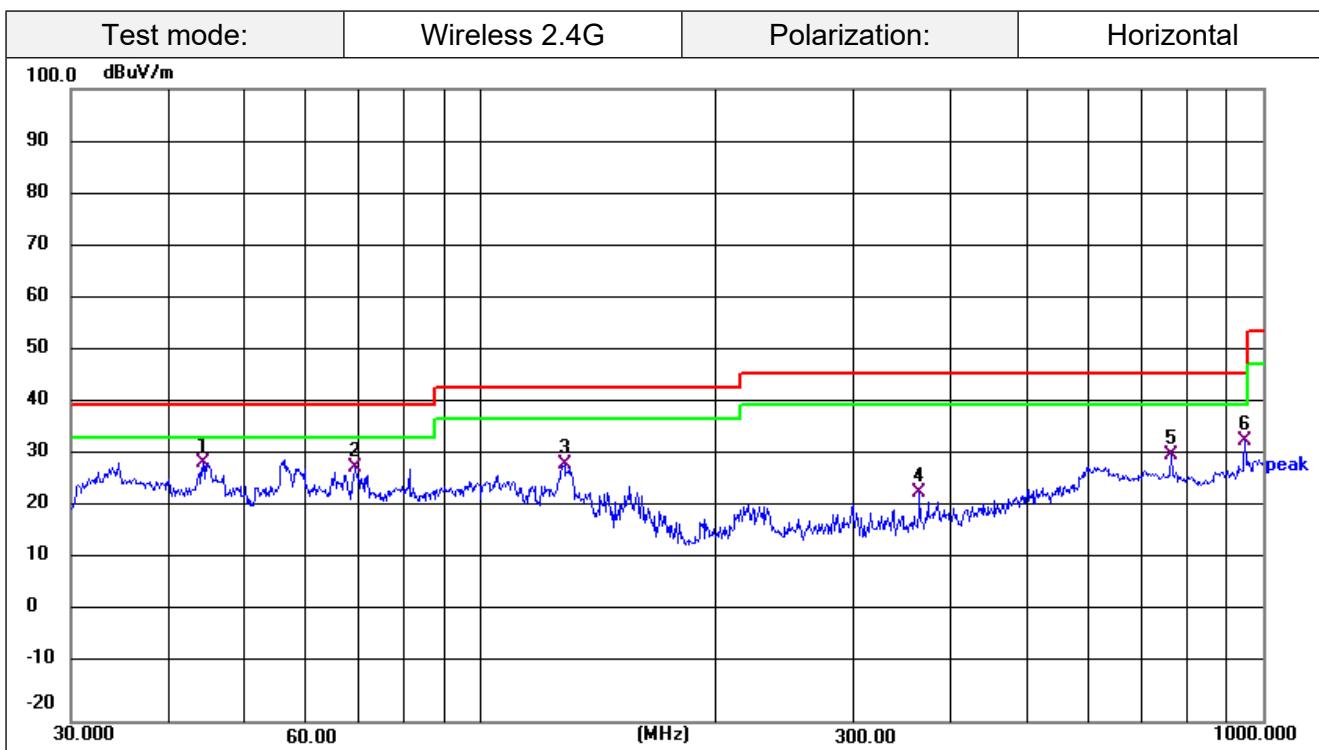
Test Frequency range	Test Receiver/Spectrum Setting	Detector
9KHz-150KHz	RBW=200Hz/VBW=3KHz, Sweep time=Auto	QP
150KHz-30MHz	RBW=9KHz/VBW=100KHz, Sweep time=Auto	QP
30MHz-1GHz	RBW=120KHz/VBW=1000KHz, Sweep time=Auto	QP
1GHz-40GHz	Peak Value: RBW=1MHz/VBW=3MHz, Sweep time=Auto Average Value: RBW=1MHz/VBW=10Hz, Sweep time=Auto	Peak

### TEST RESULTS

Remark:

1. Radiated Emission measured from 9 KHz to 40GHz and recorded worst case.
2. For below 1GHz testing recorded worst at low channel.
3. Radiated emission test from 9 KHz to 10th harmonic of fundamental was verified, and the emission levels from 9kHz to 30MHz are attenuated 20dB below the limit and not recorded in report.

**For 30MHz-1GHz**

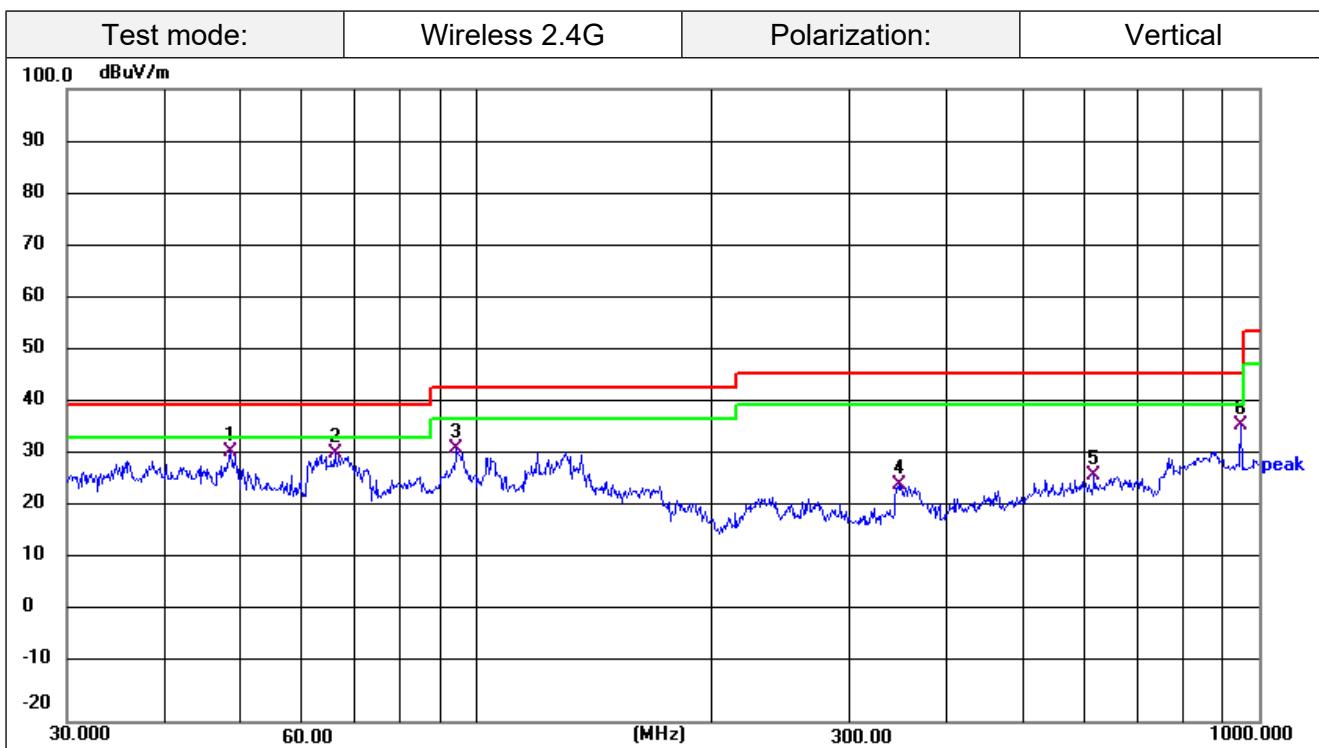

**Remark:**

Emission Level = Reading + Factor;

Factor = Antenna Factor + Cable Loss – Pre-amplifier;

Margin= Emission Level - Limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	44.2752	45.71	-16.68	29.03	40.00	-10.97	QP
2	69.3568	47.14	-18.81	28.33	40.00	-11.67	QP
3	128.1130	46.70	-17.84	28.86	43.50	-14.64	QP
4	364.2595	39.03	-15.38	23.65	46.00	-22.35	QP
5	763.3757	37.15	-6.64	30.51	46.00	-15.49	QP
6	948.7610	36.99	-3.55	33.44	46.00	-12.56	QP


**Remark:**

Emission Level = Reading + Factor;

Factor = Antenna Factor + Cable Loss – Pre-amplifier;

Margin= Emission Level - Limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	48.5016	47.74	-16.62	31.12	40.00	-8.88	QP
2	66.0342	49.21	-18.26	30.95	40.00	-9.05	QP
3	94.4284	52.42	-20.69	31.73	43.50	-11.77	QP
4	348.0274	40.76	-15.79	24.97	46.00	-21.03	QP
5	616.3718	36.06	-9.36	26.70	46.00	-19.30	QP
6	948.7610	39.73	-3.55	36.18	46.00	-9.82	QP

**Above 1GHz:**
**GFSK (above 1GHz)**

Frequency(MHz):		2405		Polarity:	Horizontal	
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB/m)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
2405.00	105.03	-14.18	90.85	114	-23.15	PEAK
2405.00	96.81	-14.18	82.63	94	-11.37	AVG
4809.95	54.43	-7.49	46.94	74	-27.06	PEAK
--	--	--	--	--	--	AVG
7215.00	47.15	-1.55	45.60	74	-28.40	PEAK
--	--	--	--	--	--	AVG

Frequency(MHz):		2405		Polarity:	VERTICAL	
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB/m)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
2405.00	105.77	-14.18	91.59	114	-22.41	PEAK
2405.00	96.85	-14.18	82.67	94	-11.33	AVG
4809.95	55.24	-7.49	47.75	74	-26.25	PEAK
--	--	--	--	--	--	AVG
7215.00	47.20	-1.55	45.65	74	-28.35	PEAK
--	--	--	--	--	--	AVG

Frequency(MHz):		2440		Polarity:	Horizontal	
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB/m)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
2440.00	107.73	-13.69	94.04	114	-19.96	PEAK
2440.00	97.57	-13.69	83.88	94	-10.12	AVG
4879.70	53.93	-6.76	47.17	74	-26.83	PEAK
--	--	--	--	--	--	AVG
7320.00	45.67	-0.53	45.14	74	-28.86	PEAK
--	--	--	--	--	--	AVG

Frequency(MHz):		2440		Polarity:	VERTICAL	
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB/m)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
2440.00	108.49	-13.69	94.80	114	-19.20	PEAK
2440.00	98.57	-13.69	84.88	94	-9.12	AVG
4879.70	54.31	-6.76	47.55	74	-26.45	PEAK
--	--	--	--	--	--	AVG
7320.00	45.77	-0.53	45.24	74	-28.76	PEAK
--	--	--	--	--	--	AVG

Frequency(MHz):		2470		Polarity:	Horizontal	
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB/m)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
2470.00	47.02	-13.27	94.37	114	-19.63	PEAK
2470.00	47.02	-13.27	82.90	94	-11.10	AVG
4939.60	47.02	-6.03	46.38	74	-27.62	PEAK
--	--	--	--	--	--	AVG
7409.80	46.47	0.01	45.53	74	-28.47	PEAK
--	--	--	--	--	--	AVG

Frequency(MHz):		2470		Polarity:	VERTICAL	
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB/m)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
2470.00	45.63	-13.27	94.66	114	-19.34	PEAK
2470.00	45.63	-13.27	84.02	94	-9.98	AVG
4939.60	45.63	-6.03	46.46	74	-27.54	PEAK
--	--	--	--	--	--	AVG
7409.80	45.02	0.01	45.58	74	-28.42	PEAK
--	--	--	--	--	--	AVG

**REMARKS:**

1. Emission level (dB $\mu$ V/m) = Reading (dB $\mu$ V) + Factor (dB/m)
2. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Factor
3. Margin value = Emission level - Limit value.
4. -- Mean the PK detector measured value is below average limit.
5. Other emission levels are attenuated 20dB below the limit and not recorded in report.
6. RBW1MHz VBW3MHz Peak detector is for PK value; RBW 1MHz VBW10Hz Peak detector is for AV value.

**Radiation Restricted band**

Frequency(MHz):		2405		Polarity:	Horizontal	
Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB/m)	Emission Level (dB $\mu$ V/m)	Limits	Margin	Detector Type
2387.14	51.08	-4.06	47.02	74	-26.98	PEAK
--	--	--	--	--	--	AVG
2390.00	40.62	-4.10	46.57	74	-27.43	PEAK
--	--	--	--	--	--	AVG

Frequency(MHz):		2405		Polarity:	Vertical	
Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB/m)	Emission Level (dB $\mu$ V/m)	Limits	Margin	Detector Type
2387.00	51.94	-4.06	47.88	74	-26.12	PEAK
--	--	--	--	--	--	AVG
2390.00	50.86	-4.10	46.76	74	-27.24	PEAK
--	--	--	--	--	--	AVG

Frequency(MHz):		2470		Polarity:	Horizontal	
Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB/m)	Emission Level (dB $\mu$ V/m)	Limits	Margin	Detector Type
2483.50	52.06	-3.09	48.97	74	-25.03	PEAK
--	--	--	--	--	--	AVG
2485.38	49.83	-3.07	46.76	74	-27.24	PEAK
--	--	--	--	--	--	AVG

Frequency(MHz):		2470		Polarity:	Vertical	
Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB/m)	Emission Level (dB $\mu$ V/m)	Limits	Margin	Detector Type
2483.50	52.27	-3.09	49.18	74	-24.82	PEAK
--	--	--	--	--	--	AVG
2487.88	49.90	-3.03	46.87	74	-27.13	PEAK
--	--	--	--	--	--	AVG

**REMARKS:**

1. Emission level (dB $\mu$ V/m) = Reading (dB $\mu$ V)+ Factor (dB/m)
2. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
3. Margin value = Emission level- Limit value.
4. -- Mean the PK detector measured value is below average limit.
5. Other emission levels are attenuated 20dB below the limit and not recorded in report.
6. RBW1MHz VBW3MHz Peak detector is for PK value; RBW 1MHz VBW10Hz Peak detector is for AV value.

### 3.3 20dB Bandwidth

#### Limit

N/A

#### Test Procedure

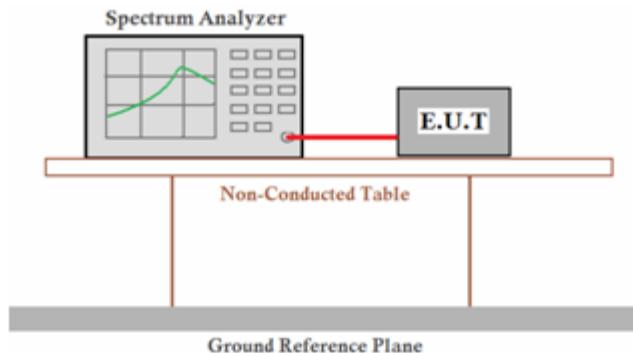
Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Spectrum Analyzer. Place the EUT on the table and set it in transmitting mode.

Use the following spectrum analyzer settings:

- 1) Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel.
- 2) RBW  $\geq$  1% of the 20 dB bandwidth, VBW  $\geq$  RBW.
- 3) Detector function = peak.
- 4) Trace = max hold.

The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

#### Test Configuration



#### Test Results

Modulation	Test Frequency (MHz)	20dB bandwidth (MHz)	Result
GFSK	2405	1.123	Pass
	2440	1.152	
	2470	1.136	

**Test plot as follows:**

### Wireless 2.4G



**2405 MHz**



**2440 MHz**



**2470 MHz**

### 3.4 Antenna Requirement

#### Standard Applicable

##### **For intentional device, according to FCC 47 CFR Section 15.203:**

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited

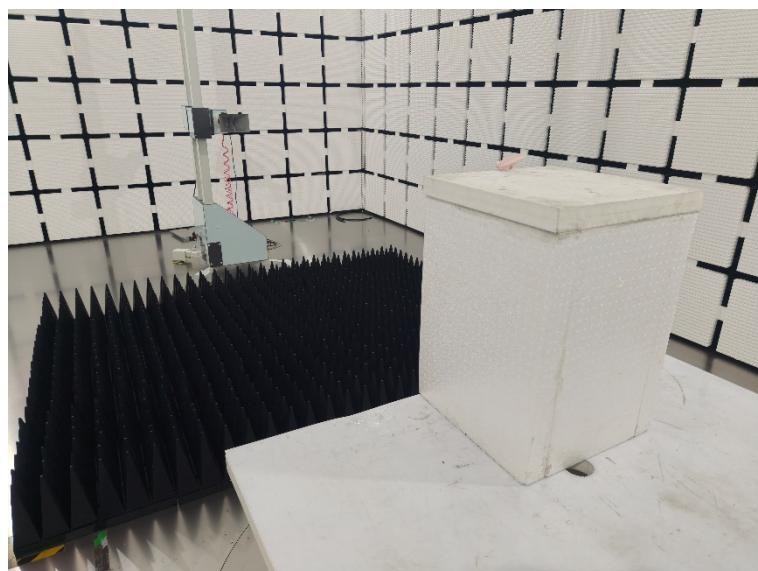
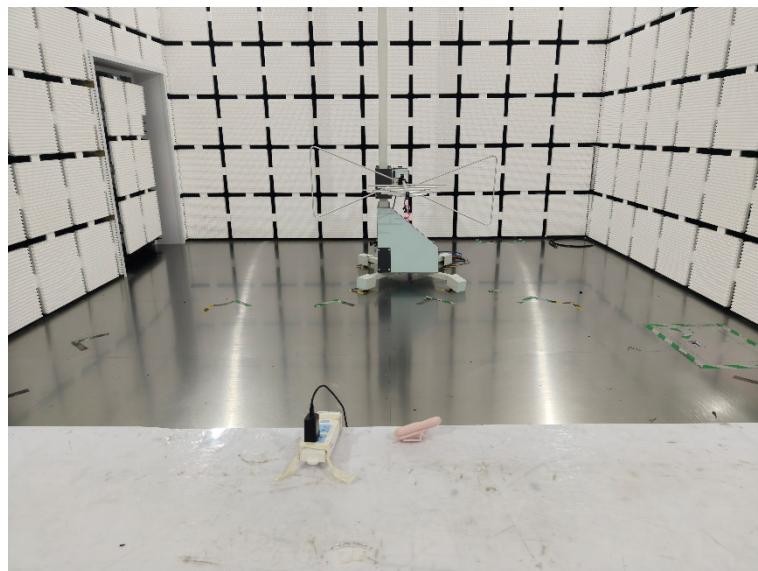
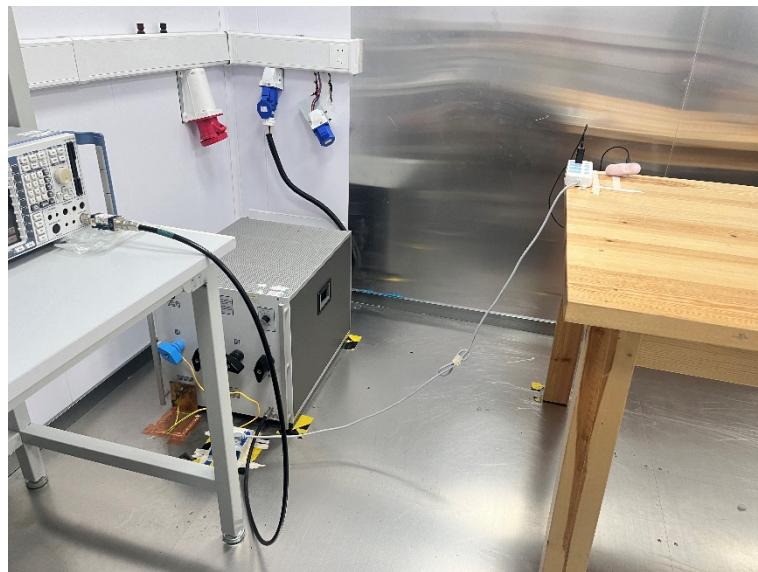
##### **FCC CFR Title 47 Part 15 Subpart C Section 15.247(b) (4):**

(4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### Test Result

The maximum gain of antenna was -1.2dBi with impedance  $50\Omega$ .

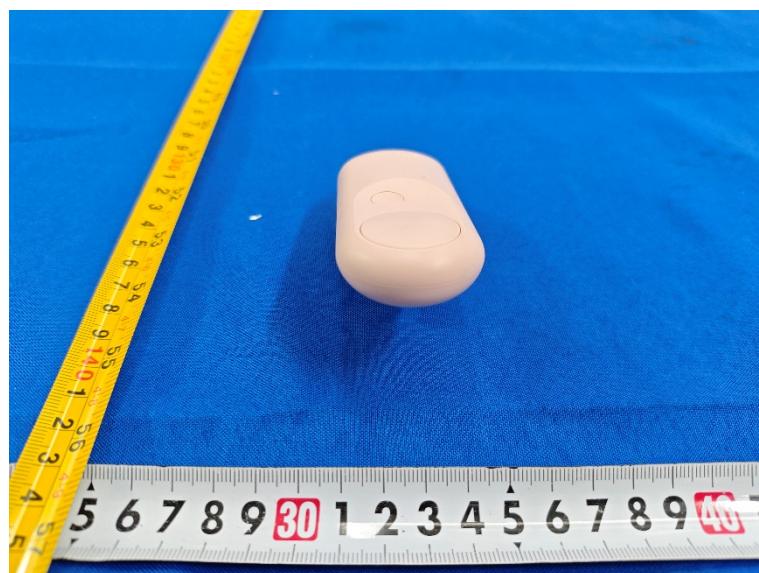
## 4 Test Setup Photographs of EUT



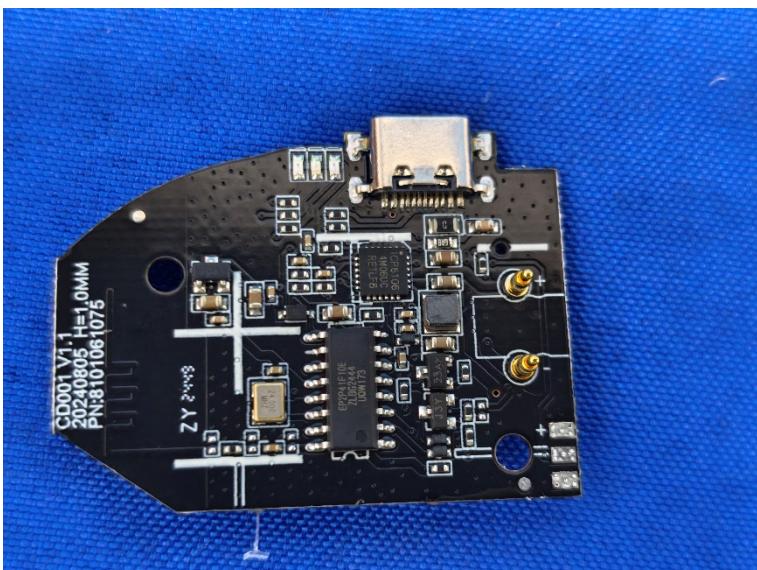
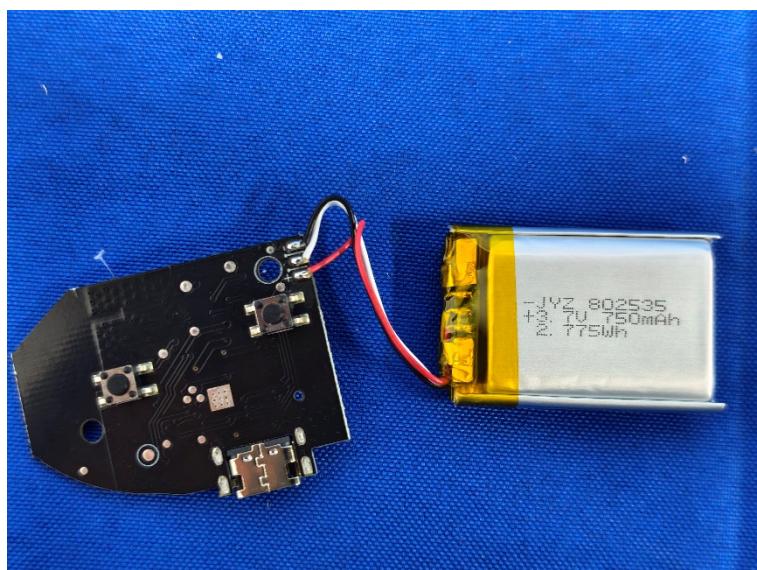
## 5 Photos of EUT

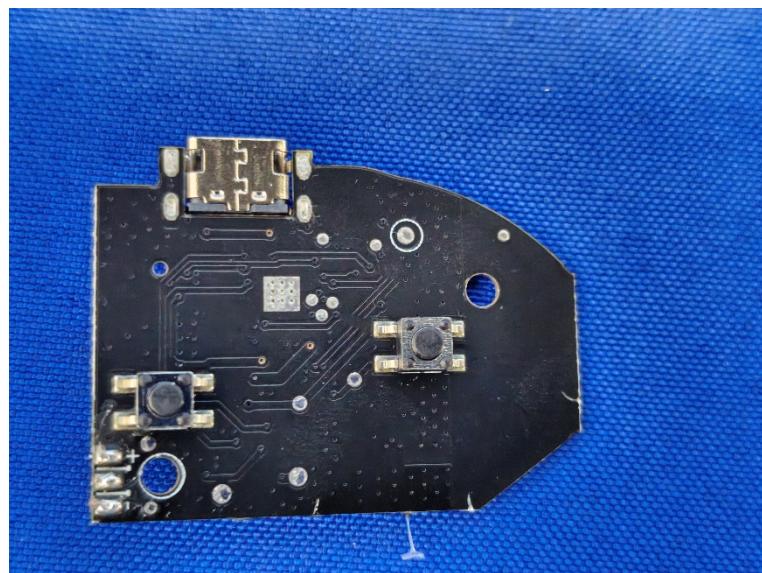
External Photos





## Internal photos





\*\*\*\*\* End of Report \*\*\*\*\*