



SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZEMC-TRF-01 Rev. A/0 Aug01,2022

Report No.: SZCR230300074503

Page: 1 of 8

RF EXPOSURE EVALUATION REPORT

Application No.: SZCR2303000745AT
Applicant: Leax Arkivator Telecom USA Inc.
Address of Applicant: 833 E Arapaho Rd Suite 203, Richardson, Texas 75081 United States
Manufacturer: Leax Arkivator Telecom USA Inc.
Address of Manufacturer: 833 E Arapaho Rd Suite 203, Richardson, Texas 75081 United States
Factory: Leax Arkivator Telecom USA Inc.
Address of Factory: 833 E Arapaho Rd Suite 203, Richardson, Texas 75081 United States
Equipment Under Test (EUT):
EUT Name: CAT12 Module
Model No.: MGA6230A
FCC ID: 2AVFNMGA6230A
Standard(s) : FCC Rules 47 CFR §2.1091
KDB 447498 D04 interim General RF Exposure Guidance v01
Date of Receipt: 2023-03-20
Date of Evaluation: 2023-03-28 to 2023-04-25
Date of Issue: 2023-05-15

Evaluation Result:

Pass*

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

Keny Xu

Keny Xu
EMC Laboratory Manager



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch EMC Laboratory

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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2023-05-15		Original

Authorized for issue by:				
		Benson Wang		
		Benson Wang/Project Engineer		
		Eric Fu		
		Eric Fu/Reviewer		



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3 General Information

3.1 General Description of E.U.T.

Product Type:	☐ Portable device
	☒ Mobile device
	☐ Fixed device

3.2 Details of E.U.T.

Power supply:	POE Passive Injector powered by Adapter Adapter 1 Model No.: ASSA107A-240050 Input: AC 100-240V; 50/60Hz; Output: DC 24V 500mA Adapter 2 Model No.: TPA298H-12240-US Input: AC 100-240V; 50/60Hz; Output: DC 24V 0.5A					
Cable(s):	Network cable: unshielded 100.5cm Cable of Adapter 1: unshielded 125.5cm Cable of Adapter 2: unshielded 134cm					
Sample Type:	Mobile production					
LTE Operation Frequency Band:	LTE FDD Band 2,4,5,12,13,66,71 CA: 2A-12A; 12A-66A					
Modulation Type:	QPSK, 16QAM,64QAM					
LTE Power Class:	3					
Antenna Type:	Panel Antenna					
Antenna Gain:	LTE Band	ANT0 TRX0	ANT1 RX1	ANT2 TRX2	ANT3 RX3	Directional Gain
	2	6.83	/	9.48	/	8.35
	4	7.24	/	9.19	/	8.32
	5	6.18	/	/	/	/
	12	/	/	0.85	/	/
	13	5.43	/	/	/	/
	66	7.24	/	9.19	/	8.32
	71	/	/	0.18	/	/
Remark 1: Band 2/4/66: 1) ANT0 and ANT2 can Simultaneous transmission, 2) They are uncorrelated. 3) ANT0 is primarily Antenna; ANT2 is Secondary Antenna Remark 2: Band 5/13: Only support ANT0;						

	Remark 3: Band 12/71: Only support ANT2;
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Note:

(1)The antenna gain value is provided by the customer. The test lab will not be responsible for wrong test result due to incorrect information about antenna gain values.

3.3 Separation Distance

Minimum test separation distance:	20cm
Remark: This minimum test separation distance is determined by the smallest distance from the antenna and radiating structures or outer surface of the device, according to the host form factor, exposure conditions and platform requirements, to any part of the body or extremity of a user or bystander.	



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3.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

3.5 Test Facility

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

• A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI (Member No. 1937)

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• FCC –Designation Number: CN1336

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1336. Test Firm Registration Number: 787754.

• Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

3.6 Deviation from Standards

None

3.7 Abnormalities from Standard Conditions

None



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4 FCC Radiofrequency radiation exposure limits

According to §1.1310, the limit for general population/uncontrolled exposures

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
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
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

5 Measurement and Calculation

5.1 Maximum transmit power

LTE:

The Power Data is based on the RF Test Report SZCR230300074503 and Tune up procedure.

Antenna Gain:	LTE Band	ANT0 TRX0	ANT1 RX1	ANT2 TRX2	ANT3 RX3	Directional Gain
	2	6.83	/	9.48	/	8.35
	4	7.24	/	9.19	/	8.32
	5	6.18	/	/	/	/
	12	/	/	0.85	/	/
	13	5.43	/	/	/	/
	66	7.24	/	9.19	/	8.32
	71	/	/	0.18	/	/
Remark 1: Band 2/4/66: 1) ANT0 and ANT2 can Simultaneous transmission, 2) They are uncorrelated. 3) ANT0 is primarily Antenna; ANT2 is Secondary Antenna Remark 2: Band 5/13: Only support ANT0; Remark 3: Band 12/71: Only support ANT2;						

MPE Calculation

According to the formula $S=P/4\pi R^2$, we can calculate S which is MPE.

Note:

- 1) P (mW)
- 2) R = distance to the center of radiation of antenna (in centimeter)
- 3) MPE limit = 1mW/cm²

Test Mode	Frequency Band (MHz)	Max Conducted power (dBm)	Operation Distance R(cm)	Power Density (mW/cm ²)	Limit of Power Density S(mW/cm ²)	Result
LTE Band 2	1850-1910	25	20	0.43	1.00	Pass
LTE Band 4	1710-1755	22	20	0.214	1.00	Pass
LTE Band 5	824-849	24.5	20	0.233	0.55	Pass
LTE Band 12	699-716	24	20	0.061	0.47	Pass
LTE Band 13	777-787	24	20	0.174	0.52	Pass
LTE Band 66	1710-1780	22	20	0.214	1.00	Pass
LTE Band 71	663-698	24	20	0.052	0.44	Pass

--End of the Report--