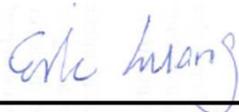


RF Exposure Evaluation Report

APPLICANT : Sony Corporation
EQUIPMENT : Wireless module
BRAND NAME : Sony
MODEL NAME : AL1DR
FCC ID : AK8145890811
STANDARD : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC., would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091, and pass the limit. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.



Reviewed by: Eric Huang / Manager



Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Taoyuan City, Taiwan (R.O.C.)



Table of Contents

1. **ADMINISTRATION DATA** 4

 1.1. Testing Laboratory 4

2. **DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)** 5

3. **MAXIMUM RF AVERAGE OUTPUT POWER AMONG PRODUCTION UNITS** 5

4. **RF EXPOSURE LIMIT INTRODUCTION** 6

5. **RADIO FREQUENCY RADIATION EXPOSURE EVALUATION** 6

 5.1. Standalone Power Density Calculation 6



1. Administration Data

1.1. Testing Laboratory

Testing Laboratory	
Test Site	SPORTON INTERNATIONAL INC.
Test Site Location	No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978

Applicant	
Company Name	Sony Corporation
Address	1-7-1 Konan, Minato-ku, Tokyo, 108-0075, Japan

Manufacturer	
Company Name	Sony Corporation
Address	1-7-1 Konan, Minato-ku, Tokyo, 108-0075, Japan

2. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	Wireless module
Brand Name	Sony
Model Name	AL1DR
FCC ID	AK8145890811
Wireless Technology and Frequency Range	WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Mode	802.11a/b/g/n HT20 Bluetooth BR/EDR/LE
HW Version	A
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

3. Maximum RF average output power among production units

Mode		Maximum Average Power (dBm)
2.4GHz WLAN	802.11b	18.00
	802.11g	18.00
	802.11n-HT20	18.00
Bluetooth BR/EDR		9.30
Bluetooth LE		9.30



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	2412.0	-8.00	18.00	10.000	0.010	10.000	0.002	1.000
Bluetooth	2402.0	-8.00	9.30	1.300	0.001	1.349	0.001	1.000

Note: For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band

Conclusion:

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