

Test Report

Applicant : PEAG, LLC dba JLab Audio
Address : 5927 LANDAU CT, Carlsbad, CA 92008, United States
Product Name : Wireless Mouse
Brand Mark : 
Model : Midnight Wireless Mouse
Series model : Midnight Mouse
Report Number : BLA-EMC-202511-A3303
FCC ID : 2AHYV-MNWM
Date of Receipt : Nov. 10,2025
Date of Test : Nov. 10,2025 to Dec. 24,2025
Test Standard : 47 CFR Part 15, Subpart C 15.249
Test Result : Pass

Compiled by:

charlie

Review by:

Xavier

Approved by:

Jing Zheng

Issued Date: Dec. 24, 2025



BlueAsia of Technical Services(Shenzhen) Co.,Ltd.

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Shenzhen, Guangdong Province, China



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Revise Record

Version No.	Date	Description
01	Dec. 24,2025	Original

1 General information

1.1 General information

Applicant	PEAG, LLC dba JLab Audio
Address	5927 LANDAU CT, Carlsbad, CA 92008, United States
Manufacturer	GuangDong Simpreal Intelligent Technology Co., Ltd
Address	Room 2408, JiaHong ZhenXing DaSha, DongGuan Avenue #13, DongCheng District, DongGuan City, GuangDong Province, P.R. China
Factory	GuangDong Simpreal Intelligent Technology Co., Ltd
Address	Room 2408, JiaHong ZhenXing DaSha, DongGuan Avenue #13, DongCheng District, DongGuan City, GuangDong Province, P.R. China

1.2 General description of EUT

Product name	Wireless Mouse
Model no.	Midnight Wireless Mouse
Series model	Midnight Mouse
Differences of Series model	Their identical in circuitry and electrical, mechanical and physical construction; the only differences are the model no. for trading purpose.
Operation Frequency	2405MHz-2475MHz
Modulation Type	GFSK
Number of Channels	3
Antenna Type	PCB antenna
Antenna Gain	-0.71dBi(Provided by customer)
Max. Field Strength(PK)	100.79dBuV/m@3m
Max. Field Strength(AV)	87.79dBuV/m@3m
Power supply or adapter information	DC3.7V
Hardware version	VER2.0
Software version	V1.18
Engineer sample no.	BLA-EMC-202511-A33
<i>Note: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.</i>	

2 Test summary

No.	Test item	FCC Part Section(s)	Test Method(Clause)	Result
1	Antenna Requirement	§15.203	N/A	Pass
2	Conducted Emissions at AC Power Line (150kHz-30MHz)	§15.207	ANSI C63.10-2020+Cor.1-2023 Clause 6.2	Pass
3	20dB Bandwidth	N/A	ANSI C63.10-2020+Cor.1-2023 Section 6.9	Pass
4	Field Strength of the Fundamental Signal	§15.249(a)	ANSI C63.10-2020+Cor.1-2023 Clause 6.5&6.6	Pass
5	Radiated Emissions	§15.249 (d) §15.209	ANSI C63.10-2020+Cor.1-2023 Section 6.4,6.5,6.6	Pass
6	Restricted Band Around Fundamental Frequency	§15.205 §15.209	ANSI C63.10-2020+Cor.1-2023 Section 6.4,6.5,6.6	Pass

N/A: Not Applicable

3 Test Configuration

3.1 Test mode

Test Mode ^{Note 1}	Description
TX	Keep the EUT in continuously transmitting with modulation mode.
RX	Keep the EUT in receiving mode
TX Low channel	Keep the EUT in continuously transmitting mode in low channel
TX middle channel	Keep the EUT in continuously transmitting mode in middle channel
TX high channel	Keep the EUT in continuously transmitting mode in high channel

Note 1: The EUT was configured to measure its highest possible emission and/or immunity level. The test modes were adapted according to the operation manual for use; the EUT was operated in the engineering mode Note 2 to fix the TX or Rx frequency that was for the purpose of the measurements.

Note 2: Special software is used. The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

Power level setup in software			
Mode	Channel	Frequency (MHz)	Soft Set
GFSK	CH0	2405	TX level :default
	CH1	2445	
	CH2	2475	

3.2 Operation Frequency each of channel

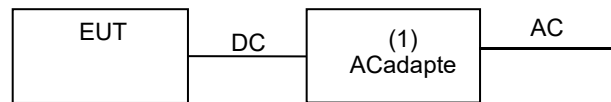
Channel	Frequency	Channel	Frequency
0	2405MHz	2	2475MHz
1	2445MHz	/	/

3.3 Test channel

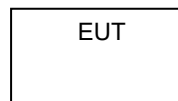
Channel	Frequency
The lowest channel	2405MHz
The middle channel	2445MHz
The Highest channel	2475MHz

3.4 Configuration diagram of EUT

AC conducted emission:

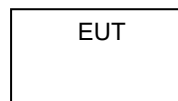


Radiated emission:



Note: see test photographs attached in APPENDIX A for the actual connections between Product and support equipment.

RF Test:



Support equipment:

Name	Device type	Brand	Mode	Series No	Remark
(1)	AC Adapter	UGREEN	CD112	N/A	N/A

3.5 Auxiliary equipment

Device Type	Manufacturer	Model Name	Serial No.	Remark
AC Adapter	UGREEN	CD112	N/A	From lab

Note:“--” mean no any auxiliary device during testing.

3.6 Test environment

Environment	Temperature	Voltage
Normal	25°C	DC 3.7V

4 Laboratory information

4.1 Laboratory and accreditations

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

FCC	Company name:	BlueAsia of Technical Services(Shenzhen) Co., Ltd.
	Address:	Building C, No. 107, Shihuan Road, Shiyan Sub-District, Baoan District, Shenzhen, Guangdong Province, China
	A2LA Cert. No.:	5071.01
	FCC Designation No.:	CN1252
	Test Firm Registration Number:	923526
ISED	Company name:	BlueAsia of Technical Services(Shenzhen) Co., Ltd.
	Address:	No.41, South of Beihuan Road, Shangwu Community, Shiyan Subdistrict, Bao'an District, Shenzhen, Guangdong, China
	ISED CAB identifier No.:	CN0028
	Company Number:	24243
Telephone:		+86-755-28682673
FAX:		+86-755-28682673

4.2 Measurement uncertainty

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=1.96$.

Parameter	Expanded Uncertainty
Radiated Emission(9kHz-30MHz)	$\pm 4.34\text{dB}$
Radiated Emission(30Mz-1000MHz)	$\pm 4.24\text{dB}$
Radiated Emission(1GHz-18GHz)	$\pm 4.68\text{dB}$
Radiated Emission(18GHz-40GHz)	$\pm 4.78\text{dB}$
AC Power Line Conducted Emission(150kHz-30MHz)	$\pm 3.45\text{dB}$
Occupied Channel Bandwidth	$\pm 5\%$
RF output power, conducted	$\pm 1.5\text{ dB}$
Power Spectral Density, conducted	$\pm 3.0\text{ dB}$
Unwanted Emissions, conducted	$\pm 3.0\text{ dB}$
Temperature	$\pm 3\text{ }^{\circ}\text{C}$
Supply voltages	$\pm 3\%$
Time	$\pm 5\%$

5 Test equipment

Radiated Spurious Emissions (Below 1GHz)

Equipment	Name	Model	Manufacture	S/N	Cal. Date	Due. Date
BLA-EMC-002-01	Anechoic chamber	9*6*6 chamber	SKET	N/A	2024/3/27	2027/3/26
BLA-EMC-002-02	Control room	966 control room	SKET	N/A	2024/3/27	2027/3/26
BLA-EMC-009	EMI receiver	ESR7	R&S	101199	2025/08/05	2026/08/04
BLA-EMC-043	Loop antenna	FMZB1519B	Schwarzbeck	00102	2024/06/29	2026/06/28
BLA-EMC-065	Broadband antenna	VULB9168	Schwarzbeck	01065P	2024/06/29	2026/06/27
BLA-XC-01	Coaxial Cable	N/A	BlueAsia	V01	N/A	N/A
BLA-XC-02	Coaxial Cable	N/A	BlueAsia	V02	N/A	N/A

Radiated Spurious Emissions (Above 1GHz)

Equipment	Name	Model	Manufacture	S/N	Cal. Date	Due. Date
BLA-EMC-001-01	Anechoic chamber	9*6*6 chamber	SKET	N/A	2023/11/16	2026/11/15
BLA-EMC-001-02	Control Room	966 control room	SKET	N/A	2023/11/16	2026/11/15
BLA-EMC-008	Spectrum	FSP40	R&S	100817	2025/08/05	2026/08/04
BLA-EMC-013	Horn Antenna	BBHA9120D	Schwarzbeck	01892	2024/06/29	2026/06/28
BLA-EMC-014	Amplifier	PA_000318G-45	SKET	PA2018043003	2025/08/05	2026/08/04
BLA-EMC-046	Filter bank	2.4G/5G Filter bank	SKET	N/A	2025/06/09	2026/06/08
BLA-EMC-061	Receiver	ESPI7	R&S	101477	2025/06/09	2026/06/08
BLA-EMC-066	Amplifier	LNPA_30M01G-30	SKET	SK2021060801	2025/06/09	2026/06/08
BLA-EMC-086	Amplifier	LNPA_18G40G-50dB	SKET	SK2022071301	2025/06/09	2026/06/08
BLA-EMC-087	Horn Antenna	BBHA 9170	Schwarzbeck	1106	2024/06/29	2026/06/28
BLA-XC-03	Coaxial Cable	N/A	BlueAsia	V03	N/A	N/A
BLA-XC-04	Coaxial Cable	N/A	BlueAsia	V04	N/A	N/A

Conducted emissions at AC power line (150 kHz-30 MHz)

Equipment	Name	Model	Manufacture	S/N	Cal. Date	Due. Date
BLA-EMC-003-001	Shield room	8*3*3	SKET	N/A	2023/11/16	2026/11/15
BLA-EMC-009	EMI receiver	ESR7	R&S	101199	2025/08/05	2026/08/04
BLA-EMC-011	LISN	ENV216	R&S	101372	2025/08/05	2026/08/04
BLA-EMC-033	Impedance transformer	DC-2GHz	DFXP	N/A	2025/06/09	2026/06/08
BLA-EMC-041	LISN	AT166-2	ATTEN	AKK1806000003	2025/08/05	2026/08/04
BLA-EMC-045	Impedance stable network	ISNT8-cat 6	TESEQ	53580	2025/08/05	2026/08/04
BLA-EMC-095	Single-channel vehicle artificial power network	NNBM 8124	Schwarzbeck	01045	2025/06/09	2026/06/08
BLA-EMC-096	Single-channel vehicle artificial power network	NNBM 8124	Schwarzbeck	01075	2025/06/09	2026/06/08
BLA-XC-05	Coaxial Cable	N/A	BlueAsia	V05	N/A	N/A

RF conducted

Equipment	Name	Model	Manufacture	S/N	Cal. Date	Due. Date
BLA-EMC-003-003	Shield room	5*3*3	SKET	N/A	2023/11/16	2026/11/15
BLA-EMC-016	Signal Generator	N5182A	Agilent	MY52420567	2025/06/09	2026/06/08
BLA-EMC-038	Spectrum	N9020A	Agilent	MY49100060	2025/08/05	2026/08/04
BLA-EMC-042	Power sensor	RPR3006 W	DARE	14I00889SN042	2025/08/05	2026/08/04
BLA-EMC-044	Radio communication tester	CMW500	R&S	132429	2025/08/05	2026/08/04
BLA-EMC-064	Signal Generator	N5182B	KEYSIGHT	MY58108892	2025/06/09	2026/06/08
BLA-EMC-079	Spectrum	N9020A	Agilent	MY54420161	2025/08/05	2026/08/04
BLA-EMC-088	Audio Analyzer	ATS-1	Audio Precision	ATS141094	2025/06/09	2026/06/08
BLA-EMC-100	Digital Radio Tester	RWC2010	Redwoodcomm	RWC20102490304	2025/06/09	2026/06/08

Test Software Record

Software No.	Software Name	Manufacture	Software version	Test site
BLA-EMC-S001	EZ-EMC	EZ	EEMC-3A1+	RE
BLA-EMC-S002	EZ-EMC	EZ	EEMC-3A1+	RE
BLA-EMC-S003	EZ-EMC	EZ	EEMC-3A1+	CE
BLA-EMC-S010	MTS 8310	MW	2.0.0.0	RF

6 Test result

6.1 Antenna requirement

Test Standard	47 CFR Part 15, Subpart C 15.249
Test Method	N/A

6.1.1 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 an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of a so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT antenna:

The antenna is PCB Antenna The best case gain of the antenna is -0.71dBi

6.2 Conducted emissions at AC power line (150 kHz-30 MHz)

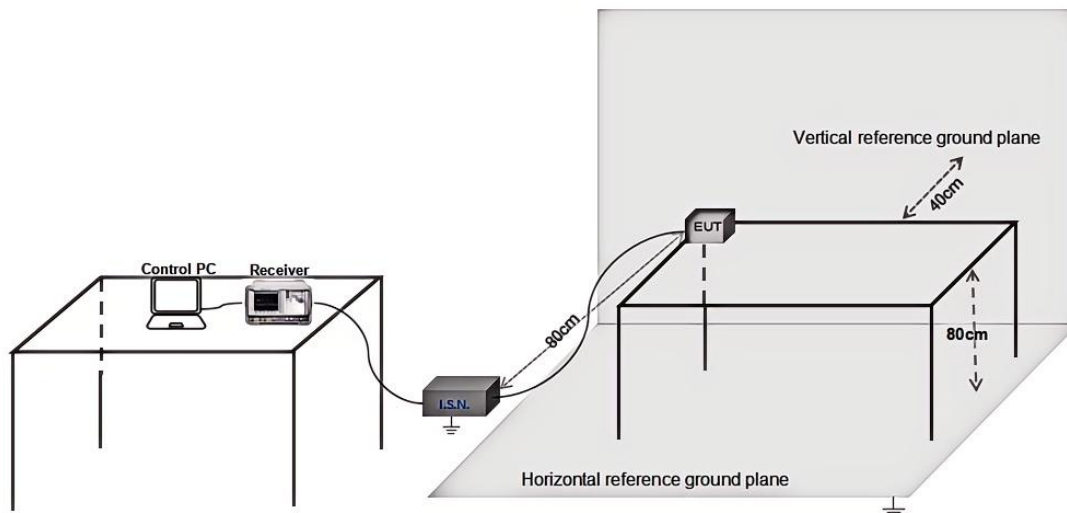
Test Standard	47 CFR Part 15, Subpart C 15.249
Test Method	ANSI C63.10-2020+Cor.1-2023 Section 6.2
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX

6.2.1 Limit

Frequency of emission(MHz)	Conducted limit(dBμV)	
	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.

6.2.2 Test setup



Description of test setup connection:

- Connect the control PC to the receiver through a USB to GPIB cable;
- The receiver is connected to the LISN through a coaxial line;
- Connect the power port of LISN to the EUT.

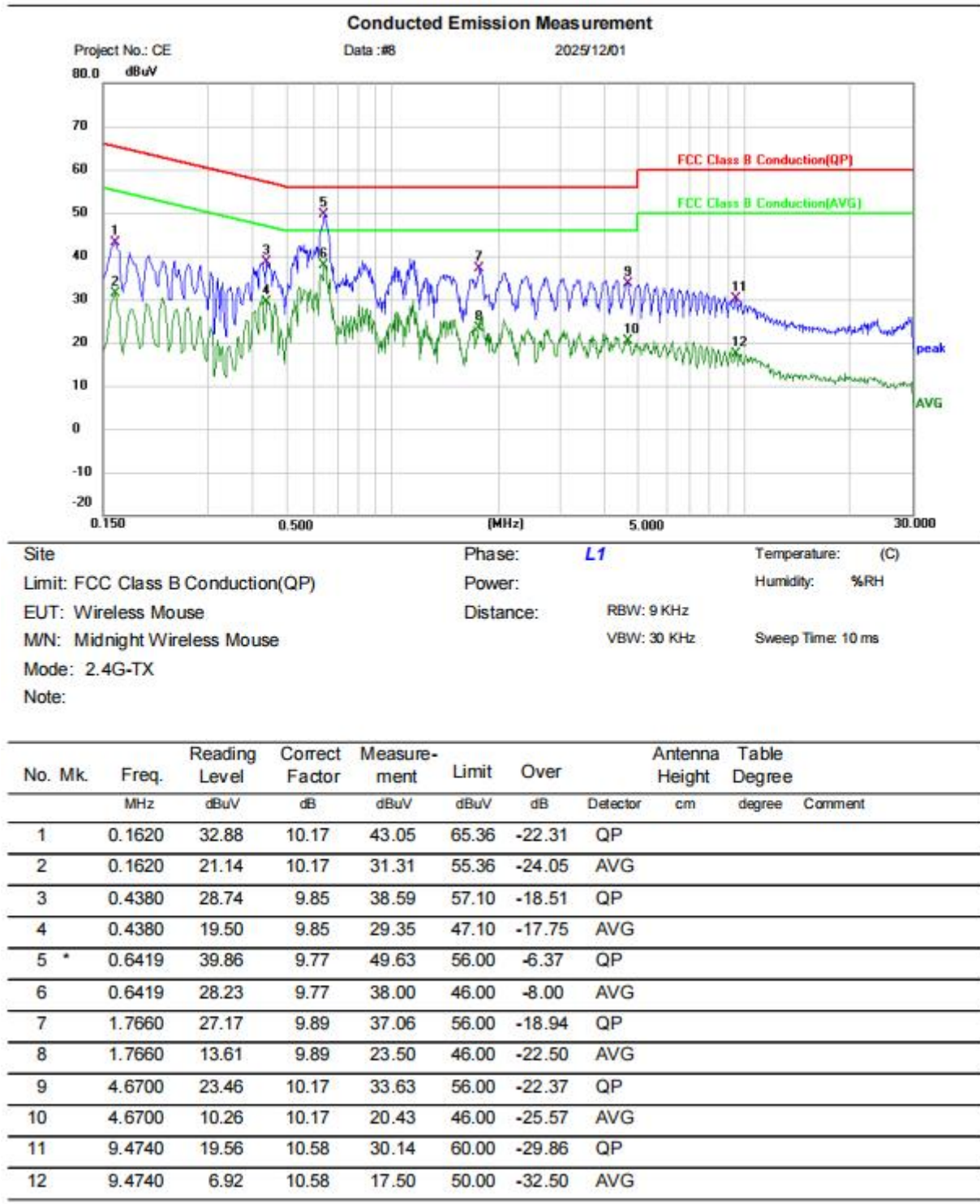
6.2.3 Procedure

- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50H + 5ohm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
- 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
- 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
- 5) 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 on conducted measurement.

LISN=Read Level+ Cable Loss+ LISN Factor

6.2.4 Test data

[Test mode: TX]; [Line: Line];[Power:AC120V/60Hz]



Test Result: Pass

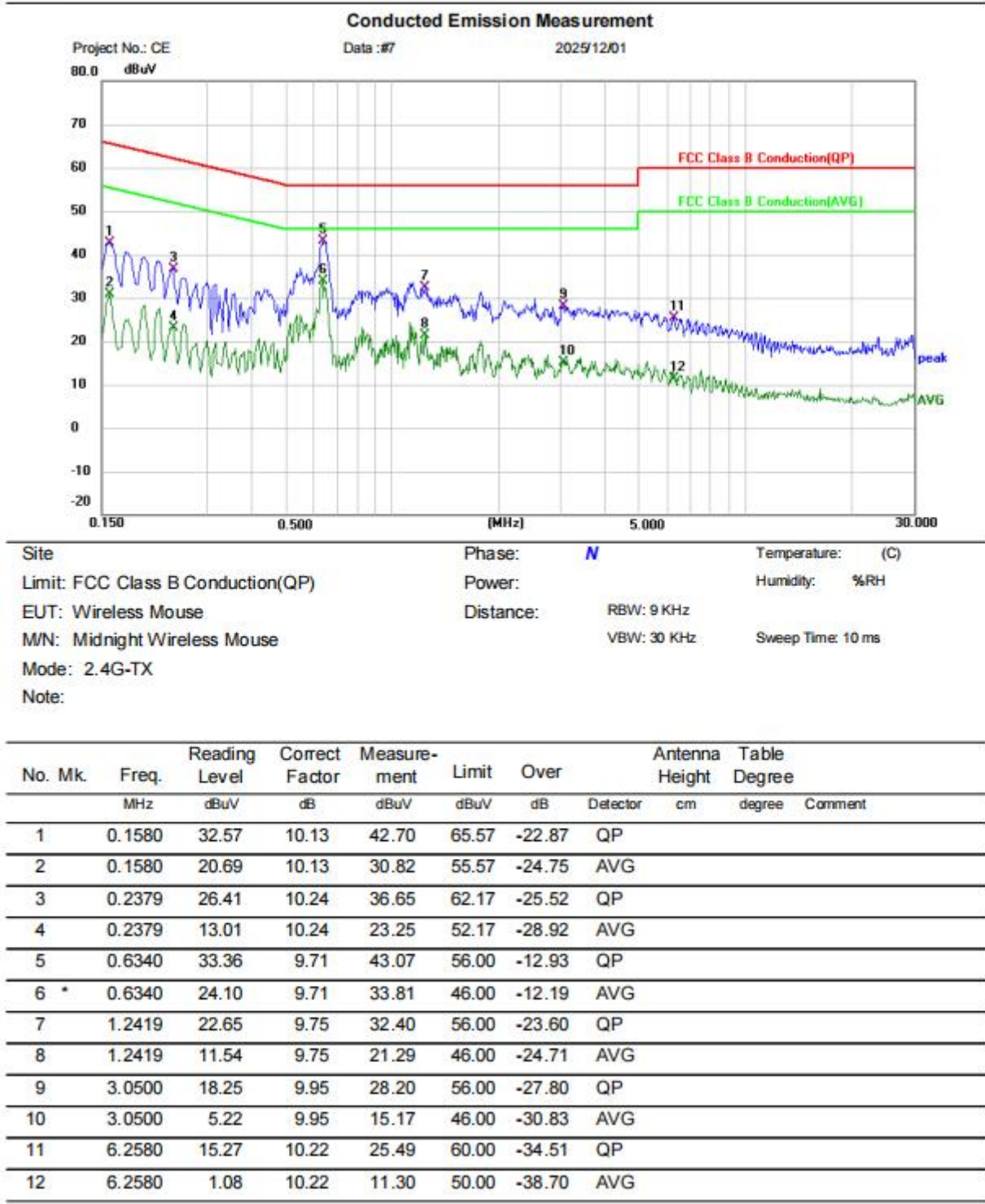
BlueAsia of Technical Services (Shenzhen) Co., Ltd.

Tel: +86-755-23059481

Email: marketing@cblueasia.com www.cblueasia.com

Version:v1.2

[Test mode: TX]; [Line: Neutral];[Power:AC120V/60Hz]



Test Result: Pass

tests have been conducted low, medium and high channels. Only the worst low channels mode was reported.

6.3 Field strength of the fundamental signal

Test Standard	47 CFR Part 15, Subpart C 15.249(a)
Test Method	ANSI C63.10-2020+Cor.1-2023 Section 6.5&6.6
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX

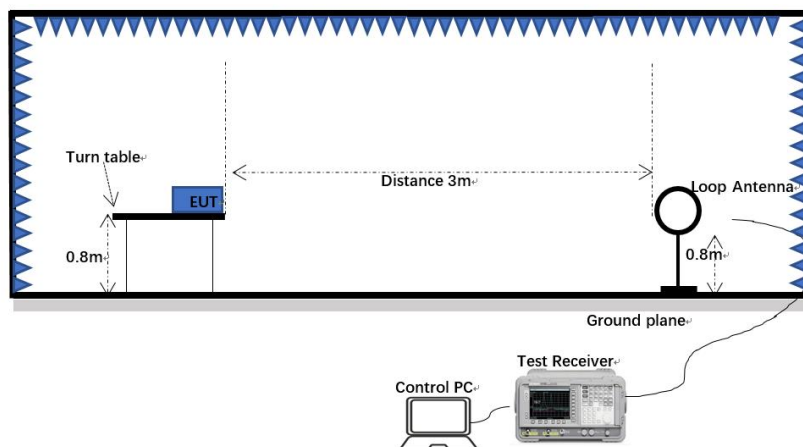
6.3.1 Limit

Fundamental frequency(MHz)	Field strength of fundamental(dBuV/m)	Field strength of harmonics(dBuV/m)
902-928	94	54
2400-2483.5	94	54
5725-5875	94	54
24000-24250	108	68

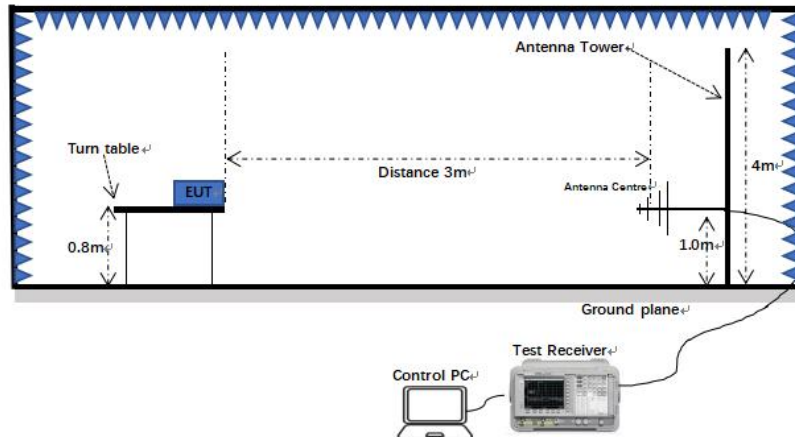
Remark: The frequencies above 1000MHz are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

6.3.2 Test setup

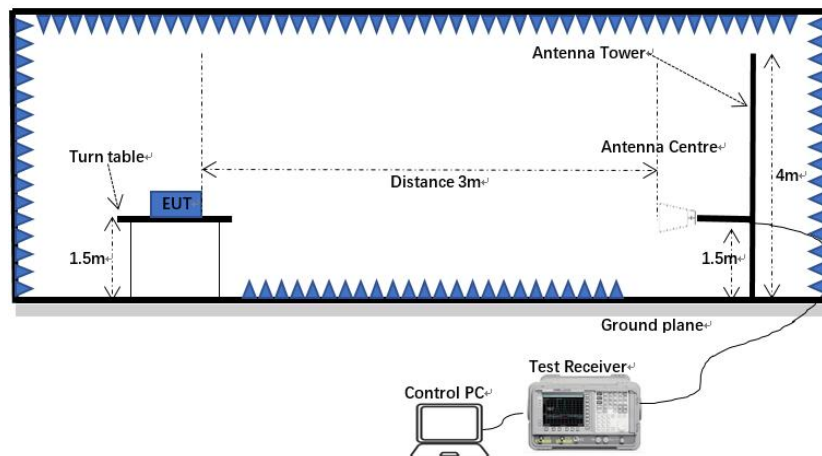
Below 1GHz:



30MHz-1GHz:



Above 1GHz:



6.3.3 Procedure

- For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum

reading.

- f) The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g) 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.
- h) Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i) The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j) Repeat above procedures until all frequencies measured was complete.
- k) $\text{Level (dB}\mu\text{V/m)} = \text{Reading Level(dBuV)} + \text{Correct Factor (dB)}$
- l) SA setting: RBW=1MHz, VBW=3MHz, PK detector is for PK value ,RMS detector is for AV value.

6.3.4 Test data

Peak value

Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Level (dB μ V/m)	Limit (dB μ V/m)	Over Limit (dB)	Antenna Polaxis
2405	87.24	-2.41	84.83	114	-29.17	H
2405	101.2	-2.41	98.79	114	-15.21	V
2445	84.66	-2.69	81.97	114	-32.03	H
2445	103.19	-2.69	100.5	114	-13.5	V
2475	83.89	-2.87	81.02	114	-32.98	H
2475	103.66	-2.87	100.79	114	-13.21	V

Average value

Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Level (dB μ V/m)	Limit (dB μ V/m)	Over Limit (dB)	Antenna Polaxis
2405	81.44	-2.41	79.03	94	-14.97	H
2405	90.2	-2.41	87.79	94	-6.21	V
2445	76.93	-2.69	74.24	94	-19.76	H
2445	90.35	-2.69	87.66	94	-6.34	V
2475	76.99	-2.87	74.12	94	-19.88	H
2475	90.34	-2.87	87.47	94	-6.53	V

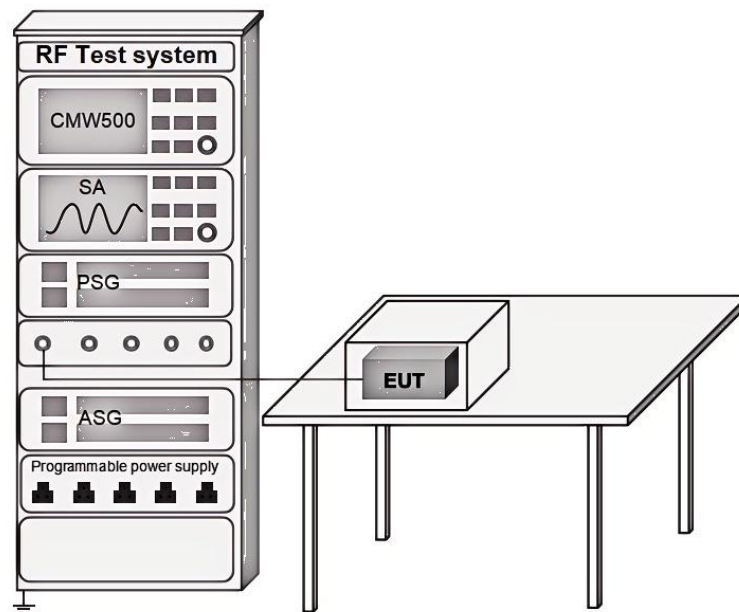
6.4 20dB bandwidth

Test Standard	47 CFR Part 15, Subpart C 15.249
Test Method	ANSI C63.10-2020+Cor.1-2023 Section 6.9
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX

6.4.1 Limit

N/A

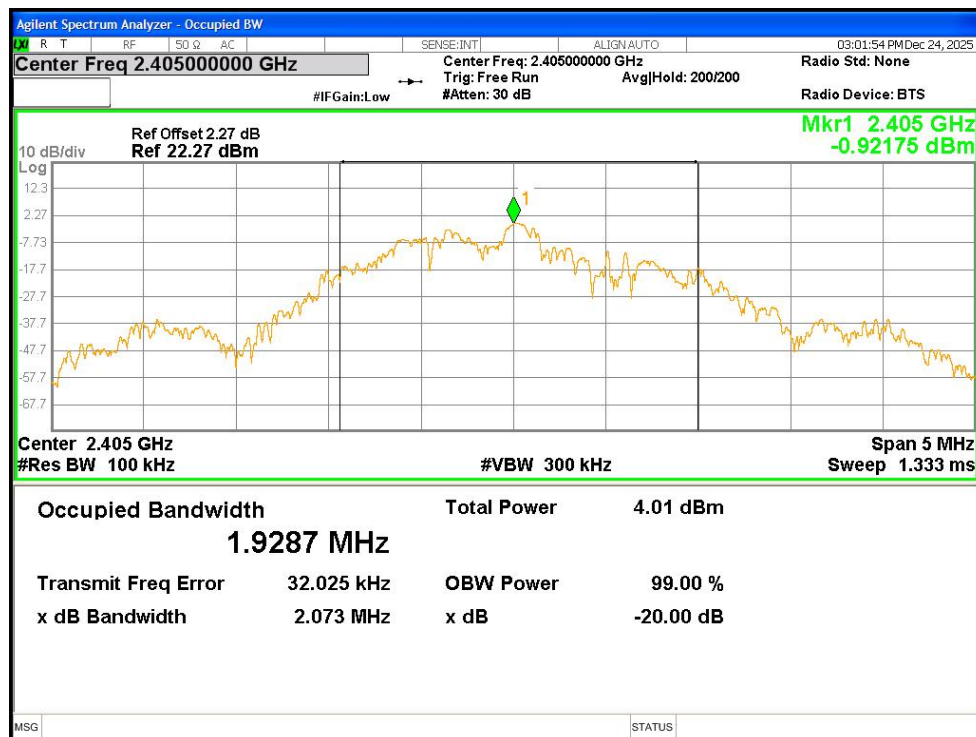
6.4.2 Test setup



6.4.3 Test data

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Verdict
NVNT	GFSK	2405	Ant1	2.073	Pass
NVNT	GFSK	2445	Ant1	2.099	Pass
NVNT	GFSK	2475	Ant1	2.126	Pass

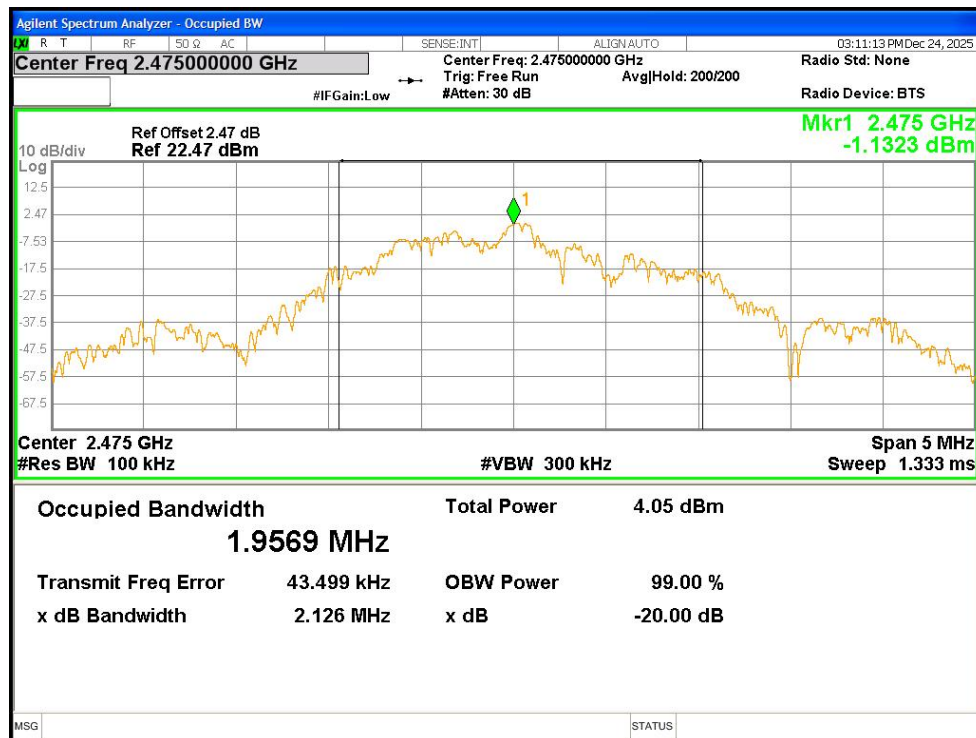
-20dB Bandwidth NVNT GFSK 2405MHz Ant1



-20dB Bandwidth NVNT GFSK 2445MHz Ant1



-20dB Bandwidth NVNT GFSK 2475MHz Ant1



6.5 Radiated spurious emissions

Test Standard	47 CFR Part 15, Subpart C 15.249(d)
Test Method	ANSI C63.10-2020+Cor.1-2023 Section 6.4,6.5,6.6
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX

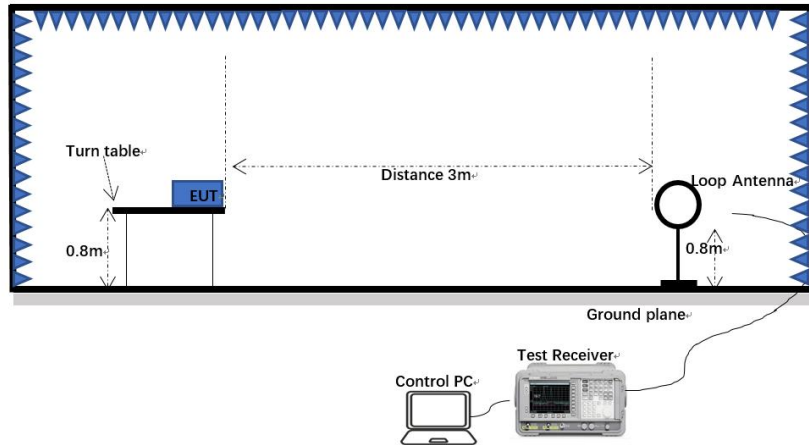
6.5.1 Limit

Frequency(MHz)	Field strength (microvolts/meter)	Limit (dBuV/m)	Detector	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	40.0	QP	3
88-216	150	43.5	QP	3
216-960	200	46.0	QP	3
960-1000	500	54.0	QP	3
Above 1000	500	54.0	AV	3

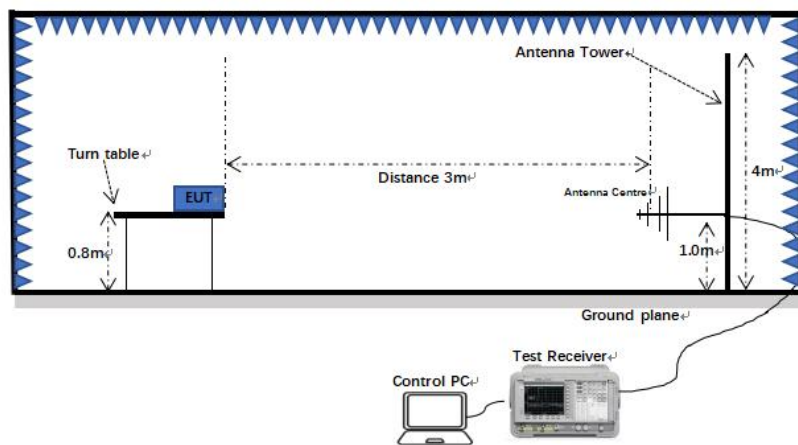
Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

6.5.2 Test setup

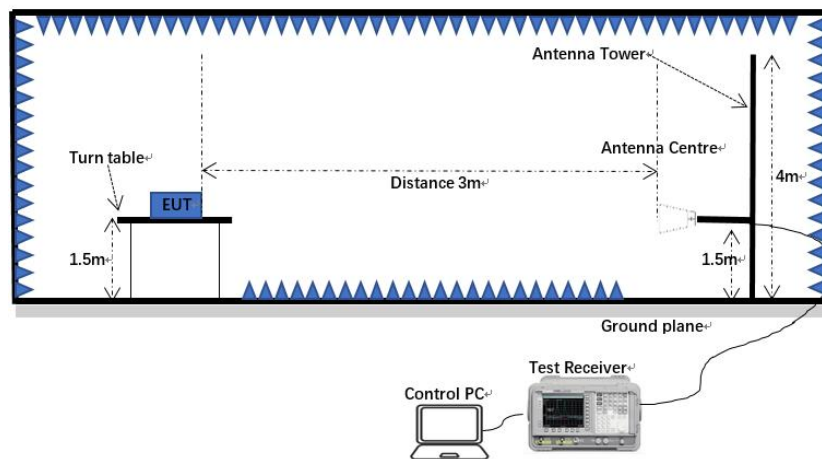
Below 1GHz:



30MHz-1GHz:



Above 1GHz:



6.5.3 Procedure

For testing performed with the loop antenna, the center of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specified distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane. Only the worst position of vertical was shown in the report.

Remark:

1) For emission below 1GHz, through pre-scan found the worst case is the lowest channel. Only the worst case is recorded in the report.

2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor - Preamplifier Factor

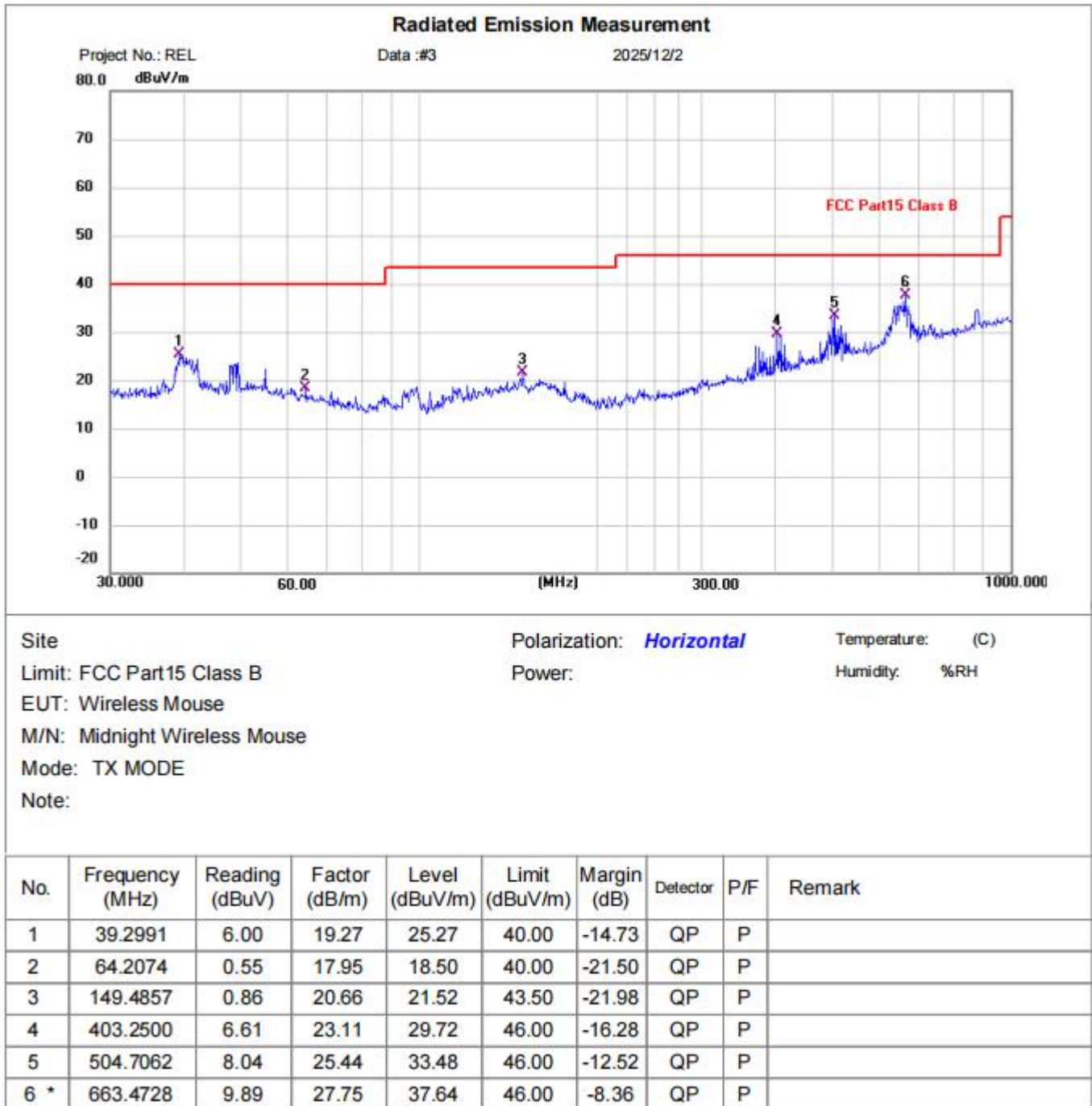
3) Scan from 9kHz to 40GHz, the disturbance above 18GHz and below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. Fundamental frequency is blocked by filter, and only spurious emission is shown.

4) For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

6.5.4 Test data

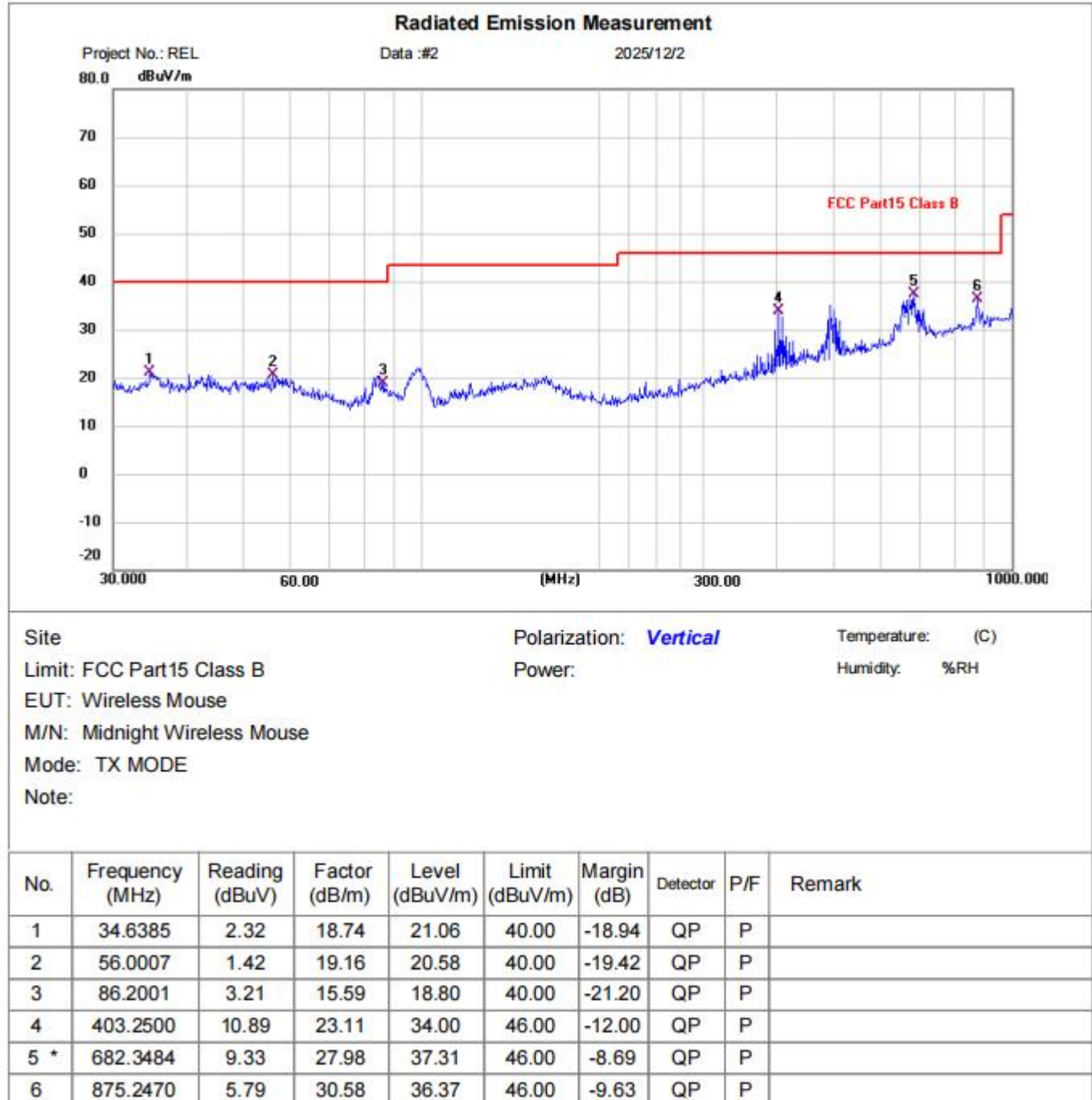
Below 1GHz

[Test mode: TX]; [Polarity: Horizontal] ;[Power: DC3.7V]



Test Result: Pass

[Test mode: TX]; [Polarity: Vertical] ;[Power: DC3.7V]

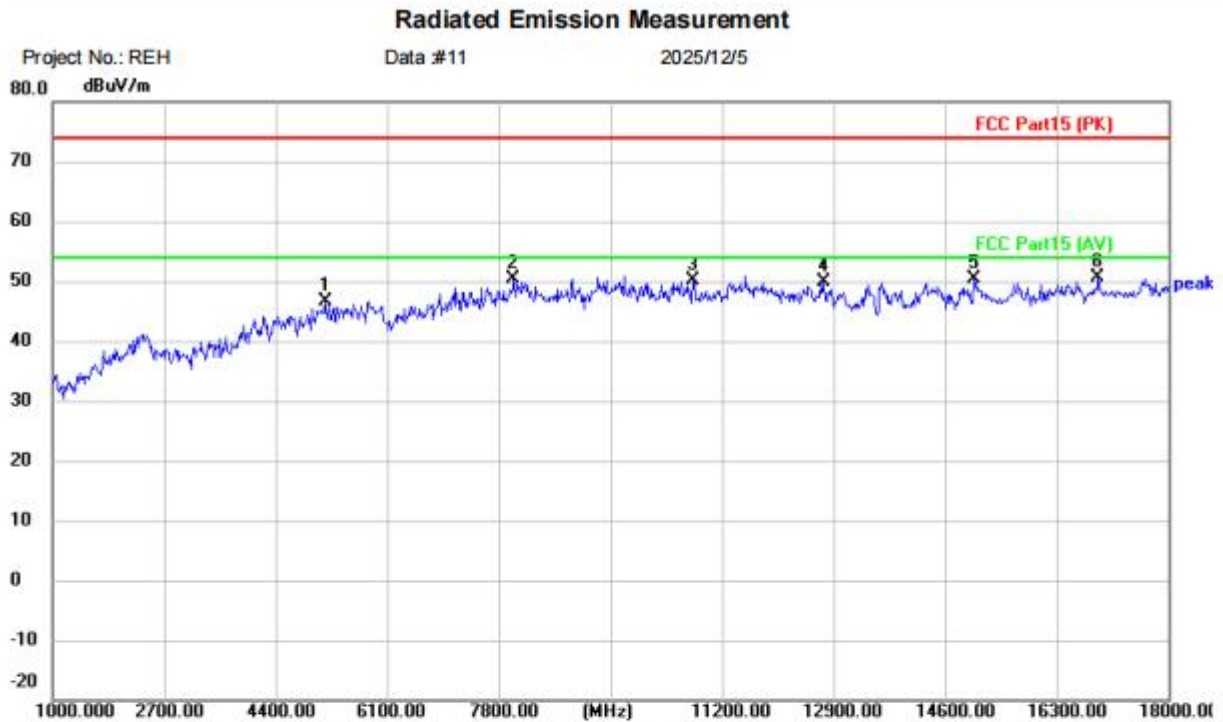


Test Result: Pass

tests have been conducted low, medium and high channels. Only the worst low channels mode was reported.

Above 1GHz:

[Test mode: TX low channel]; [Polarity: Horizontal] ;[Power: DC3.7V]



Site Polarization: **Horizontal** Temperature: (C)

Limit: FCC Part15 (PK) Power: Humidity: %RH

EUT: Wireless Mouse

M/N: Midnight Wireless Mouse

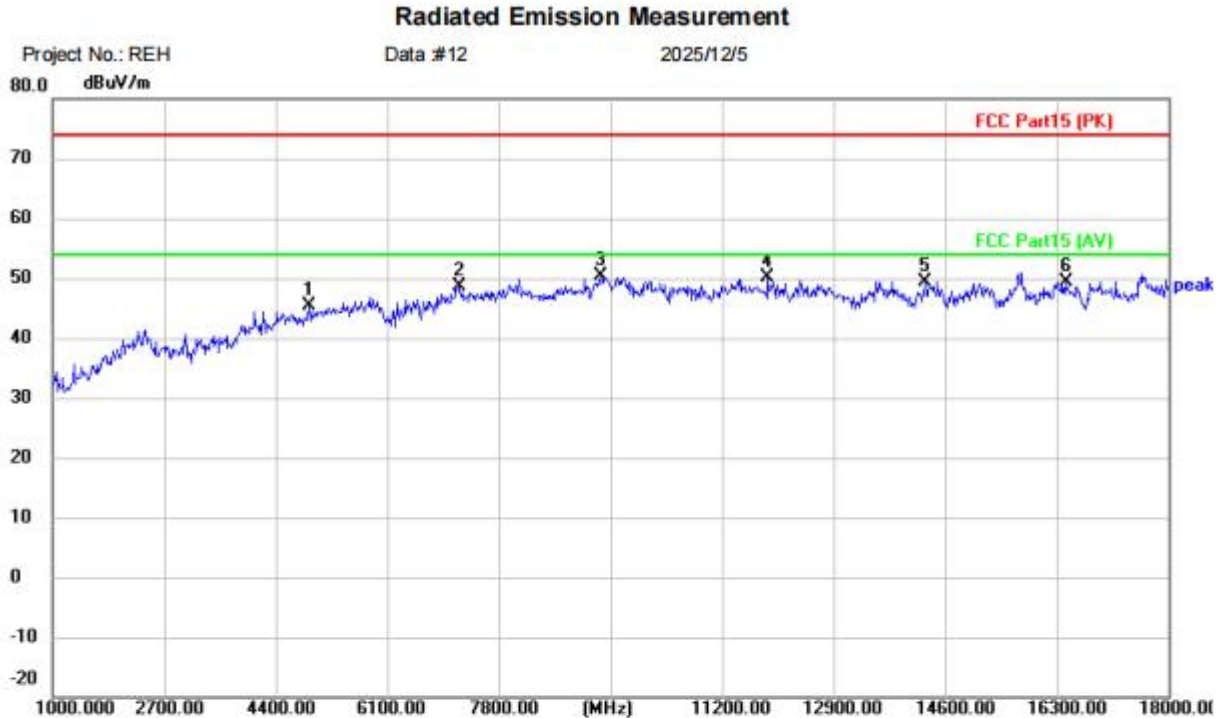
Mode: 2.4G-TX-2405

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		5148.000	38.44	8.08	46.52	74.00	-27.48	peak	
2		8021.000	38.69	11.64	50.33	74.00	-23.67	peak	
3		10758.00	37.10	12.93	50.03	74.00	-23.97	peak	
4		12747.00	35.98	13.86	49.84	74.00	-24.16	peak	
5		15042.00	41.04	9.42	50.46	74.00	-23.54	peak	
6	*	16929.00	40.48	10.04	50.52	74.00	-23.48	peak	

Test Result: Pass

[Test mode: TX low channel]; [Polarity: Vertical] ;[Power: DC3.7V]

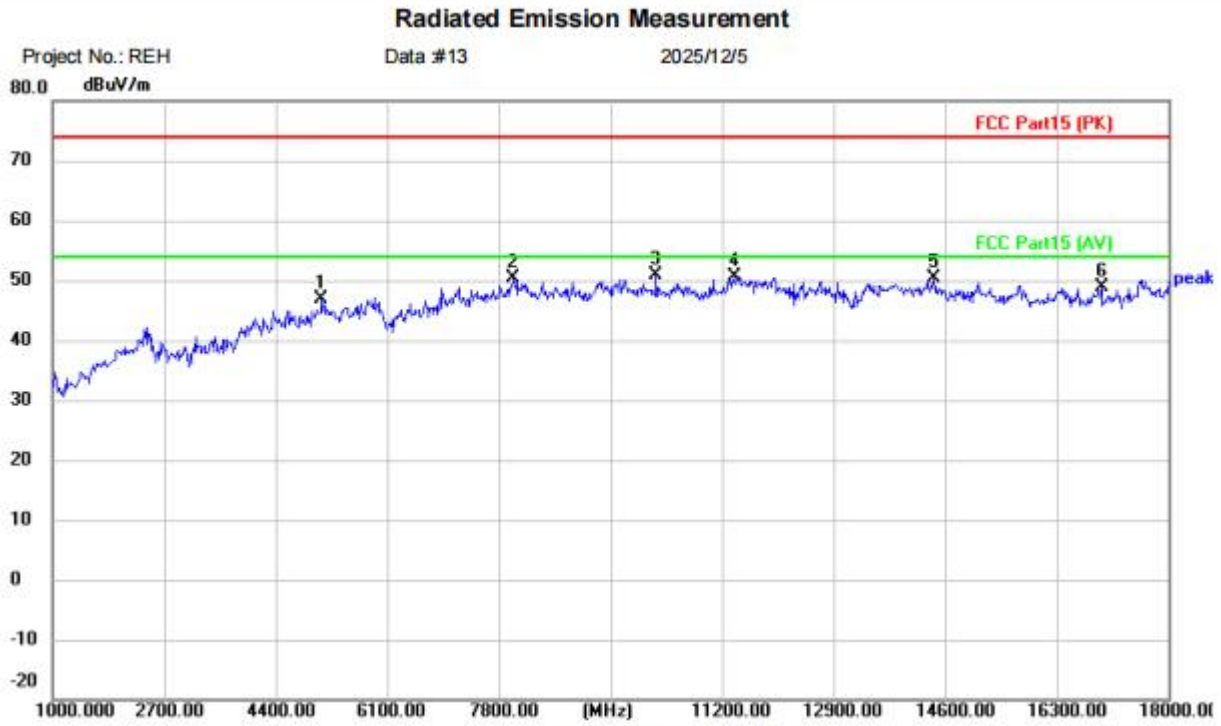


Site: Polarization: **Vertical** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: Wireless Mouse
M/N: Midnight Wireless Mouse
Mode: 2.4G-TX-2405
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4910.000	38.74	6.67	45.41	74.00	-28.59	peak	
2		7188.000	38.10	10.45	48.55	74.00	-25.45	peak	
3	*	9347.000	36.93	13.38	50.31	74.00	-23.69	peak	
4		11897.00	36.64	13.56	50.20	74.00	-23.80	peak	
5		14294.00	38.32	11.05	49.37	74.00	-24.63	peak	
6		16436.00	39.59	9.89	49.48	74.00	-24.52	peak	

Test Result: Pass

[Test mode: TX middle channel]; [Polarity: Horizontal] ;[Power: DC3.7V]

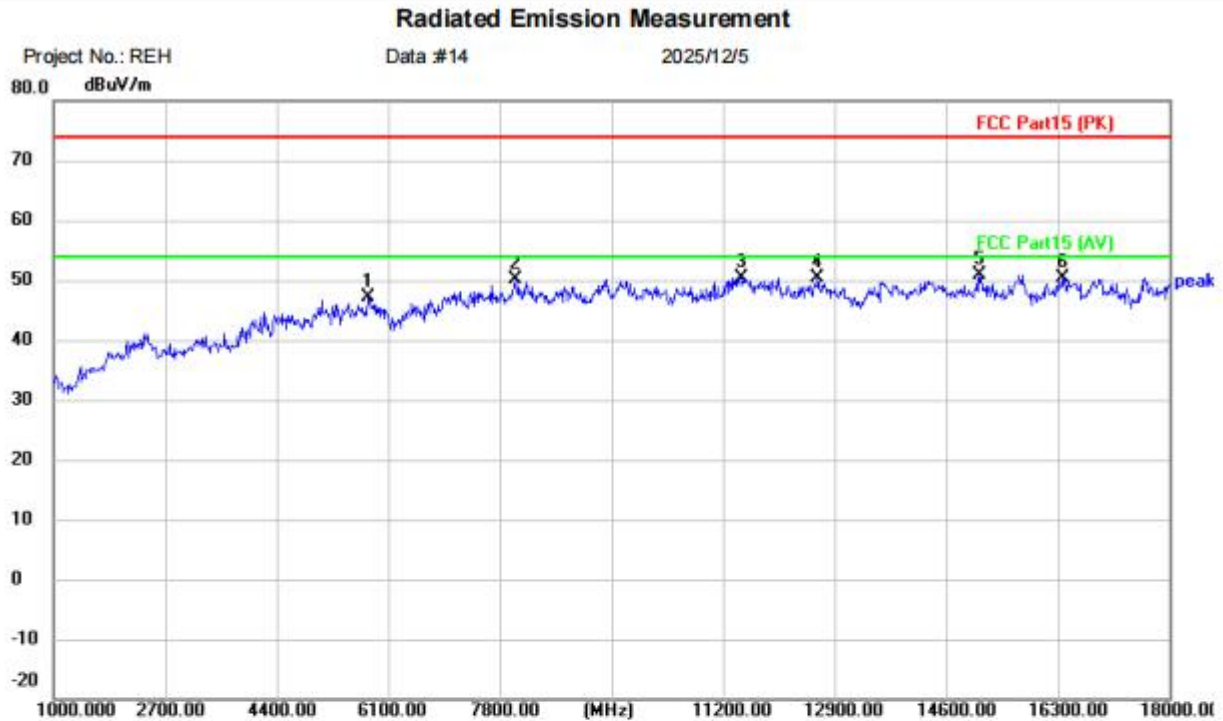


Site Polarization: **Horizontal** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: Wireless Mouse
 M/N: Midnight Wireless Mouse
 Mode: 2.4G-TX-2445
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		5097.000	38.51	8.33	46.84	74.00	-27.16	peak	
2		8021.000	38.78	11.64	50.42	74.00	-23.58	peak	
3	*	10197.00	37.74	13.22	50.96	74.00	-23.04	peak	
4		11387.00	36.45	14.13	50.58	74.00	-23.42	peak	
5		14430.00	39.65	10.63	50.28	74.00	-23.72	peak	
6		16980.00	39.45	9.33	48.78	74.00	-25.22	peak	

Test Result: Pass

[Test mode: TX middle channel]; [Polarity: Vertical] ;[Power: DC3.7V]

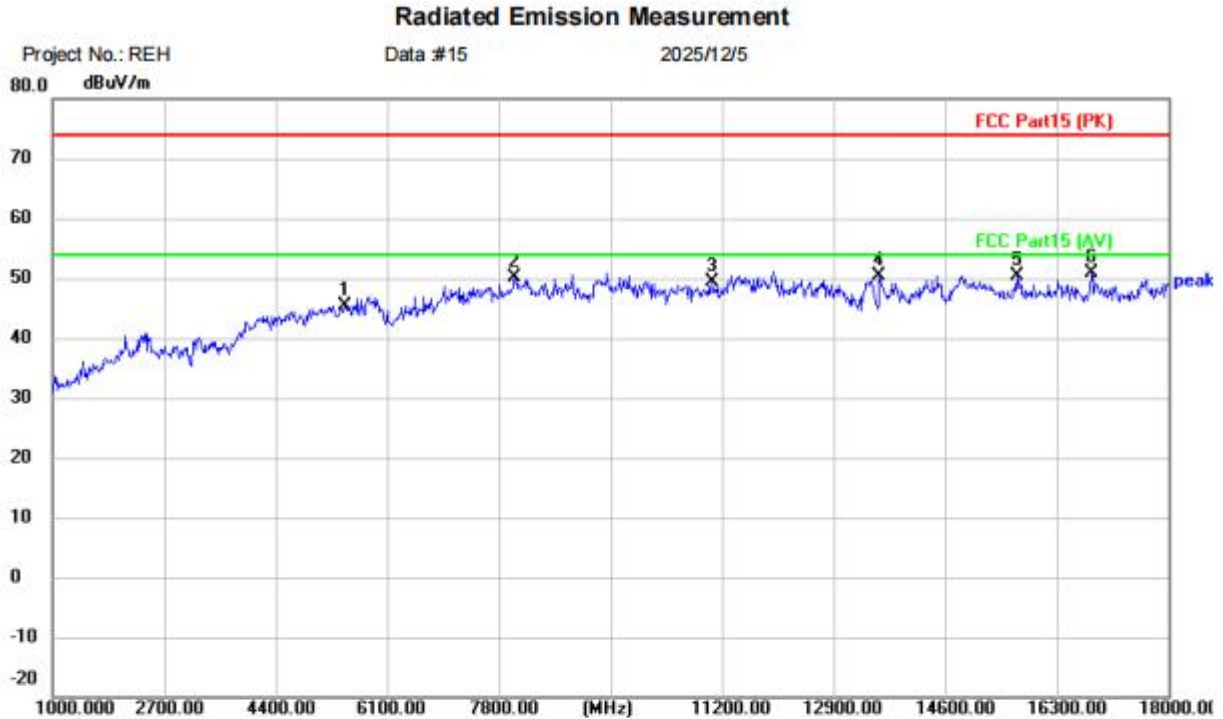


Site: Polarization: **Vertical** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: Wireless Mouse
 M/N: Midnight Wireless Mouse
 Mode: 2.4G-TX-2445
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		5794.000	38.29	8.91	47.20	74.00	-26.80	peak	
2		8038.000	38.41	11.68	50.09	74.00	-23.91	peak	
3		11472.00	35.74	14.70	50.44	74.00	-23.56	peak	
4		12645.00	36.85	13.46	50.31	74.00	-23.69	peak	
5	*	15110.00	41.43	9.53	50.96	74.00	-23.04	peak	
6		16368.00	40.96	9.40	50.36	74.00	-23.64	peak	

Test Result: Pass

[Test mode: TX High channel]; [Polarity: Horizontal] ;[Power: DC3.7V]

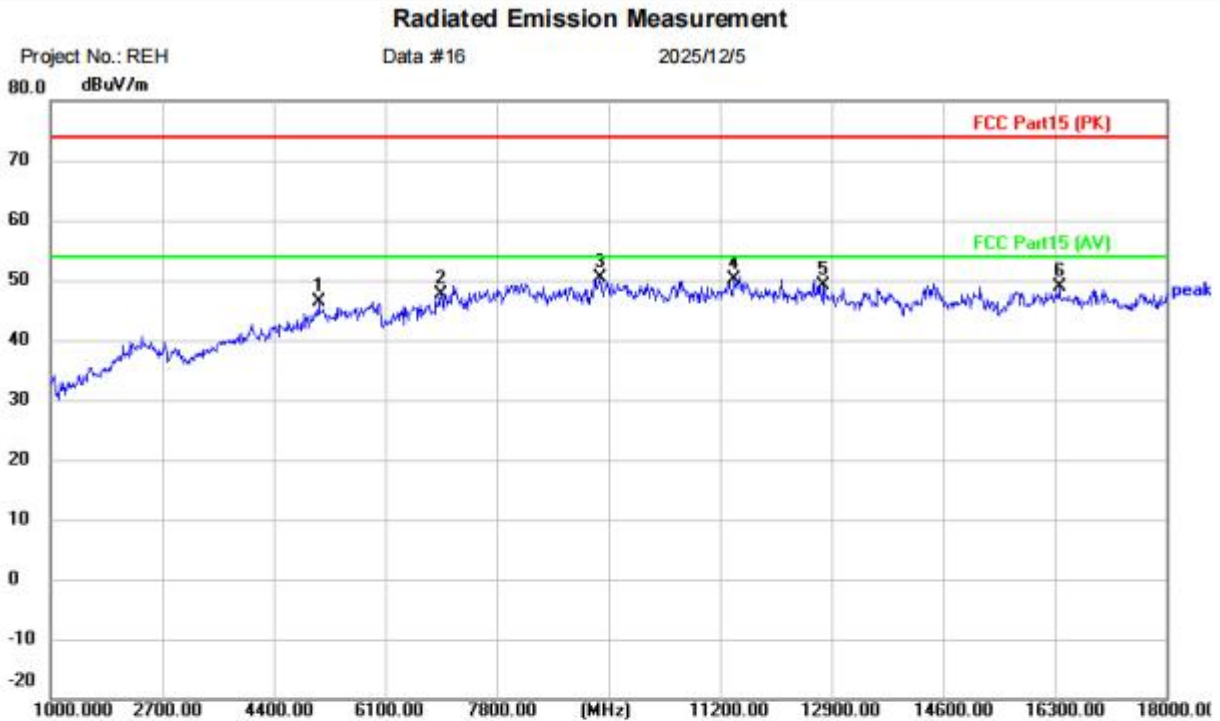


Site: Polarization: **Horizontal** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: Wireless Mouse
 M/N: Midnight Wireless Mouse
 Mode: 2.4G-TX-2475
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		5454.000	37.18	8.27	45.45	74.00	-28.55	peak	
2		8038.000	38.52	11.68	50.20	74.00	-23.80	peak	
3		11047.00	36.20	13.11	49.31	74.00	-24.69	peak	
4		13597.00	37.46	12.90	50.36	74.00	-23.64	peak	
5		15688.00	40.94	9.44	50.38	74.00	-23.62	peak	
6	*	16827.00	40.57	10.30	50.87	74.00	-23.13	peak	

Test Result: Pass

[Test mode: TX High channel]; [Polarity: Vertical] ;[Power: DC3.7V]



Site: Polarization: **Vertical** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: Wireless Mouse
M/N: Midnight Wireless Mouse
Mode: 2.4G-TX-2475
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		5080.000	37.89	8.38	46.27	74.00	-27.73	peak	
2		6950.000	37.87	9.80	47.67	74.00	-26.33	peak	
3	*	9381.000	37.45	12.97	50.42	74.00	-23.58	peak	
4		11421.00	35.67	14.39	50.06	74.00	-23.94	peak	
5		12781.00	35.30	13.80	49.10	74.00	-24.90	peak	
6		16368.00	39.36	9.40	48.76	74.00	-25.24	peak	

Test Result: Pass

Note: When scanning in the range of 1GHz~ 25GHz and the interference above 18GHz is very small, it is a low noise signal. The point shown in the figure above is the highest emission that can be found during the test, so only the above point is shown. The fundamental frequency is blocked by the filter. Only stray emission.

6.6 Restricted bands around fundamental frequency

Test Standard	47 CFR Part 15, Subpart C 15.205 & 209
Test Method	ANSI C63.10-2020+Cor.1-2023 Section 6.4&6.5&6.6
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX

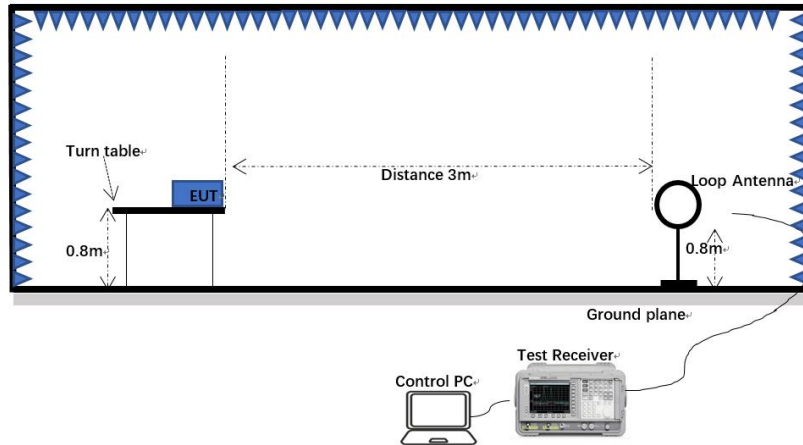
6.6.1 Limit

Frequency	Limit (dBuV/m @3m)	Remark
30MHz-88MHz	40.0	Quasi-peak Value
88MHz-216MHz	43.5	Quasi-peak Value
216MHz-960MHz	46.0	Quasi-peak Value
960MHz-1GHz	54.0	Quasi-peak Value
Above 1GHz	54.0	Average Value
Above 1GHz	74.0	Peak Value

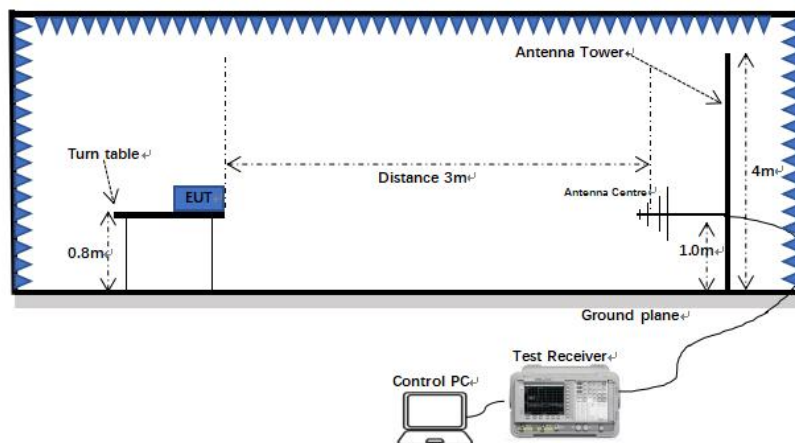
Remark: Emission radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

6.6.2 Test setup

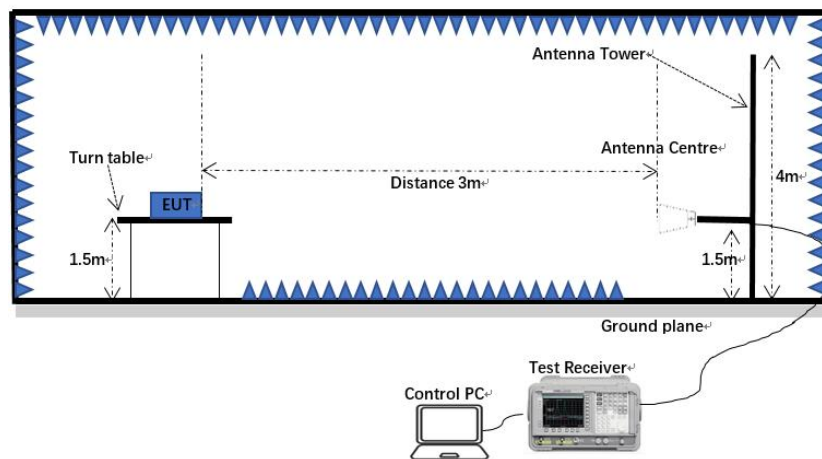
Below 1GHz:



30MHz-1GHz:



Above 1GHz:



6.6.3 Procedure

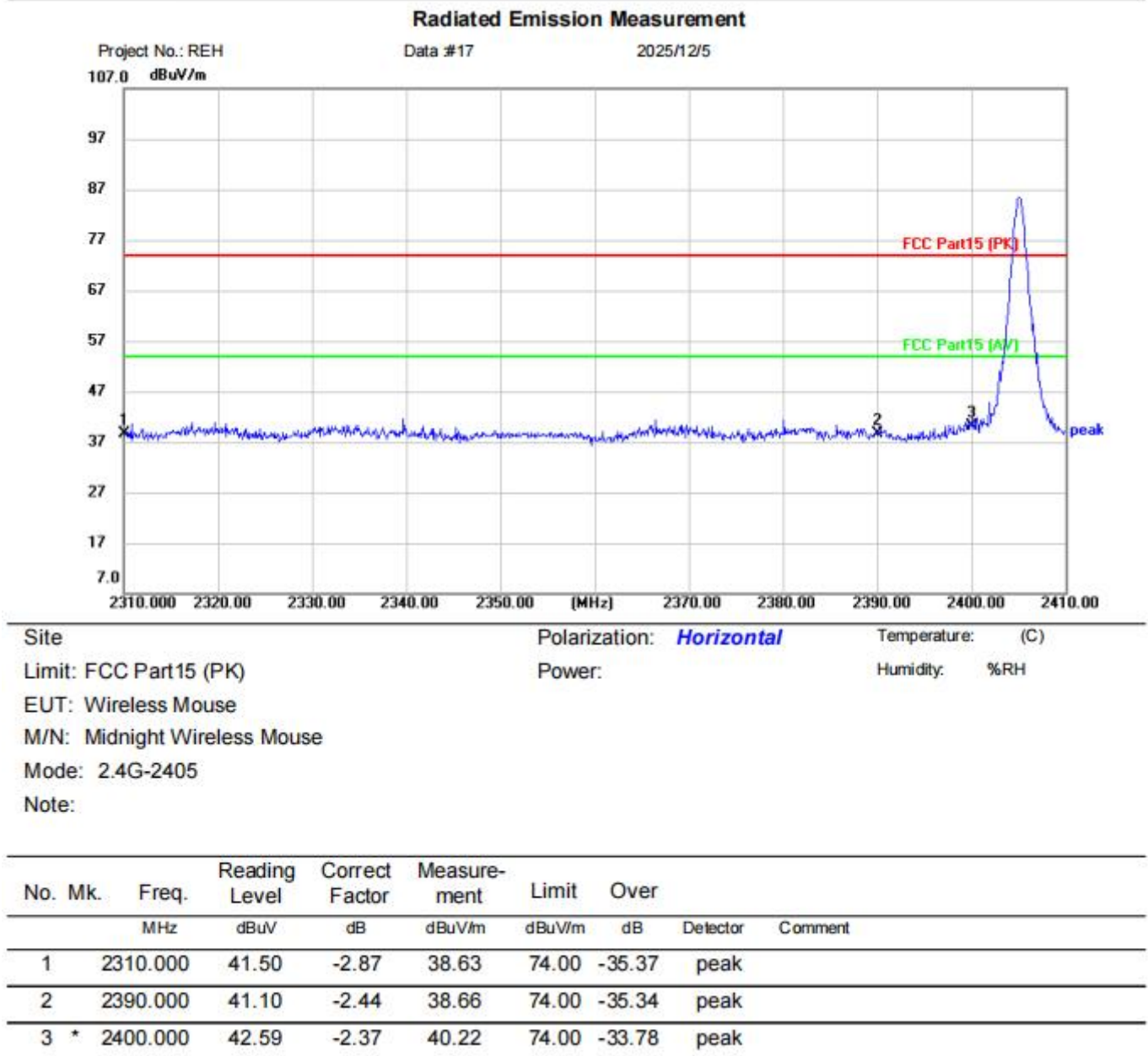
- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d. 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.
- e. 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. 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.
- h. Test the EUT in the lowest channel, the middle channel, the highest channel.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was complete.

Note 1: Level (dBuV) = Reading (dBuV) + Factor (dB/m)

Note 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

6.6.4 Test data

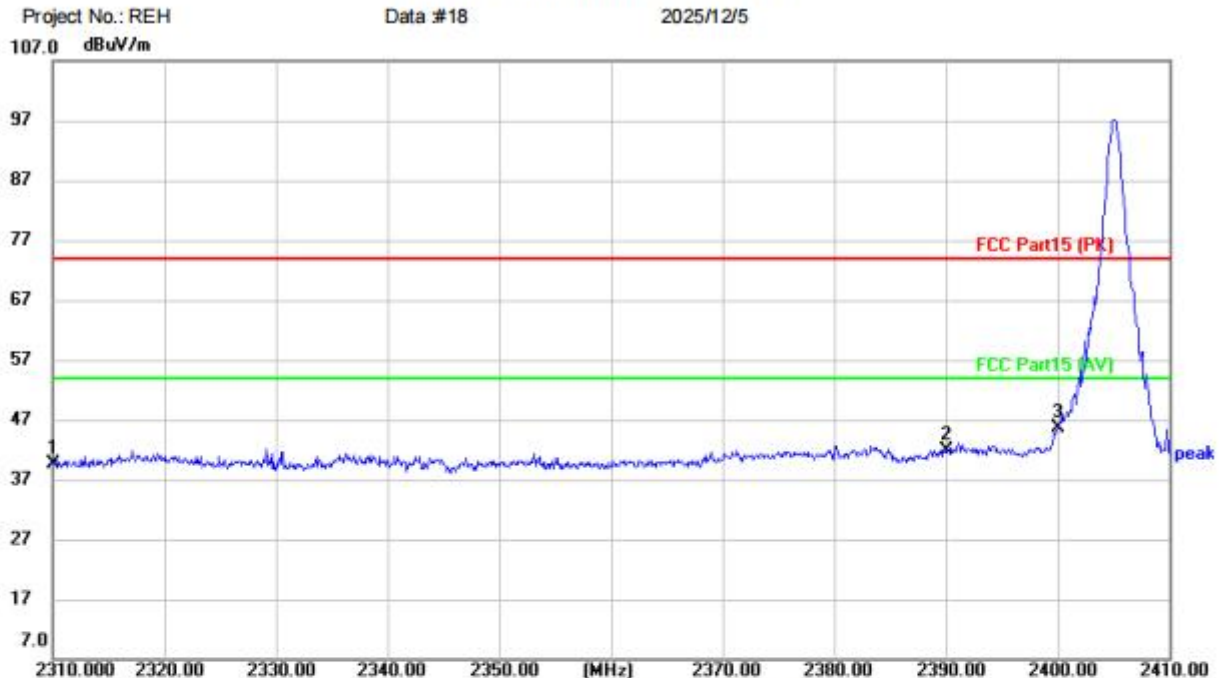
[Test mode: TX low channel]; [Polarity: Horizontal] ;[Power: DC3.7V]



Test Result: Pass

[Test mode:TX low channel]; [Polarity: Vertical] ;[Power: DC3.7V]

Radiated Emission Measurement



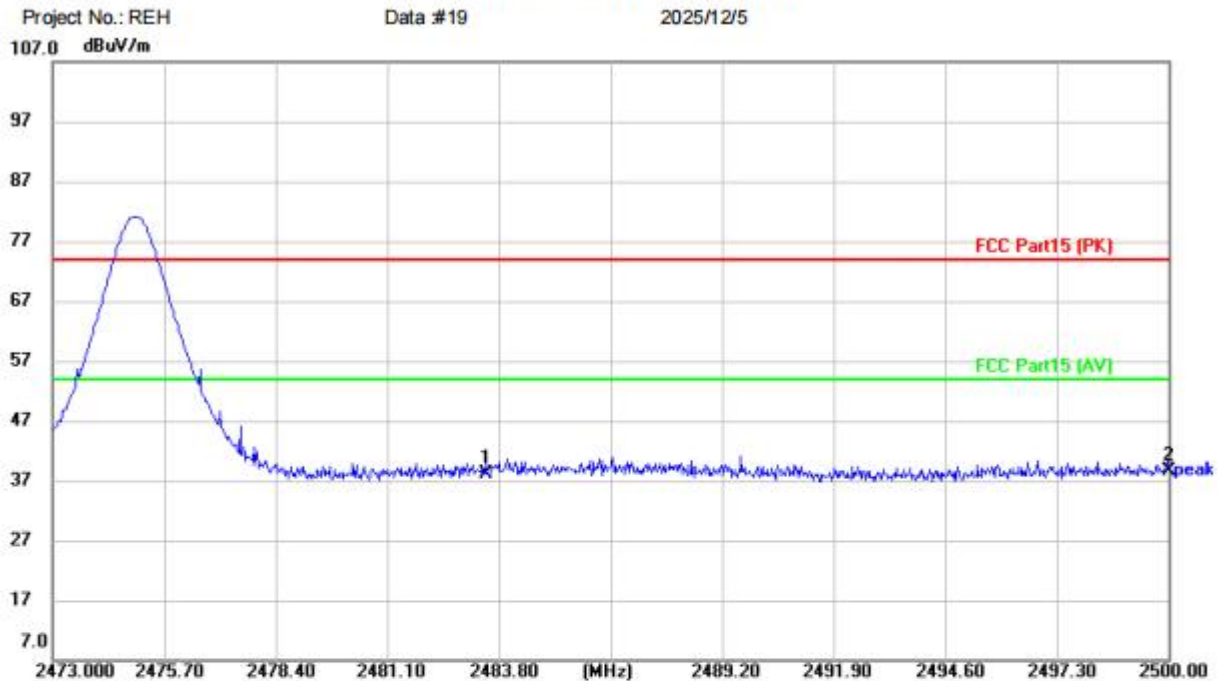
Site Polarization: **Vertical** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: Wireless Mouse
M/N: Midnight Wireless Mouse
Mode: 2.4G-2405
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2310.000	42.42	-2.87	39.55	74.00	-34.45	peak	
2		2390.000	44.23	-2.44	41.79	74.00	-32.21	peak	
3	*	2400.000	47.92	-2.37	45.55	74.00	-28.45	peak	

Test Result: Pass

[Test mode: TX High channel]; [Polarity: Horizontal] ;[Power: DC3.7V]

Radiated Emission Measurement



Site Polarization: **Horizontal** Temperature: (C)

Limit: FCC Part15 (PK) Power: Humidity: %RH

EUT: Wireless Mouse

M/N: Midnight Wireless Mouse

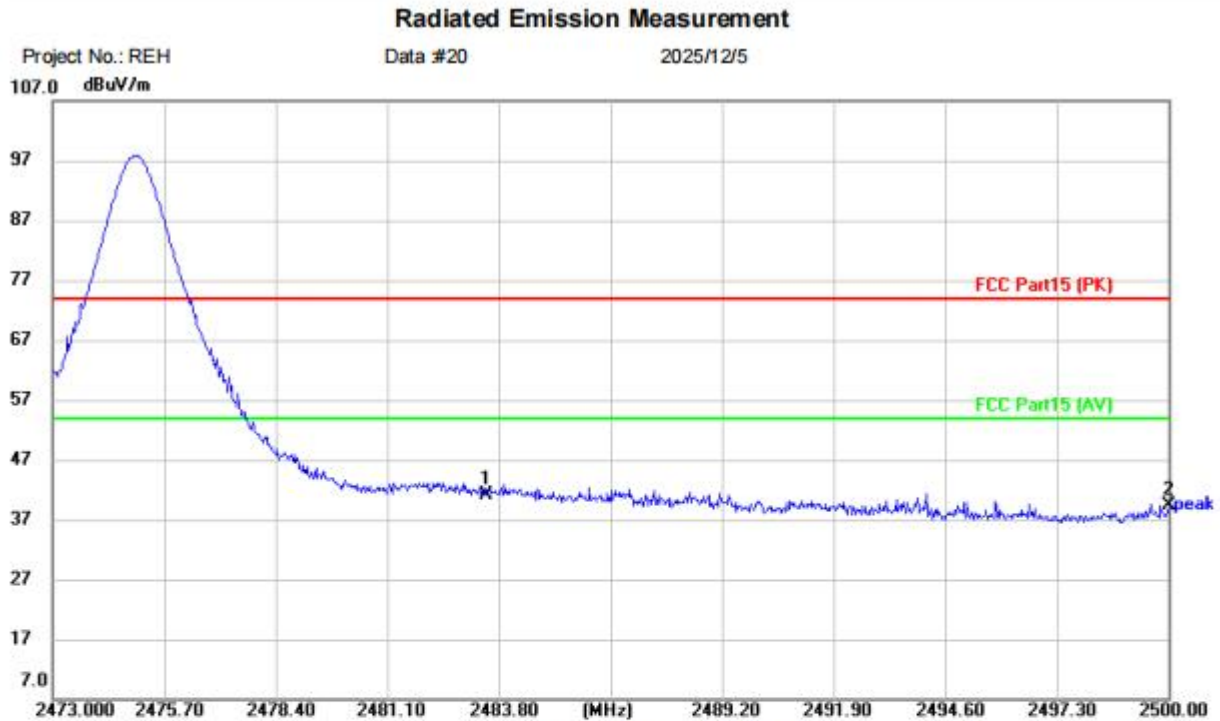
Mode: 2.4G-2475

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		2483.500	41.14	-2.91	38.23	74.00	-35.77	peak	
2	*	2500.000	41.51	-3.00	38.51	74.00	-35.49	peak	

Test Result: Pass

[Test mode:TX High channel]; [Polarity: Vertical] ;[Power: DC3.7V]



Site: Polarization: **Vertical** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: Wireless Mouse
 M/N: Midnight Wireless Mouse
 Mode: 2.4G-2475
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	2483.500	44.15	-2.91	41.24	74.00	-32.76	peak	
2		2500.000	42.45	-3.00	39.45	74.00	-34.55	peak	

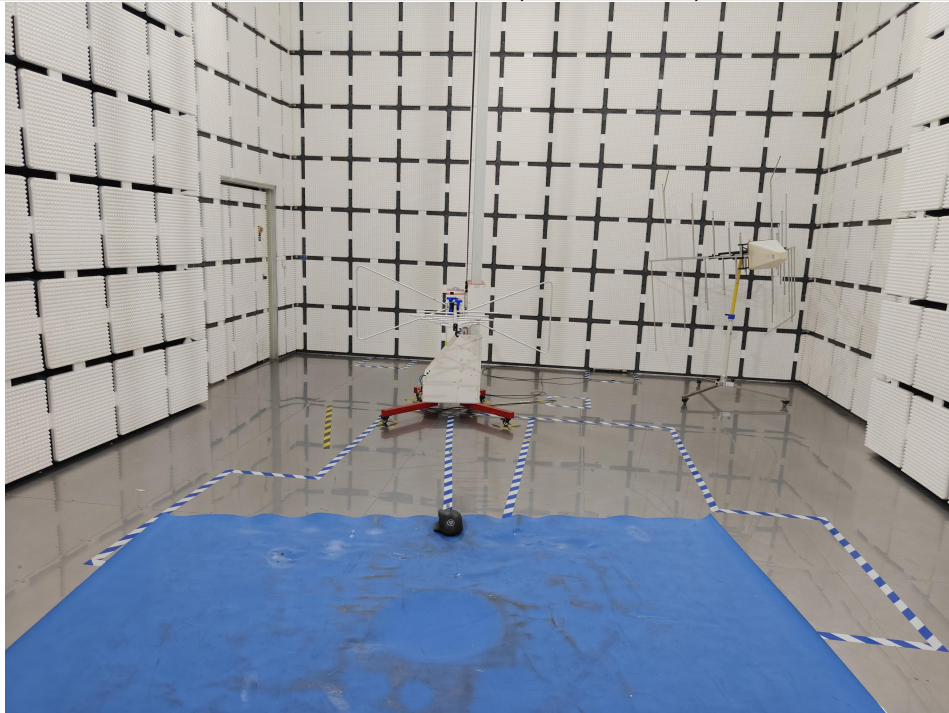
Test Result: Pass

Appendix A: photographs of test setup

Conducted emissions at AC power line (150kHz-30MHz)



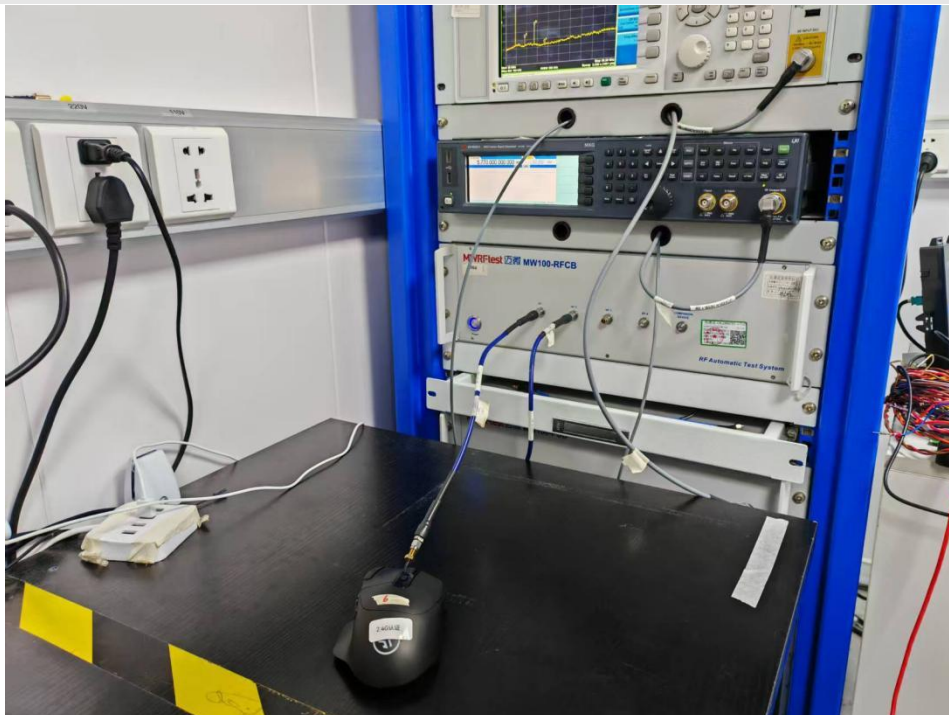
Radiated Emissions (30MHz-1GHz)



Radiated Emissions (above 1GHz)



RF TEST



Appendix B: photographs of EUT

Reference to the test report no. BLA-EMC-202511-A3301

----END OF REPORT----

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