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检测
TESTING
CNAS L6478

TEST REPORT

Reference No.	:	WTF25F06150635W001
Applicant	:	Mid Ocean Brands B.V.
Address	:	Unit 711-716, 7/F., Tower A, 83 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong.
Manufacturer	:	106613
Address	:	---
Product Name	:	Rechargeable wireless mouse
Model No.	:	MO2222
Test specification	:	ETSI EN 300 440 V2.2.1 (2018-07)
Date of Receipt sample	:	2025-07-18
Date of Test	:	2025-07-28
Date of Issue	:	2025-08-08
Test Report Form No.	:	WEW-300440A-01B
Test Result	:	**Pass**

Remarks:
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of approver.

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Tested by: Roy Hong

Approved by: Danny Zhou

1 Test Summary

Radio Spectrum			
Test	Test Requirement	Limit / Severity	Result
Equivalent isotropically radiated power (e.i.r.p.)	ETSI EN 300 440 V2.2.1	10 mW e.i.r.p.	Pass
Permitted range of operating frequencies	ETSI EN 300 440 V2.2.1	fL > 2400 fH < 2483.5	Pass
Duty cycle	ETSI EN 300 440 V2.2.1	Table 4	Pass
Unwanted emissions in the spurious domain	ETSI EN 300 440 V2.2.1	Table 3	Pass
Adjacent channel selectivity	ETSI EN 300 440 V2.2.1	Clause 4.3.3.4	N/A*
Blocking or desensitization	ETSI EN 300 440 V2.2.1	Clause 4.3.4.4	Pass
Receiver spurious radiations	ETSI EN 300 440 V2.2.1	25MHz to 1GHz: ≤2nW 1GHz: ≤20nW	Pass

Remark:

Pass	The EUT complies with the essential requirements in the standard
Fail	The EUT does not comply with the essential requirements in the standard
N/A	Not Applicable
*	This requirement applies to channelized Category 1 receivers. The EUT is channelized Category 3 receiver.

2 Contents

3 General Information

3.1 General Description of E.U.T.

Product Name ..... : Rechargeable wireless mouse

Model No. ..... : MO2222

Remark ..... : The full TX tests were performed on the mouse, full RX tests were performed on the dongle.

Rating ..... : **Mouse:** Input: DC 5V, 1A; Battery: 3.7V, 500mAh
Dongle: DC 5V

Battery Capacity ..... : ---

Adapter Model..... : ---

3.2 Technical Specification

Frequency Bands ..... : 2400-2483.5MHz

Operating Frequency ..... : 2402MHz, 2440MHz, 2480MHz

Quantity of Channels ..... : 3

Maximum RF Output Power ..... : -11.232 dBm (EIRP)

Type of Modulation ..... : GFSK

Antenna Type..... : PCB Antenna

Antenna Gain ..... : 0dBi

Receiver Category..... : 3

Receiver category	Description
1	Highly reliable SRD communication media; e.g. serving human life inherent systems (may result in a physical risk to a person).
2	Medium reliability SRD communication media e.g. causing inconvenience to persons, which cannot simply be overcome by other means.
3	Standard reliability SRD communication media and radiodetermination devices. E.g. Inconvenience to persons, which can simply be overcome by other means (e.g. manual).

3.3 Standards Applicable for Testing

The tests were performed according to following standards:

ETSI EN 300 440 V2.2.1 (2018-07)	Short Range Devices (SRD); Radio equipment to be used in the 1 GHz to 40 GHz frequency range; Harmonised Standard for access to radio spectrum

3.4 Test Facility

The test facility has a test site registered with the following organizations:

- **ISED – Registration No.: 21895**

Waltek Testing Group (Foshan) Co., Ltd. has been registered and fully described in a report filed with the Innovation, Science an Economic Development Canada(ISED). The acceptance letter from the ISED is maintained in our files. Registration ISED number:21895.

- **FCC – Registration No.: 820106**

Waltek Testing Group (Foshan) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 820106.

- **NVLAP – Lab Code: 600191-0**

Waltek Testing Group (Foshan) Co., Ltd. EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 600191-0.
This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

3.5 Subcontracted

Whether parts of tests for the product have been subcontracted to other labs:

☐ Yes ☒ No

If Yes, list the related test items and lab information:

Test items: ---

Lab information: ---

3.6 Abnormalities from Standard Conditions

None.

3.7 Disclaimer

The antenna gain information is provided by the customer. The laboratory is not responsible for the accuracy of the antenna gain information.

4 Equipment Used during Test

4.1 Equipment List

☒3m Semi-anechoic Chamber for Spurious Emission						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1	3m Semi-anechoic Chamber	CHANGCHUANG	9m×6m×6m	-	2024-01-05	2027-01-04
2	EMI TEST RECEIVER	RS	ESR7	101566	2025-01-06	2026-01-05
3	Spectrum Analyzer	Agilent	N9020A	MY48011796	2025-01-06	2026-01-05
4	Trilog Broadband Antenna	SCHWARZBECK	VULB9162	9162-117	2025-01-12	2026-01-11
5	Coaxial Cable (below 1GHz)	Times Micorwave Systems	RG223-NMNM-10M	-	2025-01-07	2026-01-06
6	Coaxial Cable (below 1GHz)	Times Micorwave Systems	RG223-NMNM-3M	-	2025-01-07	2026-01-06
7	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9120 D	01561	2025-01-13	2026-01-12
8	Broadband Preamplifier (Above 1GHz)	Lunar E M	LNA1G18-40	20160501002	2025-01-06	2026-01-05
9	Coaxial Cable (above 1GHz)	Times-Micorwave	CBL5-NN	-	2025-01-06	2026-01-05
☒RF Conducted test						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1	Environmental Chamber	GERUI	GR-HWS-1000L	GR24061818	2025-07-02	2026-07-01
2	Spectrum Analyzer	Agilent	N9020A	MY48011796	2025-01-06	2026-01-05
3	EXG Analog Signal Generator	Agilent	N5181A	MY48180720	2025-01-06	2026-01-05
4	RF Control Unit	Tonscend	JS0806-2	-	2025-01-08	2026-01-07
5	USB Wideband Power Sensor	KEYSIGHT	U2021XA	MY56510008	2025-01-08	2026-01-07

☐: ***Not Used***
☒: ***Used***

4.2 Software List

Description	Manufacturer	Model	Version
EMI Test Software (Radiated Emission)	FARATRONIC	EZ-EMC	RA-03A1-2
RF Conducted Test	TONSCEND	JS1120-2	2.6

4.3 Special Accessories and Auxiliary Equipment

Item	Equipment	Technical Data	Manufacturer	Model No.	Serial No.
1.	/	/	/	/	/

4.4 Measurement Uncertainty

Parameter	Uncertainty	Note
RF Output Power	±2.2dB	(1)
Occupied Bandwidth	±1.5%	(1)
Transmitter Spurious Emission	±3.8dB (for 25MHz-1GHz)	(1)
	±5.0dB (for 1GHz-18GHz)	(1)

(1)This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

4.5 Decision Rule

Compliance or non-compliance with a disturbance limit shall be determined in the following manner.

If U_{LAB} is less than or equal to U_{cispr}, then

-Compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;

-Non-compliance is deemed to occur is any measured disturbance level exceeds the disturbance limt.

If U_{LAB} is greater than U_{cispr}, then

-Compliance is deemed to occur if no measured disturbance level, increased by (U_{LAB}-U_{cispr}) , exceeds the disturbance limit;

-Non-compliance is deemed to occur if any measured disturbance level, increased by (U_{LAB}-U_{cispr}) , exceeds the disturbance limit.

5 Test Conditions and Test mode

The equipment under test (EUT) was configured to measure its highest possible emission/immunity level. The test modes were adapted according to the operation manual for use, the EUT was operated in the continuous transmitting mode that was for the purpose of the measurements, more detailed description as follows:

5.1 RF Channel and Frequency

The lowest, middle and highest channel were tested as representatives.

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2402	2	2440	3	2480

5.2 Independent Operation Modes

Test Mode	Description
A	Transmitting
B	Receiving
C	Standby
D	Off

5.3 Test Environment Condition

Test Condition		Test Temperature	Test Voltage (Vdc)
Normal	NTNV	25°C	3.7
Extreme	LTLV	-20°C	3.3
	LTHV	-20°C	4.1
	HTLV	+55°C	3.3
	HTHV	+55°C	4.1

6 Equivalent isotropically radiated power (e.i.r.p.)

6.1 Standard Applicable

The transmitter maximum e.i.r.p. measurements shall be performed as described in clause 4.2.2.3 and not exceed the limits in clause 4.2.2.4. The values and measurement method utilized shall be stated in the test report.

The transmitter maximum e.i.r.p. under normal and extreme test conditions is provided in table 2.

Table 2: Maximum radiated power (e.i.r.p.)

Entry	Frequency Bands	Power	Application	Notes
1	2 400 MHz to 2 483,5 MHz	10 mW e.i.r.p.	Non-specific short range devices	
2	2 400 MHz to 2 483,5 MHz	25 mW e.i.r.p.	Radiodetermination devices	
3	(a) 2 446 MHz to 2 454 MHz	500 mW e.i.r.p.	Radio Frequency Identification (RFID) devices	See also table 4 and Annex G
4	(b) 2 446 MHz to 2 454 MHz	4 W e.i.r.p.	Radio Frequency Identification (RFID) devices	See also table 4 and Annex G
5	5 725 MHz to 5 875 MHz	25 mW e.i.r.p.	Non-specific short range devices	
6	9 200 MHz to 9 500 MHz	25 mW e.i.r.p.	Radiodetermination devices	
7	9 500 MHz to 9 975 MHz	25 mW e.i.r.p.	Radiodetermination devices	
8	10,5 GHz to 10,6 GHz	500 mW e.i.r.p.	Radiodetermination devices	
9	13,4 GHz to 14,0 GHz	25 mW e.i.r.p.	Radiodetermination devices	
10	17,1 GHz to 17,3 GHz	400 mW e.i.r.p.	Radiodetermination devices	See Annex H
11	24,00 GHz to 24,25 GHz	100 mW e.i.r.p.	Non-specific short range devices and radiodetermination devices	
NOTE: The spectrum ranges in some entries are not harmonised throughout all EU territory, specifically entries 4, 9, and 11 have been identified as such. Implementers are cautioned to refer to CEPT/ERC Recommendation 70-03 [i.2] as well as current National Radio plans to verify acceptance within intended regions of use.				

6.2 Test Procedure

Reference to ETSI EN 300 440 V2.2.1 clause 4.2.2.3

6.3 Test Condition

Operating Mode ..... : A

Test Environment ..... : Normal Condition, Extreme Condition

Test Voltage ..... : Battery 3.7V

Ambient temperature ..... : 22°C

Humidity ..... : 54%RH

Atmospheric Pressure ..... : 101.2kPa

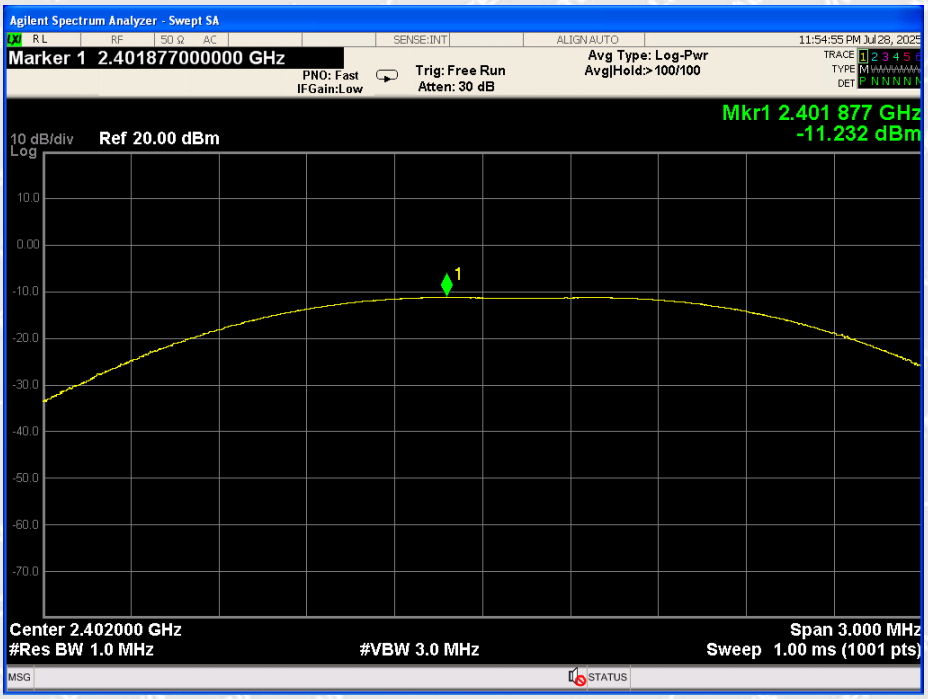
6.4 Test Result

Test Channel	Test Condition	Equivalent isotropic radiated power (dBm)	Limit	Verdict
Low Channel	Normal	-11.232	10mW(10dBm)	Pass
	LTLV	-11.240	10mW(10dBm)	Pass
	LTHV	-11.251	10mW(10dBm)	Pass
	HTLV	-11.250	10mW(10dBm)	Pass
	HTHV	-11.259	10mW(10dBm)	Pass
Middle Channel	Normal	-11.378	10mW(10dBm)	Pass
	LTLV	-11.386	10mW(10dBm)	Pass
	LTHV	-11.367	10mW(10dBm)	Pass
	HTLV	-11.373	10mW(10dBm)	Pass
	HTHV	-11.381	10mW(10dBm)	Pass
High Channel	Normal	-11.391	10mW(10dBm)	Pass
	LTLV	-11.392	10mW(10dBm)	Pass
	LTHV	-11.428	10mW(10dBm)	Pass
	HTLV	-11.372	10mW(10dBm)	Pass
	HTHV	-11.375	10mW(10dBm)	Pass
Max. E.I.R.P		**-11.232**		

Note:
1. The cable loss and antenna is taken into account in results.
2. P=A(RMS power)+G+Y, Antenna gain (G): 0dBi

Test plot:

Worst case at Low Channel Normal Condition



7 Permitted range of operating frequencies

7.1 Standard Applicable

The width of the power spectrum envelope is fH -fL for a given operating frequency. In equipment that allows adjustment or selection of different operating frequencies, the power envelope takes up different positions in the allowed band. The frequency range is determined by the lowest value of fL and the highest value of fH resulting from the adjustment of the equipment to the lowest and highest operating frequencies.

The occupied bandwidth (i.e. the bandwidth in which 99 % of the wanted emission is contained) of the transmitter shall fall within the assigned frequency band.

For all equipment the frequency range shall lie within the frequency band given by clause 4.2.2.4, table 2. For non-harmonized frequency bands the available frequency range may differ between national administrations.

7.2 Test Procedure

Reference to ETSI EN 300 440 V2.2.1 Clause 4.2.3.3.

7.3 Test Condition

Operating Mode ..... : A

Test Environment ..... : Normal Condition, Extreme Condition

Test Voltage ..... : Battery 3.7V

Ambient temperature ..... : 22°C

Humidity ..... : 54%RH

Atmospheric Pressure ..... : 101.2kPa

7.4 Test Result

Test Conditions	Frequency range measure in a 30KHz bandwidth			
	f_L at Low Channel (MHz)		f_H at High Channel (MHz)	
	Measure result	Limit	Measure result	Limit
Normal	2401.530	f_L > 2400	2480.755	f_H < 2483.5
LTLV	2401.525	f_L > 2400	2480.755	f_H < 2483.5
LTHV	2401.515	f_L > 2400	2480.760	f_H < 2483.5
HTLV	2401.525	f_L > 2400	2480.755	f_H < 2483.5
HTHV	2401.520	f_L > 2400	2480.750	f_H < 2483.5

8 Duty Cycle

8.1 Standard Applicable

Duty Cycle (DC) shall apply to all transmitting equipment except those which utilize Listen Before Talk (LBT)clause 4.4.2,or Detect And Avoid (DAA)clause 4.4.3.

RFID transmitters operating in the 2 446 MHz to 2 454 MHz frequency band that transmit at a maximum radiated peak power level of less than 500 mW e.i.r.p. are also excluded.

For equipment utilizing table B.1 bands C or E, with a radiated power of less than 100 uW e.i.r.p, no duty cycle is specified.

Table 4: Duty cycle limits

Frequency Band	Duty cycle	Application	Notes
2 400 MHz to 2 483,5 MHz	No Restriction	Generic use	
2 400 MHz to 2 483,5 MHz	No Restriction	Radiodetermination	
(a) 2 446 MHz to 2 454 MHz	No Restriction	RFID	Limits shown in Annex G shall apply
(b) 2 446 MHz to 2 454 MHz	≤ 15 %	RFID	Limits shown in Annex G shall apply
5 725 MHz to 5 875 MHz	No Restriction	Generic use	
9 200 MHz to 9 500 MHz	No Restriction	Radiodetermination	
9 500 MHz to 9 975 MHz	No Restriction	Radiodetermination	
10,5 GHz to 10,6 GHz	No Restriction	Radiodetermination	
13,4 GHz to 14,0 GHz	No Restriction	Radiodetermination	
17,1 GHz to 17,3 GHz	DAA or equivalent techniques	Radiodetermination, limited to GBSAR detecting and movement and alert applications	Limits shown in Annex I shall apply
24,00 GHz to 24,25 GHz	No Restriction	Generic use and for radiodetermination	
NOTE: The spectrum ranges in some entries are not harmonised throughout all EU territory, specifically entries 4, 9, and 11 have been identified as such. Implementers are cautioned to refer to CEPT/ERC Recommendation 70-03 [i.2] as well as current National Radio plans to verify acceptance within intended regions of use.			

For devices with a 100 % duty cycle transmitting an unmodulated carrier most of the time, a time-out shut-off facility shall be implemented in order to improve the efficient use of spectrum.

8.2 Test Procedure

Reference to ETSI EN 300 440 V2.2.1 Clause 4.2.5.3.

8.3 Test Result

The EUT was manual operation for remote controller, it's declared by the manufacturer as a duty cycle ratio of more than 10% and up to 100%.

9 Unwanted emissions in the spurious domain

9.1 Standard Applicable

The level of unwanted emissions in the spurious domain shall be measured as described in clause 4.2.4.3 and not exceed the limits in clause 4.2.4.4.

The maximum power limits of any unwanted emissions in the spurious domain are given in table 3.

Table 3: Spurious emissions

Frequency ranges / State	47 MHz to 74 MHz 87,5 MHz to 108 MHz 174 MHz to 230 MHz 470 MHz to 862 MHz	Other frequencies ≤ 1 000 MHz	Frequencies > 1 000 MHz
Operating	4nW	250 nW	1 µW
Standby	2nW	2nW	20 nW

9.2 Test Procedure

Reference to ETSI EN 300 440 V2.2.1 Clause 4.2.4.3.

9.3 Test Condition

Operating Mode ..... : A, C

Test Environment ..... : Normal Condition

Test Voltage ..... : Battery 3.7V

Ambient temperature ..... : 22°C

Humidity ..... : 54%RH

Atmospheric Pressure ..... : 101.2kPa

9.4 Test Result

Frequency (MHz)	Receiver Reading (dBμV)	Turn table Angle (°)	RX Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)	SG Level (dBm)	Cable (dB)	Antenna Gain (dB)			
Operating_Low Channel										
733.93	27.85	119	1.4	H	-70.89	0.20	0.00	-70.69	-54	-16.69
733.93	24.60	178	1.1	V	-73.61	0.20	0.00	-73.41	-54	-19.41
1075.47	46.68	185	1.0	H	-53.30	0.25	6.00	-59.05	-30	-29.05
1075.47	48.85	242	1.1	V	-52.46	0.25	6.00	-58.21	-30	-28.21
1092.34	48.01	234	1.0	H	-51.97	0.25	6.00	-57.72	-30	-27.72
1092.34	51.09	173	2.0	V	-50.22	0.25	6.00	-55.97	-30	-25.97
Operating_High Channel										
329.82	33.87	120	1.8	H	-73.39	0.16	0.00	-73.23	-36	-37.23
329.82	34.52	220	1.3	V	-71.05	0.16	0.00	-70.89	-36	-34.89
2549.46	45.50	144	1.8	H	-48.16	0.43	10.60	-58.33	-30	-28.33
2549.46	44.45	199	1.6	V	-45.49	0.43	10.60	-55.66	-30	-25.66
5788.17	43.01	194	1.7	H	-46.28	2.87	12.90	-56.31	-30	-26.31
5788.17	42.16	127	1.3	V	-46.28	2.87	12.90	-56.31	-30	-26.31

Frequency (MHz)	Receiver Reading (dBμV)	Turn table Angle (°)	RX Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)	SG Level (dBm)	Cable (dB)	Antenna Gain (dB)			
Standby_Low Channel										
478.48	25.80	149	1.0	H	-75.14	0.16	0.00	-74.98	-57	-17.98
478.48	29.58	260	1.7	V	-72.59	0.16	0.00	-72.43	-57	-15.43
1703.57	48.23	302	1.3	H	-47.37	0.30	9.40	-56.47	-47	-9.47
1703.57	46.55	133	1.7	V	-48.78	0.30	9.40	-57.88	-47	-10.88
3825.69	43.11	226	1.0	H	-47.38	2.42	12.60	-57.56	-47	-10.56
3825.69	39.47	134	2.0	V	-49.48	2.42	12.60	-59.66	-47	-12.66
Standby_High Channel										
359.99	31.17	187	1.1	H	-74.73	0.16	0.00	-74.57	-57	-17.57
359.99	31.81	105	1.5	V	-73.25	0.16	0.00	-73.09	-57	-16.09
1139.39	45.49	152	1.0	H	-53.49	0.25	6.00	-59.24	-47	-12.24
1139.39	48.84	244	1.9	V	-51.86	0.25	6.00	-57.61	-47	-10.61
4216.68	45.23	287	1.3	H	-46.11	2.53	12.60	-56.18	-47	-9.18
4216.68	44.42	247	1.1	V	-45.53	2.53	12.60	-55.60	-47	-8.60

10 Receiver Spurious radiations

10.1 Standard Applicable

The spurious radiations measurements shall be performed as described in clause 4.3.5.3 and not exceed the limits in clause 4.3.5.4. The values and measurement method utilized shall be stated in the test report.

The power of any spurious emission shall not exceed 2 nW in the range 25 MHz to 1 GHz and shall not exceed 20 nW on frequencies above 1 GHz.

10.2 Test Procedure

Reference to ETSI EN 300 440 V2.2.1 Clause 4.3.5.3.

10.3 Test Condition

Operating Mode ..... : B

Test Environment ..... : Normal Condition

Test Voltage ..... : DC 5V

Ambient temperature ..... : 22°C

Humidity ..... : 54%RH

Atmospheric Pressure ..... : 101.2kPa

10.4 Test Result

Frequency (MHz)	Receiver Reading (dBμV)	Turn table Angle (°)	RX Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)	SG Level (dBm)	Cable (dB)	Antenna Gain (dB)			
RX mode										
660.49	25.17	203	1.3	H	-74.63	0.20	0.00	-74.43	-57	-17.43
660.49	27.21	116	1.9	V	-71.94	0.20	0.00	-71.74	-57	-14.74
1707.21	48.82	317	1.0	H	-46.78	0.30	9.40	-55.88	-47	-8.88
1707.21	47.11	312	1.8	V	-48.22	0.30	9.40	-57.32	-47	-10.32
2432.99	47.31	190	1.7	H	-46.04	0.40	10.60	-56.24	-47	-9.24
2432.99	41.81	247	1.1	V	-47.58	0.40	10.60	-57.78	-47	-10.78

11 Blocking or desensitization

11.1 Standard Applicable

The blocking or desensitization measurements shall be performed as described in clause 4.3.4.3 and not exceed the limits in clause 4.3.4.4. The values and measurement method utilized shall be stated in the test report.

The blocking level, for any frequency within the specified ranges, shall not be less than the values given in table 6, except at frequencies on which spurious responses are found.

Table 6: Limits for blocking or desensitization

Receiver category	Limit
1	-30 dBm + k
2	-45 dBm + k
3	-60 dBm + k

The correction factor, k, is as follows:

$$k = -20\log f - 10\log BW$$

Where:

- f is the frequency in GHz;
- BW is the occupied bandwidth in MHz.

The factor k is limited within the following:

- $-40\ dB < k < 0\ dB$.

The measured blocking level shall be stated in the test report.

11.2 Test Procedure

This measurement shall be conducted under normal conditions.

Two signal generators A and B shall be connected to the receiver via a combining network to the receiver, either:

a) via a test fixture or a test antenna to the receiver integrated, dedicated or test antenna; or

b) directly to the receiver permanent or temporary antenna connector.

The method of coupling to the receiver shall be stated in the test report.

Signal generator A shall be at the nominal frequency of the receiver, with normal modulation of the wanted signal. Signal generator B shall be unmodulated and shall be adjusted to a test frequency at approximately 10 times, 20 times and 50 times of the occupied bandwidth above upper band edge of occupied bandwidth.

Initially signal generator B shall be switched off and using signal generator A the level which still gives sufficient response shall be established. The output level of generator A shall then be increased by 3 dB.

Signal generator B is then switched on and adjusted until the wanted criteria are met. This level shall be recorded.

The measurement shall be repeated with the test frequency for signal generator B at 10 times, 20 times and 50 times of the occupied bandwidth below the lower band edge of the occupied bandwidth.

The blocking or desensitization shall be recorded as the level in dBm of lowest level of the unwanted signal (generator B).

For tagging systems (e.g. RF identification, anti-theft, access control, location and similar systems) signal generator A may be replaced by a physical tag positioned at 70 % of the measured system range in metres. In this case, the blocking or desensitization shall be recorded as the ratio in dB of lowest level of the unwanted signal (generator B) resulting in a non-read of the tag. to the declared sensitivity of the receiver +3 dB.

11.3 Test Condition

Operating Mode ..... : B

Test Environment ..... : Normal Condition

Test Voltage ..... : DC 5V

Ambient temperature ..... : 22°C

Humidity ..... : 54%RH

Atmospheric Pressure ..... : 101.2kPa

11.4 Test Result

Frequency (MHz)	SA Level (dBm)		SB			Occupied bandwidth (MHz)	k factor (dB)	Limit (dBm)
	P_{min}	P_{min+3}	Blocking signal frequency (MHz)		Blocking power (dBm)			
2402	-58	-55	Upper band edge +10 times OBW	2413.4301	-18	1.0761	-7.93	≥-67.93
			Lower band edge - 10 times OBW	2390.832	-15			
			Upper band edge +20 times OBW	2424.1911	-18			
			Lower band edge - 20 times OBW	2380.071	-18			
			Upper band edge +50 times OBW	2456.4741	-14			
			Lower band edge - 50 times OBW	2347.788	-16			
2442	-58	-55	Upper band edge +10 times OBW	2451.6531	-17	1.0971	-8.16	≥-68.16
			Lower band edge - 10 times OBW	2428.614	-16			
			Upper band edge +20 times OBW	2462.6241	-19			
			Lower band edge - 20 times OBW	2417.643	-20			
			Upper band edge +50 times OBW	2495.5371	-14			
			Lower band edge - 50 times OBW	2384.73	-15			
2480	*-58*	*-55*	Upper band edge +10 times OBW	2491.6034	-19	1.0925	-8.27	≥-68.27
			Lower band edge - 10 times OBW	2468.6609	-20			
			Upper band edge +20 times OBW	2502.5284	-20			
			Lower band edge - 20 times OBW	2457.7359	-17			
			Upper band edge +50 times OBW	2535.3034	-18			
			Lower band edge - 50 times OBW	2424.9609	-20			

12 Photographs – Test Setup

12.1 Photograph – Spurious Emissions Test Setup For Transmitter

Below 1GHz

Above 1GHz

12.2 Photograph – Spurious Emissions Test Setup For Receiver

Below 1GHz

Above 1GHz

13 Photographs – EUT Constructional Details

Please refer to “ANNEX” (Reference No. WTF25F06150635W).

======End of Report======

中国认可
国际互认
检测
TESTING
CNAS L6478

TEST REPORT

Reference No.	:	WTF25F06150635W002
Applicant	:	Mid Ocean Brands B.V.
Address	:	Unit 711-716, 7/F., Tower A, 83 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong.
Manufacturer	:	106613
Address	:	---
Product Name	:	Rechargeable wireless mouse
Model No.	:	MO2222
Test specification	:	EN 62479:2010 EN 50663:2017
Date of Receipt sample	:	2025-07-18
Date of Test	:	2025-07-28
Date of Issue	:	2025-08-08
Test Report Form No.	:	WEW-62479A-01B
Test Result	:	**Pass**

Remarks:
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of approver.

Prepared By:
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Tested by: Roy Hong

Approved by: Danny Zhou

1 Test Summary

HEALTH			
Test	Test Method	Class / Severity	Result
RF Exposure	EN 62479:2010 EN 50663:2017	-	Pass

Remark:

Pass Test item meets the requirement

N/A Not Applicable

2 Contents

3 General Information

3.1 General Description of E.U.T.

Product Name ..... : Rechargeable wireless mouse

Model No. ..... : MO2222

Remark ..... : --

Rating ..... : **Mouse:** Input: DC 5V, 1A; Battery: 3.7V, 500mAh
Dongle: DC 5V

Battery Capacity ..... : ---

Adapter Model..... : ---

3.2 Technical Specification

Frequency Bands ..... : 2400-2483.5MHz

Operating Frequency ..... : 2402MHz, 2440MHz, 2480MHz

Quantity of Channels ..... : 3

Maximum RF Output Power ..... : -11.232 dBm (EIRP)

Type of Modulation ..... : GFSK

Antenna Type..... : PCB Antenna

Antenna Gain ..... : 0dBi

3.3 Standards Applicable for Testing

The tests were performed according to following standards:

EN 62479:2010	Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz - 300 GHz)
EN 50663:2017	Generic standard for assessment of low power electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (10 MHz - 300 GHz)

3.4 Disclaimer

The antenna gain information is provided by the customer. The laboratory is not responsible for the accuracy of the antenna gain information.

4 RF EXPOSURE BASIC RESTRICTIONS

4.1 Limits Standard Applicable

According to EN 62479:2010, Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz).

Low-power exclusion level *P*max based on considerations of SAR

When SAR is the basic restriction, a conservative minimum value for P_{max} can be derived, equal to the localized SAR limit (SAR_{max}) multiplied by the averaging mass (m):

$$P_{max} = SAR_{max}\, m \qquad (A.1)$$

Example values of P_{max} according to Equation (A.1) are provided in Table A.1 for cases described by the ICNIRP guidelines [1], IEEE Std C95.1-1999 [2] and IEEE Std C95.1-2005 [3] where SAR limits are defined. Other exposure guidelines or standards may be applicable depending on national regulations.

Table A.1 – Example values of SAR-based P_{max} for some cases described by ICNIRP, IEEE Std C95.1-1999 and IEEE Std C95.1-2005

Guideline / Standard	SAR limit, SAR_{max} W/kg	Averaging mass, m g	P_{max} mW	Exposure tier[a]	Region of body[a]
ICNIRP [1]	2	10	20	General public	Head and trunk
	4	10	40	General public	Limbs
	10	10	100	Occupational	Head and trunk
	20	10	200	Occupational	Limbs
IEEE Std C95.1-1999 [2]	1,6	1	1,6	Uncontrolled environment	Head, trunk, arms, legs
	4	10	40	Uncontrolled environment	Hands, wrists, feet and ankles
	8	1	8	Controlled environment	Head, trunk, arms, legs
	20	10	200	Controlled environment	Hands, wrists, feet and ankles
IEEE Std C95.1-2005 [3]	2	10	20	Action level	Body except extremities and pinnae
	4	10	40	Action level	Extremities and pinnae
	10	10	100	Controlled environment	Body except extremities and pinnae
	20	10	200	Controlled environment	Extremities and pinnae

[a] Consult the appropriate standard for more information and definitions of terms.

4.2 Evaluation Methods

Based on the above standard limit, the basic restriction at frequency between 10MHz to 300GHz is on localized SAR in the head. Any device with output power below 20mW cannot produce an exposure exceeding this restriction under the most pessimistic exposure conditions.
The basic restriction is 2W/Kg for general public device, so any unit which supplies less than 20mW from it's antenna port, averaged over 6 minutes, will meet the basic restriction.

4.3 Evaluation Results

Maximum Average Output Power

Frequency (MHz)	RF Output Power (dBm)	RF Output Power (mW)	Limit (mW)	Result
2402	-11.232	0.075	20	Pass
Remark: The details of RF output power refer to report No.WTF25F06150635W001.				

Since average output power at worst case is: 0.075 mW which cannot exceed the exempt condition, 20mW specified in EN 62479. It is deemed to full fit the requirement of RF exposure basic restriction specified in EC Council Recommendation (1999/519/EC).

5 Photographs – EUT Constructional Details

Please refer to “ANNEX” (Reference No. WTF25F06150635W).

======End of Report======