



RF Exposure Evaluation Declaration

Report No.: S20251023113102E04

Issue Date: 2025-12-12

Applicant: Lumi United Technology Co., Ltd
B1, Chongwen Park, Nanshan iPark, Liuxian Avenue, Taoyuan
Address: Residential District, Nanshan District Shenzhen Guangdong
518000 China (Peoples Republic Of)
FCC ID: 2AKIT-VBS03
Product: Multi-State Sensor P100
Model No.: VB-S03E, VB-S03D
Trade Mark: Aqara
FCC Rule Part(s): CFR 47, FCC Part 2.1091 Radiofrequency radiation exposure
evaluation: portable devices.
Item Receipt date: Nov. 05, 2025
Test Date: Nov. 06, ~ Nov. 28, 2025



扫一扫验真伪

Compiled By

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Approved 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.

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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
S20251023113102E04	Rev. 01	/	2025-12-12

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§2.1033 General Information

Applicant:	Lumi United Technology Co., Ltd
Applicant Address:	B1, Chongwen Park, Nanshan iPark, Liuxian Avenue, Taoyuan Residential District, Nanshan District Shenzhen Guangdong 518000 China (Peoples Republic Of)
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Test Site:	Fanguang Inspection & Testing Co., Ltd.
LAB ID:	CN5037
LAB registration number:	600222-0
Test Site Address:	No.8 Ningyun Rd., Xinwu District Wuxi, Jiangsu 214000 China
FCC Rule Part(s):	FCC Part 2.1091
FCC ID:	2AKIT-VBS03
Test Device Serial No.:	S/N.: / ☐ Production ☒ Pre-Production ☐ Engineering

1. Product Information

1.1. Equipment Description

Product Name:	Multi-State Sensor P100				
Main Test Model:	VB-S03E				
Additional Model:	VB-S03D				
Model Description:	This EUT (Multi-State Sensor P100) the model No. VB-S03E, VB-S03D, 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	Product Name	Model No.	Colors	Sales Area
	Aqara	Multi-State Sensor P100	VB-S03E	Grey,White	Sales on line
			VB-S03D	Grey,White	in store sales
Trade Mark:	Aqara				
Input Voltage Range:	DC 3V from battery				
Bluetooth Version:	5.0				
Software Version:	1.0.0.0				
Hardware Version:	1.0.0.0				
EUT sample number:	S20251023113102-1-1 (Conducted)				
	S20251023113102-1-2 (Radiated)				

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:	BLE: 2402~2480MHz
	Zigbee: 2405~2480MHz
	Thread: 2405~2480MHz
Channel Number:	BLE: 40
	Zigbee: 16
	Thread: 16
Channel Spacing	BLE: 2MHz
	Zigbee: 5MHz
	Thread: 5MHz

Type of modulation:	BLE: GFSK Zigbee: O-QPSK Thread: O-QPSK
Antenna Type:	PIFA Antenna
Antenna Gain:	0dBi

Note: The maximum Antenna Gain was declared by the manufacturer.

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

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

P_d is the limit of MPE, 1mW/cm². 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. Test Result of RF Exposure Evaluation

Product	Multi-State Sensor P100
Test Item	RF Exposure Evaluation

Mode	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Antenna Gain (dBi)	PG		MPE (mW/cm ²)	MPE Limits (mW/cm ²)
				(dBm)	(mW)		
BLE	2402~2480	8.19	0	8.19	6.592	0.0013	1.00
Zigbee	2405~2480	8.30	0	8.30	6.761	0.0013	1.00
Thread	2405~2480	8.28	0	8.28	6.730	0.0013	1.00

Remark: 1. MPE use distance is 20cm from manufacturer declaration of user manual.

Remark: 2. Use the maximum gain of all bands when evaluating

Remark: 3: For simultaneous transmission is BLE and Zigbee (worst case).

$$\sum_{k=1}^c \frac{Evaluated_k}{Exposure Limit_k} = 0.0013 + 0.0013 = 0.0026 < 1.$$

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.

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