

Applicant: Dongguan Yuzhenrong Trading Co., Ltd

Product: WIRELESS OPTICAL MOUSE

Model No.: PC365A, T99, DS-2899, PC356B, PC356C

Trademark: N/A

Test Standards: FCC Part 15.249

Test result:

It is herewith confirmed and found to comply with the

requirements set up by ANSI C63.10 &FCC Part 15 Subpart C, Paragraph 15.249 regulations for the evaluation of

electromagnetic compatibility

Approved By

Terry Tang

Manager

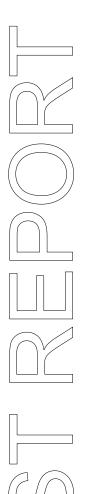
Dated: December 07, 2022

Results appearing herein relate only to the sample tested The technical reports is issued errors and omissions exempt and is subject to withdrawal at

SHENZHEN TIMEWAY TESTING LABORATORIES

Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le Village, Nanshan District, Shenzhen, China

Tel (755) 83448688, Fax (755) 83442996, E-Mail:info@timeway-lab.com



Report No.: TW2211023-02E Page 2 of 34

Date: 2022-12-07



Special Statement:

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meet with ISO/IEC-17025 requirements, which is approved by CNAS. This approval result is accepted by MRA of APLAC.

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

CNAS-LAB Code: L2292

The EMC Laboratory has been assessed and in compliance with CNAS-CL01 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of testing Laboratories.

FCC-Registration No.: 744189

The 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 No.: 744189.

Industry Canada (IC) — Registration No.:5205A

The EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 5205A.

A2LA (Certification Number:5013.01)

The EMC Laboratory has been accredited by the American Association for Laboratory Accreditation (A2LA). Certification Number:5013.01

Date: 2022-12-07



Test Report Conclusion

Content

1.0	General Details	4
1.1	Test Lab Details	4
1.2	Applicant Details	4
1.3	Description of EUT	4
1.4	Submitted Sample	4
1.5	Test Duration.	5
1.6	Test Uncertainty	5
1.7	Test By	5
2.0	List of Measurement Equipment	6
3.0	Technical Details	7
3.1	Summary of Test Results	7
3.2	Test Standards	7
4.0	EUT Modification	7
5.0	Power Line Conducted Emission Test	8
5.1	Schematics of the Test	8
5.2	Test Method and Test Procedure	8
5.3	Configuration of the EUT	8
5.4	EUT Operating Condition.	9
5.5	Conducted Emission Limit.	9
5.6	Test Result.	9
6.0	Radiated Emission test	12
6.1	Test Method and Test Procedure	12
6.2	Configuration of the EUT	13
6.3	EUT Operation Condition.	13
6.4	Radiated Emission Limit.	14
6.5	Test Result.	15
7.0	Band Edge	23
7.1	Test Method and Test Procedure.	23
7.2	Radiated Test Setup	23
7.3	Configuration of the EUT	23
7.4	EUT Operating Condition.	23
7.5	Band Edge Limit.	23
7.6	Band Edge Test Result.	24
8.0	Antenna Requirement	28
9.0	20dB bandwidth measurement	29
10.0	FCC ID Label	32
11.0	Photo of Test Setup and EUT View	33

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the SHENZHEN TIMEWAY TESTING LABORATORIES. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the SHENZHEN TIMEWAY TESTING LABORATORIES. to his customer. Supplier or others persons directly concerned. SHENZHEN TIMEWAY TESTING LABORATORIES. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The SHENZHEN TIMEWAY TESTING LABORATORIES. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.

Date: 2022-12-07



1.0 General Details

1.1 Test Lab Details

Name: SHENZHEN TIMEWAY TESTING LABORATORIES.

Address: Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le

Village, Nanshan District, Shenzhen, China

Telephone: (755) 83448688 Fax: (755) 83442996

Site on File with the Federal Communications Commission – United Sates

Registration Number: 744189 For 3m Anechoic Chamber

1.2 Applicant Details

Applicant: Dongguan Yuzhenrong Trading Co., Ltd

Address: Room 204, No.74, Humen Xinlian 9th Street, Humen Village, Humen Town, Dongguan City,

Guangdong

Telephone: --Fax: --

1.3 Description of EUT

Product: WIRELESS OPTICAL MOUSE

Manufacturer: Dongguan Yuzhenrong Trading Co., Ltd

Address: Room 204, No.74, Humen Xinlian 9th Street, Humen Village, Humen Town,

Dongguan City, Guangdong

Trademark: N/A
Additional Trademark: N/A
Model Number: PC365A

Additional Model Name T99, DS-2899, PC356B, PC356C

Hardware Version: 2899-B TX V1
Software Version: 171bd45c
Serial No.: 22F11
Rating: DC5V, 1A

Battery: DC3.7V, 700mAh Li-ion battery

Modulation Type: GFSK

Operation Frequency: 2402-2480MHz

Channel Separate: 1MHz
Channel Number: 79

Antenna Designation PCB antenna with gain -1.66dBi Max (Get from the antenna specification)

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the SHENZHEN TIMEWAY TESTING LABORATORIES. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the SHENZHEN TIMEWAY TESTING LABORATORIES. to his customer. Supplier or others persons directly concerned. SHENZHEN TIMEWAY TESTING LABORATORIES. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The SHENZHEN TIMEWAY TESTING LABORATORIES. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.

Report No.: TW2211023-02E Page 5 of 34

Date: 2022-12-07



1.4 Submitted Sample: 2 pcs

1.5 Test Duration 2022-11-03 to 2022-12-07

1.6 Test Uncertainty

Conducted Emissions Uncertainty =3.6dB

Radiated Emissions below 1GHz Uncertainty =4.7dB

Radiated Emissions above 1GHz Uncertainty =6.0dB

Conducted Power Uncertainty = 6.0dB

Occupied Channel Bandwidth Uncertainty = 5%

Conducted Emissions Uncertainty = 3.6dB

Note: The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

1.7 Test Engineer

The sample tested by

Print Name: Terry Tang

Page 6 of 34

Report No.: TW2211023-02E

Date: 2022-12-07



2.0 Test Equipment							
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date		
ESPI Test Receiver	R&S	ESPI 3	100379	2022-07-15	2023-07-14		
LISN	R&S	EZH3-Z5	100294	2022-07-18	2023-07-17		
LISN	R&S	EZH3-Z5	100253	2022-07-18	2023-07-17		
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2022-07-18	2023-07-17		
Loop Antenna	EMCO	6507	00078608	2022-07-18	2025-07-17		
Spectrum	R&S	FSIQ26	100292	2022-07-15	2023-07-14		
Horn Antenna	A-INFO	LB-180400-KF	J211060660	2022-07-18	2025-07-17		
Horn Antenna	R&S	BBHA 9120D	9120D-631	2022-07-18	2024-07-17		
Power meter	Anritsu	ML2487A	6K00003613	2022-07-18	2023-07-17		
Power sensor	Anritsu	MA2491A	32263	2022-07-18	2023-07-17		
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2022-07-18	2025-07-17		
9*6*6 Anechoic		1	N/A	2022-07-26	2025-07-25		
EMI Test Receiver	RS	ESVB	826156/011	2022-07-15	2023-07-14		
EMI Test Receiver	RS	ESCS 30	834115/006	2022-07-15	2023-07-14		
Spectrum	HP/Agilent	E4407B	MY50441392	2022-07-15	2023-07-14		
Spectrum	RS	FSP	1164.4391.38	2022-07-15	2023-07-14		
RF Cable	Zhengdi	ZT26-NJ-NJ-8M/FA	1	2022-07-15	2023-07-14		
RF Cable	Zhengdi	7m		2022-07-15	2023-07-14		
Pre-Amplifier	Schwarebeck	BBV9743	#218	2022-07-15	2023-07-14		
Pre-Amplifier	HP/Agilent	8449B	3008A00160	2022-07-15	2023-07-14		
LISN	SCHAFFNER	NNB42	00012	2022-08-18	2023-07-17		
ESPI Test Receiver	R&S	ESPI 3	100379	2022-07-15	2023-07-14		
LISN	R&S	EZH3-Z5	100294	2022-07-18	2023-07-17		

2.2 Automation Test Software

For Conducted Emission Test

Name	Version		
EZ-EMC	Ver.EMC-CON 3A1.1		

For Radiated Emissions

Name	Version
EMI Test Software BL410-EV18.91	V18.905
EMI Test Software BL410-EV18.806 High Frequency	V18.06

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the SHENZHEN TIMEWAY TESTING LABORATORIES. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the SHENZHEN TIMEWAY TESTING LABORATORIES. to his customer. Supplier or others persons directly concerned. SHENZHEN TIMEWAY TESTING LABORATORIES. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The SHENZHEN TIMEWAY TESTING LABORATORIES. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.

Page 7 of 34

Report No.: TW2211023-02E

Date: 2022-12-07



3.0 Technical Details

3.1 Summary of test results

Standard	Test Type	Result	Notes
FCC Part 15, Paragraph 15.203	Antenna Requirement	Pass	Complies
FCC Part 15, Paragraph 15.207	Conducted Emission Test	Pass	Complies
FCC Part 15 Subpart C Paragraph 15.249(a) & 15.249(b) Limit	Field Strength of Fundamental	Pass	Complies
FCC Part 15, Paragraph 15.209	Radiated Emission Test	Pass	Complies
FCC Part 15 Subpart C Paragraph 15.249(d) Limit	Band Edge Test	Pass	Complies

3.2 Test Standards

FCC Part 15 Subpart C, Paragraph 15.249, ANSI C63.4:2014 and ANSI C63.10:2013

4.0 EUT Modification

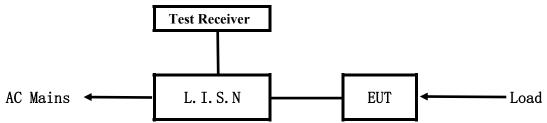
No modification by SHENZHEN TIMEWAY TESTING LABORATORIES

Date: 2022-12-07



5. Power Line Conducted Emission Test

5.1 Schematics of the test

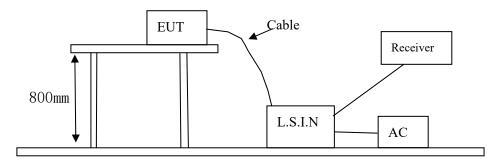


EUT: Equipment Under Test

5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.10-2013. The Frequency spectrum from 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.10-2013.

Test Voltage: 120V~, 60Hz Block diagram of Test setup



5.3 Configuration of the EUT

The EUT was configured according to ANSI C63.10-2013. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

79 channels are provided to the EUT

A. EUT

Device	Device Manufacturer Model		FCC ID	
WIRELESS	Dongguan Yuzhenrong PC365A, T99, DS-2899, PC356B,		2A3JH-PC365A	
OPTICAL MOUSE	Trading Co., Ltd	PC356C	2A3311-PC303A	

The report refers only to the sample tested and does not apply to the bulk.

Report No.: TW2211023-02E Page 9 of 34

Date: 2022-12-07



B. Internal Device

Device	Manufacturer	Model	FCC ID/DOC
N/A			

C. Peripherals

Device	Manufacturer	Model	Rating
Power Supply	KEYU	KA23-0502000DEU	Input: 100-240V~, 50/60Hz, 0.35A;
		Output: DC5V, 2A	

5.4 EUT Operating Condition

Operating condition is according to ANSI C63.10-2013

- A Setup the EUT and simulators as shown on follow
- B Enable AF signal and confirm EUT active to normal condition

5.5 Power line conducted Emission Limit according to Paragraph 15.207

Frequency	Limits (dB μ V)						
(MHz)	Quasi-peak Level	Average Level					
$0.15 \sim 0.50$	66.0~56.0*	56.0~46.0*					
$0.50 \sim 5.00$	56.0	46.0					
5.00 ~ 30.00	60.0	50.0					

Notes:

- 1. *Decreasing linearly with logarithm of frequency.
- 2. The tighter limit shall apply at the transition frequencies

5.6 Test Results:

Pass

Date: 2022-12-07



A: Conducted Emission on Live Terminal (150kHz to 30MHz)

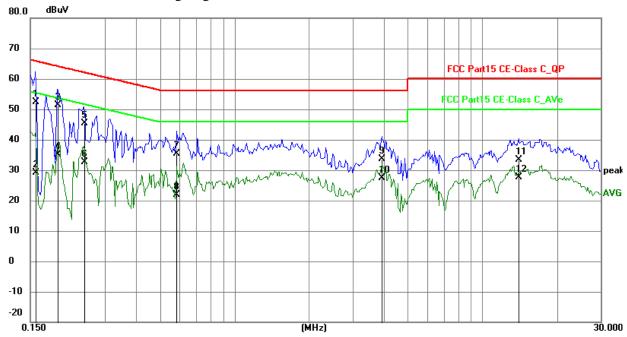
EUT Operating Environment

Temperature: 25°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

EUT set Condition: Charging and Communication by BT

Results: Pass

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1578	42.67	9.78	52.45	65.58	-13.13	QP	Р
2	0.1578	19.43	9.78	29.21	55.58	-26.37	AVG	Р
3	0.1929	41.66	9.75	51.41	63.91	-12.50	QP	Р
4	0.1929	25.33	9.75	35.08	53.91	-18.83	AVG	Р
5	0.2475	35.68	9.75	45.43	61.84	-16.41	QP	Р
6	0.2475	22.80	9.75	32.55	51.84	-19.29	AVG	Р
7	0.5829	25.63	9.77	35.40	56.00	-20.60	QP	Р
8	0.5829	12.17	9.77	21.94	46.00	-24.06	AVG	Р
9	3.9243	23.64	9.88	33.52	56.00	-22.48	QP	Р
10	3.9243	17.40	9.88	27.28	46.00	-18.72	AVG	Р
11	13.9941	23.07	10.34	33.41	60.00	-26.59	QP	Р
12	13.9941	17.28	10.34	27.62	50.00	-22.38	AVG	Р

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the SHENZHEN TIMEWAY TESTING LABORATORIES. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the SHENZHEN TIMEWAY TESTING LABORATORIES. to his customer. Supplier or others persons directly concerned. SHENZHEN TIMEWAY TESTING LABORATORIES. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The SHENZHEN TIMEWAY TESTING LABORATORIES. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.

Date: 2022-12-07



B: Conducted Emission on Neutral Terminal (150kHz to 30MHz)

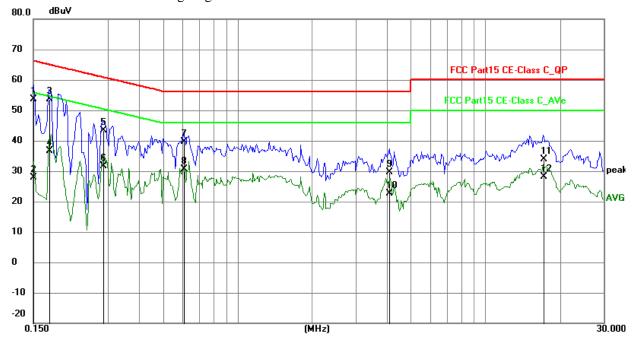
EUT Operating Environment

Temperature: 25°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

EUT set Condition: Charging and Communication by BT

Results: Pass

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1500	43.87	9.79	53.66	66.00	-12.34	QP	Р
2	0.1500	18.07	9.79	27.86	56.00	-28.14	AVG	Р
3	0.1734	43.80	9.77	53.57	64.80	-11.23	QP	Р
4	0.1734	26.91	9.77	36.68	54.80	-18.12	AVG	Р
5	0.2865	33.73	9.76	43.49	60.63	-17.14	QP	Р
6	0.2865	21.84	9.76	31.60	50.63	-19.03	AVG	Р
7	0.6102	29.76	9.78	39.54	56.00	-16.46	QP	Р
8	0.6102	20.92	9.78	30.70	46.00	-15.30	AVG	Р
9	4.0920	19.82	9.89	29.71	56.00	-26.29	QP	Р
10	4.0920	12.80	9.89	22.69	46.00	-23.31	AVG	Р
11	17.1686	23.43	10.51	33.94	60.00	-26.06	QP	Р
12	17.1686	17.60	10.51	28.11	50.00	-21.89	AVG	Р

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the SHENZHEN TIMEWAY TESTING LABORATORIES. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the SHENZHEN TIMEWAY TESTING LABORATORIES. to his customer. Supplier or others persons directly concerned. SHENZHEN TIMEWAY TESTING LABORATORIES. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The SHENZHEN TIMEWAY TESTING LABORATORIES. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.

Report No.: TW2211023-02E Page 12 of 34

Date: 2022-12-07

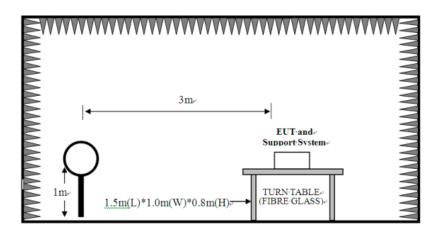


6 Radiated Emission Test

- 6.1 Test Method and test Procedure:
- (1) The EUT was tested according to ANSI C63.10-2013. The radiated test was performed at Timeway EMC Laboratory. This site is on file with the FCC laboratory division, Registration No. 744189
- (2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.10-2013.
- (3) The frequency spectrum from 30 MHz to 25 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 kHz. All readings are above 1 GHz, peak values with a resolution bandwidth of 1 MHz (Note: for Fundamental frequency radiated emission measurement, RBW=3MHz, VBW=10MHz). Measurements were made at 3 meters.
- (4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5) The antenna polarization: Vertical polarization and Horizontal polarization.

Block diagram of Test setup

For radiated emissions from 9kHz to 30MHz



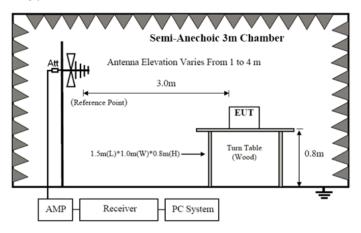
Page 13 of 34

Report No.: TW2211023-02E

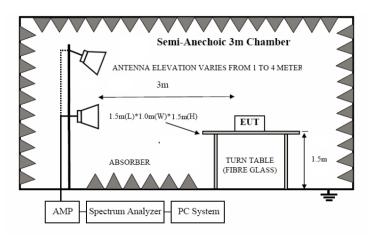
Date: 2022-12-07



For radiated emissions from 30MHz to1GHz



For radiated emissions above 1GHz



- 6.2 Configuration of The EUT

 Same as section 5.3 of this report
- 6.3 EUT Operating Condition
 Same as section 5.4 of this report.

Report No.: TW2211023-02E Page 14 of 34

Date: 2022-12-07



6.4 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

A FCC Part 15 Subpart C Paragraph 15.249(a) Limit

Fundamental Frequency	Field Stre	ength of Fundame	ntal (3m)	Field Strength of Harmonics (3m)			
(MHz)	mV/m	dBu	V/m	uV/m	dBuV/m		
2400-2483.5	50	94 (Average)	114 (Peak)	500	54 (Average)	74 (Peak)	

Note:

- 1. RF Field Strength (dBuV) = 20 log RF Voltage (uV)
- 2.Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
- 3. The emission limit in this paragraph is based on measurement instrumentation employing an average detector.

B. Frequencies in restricted band are complied to limit on Paragraph 15.209.

Frequency Range (MHz)	Distance (m)	Field strength (dB μ V/m)
0.009-0.490	3	20log(2400/F(kHz)) +40log (300/3)
0.490-1.705	3	20log(24000/F(kHz)) +40log (30/3)
1.705-30	3	69.5
30-88	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

Note:

- 1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
- 2. In the Above Table, the tighter limit applies at the band edges.
- 3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT
- 4. All scanning using PK detector. And the final emission level was get using QP detector for frequency range from 30-1000MHz.As to 1G-25G, the final emission level got using PK. For fundamental measurement, PK detector used.
- 5. For radiated emissions from 9kHz to 30MHz, the emission level is much less than the limit for more than 20dB. No necessary to take down the record.
- 6. Battery full charged during tests.

Report No.: TW2211023-02E Page 15 of 34

Date: 2022-12-07

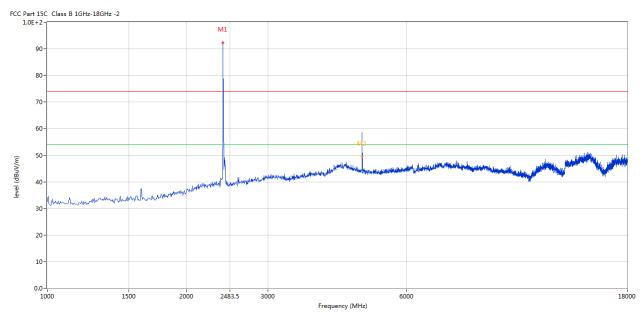


6.5 Test result

A Fundamental & Harmonics Radiated Emission Data

Please refer to the following test plots for details: Low Channel-2402MHz

Horizontal



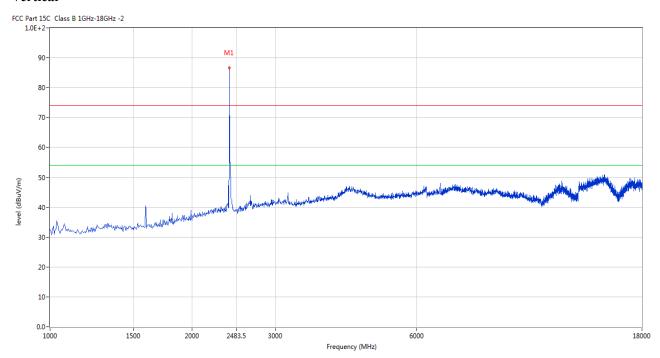
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2402	92.31	-3.57	114.0	-21.69	Peak	54.00	100	Horizontal	Pass
2	4802.799	58.48	3.12	74.0	-15.52	Peak	54.00	100	Horizontal	Pass
2**	4802.799	49.45	3.12	54.0	-4.55	AV	54.00	100	Horizontal	Pass

Report No.: TW2211023-02E Page 16 of 34

Date: 2022-12-07



Vertical



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2402	86.69	-3.57	114.0	-27.31	Peak	139.00	100	Vertical	Pass

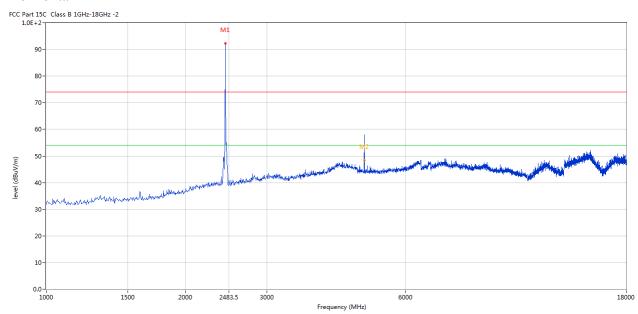
Report No.: TW2211023-02E Page 17 of 34

Date: 2022-12-07



Please refer to the following test plots for details: Middle Channel-2441MHz

Horizontal



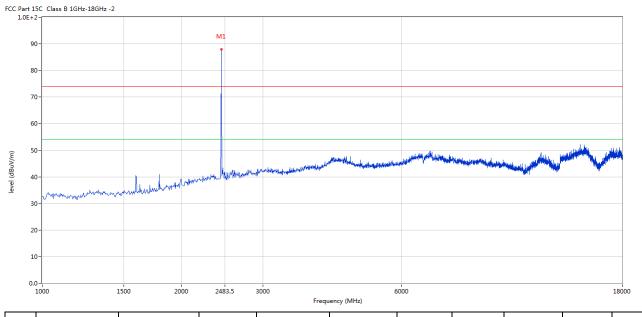
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2441	92.24	-3.57	114.0	-21.76	Peak	52.00	100	Horizontal	Pass
2	4879.280	58.02	3.20	74.0	-15.98	Peak	52.00	100	Horizontal	Pass
2**	4879.280	48.42	3.20	54.0	-5.58	AV	52.00	100	Horizontal	Pass

Report No.: TW2211023-02E Page 18 of 34

Date: 2022-12-07



Vertical



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(0)	(cm)		
1	2441	87.92	-3.57	114.0	-26.08	Peak	278.00	100	Vertical	Pass

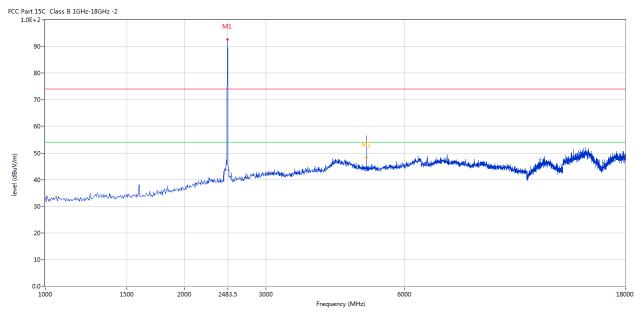
Report No.: TW2211023-02E Page 19 of 34

Date: 2022-12-07



Please refer to the following test plots for details: High Channel-2480MHz

Horizontal



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2480	92.74	-3.57	114.0	-21.26	Peak	198.00	100	Horizontal	Pass
2	4960.010	56.42	3.36	74.0	-17.58	Peak	228.00	100	Horizontal	Pass
2**	4960.010	48.38	3.36	54.0	-5.62	AV	228.00	100	Horizontal	Pass

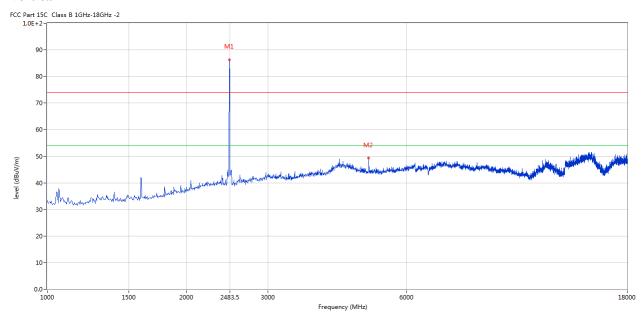
Page 20 of 34

Report No.: TW2211023-02E

Date: 2022-12-07



Vertical



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2480	86.59	-3.57	114.0	-27.41	Peak	150.00	100	Vertical	Pass
2	4960.010	49.30	3.36	74.0	-24.70	Peak	281.00	100	Vertical	Pass

Note: (2) Emission Level = Reading Level + Antenna Factor + Cable Loss-Amplifier

- (3) Margin=Emission-Limits
- (4) According to section 15.35(b), the peak limit is 20dB higher than the average limit
- (5) For test purpose, keep EUT continuous transmitting
- (5) For emission above 18GHz and Below 30MHz, It is only the floor noise. No necessary to take down.
- (6) the measured PK value less than the AV limit.

Report No.: TW2211023-02E Page 21 of 34

Date: 2022-12-07

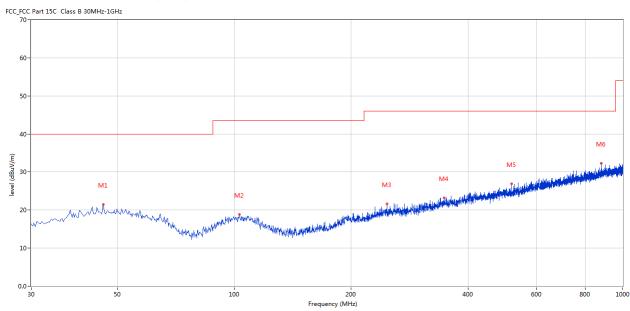


B. General Radiated Emission Data Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

Results: Pass

Please refer to following diagram for individual



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	46.001	21.51	-11.40	40.0	-18.49	Peak	0.00	100	Horizontal	Pass
2	102.974	18.90	-13.38	43.5	-24.60	Peak	143.00	200	Horizontal	Pass
3	246.983	21.66	-12.11	46.0	-24.34	Peak	120.00	100	Horizontal	Pass
4	346.626	23.18	-9.45	46.0	-22.82	Peak	50.00	100	Horizontal	Pass
5	517.303	26.89	-6.70	46.0	-19.11	Peak	60.00	200	Horizontal	Pass
6	880.962	32.32	-2.03	46.0	-13.68	Peak	170.00	100	Horizontal	Pass

Report No.: TW2211023-02E Page 22 of 34

Date: 2022-12-07

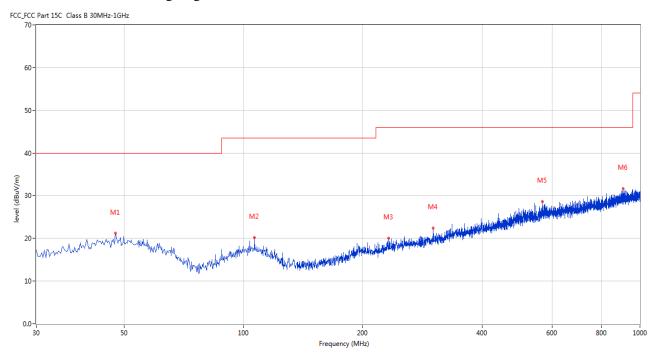


Radiated Emission In Vertical (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

Results: Pass

Please refer to following diagram for individual



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(0)	(cm)		
1	47.456	21.16	-11.38	40.0	-18.84	Peak	183.00	100	Vertical	Pass
2	106.611	20.21	-13.36	43.5	-23.29	Peak	304.00	100	Vertical	Pass
3	232.437	20.05	-12.53	46.0	-25.95	Peak	296.00	100	Vertical	Pass
4	300.562	22.38	-11.02	46.0	-23.62	Peak	143.00	100	Vertical	Pass
5	567.488	28.64	-5.97	46.0	-17.36	Peak	189.00	100	Vertical	Pass
6	905.449	31.66	-1.80	46.0	-14.34	Peak	82.00	100	Vertical	Pass

Date: 2022-12-07

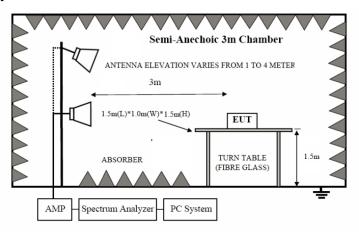


7. Band Edge

7.1 Test Method and test Procedure:

- (1) The EUT was tested according to ANSI C63.10–2013. The radiated test was performed at Timeway EMC Laboratory. This site is on file with the FCC laboratory division, Registration No. 744189
- (2) Set Spectrum as RBW=1MHz, VBW=3MHz and Peak detector used for PK value. RBW=1MHz, VBW=10Hz and Peak detector used for AV value.
- (3) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (4) The antenna polarization: Vertical polarization and Horizontal polarization.

7. 2 Radiated Test Setup



For the actual test configuration, please refer to the related items – Photos of Testing

7.3 Configuration of The EUT

Same as section 5.3 of this report

7.4 EUT Operating Condition

Same as section 5.4 of this report.

7.5 Band Edge Limit

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

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the SHENZHEN TIMEWAY TESTING LABORATORIES. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the SHENZHEN TIMEWAY TESTING LABORATORIES. to his customer. Supplier or others persons directly concerned. SHENZHEN TIMEWAY TESTING LABORATORIES. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

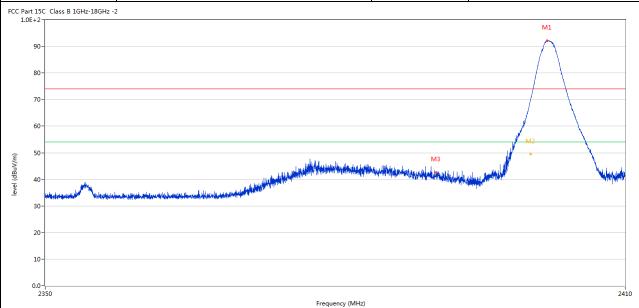
Report No.: TW2211023-02E Page 24 of 34

Date: 2022-12-07



7.6 Test Result

Product:	WIRELESS OPTICAL MOUSE	Polarity	Horizontal
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass		



Ю.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
	2401.827	92.10	-3.57	74.0	18.10	Peak	56.00	100	Horizontal	N/A
2	2400.087	69.54	-3.57	74.0	-4.46	Peak	56.00	100	Horizontal	Pass
**	2400.087	49.51	-3.57	54.0	-4.49	AV	56.00	100	Horizontal	Pass
}	2390.280	42.65	-3.53	74.0	-31.35	Peak	56.00	100	Horizontal	Pass
	**	(MHz) 2401.827 2400.087 ** 2400.087	(MHz) (dBuV/m) 2401.827 92.10 2400.087 69.54 ** 2400.087 49.51	(MHz) (dBuV/m) (dB) 2401.827 92.10 -3.57 2400.087 69.54 -3.57 ** 2400.087 49.51 -3.57	(MHz) (dBuV/m) (dB) (dBuV/m) 2401.827 92.10 -3.57 74.0 2400.087 69.54 -3.57 74.0 ** 2400.087 49.51 -3.57 54.0	(MHz) (dBuV/m) (dB) (dBuV/m) (dB) 2401.827 92.10 -3.57 74.0 18.10 2400.087 69.54 -3.57 74.0 -4.46 *** 2400.087 49.51 -3.57 54.0 -4.49	(MHz) (dBuV/m) (dB) (dBuV/m) (dB) 2401.827 92.10 -3.57 74.0 18.10 Peak 2400.087 69.54 -3.57 74.0 -4.46 Peak *** 2400.087 49.51 -3.57 54.0 -4.49 AV	(MHz) (dBuV/m) (dB) (dBuV/m) (dB) 2401.827 92.10 -3.57 74.0 18.10 Peak 56.00 2400.087 69.54 -3.57 74.0 -4.46 Peak 56.00 *** 2400.087 49.51 -3.57 54.0 -4.49 AV 56.00	(MHz) (dBuV/m) (dB) (dBuV/m) (dB) (o) (cm) 2401.827 92.10 -3.57 74.0 18.10 Peak 56.00 100 2400.087 69.54 -3.57 74.0 -4.46 Peak 56.00 100 *** 2400.087 49.51 -3.57 54.0 -4.49 AV 56.00 100	(MHz) (dBuV/m) (dB) (dB) (o) (cm) 2401.827 92.10 -3.57 74.0 18.10 Peak 56.00 100 Horizontal 2400.087 69.54 -3.57 74.0 -4.46 Peak 56.00 100 Horizontal *** 2400.087 49.51 -3.57 54.0 -4.49 AV 56.00 100 Horizontal

Report No.: TW2211023-02E Page 25 of 34



Product:		WIR	ELESS OP	TICAL MO	JSE	Detector		Vertical		
Mode				Test Voltage		DC3.7V				
Te	mperature		24 deg. C,					50	6% RH	
Te	est Result:		Pa	ass						
2 Part 1	.5C Class B 1GHz-18GHz 2-	-2					•			
6	0-					T (JM2)	^{VI4} M6 M5	M ₂		
3:	O- O	d digital have bil a gold the law delay but day	a i Min deleta in considera	n na kata da	atiya da Araba da Ar			•	1	nate was highly
3: 2: 1: 0.	0-	ld _{al} dalahan <mark>dil</mark> asida dikengalahahah	a. L.No. Judich de Leven and de And			Ampripa Jah				2410
3 2 1 1 0 .	0- 0- 0- 0- 2350			F	requency (MHz)	Detector	Table		ANT	I
3 · 2 · 1 · 0 . ·	o- 0- 0- 2350 Frequency	Results	Factor	F Limit	requency (MHz) Over Limit	Detector	Table (o)	Height	ANT	2410
3: 2: 1: 0.	0- 0- 0- 0- 2350			F	requency (MHz)	Detector	Table (o) 283.00		ANT	I
3 2 1 1 0.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	over Limit (dB)		(0)	Height (cm)		Verd
3 2 1 1 0.	Frequency (MHz) 2401.992	Results (dBuV/m) 85.63	Factor (dB) -3.57	Limit (dBuV/m) 74.0	Over Limit (dB)	Peak	(o) 283.00	Height (cm)	Vertical	Verd N/A Pass
3 2 2 1 1 0.	Frequency (MHz) 2401.992 2400.057	Results (dBuV/m) 85.63 62.36	Factor (dB) -3.57	Limit (dBuV/m) 74.0 74.0	Over Limit (dB) 11.63 -11.64	Peak Peak	(o) 283.00 150.00	Height (cm) 100 100	Vertical Vertical	Verd N/A Pass Pass
3: 2 1: 0.: No	Frequency (MHz) 2401.992 2400.057 2400.057	Results (dBuV/m) 85.63 62.36 42.31	Factor (dB) -3.57 -3.57	Limit (dBuV/m) 74.0 74.0 54.0	requency (MHz) Over Limit (dB) 11.63 -11.64 -11.69	Peak Peak AV	(o) 283.00 150.00 150.00	Height (cm) 100 100 100	Vertical Vertical Vertical	Verding N/A Pass Pass Pass
3: 2: 1: 0.	Frequency (MHz) 2401.992 2400.057 2400.057 2390.010	Results (dBuV/m) 85.63 62.36 42.31 39.07	Factor (dB) -3.57 -3.57 -3.57 -3.53	Limit (dBuV/m) 74.0 74.0 54.0 74.0	requency (MHz) Over Limit (dB) 11.63 -11.64 -11.69 -34.93	Peak Peak AV Peak	(o) 283.00 150.00 150.00 156.00	Height (cm) 100 100 100 100	Vertical Vertical Vertical Vertical	Verdi

Report No.: TW2211023-02E Page 26 of 34



I	Product:	WIR	WIRELESS OPTICAL MOUSE Polarity				rity	Horizontal				
	Mode		Keeping 7	Fransmitting		Test Vo	ltage	DC3.7V				
Tei	mperature		24 d	leg. C,		Humi	dity		56% RH			
Te	est Result:		P	Pass								
Part 1:	.5C Class B 1GHz-18GHz	-2					•					
90 80 70	0-		MI	M. M								
60	0-	a liberary	<i>/</i>	W. M.	<u> </u>							
	o-	and the state of t		M2	Mary Market Market Market	in disk nime, are broken.	ing property and this be	d adequative property and the second active	illight significate history (164 altr) with	hall programmely to		
50 40 30 20 10		geliter bet met findelijk de		M2	5 Frequency (MHz)	indigitarian desperatua desperatua desperatua desperatua desperatua desperatua desperatua desperatua desperatu	iki yanka perika hilikik	d physical property in the control of the control o	illight significant hair Phytograph factor	2500		
50 40 30 20 10	0-	Results	Factor	•		Detector	Table		ANT	I		
50 40 30 20 10			Factor (dB)	2483.	Frequency (MHz)	h differential from the state of the state o		Height (cm)	ANT	ı		
50 40 30 20 10 0.0	0	Results		2483.	Over	h differential from the state of the state o	Table	Height	ANT Horizontal	I		
30 20 10	o- 0- 0- 0- 0- 0- 0- 0- 0- 0- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1-	Results (dBuV/m)	(dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)		Verdi		

Page 27 of 34

Report No.: TW2211023-02E

Date: 2022-12-07



]	Product:	WIRI	JSE	Detecto	or	Vertical				
	Mode		Keeping T	ransmitting	Test Volta	age	DC3.7V			
Te	emperature		24 de	eg. C,		Humidit	ty	56% RH		
Τe	est Result:		Pa							
C Part 1 1.0E+	15C Class B 1GHz-18GHz -	2					•			
			M1							
9	90 -		كرمس							
8	30-									
7	70-									
6	50-		/							
				V .						
. 5	50-			1						
5	50-			7	`					A . u. Ja
5		Marie Ma		M2	Land and a state of the state of	والمعادية والموالة	phospholography		ing photogram for the order of the policy	him/whyn
4		historical stability of the stability of		M2	And and an analysis of the same of the sam	والمهارة والمورية والمرادة وا	of white the standard	and the second to be a second to be	ittyyddiadd ar hywrdd y blygdi	hjeri/autyja
3	10-	AMERICAN STREET		M2	and an interpretation of the second	المهاداة يعلن بالإستهادي	A Wallette Congression	roffettsprojety pellosoftspr	interpretations for the first of the political section of the sect	hata ta
3	10- 30-	handa da d		M2	and and consideration	فالهياء أخيسينا ميد	gdigilladira (myaniy	angleti angleti dalah dibigi	ene gartegaran fatir yestili abiliyydd	MAY CANAN
3	10	hairen er		M2	Maria de la companyo	اللهائه أوليها والمراجعة ويستوا		nggatha poggat to del degli biog	ingerialistic singletic si	Maritan Par
3 2	10- 30-	A STATE OF THE PARTY OF THE PAR		2483.5		un tempu pi kaping digebi	phy jelipaha janganiy	reffethereign teil befriep	m-periapandarkandarkandarkandarkandarkandarkandarkandarkandarkandarkandarkandarkandarkandarkandarkandarkandark	2500
3 2 1	20-		Factor	2483.5 Fre	equency (MHz)					1
4 3 2 1	30 - 20 - 2470 Frequency	Results	Factor (dB)	2483.5 Fre	equency (MHz) Over Limit	Detector	Table	Height	ANT	1
3	20-		Factor (dB)	2483.5 Fre	equency (MHz)					2500 Verdic
3 3 2 2 1 0.	Frequency (MHz)	Results (dBuV/m)	(dB)	2483.5 Free Limit (dBuV/m)	equency (MHz) Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdic

Note: The PK emission level less than the AV limit. No necessary to record the AV emission level.

Date: 2022-12-07



Page 28 of 34

8.0 Antenna Requirement

Applicable Standard

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

This product has a PCB antenna with gain -1.66dBi maximum. It fulfills the requirement of this section.

Test Result: Pass

Page 29 of 34

Report No.: TW2211023-02E



			SE	Test Mod Test Volta	le:	Keep tra	ansmitting	
Kee		mitting						
	24 dea (Mode Keeping Transmitting					23.7V	
	Temperature 24 deg. C,						% RH	
Result: Pass Detector PK						PK		
B Bandwidth 865.73kHz								
Marker ndB	1 [T1 r		RBW VBW	30 k 100 k		F Att	20 dB	
BW 86	5.731462	293 kHz	SWT	8.5 m	s Uı	nit	dBr	n
				v ₁	[T1]	- (.70 dBm	n
		<u>1</u>				2.40183	3467 GHz	3
		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Λ.	ndE	3	20	0.00 dB	1
			$\bigvee \setminus$					
	,	\mathcal{N}'	7	· T.				
	T1 /		V	$\bigvee_{\mathbf{T}^2} \nabla_{\mathbf{T}^2}$	2 [T1]			
	- -		1	4		2.40240		
	<i></i>							1
					7			
						M		
						N. C.	waken	A
								-
								-
	ndB	ndB 20.	ndB 20.00 dB	ndB 20.00 dB VBW	ndB 20.00 dB VBW 100 k BW 865.73146293 kHz SWT 8.5 m 1 ndB BW VT	ndB 20.00 dB VBW 100 kHz BW 865.73146293 kHz SWT 8.5 ms U1 ▼1 [T1] 1 ndB BW 86	ndB 20.00 dB VBW 100 kHz BW 865.73146293 kHz SWT 8.5 ms Unit V1 [T1] -0 2.40183 mdb 865.73146 VT [T1] -20 2.40154	ndB 20.00 dB VBW 100 kHz BW 865.73146293 kHz SWT 8.5 ms Unit dBr 1

Page 30 of 34

Report No.: TW2211023-02E



Product:	WIRELESS OPTICAL MOUSE					Test Mode	:	Keep tra	nsmitting	
Mode	Keeping Transmitting					Test Voltag		DC3.7V		
Temperature			4 deg. C,			Humidity		56%	6 RH	
Test Result:			Pass			Detector		F	PK	
dB Bandwidth		86	55.73kHz							
€ `		Marker	1 [T1 r	ndB]	RB	w 30 1	kHz R	F Att	20 dB	
Ref Lvl		ndB	20.	00 dB	VB	W 100	kHz			
10 dBm		BW 865	.731462	293 kHz	SW	T 8.5	ms U	nit	dBm	ı
10						▼ 1	[T1]	– C	.10 dBm	A
				1				2.44083	467 GHz	
0				\sim	\ \	nd	В	20	.00 dB	
					V 1	BW ∇ _T		5.73146 -20	293 kHz	
-10				N	1	\	 	2.44054		
			TA			Ţ2 ▽ī	'2 [T1]	-20	.19 dBm	
-20			7			7		2.44140	581 GHz	1MA
1MAX		^				\ \frac{1}{2}				IMA
-30							4			
-40		V					V	M		
								4	mully	
-60										
-70										
-80										
-90 Center 2	.441 GI	Hz		300	kHz/			Spa	n 3 MHz	

Page 31 of 34

Report No.: TW2211023-02E



Product:	WIRELESS OPTICAL MOUSE					Test Mode:			Keep transmitting			
Mode	Keeping Transmitting					Test Voltage			DC3.7V			
Temperature			4 deg. C,	ttilig			Humidity	56% RH				
Test Result:			Pass				Detector			PK		
0dB Bandwidth		864	5.73kMHz	,		-						
Odb Bandwidth												
Ref Lvl		marker ndB	1 [T1 r	oo dB		BW BW	30 ki 100 ki		F Att	20 dB		
10 dBm			.731462			WT	8.5 ms		nit	dBr	n	
10							v ₁	Fm1.1	1	10 40-	1	
				<u>1</u>			* 1	[T1]	2.47983	.12 dBm 467 GHz	A	
0				-	. ^		ndB		20	.00 dB		
					$\bigvee \bigvee$		BW	86	5.73146	293 kHz		
-10				ρ./ ————————————————————————————————————		7	$ abla_{\mathrm{T}^1}$	[T1]	-18	.75 dBm		
			T1 /			V	Ţ2 ▽ _{T2}	Feet 1	2.47954			
-20			<u> </u>				T T	[T1]	-19	.02 dBm 581 GHz		
1MAX		~	<i></i>					^	2.40040	301 G112	1MA	
-30								4				
-50		V						V				
W									894	~~~~~	١	
-60												
-70												
-80												
-90 Center 2.	48 GH2	2		300	kHz/				Spa	n 3 MHz	<u>]</u>	
ate: 6.1									_			

Report No.: TW2211023-02E Page 32 of 34

Date: 2022-12-07



10.0 FCC ID Label

FCC ID: 2A3JH-PC365A

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Mark Location:



Page 33 of 34

Report No.: TW2211023-02E Date: 2022-12-07



11.0 Photo of testing

11.1 Conducted test View--



Date: 2022-12-07



Radiated emission test view



Photographs – EUT

Please refer test report TW2211023-01E

-- End of the report--

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the SHENZHEN TIMEWAY TESTING LABORATORIES. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the SHENZHEN TIMEWAY TESTING LABORATORIES. to his customer. Supplier or others persons directly concerned. SHENZHEN TIMEWAY TESTING LABORATORIES. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The SHENZHEN TIMEWAY TESTING LABORATORIES. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.