

1 Cover Page

RF Exposure Report

Application No.:	FYCR2209000353AT
Applicant:	Changsha Intelligent Driving Institute Co., Ltd
Address of Applicant:	Building A3 and A4, No. 336, Xueshi Road, Yuelu District, Changsha, Hunan, China
Manufacturer:	Changsha Intelligent Driving Institute Co., Ltd
Address of Manufacturer:	Building A3 and A4, No. 336, Xueshi Road, Yuelu District, Changsha, Hunan, China
Factory:	Changsha Intelligent Driving Institute Co., Ltd
Address of Factory:	Building A3 and A4, No. 336, Xueshi Road, Yuelu District, Changsha, Hunan, China
Equipment Under Test (EUT):	
EUT Name:	Intelligent Processing Unit
Model No.:	EP0103
Trade mark:	
FCC ID:	2A4ABEP0103
	47 CFR Part 2.1091
Standard(s) :	47 CFR Part 1.1310
	47 CFR Part 1.1307
Date of Receipt:	2022-09-05
Date of Test:	2022-09-19 to 2022-10-31
Date of Issue:	2022-11-01
Test Result:	Pass*

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

Winkley Wang

EMC Technical Manager



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Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2022-11-01		Original

Authorized for issue by:			
		Tree Zhan	
		Tree Zhan/Project Engineer	
		Winkey Wang	
		Winkey Wang/Reviewer	

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3 General Information

3.1 Details of E.U.T.

Power supply:	AC/DC Switching Adaptor Adapter Model: GST120A24-HON Input: AC 100-240V, 50/60Hz, 1.4A Output: DC 24V 1.5A, 120W Max
Test Voltage:	AC 120V, 60Hz Note: Both nominal AC 120V, 60Hz and AC 240 V, 60Hz are required for testing in accordance with FCC KDB174176, this report only shows the results of the worst test result(AC 120V, 60Hz);
Cable(s):	AC cable:140cm with a ferrite core
Internal Source:	More than 108MHz
Operation Frequency Band:	LTE Band 5,38,40
Modulation Type:	QPSK 16QAM
Antenna Type:	Helical Rod Antenna
Antenna Gain:	7dBi

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3.2 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc. Shenzhen branch.

Fuyong lab. Xinlong TechnoPark, Fengtang Road, Fuyong Subdistrict, Bao'an, Shenzhen, China

Tel: +86 755 8866 3988 Fax: +86 755 2671 0594

No tests were sub-contracted.

3.3 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **A2LA (Certificate No. 6606.01)**

Compliance Certification Services (Kunshan) Inc. Shenzhen branch is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 6606.01.

- **FCC –Designation Number: CN1322**

Compliance Certification Services (Kunshan) Inc. Shenzhen branch has been recognized as an accredited testing laboratory.

Designation Number: CN1322. Test Firm Registration Number: 718073

- **Innovation, Science and Economic Development Canada**

Compliance Certification Services (Kunshan) Inc. Shenzhen branch has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0129.

IC#: 28189.

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4 Radio Spectrum Technical Requirement

4.1 RF Exposure

4.1.1 Requirement

In accordance with 47 CFR FCC Part 2.1091, this device has been defined as a mobile device whereby a distance of 0.2m normally can be maintained between the user and the device.

According to 47 CFR FCC Part 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 Part1.1307(b).

TABLE 1 TO §1.1310(E)(1)—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
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
(ii) Limits for General Population/Uncontrolled Exposure				
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

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4.1.2 Method

According to IEEE C95.3:2002 section 5.5.1.1, the power density S at a point on the axis at a distance d from a transmitting antenna is given by the Friis free-space transmission formula:

$$S = \frac{PG}{4\pi d^2}$$

S = power density (mW/cm²)
P = the net power delivered to the antenna (mW)
G = gain of the antenna in linear scale
d = distance between observation point and center of the radiator (cm)

From the maximum EUT RF output power, as well as the gain of the used antenna, according to the RF power density limit stated in above table, the minimum distance between the antenna and human body will be calculated.

4.1.3 Conclusion

Type	Test Freq. (MHz)	Max Antenna Gain (dBi)	Max Antenna Gain (Numeric)	Max tune-up tolerance power (dBm)	Max tune-up Tolerance power to Antenna (mW)	Power Density at R=20cm (mW/cm ²)	Limit (mW/cm ²)	MPE Ratios	Result
LTE Band5	824.7	7	5.01	23	199.53	0.1989	0.5498	0.3618	PASS
LTE Band38	2572.5	7	5.01	23	199.53	0.1989	1	0.1989	PASS
LTE Band40	2307.5	7	5.01	16	39.81	0.0397	1	0.0397	PASS

4.2 EUT Constructional Details

Refer to Appendix - external and internal photos for FYCR2209000353AT.

--End of the Report--

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