

TEST REPORT

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
Equipment Type: 4G Mini Dashcam
Model Name: JC182 (refer to section 2.3)
Brand Name: Jimi IoT
FCC ID: 2AMLF-JC182NA
Test Standard: 47 CFR Part 2.1091
KDB 447498 D04 v01
Sample Arrival Date: May 06, 2025
Test Date: May 08, 2025 - May 19, 2025
Date of Issue: May 28, 2025

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

**Tested by:** Xiong Lining**Checked by:** Xu Rui**Approved by:** Tolan Tu
(Testing Director)

Revision History

<u>Version</u>	<u>Issue Date</u>	<u>Revisions Content</u>
<u>Rev. 01</u>	<u>May 28, 2025</u>	<u>Initial Issue</u>

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1 GENERAL INFORMATION

1.1 Test Laboratory

Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100

1.2 Test Location

Name	Shenzhen BALUN Technology Co., Ltd.
Location	☐ Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
	☒ 1/F, Building B, Ganghongji High-tech Intelligent Industrial Park, No. 1008, Songbai Road, Yangguang Community, Xili Sub-district, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.

2 PRODUCT INFORMATION

2.1 Applicant Information

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

2.2 Manufacturer Information

Manufacturer	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

2.3 General Description for Equipment under Test (EUT)

EUT Name	4G Mini Dashcam
Model Name Under Test	JC182
Series Model Name	JC182-NA, JC182S, JC182P, TripVue, R42, LN-R42
Description of Model name differentiation	All models are same with electrical parameters and internal circuit structure, but only differ in model name. (this information provided by the customer)
Hardware Version	C182_MB_V1.2_0125
Software Version	C182_0_3_STD_JM_JC182_V1.2.0.4_250414.1100
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.4 Technical Information

Network and Wireless connectivity	4G Network LTE FDD Band 2/4/5/7/12/14/17/25/26/66 LTE TDD Band 41 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20/40) GPS, BDS, AGPS
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The requirement for the following technical information of the EUT was tested in this report:

Operating Mode	LTE; WIFI		
Frequency Range	LTE Band 2	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	LTE Band 4	TX: 1710 ~ 1755 MHz	RX: 2110 ~ 2155 MHz
	LTE Band 5	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	LTE Band 7	TX: 2500 ~ 2570 MHz	RX: 2620 ~ 2690 MHz
	LTE Band 12	TX: 699 ~ 716 MHz	RX: 729 ~ 746 MHz
	LTE Band 14	TX: 788 ~ 798 MHz	RX: 758 ~ 768 MHz
	LTE Band 17	TX: 704 ~ 716 MHz	RX: 734 ~ 746 MHz
	LTE Band 25	TX: 1850 ~ 1915 MHz	RX: 1930 ~ 1995 MHz

	LTE Band 26	TX: 814 ~ 824 MHz	RX: 859 ~ 869 MHz
		TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	LTE Band 66	TX: 1710 ~ 1780 MHz	RX: 2110 ~ 2180 MHz
	LTE Band 41	TX: 2496 ~ 2690 MHz	RX: 2496 ~ 2690 MHz
	802.11b/g /n(HT20/HT40)	2412 ~ 2462 MHz	
Antenna Type	WWAN: PIFA Antenna WIFI: Monopole Antenna		
Exposure Category	General Population/Uncontrolled Exposure		
Product Type	Mobile Device		

3 SUMMARY OF TEST RESULT

3.1 Test Standards

No.	Identity	Document Title
1	KDB 447498 D04 v01	447498 D04 Interim General RF Exposure Guidance v01

3.2 Limit Standards

No.	Identity	Document Title
1	47 CFR Part 2.1091	Radiofrequency radiation exposure evaluation: mobile devices

4 DEVICE CATEGORY AND LEVELS LIMITS

Mobile Devices:

CFR Title 47 §2.1091(b)

For purposes of this section, 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 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons.

FCC KDB 447498 D04 General RF Exposure Guidance v01 Limit

Evaluation of compliance with the exposure limits in § 1.1310 is necessary if the ERP of the device is greater than ERP_{20cm} in Formula (B.1) [repeated from § 2.1091(c)(1) and § 1.1307(b)(1)(i)(B)].

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B.1})$$

If the ERP is not easily obtained, then the available maximum time-averaged power may be used (i. e., without consideration of ERP only if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole.

SAR-based exemptions are constant at separation distances between 20 cm and 40 cm to avoid discontinuities in the threshold when transitioning between SAR-based and MPE-based exemption criteria at 40 cm, considering the importance of reflections.

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold P_{th} (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by Formula (B.2).

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases} \quad (\text{B. 2})$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20 \text{ cm}}$ is per Formula (B.1). The example values shown in Table B.2 are for illustration only.

Table B.2—Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)										
		5	10	15	20	25	30	35	40	45	50
300		39	65	88	110	129	148	166	184	201	217
450		22	44	67	89	112	135	158	180	203	226
835		9	25	44	66	90	116	145	175	207	240
1900		3	12	26	44	66	92	122	157	195	236
2450		3	10	22	38	59	83	111	143	179	219
3600		2	8	18	32	49	71	96	125	158	195
5800		1	6	14	25	40	58	80	106	136	169

5 ASSESSMENT RESULT

5.1 Output Power

Mode	LTE					
	Band 2	Band 4	Band 5	Band 7	Band 12	Band 14
Conducted Power (dBm)	22.70	23.02	23.26	23.51	22.58	22.79
Antenna Gain (dBm)	1.82	0.88	0.49	2.19	3.39	1.37
ERP/EIRP (dBm)	24.52	23.90	21.60	25.70	23.82	22.01
Note: This report listed the worst case conducted power value, please refer to BL-SZ2541550-501 report for more details.						

Mode	LTE					
	Band 17	Band 25	Band 26 (Part 22)	Band 26 (Part 90)	Band 66	Band 41
Conducted Power (dBm)	22.28	21.89	24.17	24.64	23.08	24.49
Antenna Gain (dBm)	3.39	1.82	0.49	0.49	0.97	2.19
ERP/EIRP (dBm)	23.52	23.71	22.51	22.98	24.05	26.68
Note: This report listed the worst case conducted power value, please refer to BL-SZ2541550-501 report for more details.						

Mode	2.4G WIFI
Conducted Power (dBm)	22.06
Antenna Gain (dBi)	1.17
EIRP (dBm)	23.23
Note: This report listed the worst case conducted power value, please refer to BL-SZ2541550-601 report for more details.	

5.2 Tune-up power

Mode		Conducted Power Range (dBm)	EIRP Range (dBm)	ERP Range (dBm)
LTE	B2	[22.00,24.00]	[23.00, 25.00]	[20.85,22.85]
	B4	[22.00,24.00]	[23.00, 25.00]	[20.85,22.85]
	B5	[22.00,24.00]	/	[20.85,22.85]
	B7	[22.00,24.00]	[24.00,26.00]	[21.85,23.85]
	B12	[21.00,23.00]	/	[22.85,24.85]
	B14	[22.00,24.00]	/	[20.85,22.85]
	B17	[21.00,23.00]	/	[22.85,24.85]
	B25	[21.00,23.00]	[23.00,25.00]	[20.85,22.85]
	B26(Part22)	[23.00,25.00]	/	[21.85,23.85]
	B26(Part90)	[24.00,26.00]	/	[21.85,23.85]
	B66	[22.00,24.00]	[23.00, 25.00]	[20.85,22.85]
	B41	[23.00,25.00]	[26.00,28.00]	[23.85,25.85]
2.4G WIFI		[21.00,23.00]	[22.00, 24.00]	[19.85,21.85]

Note1: ERP= EIRP -2.15dB.

Note2: According KDB 447498 D04, used the greater of maximum conducted power and ERP to compare with the threshold value Pth.

5.3 RF Exposure Evaluation Result

Evolution mode	Frequency (GHz)	Maximum power (dBm)	Maximum power (mw)	Distance (mm)	Threshold Power (mW)	Power / Limit	Verdict
LTE B2	1.910	24.00	251.19	200	3060.00	0.082	Pass
LTE B4	1.755	24.00	251.19	200	3060.00	0.082	Pass
LTE B5	0.849	24.00	251.19	200	1731.96	0.145	Pass
LTE B7	2.570	24.00	251.19	200	3060.00	0.082	Pass
LTE B12	0.716	24.85	305.49	200	1460.64	0.209	Pass
LTE 14	0.798	24.00	251.19	200	1627.92	0.154	Pass
LTE B17	0.716	24.85	305.49	200	1460.64	0.209	Pass
LTE B25	1.915	23.00	199.53	200	3060.00	0.065	Pass
LTE B26(Part22)	0.824	25.00	316.23	200	1680.96	0.188	Pass
LTE B26(Part90)	0.849	26.00	398.11	200	1731.96	0.230	Pass
LTE B66	2.690	24.00	251.19	200	3060.00	0.082	Pass
LTE B41	1.780	25.85	384.59	200	3060.00	0.126	Pass
2.4G WIFI	2.462	23.00	199.53	200	3060.00	0.065	Pass

5.4 Collocated Power Calculation

Evolution mode	Frequency(MHz)	Power /Limit	$\Sigma(\text{Power} / \text{Limit})$ of WWAN + WLAN	Verdict
LTE B26(Part90)	824 ~ 849MHz	0.230	0.295	Pass
2.4G WIFI	2412 ~ 2462 MHz	0.065		

Note:

1. $\Sigma(\text{Power} / \text{Limit})$: This is a summation of [(power for each transmitter/ antenna included in the simultaneous transmission)/ (corresponding Power limit)], for 2.4G WIFI +WWAN.
2. Both of the 2.4GHz/WWAN can transmit simultaneously, the formula of calculated the Power is $CP1 / LP1 + CP2 / LP2 + \dots \text{etc.} < 1$
 CP = Calculation power
 LP = Limit of power
3. The worst-case situation is 0.295, which is less than "1". This confirmed that the device comply with FCC KDB 447498 D04 Power limit.
4. The DUT work frequency range used is 2412 ~ 2462 MHz, 824 ~ 849MHz the result close to the limit by the above formula, so we select worst case power to calculate the exclusion power threshold.

5.5 Conclusion

This EUT is deemed to comply with the reference level limits, therefore the basic restrictions are compliant with human exposure limits.

Statement

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