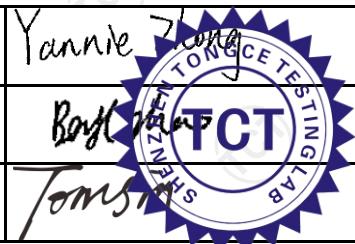


# TEST REPORT

<b>FCC ID.</b> .....	2A2H2-BDRV1
<b>Test Report No.</b> .....	TCT240809E010
<b>Date of issue</b> .....	Aug. 15, 2024
<b>Testing laboratory</b> .....	SHENZHEN TONGCE TESTING LAB
<b>Testing location/ address:</b>	2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China
<b>Applicant's name</b> .....	Silver Point Innovations LLC NY
<b>Address</b> .....	261 5th avenue Suite 1512, New York, New York 10016, United States
<b>Manufacturer's name</b> .....	Silver Point Innovations LLC NY
<b>Address</b> .....	261 5th avenue Suite 1512, New York, New York 10016, United States
<b>Standard(s)</b> .....	FCC CFR Title 47 Part 15 Subpart C Section 15.247 FCC KDB 558074 D01 15.247 Meas Guidance v05r02 ANSI C63.10:2013
<b>Product Name</b> .....	BDRV1
<b>Trade Mark</b> .....	BLACK+DECKER
<b>Model/Type reference</b> .....	<b>BLACK+ DECKER</b>
<b>Rating(s)</b> .....	Adapter Information: Model: TPQ-236A190060UW01 Input: AC 100-240V, 50/60Hz, 0.4A Output: DC 19.0V, 0.6A Rechargeable Li-ion Battery1 DC 14.4V Rechargeable Li-ion Battery2 DC 14.4V
<b>Date of receipt of test item</b> .....	Aug. 09, 2024
<b>Date (s) of performance of test</b> .....	Aug. 09, 2024 ~ Aug. 15, 2024
<b>Tested by (+signature)</b> .....	Yannie ZHONG
<b>Check by (+signature)</b> .....	Beryl ZHAO
<b>Approved by (+signature)</b> :	Tomsin



## General disclaimer:

This report shall not be reproduced except in full, without the written approval of SHENZHEN TONGCE TESTING LAB. This document may be altered or revised by SHENZHEN TONGCE TESTING LAB personnel only, and shall be noted in the revision section of the document. The test results in the report only apply to the tested sample.

## Table of Contents

<b>1. General Product Information .....</b>	<b>3</b>
1.1. EUT description .....	3
1.2. Model(s) list.....	3
1.3. Operation Frequency .....	4
<b>2. Test Result Summary .....</b>	<b>5</b>
<b>3. General Information.....</b>	<b>6</b>
3.1. Test environment and mode.....	6
3.2. Description of Support Units.....	7
<b>4. Facilities and Accreditations .....</b>	<b>8</b>
4.1. Facilities .....	8
4.2. Location .....	8
4.3. Measurement Uncertainty.....	8
<b>5. Test Results and Measurement Data .....</b>	<b>9</b>
5.1. Antenna requirement .....	9
5.2. Conducted Emission.....	10
5.3. Radiated Spurious Emission Measurement.....	14

**Appendix A: Test Result of Conducted Test**

**Appendix B: Photographs of Test Setup**

**Appendix C: Photographs of EUT**

## 1. General Product Information

### 1.1. EUT description

<b>Product Name</b> .....	BDRV1
<b>Model/Type reference</b> .....	BDRV1-SLVS
<b>Sample Number</b> .....	TCT240809E009-0101
<b>Operation Frequency</b> .....	2412MHz~2462MHz (802.11b/802.11g/802.11n(HT20))
<b>Channel Separation</b> .....	5MHz
<b>Number of Channel</b> .....	11 for 802.11b/802.11g/802.11n(HT20)
<b>Modulation Technology</b> .....	802.11b: Direct Sequence Spread Spectrum (DSSS) 802.11g/802.11n: Orthogonal Frequency Division Multiplexing(OFDM)
<b>Data speed</b> .....	802.11b: 1Mbps, 2Mbps, 5.5Mbps, 11Mbps 802.11g: 6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps 802.11n: Up to 150Mbps
<b>Antenna Type</b> .....	PCB Antenna
<b>Antenna Gain</b> .....	2.54dBi
<b>Rating(s)</b> .....	Adapter Information: Model: TPQ-236A190060UW01 Input: AC 100-240V, 50/60Hz, 0.4A Output: DC 19.0V, 0.6A Rechargeable Li-ion Battery1 DC 14.4V Rechargeable Li-ion Battery2 DC 14.4V
<b>Remark</b> .....	There are two charging stations, two batteries(battery1: G01-LI-1440-2600, battery2: XC001-03 ), two fans(fan1: QYC20A13F-28, fan2: G82F25M0S3K)

Note: The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

### 1.2. Model(s) list

None.

### 1.3. Operation Frequency

For 802.11b/g/n(HT20)

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz	--	--

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

802.11b/802.11g/802.11n (HT20)

Channel	Frequency
The lowest channel	2412MHz
The middle channel	2437MHz
The Highest channel	2462MHz

## 2. Test Result Summary

Requirement	CFR 47 Section	Result
Antenna requirement	§15.203/§15.247 (c)	PASS
AC Power Line Conducted Emission	§15.207	PASS
Conducted Peak Output Power	§15.247 (b)(3)	PASS
6dB Emission Bandwidth	§15.247 (a)(2)	PASS
Power Spectral Density	§15.247 (e)	PASS
Band Edge	§15.247(d)	PASS
Spurious Emission	§15.205/§15.209	PASS

**Note:**

1. PASS: *Test item meets the requirement.*
2. Fail: *Test item does not meet the requirement.*
3. N/A: *Test case does not apply to the test object.*
4. *The test result judgment is decided by the limit of test standard.*
5. *This report is issued as a supplemental report to original FCC ID: 2A2H2- BDRV1, the difference is changing another charging Station, battery and fan in this report, conducted emission and radiated emission had been re-tested and only its data was presented in this report.*

### 3. General Information

#### 3.1. Test environment and mode

Operating Environment:		
Condition	Conducted Emission	Radiated Emission
Temperature:	23.6 °C	24.7 °C
Humidity:	51 % RH	51 % RH
Atmospheric Pressure:	1010 mbar	1010 mbar

Test Mode:	
Engineer mode:	Keep the EUT in continuous transmitting by select channel and modulations with max duty cycle

The sample was placed 0.8m & 1.5m for the measurement below & above 1GHz above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case( Z axis) are shown in Test Results of the following pages.

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

**Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.**

Mode	Data rate
802.11b	1Mbps
802.11g	6Mbps
802.11n(HT20)	6.5Mbps

### 3.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
/	/	/	/	/

**Note:**

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.
3. For conducted measurements (Output Power, 6dB Emission Bandwidth, Power Spectral Density, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.

## 4. Facilities and Accreditations

### 4.1. Facilities

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

- FCC - Registration No.: 645098

SHENZHEN TONGCE TESTING LAB

Designation Number: CN1205

The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

- IC - Registration No.: 10668A-1

SHENZHEN TONGCE TESTING LAB

CAB identifier: CN0031

The testing lab has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

### 4.2. Location

SHENZHEN TONGCE TESTING LAB

Address: 2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China

TEL: +86-755-27673339

### 4.3. Measurement Uncertainty

The reported 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 %.

No.	Item	MU
1	Conducted Emission	$\pm 3.10$ dB
2	RF power, conducted	$\pm 0.12$ dB
3	Spurious emissions, conducted	$\pm 0.11$ dB
4	All emissions, radiated(<1 GHz)	$\pm 4.56$ dB
5	All emissions, radiated(1 GHz - 18 GHz)	$\pm 4.22$ dB
6	All emissions, radiated(18 GHz- 40 GHz)	$\pm 4.36$ dB

## 5. Test Results and Measurement Data

### 5.1. Antenna requirement

<b>Standard requirement:</b>	FCC Part15 C Section 15.203 /247(c)
------------------------------	-------------------------------------

#### 15.203 requirement:

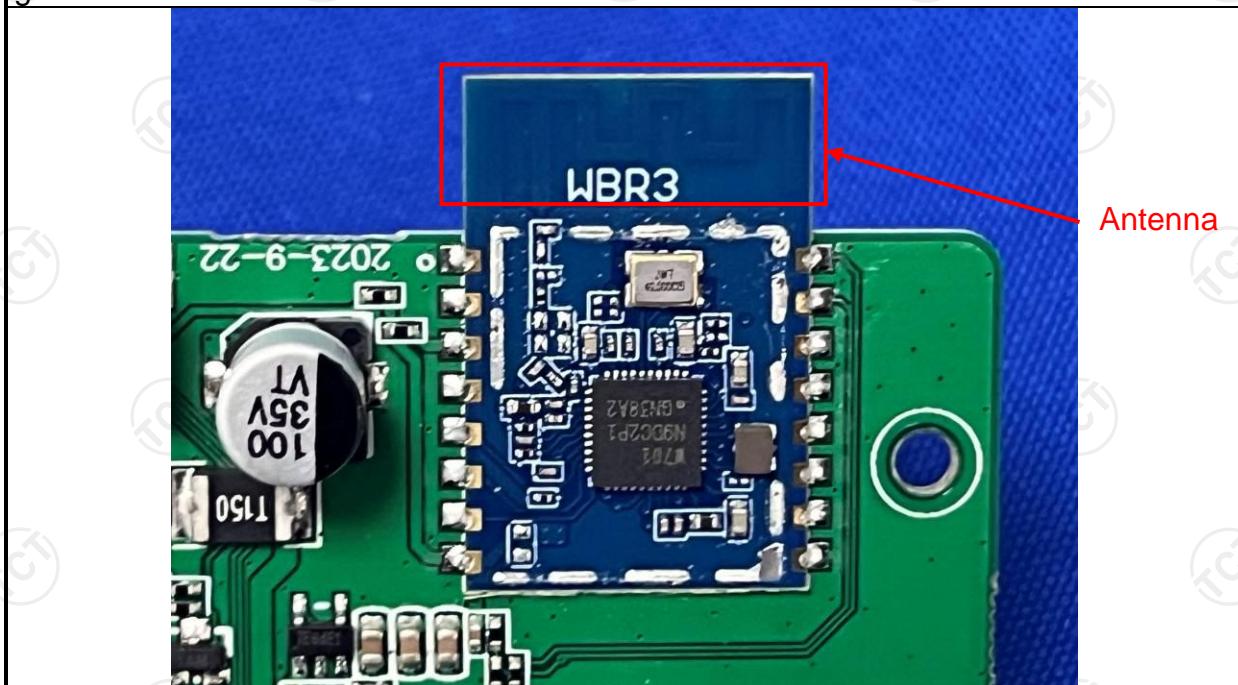
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit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

#### 15.247(c) (1)(i) requirement:

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

#### E.U.T Antenna:

The WIFI antenna is PCB antenna which permanently attached, and the best case gain of the antenna is 2.54dBi.



## 5.2. Conducted Emission

### 5.2.1. Test Specification

<b>Test Requirement:</b>	FCC Part15 C Section 15.207														
<b>Test Method:</b>	ANSI C63.10:2013														
<b>Frequency Range:</b>	150 kHz to 30 MHz														
<b>Receiver setup:</b>	RBW=9 kHz, VBW=30 kHz, Sweep time=auto														
<b>Limits:</b>	<table border="1"> <thead> <tr> <th rowspan="2">Frequency range (MHz)</th> <th colspan="2">Limit (dBuV)</th> </tr> <tr> <th>Quasi-peak</th> <th>Average</th> </tr> </thead> <tbody> <tr> <td>0.15-0.5</td> <td>66 to 56*</td> <td>56 to 46*</td> </tr> <tr> <td>0.5-5</td> <td>56</td> <td>46</td> </tr> <tr> <td>5-30</td> <td>60</td> <td>50</td> </tr> </tbody> </table>	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
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													
<b>Test Setup:</b>	<p style="text-align: center;"><b>Reference Plane</b></p> <p>Remark E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</p>														
<b>Test Mode:</b>	Transmitting Mode														
<b>Test Procedure:</b>	<ol style="list-style-type: none"> <li>1. The E.U.T is connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.</li> <li>2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).</li> <li>3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2013 on conducted measurement.</li> </ol>														
<b>Test Result:</b>	PASS														

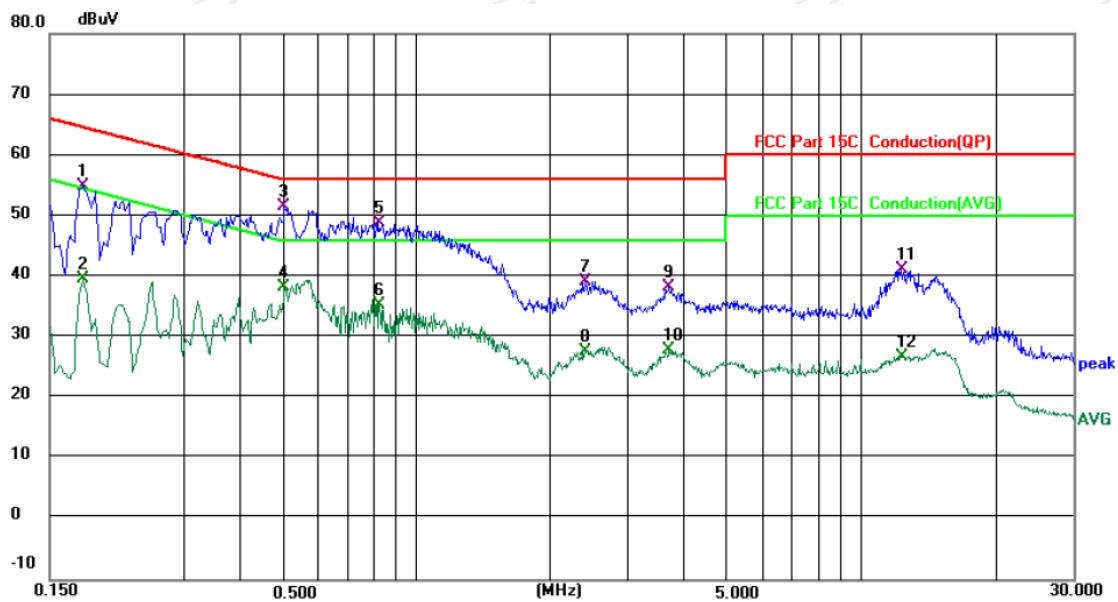
**5.2.2. Test Instruments**

Conducted Emission Shielding Room Test Site (843)				
Equipment	Manufacturer	Model	Serial Number	Calibration Due
EMI Test Receiver	R&S	ESCI3	100898	Jun. 26, 2025
LISN	Schwarzbeck	NSLK 8126	8126453	Jan. 31, 2025
Attenuator	N/A	10dB	164080	Jun. 26, 2025
Line-5	TCT	CE-05	/	Jun. 26, 2025
EMI Test Software	EZ_EMC	EMEC-3A1	1.1.4.2	/

### 5.2.3. Test data

Please refer to following diagram for individual

#### Conducted Emission on Line Terminal of the power line (150 kHz to 30MHz)



Site 844 Shielding Room Phase: **L1** Temperature: 23.6 (°C) Humidity: 51 %

Limit: FCC Part 15C Conduction(QP)

Power: AC 120 V / 60 Hz

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Comment
			Level	Factor	ment			
		MHz	dB $\mu$ V	dB	dB $\mu$ V	dB $\mu$ V	dB	Detector
1		0.1779	45.22	9.66	54.88	64.58	-9.70	QP
2		0.1779	29.91	9.66	39.57	54.58	-15.01	AVG
3 *		0.5060	41.26	10.18	51.44	56.00	-4.56	QP
4		0.5060	28.13	10.18	38.31	46.00	-7.69	AVG
5		0.8259	38.30	10.55	48.85	56.00	-7.15	QP
6		0.8259	24.87	10.55	35.42	46.00	-10.58	AVG
7		2.4020	29.36	9.89	39.25	56.00	-16.75	QP
8		2.4020	17.73	9.89	27.62	46.00	-18.38	AVG
9		3.7179	28.11	10.06	38.17	56.00	-17.83	QP
10		3.7179	17.79	10.06	27.85	46.00	-18.15	AVG
11		12.2579	30.79	10.29	41.08	60.00	-18.92	QP
12		12.2579	16.46	10.29	26.75	50.00	-23.25	AVG

#### Note:

Freq. = Emission frequency in MHz

Reading level (dB $\mu$ V) = Receiver reading

Corr. Factor (dB) = LISN factor + Cable loss

Measurement (dB $\mu$ V) = Reading level (dB $\mu$ V) + Corr. Factor (dB)

Limit (dB $\mu$ V) = Limit stated in standard

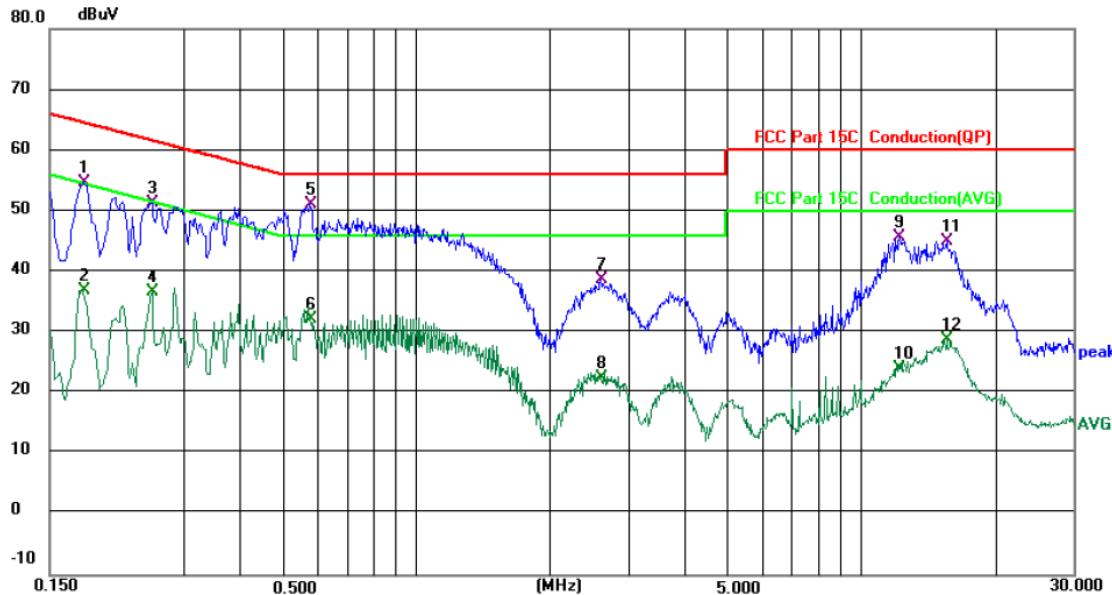
Margin (dB) = Measurement (dB $\mu$ V) – Limits (dB $\mu$ V)

Q.P. = Quasi-Peak

AVG = average

\* is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.

**Conducted Emission on Neutral Terminal of the power line (150 kHz to 30MHz)**



Site 844 Shielding Room Phase: **N** Temperature: 23.6 (°C) Humidity: 51 %

Limit: FCC Part 15C Conduction(QP) Power: AC 120 V/ 60 Hz

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		0.1780	44.97	9.64	54.61	64.58	-9.97	QP	
2		0.1780	27.19	9.64	36.83	54.58	-17.75	AVG	
3		0.2540	41.72	9.64	51.36	61.63	-10.27	QP	
4		0.2540	27.11	9.64	36.75	51.63	-14.88	AVG	
5	*	0.5780	40.75	10.23	50.98	56.00	-5.02	QP	
6		0.5780	21.87	10.23	32.10	46.00	-13.90	AVG	
7		2.6060	28.97	9.85	38.82	56.00	-17.18	QP	
8		2.6060	12.60	9.85	22.45	46.00	-23.55	AVG	
9		12.2500	35.34	10.27	45.61	60.00	-14.39	QP	
10		12.2500	13.73	10.27	24.00	50.00	-26.00	AVG	
11		15.6260	34.87	10.24	45.11	60.00	-14.89	QP	
12		15.6260	18.51	10.24	28.75	50.00	-21.25	AVG	

**Note1:**

Freq. = Emission frequency in MHz

Reading level (dB $\mu$ V) = Receiver reading

Corr. Factor (dB) = LISN factor + Cable loss

Measurement (dB $\mu$ V) = Reading level (dB $\mu$ V) + Corr. Factor (dB)

Limit (dB $\mu$ V) = Limit stated in standard

Margin (dB) = Measurement (dB $\mu$ V) – Limits (dB $\mu$ V)

Q.P. =Quasi-Peak

AVG =average

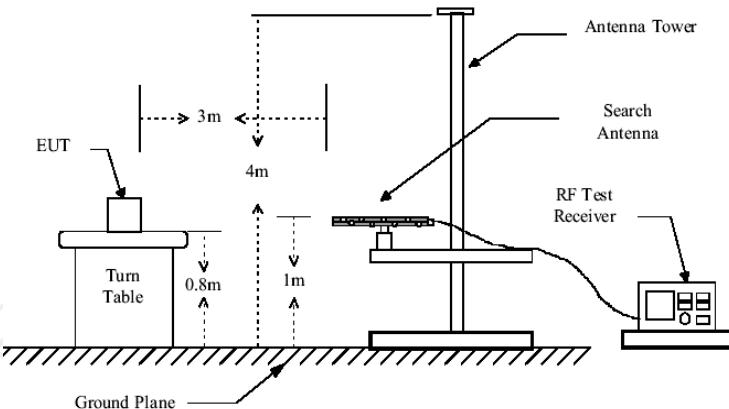
\* is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.

**Note2:** Measurements were conducted in all three channels (high, middle, low) and all modulation (802.11b, 802.11g, 802.11n(HT20)) of all charging stations, batteries and fans, and the worst case Mode: Middle channel and 802.11g(Charging Station1+Battery1+Fan1) was submitted only.

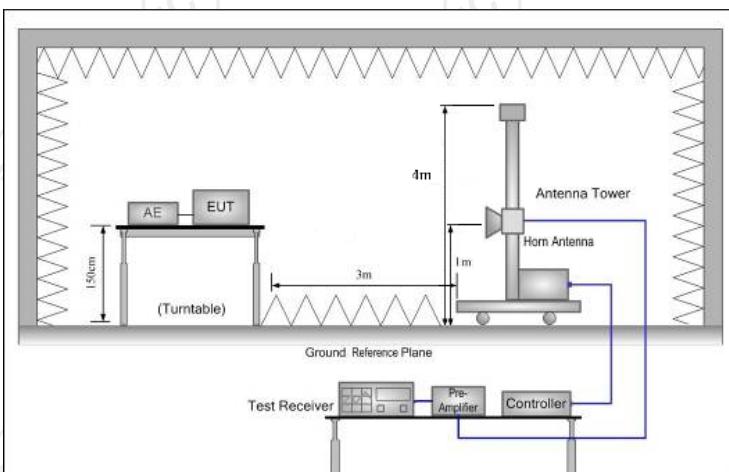
### 5.3. Radiated Spurious Emission Measurement

#### 5.3.1. Test Specification

<b>Test Requirement:</b>	FCC Part15 C Section 15.209																																							
<b>Test Method:</b>	ANSI C63.10:2013																																							
<b>Frequency Range:</b>	9 kHz to 25 GHz																																							
<b>Measurement Distance:</b>	3 m																																							
<b>Antenna Polarization:</b>	Horizontal & Vertical																																							
<b>Operation mode:</b>	Transmitting mode with modulation																																							
<b>Receiver Setup:</b>	<table border="1"> <thead> <tr> <th>Frequency</th> <th>Detector</th> <th>RBW</th> <th>VBW</th> <th>Remark</th> </tr> </thead> <tbody> <tr> <td>9kHz- 150kHz</td> <td>Quasi-peak</td> <td>200Hz</td> <td>1kHz</td> <td>Quasi-peak Value</td> </tr> <tr> <td>150kHz- 30MHz</td> <td>Quasi-peak</td> <td>9kHz</td> <td>30kHz</td> <td>Quasi-peak Value</td> </tr> <tr> <td>30MHz-1GHz</td> <td>Quasi-peak</td> <td>120KHz</td> <td>300KHz</td> <td>Quasi-peak Value</td> </tr> <tr> <td rowspan="2">Above 1GHz</td><td>Peak</td> <td>1MHz</td> <td>3MHz</td> <td>Peak Value</td> </tr> <tr> <td>Peak</td> <td>1MHz</td> <td>10Hz</td> <td>Average Value</td> </tr> </tbody> </table>					Frequency	Detector	RBW	VBW	Remark	9kHz- 150kHz	Quasi-peak	200Hz	1kHz	Quasi-peak Value	150kHz- 30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Value	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value	Above 1GHz	Peak	1MHz	3MHz	Peak Value	Peak	1MHz	10Hz	Average Value						
Frequency	Detector	RBW	VBW	Remark																																				
9kHz- 150kHz	Quasi-peak	200Hz	1kHz	Quasi-peak Value																																				
150kHz- 30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Value																																				
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value																																				
Above 1GHz	Peak	1MHz	3MHz	Peak Value																																				
	Peak	1MHz	10Hz	Average Value																																				
<b>Limit:</b>	<table border="1"> <thead> <tr> <th>Frequency</th> <th>Field Strength (microvolts/meter)</th> <th>Measurement Distance (meters)</th> </tr> </thead> <tbody> <tr> <td>0.009-0.490</td> <td>2400/F(KHz)</td> <td>300</td> </tr> <tr> <td>0.490-1.705</td> <td>24000/F(KHz)</td> <td>30</td> </tr> <tr> <td>1.705-30</td> <td>30</td> <td>30</td> </tr> <tr> <td>30-88</td> <td>100</td> <td>3</td> </tr> <tr> <td>88-216</td> <td>150</td> <td>3</td> </tr> <tr> <td>216-960</td> <td>200</td> <td>3</td> </tr> <tr> <td>Above 960</td> <td>500</td> <td>3</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Frequency</th> <th>Field Strength (microvolts/meter)</th> <th>Measurement Distance (meters)</th> <th>Detector</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Above 1GHz</td><td>500</td> <td>3</td> <td>Average</td> </tr> <tr> <td>5000</td> <td>3</td> <td>Peak</td> </tr> </tbody> </table>					Frequency	Field Strength (microvolts/meter)	Measurement Distance (meters)	0.009-0.490	2400/F(KHz)	300	0.490-1.705	24000/F(KHz)	30	1.705-30	30	30	30-88	100	3	88-216	150	3	216-960	200	3	Above 960	500	3	Frequency	Field Strength (microvolts/meter)	Measurement Distance (meters)	Detector	Above 1GHz	500	3	Average	5000	3	Peak
Frequency	Field Strength (microvolts/meter)	Measurement Distance (meters)																																						
0.009-0.490	2400/F(KHz)	300																																						
0.490-1.705	24000/F(KHz)	30																																						
1.705-30	30	30																																						
30-88	100	3																																						
88-216	150	3																																						
216-960	200	3																																						
Above 960	500	3																																						
Frequency	Field Strength (microvolts/meter)	Measurement Distance (meters)	Detector																																					
Above 1GHz	500	3	Average																																					
	5000	3	Peak																																					
<b>Test setup:</b>	<p>For radiated emissions below 30MHz</p> <p>Distance = 3m</p> <p>0.8m</p> <p>Turn table</p> <p>1m</p> <p>Ground Plane</p> <p>30MHz to 1GHz</p>																																							



Above 1GHz



#### 1. For the radiated emission test below 1GHz:

The EUT was placed on a turntable with 0.8 meter above ground. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high PASS filter are used for the test in order to get better signal level.

For the radiated emission test above 1GHz:

Place the measurement antenna on a turntable with 1.5 meter above ground, which is away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which

#### Test Procedure:

	<p>maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.</p> <p>3. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level</p> <p>4. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.</p> <p>5. Use the following spectrum analyzer settings:</p> <ul style="list-style-type: none"><li>(1) Span shall wide enough to fully capture the emission being measured;</li><li>(2) Set RBW=120 kHz for <math>f &lt; 1</math> GHz; VBW <math>\geq</math> RBW; Sweep = auto; Detector function = peak; Trace = max hold;</li><li>(3) Set RBW = 1 MHz, VBW= 3MHz for <math>f &gt; 1</math> GHz for peak measurement.</li></ul> <p>For average measurement: VBW = 10 Hz, when duty cycle is no less than 98 percent. <math>VBW \geq 1/T</math>, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.</p>
<b>Test results:</b>	PASS

### 5.3.2. Test Instruments

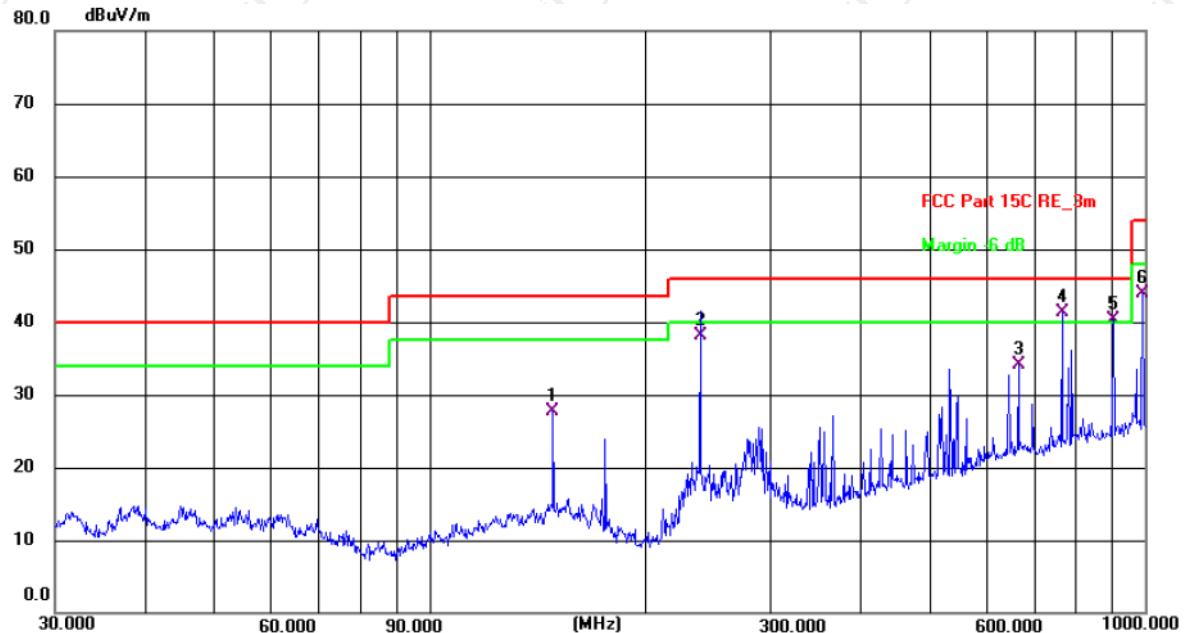
Radiated Emission Test Site (966)				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
EMI Test Receiver	R&S	ESCI7	100529	Jan. 31, 2025
Spectrum Analyzer	R&S	FSQ40	200061	Jun. 26, 2025
Pre-amplifier	HP	8447D	2727A05017	Jun. 26, 2025
Pre-amplifier	SKET	LNPA_0118G-45	SK2021012102	Jan. 31, 2025
Pre-amplifier	SKET	LNPA_1840G-50	SK202109203500	Jan. 31, 2025
Loop antenna	Schwarzbeck	FMZB1519B	00191	Jun. 26, 2025
Broadband Antenna	Schwarzbeck	VULB9163	340	Jun. 28, 2025
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Jun. 28, 2025
Horn Antenna	Schwarzbeck	BBHA 9170	00956	Feb. 02, 2025
Coaxial cable	SKET	RE-03-D	/	Jun. 26, 2025
Coaxial cable	SKET	RE-03-M	/	Jun. 26, 2025
Coaxial cable	SKET	RE-03-L	/	Jun. 26, 2025
Coaxial cable	SKET	RE-04-D	/	Jun. 26, 2025
Coaxial cable	SKET	RE-04-M	/	Jun. 26, 2025
Coaxial cable	SKET	RE-04-L	/	Jun. 26, 2025
Antenna Mast	Keleto	RE-AM	/	/
EMI Test Software	EZ_EMCA	FA-03A2 RE+	1.1.4.2	/

### 5.3.3. Test Data

Please refer to following diagram for individual

Below 1GHz

Horizontal:



Site 3m Anechoic Chamber2

Polarization: **Horizontal**

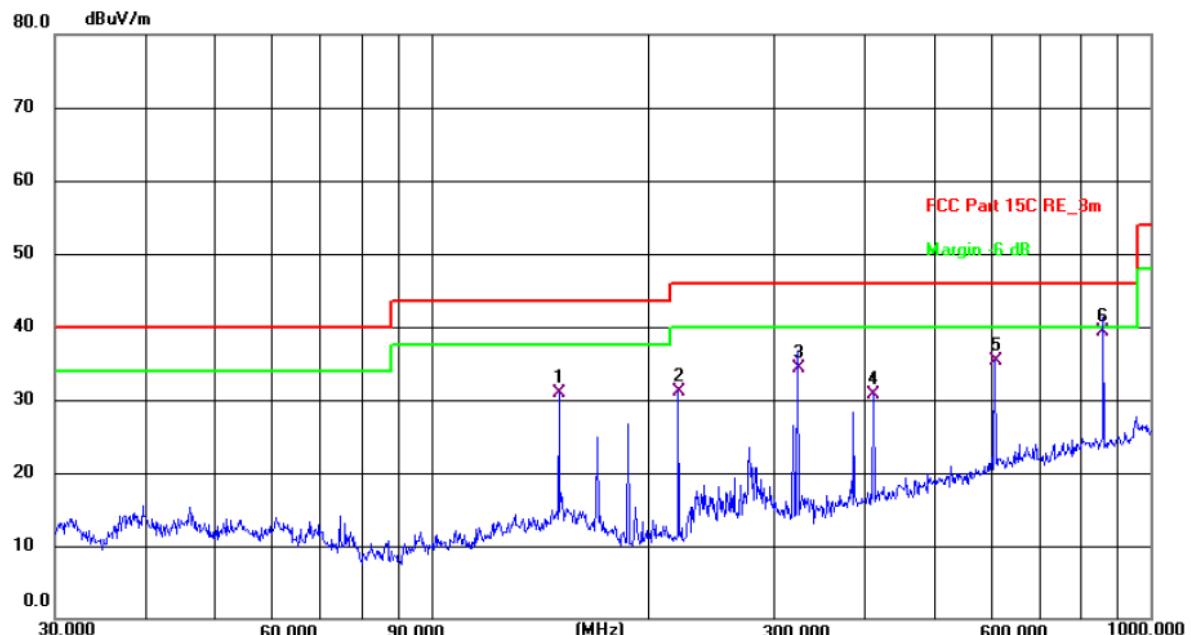
Temperature: 24.7(C) Humidity: 51 %

Limit: FCC Part 15C RE\_3m

Power: DC 14.4 V

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	148.9624	45.13	-17.41	27.72	43.50	-15.78	QP	P	
2	239.1471	57.93	-19.73	38.20	46.00	-7.80	QP	P	
3	665.8034	42.59	-8.45	34.14	46.00	-11.86	QP	P	
4 *	766.0571	48.71	-7.45	41.26	46.00	-4.74	QP	P	
5 !	903.3093	46.45	-6.05	40.40	46.00	-5.60	QP	P	
6	993.0113	48.69	-4.85	43.84	54.00	-10.16	QP	P	

Vertical:



Site 3m Anechoic Chamber2 Polarization: **Vertical** Temperature: 24.7(C) Humidity: 51 %

Limit: FCC Part 15C RE\_3m Power: DC 14.4 V

No.	Frequency (MHz)	Reading (dB $\mu$ V)	Factor (dB/m)	Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Detector	P/F	Remark
1	150.5377	48.20	-17.26	30.94	43.50	-12.56	QP	P	
2	220.6171	51.74	-20.54	31.20	46.00	-14.80	QP	P	
3	323.3203	51.85	-17.55	34.30	46.00	-11.70	QP	P	
4	411.8240	45.30	-14.52	30.78	46.00	-15.22	QP	P	
5	607.7867	44.93	-9.65	35.28	46.00	-10.72	QP	P	
6 *	860.0351	45.79	-6.58	39.21	46.00	-6.79	QP	P	

**Note:** 1. The low frequency, which started from 9KHz~30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported

2. Measurements were conducted in all three channels (high, middle, low) and all modulation(802.11b, 802.11g, 802.11n(HT20)) of all batteries and fans, and the worst case Mode: Middle channel and 802.11g(Battery1+Fan1) was submitted only.

3. Freq. = Emission frequency in MHz

Measurement (dB $\mu$ V/m) = Reading level (dB $\mu$ V) + Corr. Factor (dB)

Correction Factor= Antenna Factor + Cable loss – Pre-amplifier

Limit (dB $\mu$ V/m) = Limit stated in standard

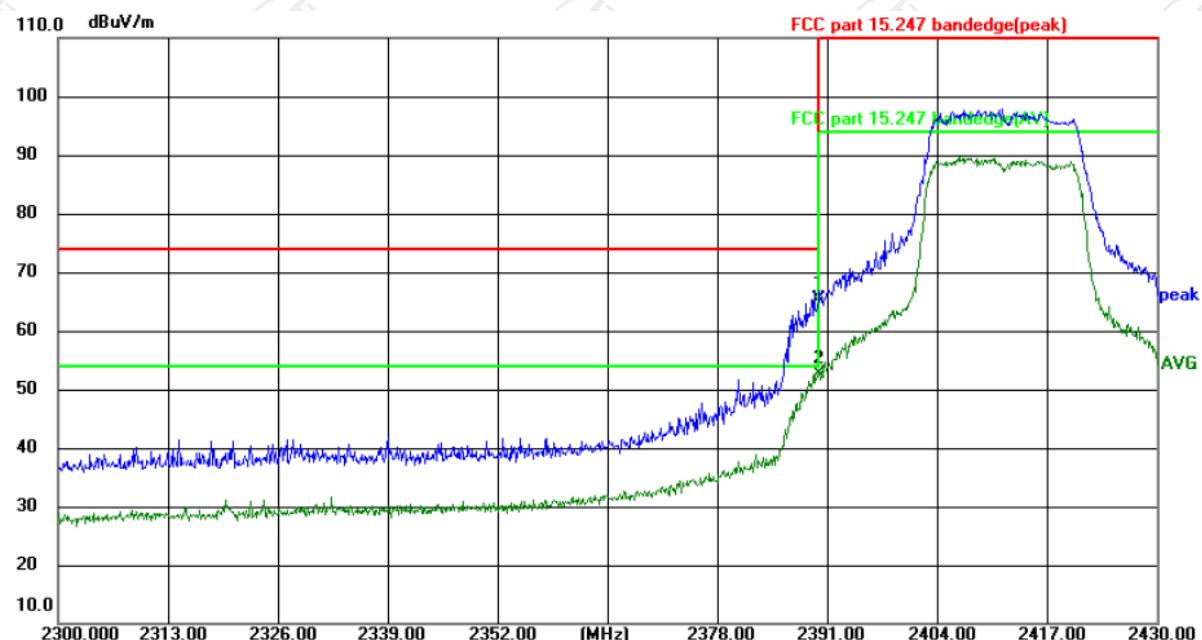
Margin (dB) = Measurement (dB $\mu$ V/m) – Limits (dB $\mu$ V/m)

\* is meaning the worst frequency has been tested in the test frequency range.

**Test Result of Radiated Spurious at Band edges**

Lowest channel 2422:

Horizontal:



Site: 3m Anechoic Chamber

Polarization: **Horizontal**

Temperature: 25.3(°C)

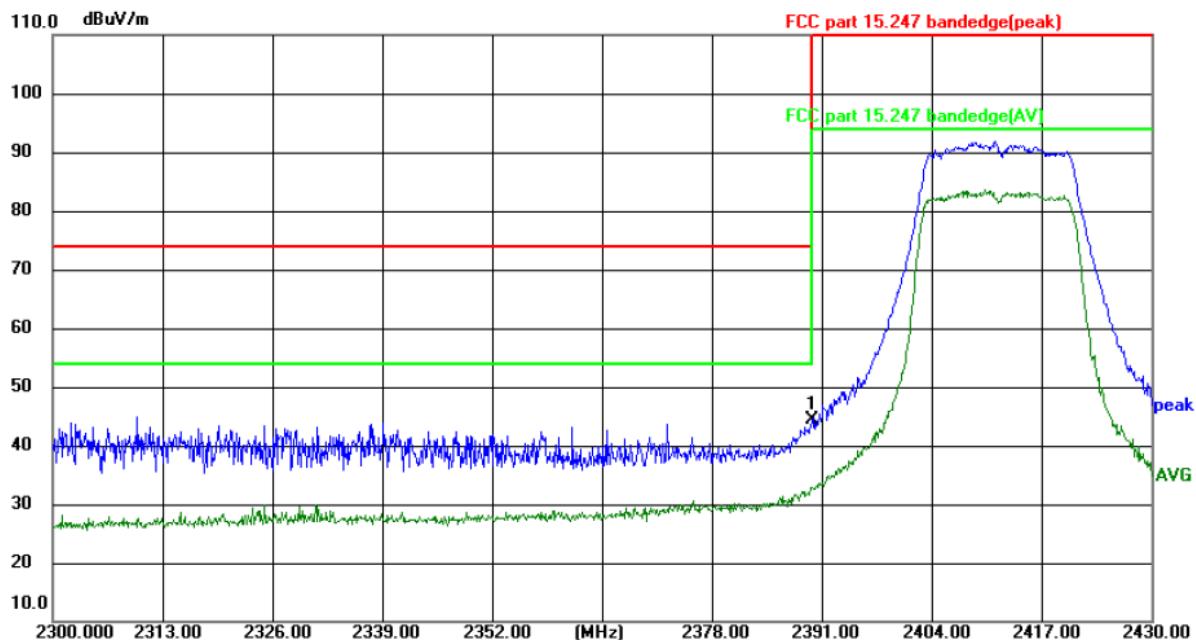
Humidity: 52 %

Limit: FCC part 15.247 bandedge(peak)

Power: DC 14.4 V

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	2390.000	82.07	-16.70	65.37	74.00	-8.63	peak	P	
2 *	2390.000	69.34	-16.70	52.64	54.00	-1.36	AVG	P	

Vertical:



Site: 3m Anechoic Chamber

Polarization: **Vertical**

Temperature: 25.3(°C)

Humidity: 52 %

Limit: FCC part 15.247 bandedge(peak)

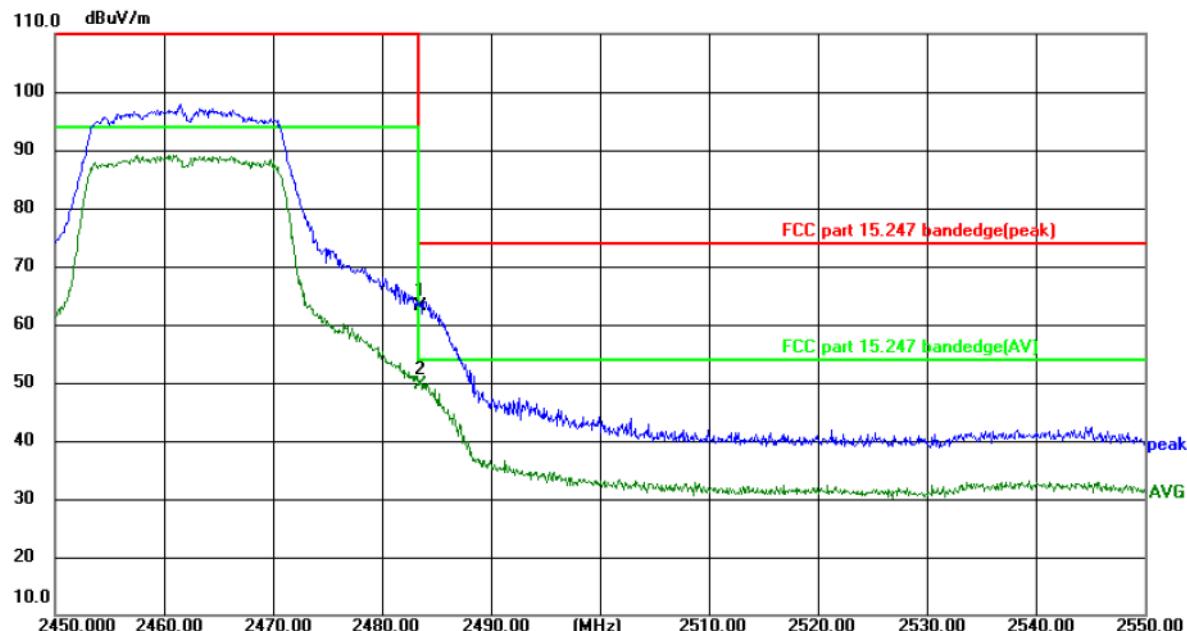
Power: DC 14.4 V

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1 *	2390.000	61.00	-16.70	44.30	74.00	-29.70	peak	P	

**Note:** Measurements were conducted in all two channels (high, low) and all modulation (802.11b, 802.11g, 802.11n(HT20)) of all batteries and fans, and the worst case 802.11n(HT20) was submitted only.

Highest channel 2452:

Horizontal:



Site: 3m Anechoic Chamber

Polarization: **Horizontal**

Temperature: 25.3(°C)

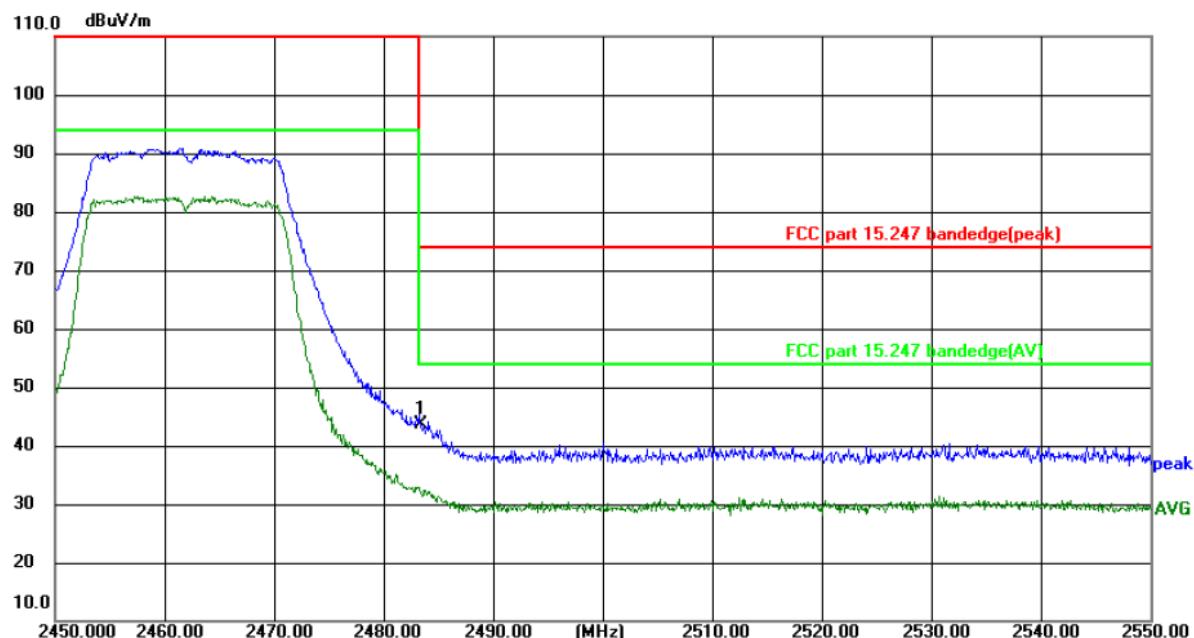
Humidity: 52 %

Limit: FCC part 15.247 bandedge(peak)

Power: DC 14.4 V

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	2483.500	79.66	-16.65	63.01	74.00	-10.99	peak	P	
2 *	2483.500	66.36	-16.65	49.71	54.00	-4.29	AVG	P	

Vertical:



Site: 3m Anechoic Chamber      Polarization: **Vertical**      Temperature: 25.3(°C)      Humidity: 52 %

Limit: FCC part 15.247 bandedge(peak)      Power: DC 14.4 V

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1 *	2483.500	60.35	-16.65	43.70	74.00	-30.30	peak	P	

**Note:**

1. Peak Final Emission Level=Peak Reading + Correction Factor;
2. Correction Factor= Antenna Factor + Cable loss – Pre-amplifier
3. Measurements were conducted in all two channels (high, low) and all modulation (802.11b, 802.11g, 802.11n(HT20)) of all batteries and fans, and the worst case 802.11n(HT20) was submitted only.

**Above 1GHz**

Modulation Type: 802.11b

Low channel: 2412 MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dB $\mu$ V)	AV reading (dB $\mu$ V)	Correction Factor (dB/m)	Emission Level		Peak limit (dB $\mu$ V/m)	AV limit (dB $\mu$ V/m)	Margin (dB)
					Peak (dB $\mu$ V/m)	AV (dB $\mu$ V/m)			
4824	H	45.24	---	-9.48	35.76	---	74	54	-18.24
7236	H	33.92	---	-1.34	32.58	---	74	54	-21.42
---	H	---	---	---	---	---	---	---	---
4824	V	44.96	---	-9.48	35.48	---	74	54	-18.52
7236	V	33.18	---	-1.34	31.84	---	74	54	-22.16
---	V	---	---	---	---	---	---	---	---

Middle channel: 2437 MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dB $\mu$ V)	AV reading (dB $\mu$ V)	Correction Factor (dB/m)	Emission Level		Peak limit (dB $\mu$ V/m)	AV limit (dB $\mu$ V/m)	Margin (dB)
					Peak (dB $\mu$ V/m)	AV (dB $\mu$ V/m)			
4874	H	44.89	---	-9.37	35.52	---	74	54	-18.48
7311	H	31.61	---	-1.17	30.44	---	74	54	-23.56
---	H	---	---	---	---	---	---	---	---
4874	V	42.45	---	-9.37	33.08	---	74	54	-20.92
7311	V	31.77	---	-1.17	30.60	---	74	54	-23.40
---	V	---	---	---	---	---	---	---	---

High channel: 2462 MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dB $\mu$ V)	AV reading (dB $\mu$ V)	Correction Factor (dB/m)	Emission Level		Peak limit (dB $\mu$ V/m)	AV limit (dB $\mu$ V/m)	Margin (dB)
					Peak (dB $\mu$ V/m)	AV (dB $\mu$ V/m)			
4924	H	43.03	---	-9.26	33.77	---	74	54	-20.23
7386	H	34.25	---	-1.01	33.24	---	74	54	-20.76
---	H	---	---	---	---	---	---	---	---
4924	V	43.80	---	-9.26	34.54	---	74	54	-19.46
7386	V	33.74	---	-1.01	32.73	---	74	54	-21.27
---	V	---	---	---	---	---	---	---	---

**Note:**

1. Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier
2. Margin (dB) = Emission Level (Peak) (dB $\mu$ V/m)-Average limit (dB $\mu$ V/m)
3. The emission levels of other frequencies are very lower than the limit and not show in test report.
4. Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency. The highest test frequency is 25GHz.
5. Data of measurement shown “---”in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.
6. All the restriction bands are compliance with the limit of 15.209.

Modulation Type: 802.11g

Low channel: 2412 MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dB $\mu$ V)	AV reading (dB $\mu$ V)	Correction Factor (dB/m)	Emission Level		Peak limit (dB $\mu$ V/m)	AV limit (dB $\mu$ V/m)	Margin (dB)
					Peak (dB $\mu$ V/m)	AV (dB $\mu$ V/m)			
4824	H	44.95	---	0.75	45.70	---	74	54	-8.30
7236	H	34.53	---	9.87	44.40	---	74	54	-9.60
---	H	---	---	---	---	---	---	---	---
4824	V	43.28	---	0.75	44.03	---	74	54	-9.97
7236	V	33.42	---	9.87	43.29	---	74	54	-10.71
---	V	---	---	---	---	---	---	---	---

Middle channel: 2437 MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dB $\mu$ V)	AV reading (dB $\mu$ V)	Correction Factor (dB/m)	Emission Level		Peak limit (dB $\mu$ V/m)	AV limit (dB $\mu$ V/m)	Margin (dB)
					Peak (dB $\mu$ V/m)	AV (dB $\mu$ V/m)			
4874	H	43.07	---	0.97	44.04	---	74	54	-9.96
7311	H	32.24	---	9.83	42.07	---	74	54	-11.93
---	H	---	---	---	---	---	---	---	---
4874	V	42.98	---	0.97	43.95	---	74	54	-10.05
7311	V	31.61	---	9.83	41.44	---	74	54	-12.56
---	V	---	---	---	---	---	---	---	---

High channel: 2462 MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dB $\mu$ V)	AV reading (dB $\mu$ V)	Correction Factor (dB/m)	Emission Level		Peak limit (dB $\mu$ V/m)	AV limit (dB $\mu$ V/m)	Margin (dB)
					Peak (dB $\mu$ V/m)	AV (dB $\mu$ V/m)			
4924	H	43.45	---	1.18	44.63	---	74	54	-9.37
7386	H	33.29	---	10.07	43.36	---	74	54	-10.64
---	H	---	---	---	---	---	---	---	---
4924	V	44.56	---	1.18	45.74	---	74	54	-8.26
7386	V	34.44	---	10.07	44.51	---	74	54	-9.49
---	V	---	---	---	---	---	---	---	---

**Note:**

1. Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier
2. Margin (dB) = Emission Level (Peak) (dB $\mu$ V/m)-Average limit (dB $\mu$ V/m)
3. The emission levels of other frequencies are very lower than the limit and not show in test report.
4. Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency. The highest test frequency is 25GHz.
5. Data of measurement shown “---”in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.
6. All the restriction bands are compliance with the limit of 15.209.

Modulation Type: 802.11n (HT20)

Low channel: 2412 MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dB $\mu$ V)	AV reading (dB $\mu$ V)	Correction Factor (dB/m)	Emission Level		Peak limit (dB $\mu$ V/m)	AV limit (dB $\mu$ V/m)	Margin (dB)
					Peak (dB $\mu$ V/m)	AV (dB $\mu$ V/m)			
4824	H	42.25	---	0.75	43.00	---	74	54	-11.00
7236	H	30.46	---	9.87	40.33	---	74	54	-13.67
---	H	---	---	---	---	---	---	---	---
4824	V	43.03	---	0.75	43.78	---	74	54	-10.22
7236	V	32.37	---	9.87	42.24	---	74	54	-11.76
---	V	---	---	---	---	---	---	---	---

Middle channel: 2437 MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dB $\mu$ V)	AV reading (dB $\mu$ V)	Correction Factor (dB/m)	Emission Level		Peak limit (dB $\mu$ V/m)	AV limit (dB $\mu$ V/m)	Margin (dB)
					Peak (dB $\mu$ V/m)	AV (dB $\mu$ V/m)			
4874	H	42.89	---	0.97	43.86	---	74	54	-10.14
7311	H	32.18	---	9.83	42.01	---	74	54	-11.99
---	H	---	---	---	---	---	---	---	---
4874	V	44.72	---	0.97	45.69	---	74	54	-8.31
7311	V	33.51	---	9.83	43.34	---	74	54	-10.66
---	V	---	---	---	---	---	---	---	---

High channel: 2462 MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dB $\mu$ V)	AV reading (dB $\mu$ V)	Correction Factor (dB/m)	Emission Level		Peak limit (dB $\mu$ V/m)	AV limit (dB $\mu$ V/m)	Margin (dB)
					Peak (dB $\mu$ V/m)	AV (dB $\mu$ V/m)			
4924	H	41.04	---	1.18	42.22	---	74	54	-11.78
7386	H	32.93	---	10.07	43.00	---	74	54	-11.00
---	H	---	---	---	---	---	---	---	---
4924	V	43.44	---	1.18	44.62	---	74	54	-9.38
7386	V	33.46	---	10.07	43.53	---	74	54	-10.47
---	V	---	---	---	---	---	---	---	---

**Note:**

1. Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier
2. Margin (dB) = Emission Level (Peak) (dB $\mu$ V/m)-Average limit (dB $\mu$ V/m)
3. The emission levels of other frequencies are very lower than the limit and not show in test report.
4. Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency. The highest test frequency is 25GHz.
5. Data of measurement shown “---”in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.
6. All the restriction bands are compliance with the limit of 15.209.

**Appendix B: Photographs of Test Setup**

Refer to the test report No. TCT240809E009

**Appendix C: Photographs of EUT**

Refer to the test report No. TCT240809E009

\*\*\*\*\***END OF REPORT**\*\*\*\*\*