



# RF Exposure Evaluation Declaration

Report No.: S2025062756520104

Issue Date: 07-18-2025

**Applicant:** Lumi United Technology Co., Ltd

**Address:** B1, Chongwen Park, Nanshan iPark, Liuxian Avenue, Taoyuan Residential District, Nanshan District, Shenzhen, China

**FCC ID:** 2AKIT-PSS04

**Application Type:** Certification

**Product:** Presence Multi-Sensor FP300

**Model No.:** PS-S04E

**Trade Mark:** Aqara

**FCC Rule Part(s):** CFR 47, FCC Part 2.1091 Radio frequency radiation exposure evaluation: mobile devices.

**Item Receipt date:** Feb.13 2025

**Test Date:** Feb.14 2025 ~ Jun.30 2025

Compiled By

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The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in KDB 558074 D01. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of Fangguang Inspection & Testing Co., Ltd. Wuxi Branch

The test report must not be used by the client to claim product certifications, approval, or endorsement by NVLAP, NIST or any agency of U.S. Government.

## Revision History

Report No.	Version	Description	Issue Date
S2025062756520104	Rev. 01	/	07-18-2025

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## §2.1033 General Information

<b>Applicant:</b>	Lumi United Technology Co., Ltd
<b>Applicant Address:</b>	B1, Chongwen Park, Nanshan iPark, Liuxian Avenue, Taoyuan Residential District, Nanshan District, Shenzhen, China
<b>Manufacturer:</b>	Lumi United Technology Co., Ltd
<b>Manufacturer Address:</b>	B1, Chongwen Park, Nanshan iPark, Liuxian Avenue, Taoyuan Residential District, Nanshan District, Shenzhen, China
<b>Test Site:</b>	Fangguang Inspection & Testing Co., Ltd.
<b>LAB ID:</b>	CN5037
<b>Test Site Address:</b>	No.8 Ningyun Rd., Xinwu District Wuxi, Jiangsu 214000 China
<b>FCC Rule Part(s):</b>	FCC Part 2.1091
<b>FCC ID:</b>	2AKIT-PSS04
<b>Test Device Serial No.:</b>	S/N.: / <input type="checkbox"/> Production <input checked="" type="checkbox"/> Pre-Production <input type="checkbox"/> Engineering

## 1. PRODUCT INFORMATION

### 1.1. Equipment Description

Product Name:	Presence Multi-Sensor FP300
Test Model:	PS-S04E
Additional Model:	PS-S04D
Model difference descriptions:	They have the same technical construction including circuit diagram, PCB LAYOUT, hardware version and software version identical, except sales area and packaging are different.
Trade Mark:	Aqara
Power Supply:	3.0V DC supplied by button cell
Battery Specification:	CR2450*2 Batteries
Hardware Version:	1.0.0.0
Software Version:	1.0.0.0
EUT sample number:	S2025062756520104-1-1/1-2

Note: This information is provided by the Customer and its authenticity is the responsibility of the Customer.

### 1.2. Product Specification Subjective to this Report

Operating Frequency	ZigBee & Thread: 2405MHz-2480MHz, BLE_1M & 2M: 2402MHz-2480MHz, Radar: 57-61.56GHz
Modulation type:	ZigBee & Thread: O-QPSK, BLE_1M & 2M: GFSK, Radar: FMCW
Antenna Type:	ZigBee: Internal antenna with 1.0dBi (Max.) Thread: Internal antenna with 1.0dBi (Max.) BLE_1M & 2M: Internal antenna with 1.0dBi (Max.) Radar: AiP Antenna with 7.39dBi Gain (Max.)
Note:	The EUT antenna gain is provided by the applicant. This report is made solely on the basis of such data and/or information. We accept no responsibility for the authenticity and completeness of the above data and information and the validity of the results and/or conclusions. The test model is PS-S04E.

## 2. RF Exposure Evaluation

### 2.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

#### LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	f/1500	6
1500-100,000	--	--	1	30

f= Frequency in MHz

Calculation Formula:  $Pd = (Pout \cdot G) / (4 \cdot \pi \cdot r^2)$

Where

Pd = power density in mW/cm<sup>2</sup>

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

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

Pd is the limit of MPE, 1mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

For simultaneous transmission exposure cases, calculation formula is:

$$\sum_{k=1}^c \frac{Evaluated_k}{Exposure\ Limit_k} \leq 1$$

## 2.2. Calculation Method

### STANDALONE MPE

Mode	Frequency (MHz)	Maximum Tune-up Output power (dBm)	Antenna Gain (dBi)	Maximum Tune-up EIRP (dBm)	ERP (dBm)	Maximum Tune-up ERP (W)	Threshold ERP(W)
ZigBee	2405- 2480	9.00	1.00	10.00	7.85	0.0061	0.768
Thread	2405- 2480	9.00	1.00	10.00	7.85	0.0061	0.768
BLE	2402-2480	9.00	1.00	10.00	7.85	0.0061	0.768
Radar	57000-61560	16.00	7.39	23.39	21.24	0.1330	0.768

Remark:

1. RF Exposure use distance is 20cm from manufacturer declaration of user manual.
2. Threshold ERP(W)=  $19.2R^2$  (W)= $19.2*0.2*0.2$ (W)=0.768(W).
3. ERP (dBm)=EIRP (dBm)-2.15.

### Maximum Simultaneous transmission MPE Ratio for Thread, BLE, Radar:

Maximum MPE ratio BLE	Maximum MPE ratio Thread	Maximum MPE ratio Radar	$\sum$ MPEratios	Limit	Results
0.0079	0.0079	0.1732	0.1890	1.000	Pass

Remark:

According to KDB447498 for Transmitters used in mobile exposure conditions for simultaneous transmission operations;

$\sum$  of MPE ratios  $\leq$  1.0

### CONCULISON:

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB 447498 v06.

## Statement

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