TCT 通测检测 TESTING CENTRE TECHNOLOGY

TEST REPORT

FCC ID. ..... :	2AW3GTM013	
Test Report No..... :	TCT250422E027	
Date of issue..... :	Apr. 28, 2025	
Testing laboratory ..... :	SHENZHEN TONGCE TESTING LAB	
Testing location/ address:	2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China	
Applicant's name..... :	Shenzhen Torich Electronic Technology Co., Ltd	
Address..... :	4/5F, Unit B2, Fenghuang Gang 3Rd Industiral Area, Baotian 1st Road, No.231, Bao'An District, Shenzhen, 518102 China	
Manufacturer's name ... :	Shenzhen Torich Electronic Technology Co., Ltd	
Address..... :	4/5F, Unit B2, Fenghuang Gang 3Rd Industiral Area, Baotian 1st Road, No.231, Bao'An District, Shenzhen, 518102 China	
Standard(s) ..... :	FCC CFR Title 47 Part 15 Subpart C Section 15.249 ANSI C63.10:2020	
Product Name..... :	Wireless Mouse	
Trade Mark ..... :	N/A	
Model/Type reference..... :	Refer to model list of page 3	
Rating(s)..... :	DC 1.5V (1*AA battery)	
Date of receipt of test item ..... :	Apr. 22, 2025	
Date (s) of performance of test..... :	Apr. 22, 2025 ~ Apr. 28, 2025	
Tested by (+signature) ... :	Ronaldo LUO	
Check by (+signature).... :	Beryl ZHAO	
Approved by (+signature):	Tomsin	

General disclaimer:

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Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

1. General Product Information

1.1. EUT description

Product Name.....:	Wireless Mouse
Model/Type reference.....:	TM013
Sample Number.....:	TCT250422E027-0101
Operation Frequency.....:	2402MHz~2480MHz
Channel Separation.....:	2MHz
Number of Channel.....:	40
Modulation Technology.....:	GFSK
Antenna Type.....:	PCB Antenna
Antenna Gain.....:	2.48dBi
Rating(s).....:	DC 1.5V (1*AA battery)

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

No.	Model No.	Tested with
1	TM013	☒
Other models	TM-001, TM-002, TM-003, TM-004, TM-005, TM-006, TM-008, TM-009, TM-010, TM-011, TM-012, TM-013, TM-014, TM-015, TM-015Pro, TM-015C+, TM-016, TM-017, TM-018, TM-019, TM-020, TM-021, TM-023SE, TM-023, TM-024, TM-025, TM-026, TM-027, TM-028, TM-029, TM-030, TM-6500, TM-217, TM-218, TM-219, TM-220, TM-221, TM-222, TM-223, TM-224, TM-225, TM-226, GM-0008, GM-009, GM-010, GM-011, GM-012, GM-013, GM-014	☐
Note: TM013 is tested model, other models are derivative models. The models are identical in circuit and PCB layout, only different on the model names and colors. So the test data of TM013 can represent the remaining models.		

1.3. Operation Frequency

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
0	2402MHz	10	2422MHz	20	2442MHz	30	2462MHz
1	2404MHz	11	2424MHz	21	2444MHz	31	2464MHz
…	…	…	…	…	…	…	…
8	2418MHz	18	2438MHz	28	2458MHz	38	2478MHz
9	2420MHz	19	2440MHz	29	2460MHz	39	2480MHz
Remark: Channel 0, 19 & 39 have been tested.							

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2. Test Result Summary

Requirement	CFR 47 Section	Result
Antenna Requirement	§15.203	PASS
AC Power Line Conducted Emission	§15.207	N/A
Field Strength of Fundamental	§15.249 (a)	PASS
Spurious Emissions	§15.249 (a) (d)/ §15.209	PASS
Band Edge	§15.249 (d)/ §15.205	PASS
20dB Occupied Bandwidth	§15.215 (c)	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.

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3. General Information

3.1. Test Environment and Mode

Operating Environment:	
Condition	Radiated Emission
Temperature:	24.8 °C
Humidity:	51 % RH
Atmospheric Pressure:	1010 mbar
Test Software:	
Software Information:	Engineering mode
Power Level:	Default
Test Mode:	
Engineering mode:	Keep the EUT in continuous transmitting by select channel

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.

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.

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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

  SHENZHEN TONGCE TESTING LAB

  CAB identifier: CN0031

  The testing lab has been registered by Innovation, Science and Economic Development 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

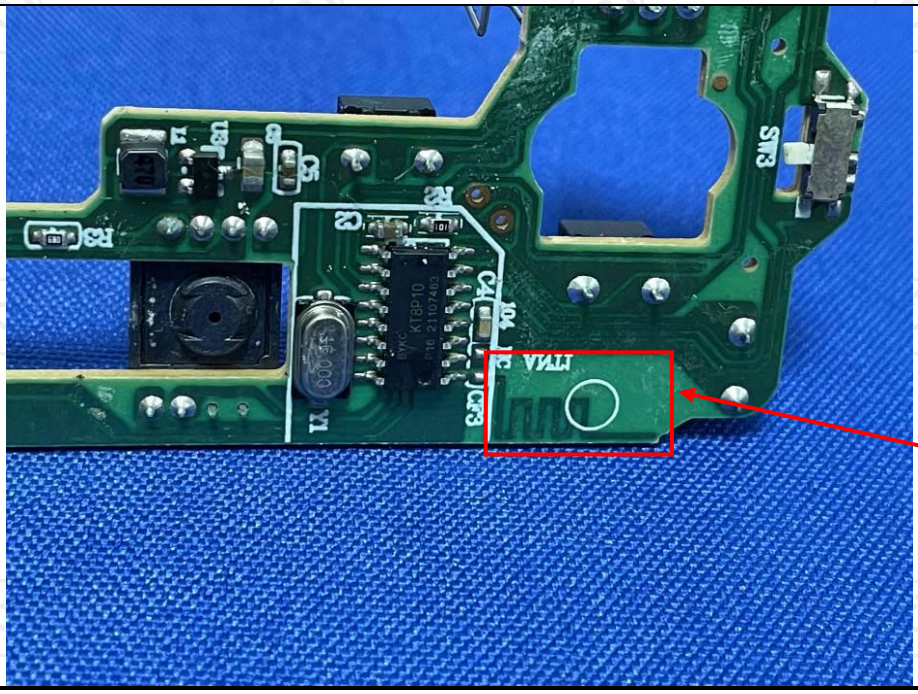
The reported uncertainty of measurement y ± U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

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

5. Test Results and Measurement Data

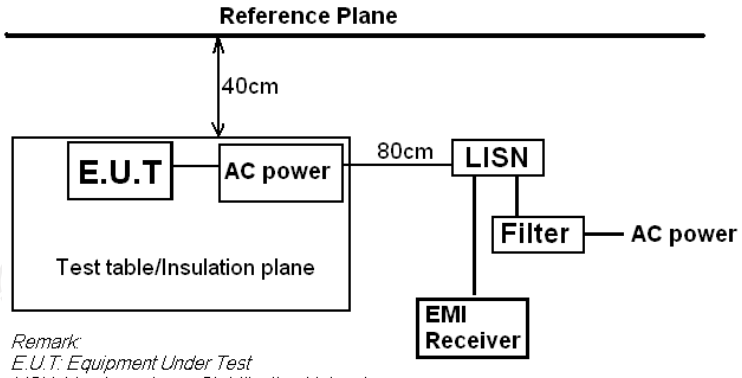
5.1. Antenna Requirement

Standard requirement:	FCC Part15 C Section 15.203
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.	
E.U.T Antenna:	
The EUT antenna is PCB antenna which permanently attached, and the best case gain of the antenna is 2.48dBi.	



5.2. Conducted Emission

5.2.1. Test Specification

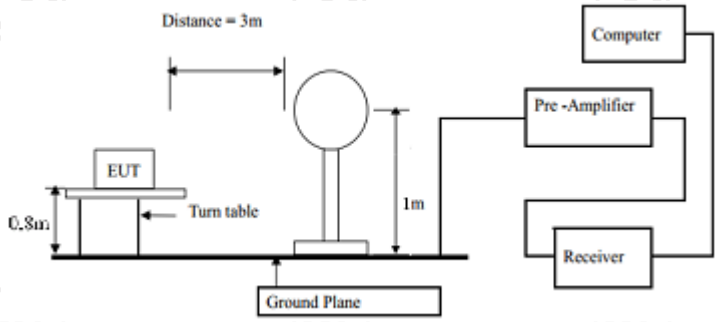
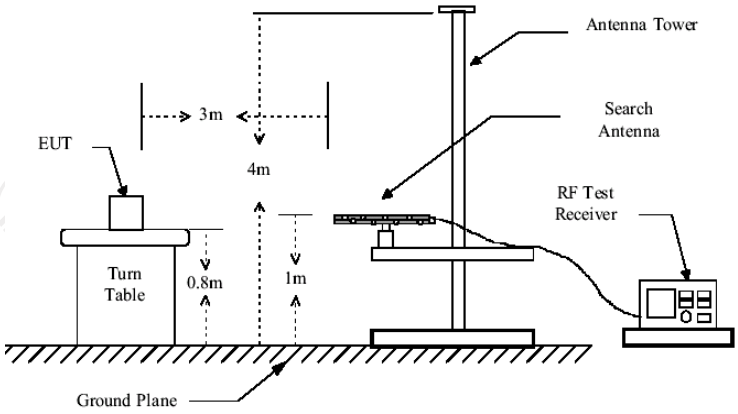
<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.207</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2020</td></tr>
<tr><td>Frequency Range:</td><td>150 kHz to 30 MHz</td></tr>
<tr><td>Receiver setup:</td><td>RBW=9 kHz, VBW=30 kHz, Sweep time=auto</td></tr>
<tr><td>Limits:</td><td>
<table>
<tr><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr>
<tr><td>Quasi-peak</td><td>Average</td></tr>
<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>
</table>
</td></tr>
<tr><td>Test Setup:</td><td> 

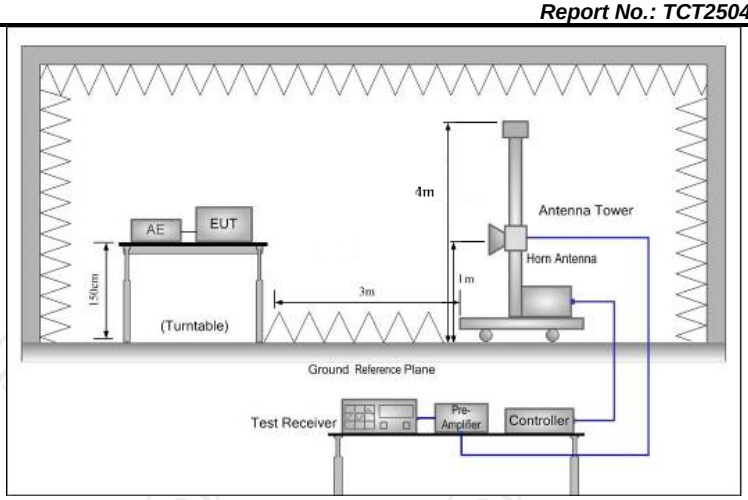
Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m</td></tr>
<tr><td>Test Mode:</td><td>Transmitting Mode</td></tr>
<tr><td>Test Procedure:</td><td>1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.
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).
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 C63.10:2020 on conducted measurement.</td></tr>
<tr><td>Test Result:</td><td>N/A; Because the EUT is powered by the battery, so the item is not applicable.</td></tr>
</table>

5.3. Radiated Emission Measurement

5.3.1. Test Specification

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2020</td></tr>
<tr><td>Frequency Range:</td><td>9 kHz to 25 GHz</td></tr>
<tr><td>Measurement Distance:</td><td>3 m</td></tr>
<tr><td>Antenna Polarization:</td><td>Horizontal & Vertical</td></tr>
<tr><td>Receiver Setup:</td><td>
<table>
<tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<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>
</table>
</td></tr>
<tr><td>Limit(Field strength of the fundamental signal):</td><td>
<table>
<tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></tr>
<tr><td rowspan="2">2400MHz-2483.5MHz</td><td>94.00</td><td>Average Value</td></tr>
<tr><td>114.00</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Limit(Spurious Emissions):</td><td>
<table>
<tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></tr>
<tr><td>0.009-0.490</td><td>2400/F(KHz)</td><td>Quasi-peak Value</td></tr>
<tr><td>0.490-1.705</td><td>24000/F(KHz)</td><td>Quasi-peak Value</td></tr>
<tr><td>1.705-30</td><td>30</td><td>Quasi-peak Value</td></tr>
<tr><td>30MHz-88MHz</td><td>40.0</td><td>Quasi-peak Value</td></tr>
<tr><td>88MHz-216MHz</td><td>43.5</td><td>Quasi-peak Value</td></tr>
<tr><td>216MHz-960MHz</td><td>46.0</td><td>Quasi-peak Value</td></tr>
<tr><td>960MHz-1GHz</td><td>54.0</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>54.0</td><td>Average Value</td></tr>
<tr><td>74.0</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Limit (band edge) :</td><td>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 Section 15.209, whichever is the lesser attenuation.</td></tr>
<tr><td>Test Procedure:</td><td>1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber in below 1GHz, 1.5m above the ground in above 1GHz. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</td></tr>
</table>

	4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
Test setup:	For radiated emissions below 30MHz  30MHz to 1GHz  Above 1GHz (The diagram below shows the test setup that is utilized to make the measurements for emission from 1GHz to the tenth harmonic of the highest fundamental frequency or to 40GHz emissions, whichever is lower.)

	
Test results:	PASS

5.3.2. Test Instruments

Radiated Emission Test Site (966)					
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Date of Cal.**	**Due Date**
EMI Test Receiver	R&S	ESCI7	100529	Jan. 21, 2025	Jan. 20, 2026
Spectrum Analyzer	R&S	FSQ40	200061	Jun. 27, 2024	Jun. 26, 2025
Pre-amplifier	SKET	LNPA_0118G-45	SK2021012102	Jan. 21, 2025	Jan. 20, 2026
Pre-amplifier	SKET	LNPA_1840G-50	SK202109203500	Jan. 21, 2025	Jan. 20, 2026
Pre-amplifier	HP	8447D	2727A05017	Jun. 27, 2024	Jun. 26, 2025
Loop antenna	Schwarzbeck	FMZB1519B	00191	Jun. 27, 2024	Jun. 26, 2025
Broadband Antenna	Schwarzbeck	VULB9163	340	Jun. 29, 2024	Jun. 28, 2025
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Jun. 29, 2024	Jun. 28, 2025
Horn Antenna	Schwarzbeck	BBHA 9170	00956	Jan. 23, 2025	Jan. 22, 2026
Coaxial cable	SKET	RE-03-D	/	Jun. 27, 2024	Jun. 26, 2025
Coaxial cable	SKET	RE-03-M	/	Jun. 27, 2024	Jun. 26, 2025
Coaxial cable	SKET	RE-03-L	/	Jun. 27, 2024	Jun. 26, 2025
Coaxial cable	SKET	RE-04-D	/	Jun. 27, 2024	Jun. 26, 2025
Coaxial cable	SKET	RE-04-M	/	Jun. 27, 2024	Jun. 26, 2025
Coaxial cable	SKET	RE-04-L	/	Jun. 27, 2024	Jun. 26, 2025
Antenna Mast	Keleto	RE-AM	/	/	/
EMI Test Software	EZ_EMC	FA-03A2 RE+	1.1.4.2	/	/

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5.3.3. Test Data

Field Strength of Fundamental

Frequency (MHz)	Emission PK (dBuV/m)	Horizontal /Vertical	Limits PK (dBuV/m)	Margin (dB)
2402	80.48	H	114	-33.52
2402	67.61	V	114	-46.39
2440	88.53	H	114	-25.47
2440	71.81	V	114	-42.19
2480	87.96	H	114	-26.04
2480	71.23	V	114	-42.77

Frequency (MHz)	Emission AV (dBuV/m)	Horizontal /Vertical	Limits AV (dBuV/m)	Margin (dB)
2402	80.04	H	94	-13.96
2402	67.10	V	94	-26.90
2440	87.98	H	94	-6.02
2440	71.38	V	94	-22.62
2480	87.52	H	94	-6.48
2480	70.74	V	94	-23.26

Spurious Emissions

Frequency Range (9 kHz-30MHz)

Frequency (MHz)	Level@3m (dBμV/m)	Limit@3m (dBμV/m)
--	--	--
--	--	--
--	--	--
--	--	--

Note: *1. Emission Level=Reading+ Cable loss-Antenna factor-Amp factor.*

2. The emission levels are 20 dB below the limit value, which are not reported. It is deemed to comply with the requirement.

3. For fundamental frequency, RBW >20dB BW , VBW>=RBW, PK detector is for PK value, RMS detector is for AV value.

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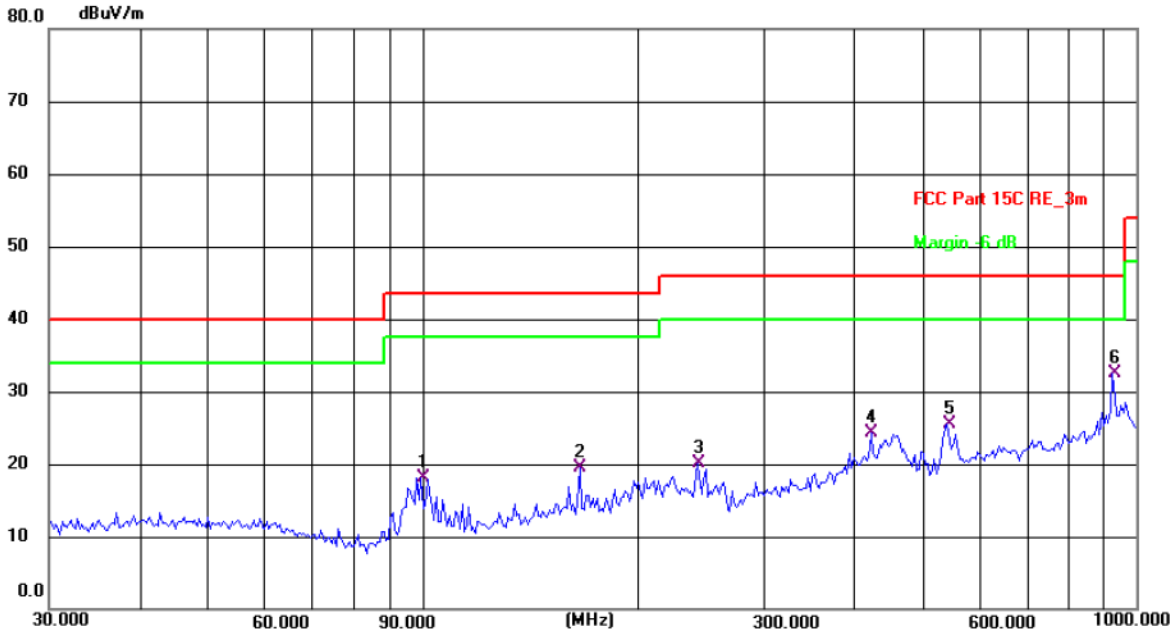
Frequency Range (30MHz-1GHz)

Horizontal:

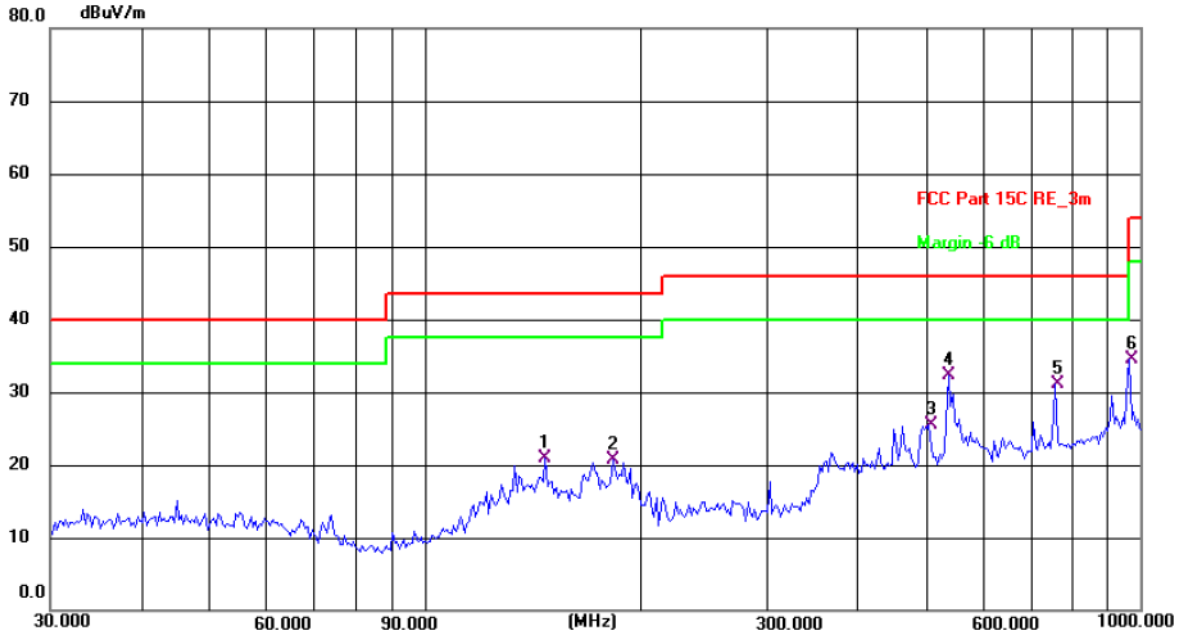


Site: 3m Anechoic Chamber1 Polarization: *Horizontal* Temperature: 24.8(C) Humidity: 51 %

Limit: FCC Part 15C RE_3m Power: DC 1.5V(1*AA battery)

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	99.5281	33.54	-15.46	18.08	43.50	-25.42	QP	P	
2	166.0680	31.04	-11.54	19.50	43.50	-24.00	QP	P	
3	242.5253	33.98	-13.80	20.18	46.00	-25.82	QP	P	
4	425.0280	32.89	-8.68	24.21	46.00	-21.79	QP	P	
5	543.2742	32.23	-6.81	25.42	46.00	-20.58	QP	P	
6 *	925.7563	33.26	-0.77	32.49	46.00	-13.51	QP	P	

Vertical:



Site: 3m Anechoic Chamber1 Polarization: *Vertical* Temperature: 24.8(C) Humidity: 51 %

Limit: FCC Part 15C RE_3m Power: DC 1.5V(1*AA battery)

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	147.4036	32.57	-11.60	20.97	43.50	-22.53	QP	P	
2	183.2005	34.53	-13.84	20.69	43.50	-22.81	QP	P	
3	506.4791	33.16	-7.59	25.57	46.00	-20.43	QP	P	
4 *	539.4775	39.26	-6.89	32.37	46.00	-13.63	QP	P	
5	760.7036	34.59	-3.41	31.18	46.00	-14.82	QP	P	
6	965.5421	34.53	-0.07	34.46	54.00	-19.54	QP	P	

Note: *Measurements were conducted in all channels (high, middle, low), and the worst case (Middle channel) was submitted only.*

Above 1GHz

Low channel: 2402MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBµV)	AV reading (dBuV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBµV/m)	AV limit (dBµV/m)	Margin (dB)
					Peak (dBµV/m)	AV (dBµV/m)			
4804	H	56.02	---	-9.51	46.51	---	74	54	-7.49
7206	H	46.33	---	-1.41	44.92	---	74	54	-9.08
---	---	---	---	---	---	---	---	---	---
4804	V	56.49	---	-9.51	46.98	---	74	54	-7.02
7206	V	46.71	---	-1.41	45.30	---	74	54	-8.70
---	---	---	---	---	---	---	---	---	---

Middle channel: 2440MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBµV)	AV reading (dBµV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBµV/m)	AV limit (dBµV/m)	Margin (dB)
					Peak (dBµV/m)	AV (dBµV/m)			
4880	H	55.67	---	-9.36	46.31	---	74	54	-7.69
7320	H	46.02	---	-1.15	44.87	---	74	54	-9.13
---	---	---	---	---	---	---	---	---	---
4880	V	57.16	---	-9.36	47.80	---	74	54	-6.20
7320	V	47.80	---	-1.15	46.65	---	74	54	-7.35
---	---	---	---	---	---	----	---	---	---

High channel: 2480MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBµV)	AV reading (dBµV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBµV/m)	AV limit (dBµV/m)	Margin (dB)
					Peak (dBµV/m)	AV (dBµV/m)			
4960	H	57.17	---	-9.20	47.97	---	74	54	-6.03
7440	H	46.44	---	-0.96	45.48	---	74	54	-8.52
---	---	---	---	---	---	---	---	---	---
4960	V	56.36	---	-9.20	47.16	---	74	54	-6.84
7440	V	45.65	---	-0.96	44.69	---	74	54	-9.31
---	---	---	---	---	---	---	---	---	---

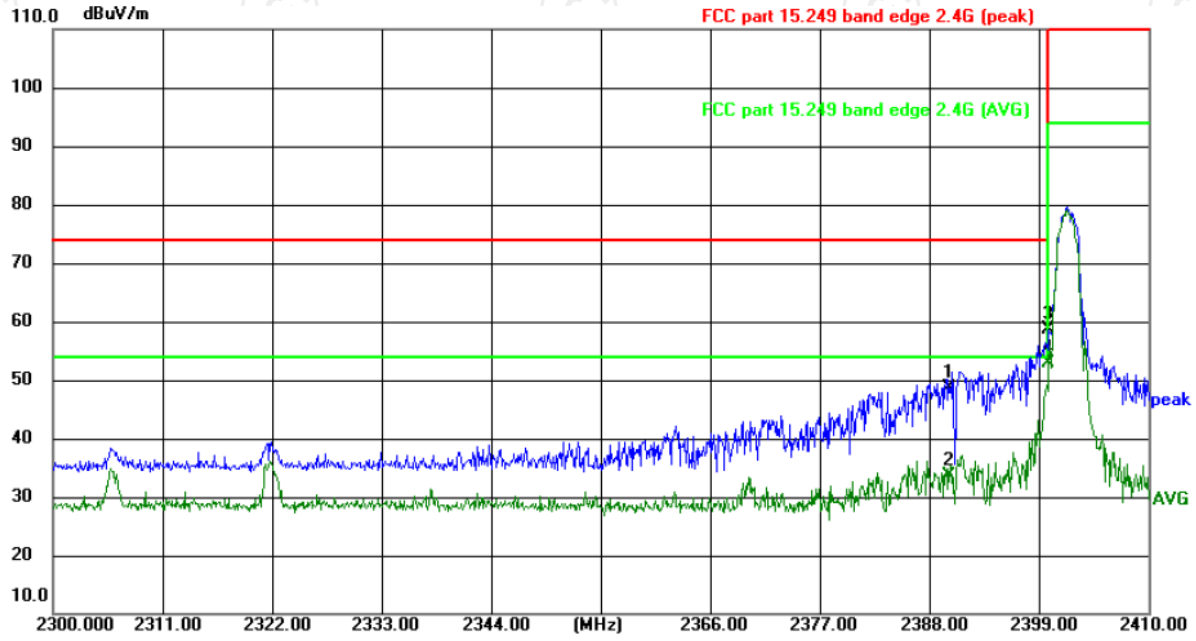
Note:

1. *Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier*
2. *Margin (dB) = Emission Level (Peak) (dBµV/m)-Average limit (dBµV/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.*
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.*

Band Edge Requirement

Lowest channel 2402:

Horizontal:



Site: 3m Anechoic Chamber Polarization: *Horizontal* Temperature: 24.1(℃) Humidity: 59 %

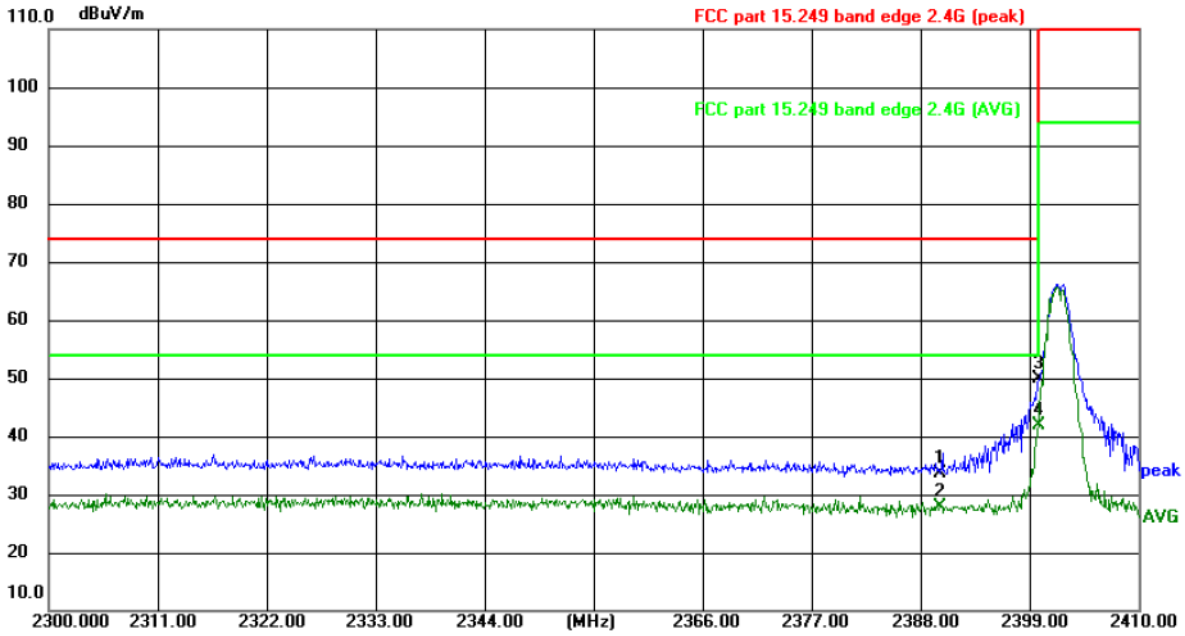
Limit: FCC part 15.249 band edge 2.4G (peak) Power:DC 1.5V(1*AA battery)

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBµV)	AV reading (dBuV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBµV/m)	AV limit (dBµV/m)	Margin (dB)
					Peak (dBµV/m)	AV (dBµV/m)			
2390.000	H	64.77	---	-16.26	48.51	---	74	54	-25.49
2390.000	H	---	49.88	-16.26	---	33.62	74	54	-20.38
2400.000	H	75.05	---	-16.35	58.70	---	74	54	-15.30
2400.000	H	---	69.35	-16.35	---	53.00	74	54	-1.00

Note:

1.Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier
2.Margin (dB) = Emission Level (Peak/AVG) (dBµV/m)- limit (Peak/AVG) (dBµV/m))

Vertical:



Site: 3m Anechoic Chamber Polarization: *Vertical* Temperature: 24.1(℃) Humidity: 59 %

Limit: FCC part 15.249 band edge 2.4G (peak) Power:DC 1.5V(1*AA battery)

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBµV)	AV reading (dBuV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBµV/m)	AV limit (dBµV/m)	Margin (dB)
					Peak (dBµV/m)	AV (dBµV/m)			
2390.000	V	49.87	---	-16.26	33.61	---	74	54	-40.39
2390.000	V	---	44.06	-16.26	---	27.80	74	54	-26.20
2400.000	V	66.30	---	-16.35	49.95	---	74	54	-24.05
2400.000	V	---	58.18	-16.35	---	41.83	74	54	-12.17

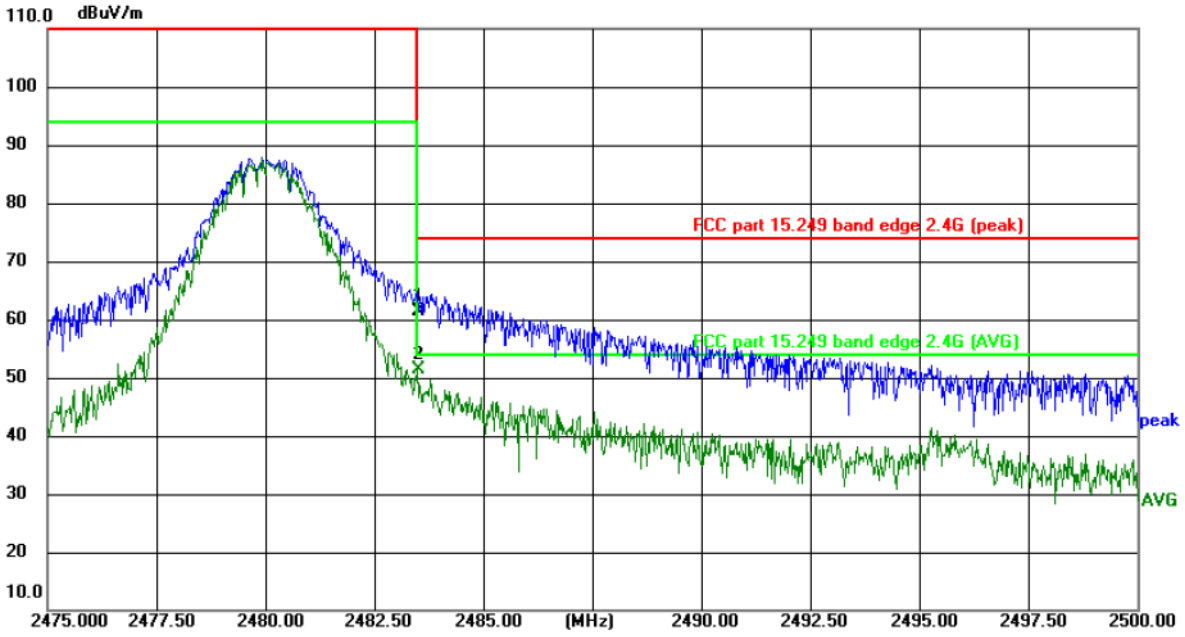
Note:

1.Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier

2.Margin (dB) = Emission Level (Peak/AVG) (dBµV/m)- limit (Peak/AVG) (dBµV/m))

Highest channel 2480:

Horizontal:



Site: 3m Anechoic Chamber Polarization: *Horizontal* Temperature: 24.1(℃) Humidity: 59 %

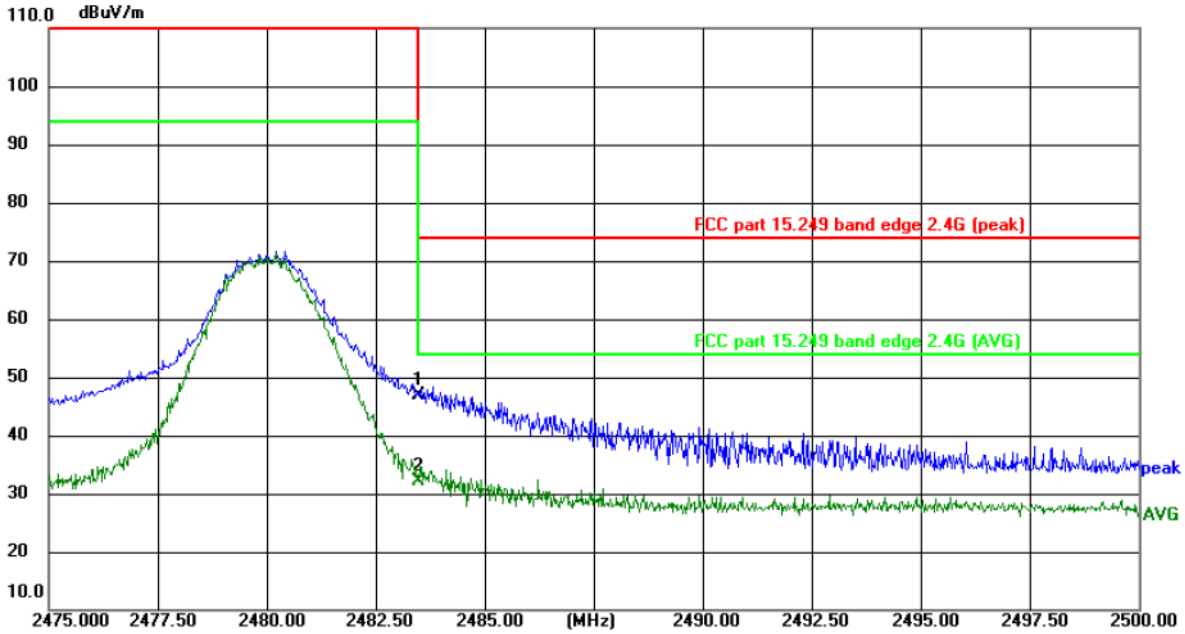
Limit: FCC part 15.249 band edge 2.4G (peak) Power:DC 1.5V(1*AA battery)

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBuV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
2483.500	H	77.21	---	-15.91	61.30	---	74	54	-12.70
2483.500	H	---	69.19	-15.91	---	51.28	74	54	-2.72

Note:

1.Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier
2.Margin (dB) = Emission Level (Peak/AVG) (dBμV/m)- limit (Peak/AVG) (dBμV/m))

Vertical:



Site: 3m Anechoic Chamber Polarization: *Vertical* Temperature: 24.1(℃) Humidity: 59 %

Limit: FCC part 15.249 band edge 2.4G (peak) Power:DC 1.5V(1*AA battery)

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBµV)	AV reading (dBuV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBµV/m)	AV limit (dBµV/m)	Margin (dB)
					Peak (dBµV/m)	AV (dBµV/m)			
2483.500	V	62.91	---	-15.91	47.00	---	74	54	-27.00
2483.500	V	---	48.07	-15.91	---	32.16	74	54	-21.84

Note:

1.Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier

2.Margin (dB) = Emission Level (Peak/AVG) (dBµV/m)- limit (Peak/AVG) (dBµV/m))

5.4. 20dB Occupied Bandwidth

5.4.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.215(c)
Test Method:	ANSI C63.10: 2020
Limit:	N/A
	1. According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT. 2. Set to the maximum power setting and enable the EUT transmit continuously. 3. Use the following spectrum analyzer settings for 20dB Bandwidth measurement. Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel; RBW≥1% of the 20 dB bandwidth; VBW≥RBW; Sweep = auto; Detector function = peak; Trace = max hold. 4. Measure and record the results in the test report.
Test setup:	
Test Mode:	Transmitting mode with modulation
Test results:	PASS

5.4.2. Test Instruments

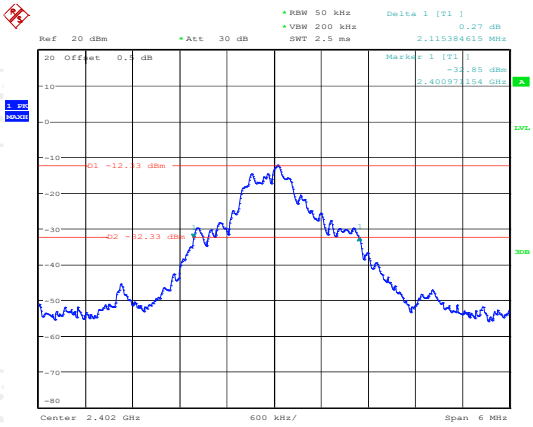
Equipment	Manufacturer	Model No.	Serial Number	Date of Cal.	Due Date
Spectrum Analyzer	R&S	FSU	200054	Jun. 27, 2024	Jun. 26, 2025

5.4.3. Test data

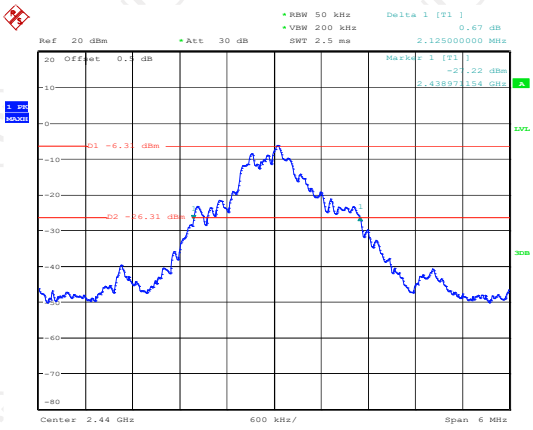
Test Channel	20dB Occupy Bandwidth (kHz)	Limit	Conclusion
Lowest	2115.38	---	PASS
Middle	2125.00	---	PASS
Highest	2125.00	---	PASS

Test plots as follows:

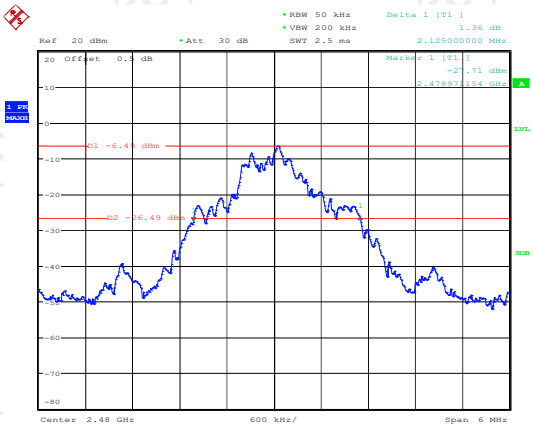
Lowest channel



Middle channel



Highest channel



Appendix B: Photographs of Test Setup

Please refer to document Appendix No.: TCT250422E027-A

Appendix C: Photographs of EUT

Please refer to document Appendix No.: TCT250422E027-B & TCT250422E027-C

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