

RF Exposure Evaluation Report

Equipment : NIUX Wi-Fi module for household and professional appliances
Brand Name : Electrolux
Model No. : NIUX-UART-LIT , NIUX-USB-LIT
FCC ID : 2AIBX-NIUXL
Standard : 47 CFR Part 2.1091
Applicant : ELECTROLUX ITALIA S.p.A.
Corso Lino Zanussi 30 / 33080 Porcia / Italy
Manufacturer : LITE-ON Technology (Changzhou) CO.LTD
No.88, Yanghu Road, Wujin Hi-Tech Industrial Development Zone, Jiangsu Province, China
Zip Code: 213166

The product sample received on Jun. 06, 2017 and completely tested on Jul. 04, 2017. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with 47 CFR Part 2.1091, and pass the limit.

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Jordan Hsiao
SPORTON INTERNATIONAL INC.





TABLE OF CONTENTS

1	GENERAL DESCRIPTION	4
1.1	EUT General Information	4
1.2	Testing Location	4
2	MAXIMUM PERMISSIBLE EXPOSURE	5
2.1	Limit of Maximum Permissible Exposure	5
2.2	MPE Calculation Method	5
2.3	Calculated Result and Limit.....	6

REVISION HISTORY

[illegible]

1 General Description

1.1 EUT General Information

RF General Information			
Evaluation Mode	Frequency Range (MHz)	Operating Frequency (MHz)	Modulation Type
2.4GHz WLAN	2400-2483.5	2412-2462	802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11g/n: OFDM (BPSK, QPSK, 16QAM, 64QAM)

1.2 Testing Location

Testing Location				
<input checked="" type="checkbox"/> HWA YA	ADD :	No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)		
	TEL :	886-3-327-3456	FAX :	886-3-327-0973
<input type="checkbox"/> JHUBEI	ADD :	No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C.		
	TEL :	886-3-656-9065	FAX :	886-3-656-9085

2 Maximum Permissible Exposure

2.1 Limit of Maximum Permissible Exposure

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
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

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
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

Note: f = frequency in MHz ; *Plane-wave equivalent power density

2.2 MPE Calculation Method

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:

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

E = Electric field (V/m)

P = RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$



2.3 Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	EIRP (W)	Distance (cm)	S (mW/cm²)	S Limit (mW/cm²)
2.4G;G1D	3.31	17.46	20.77	0.11940	20	0.02375	1.00000
2.4G;D1D	3.31	24.00	27.31	0.53827	20	0.10709	1.00000