

# RF EXPOSURE EVALUATION REPORT

**FCC ID** : PPQLILYW131  
**Equipment** : WLAN Module  
**Brand Name** : LITEON  
**Model Name** : LILY-W131  
**Applicant** : LITE-ON Technology Corporation  
Bldg. C, 90, Chien 1 Rd., Chung-Ho, New  
Taipei City 23585, Taiwan (R.O.C)  
**Manufacturer** : LITE-ON Technology Corporation  
Bldg. C, 90, Chien 1 Rd., Chung-Ho, New  
Taipei City 23585, Taiwan (R.O.C)  
**Standard** : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part2.1091 and it complies with applicable limit.

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC evaluation.

The results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Laboratory, the test report shall not be reproduced except in full



Approved by: Cona Huang / Deputy Manager



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## **Table of Contents**

<b>1. DESCRIPTION OF EQUIPMENT UNDER TEST (EUT) .....</b>	<b>4</b>
<b>2. MAXIMUM RF AVERAGE OUTPUT POWER AMONG PRODUCTION UNITS .....</b>	<b>5</b>
<b>3. RF EXPOSURE LIMIT INTRODUCTION .....</b>	<b>6</b>
<b>4. RADIO FREQUENCY RADIATION EXPOSURE EVALUATION .....</b>	<b>7</b>
4.1. Standalone Power Density Calculation .....	7



### History of this test report

Report No.	Version	Description	Issued Date
FA371710A	Rev. 01	Initial issue of report	Sep. 14, 2023



**1. Description of Equipment Under Test (EUT)**

Product Feature & Specification	
EUT Type	WLAN Module
Brand Name	LITEON
Model Name	LILY-W131
FCC ID	PPQLILYW131
Wireless Technology and Frequency Range	WLAN 2.4 GHz Band: 2400 MHz ~ 2483.5 MHz
Mode	WLAN: 802.11b/g/n HT20

Host Information	
Equipment Name	AC Charging Station_IC 80A
Brand Name	LITEON
Model Name	EX-1193-1, EX-1193-3, EX-1193-5 EX-1193-1-48, EX-1193-3-48, EX-1193-5-48
Integrated WWAN Module	Brand Name: Quectel Model Name: BG96
Integrated RFID Module	Brand Name: REYAX Model Name: RYORR2L
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz RFID: 13.56 MHz
Mode	GSM/GPRS/EGPRS LTE: QPSK, 16QAM RFID: ASK
EUT Stage	Production Unit

Reviewed by: Jason Wang

Report Producer: Paula Chen



**2. Maximum RF average output power among production units**

**<WWAN>**

	Mode	Maximum Average power(dBm)
GSM	GSM850 GSM/GPRS 1TX	33
	GSM1900 GSM/GPRS 1TX	30
LTE	LTE B2	23
	LTE B4	23
	LTE B5	23
	LTE B12	23
	LTE B13	23
	LTE B25	23
	LTE B26	23

**<WLAN>**

Mode	Maximum Average power (dBm)
2.4GHz WLAN	19

**<RFID>**

Mode	Maximum EIRP Power (dBm)
13.56MHz	-49.9

Note : EIRP is calculated using 10-meter field strength conversion.



3. 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.

Table with 5 columns: Frequency range (MHz), Electric field strength (V/m), Magnetic field strength (A/m), Power density (mW/cm²), Averaging time (minutes). It is divided into two sections: (A) Limits for Occupational/Controlled Exposures and (B) Limits for General Population/Uncontrolled Exposure.

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 = PG / (4πR²)

Where:

- S = Power Density
P = Output Power at Antenna Terminals
G = Gain of Transmit Antenna (linear gain)
R = Distance from Transmitting Antenna



### 4. Radio Frequency Radiation Exposure Evaluation

#### 4.1. Standalone Power Density Calculation

Band	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Power Density / Limit
GSM 850 (1 Tx slot)	1.00	33.00	34.0	2.51	316.23	0.063	0.549	0.115
GSM 1900 (1 Tx slot)	3.20	30.00	33.2	2.09	263.03	0.052	1.000	0.052
LTE Band 2	3.20	23.00	26.2	0.42	416.87	0.083	1.000	0.083
LTE Band 4	2.30	23.00	25.3	0.34	338.84	0.067	1.000	0.067
LTE Band 5	1.00	23.00	24.0	0.25	251.19	0.050	0.549	0.091
LTE Band 12	2.40	23.00	25.4	0.35	346.74	0.069	0.466	0.148
LTE Band 13	0.80	23.00	23.8	0.24	239.88	0.048	0.518	0.092
LTE Band 25	3.20	23.00	26.2	0.42	416.87	0.083	1.000	0.083
LTE Band 26	1.00	23.00	24.0	0.25	251.19	0.050	0.543	0.092
WLAN2.4GHz Band	3.30	19.00	22.3	0.17	169.82	0.034	1.000	0.034
RFID			-49.9	0.00	0.00	0.000	0.979	0.000

WWAN Power Density / Limit	WLAN Power Density / Limit	RFID Power Density / Limit	Σ (Power Density / Limit) of WWAN+WLAN+RFID
0.148	0.034	0.000	0.182

**Note:**

- For colocation analysis, GPRS850/1900 (1TX slot) is chosen for summation due to the highest (power density/limit) among all WWAN wireless modes.
- Σ(Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for WWAN + WLAN + RFID.
- Considering the WWAN module collocation with the WLAN and NFC transmitter of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 3 collocated transmitters is compliant.

### Conclusion:

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