

EMC Test Report

Report No.: AGC07777190401EE01

PRODUCT DESIGNATION : wireless mouse
BRAND NAME : N/A
MODEL NAME : MO8117 LXW-273
CLIENT : Mid Ocean Brands B.V
DATE OF ISSUE : Apr. 25, 2019
STANDARD(S) : Draft EN 301 489-1 V2.2.0 (2017-03)
: Draft EN 301 489-3 V2.1.1 (2017-03)
REPORT VERSION : V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

CAUTION:

This report shall not be reproduced except in full without the written permission of the test laboratory and shall not be quoted out of context.



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Apr. 25, 2019	Valid	Initial release

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

TABLE OF CONTENTS

1. TEST REPORT CERTIFICATION.....	4
2. GENERAL INFORMATION.....	5
2.1. DESCRIPTION OF EUT	5
2.2. OBJECTIVE	5
2.3. TEST STANDARDS AND RESULTS.....	6
2.4. TEST ITEMS AND THE RESULTS.....	6
2.5. ENVIRONMENTAL CONDITIONS	6
3. TEST MODE DESCRIPTION	7
4. MEASUREMENT UNCERTAINTY.....	7
5. SUPPORT EQUIPMENT	8
6. IDENTIFICATION OF THE RESPONSIBLE TESTING LOCATION.....	9
7. EMISSION TEST	10
7.1. RADIATED DISTURBANCE MEASUREMENT.....	10
8. IMMUNITY TEST	14
8.1. EUT SETUP AND OPERATING CONDITIONS	16
8.2. GENERAL PERFORMANCE CRITERIA.....	16
8.3. ELECTROSTATIC DISCHARGE IMMUNITY TEST.....	18
8.4. RADIATED, RADIO FREQUENCY ELECTROMAGNETIC FIELD IMMUNITY TEST.....	22
APPENDIX A: PHOTOGRAPHS OF TEST SETUP.....	25

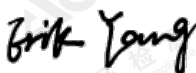
The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

1. TEST REPORT CERTIFICATION

Applicant	Mid Ocean Brands B.V
Address	7/F. Kings Tower, 111King Lam Street, Cheung Sha Wan. kowloon HK
Manufacturer	Mid Ocean Brands B.V
Address	7/F. Kings Tower, 111King Lam Street, Cheung Sha Wan. kowloon HK
Factory	Mid Ocean Brands B.V
Address	7/F. Kings Tower, 111King Lam Street, Cheung Sha Wan. kowloon HK
Product Designation	wireless mouse
Brand Name	N/A
Test Model	MO8117 LXW-273
Date of test	Apr. 01, 2019 to Apr. 18, 2019
Deviation	None
Condition of Test Sample	Normal
Test Result	Pass
Report Template	AGCRT-EC-EMC

We, Attestation of Global Compliance (Shenzhen) Co., Ltd., hereby certify that the submitted samples of the above item, as detailed in chapter 2.1 of this report, has been tested in our facility. The test record, data evaluation and test configuration represented herein are true and accurate accounts of measurements of the sample's EMC characteristics under the conditions herein specified.

Tested By



Erik Yang(Yang Jianmin)

Apr. 18, 2019

Reviewed By



Max Zhang(Zhang Yi)

Apr. 25, 2019

Approved By



 Forrest Lei(Lei Yonggang)
 Authorized Officer

Apr. 25, 2019

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

2. GENERAL INFORMATION

2.1. DESCRIPTION OF EUT

The EUT is a short range, lower power, wireless device.

Details of technical specification refer to the description in follows:

Operating Frequency	2405MHz-2470MHz
Support Channels	8 Channels
Modulation	GFSK
Hardware Version	Mouse: V10 Dongle: V10
Software Version	Mouse: V10 Dongle: V10
Antenna Type	Mouse: PCB Antenna Dongle: PCB Antenna
Antenna Gain	Mouse: -7dBi Dongle: -7dBi
Receiver category	2
Power Supply	Mouse: DC 3.0V by battery Dongle: DC 5V
Test Frequency	2405MHz, 2430MHz, 2470MHz

2.2. OBJECTIVE

Perform Electro Magnetic Interference (EMI) and Electro Magnetic Susceptibility (EMS) tests for CE Marking.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

2.3. TEST STANDARDS AND RESULTS

The EUT has been tested according to ETSI EN 301 489-1 V2.2.0 (2017-03) and ETSI EN 301 489-3 V2.1.1 (2017-03).

ETSI EN 301 489-1	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU and the essential requirements of article 6 of Directive 2014/30/EU
ETSI EN 301 489-3	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 3: Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 246 GHz; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU

2.4. TEST ITEMS AND THE RESULTS

No.	Basic Standard	Test Type	Result
EMISSION (EN 301 489-1 §7.1)			
1	EN 55032	Radiated emission	PASS
3	EN 55032	Conducted emission, AC ports	N/A
4	EN 55032	Conducted emission, Telecom ports	N/A
5	EN 61000-3-2	Harmonic current emissions	N/A
6	EN 61000-3-3	Voltage fluctuations & flicker	N/A
IMMUNITY (EN 301 489-1 §7.2)			
7	EN 61000-4-2	Electrostatic discharge immunity	PASS
8	EN 61000-4-3	Radiated RF electromagnetic field immunity	PASS
9	EN 61000-4-4	Electrical fast transient/burst immunity	N/A
10	ISO 7637-1, -2	Transients and surges, DC ports	N/A
11	EN 61000-4-5	Surge immunity, AC ports, Telecom ports	N/A
12	EN 61000-4-6	Immunity to conducted disturbances induced by RF fields	N/A
13	EN 61000-4-11	Voltage dips and short interruptions immunity	N/A

Note:

1. N/A- Not Applicable.
2. The latest versions of basic standards are applied.

2.5. ENVIRONMENTAL CONDITIONS

During the measurement the environmental conditions were within the listed ranges:

- Temperature: -20-55°C
- Humidity: 30-60 %
- Atmospheric pressure: 86-106 kPa

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

3. TEST MODE DESCRIPTION

TEST MODE DESCRIPTION		
NO.	TEST MODE DESCRIPTION	WORST
1	Normal operation (Mouse and dongle connected)	V
2	Standby mode	--

Note: V means EMI worst mode

I/O Port Information (☒ Applicable ☐ Not Applicable)

I/O Port of EUT			
I/O Port Type	Number	Cable Description	Tested With
--	--	--	--

4. MEASUREMENT UNCERTAINTY

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in measurement" (GUM) published by CISPR and ANSI.

- Uncertainty of Conducted Emission, $U_c = \pm 3.2$ dB
- Uncertainty of Radiated Emission below 1GHz, $U_c = \pm 3.9$ dB
- Uncertainty of Radiated Emission above 1GHz, $U_c = \pm 4.8$ dB

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

5. SUPPORT EQUIPMENT

Device Type	Manufacturer	Model Name	Data Cable
PC	XIAOMI	161301-01	--

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

6. 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

TEST EQUIPMENT OF RADIATED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	Jun.12, 2018	Jun.11, 2019
ANTENNA	SCHWARZBECK	VULB9168	D69250	Mar.01, 2018	Feb.28, 2020
Double-Ridged Waveguide Horn	ETS	3117	00034609	Mar.01, 2018	Feb.28, 2020
Broadband Preamplifier	SCHWARZBECK	BBV 9718	9718-162	Jun.12, 2018	Jun.11, 2019

TEST EQUIPMENT OF ESD TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
ESD Simulator	Schaffner	NSG 438	782	Jun.12, 2018	Jun.11, 2019

TEST EQUIPMENT OF RS IMMUNITY TEST

Description	Manufacturer	Model	S/N	Cal. Date	Cal. Due
SIGNAL GENERATOR	R&S	E4421B	MY43351603	May.15, 2018	May.14, 2019
ANTENNA	SCHWARZBCK	VULB9168	D69250	Sep.28, 2017	Sep.27, 2019
POWER SENSOR	R&S	URV5-Z4	100124	May.15, 2018	May.14, 2019
POWER METER	R&S	NRVD	8323781027	May.15, 2018	May.14, 2019
POWER AMPLIFIER	KALMUS	7100LC	04-02/17-06-001	Jun.12, 2018	Jun.11, 2019
RF AMPLIFIER	Milmega	AS0104-55_55	1004793	Jun.12, 2018	Jun.11, 2019
HORN ANTENNA	ETS LINDGREN	3117	00034609	May.26, 2018	May.25, 2019
Power Amplifier	rflight	NTWPA-2560100	17063183	Oct.18, 2018	Oct.17, 2019
Broadband High Gain Horn Antenna	SCHWARZBECK	BBHA 9120 J	00073	Mar.19, 2018	Mar.18, 2020

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

7. EMISSION TEST

7.1. RADIATED DISTURBANCE MEASUREMENT

7.1.1. LIMITS OF RADIATED DISTURBANCES

Limits for radiated disturbance 30M to1 GHz at a measurement distance of 3 m

Frequency range (MHz)	Quasi peak limits(dBuV/m), for Class B ITE, at 3m measurement distance
30 - 230	40
230 - 1000	47

Limits for radiated disturbance above 1 GHz at a measurement distance of 3 m

Frequency range (MHz)	Limits (dBuV/m), Class B ITE	
	Peak	Average
1000-3000MHz	70	50
3000-6000MHz	74	54

Notes:

1. The lower limit shall apply at the transition frequency.
2. Additional provisions may be required for cases where interference occurs.

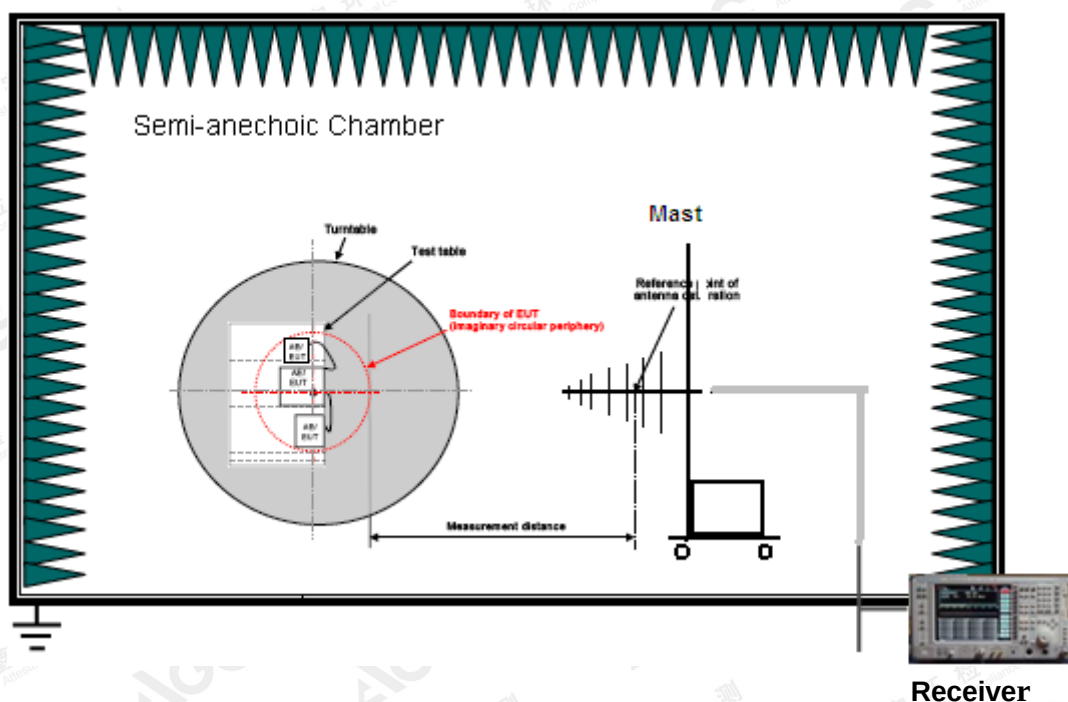
7.1.2. TEST PROCEDURE

- (1). The EUT was placed on the top of an insulating table 0.8 meters above the ground at a semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- (2). The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- (3).The antenna is a broadband antenna, and its height is varied from 1 to 4 meter 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.
- (4). For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to the heights from 1 to 4 meters and the ratable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- (5).The test-receiver system was set to Peak Detector Function and Specified Bandwidth with Maximum Hold Mode. 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 emission that did not have 10dB margin would be retested one by one using the quasi-peak method.

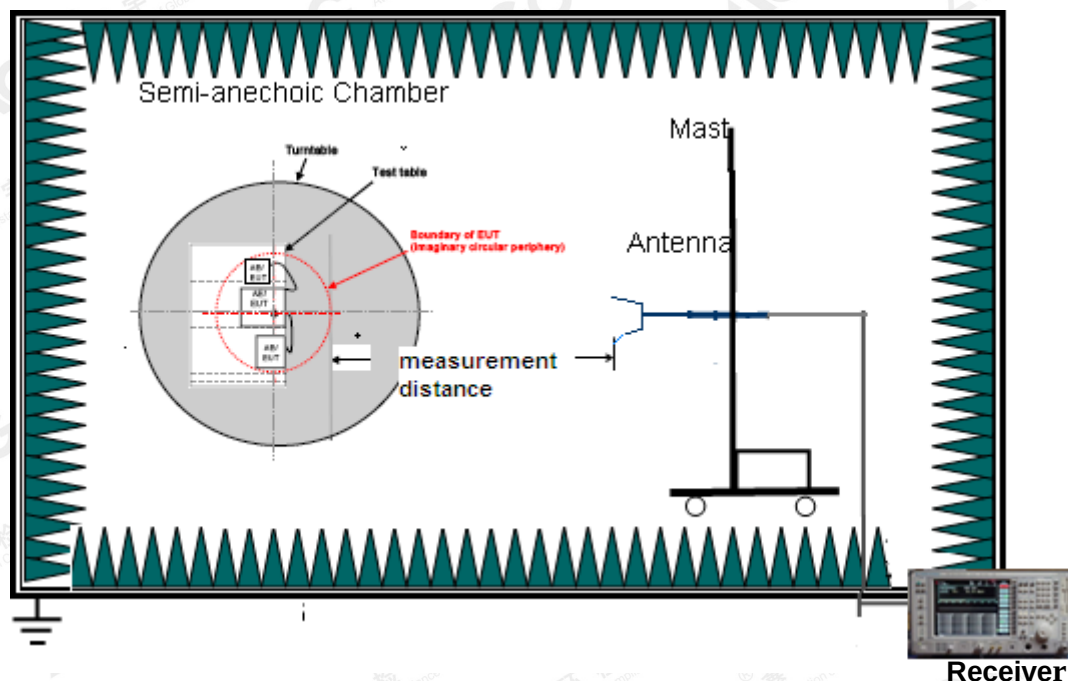
The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

7.1.3. BLOCK DIAGRAM OF TEST SETUP

Radiated Disturbance below 1 GHz



Radiated Disturbance above 1 GHz

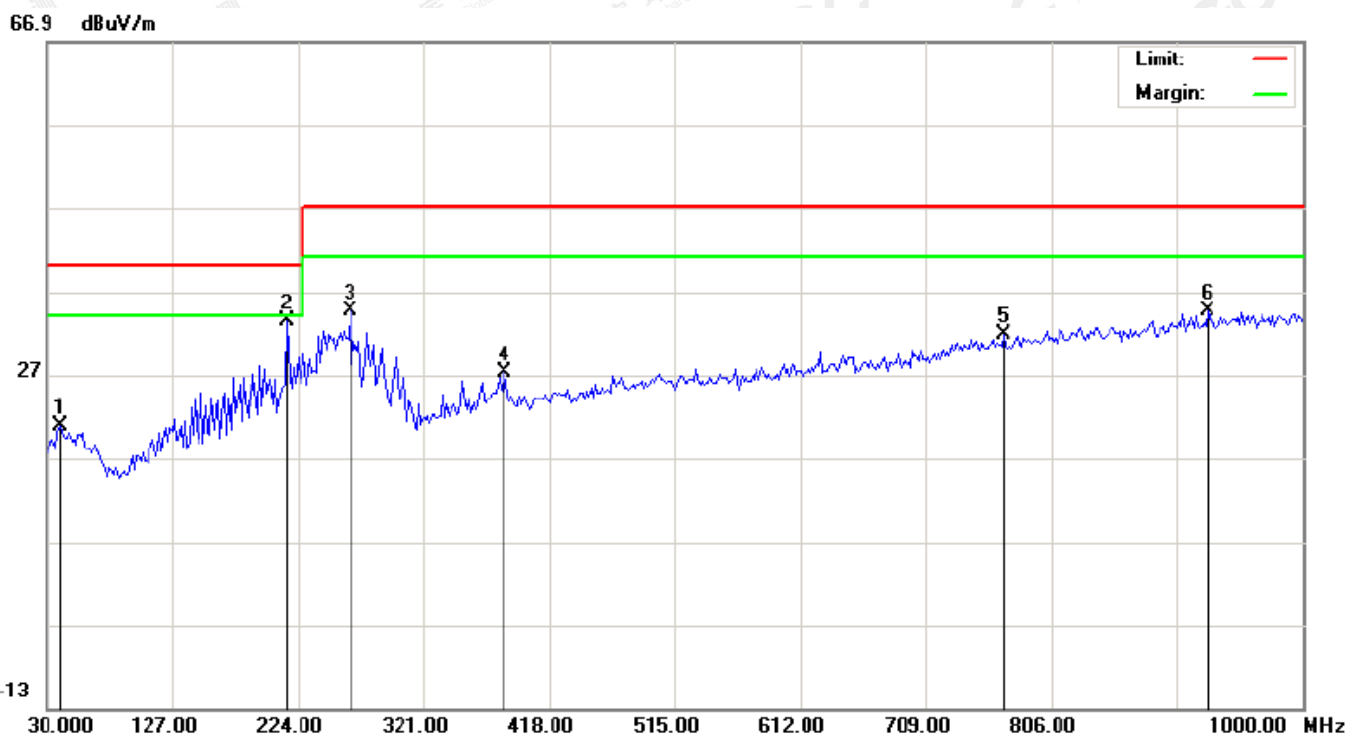


For the actual test configuration, please refer to the related item-Photographs of the Test Configuration.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

7.1.4 TEST RESULT

RADIATED EMISSION BELOW 1GHZ- HORIZONTAL



No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		41.3167	0.70	20.04	20.74	40.00	-19.26	peak			
2	*	215.9167	16.42	17.00	33.42	40.00	-6.58	peak			
3		264.4167	15.99	18.67	34.66	47.00	-12.34	peak			
4		384.0500	4.78	22.42	27.20	47.00	-19.80	peak			
5		768.8167	2.19	29.71	31.90	47.00	-15.10	peak			
6		927.2500	2.58	31.93	34.51	47.00	-12.49	peak			

RESULT: PASS

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

RADIATED EMISSION BELOW 1GHZ- VERTICAL

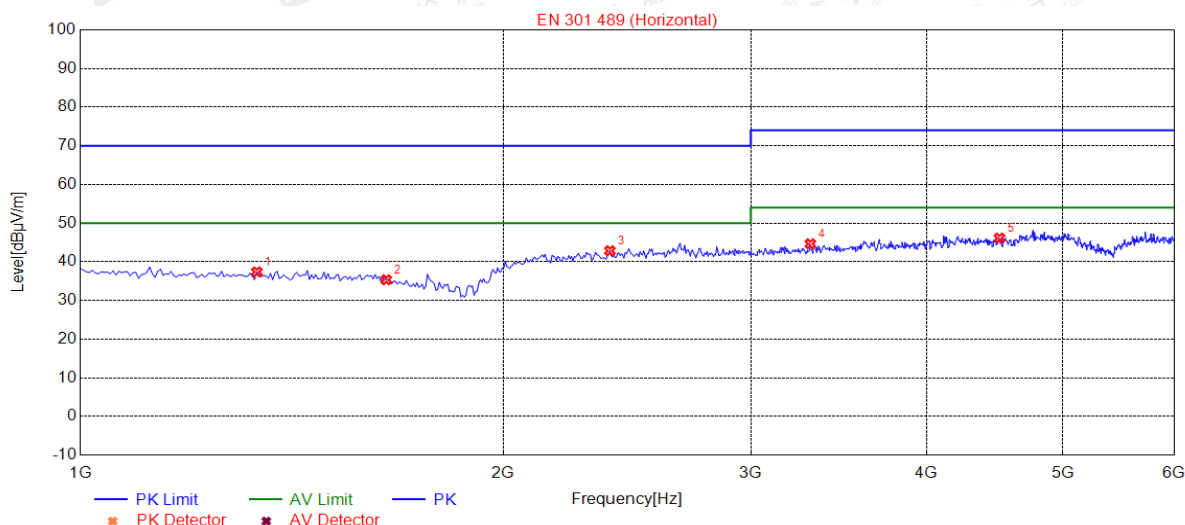


No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		47.7833	2.40	19.81	22.21	40.00	-17.79	peak			
2		167.4167	6.54	18.43	24.97	40.00	-15.03	peak			
3		243.4000	13.12	18.60	31.72	47.00	-15.28	peak			
4		299.9833	8.30	19.47	27.77	47.00	-19.23	peak			
5	*	539.2500	9.88	25.76	35.64	47.00	-11.36	peak			
6		870.6667	3.00	31.32	34.32	47.00	-12.68	peak			

RESULT: PASS

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

RADIATED EMISSION ABOVE 1GHZ- HORIZONTAL

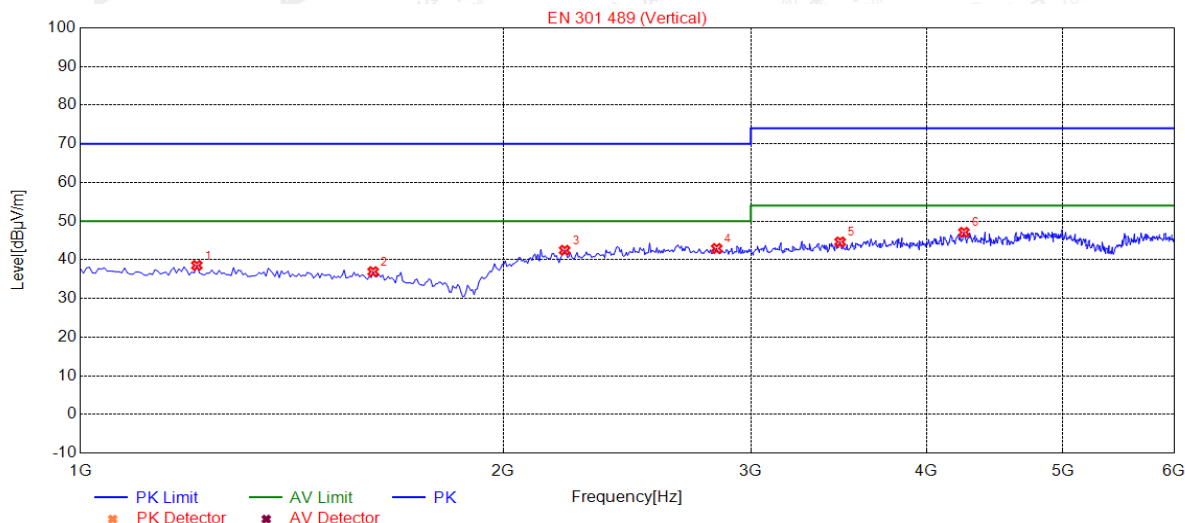


NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1335.3353	37.38	-16.97	70.00	32.62	150	350	Horizontal
2	1650.6507	35.34	-15.53	70.00	34.66	200	290	Horizontal
3	2381.3814	42.84	-10.22	70.00	27.16	200	110	Horizontal
4	3307.3073	44.64	-8.27	74.00	29.36	150	280	Horizontal
5	4508.5085	46.14	-5.19	74.00	27.86	200	240	Horizontal

RESULT: PASS

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

RADIATED EMISSION ABOVE 1GHZ- VERTICAL



NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1210.2102	38.54	-16.85	70.00	31.46	200	160	Vertical
2	1615.6156	36.93	-15.90	70.00	33.07	200	330	Vertical
3	2211.2112	42.46	-10.93	70.00	27.54	150	270	Vertical
4	2836.8368	42.92	-9.46	70.00	27.08	150	100	Vertical
5	3472.4725	44.62	-7.70	74.00	29.38	200	40	Vertical
6	4253.2533	47.11	-5.84	74.00	26.89	100	40	Vertical

RESULT: PASS

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

8. IMMUNITY TEST

8.1. EUT SETUP AND OPERATING CONDITIONS

The battery was in full voltage and the charger was connected to the EUT to keep the voltage constant during the tests.

Each immunity test was performed according to the requirements of the standard.

8.2. GENERAL PERFORMANCE CRITERIA

1. Performance criteria for Continuous phenomena applied to Transmitter (CT)

For equipment of type II or type III that requires a communication link that is maintained during the test, it shall be verified by appropriate means supplied by the manufacturer that the communication link is maintained during each individual exposure in the test sequence.

Where the EUT is a transmitter, tests shall be repeated with the EUT in standby mode to ensure that any unintentional transmission does not occur.

2. Performance criteria for Transient phenomena applied to Transmitter (TT)

For equipment of type II or type III that requires a communication link that is maintained during the test, this shall be verified by appropriate means supplied by the manufacturer during each individual exposure in the test sequence. Where the EUT is a transmitter, tests shall be repeated with the EUT in standby mode to ensure that any unintentional transmission does not occur.

3. Performance criteria for Continuous phenomena applied to Receiver (CR)

For equipment of type II or III that requires a communication link that is maintained during the test, it shall be verified by appropriate means supplied by the manufacturer that the communication link is maintained during each individual exposure in the test sequence. Where the EUT is a transceiver, under no circumstances shall the transmitter operate unintentionally during the test.

4. Performance criteria for Transient phenomena applied to Receiver (TR)

For equipment of type II or type III that requires a communication link that is maintained during the test, this shall be verified by appropriate means supplied by the manufacturer during each individual exposure in the test sequence. Where the EUT is a transceiver, under no circumstances shall the transmitter operate unintentionally during the test.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

5. Performance Table

Performance criteria		
Criteria	During Test	After Test
A	Shall operate as intended. May show degradation of performance. Shall be no loss of function. Shall be no unintentional transmissions.	Shall operate as intended. Shall be no degradation of performance. Shall be no loss of function. Shall be no loss of stored data or user programmable functions.
B	May show loss of function (one or more). May show degradation of performance. No unintentional transmissions.	Functions shall be self-recoverable. Shall operate as intended after recovering. Shall be no degradation of performance. Shall be no loss of stored data or user programmable functions.
C	May be loss of function (one or more).	Functions shall be recoverable by the operator. Shall operate as intended after recovering. Shall be no degradation of performance.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

8.3. ELECTROSTATIC DISCHARGE IMMUNITY TEST

8.3.1 TEST SPECIFICATION

Basic Standard	EN 61000-4-2
Discharge Impedance	330Ω / 150 pF
Discharge Voltage	Air Discharge:8 kV , Contact Discharge:4 kV
Polarity	Positive / Negative
Number of Discharge	Minimum 20 times at each test point
Discharge Mode	Single discharge
Discharge Period	1-second minimum

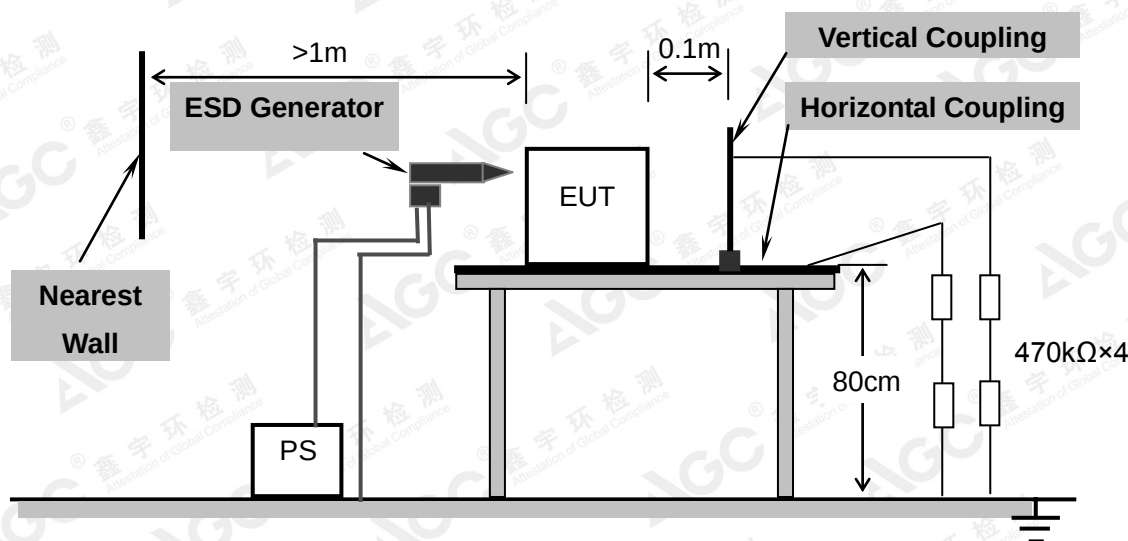
8.3.2 TEST PROCEDURE

The test procedure was in accordance with EN 61000-4-2:

- Electrostatic discharges were applied only to those points and surfaces of the EUT that are accessible to users during normal operation.
- The test was performed with at least ten single discharges on the pre-selected points in the most sensitive polarity.
- The time interval between two successive single discharges was at least 1 second.
- The ESD generator was held perpendicularly to the surface to which the discharge was applied and the return cable was at least 0.2 meters from the EUT.
- Contact discharges were applied to the non-insulating coating, with the pointed tip of the generator penetrating the coating and contacting the conducting substrate.
- Air discharges were applied with the round discharge tip of the discharge electrode approaching the EUT as fast as possible (without causing mechanical damage) to touch the EUT. After each discharge, the ESD generator was removed from the EUT and re-triggered for a new single discharge. The test was repeated until all discharges were completed.
- At least ten single discharges (in the most sensitive polarity) were applied to the Horizontal Coupling Plane at points on each side of the EUT. The ESD generator was positioned vertically at a distance of 0.1 meters from the EUT with the discharge electrode touching the HCP.
- At least ten single discharges (in the most sensitive polarity) were applied to the center of one vertical edge of the Vertical Coupling Plane in sufficiently different positions that the four faces of the EUT were completely illuminated. The VCP (dimensions 0.5m×0.5m) was placed vertically to and 0.1 meters from the EUT.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

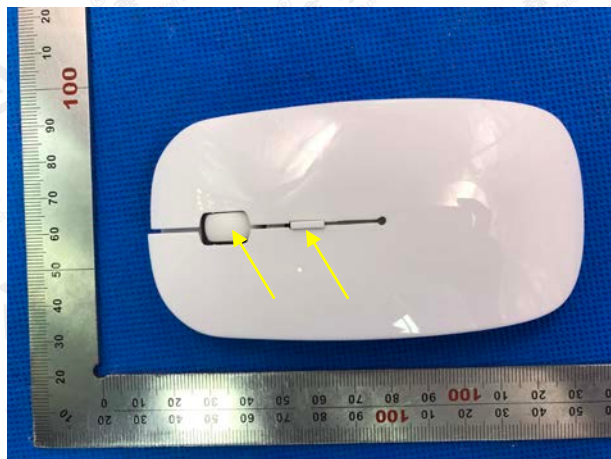
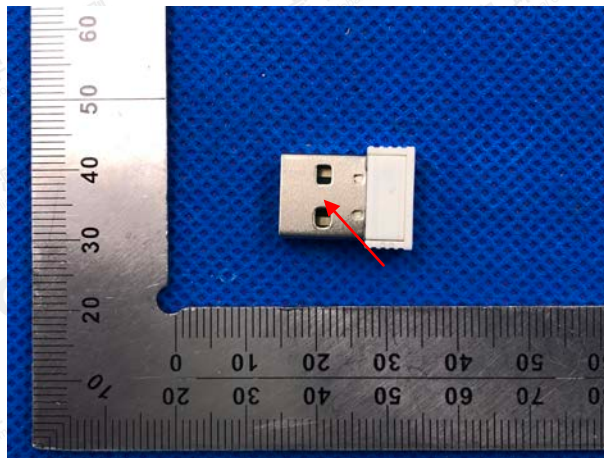
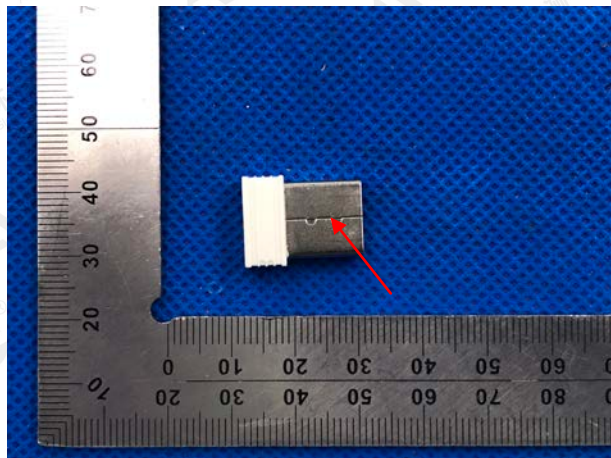
8.3.3 TEST SETUP



For the actual test configuration, please refer to Appendix II : Photographs of the Test Configuration.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

ESD location: Yellow line: Air discharge Red line: Contact discharge



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

8.3.4 TEST RESULT

TEST PROCEDURE

Please refer to ETSI EN 301 489-1 Clause 9.3.2 and EN 61000-4-2 for the measurement methods.

☒ **MODE 1&MODE 2 (TX/RX)**

Amount of Discharges	Voltage	Coupling	Observation	Result (Criteria meet)
Mini 20 / Point	±2kV;±4kV	contact discharge	TR, TT	A
Mini 20 / Point	±2kV;±4kV;±8kV	Air Discharge	TR, TT	A
Mini 20 / Point	±4kV	Indirect Discharge HCP	TR, TT	A
Mini 20 / Point	±4kV	Indirect Discharge VCP	TR, TT	A

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

8.4. RADIATED, RADIO FREQUENCY ELECTROMAGNETIC FIELD IMMUNITY TEST

8.4.1 TEST SPECIFICATION

Basic Standard	EN 61000-4-3
Frequency Range	80 MHz – 6000MHz
Field Strength	3V/m
Modulation	1 kHz sine wave, 80%, AM modulation
Frequency Step	1% of fundamental
Polarity of Antenna	Horizontal and Vertical
Test Distance	3m
Antenna Height	1.55m
Dwell Time	3 seconds

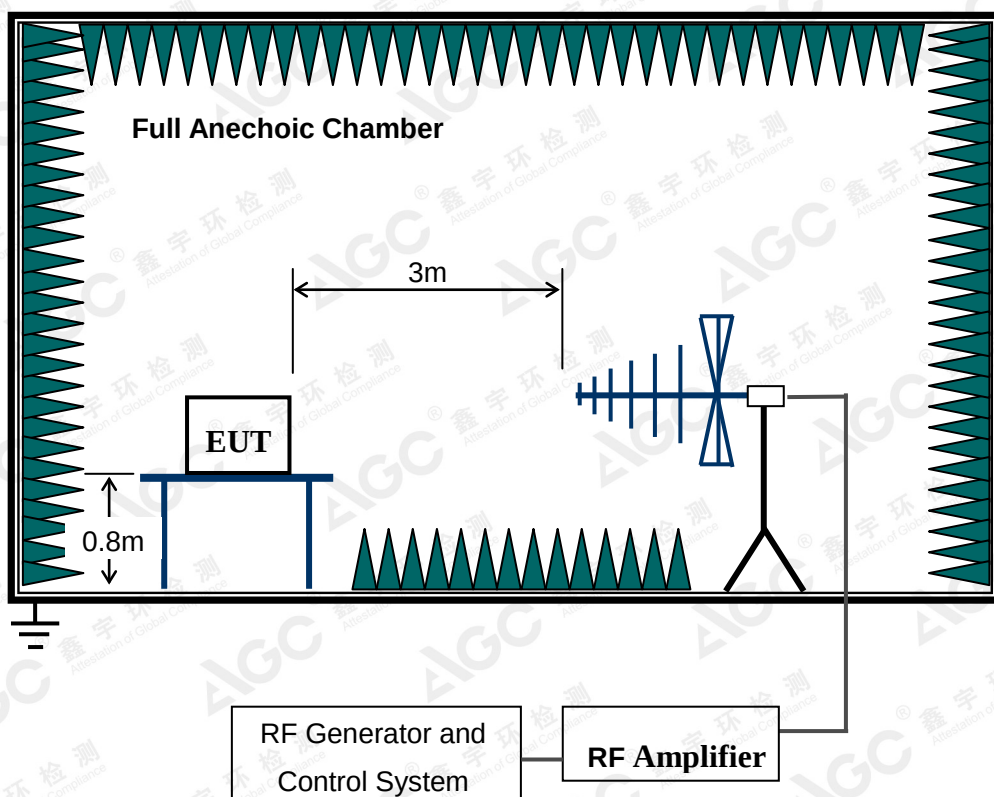
8.4.2 TEST PROCEDURE

The test procedure was in accordance with EN 61000-4-3.

- The testing was performed in a fully anechoic chamber. The transmit antenna was located at a distance of 3 meters from the EUT.
- The test signal was 80% amplitude modulated with a 1 kHz sine wave.
- The frequency range was swept from 80 MHz to 6000MHz with the exception of the exclusion band for transmitters, receivers and duplex transceivers. The rate of sweep did not exceed 1.5×10^{-3} decade/s. Where the frequency range is swept incrementally, the step size was 1% of fundamental.
- The dwell time at each frequency shall be not less than the time necessary for the EUT to be able to respond.
- The field strength level was 3V/m.
- The test was performed with the EUT exposed to both vertically and horizontally polarized fields on each of the four sides.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

8.4.3 TEST SETUP



For the actual test configuration, please refer to Appendix II : Photographs of the Test Configuration.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

8.4.4 TEST RESULT

TEST PROCEDURE

Please refer to ETSI EN 301 489-1 Clause 9.2.2, ETSI EN 301 489-17 and EN 61000-4-3 for the measurement methods.

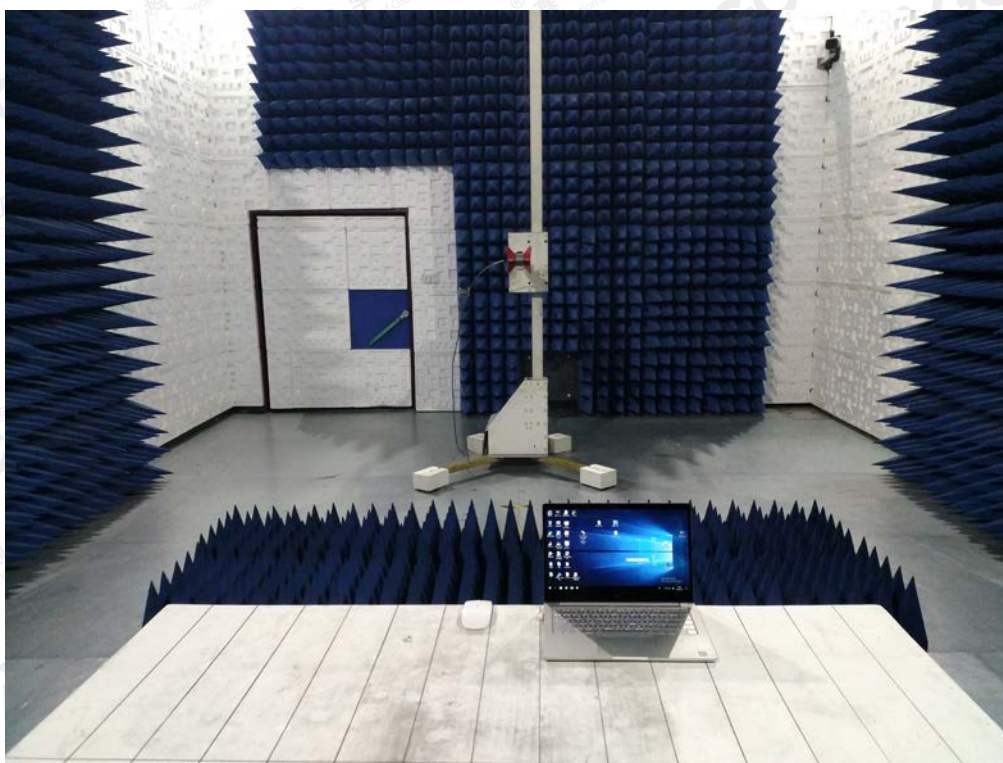
☒ **MODE 1&MODE 2 (TX/RX)**

Freq. Range (MHz)	Field	Modulation	Polarity	Position	Observation	Result (Criteria meet)
80-6000	3V/m	Yes	H	Front	CR, CT	A
80-6000	3V/m	Yes	H	Back	CR, CT	A
80-6000	3V/m	Yes	H	Left	CR, CT	A
80-6000	3V/m	Yes	H	Right	CR, CT	A
80-6000	3V/m	Yes	V	Front	CR, CT	A
80-6000	3V/m	Yes	V	Back	CR, CT	A
80-6000	3V/m	Yes	V	Left	CR, CT	A
80-6000	3V/m	Yes	V	Right	CR, CT	A

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

APPENDIX A: PHOTOGRAPHS OF TEST SETUP

RADIATED EMISSION

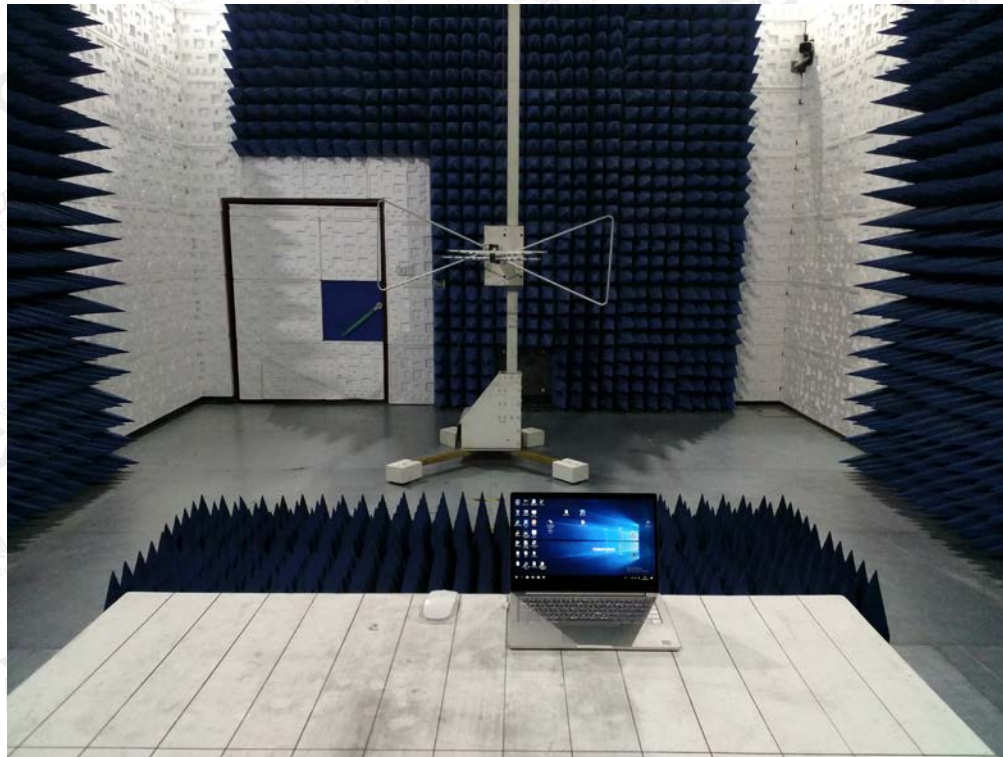


The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

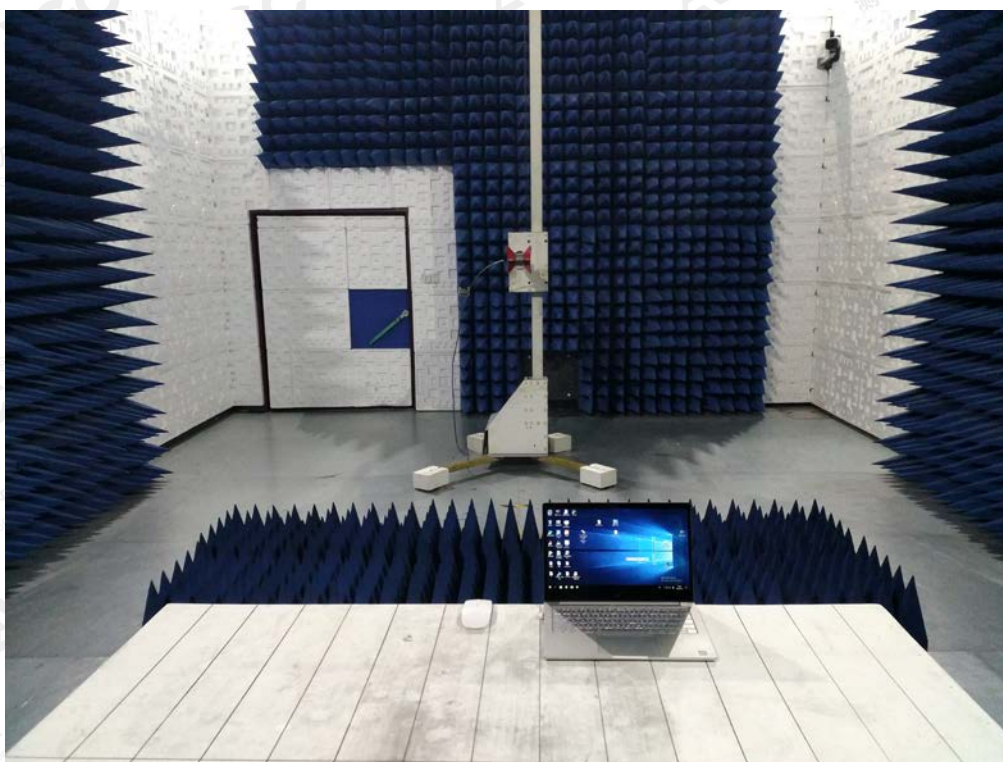
EN 61000-4-2 ESD TEST SETUP



EN 61000-4-3 RS TEST SETUP



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.



-----END OF REPORT-----

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

EUT PHOTOS

Report No.: AGC07777190401AP01

PRODUCT DESIGNATION : wireless mouse
BRAND NAME : N/A
MODEL NAME : M08117 LXW-273
CLIENT : Mid Ocean Brands B.V
DATE OF ISSUE : Apr. 25, 2019
REPORT VERSION V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

CAUTION:

This report shall not be reproduced except in full without the written permission of the test laboratory and shall not be quoted out of context.



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

REPORT REVISE RECORD

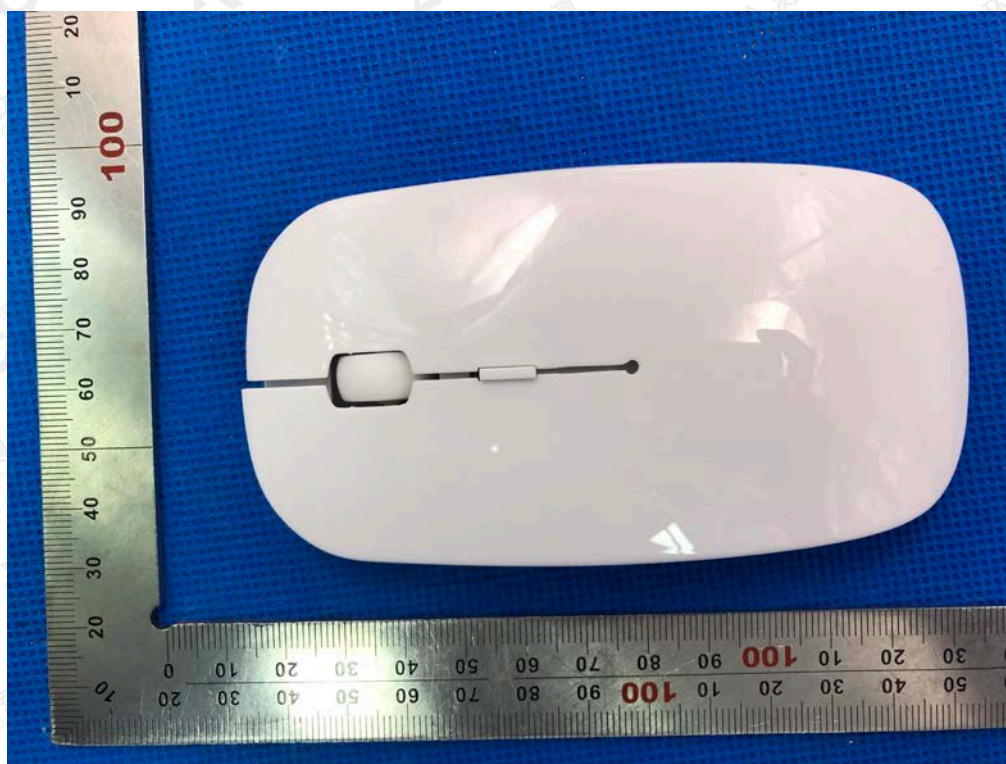
Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Apr. 25, 2019	Valid	Initial release

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

PHOTOGRAPHS OF EUT
ALL VIEW OF EUT



Mouse
TOP VIEW OF EUT



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

BOTTOM VIEW OF EUT



FRONT VIEW OF EUT



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

BACK VIEW OF EUT



LEFT VIEW OF EUT

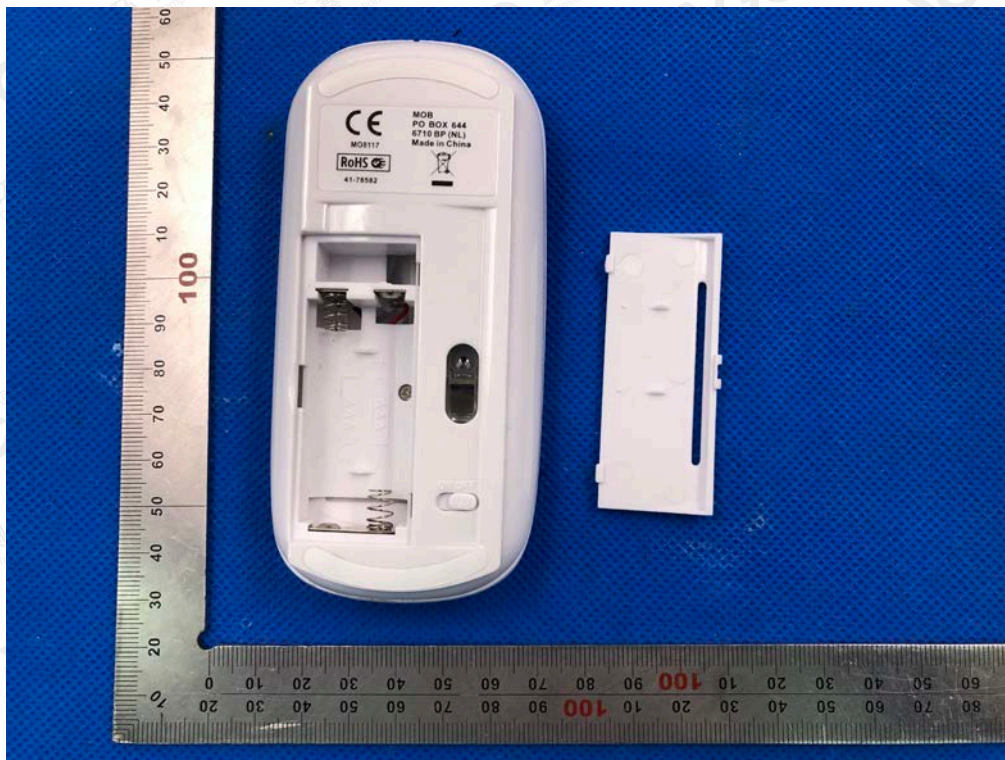


The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

RIGHT VIEW OF EUT

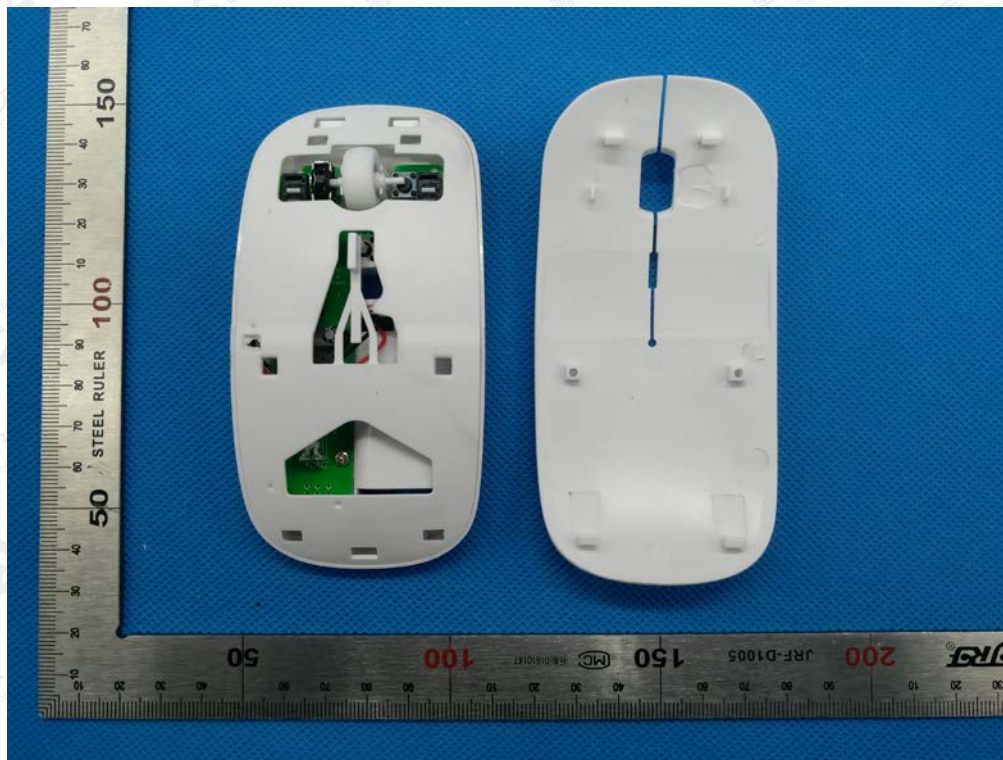


OPEN VIEW OF EUT (FIGURE 1)

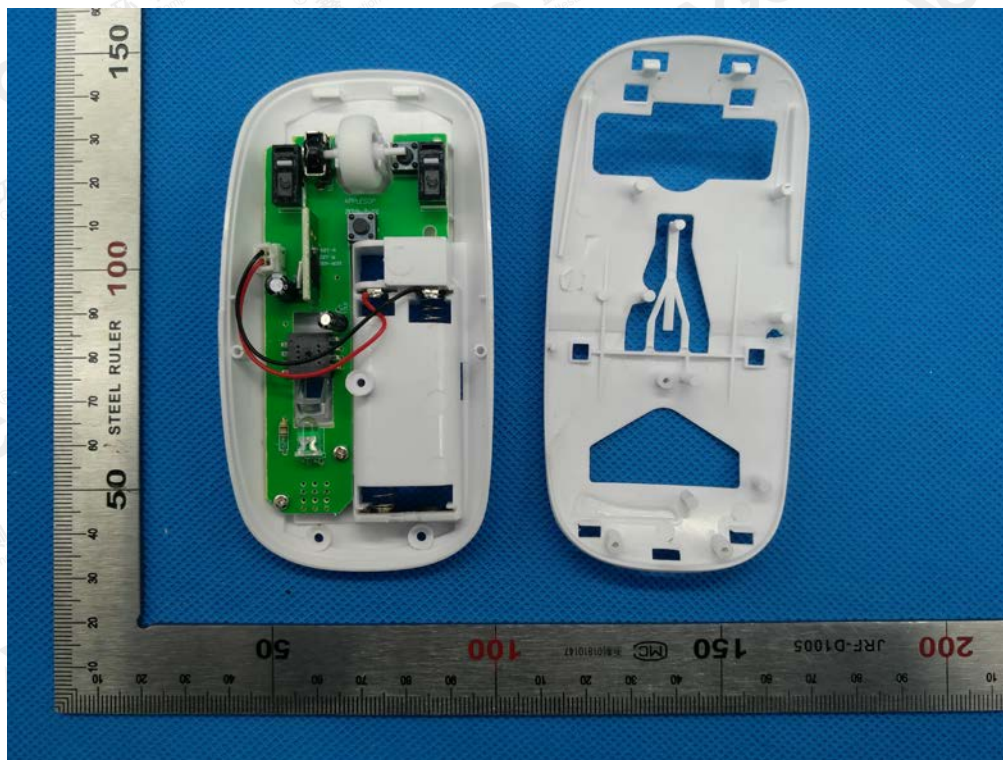


The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

OPEN VIEW OF EUT (FIGURE 2)

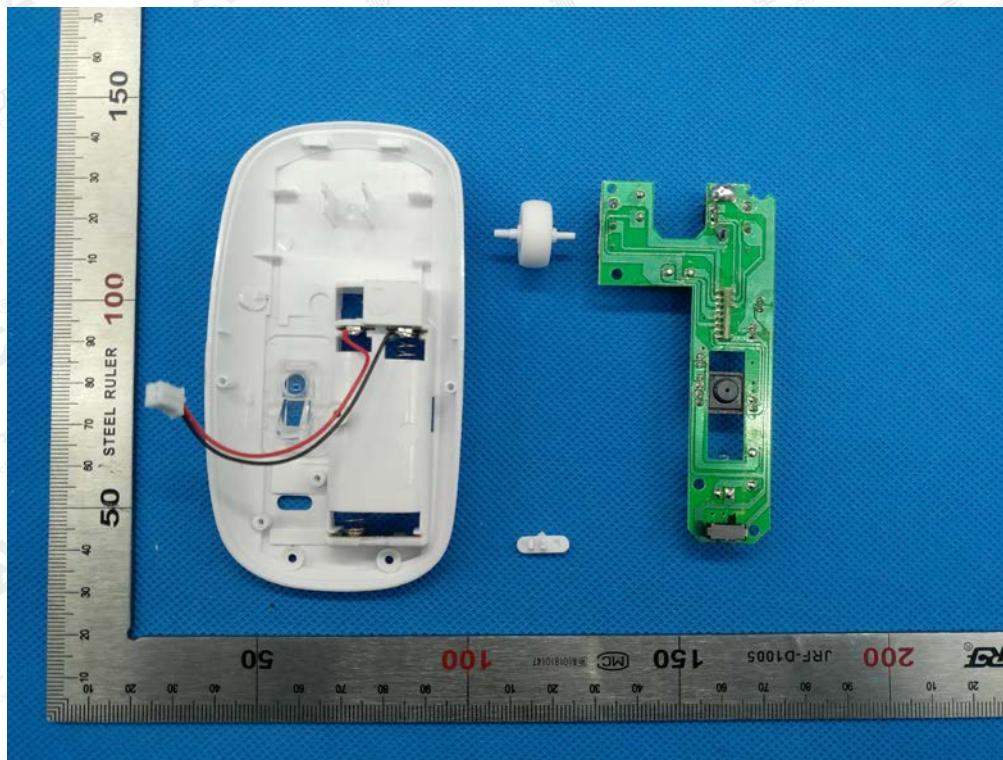


OPEN VIEW OF EUT (FIGURE 3)

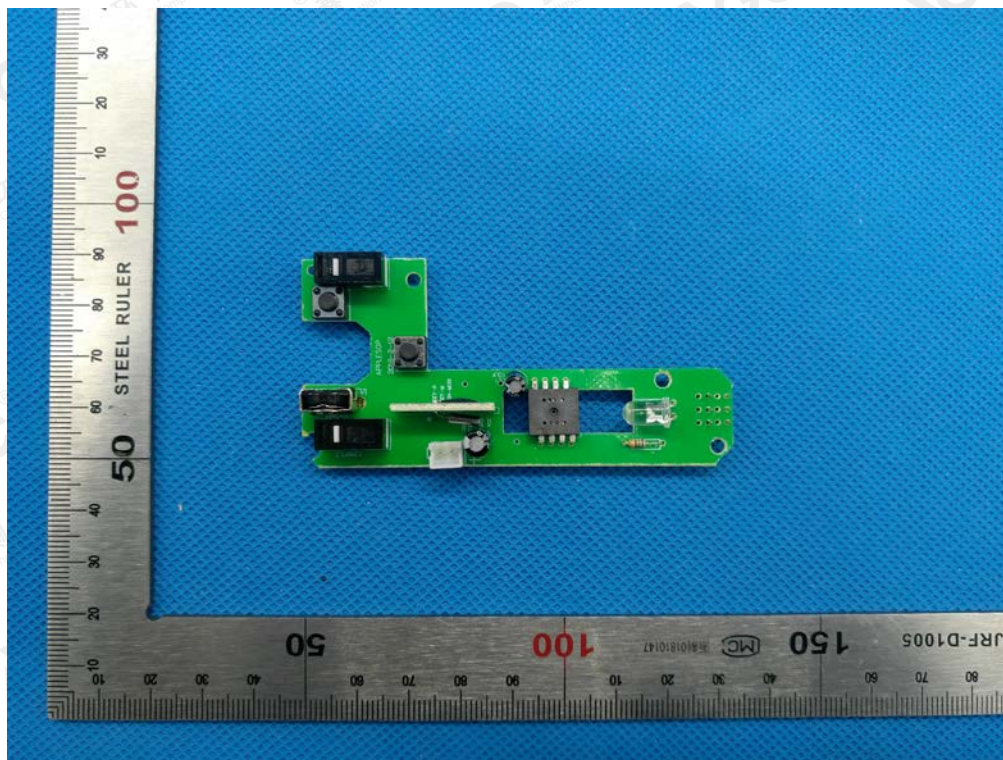


The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

OPEN VIEW OF EUT (FIGURE 4)

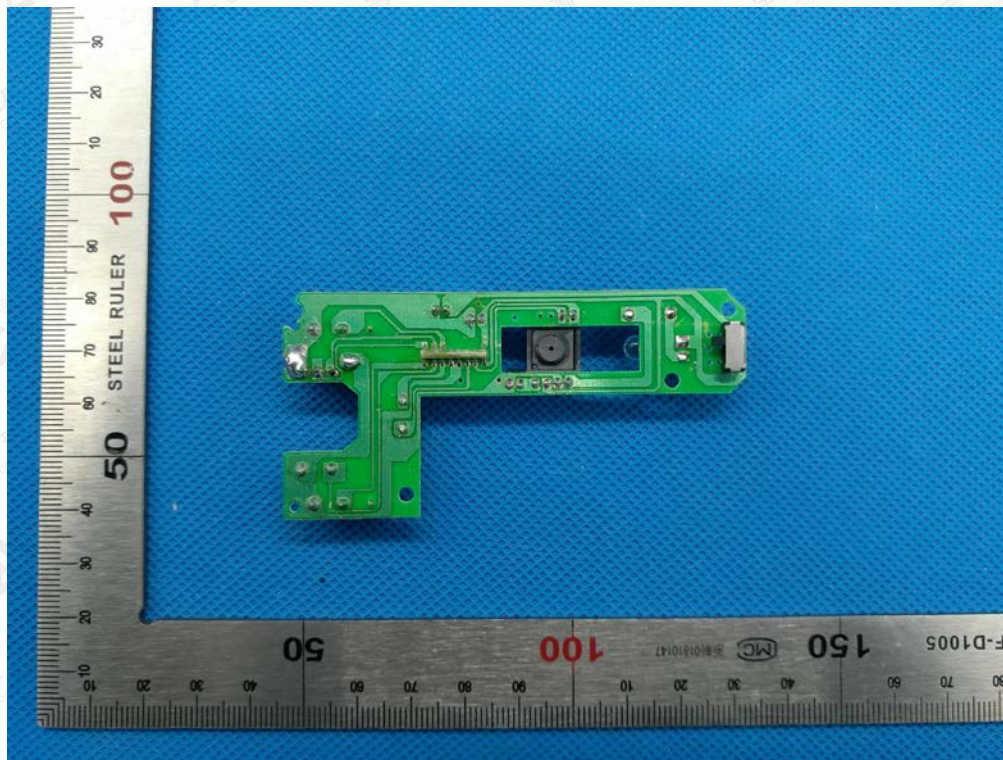


INTERNAL VIEW OF EUT (FIGURE 1)

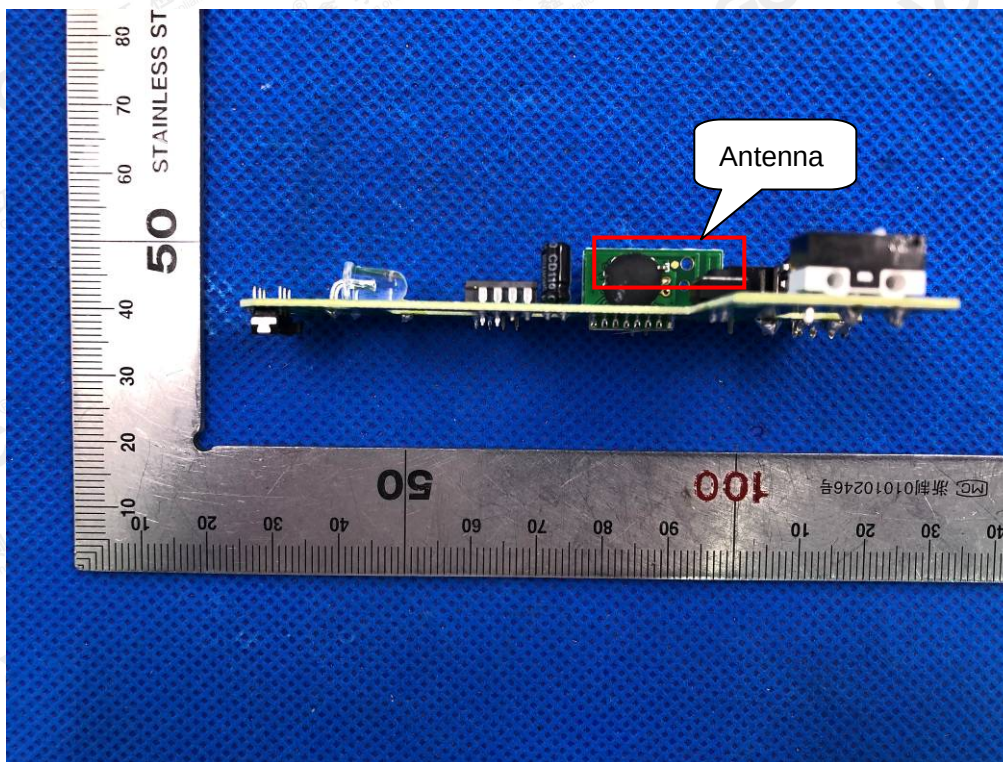


The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

INTERNAL VIEW OF EUT (FIGURE 2)

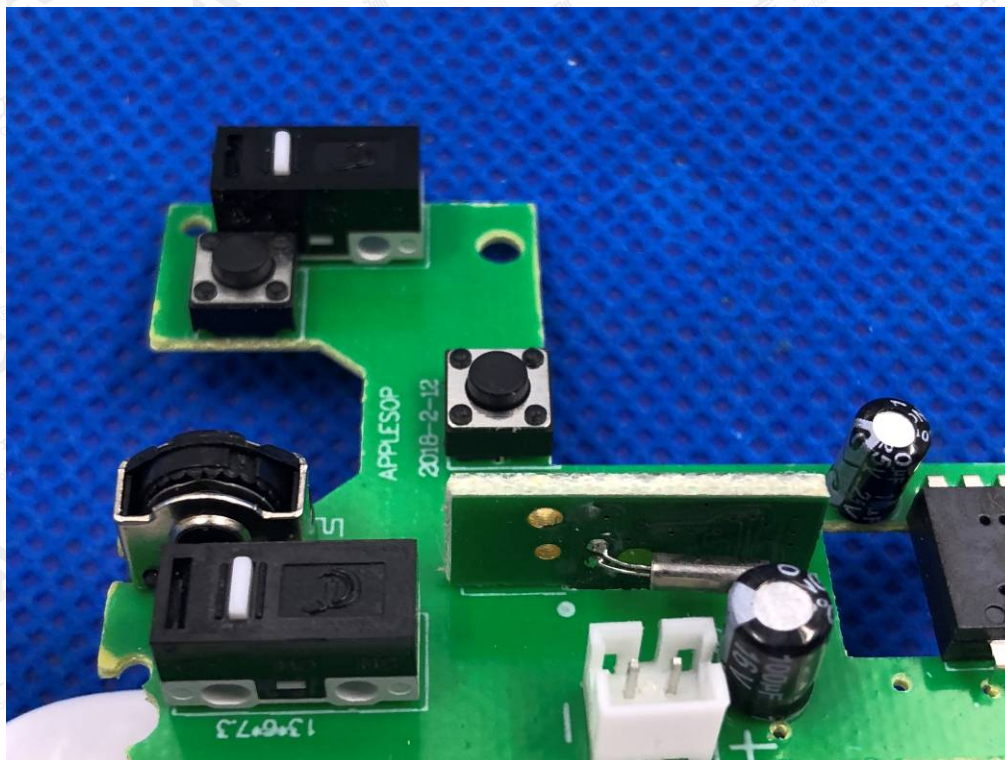


INTERNAL VIEW OF EUT (FIGURE 3)



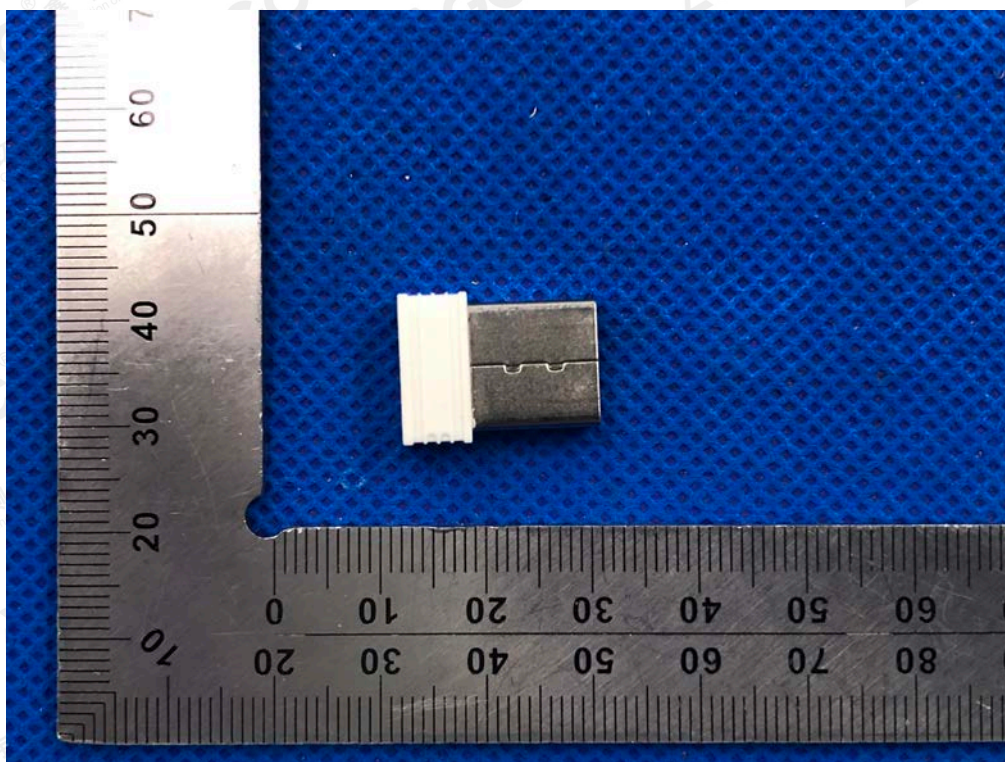
The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

INTERNAL VIEW OF EUT (FIGURE 4)



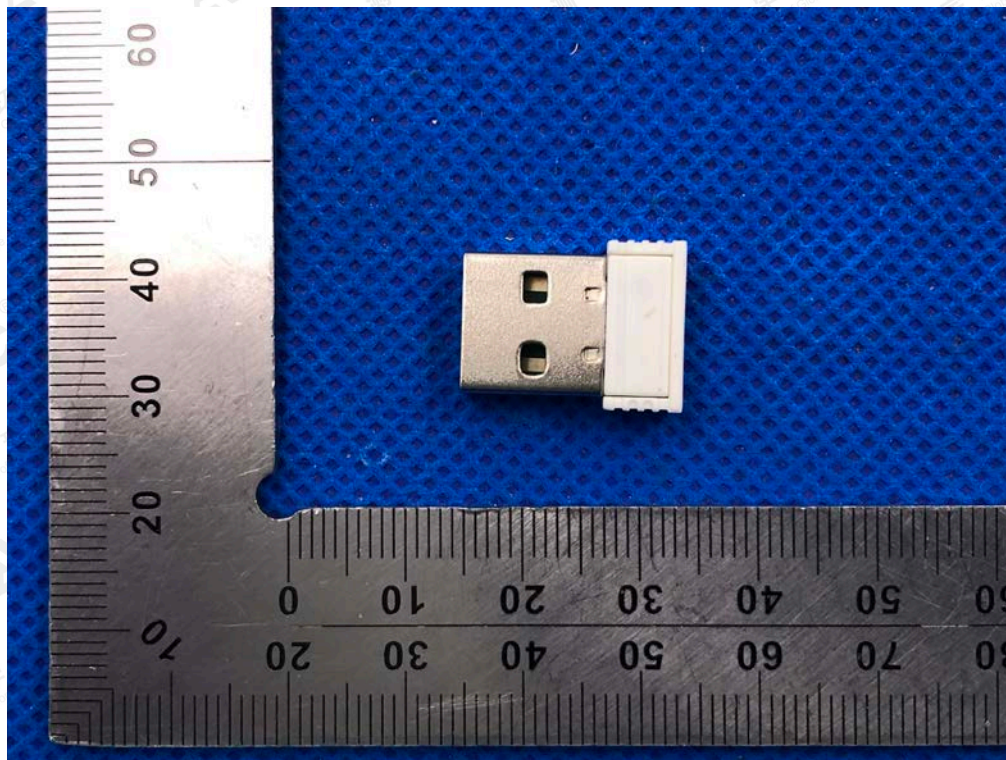
Dongle

TOP VIEW OF EUT

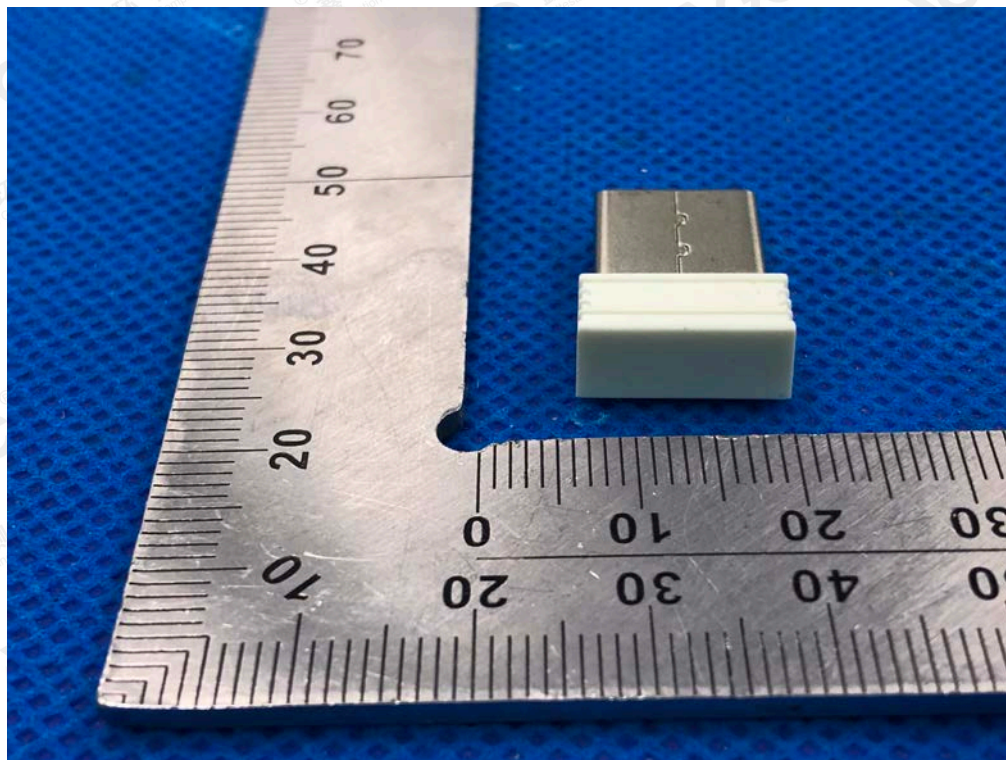


The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

BOTTOM VIEW OF EUT

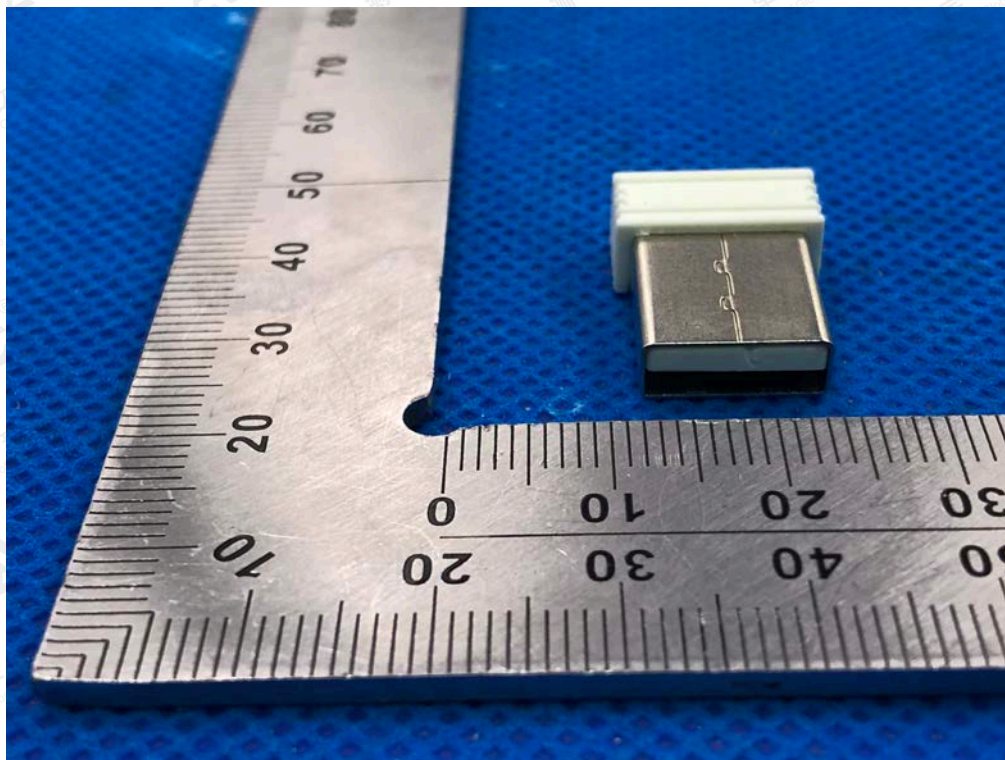


FRONT VIEW OF EUT

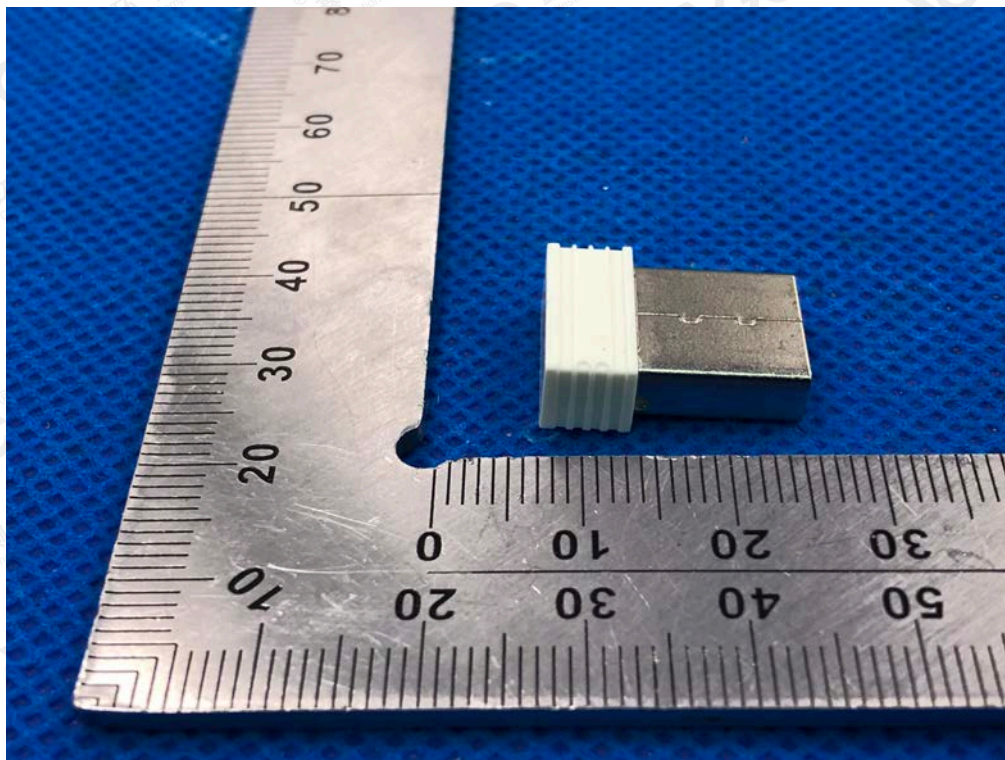


The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

BACK VIEW OF EUT

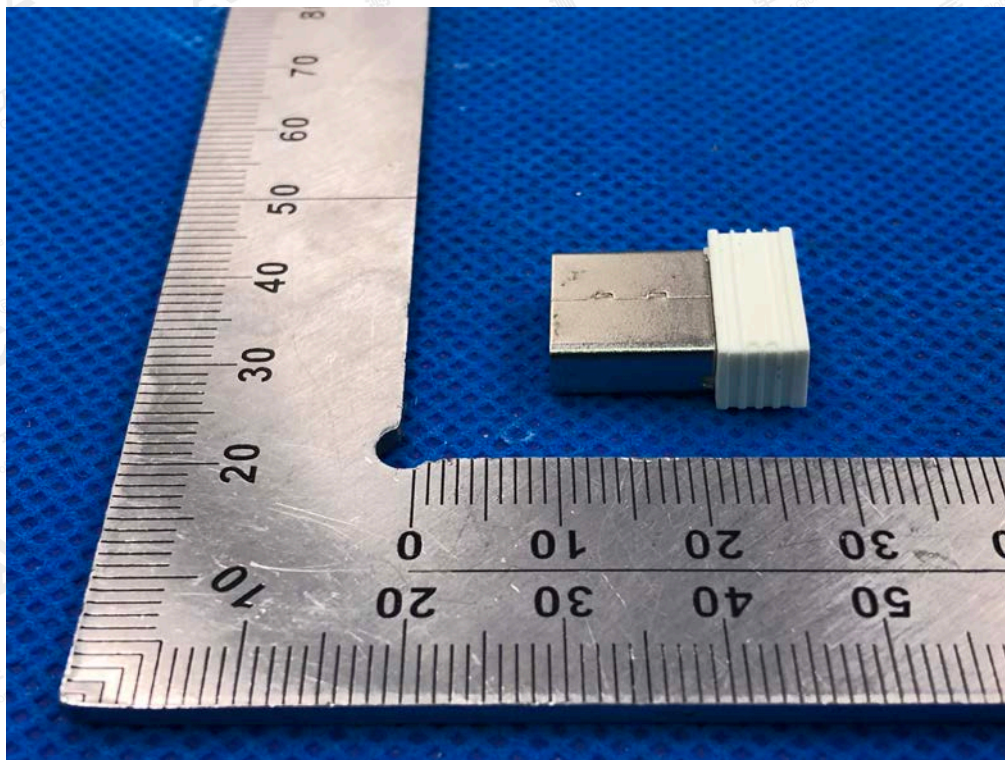


LEFT VIEW OF EUT

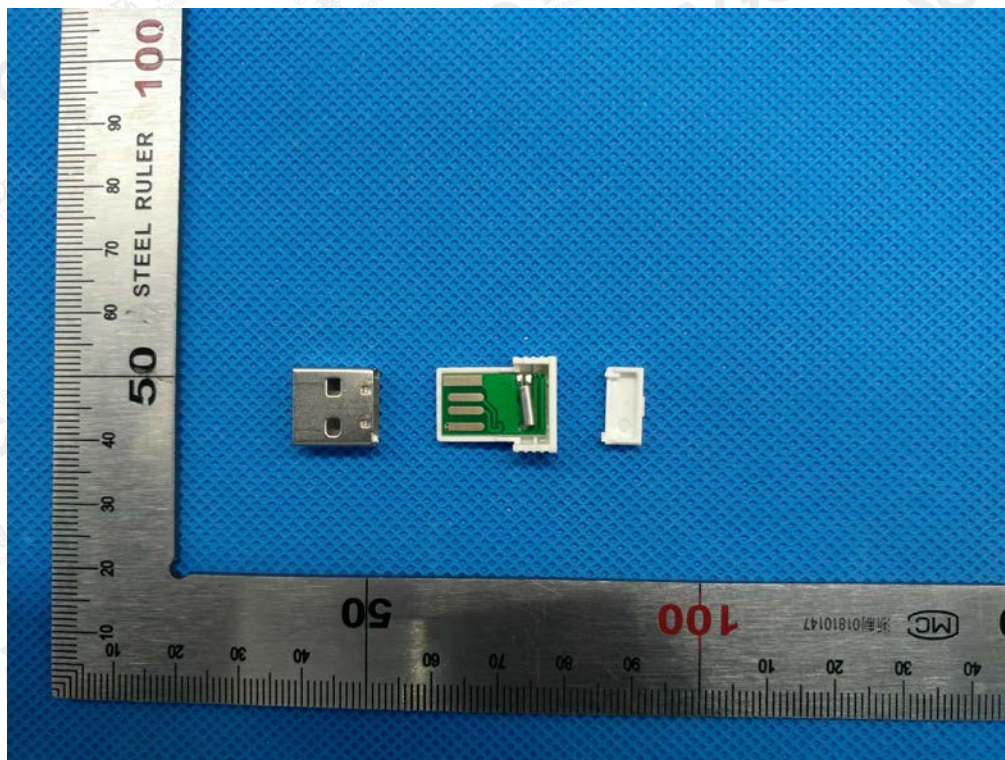


The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

RIGHT VIEW OF EUT

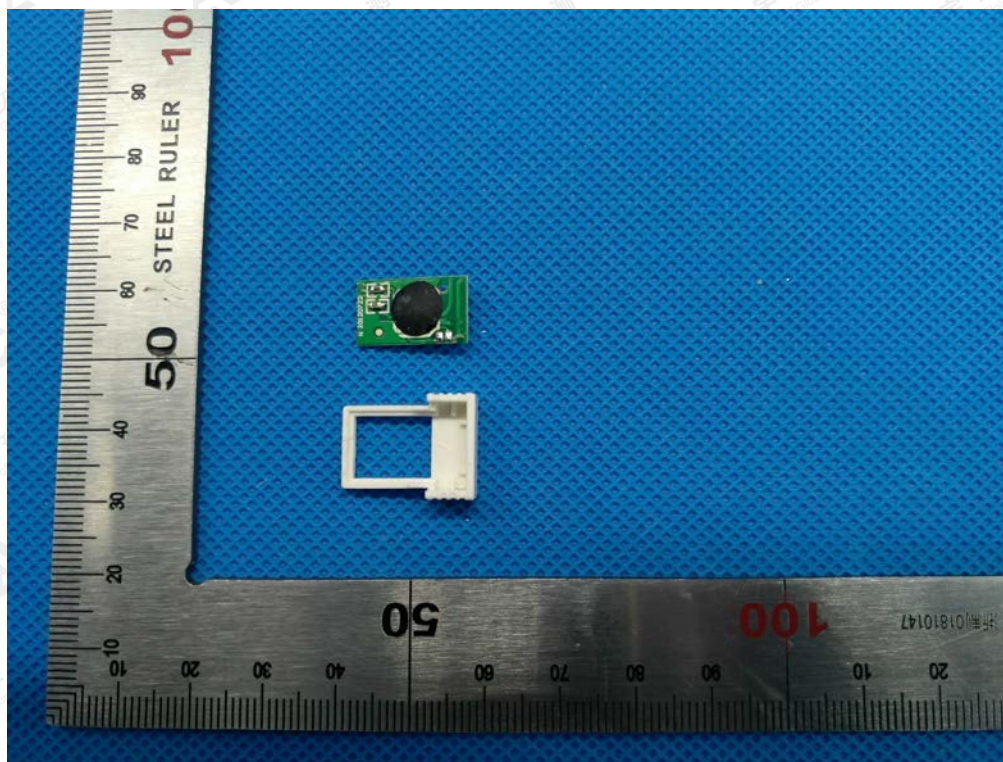


OPEN VIEW OF EUT (FIGURE 1)

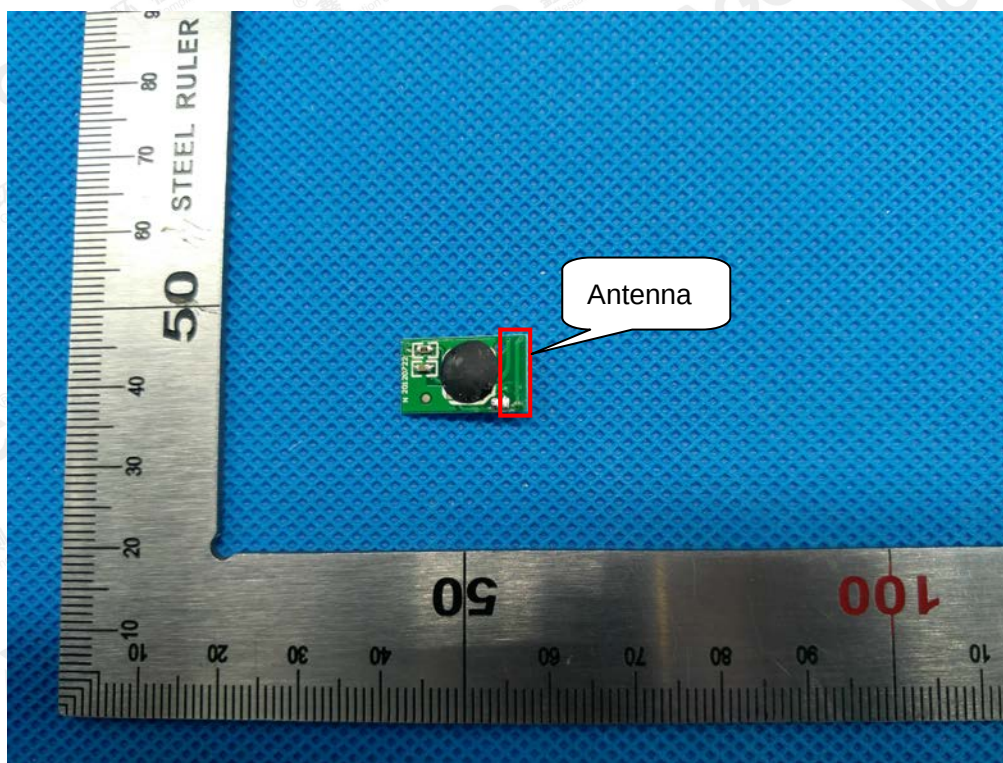


The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

INTERNAL VIEW OF EUT (FIGURE 1)

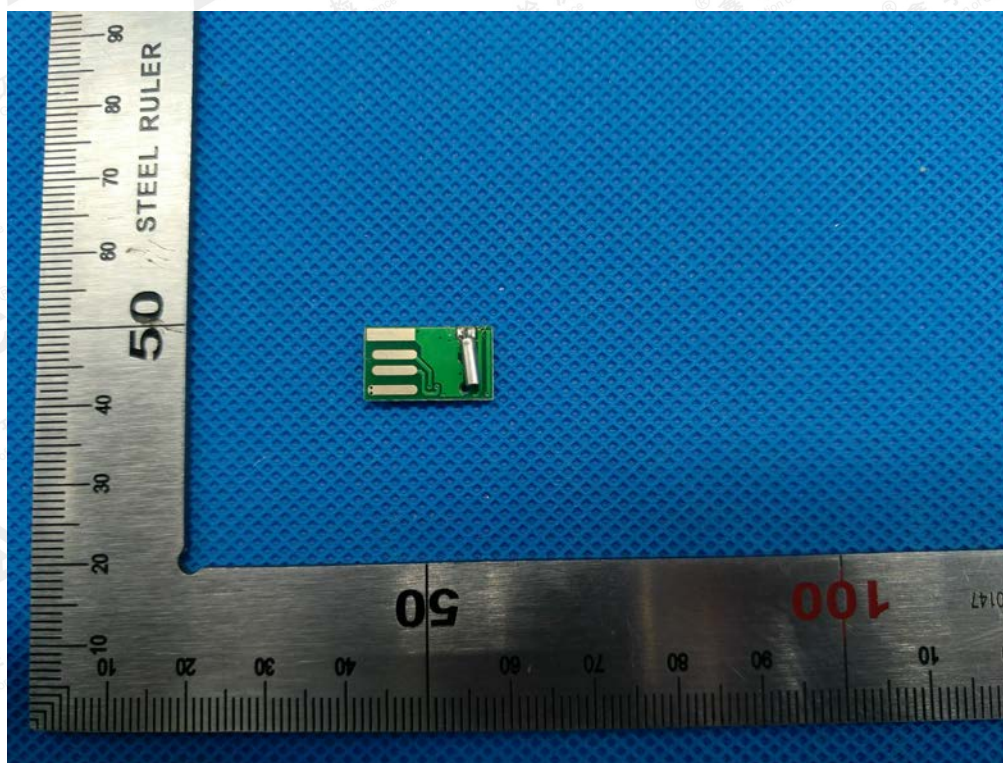


INTERNAL VIEW OF EUT (FIGURE 2)



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

INTERNAL VIEW OF EUT (FIGURE 3)



-----END OF REPORT-----

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.