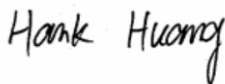


RF Exposure Evaluation Report

APPLICANT : Luxottica Group S.p.A
EQUIPMENT : Ray-Ban Stories
BRAND NAME : Ray Ban
MODEL NAME : RW4002, RW4003, RW4004, RW4005
FCC ID : 2AYOA-4002
STANDARD : 47 CFR Part 2.1091
FCC KDB 447498 D01 v06

We, Sporton International (ShenZhen) Inc., would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091 and FCC KDB 447498 D01 v06, and pass the limit. Without written approval of Sporton International (ShenZhen) Inc., the test report shall not be reproduced except in full.



Reviewed by: Hank Huang / Supervisor



Approved by: Johnny Chen / Manager



Sporton International (ShenZhen) Inc.

**1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055
People's Republic of China**



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**Revision History**

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA110802B	Rev. 01	Initial issue of report	May 24, 2021



1. Administration Data

1.1. Testing Laboratory

Sporton International (Shenzhen) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Testing Laboratory		
Test Firm	Sporton International (Shenzhen) Inc.	
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595	
Test Site No.	FCC Designation No.	FCC Test Firm Registration No.
	CN1256	421272

Applicant	
Company Name	Luxottica Group S.p.A
Address	Piazzale Cadorna 3, 20123 Milano

Manufacturer	
Company Name	Luxottica Tristar (Dongguan) Optical Co., Ltd.
Address	Oudeng Zone, Gaobu Town, Dongguan City, Guangdong Province 523268, China

2. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	Ray-Ban Stories
Brand Name	Ray Ban
Model Name	RW4002, RW4003, RW4004, RW4005
FCC ID	2AYOA-4002
Wireless Technology and Frequency Range	WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5720 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Mode	WLAN 2.4GHz 802.11b/g/n HT20 WLAN 5GHz 802.11a/n HT20 WLAN 5GHz 802.11ac VHT20 Bluetooth BR/EDR/LE
Antenna Type	WLAN/Bluetooth : PCBA Antenna
Antenna Gain	WLAN2.4G : gain 2.3 dBi WLAN5.2G : gain 1.3 dBi WLAN5.3G : gain 2.0 dBi WLAN5.5G : gain 2.8 dBi WLAN5.8G : gain 2.8 dBi Bluetooth: gain 2.3 dBi
EUT Stage	Identical Prototype
Remark: 1. The device has two power states: one is SoftAP mode (non-charging mode) with low rated RF power and performed SAR testing; SoftAP mode will disable 5G bands (U-NII-1, U-NII-2A, U-NII-2C), another one is STA mode (charging mode) with high rated RF power which performed MPE evaluation. 2. This report is performed for STA mode(charging mode) with high rated RF power.	

Comments and Explanations:
1. The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification. 2. The maximum RF output tune up power, antenna gain also the safe distance used for evaluate RF exposure were declared by manufacturer.

**3. Maximum RF Tune Up power among production units****<2.4GHz WLAN >**

Mode		Maximum Average Power (dBm)
WLAN2.4G	802.11b	20.00
	802.11g	19.00
	802.11n-HT20	16.00

<5GHz WLAN >

Mode		Maximum Average Power (dBm)
WLAN5.2G	802.11a	16.00
	802.11n-HT20	15.00
	802.11ac-VHT20	13.00
WLAN5.3G	802.11a	16.00
	802.11n-HT20	15.50
	802.11ac-VHT20	13.00
WLAN5.5G	802.11a	16.00
	802.11n-HT20	15.00
	802.11ac-VHT20	13.00
WLAN5.8G	802.11a	16.00
	802.11n-HT20	15.00
	802.11ac-VHT20	13.00

<Bluetooth>

Mode	Maximum Average Power (dBm)
Bluetooth BR/EDR	10.00
Bluetooth LE	9.00

4. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f ²)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = Power Density

P = Output Power at Antenna Terminals

G = Gain of Transmit Antenna (linear gain)

R = Distance from Transmitting Antenna

5. Radio Frequency Radiation Exposure Evaluation

5.1. Standalone Power Density Calculation

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)
2.4GHz WLAN	2412	2.30	20.00	22.300	0.170	169.824	0.034	1.000
WLAN 5.2GHz	5180	1.30	16.00	17.300	0.054	53.703	0.011	1.000
WLAN 5.3GHz	5260	2.00	16.00	18.000	0.063	63.096	0.013	1.000
WLAN 5.5GHz	5500	2.80	16.00	18.800	0.076	75.858	0.015	1.000
WLAN 5.8GHz	5745	2.80	16.00	18.800	0.076	75.858	0.015	1.000
Bluetooth	2402	2.30	10.00	12.300	0.017	16.982	0.003	1.000

Note:

1. For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band.
2. Chose the maximum power to do MPE analysis.
3. WLAN 2.4G and Bluetooth share the same antenna, and cannot transmit simultaneously.
4. According to the EUT character, WLAN 5GHz and Bluetooth cannot transmit simultaneously.
5. According to the EUT character, WLAN 2.4GHz and WLAN 5GHz cannot transmit simultaneously.

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.

-----THE END-----