



# FCC Test Report

## For

**Applicant Name:** GUANGZHOU SKYDANCE CO.,LTD  
**Address:** 2-3 Floor, Building A, No.36, Zhongsan, Shiguang Road, Zhongcun Street, Panyu District, Guangzhou, China  
**EUT Name:** Bluetooth & RF 5 in1 LED Controller  
**Brand Name:** SKYDANCE  
**Model Number:** WB5

## Issued By

**Company Name:** BTF Testing Lab (Shenzhen) Co., Ltd.  
**Address:** F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

**Report Number:** BTF240105R00201  
**Test Standards:** 47 CFR Part 15, Subpart B

**Test Conclusion:** Pass  
**FCC ID:** 2BDBM-WB5  
**Test Date:** 2024-01-08 to 2024-01-11  
**Date of Issue:** 2024-01-22

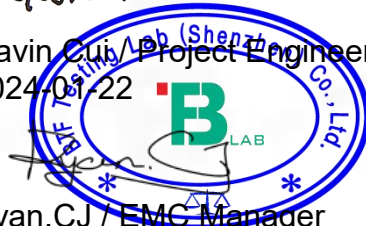
**Prepared By:**

Handwritten signature: Gavin Cui

**Date:**

Gavin Cui / Project Engineer  
2024-01-22

**Approved By:**



**Date:**

Ryan.CJ / EMC Manager  
2024-01-22

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Revision History		
Version	Issue Date	Revisions Content
R_V0	2024-01-22	Original
<i>Note: Once the revision has been made, then previous versions reports are invalid.</i>		

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# 1 Introduction

## 1.1 Identification of Testing Laboratory

Company Name:	BTF Testing Lab (Shenzhen) Co., Ltd.
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Phone Number:	+86-0755-23146130
Fax Number:	+86-0755-23146130

## 1.2 Identification of the Responsible Testing Location

Company Name:	BTF Testing Lab (Shenzhen) Co., Ltd.
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Phone Number:	+86-0755-23146130
Fax Number:	+86-0755-23146130
FCC Registration Number:	518915
Designation Number:	CN1330

## 1.3 Announcement

- (1) The test report reference to the report template version v0.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing, reviewing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) This document may not be altered or revised in any way unless done so by BTF and all revisions are duly noted in the revisions section.
- (5) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
- (6) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

## 2 Product Information

### 2.1 Application Information

Company Name:	GUANGZHOU SKYDANCE CO.,LTD
Address:	2-3 Floor, Building A, No.36, Zhongsan, Shiguang Road, Zhongcun Street, Panyu District, Guangzhou, China

### 2.2 Manufacturer Information

Company Name:	GUANGZHOU SKYDANCE CO.,LTD
Address:	2-3 Floor, Building A, No.36, Zhongsan, Shiguang Road, Zhongcun Street, Panyu District, Guangzhou, China

### 2.3 Factory Information

Company Name:	GUANGZHOU SKYDANCE CO.,LTD
Address:	2-3 Floor, Building A, No.36, Zhongsan, Shiguang Road, Zhongcun Street, Panyu District, Guangzhou, China

### 2.4 General Description of Equipment under Test (EUT)

EUT Name:	Bluetooth & RF 5 in1 LED Controller
Test Model Number:	WB5
Hardware Version:	B1
Product Function and Intended Use	The EUT is a LED Controller controlled by a 2478MHz remote controller. For more detail information, refer to the user's manual.

### 2.5 Technical Information

Power Supply:	Powered by DC power supply 24VDC, 15.5A
Rated Current:	12-24VDC, 15.5A
Antenna Type:	External Antenna
Operation Frequency:	2478MHz
Note:	#: The antenna gain provided by the applicant, and the laboratory will not be responsible for the accumulated calculation results which covers the information provided by the applicant.

### 3 Summary of Test Results

#### 3.1 Test Standards

The tests were performed according to following standards:  
**47 CFR Part 15, Subpart B: Unintentional Radiators**

#### 3.2 Uncertainty of Test

Item	Measurement Uncertainty
Conducted Emission (150 kHz-30 MHz)	±2.64dB
Radiated Emissions (30M - 1GHz)	±4.12dB
Radiated Emissions (above 1GHz)	1-6GHz: ±3.94dB 6-18GHz: ±4.16dB

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

#### 3.3 Summary of Test Result

Item	Standard	Requirement	Result
Conducted emissions on AC mains	47 CFR Part 15, Subpart B	15.107, Class B	Pass
Radiated emissions (Below 1GHz)	47 CFR Part 15, Subpart B	15.109, Class B	Pass
Radiated emissions (Above 1GHz)	47 CFR Part 15, Subpart B	15.109, Class B	Pass

## 4 Test Configuration

### 4.1 Test Equipment List

Conducted emissions on AC mains					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Pulse Limiter	SCHWARZBECK	VTSD 9561-F	00953	/	/
Coaxial Switcher	SCHWARZBECK	CX210	CX210	/	/
V-LISN	SCHWARZBECK	NSLK 8127	01073	2023-11-16	2024-11-15
LISN	AFJ	LS16/110VAC	16010020076	2023-02-23	2024-02-22
EMI Receiver	ROHDE&SCHWARZ	ESCI3	101422	2023-11-15	2024-11-14

Radiated emissions (Below 1GHz)					
Radiated emissions (Above 1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Coaxial cable Multiflex 141	Schwarzbeck	N/SMA 0.5m	517386	2023-03-24	2024-03-23
Preamplifier	SCHWARZBECK	BBV9744	00246	/	/
RE Cable	REBES Talent	UF1-SMASMAM-10m	21101566	/	/
RE Cable	REBES Talent	UF2-NMNM-10m	21101570	/	/
RE Cable	REBES Talent	UF1-SMASMAM-1m	21101568	/	/
RE Cable	REBES Talent	UF2-NMNM-1m	21101576	/	/
RE Cable	REBES Talent	UF2-NMNM-2.5m	21101573	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Horn Antenna	SCHWARZBECK	BBHA9170	01157	2023-11-13	2024-11-12
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI7	101032	2023-11-16	2024-11-15
SIGNAL ANALYZER	ROHDE&SCHWARZ	FSQ40	100010	2023-11-16	2024-11-15
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Broadband Preamplifier	SCHWARZBECK	BBV9718D	00008	2023-03-24	2024-03-23
Horn Antenna	SCHWARZBECK	BBHA9120D	2597	2022-05-22	2024-05-21
EZ EMC	Frad	FA-03A2 RE+	/	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Log periodic antenna	SCHWARZBECK	VULB 9168	01328	2023-11-13	2024-11-12

#### 4.2 Test Auxiliary Equipment

Title	Manufacturer	Model No.	Serial No.
DC power supply	ITECH	IT6721	800104030767710436

#### 4.3 Test Modes

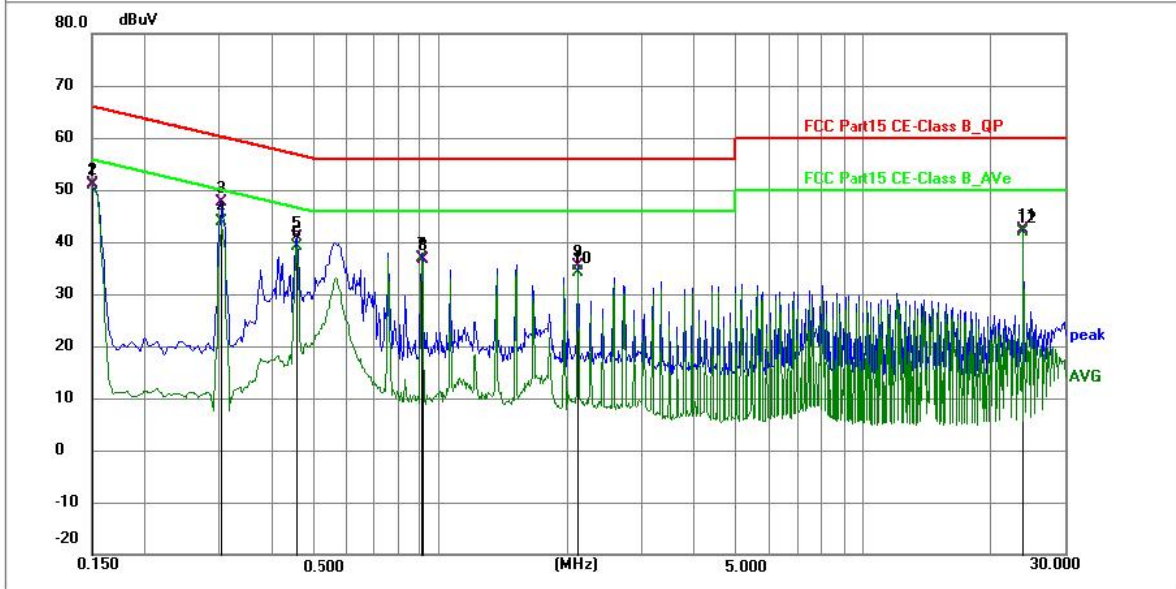
No.	Test Modes	Description
TM1	RX mode+working	Keep the EUT connect to AC power line and normal work in continuously RX mode





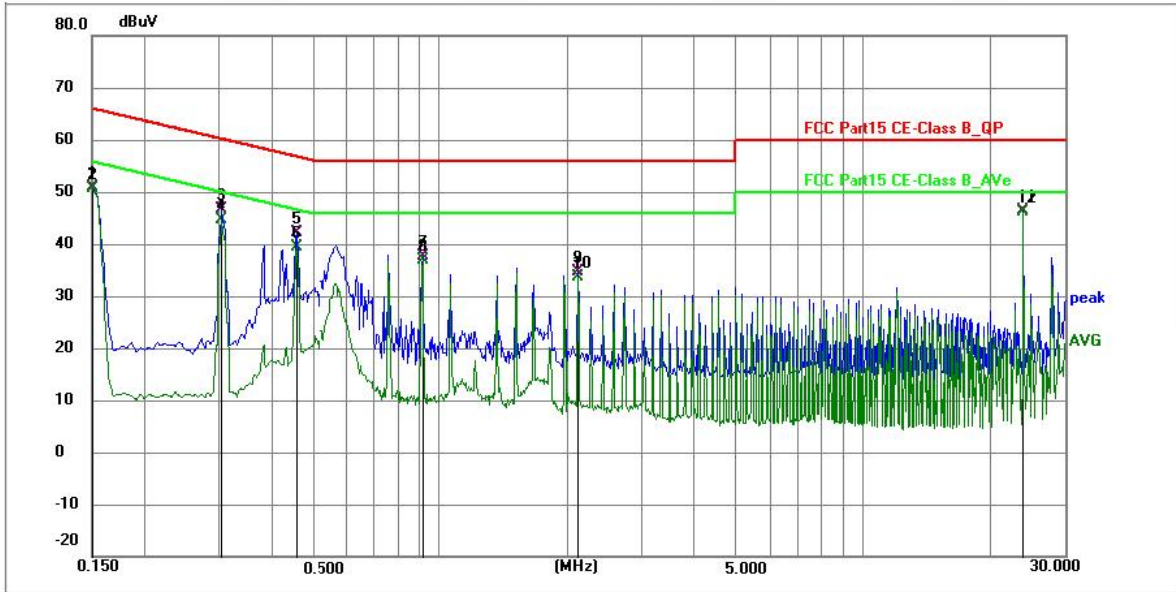
5.1.3 Test Data:

TM1 / Line: Line



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1 *	0.1500	40.49	10.45	50.94	56.00	-5.06	AVG	P	
2	0.1507	40.76	10.45	51.21	65.96	-14.75	QP	P	
3	0.3030	37.02	10.57	47.59	60.16	-12.57	QP	P	
4	0.3030	33.23	10.57	43.80	50.16	-6.36	AVG	P	
5	0.4560	30.33	10.57	40.90	56.77	-15.87	QP	P	
6	0.4560	28.49	10.57	39.06	46.77	-7.71	AVG	P	
7	0.9060	26.21	10.67	36.88	46.00	-9.12	AVG	P	
8	0.9104	25.86	10.67	36.53	56.00	-19.47	QP	P	
9	2.1164	24.63	10.68	35.31	56.00	-20.69	QP	P	
10	2.1164	23.56	10.68	34.24	46.00	-11.76	AVG	P	
11	24.0000	31.12	11.17	42.29	60.00	-17.71	QP	P	
12	24.0000	30.81	11.17	41.98	50.00	-8.02	AVG	P	

TM1 / Line: Neutral



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1500	40.43	10.45	50.88	66.00	-15.12	QP	P	
2	0.1508	40.23	10.45	50.68	55.96	-5.28	AVG	P	
3	0.3030	35.95	10.57	46.52	60.16	-13.64	QP	P	
4	0.3030	34.13	10.57	44.70	50.16	-5.46	AVG	P	
5	0.4560	31.55	10.57	42.12	56.77	-14.65	QP	P	
6	0.4560	28.80	10.57	39.37	46.77	-7.40	AVG	P	
7	0.9105	27.03	10.67	37.70	56.00	-18.30	QP	P	
8	0.9105	26.31	10.67	36.98	46.00	-9.02	AVG	P	
9	2.1210	23.88	10.68	34.56	56.00	-21.44	QP	P	
10	2.1210	22.86	10.68	33.54	46.00	-12.46	AVG	P	
11	24.0000	35.14	11.17	46.31	60.00	-13.69	QP	P	
12 *	24.0000	34.96	11.17	46.13	50.00	-3.87	AVG	P	

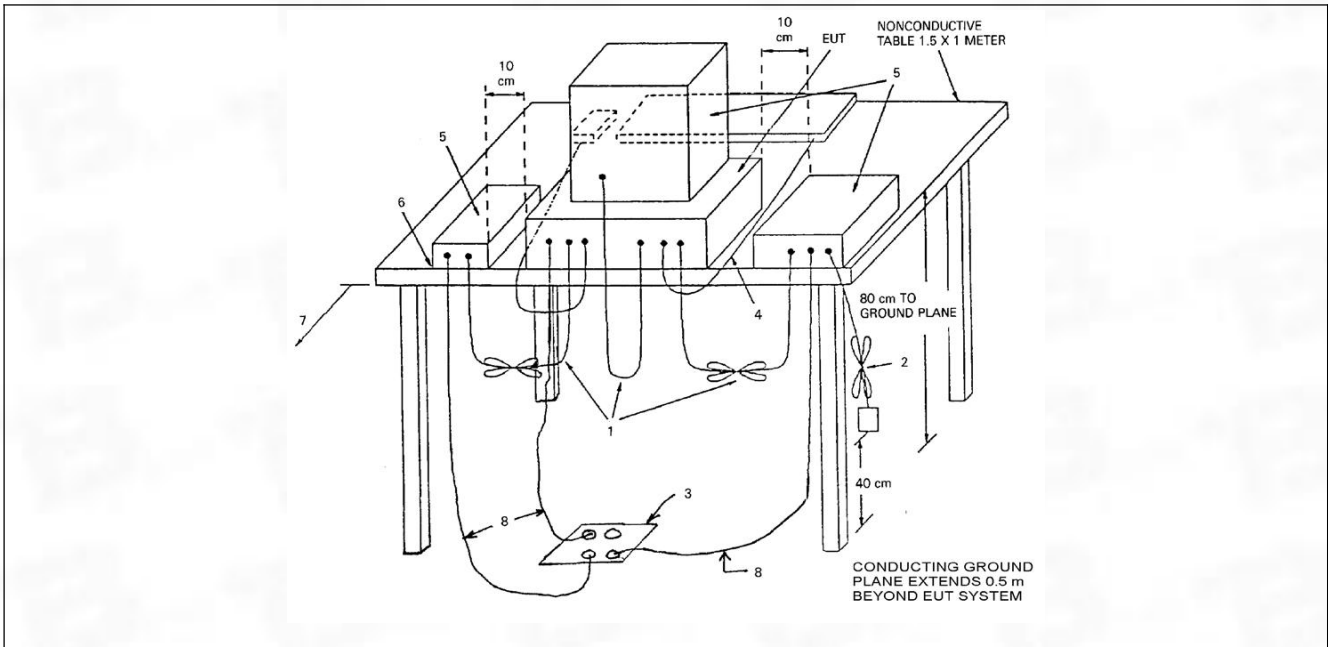
### 5.2 Radiated emissions (Below 1GHz)

Test Requirement:	15.109, Class B				
Test Method:	ANSI C63.4-2014 ANSI C63.4a-2017				
Test Limit:	Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:				
	Frequency of emission (MHz)	Field strength @3m		Field strength @10m	
		(uV/m)	(dBuV/m)	(uV/m)	(dBuV/m)
	30 – 88	100	40	30	29.5
	88 – 216	150	43.5	45	33.1
216 – 960	200	46	60	35.6	
Above 960	500	54	150	43.5	
Procedure:	An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities. Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor				

#### 5.2.1 E.U.T. Operation:

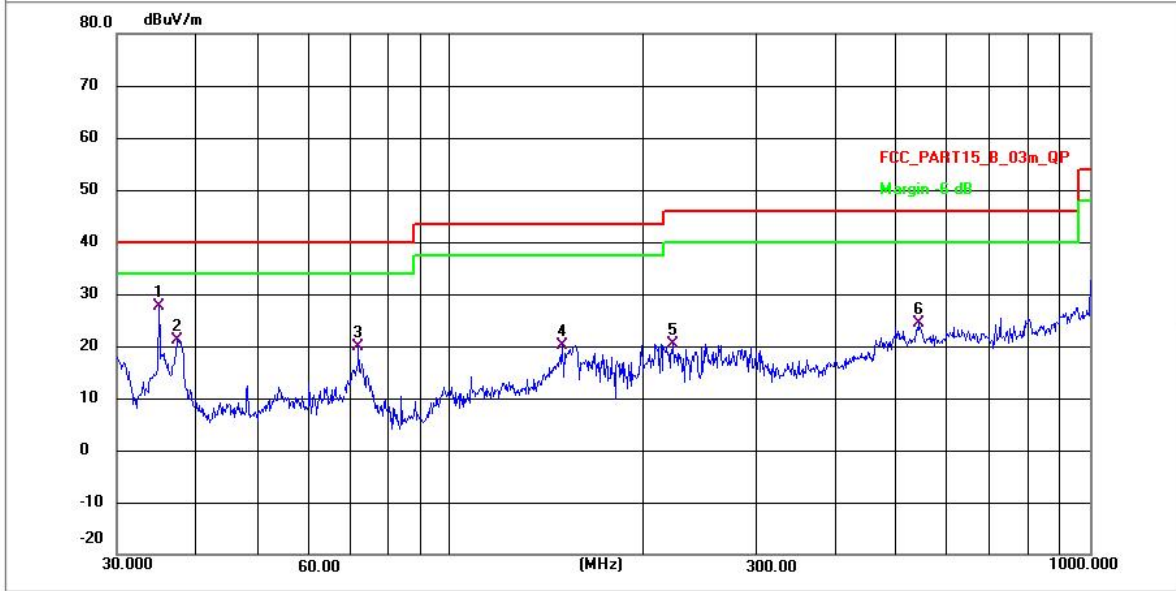
Operating Environment:	
Temperature:	23.6 °C
Humidity:	52 %
Atmospheric Pressure:	1010 mbar

#### 5.2.2 Test Setup Diagram:



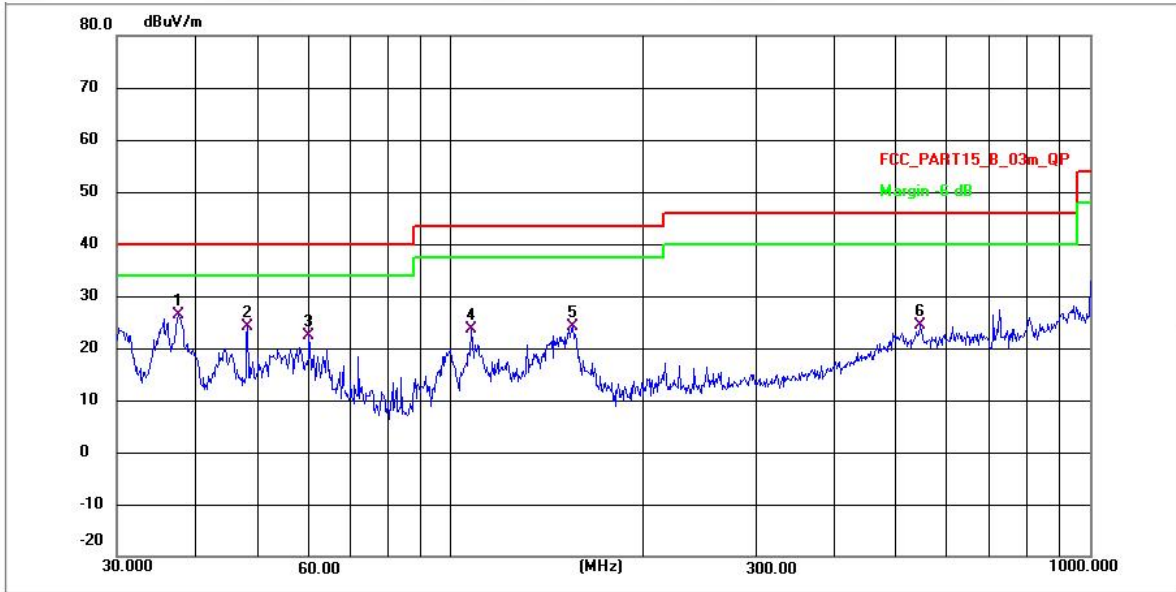
5.2.3 Test Data:

TM1 / Polarization: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	35.0048	46.09	-18.46	27.63	40.00	-12.37	QP	P
2	37.4164	39.65	-18.44	21.21	40.00	-18.79	QP	P
3	71.9580	38.01	-18.09	19.92	40.00	-20.08	QP	P
4	149.7480	47.79	-27.78	20.01	43.50	-23.49	QP	P
5	222.9502	46.63	-26.33	20.30	46.00	-25.70	QP	P
6	540.4240	45.96	-21.56	24.40	46.00	-21.60	QP	P

TM1 / Polarization: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	37.4821	46.98	-20.58	26.40	40.00	-13.60	QP	P
2	47.9940	44.50	-20.37	24.13	40.00	-15.87	QP	P
3	59.9639	42.49	-20.15	22.34	40.00	-17.66	QP	P
4	107.8877	51.79	-28.15	23.64	43.50	-19.86	QP	P
5	155.6370	51.78	-27.73	24.05	43.50	-19.45	QP	P
6	545.1826	45.89	-21.61	24.28	46.00	-21.72	QP	P



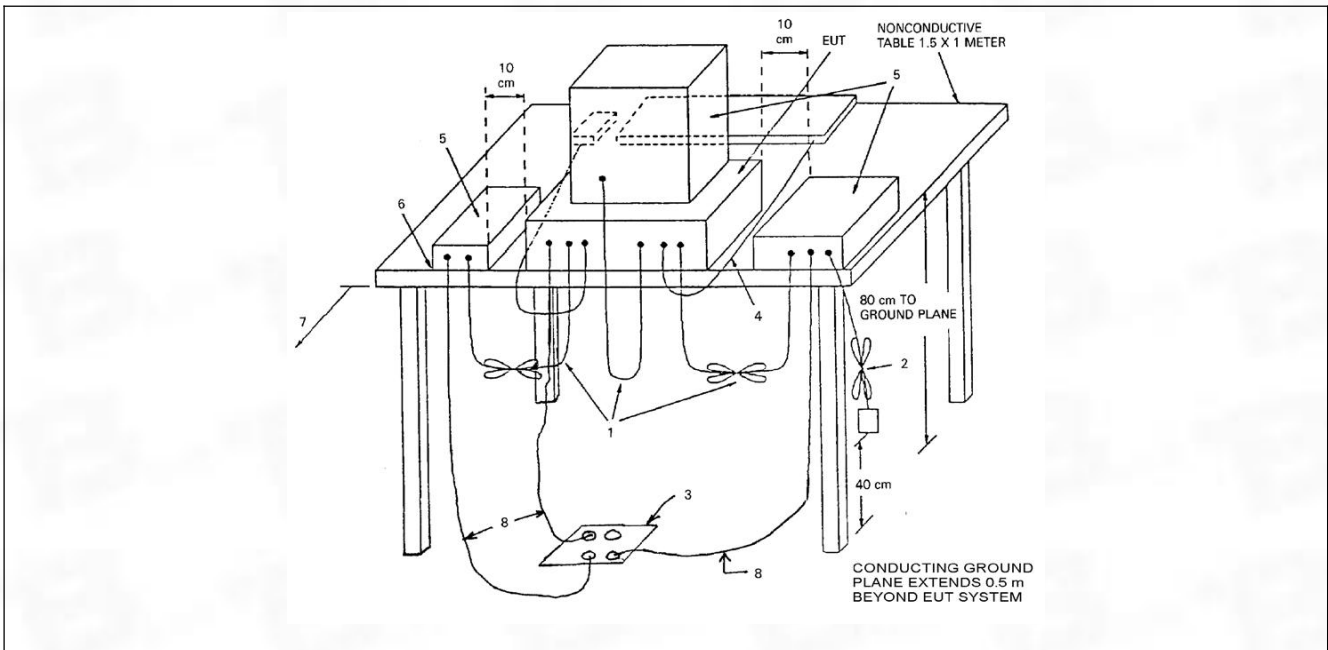
### 5.3 Radiated emissions (Above 1GHz)

Test Requirement:	15.109, Class B		
Test Method:	ANSI C63.4-2014 ANSI C63.4a-2017		
Test Limit:	<b>Frequency of emission (MHz)</b>	<b>Field strength @3m</b>	
		<b>Average (uV/m)</b>	<b>Average(d BuV/m)</b>
	Above 1GHz	500	54
Peak (dBuV/m)			74
Procedure:	<p>An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. For below 1GHz test, Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities. For above 1GHz test, Average measurements were conducted based on the peak sweep graph. The EUT was measured by Horn antenna with 2 orthogonal polarities.</p> <p>Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor</p>		

#### 5.3.1 E.U.T. Operation:

Operating Environment:	
Temperature:	24.3 °C
Humidity:	47.4 %
Atmospheric Pressure:	1010 mbar

#### 5.3.2 Test Setup Diagram:



**5.3.3 Test Data:**

TM1 / Polarization: Horizontal

No.	Frequency (MHz)	Reading (dBu)	Factor (dB/m)	Level (dBu/m)	Limit (dBu/m)	Margin (dB)	Detector	P/F
1	3074.543	68.94	-48.89	20.05	74.00	-53.95	peak	P
2	4500.748	75.40	-48.12	27.28	74.00	-46.72	peak	P
3	6367.878	81.78	-47.95	33.83	74.00	-40.17	peak	P
4	8222.277	83.85	-45.60	38.25	74.00	-35.75	peak	P
5	11689.241	87.50	-43.06	44.44	74.00	-29.56	peak	P
6 *	14746.341	89.76	-41.99	47.77	74.00	-26.23	peak	P

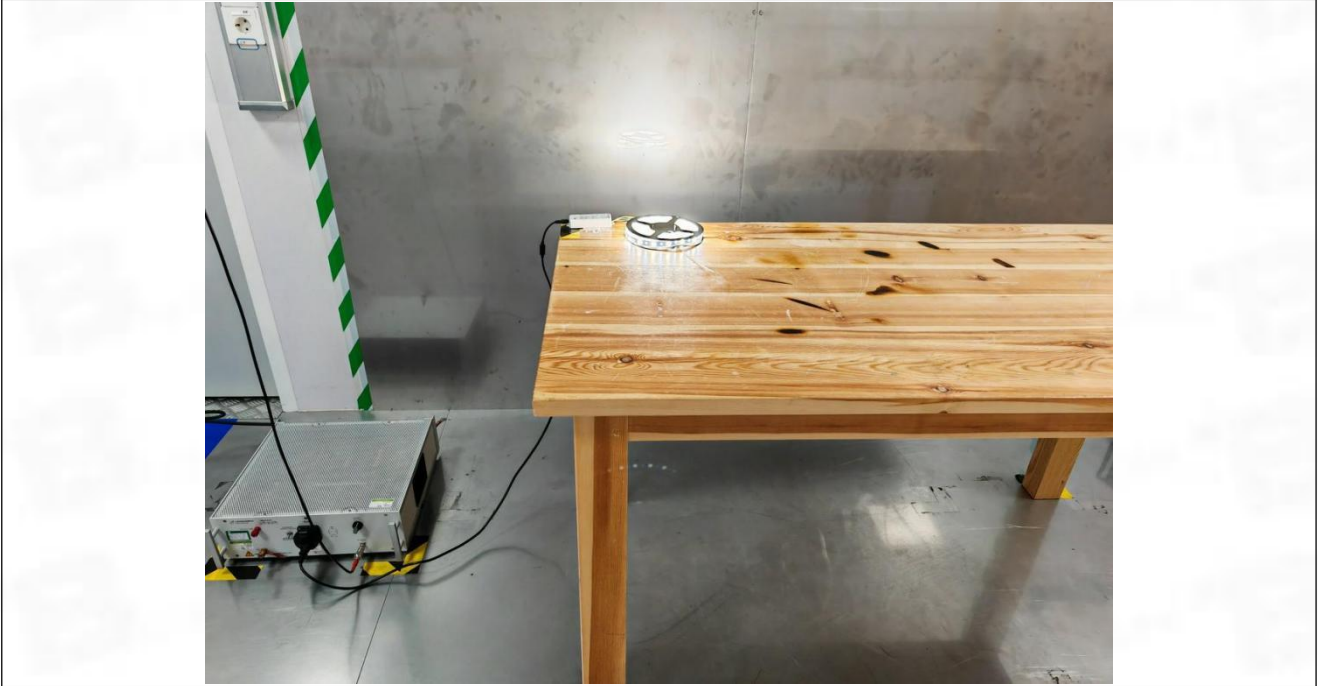
TM1 / Polarization: Vertical

No.	Frequency (MHz)	Reading (dBu)	Factor (dB/m)	Level (dBu/m)	Limit (dBu/m)	Margin (dB)	Detector	P/F
1	2603.481	67.58	-49.24	18.34	74.00	-55.66	peak	P
2	4945.317	78.31	-48.10	30.21	74.00	-43.79	peak	P
3	6616.694	82.89	-47.80	35.09	74.00	-38.91	peak	P
4	8262.014	83.50	-45.58	37.92	74.00	-36.08	peak	P
5	11324.677	87.85	-43.00	44.85	74.00	-29.15	peak	P
6 *	14553.823	88.92	-41.96	46.96	74.00	-27.04	peak	P

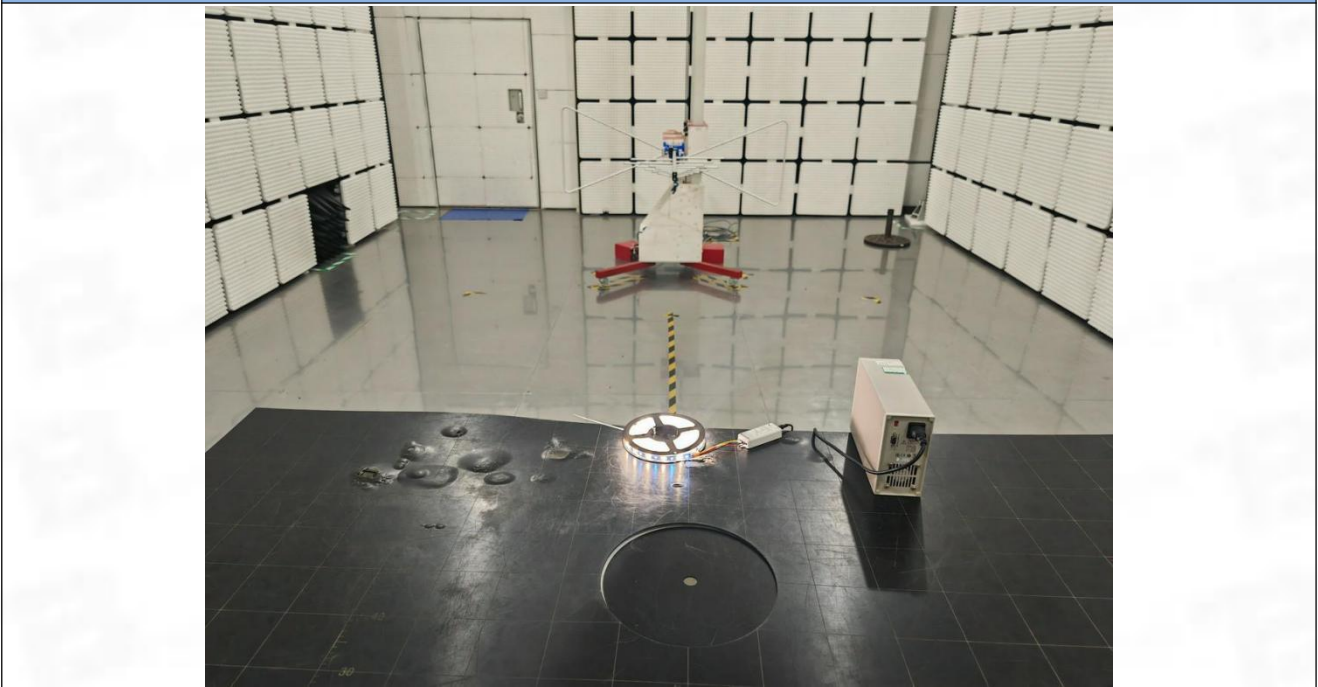


## 6 Test Setup Photos

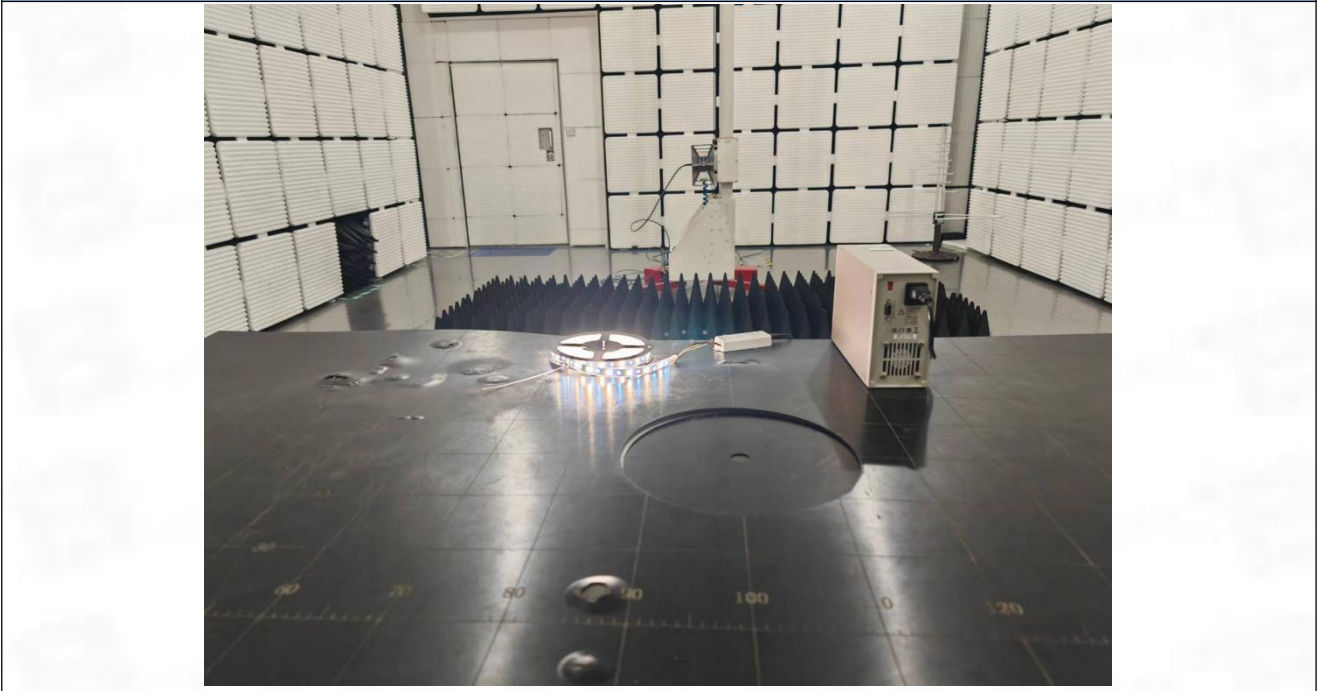
Conducted emissions on AC mains



Radiated emissions (Below 1GHz)

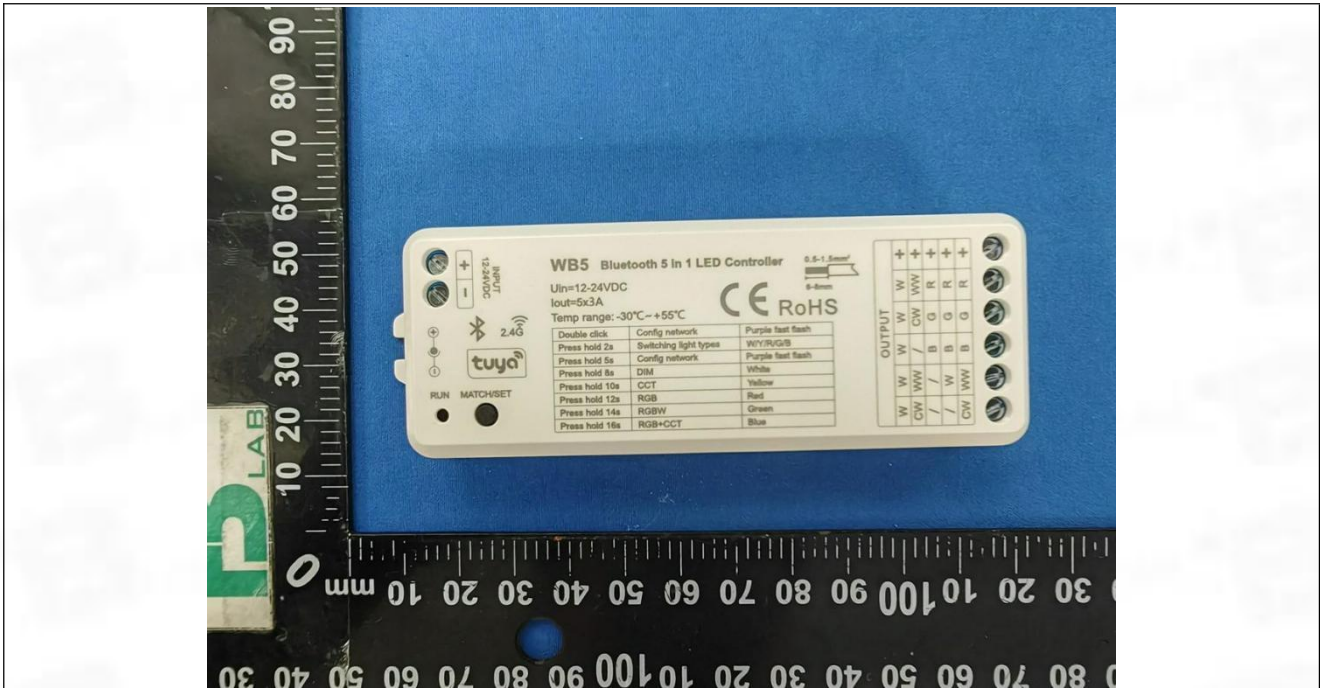


**Radiated emissions (Above 1GHz)**

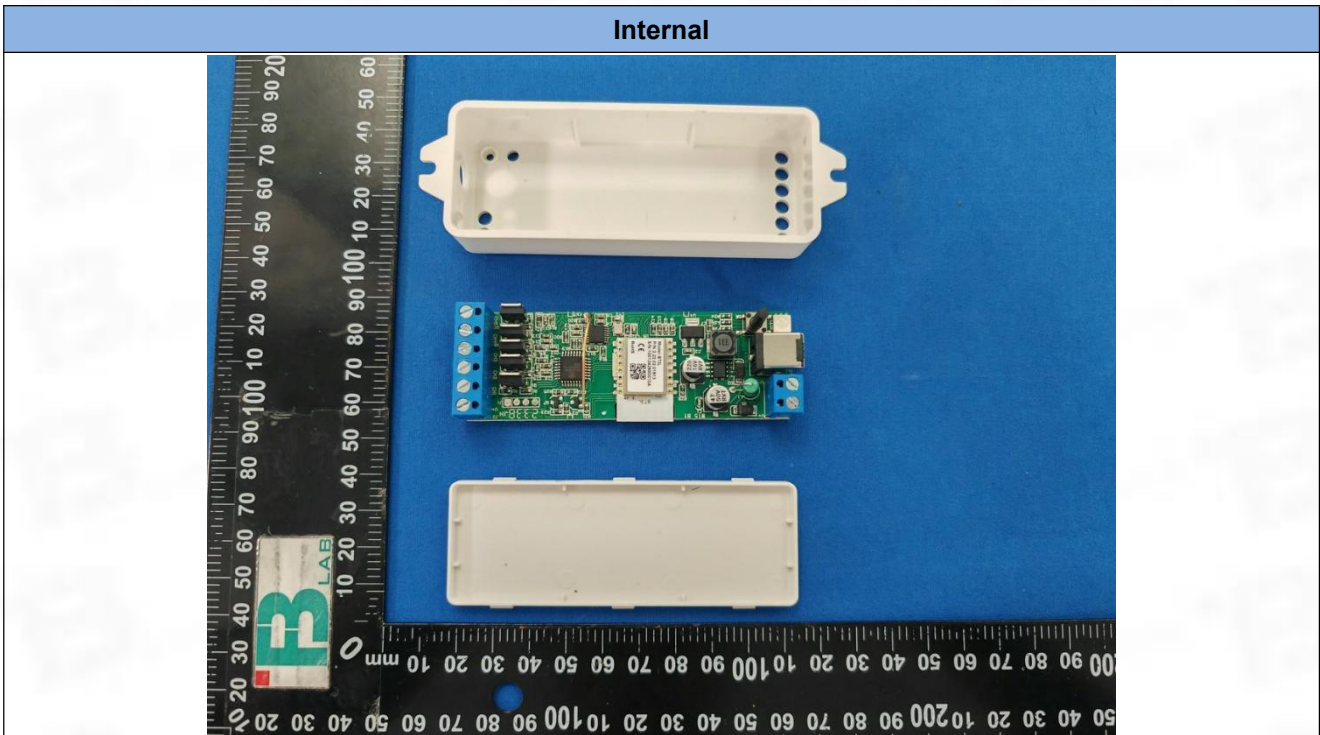


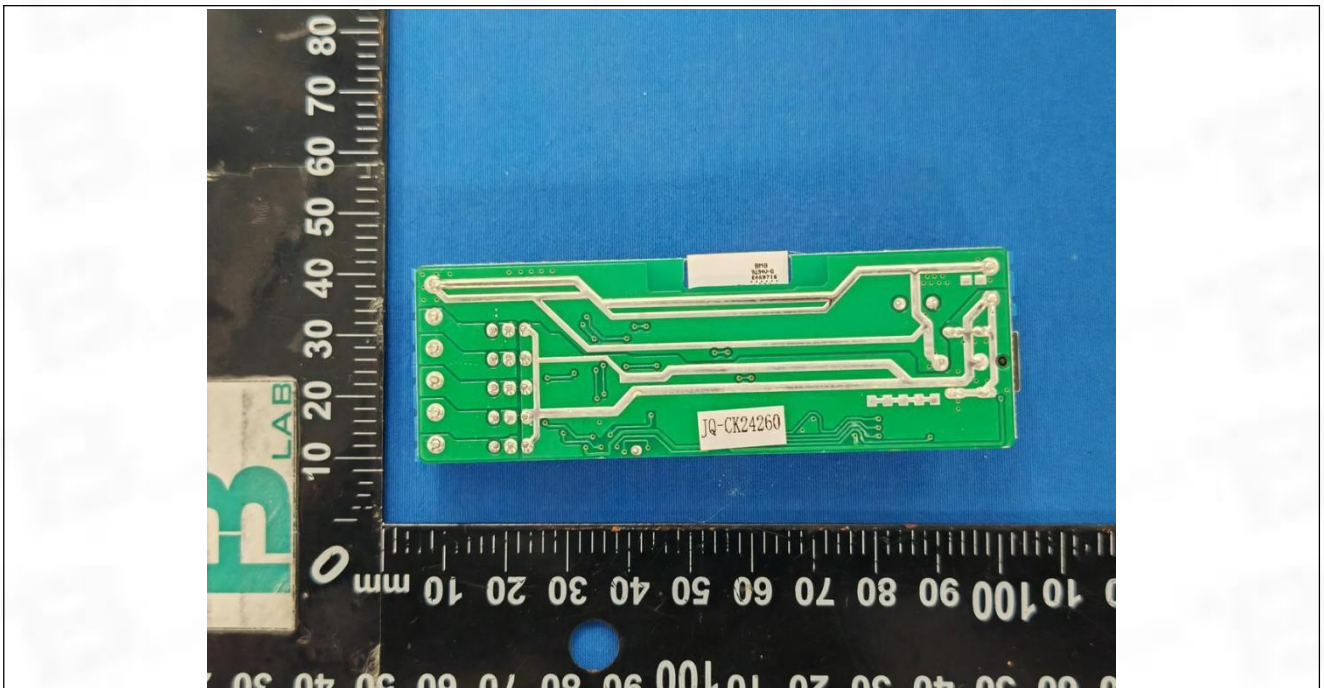
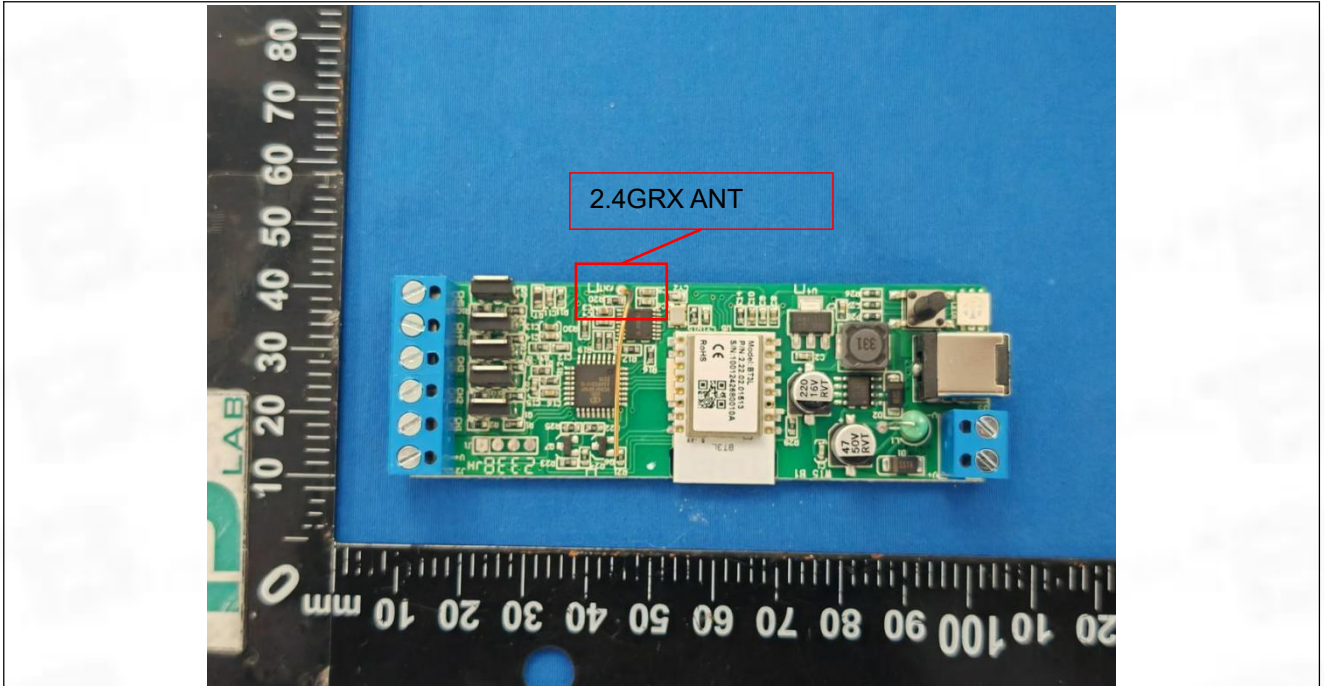






Internal







Test Report Number: BTF240105R00201



BTF Testing Lab (Shenzhen) Co., Ltd.

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Bao'an District, Shenzhen, China

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**-- END OF REPORT --**