Shenzhen Huaxia Testing Technology Co., Ltd

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

Telephone: +86-755-26648640
Fax: +86-755-26648637
Website: www.cqa-cert.com

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RF Exposure Evaluation Report

Report No.:	CQASZ20250100161E-05
Applicant:	iCarzone Inc.
Address of Applicant:	5101 Santa Monica Blvd Ste 8 Los Angeles, CA 90029 United States
Equipment Under Test (EUT):	
EUT Name:	Car Diagnostic Tool
Model No.:	UR1000
Test Model No.:	UR1000
Brand Name:	
FCC ID:	2BMNZ-UR1000
Standards:	47 CFR Part 1.1307 47 CFR Part 2.1093 KDB447498 D04 Interim General RF Exposure Guidance v01
Date of Receipt:	2025-01-17
Date of Test:	2025-01-17 to 2025-02-12
Date of Issue:	2025-3-13
Test Result:	**PASS***

*In the configuration tested, the EUT complied with the standards specified above.

Tested By: lewis zhou
(Lewis Zhou)

Reviewed By: Timo Lei
(Timo Lei)

Approved By: Jack Ai
(Jack Ai)

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20250100161E-05	Rev.01	Initial report	2025-3-13

2 Contents

3 General Information

3.1 Client Information

Applicant:	iCarzone Inc.
Address of Applicant:	5101 Santa Monica Blvd Ste 8 Los Angeles, CA 90029 United States
Manufacturer:	iCarzone Inc.
Address of Manufacturer:	5101 Santa Monica Blvd Ste 8 Los Angeles, CA 90029 United States
Factory:	Dongguan Yongdong Electronic Technology Co., Ltd
Address of Factory:	No. 10,4th Street,Zhangyang Fuzhu Industrial Zone,Zhangmutou town,Dongguan City

3.2 General Description of EUT

Product Name:	Car Diagnostic Tool
Model No.:	UR1000
Test Model No.:	UR1000
Trade Mark:	
Software Version:	V1.01
Hardware Version:	X701S
Power Supply:	Li-ion battery: DC 3.7V 5000mAh, Charge by DC 5V for adapter
Simultaneous Transmission	☐ Simultaneous TX is supported and evaluated in this report. ☒ Simultaneous TX is not supported.

3.3 General Description of BLE

Operation Frequency:	2402MHz~2480MHz
Modulation Type:	GFSK
Transfer Rate:	1Mbps
Number of Channel:	40
Product Type:	☐ Mobile ☒ Portable
Antenna Type:	FPC antenna
Antenna Gain:	2.15dBi

3.4 General Description of BT

Operation Frequency:	2402MHz~2480MHz
Modulation Type:	GFSK, π/4DQPSK, 8DPSK
Transfer Rate:	1Mbps/2Mbps/3Mbps
Number of Channel:	79
Product Type:	☐ Mobile ☒ Portable
Antenna Type:	FPC antenna

Antenna Gain:	2.15dBi

3.5 General Description of 2.4G WIFI Classic

Operation Frequency:	2412MHz~2462MHz
Type of Modulation:	IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g : OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20 and HT40) : OFDM (64QAM, 16QAM, QPSK, BPSK)
Number of Channel:	IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels IEEE 802.11n HT40: 7 Channels
Channel Separation:	5MHz
Transfer Rate:	IEEE for 802.11b: 1Mbps/2Mbps/5.5Mbps/11Mbps IEEE for 802.11g : 6Mbps/9Mbps/12Mbps/18Mbps/24Mbps/36Mbps/48Mbps/54Mbps IEEE for 802.11n(HT20) : 6.5Mbps/13Mbps/19.5Mbps/26Mbps/39Mbps/52Mbps/58.5Mbps/65Mbps IEEE for 802.11n(HT40) : 13.5Mbps/27Mbps/40.5Mbps/54Mbps/81Mbps/108Mbps/121.5Mbps/135Mbps
Sample Type:	☐ Mobile ☒ Portable
Antenna Type:	FPC antenna
Antenna Gain:	2.15dBi

3.6 General Description of 125KHz

Operation Frequency:	125KHz
Type of Modulation:	ASK
Sample Type:	☐ Mobile ☒ Portable
Antenna Type:	PKE antenna
Antenna Gain:	0dBi

4 RF Exposure Evaluation

4.1 SAR Evaluation for Portable condition

4.1.1 Standard Requirement

447498 D04 Interim General RF Exposure Guidance v01

3.2. SAR Test Reduction Guidance

SAR test reduction procedures [Glossary] allow using a particular set of test data as representative of other, similar, test conditions. This may be applied for data within different test positions (e.g. body, head, extremity), wireless modes (e.g. Wi-Fi, cellular), and frequency bands.This test reduction process provides for the use of test data for one specific channel, while referencing to those data for demonstrating compliance in other required channels for each test position of an exposure condition, within the operating mode of a frequency band. This is limited specifically to when the reported 1-g or 10-g SAR for the mid-band or highest output power channel meets any of the following conditions.

4.1.2 Limits

SAR-based thresholds are derived based on frequency, power, and separation distance of the RF source. The formula defines the thresholds in general for either available maximum timeaveraged power or maximum time-averaged ERP, whichever is greater.

If the ERP of a device is not easily determined, such as for a portable device with a small form factor, the applicant may use the available maximum time-averaged power exclusively if the device antenna or radiating structure does not exceed an electrical length of $\lambda/4$.

As for devices with antennas of length greater than $\lambda/4$ where the gain is not well defined, but always less than that of a half-wave dipole (length $\lambda/2$), the available maximum time-averaged power generated by the device may be used in place of the maximum time-averaged ERP, where that value is not known.

The separation distance is the smallest distance from any part of the antenna or radiating structure for all persons, during operation at the applicable ERP. In the case of mobile or portable devices, the separation distance is from the outer housing of the device where it is closest to the antenna.

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 Pth (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). Pth is given by Formula (B.2).

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

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

4.1.3 SAR Exclusion Evaluation Result

1) For BLE

Measurement Data

Channel	Conducted Peak Output Power (dBm)	Maximum tune-up Power (mW)	Exclusion threshold (mW)
Lowest (2402MHz)	-0.6	0.87	3.0
Middle (2440MHz)	0.12	1.03	
Highest (2480MHz)	0.2	1.05	

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20250100161E-02

2) **For BT**

Measurement Data

Channel	Conducted Peak Output Power (dBm)	Maximum tune-up Power (mW)	Exclusion threshold (mW)
Lowest (2402MHz)	-0.35	0.92	3.0
Middle (2441MHz)	0.08	1.02	
Highest (2480MHz)	0.26	1.06	

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20250100161E-01

3) For 2.4G WIFI

Measurement Data

Channel	Conducted Peak Output Power (dBm)	Maximum tune-up Power (mW)	Exclusion threshold (mW)
Lowest (2412MHz)	0.16	1.04	3.0
Middle (2437MHz)	1.91	1.55	
Highest (2462MHz)	0.68	1.17	

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20250100161E-03

4) For 125KHz

$$\mathrm{EIRP} = E_{\mathrm{Meas}} + 20\log\left(d_{\mathrm{Meas}}\right) - 104.7$$

where

EIRP	is the equivalent isotropically radiated power, in dBm
E_{Meas}	is the field strength of the emission at the measurement distance, in dBμV/m
d_{Meas}	is the measurement distance, in m

Frequency	EIRP (dBμV/m)	EIRP (dBm)	ERP (dBm)	Maximum tune-up Power (mW)	Exclusion threshold (mW)
(125KHz)	56.91	-38.25	-40.40	0.0001	1

Remark: The Max Peak Output Power data refer to report Report No.: CQASZ20250100161E-03.

*** END OF REPORT ***