

RF Test Report

Report No.: AGC12440231102ER02

PRODUCT DESIGNATION: WIRELESS MOUSE

BRAND NAME : N/A

MODEL NAME : MO2222

APPLICANT : Mid Ocean Brands B.V.

DATE OF ISSUE : Nov. 27, 2023

STANDARD(S) : ETSI EN 300 440 V2.2.1 (2018-07)

REPORT VERSION: V1.0

Attestation of Global Confilence (Shenzhen) Co., Ltd



Page 2 of 35

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	1	Nov. 27, 2023	Valid	Initial Release



Page 3 of 35

TABLE OF CONTENTS

1. TEST REPORT CERTIFICATION	
2. GENERAL INFORMATION	
2.1. DESCRIPTION OF EUT	Ę
2.2. TEST STANDARDS AND RESULTS	
2.3. TEST ITEMS AND THE RESULTS	
2.4. ENVIRONMENTAL CONDITIONS	7
3. MEASUREMENT UNCERTAINTY	8
4. IDENTIFICATION OF THE RESPONSIBLE TESTING LOCATION	9
5. ETSI EN 300 440 REQUIREMENTS	10
5.1. EQUIVALENT ISOTROPICALLY RADIATED POWER (E.I.R.P.)	10
5.2. PERMITTED RANGE OF OPERATING FREQUENCIES	
5.3. UNWANTED EMISSIONS IN THE SPURIOUS DOMAIN	
5.4. DUTY CYCLE	
5.5. BLOCKING OR DESENSITIZATION	27
APPENDIX I: PHOTOGRAPHS OF TEST SETUP	32
APPENDIX II: PHOTOGRAPHS OF THE FUT	35



Page 4 of 35

1. TEST REPORT CERTIFICATION

Applicant	Mid Ocean Brands B.V.			
Address	7/F., King Tower, 111King Lam Street, Cheung ShaWan, Kowloon, HongKong.			
Manufacturer	Mid Ocean Brands B.V.			
Address	7/F., King Tower, 111King Lam Street, Cheung ShaWan, Kowloon, HongKong.			
Factory	Mid Ocean Brands B.V.			
Address	7/F., King Tower, 111King Lam Street, Cheung ShaWan, Kowloon, HongKong.			
Product Designation	WIRELESS MOUSE			
Brand Name	N/A			
Test Model	MO2222			
Series Model(s)	N/A			
Difference Description	N/A			
Date of receipt of test item	Nov. 20, 2023			
Date of test	Nov. 20, 2023 to Nov. 27, 2023			
Deviation	None			
Test Result	Pass			
Condition of Test Sample	Normal			

Note: The test results of this report relate only to the tested sample identified in this report.

Prepared By	Coli	
	Cici Li (Project Engineer)	Nov. 27, 2023
Reviewed By	Calin Lin	
	Calvin Liu (Reviewer)	Nov. 27, 2023
Approved By	Max Zhang	
	Max Zhang Authorized Officer	Nov. 27, 2023



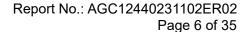
Page 5 of 35

2. GENERAL INFORMATION

2.1. DESCRIPTION OF EUT

Note: the following data is based on the information by the applicant.

Operating Frequency	2402MHz to 2480MHz
Support Channels	79 Channels
Modulation	GFSK
Hardware Version	VER1.0
Software Version	VER1.0
Antenna Type	PCB Antenna
Antenna Gain	-0.55dBi
Receiver Category	2
Power Supply	Mouse: DC 5V by adapter or DC 3.7V by battery Dongle: DC 5V by PC





Channel list:

Channel	Frequency (GHz)	Channel	Frequency (GHz)	
01	2.402	42	2.443	
02	2.403	43	2.444	
03	2.404	44	2.445	
04	2.405	45	2.446	
05	2.406	46	2.447	
06	2.407	47	2.448	
07	2.408	48	2.449	
08	2.409	49	2.450	
09	2.410	50	2.451	
10	2.411	51	2.452	
11	2.412	52	2.453	
12	2.413	53	2.454	
13	2.414	54	2.455	
14	2.415	55	2.456	
15	2.416	56	2.457	
16	2.417	57	2.458	
17	2.418	58	2.459	
18	2.419	59	2.460	
19	2.420	60	2.461	
20	2.421	61	2.462	
21	2.422	62	2.463	
22	2.423	63	2.464	
23	2.424	64	2.465	
24	2.420	65	2.466	
25	2.426	66	2.467	
26	2.427	67	2.468	
27	2.428	68	2.469	
28	2.429	69	2.470	
29	2.430	70	2.471	
30	2.431	71	2.472	
31	2.432	72	2.473	
32	2.433	73	2.474	
33	2.434	74	2.475	
34	2.435	75	2.476	
35	2.436	76	2.477	
36	2.437	77	2.478	
37	2.438	78	2.479	
38	2.439	79	2.480	
39	2.440			
40	2.441			
41	2.442			



Page 7 of 35

2.2. TEST STANDARDS AND RESULTS

The EUT has been tested according to ETSI EN 300 440 V2.2.1.

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

2.3. TEST ITEMS AND THE RESULTS

No.	Basic Standard	Test Type	Result
1	ETSI EN 300 440 4.2.2	Equivalent isotropically radiated power (e.i.r.p.)	Pass
2	ETSI EN 300 440 4.2.3	Permitted range of operating frequencies	Pass
3	ETSI EN 300 440 4.2.4	Unwanted emissions in the spurious domain	Pass
4	ETSI EN 300 440 4.2.5	Duty cycle	Pass
5	ETSI EN 300 440 4.2.6	Additional requirements for FHSS equipment	N/A
6	ETSI EN 300 440 4.3.3	Adjacent channel selectivity	N/A
7	ETSI EN 300 440 4.3.4	Blocking or desensitization	Pass
8	ETSI EN 300 440 4.3.5	Spurious emissions	Pass

2.4. ENVIRONMENTAL CONDITIONS

- Temperature: 15-35°C- Relative Humidity: 30-60%

- Atmospheric pressure: 86-106kPa



Page 8 of 35

3. MEASUREMENT UNCERTAINTY

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO.

- Uncertainty of Radio Frequency, Uc=±1 x 10-7
- Uncertainty of total RF power, conducted, Uc = ±0.8dB
- Uncertainty of RF power density, conducted, Uc = ±2.6dB
- Uncertainty of spurious emissions, conducted, Uc = ±2.7dB
- Uncertainty of spurious emissions, radiated, Uc = ±5.4dB
- Uncertainty of Temperature: ±0.5°C
- Uncertainty of Humidity: ±1 %
- Uncertainty of DC and low frequency voltages: ±2%



Page 9 of 35

4. IDENTIFICATION OF THE RESPONSIBLE TESTING LOCATION

Site	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

LIST OF EQUIPMENTS USED

Description	Manufacturer	Model No.	S/N	Cal. Date	Cal. Due
MXG X-Series Vector Signal Generator	Aglient	N5182B	MY53050647	Mar. 03, 2023	Mar. 02, 2024
RF Analog Signal Generator	Aglient	N5171B	MY53050474	Jun. 01, 2023	May 31, 2024
EXA Signal Analyzer	Agilent	N9010A	MY53470504	Jun. 01, 2023	May 31, 2024
Signal Analyzer	Aglient	N9020A	MY52090123	Jun. 03, 2023	Jun. 02, 2024
USB Wideband Power Sensor	Aglient	U2021XA	MY54110007	Jun. 03, 2023	Jun. 02, 2024
Universal Radio Communication Tester	R&S	CMW270	101933	Jun. 02, 2023	Jun. 01, 2024
Attenuator	ZHINAN	E-002	N/A	Aug. 04, 2022	Aug. 03, 2024
Power spliter	Mini-Circuits	ZFRSC-183-s	3122	N/A	N/A
Power Meter	R&S	NRVD	8323781027	Mar. 24, 2022	Mar. 23, 2025
2.4GHz Filter	EM Electronics	N/A	N/A	Mar. 18, 2022	Mar. 19, 2024
Small environment tester	ESPEC	SH-242	93008290	Aug. 03, 2022	Aug. 02, 2024
Wideband Antenna	SCHWARZBECK	VULB9168	VULB9168-494	Jan. 05, 2023	Jan. 04, 2024
Double-Ridged Waveguide Horn	ETS	3117	00154520	Jun. 03, 2023	Jun. 02, 2024
RF Cable	Harbour	FLCA-7312-80 -10000S2	FL0000169	Nov. 11, 2022	Nov. 10, 2024



Page 10 of 35

5. ETSI EN 300 440 REQUIREMENTS

5.1. EQUIVALENT ISOTROPICALLY RADIATED POWER (E.I.R.P.)

EN 300 440 Clause 4.2.2.4

Radiated Power <= 10mW (10dBm) EIRP over Normal and Extreme conditions.

Test Configuration

Temperature and Voltage Measurement (under normal and extreme test conditions)

Equipment measured as constant envelope modulation equipment



Remarks:

For peak power measurements, a spectrum analyser or frequency-selective voltmeter shall be used and tuned to the Presenter carrier at which the highest level is detected.



Page 11 of 35

TEST PROCEDURE

Please refer to ETSI EN 300 440 clause 4.2.2.3 for the test conditions and measurement method.

TEST RESULTS

Operation Mode	Single TX	Test Date	Nov. 21, 2023
Temperature	24.3°C	Tested by	Cici Li
Humidity	63.4% RH	Polarity	

Mouse:

TEST CONDITIONS		Transmitter Power (dBm)				
		Temp (25)°C	Temp (0)°C		Temp (40)°C	
CHANNEL	VOL POWER	DC 5V	DC 4.5V	DC 5.5V	DC 4.5V	DC 5.5V
2402MHz	EIRP	-0.637	-0.639	-0.641	-0.643	-0.646
2441MHz	EIRP	-1.078	-1.080	-1.083	-1.085	-1.086
2480MHz	EIRP	-1.758	-1.760	-1.763	-1.764	-1.767
Limit		10dBm				
Measurement uncertainty				+ 0.28dB / - 0.30	dB	

Donale:

TEST CONDITIONS		Transmitter Power (dBm)				
		Temp (25)°C	Temp (0)°C		Temp (40)°C	
CHANNEL	VOL POWER	DC 5V	DC 4.5V	DC 5.5V	DC 4.5V	DC 5.5V
2402MHz	EIRP	-1.342	-1.344	-1.346	-1.348	-1.349
2441MHz	EIRP	-2.013	-2.014	-2.017	-2.019	-2.021
2480MHz	EIRP	-3.058	-3.061	-3.063	-3.065	-3.067
Limit		10dBm				
Measurement uncertainty				+ 0.28dB / - 0.30	dB	

Conclusion: PASS



Page 12 of 35

5.2. PERMITTED RANGE OF OPERATING FREQUENCIES

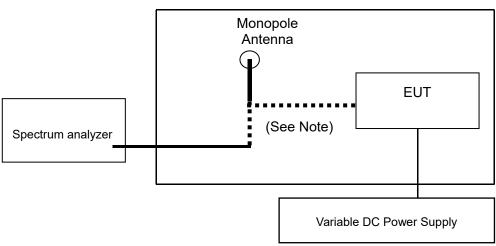
ETSI EN 300 440 clause 4.2.3.5

For all equipment the frequency shall lie within the band 2.4GHz to 2.4835GHz (fL>2.4GHz and fH<2.4835GHz)

TEST CONFIGURATION

Temperature and Voltage Measurement (under normal and extreme test conditions)





Remarks:

The spectrum analyzer could be connected to a monopole antenna or directly connected to the EUT, if the EUT has already employing an antenna connector.

TEST PROCEDURE

Please refer to ETSI EN 300 440 clause 4.2.3.3 for the test conditions and measurement method.



Page 13 of 35

TEST RESULTS FOR FREQUENCY RANGE

Mouse:

TEST C	ONDITION	Frequency Range		
TEST CONDITION		Low Frequency	High Frequency	
Temperature Voltage		MHz		
25°C	DC 5.0V	2400.960	2480.665	
	DC 4.5V	2400.960	2480.665	
0°C	DC 5.5V	2400.960	2480.675	
4000	DC 4.5V	2400.960	2480.660	
40°C	DC 5.5V	2400.960	2480.665	
Measured frequencies (lowest and Highest)		2400.960	2480.675	
Limit		FL > 2400MHz	FH < 2483.5MHz	

TEST RESULTS FOR 99% OCCUPIED BANDWIDTH

Test Condition	Channel [MHz]	OBW [MHz]	FL@OBW	FH@OBW	Limit [MHz]
Normal	2402	1.0561	2401.472		> 2400MHz
Normal	2480	1.0269		2480.513	< 2483.5MHz



Page 14 of 35

Dongle:

TEST CO	TEST CONDITION		y Range
TEST CC			High Frequency
Temperature Voltage		MHz	MHz
25°C	DC 5.0V	2400.995	2480.660
000	DC 4.5V	2400.995	2480.700
0°C	DC 5.5V	2400.995	2480.690
4000	DC 4.5V	2401.000	2480.675
40°C	DC 5.5V	2401.000	2480.665
Measured frequencies (lowest and Highest)		2400.995	2480.700
Limit		FL > 2400MHz	FH < 2483.5MHz

TEST RESULTS FOR 99% OCCUPIED BANDWIDTH

Test Condition	Channel [MHz]	OBW [MHz]	FL@OBW	FH@OBW	Limit [MHz]
Normal	2402	1.0474	2401.476		> 2400MHz
Normal	2480	1.0263		2480.513	< 2483.5MHz

Conclusion: PASS



Page 15 of 35

5.3. UNWANTED EMISSIONS IN THE SPURIOUS DOMAIN

ETSI EN 300 440 clause 4.2.4

Unwanted emissions in the spurious domain (spurious emissions) are those at frequencies beyond the limit of 250 % of the necessary bandwidth above and below the centre frequency of the emission.

The level of spurious emissions shall be measured as either:

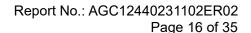
a)

- i) Their power level in a specified load (conducted emission); and
- ii) Their effective radiated power when radiated by the cabinet and structure of the equipment (cabinet radiation); or
- b) Their effective radiated power when radiated by the cabinet and the integral or dedicated antenna, in the case of equipment fitted with such an antenna and no permanent RF connector.

For measurements above 1 000 MHz the peak value shall be measured using a spectrum analyser. The "max hold" function of a spectrum analyser shall be used. For measurements up to 1 000 MHz the quasi-peak detector set in accordance with the specification of CISPR 16 [1] shall be used.

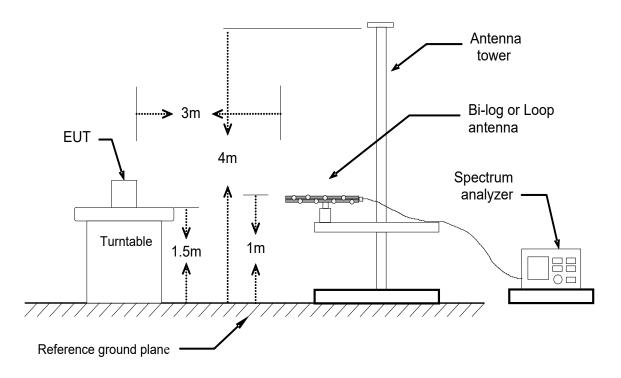
The power of any spurious emission shall not exceed the following values given in table 5.

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

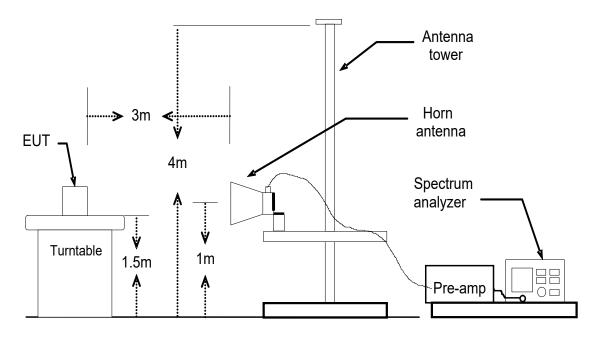




Test Configuration Below 1GHz



Above 1GHz



TEST PROCEDURE

Please refer to ETSI EN 300 440 clause 4.2.4.3 for the test conditions and measurement methods.

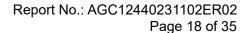


Page 17 of 35

TEST RESULT

Mouse:

NO	Frequency	Measurement Bandwidth	Level	Limit	Margin
NO.	MHz	KHz	EIRP	dBm	dB
	TX:	2402MHz, Antenna Polarizati	on: Vertical		
1	4804	1000	-40.48	-30	10.48
2	7206	1000	-44.50	-30	14.50
3	9608	1000	\	-30	>10
4	12010	1000	\	-30	>10
5	Other(25-1000)	100	\	-36 or -54	>10
6	Other(1000-25000)	1000	\	-30	>10
	TX:2	402MHz, Antenna Polarizatio	n: Horizonta	al	
1	4804	1000	-39.86	-30	9.86
2	7206	1000	-44.54	-30	14.54
3	9608	1000	\	-30	>10
4	12010	1000	\	-30	>10
5	Other(25-1000)	100	\	-36 or -54	>10
6	Other(1000-25000)	1000	\	-30	>10
	TX:	2441MHz, Antenna Polarizati	on: Vertical		
1	4882	1000	-39.26	-30	9.26
2	7323	1000	-43.10	-30	13.10
3	9764	1000	\	-30	>10
4	12205	1000	\	-30	>10
5	Other(25-1000)	100	\	-36 or -54	>10
6	Other(1000-25000)	1000	\	-30	>10
	TX:2	441MHz, Antenna Polarization	n: Horizonta	al	
1	4882	1000	-39.22	-30	9.22
2	7323	1000	-43.96	-30	13.96
3	9764	1000	\	-30	>10
4	12205	1000	\	-30	>10
5	Other(25-1000)	100	\	-36 or -54	>10
6	Other(1000-25000)	1000	\	-30	>10





	TX:2480MHz, Antenna Polarization: Vertical				
1	4960	1000	-41.68	-30	11.68
2	7440	1000	-43.08	-30	13.08
3	9920	1000	\	-30	>10
4	12400	1000	\	-30	>10
5	Other(25-1000)	100	\	-36 or -54	>10
6	Other(1000-25000)	1000	\	-30	>10
	TX:24	80MHz, Antenna Polarizatio	n: Horizonta	al	
1	4960	1000	-39.81	-30	9.81
2	7440	1000	-43.77	-30	13.77
3	9920	1000	\	-30	>10
4	12400	1000	\	-30	>10
5	Other(25-1000)	100	\	-36 or -54	>10
6	Other(1000-25000)	1000	\	-30	>10
	Measurement uncertainty:±3.2dB				

Transmitter Standby Mode

NO	Frequency	Measurement Bandwidth	Level	Limit	Margin	
NO.	MHz	KHz	EIRP	dBm	dB	
Standby Mode ,Antenna Polarization: Vertical						
1	25-1000	100	\	-57	>10	
2	1000-25000	1000	\	-47	>10	
Standby M	Standby Mode ,Antenna Polarization: Horizontal					
1	25-1000	100	\	-57	>10	
2	1000-25000	1000	1	-47	>10	

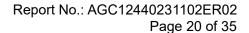
Notes: "\" in the table above means that the emissions are too small to be measured and are at least 10 dB below the limit.



Page 19 of 35

Dongle:

NO	Frequency	Measurement Bandwidth	Level	Limit	Margin	
NO.	MHz	KHz	EIRP	dBm	dB	
TX:2402MHz, Antenna Polarization: Vertical						
1	4804	1000	-40.65	-30	10.65	
2	7206	1000	-44.19	-30	14.19	
3	9608	1000	\	-30	>10	
4	12010	1000	\	-30	>10	
5	Other(25-1000)	100	\	-36 or -54	>10	
6	Other(1000-25000)	1000	\	-30	>10	
	TX:2	402MHz, Antenna Polarizatio	n: Horizonta	al		
1	4804	1000	-40.27	-30	10.27	
2	7206	1000	-43.84	-30	13.84	
3	9608	1000	\	-30	>10	
4	12010	1000	\	-30	>10	
5	Other(25-1000)	100	\	-36 or -54	>10	
6	Other(1000-25000)	1000	\	-30	>10	
	TX:	2441MHz, Antenna Polarizati	on: Vertical			
1	4882	1000	-39.10	-30	9.10	
2	7323	1000	-43.10	-30	13.10	
3	9764	1000	\	-30	>10	
4	12205	1000	\	-30	>10	
5	Other(25-1000)	100	\	-36 or -54	>10	
6	Other(1000-25000)	1000	\	-30	>10	
	TX:2	441MHz, Antenna Polarizatio	n: Horizonta	al		
1	4882	1000	-38.72	-30	8.72	
2	7323	1000	-44.44	-30	14.44	
3	9764	1000	\	-30	>10	
4	12205	1000	\	-30	>10	
5	Other(25-1000)	100	\	-36 or -54	>10	
6	Other(1000-25000)	1000	\	-30	>10	





	TX:2480MHz, Antenna Polarization: Vertical					
1	4960	1000	-41.45	-30	11.45	
2	7440	1000	-42.65	-30	12.65	
3	9920	1000	\	-30	>10	
4	12400	1000	\	-30	>10	
5	Other(25-1000)	100	\	-36 or -54	>10	
6	Other(1000-25000)	1000	\	-30	>10	
	TX:24	80MHz, Antenna Polarizatio	n: Horizonta	nl		
1	4960	1000	-40.23	-30	10.23	
2	7440	1000	-44.41	-30	14.41	
3	9920	1000	\	-30	>10	
4	12400	1000	\	-30	>10	
5	Other(25-1000)	100	\	-36 or -54	>10	
6	Other(1000-25000)	1000	\	-30	>10	
	Measurement uncertainty:±3.2dB					

Transmitter Standby Mode

NO	Frequency	Measurement Bandwidth	Level	Limit	Margin	
NO.	MHz	KHz	EIRP	dBm	dB	
Standby Mode ,Antenna Polarization: Vertical						
1	25-1000	100	\	-57	>10	
2	1000-25000	1000	\	-47	>10	
Standby M	Standby Mode ,Antenna Polarization: Horizontal					
1	25-1000	100	\	-57	>10	
2	1000-25000	1000	1	-47	>10	

Notes: "\" in the table above means that the emissions are too small to be measured and are at least 10 dB below the limit.

Conclusion: PASS



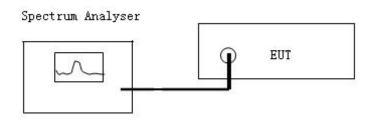
Page 21 of 35

5.4. DUTY CYCLE

ETSI EN 300 440 clause 4.2.5.4:

Limit: up to 100%

Test Configuration



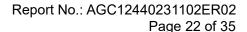
TEST PROCEDURE

Please refer to ETSI EN 300 440 clause 4.2.5.3 for the test conditions and measurement methods.

TEST RESULTS

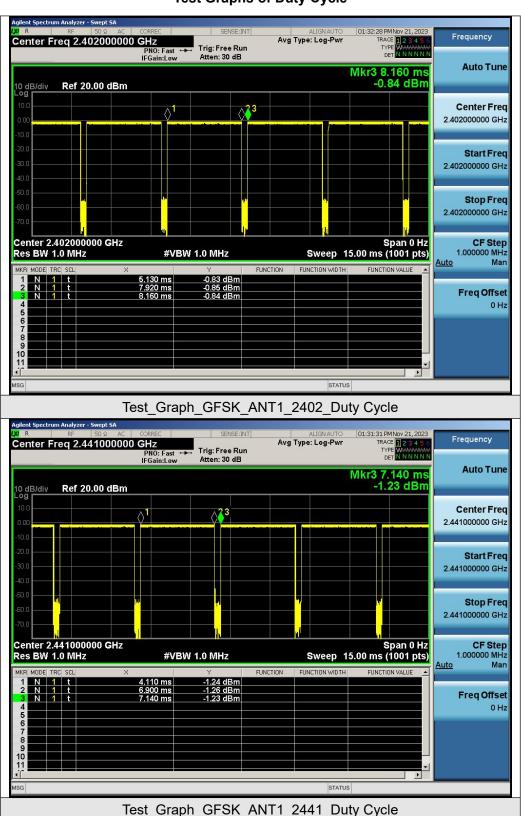
Mouse:

Mouse.				
Frequency Measured				
(MHz)				
Operating frequency (MHz)	Duty cycle	Result (Pass/Fail)		
2402MHz	92.08%	Pass		
2441MHz	92.08%	Pass		
2480MHz	92.08%	Pass		



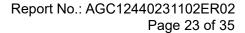


Test Graphs of Duty Cycle

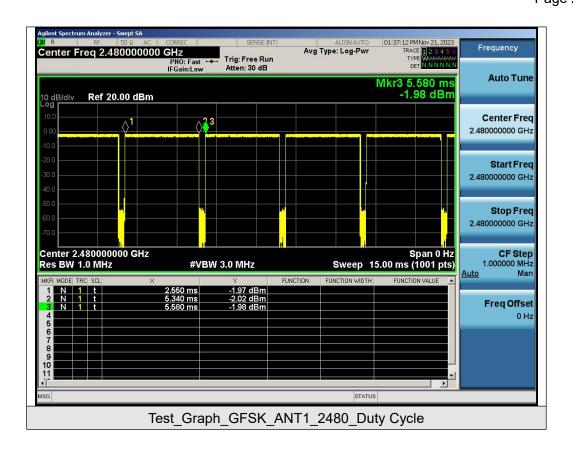


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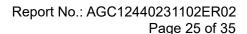




Page 24 of 35

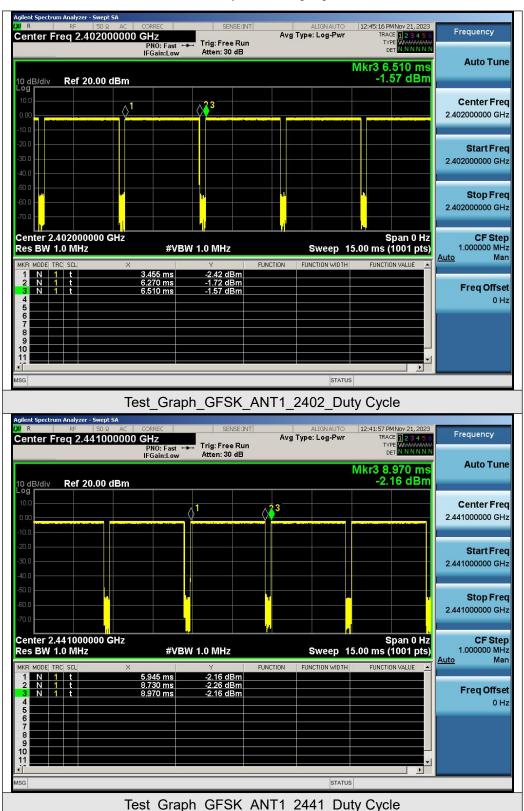
Dongle:

Dollylo.			
Frequency Measured			
	(MHz)		
Operating frequency (MHz)	Duty cycle	Result (Pass/Fail)	
2402MHz	92.14%	Pass	
2441MHz	92.06%	Pass	
2480MHz	92.14%	Pass	



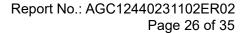


Test Graphs of Duty Cycle

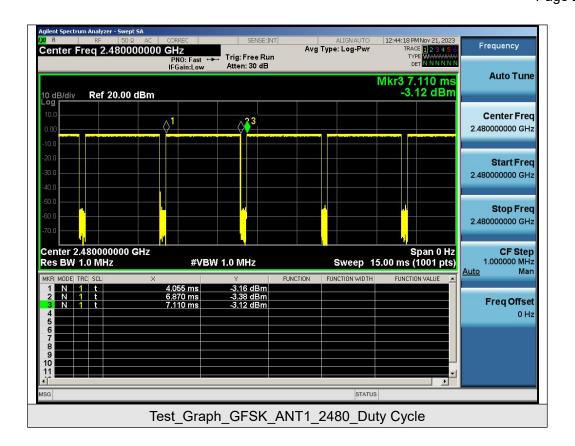


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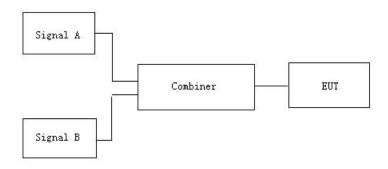




Page 27 of 35

5.5. BLOCKING OR DESENSITIZATION

TEST SETUP:



TEST LIMITS:

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=-20logf-10logBW

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

The factor k is limited within the following: -40dB < k < 0 dB.

TEST PROCEDURE:

- 1. Two signal generators A and B shall be connected to the receiver via a combining network to the receiver.
- 2. 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.
- 3. Initially signal generator B shall be switched off and using signal generator A the level that still gives sufficient response shall be established. The output level of generator A shall then be increased by 3 dB.
- 4. Signal generator B is then switched on and adjusted until the wanted criteria are met. This level shall be recorded.
- 5. The measurement shall be repeated with the test frequency for signal generator B at approximately 10 times, 20 times and 50 times of the occupied bandwidth above upper band edge of occupied bandwidth.
- 6. The blocking or desensitization shall be recorded as the level in dBm of lowest level of the unwanted signal (generator B).



Page 28 of 35

TEST RESULT

Mouse:

Blocking or Desensitization				
	Receiver cateo	gory: 2		
Coupl	ing method: Test antenna to the	e receiver integrated antenna	a	
Lower band edge of occu	pied bandwidth (LBE):MHz	2401.4	72	
Upper band edge of occu	pied bandwidth (UBE):MHz	2480.5	13	
Unwanted Frequency Offset (MHz)			Verdict	
	(dBm)	(dBm)		
LBE – 50 x OBW	-48	≥ -45+k		
LBE – 20 x OBW	-46	≥ -45+k		
LBE – 10 x OBW	-42	≥ -45+k	Comply with receiver	
UBE + 10 x OBW	-40	≥ -45+k	category 2 limit	
UBE + 20 x OBW	-43	≥ -45+k		
UBE + 50 x OBW	-44	≥ -45+k		
Measurement uncertainty: 6dB				

K= -7.849

Dongle:

Blocking or Desensitization					
	Receiver category: 2				
Coupl	ing method: Test antenna to the	e receiver integrated antenna	a		
Lower band edge of occu	pied bandwidth (LBE):MHz	2401.4	76		
Upper band edge of occu	pied bandwidth (UBE):MHz	2480.5	513		
Unwanted Frequency Unwanted Signal Level Unwanter Offset (MHz)		Unwanted Level Limit	Verdict		
	(dBm)	(dBm)			
LBE – 50 x OBW	-48	≥ -45+k			
LBE – 20 x OBW	-46	≥ -45+k			
LBE – 10 x OBW	-42	≥ -45+k	Comply with receiver		
UBE + 10 x OBW	-40	≥ -45+k	category 2 limit		
UBE + 20 x OBW	-43	≥ -45+k			
UBE + 50 x OBW	-44	≥ -45+k			
Measurement uncertainty: 6dB					

K= -7.813



Page 29 of 35

5.6. RECEIVER SPURIOUS EMISSIONS

ETSI EN 300 440 clause 4.3.5

These requirements do not apply to receivers used in combination with permanently co-located Presenters continuously transmitting. Co-located is defined as < 3 m. In these cases the receivers will be tested together with the Presenter in operating mode

The spurious emissions of the receivers shall not exceed the values in tables in the indicated bands:

Frequency Range	Limit when in stand-by
25 MHz to 1 GHz	-57dBm
Above 1 GHz	-47dBm

TEST CONFIGURATION

Radiated Spurious Emissions

Same as section 5.3 in this test report

TEST PROCEDURE

Please refer to ETSI EN 300 440 clause 4.3.5.3 for the test conditions and measurement methods.



Page 30 of 35

TEST RESULTS

Measurement Data for Receiver (worst case 2480MHz)-Mouse

Frequency	Spurious Emission		Limit	Test
(MHz)	polarization	Level(dBm)	(dBm)	Result
127.22	Vertical	-67.47	2nW/	
325.04	V	-65.55	-57dBm	
486.27	V	-62.95	below 1GHz,	
638.29	V	-61.13	10112,	
740.26	V	-59.73		
1425.52	V	-57.61]	
Other(25-26000)	V		20nW/	
162.96	Horizontal	-66.82	-47dBm	Pass
253.84	Н	-65.21	above	
362.18	Н	-61.62	1GHz.	
586.39	Н	-60.76		
623.28	Н	-59.33		
1632.81	Н	-57.27		
Other(25-26000)	Н			

Notes:

- 1. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "--" remark, if no specific emission from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 2. All the modes had been tested, only the worst case recorded in the report.



Page 31 of 35

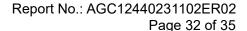
Measurement Data for Receiver (worst case 2480MHz)-Dongle

Frequency	Spurious Emission		Limit	Test
(MHz)	polarization	Level(dBm)	(dBm)	Result
123.38	Vertical	-67.04	2nW/	
325.04	V	-65.77	-57dBm	
486.27	V	-63.22	below 1GHz,	
638.29	V	-61.47] 10112,	
740.26	V	-60.46		
1425.52	V	-57.87		
Other(25-26000)	V		20nW/	_
161.64	Horizontal	-66.80	-47dBm	Pass
253.84	Н	-65.29	above 1GHz.	
362.18	Н	-62.16	IGHZ.	
586.39	Н	-60.72		
623.28	Н	-58.96		
1632.81	Н	-57.37		
Other(25-26000)	Н			

Notes:

- 3. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "--" remark, if no specific emission from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 4. All the modes had been tested, only the worst case recorded in the report.

Conclusion: PASS





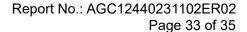
APPENDIX I: PHOTOGRAPHS OF TEST SETUP

RADIATED SPURIOUS EMISSION BELOW 1G TEST SETUP-Mouse



RADIATED SPURIOUS EMISSION BELOW 1G TEST SETUP-Dongle





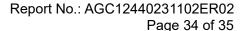


RADIATED SPURIOUS EMISSION ABOVE 1G TEST SETUP-Mouse



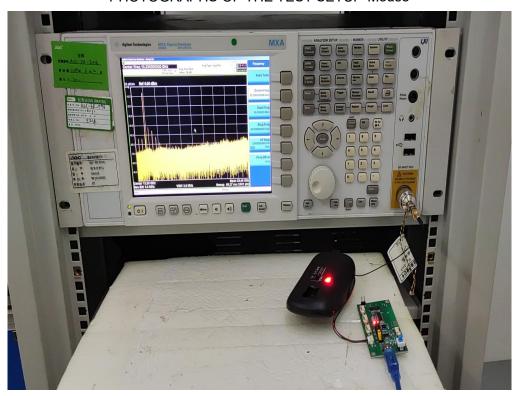
RADIATED SPURIOUS EMISSION ABOVE 1G TEST SETUP-Dongle







PHOTOGRAPHS OF THE TEST SETUP-Mouse



PHOTOGRAPHS OF THE TEST SETUP-Dongle



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Page 35 of 35

APPENDIX II: PHOTOGRAPHS OF THE EUT

Refer to the Report No.: AGC12440231102AP01

----END OF REPORT----



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- 4. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.
- 5. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.
- 6. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.
- 7.Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.
- 8. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.
- 9. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.



Health Test Report

Report No.: AGC12440231102EH01

PRODUCT DESIGNATION: WIRELESS MOUSE

BRAND NAME : N/A

MODEL NAME : MO2222

APPLICANT: Mid Ocean Brands B.V.

DATE OF ISSUE : Nov. 27, 2023

STANDARD(S)EN 62479:2010
EN 50663:2017

REPORT VERSION: V1.0

Attestation of Global Confine (Shenzhen) Co., Ltd.



Page 2 of 6

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	1	Nov. 27, 2023	Valid	Initial release



Page 3 of 6

TABLE OF CONTENTS

1.	GENERAL INFORMATION	4
2.	TECHNICAL INFORMATION	. !
	TEST RESULT	
4.	CONCLUSION	١.



Page 4 of 6

1. GENERAL INFORMATION

Applicant	Mid Ocean Brands B.V.
Address	7/F., King Tower, 111King Lam Street, Cheung ShaWan, Kowloon, HongKong.
Manufacturer	Mid Ocean Brands B.V.
Address	7/F., King Tower, 111King Lam Street, Cheung ShaWan, Kowloon, HongKong.
Factory	Mid Ocean Brands B.V.
Address	7/F., King Tower, 111King Lam Street, Cheung ShaWan, Kowloon, HongKong.
Product Designation	WIRELESS MOUSE
Brand Name	N/A
Test Model	MO2222
Series Model	N/A
Difference Description	N/A
Date of receipt of test item	Nov. 20, 2023
Date of test	Nov. 20, 2023 to Nov. 27, 2023
Test Result	Pass

Note: The test results of this report relate only to the tested sample identified in this report.

Reviewed By

Cici Li
(Project Engineer)

Calvin Liu
(Reviewer)

Nov. 27, 2023

Nov. 27, 2023

Max Zhang
Authorized Officer

Nov. 27, 2023



Page 5 of 6

2. TECHNICAL INFORMATION

Note: the following data is based on the information by the applicant.

Product Designation	WIRELESS MOUSE
Brand Name	N/A
Test Model	MO2222
Hardware Version	VER1.0
Software Version	VER1.0
Operation Frequency	2402-2480MHz
Modulation type	GFSK
Antenna Type	PCB Antenna
Antenna gain	-0.55dBi
Power Supply	Mouse: DC 5V by adapter or DC 3.7V by battery Dongle: DC 5V by PC

Note: For more details, please refer to the user's manual of the EUT.



Page 6 of 6

3. TEST RESULT

Max Emission Level-Mouse					
Frequency (MHz) EIRP Level (dBm) EIRP Level(mW) Limit (mW) Result					
2402	-0.637	0.864	20	Pass	
2441	-1.078	0.780	20	Pass	
2480	-1.758	0.667	20	Pass	

Max Emission Level-Dongle				
Frequency (MHz)	EIRP Level (dBm)	EIRP Level(mW)	Limit (mW)	Result
2402	-1.342	0.734	20	Pass
2441	-2.013	0.629	20	Pass
2480	-3.058	0.495	20	Pass

Note:

1. The maximum output power refers to the project report number: AGC12440231102ER02.

4. CONCLUSION

Remark: EUT meets the basic requirements in the standard.



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