

RF Exposure Evaluation Declaration

FCC ID: 2AZN4-CAEASRR400

Applicant: Changjiang Automobile Electronic System Co., Ltd.

Application Type: Certification

Product: SRR

Model No.: CAEA-SRR-400

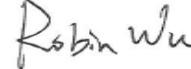
Serial Model No.: SRR400

Brand Name: CAEA

Test Rule(s): Part 95 Subpart M, Section 95.3385

Reviewed By: 

Vincent Yu

Approved By: 

Robin Wu



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

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Revision History

Report No.	Version	Description	Issue Date	Note
2104RSU051-U2	Rev. 01	Initial Report	06-26-2021	Valid

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1. GENERAL INFORMATION

1.1. Applicant

Changjiang Automobile Electronic System Co., Ltd.

No.289, Road12, Avenue2, Binhai Industrial Zone, Wenzhou, Zhejiang 325024, P.R.China

1.2. Manufacturer

Changjiang Automobile Electronic System Co., Ltd.

No.289, Road12, Avenue2, Binhai Industrial Zone, Wenzhou, Zhejiang 325024, P.R.China

1.3. Testing Facility

<input checked="" type="checkbox"/>	Test Site – MRT Suzhou Laboratory
	Laboratory Location (Suzhou - Wuzhong)
	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China
	Laboratory Location (Suzhou - SIP)
	4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China
	Laboratory Accreditations
	A2LA: 3628.01 CNAS: L10551
	FCC: CN1166 ISED: CN0001
	VCCI: R-20025, G-20034, C-20020, T-20020
<input type="checkbox"/>	Test Site – MRT Shenzhen Laboratory
	Laboratory Location (Shenzhen)
	1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China
	Laboratory Accreditations
	A2LA: 3628.02 CNAS: L10551
	FCC: CN1284 ISED: CN0105
<input type="checkbox"/>	Test Site – MRT Taiwan Laboratory
	Laboratory Location (Taiwan)
	No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)
	Laboratory Accreditations
	TAF: L3261-190725
	FCC: 291082, TW3261 ISED: TW3261

2. PRODUCT INFORMATION

2.1. Equipment Description

Product Name	SRR
Model No.	CAEA-SRR-400
Serial Model No.	SRR400
Working Frequency Range	76 ~ 77GHz
Type of Modulation	FMCW
Emission Designator	518MN0N
Working Voltage	12VDC
Antenna Type	Integrated antenna
Remark: The different of models only for marketing different client. The PCB layout, circuit schematic, and RF performance of each model are the same.	

3. RF EXPOSURE EVALUATION

3.1. Limits

FCC 95.3385

Regardless of the power density levels permitted under this subpart, devices operating under the provisions of this subpart are subject to the radiofrequency radiation exposure requirements specified in §§1.1307(b), 2.1091, and 2.1093 of this chapter, as appropriate. Applications for equipment authorization of devices operating under this section must contain a statement confirming compliance with these requirements for both fundamental emissions and unwanted emissions. Technical information showing the basis for this statement must be submitted to the Commission upon request.

§2.1091 Radiofrequency radiation exposure evaluation: portable devices

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.

§1.1310 Radiofrequency radiation exposure limits.

Below sets forth limits for Maximum Permissible Exposure (MPE) to radiofrequency electromagnetic fields

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (Minutes)
(A) Limits for Occupational/ Control 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
300-1,500	--	--	f/300	6
1,500-100,000	--	--	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
300-1,500	--	--	f/1500	30
1,500-100,000	--	--	1.0	30

f= Frequency in MHz

* = Plane-wave equivalent power density

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

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

E = EIRP in mW

G = gain of antenna in linear scale

π = 3.14

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

3.2. Test Result

Product	SRR
Test Item	RF Exposure Evaluation

Frequency Range (GHz)	Maximum EIRP (dBm)	Power Density at r = 20 cm (mW/cm ²)	Limit (mW/cm ²)
76 ~ 77	14.5	0.0056	1

CONCLUSION:

The Power density at 20cm as below:

$$P_d(20\text{cm}) = E/(4\pi r^2) = 10^{(14.5/10)} / (4 \cdot 3.1416 \cdot 20^2) \text{ mW/cm}^2 = 0.0054 \text{ mW/cm}^2 < 1 \text{ mW/cm}^2$$

So the EUT complies with the FCC 95.3385 requirement.

Appendix - EUT Photograph

Refer to "2104RSU051-UE" file.