FCC RF Exposure Test Report

Report No.	:	**PSU-QSZ2504270113SA01**
Applicant	:	**SHENZHEN JIMI IOT CO., LTD.**
Address	:	**3-4/F, BLOCK A, BUILDING #7, SHENZHEN INTERNATIONAL INNOVATION VALLEY, DASHI 1ST ROAD, NANSHAN DISTRICT, SHENZHEN, GUANGDONG, CHINA**
Product	:	**POSITIONING FUEL LEVEL SENSOR**
FCC ID	:	**2AMLF-KL100**
Brand	:	**JIMIIOT**
Model No.	:	**KL100**
Standards	:	**FCC Part 2 (Section 2.1091)** **KDB 447498 D01 General RF Exposure Guidance v06**
Sample Received Date	:	**Jun. 05, 2025**
Date of Testing	:	**Jun. 05, 2025 ~ Jun. 12, 2025**
Test Lab	:	**The FCC Site Registration No. is 434559; The Designation No. is CN1325.**
Issued By	:	**Huarui 7layers High Technology (Suzhou) Co., Ltd.**
Address	:	**Tower N, Innovation Center, 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province China**

CERTIFICATION: The above equipment have been tested by **Huarui 7Layers High Technology (Suzhou) Co., Ltd.,** 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 SAR characteristics under the conditions specified in this report. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product certification, approval, or endorsement by A2LA or any government agencies.

Prepared By : Chang Gao
(Chang Gao / Engineer)

Approved By : Sunpeibo
(Peibo Sun /Manager)

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Release Control Record

Report No.	Reason for Change	Date Issued
PSU-QSZ2504270113SA01	Original release	Jun. 12, 2025

1. Description of Equipment Under Test

EUT Type*	Positioning Fuel Level Sensor
FCC ID*	2AMLF-KL100
Brand Name*	jimiiot
Model Name*	KL100
Tx Frequency Bands (Unit: MHz)	GSM 850:824.2MHz ~ 848.8MHz GSM 1900: 1850.2MHz ~ 1909.8MHz LTE Band 2 : 1850.7MHz ~ 1909.3MHz LTE Band 4 : 1710.7MHz ~ 1754.3MHz LTE Band 5 : 824.7MHz ~ 848.3MHz LTE Band 7: 2502.5MHz ~ 2567.5MHz BLE: 2402MHz ~ 2480MHz
Uplink Modulations*	GPRS/EDGE: GMSK,8PSK LTE : QPSK, 16QAM BLE:GFSK
Antenna Type*	PIFA Antenna
HW VERSION*	KL100_MB_V1.1
SW VERSION*	KL100_KL100_WEBI_V1.2_250318.2028
EUT Stage*	Identical Prototype

Note:

1. *Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information , Test Lab is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.

2. The above EUT information is declared by manufacturer and for more detailed features description please refers to the manufacturer's specifications or User's Manual.

2. MPE(Maximum Permissible Exposure) Assessment

2.1 Introduction

According to 47 CFR §2.1091, a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 cm is normally maintained between the transmitting antenna and the body of the user or nearby persons. In this context, the term "fixed location" means that the device is physically secured at one location and is not able to be easily moved to another location. Transmitting devices designed to be used by consumers or workers that can be easily re-located, such as wireless devices associated with a personal computer, are considered to be mobile devices if they meet the 20 cm separation requirement. The limits to be used for MPE evaluation are specified in §1.1310. All unlicensed personal communications service (PCS) devices and unlicensed NII devices shall be subject to the limits for general population/uncontrolled exposure.

2.2 RF Radiation Exposure Limits

According to 47 CFR §1.1310, the criteria listed in below table shall be used to evaluate the environmental impact of human exposure to RF radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of §2.1093.

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time (min)
(A) Limits for Occupational / Controlled Exposures				
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 – 100000	-	-	5	6
(B) Limits for General Population / Uncontrolled Exposures				
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 – 100000	-	-	1.0	30

Limits for maximum permissible exposure (MPE)

Notes:

1. f = frequency in MHz
2. Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided they are made aware of the potential for exposure.
3. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

2.3 MPE Assessment Method

Calculations can be made to predict RF field strength and power density levels around typical RF sources. For example, in the case of a single radiating antenna, a prediction for power density in the far-field of the antenna can be made by use of the general Equations below. This equation is generally accurate in the far-field of an antenna but will over-predict power density in the near field, where they could be used for making a "worst case" or conservative prediction.

$$\text{Power Density (S)} = \frac{PG}{4\pi R^2} = \frac{EIRP}{4\pi R^2}$$

Where
S = Power Density, unit in mW/cm^2
P = Power input to the antenna, unit in mW
G = Power gain of the antenna in the direction of interest relative to an isotropic radiator
R = Distance to the center of radiation of the antenna, unit in cm
EIRP = Effective isotropically radiated power

2.4 MPE Calculation for Standalone Operations

The manufacturer expects that the radiated component of this device will not close to the human body during normal usage and the warning statement was also stated in the user instruction. Since the transmitting antenna will be kept at least 20 cm away from the human body, the MPE level is calculated based on this condition and the result is listed in below table.

CALCULATION FOR MAXIMUM E.I.R.P

Band	Frequency (MHz)	Maximum EIRP (dBm)	Maximum EIRP (mW)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)	Power Density / Limit Ratio	Result
GPRS 850 (1 Tx slot)	824.2	30.82	152.055	0.030	0.549	0.055	Pass
GPRS 850 (2 Tx slots)	824.2	30.40	275.423	0.055	0.549	0.100	Pass
GPRS 850 (3 Tx slots)	824.2	29.67	347.536	0.069	0.549	0.126	Pass
GPRS 850 (4 Tx slots)	824.2	28.45	350.752	0.070	0.549	0.127	Pass
EGPRS 850 (1 Tx slot)	824.2	27.51	70.958	0.014	0.549	0.026	Pass
EGPRS 850 (2 Tx slots)	824.2	26.77	119.399	0.024	0.549	0.043	Pass
EGPRS 850 (3 Tx slots)	824.2	24.75	112.202	0.022	0.549	0.041	Pass
EGPRS 850 (4 Tx slots)	824.2	22.23	83.753	0.017	0.549	0.030	Pass
GPRS 1900 (1 Tx slot)	1850.2	30.03	126.765	0.025	1.000	0.025	Pass
GPRS 1900 (2 Tx slots)	1850.2	29.24	210.863	0.042	1.000	0.042	Pass
GPRS 1900 (3 Tx slots)	1850.2	28.06	240.436	0.048	1.000	0.048	Pass
GPRS 1900 (4 Tx slots)	1850.2	25.99	199.067	0.040	1.000	0.040	Pass
EGPRS 1900 (1 Tx slot)	1850.2	28.75	94.406	0.019	1.000	0.019	Pass
EGPRS 1900 (2 Tx slots)	1850.2	27.74	149.279	0.030	1.000	0.030	Pass
EGPRS 1900 (3 Tx slots)	1850.2	26.20	156.675	0.031	1.000	0.031	Pass
EGPRS 1900 (4 Tx slots)	1850.2	23.00	100.000	0.020	1.000	0.020	Pass
LTE Band2	1850.7	24.94	311.889	0.062	1.000	0.062	Pass
LTE Band4	1710.7	22.91	195.434	0.039	1.000	0.039	Pass
LTE Band5	824.7	21.12	129.420	0.026	0.550	0.047	Pass
LTE Band7	2502.5	25.04	319.154	0.064	1.000	0.064	Pass
LE	2402	8.29	6.745	0.001	1.000	0.001	Pass

2.5 CONCLUSION OF SIMULTANEOUS TRANSMITTER

Both of the WLAN and WWAN can transmit simultaneously, the formula of calculated the MPE is:

CPD1/LPD1+CPD2/LPD2+……etc. < 1
CPD = Calculation power density
LPD = Limit of power density

Band	Frequency (MHz)	Power Density (mW/cm^2)	limit (mW/cm^2)	Power Density / Limit	Σ(Power Density / Limit)	MPE Limit	MPE Limit	MPE Limit	PASS / FAIL
WWAN	824.2	0.127	1	0.127	0.143	1.000	1.000	1.000	PASS
WLAN	2412	0.016	1	0.016					

Summary:
Since the ERP (effective radiated power) operated at < 1.5 GHz is less than 1.5 watts and > 1.5 GHz is less than 3 watts, the routine environmental evaluation is not required, and the MPE result calculated for this device complies with the MPE limit as specified in 47 CFR §1.1310.

3. Information on the Testing Laboratories

We, Huarui 7layers High Technology (Suzhou) Co., Ltd. ,were founded in 2020 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

Huarui 7Layers High Technology (Suzhou) Co., Ltd.
Lab Address:
Tower N, Innovation Center, 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province
Accredited Test Lab Cert 6613.01

If you have any comments, please feel free to contact us at the following:

Suzhou EMC/RF Lab:
Tel: +86 (0557) 368 1008

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