

RF Exposure Report

Report No.: SABHAT-WTW-P21061067

FCC ID: R68OQ610US

Test Model: Open-Q 610 uSOM

Received Date: Jun. 29, 2021

Date of Evaluation: Nov. 11, 2021

Issued Date: Jan. 10, 2022

Applicant: Lantronix, Inc.

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FCC Registration / 788550 / TW0003
Designation Number:



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Release Control Record

Issue No.	Description	Date Issued
SABHAT-WTW-P21061067	Original Release	Jan. 10, 2022

1 Certificate of Conformity

Product: Open-Q 610 uSOM

Brand: Lantronix

Test Model: Open-Q 610 uSOM

Sample Status: Engineering Sample

Applicant: Lantronix, Inc.

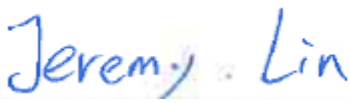
Date of Evaluation: Nov. 11, 2021

Standards: FCC Part 2 (Section 2.1091)

References Test Guidance: KDB 447498 D01 General RF Exposure Guidance v06

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.


Prepared by : _____, **Date:** Jan. 10, 2022
Lena Wang / Specialist


Approved by : _____, **Date:** Jan. 10, 2022
Jeremy Lin / Project Engineer

2 RF Exposure

2.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
300-1500	F/1500	30
1500-100,000	1.0	30

F = Frequency in MHz

2.2 MPE Calculation Formula

$$P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$$

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

2.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

3 Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Max Average Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WLAN					
2412-2462	22.81	3.32	20	0.082	1
5180-5240	16.87	6.11	20	0.040	1
5260-5320	16.86	6.11	20	0.039	1
5500-5720	20.25	6.11	20	0.086	1
5745-5825	20.72	6.11	20	0.096	1
BT EDR					
2402-2480	10.91	3.32	20	0.005	1
BT LE					
2402-2480	10.97	3.32	20	0.005	1

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

Note:

1. 2.4GHz & BT antenna gain: 3.32dBi
5GHz: antenna gain = 6.11dBi
2. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

Conclusion:

The formula of calculated the MPE is:

$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

The simultaneous operation mode was determined by client.

1. WLAN 5G+ BT = $0.096/1 + 0.005/1 = 0.101$

Therefore the maximum calculations of above situations are less than the "1" limit.

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