

Report No.: SZEM201001052203

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RF Exposure Evaluation Report

Application No.: SZEM2010010522CR

Applicant: Leax Arkivator Telecom USA Inc.

Address of Applicant: 833 E Arapaho Rd, Suite 203, Richardson, TX, 75081

Manufacturer: Leax Arkivator Telecom USA Inc.

Address of Manufacturer: 833 E Arapaho Rd, Suite 203, Richardson, TX, 75081

Equipment Under Test (EUT):

EUT Name: Distributed Band41 Macro Base Station/Band41

Model No.: LAU9560

Trade Mark: LEAX ARKIVATOR TELECOM

 FCC ID:
 2AVFNLAU9560

 Standard(s):
 47 CFR Part 2

47 CFR Part 27

Date of Receipt: 2020-10-26

Date of Test: 2020-10-29 to 2020-12-29

Date of Issue: 2021-02-19

Test Result : Pass*

Keny Xu EMC Laboratory Manager



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



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2 Version

Revision Record					
Version	Chapter	Date	Modifier	Remark	
01		2021-02-19		Original	

Authorized for issue by:		
	Landew	
	Leo Lai/Project Engineer	-
	EvicFu	
	Eric Fu /Reviewer	-



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4 General Information

4.1 General Description of EUT

Power supply:	-57VDC to -40VDC (nominal: -48.0VDC)		
Test Voltage:	DC -48V		
Cable:	RJ45 Cable: 100cm		
	DC cable: 150cm unshielded		
Sample Type:	Fixed production		
LTE Operation Frequency Band:	41		
Frequency range:	2496-2690 MHz		
Number of antenna ports:	64 Tx / Rx ports		
Maximum Number of supported carriers per port:	1		
Modulation Type:	QPSK, 16QAM, 64QAM		
Working Bandwidth:	10M, 15M, 20M		
Antenna Gain:	17 dBi (per antenna port, max.)		
Hardware:	LAU9560		
Software:	LEAX_AAU_V1.00		
Extreme temp. Tolerance:	-30°C to +50°C		



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4.2 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

Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594

No tests were sub-contracted.

4.3 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

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. 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: CN1178

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

Designation Number: CN1178. Test Firm Registration Number: 406779.

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.

4.4 Deviation from Standards

None

4.5 Abnormalities from Standard Conditions

None.

4.6 Other Information Requested by the Customer

None.



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5 RF Exposure Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 Limits

According to FCC Part1.1310: 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—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm²)	Averaging time (minutes)		
(A) Limits for Occupational/Controlled Exposures						
0.3–3.0 3.0–30 30–300 300–1500 1500–100,000	614 1842/f 61.4	1.63 4.89/f 0.163	*(100) *(900/f2) 1.0 f/300	6 6 6 6		
(B) Limits for General Population/Uncontrolled Exposure						
0.3–1.34 1.34–30 30–300 300–1500 1500–100,000	614 824/ī 27.5	1.63 2.19/f 0.073	*(100) *(180/f²) 0.2 f/1500 1.0	30 30 30 30 30 30		

F= Frequency in MHz

Friis Formula

Friis transmission formula: $Pd = (Pout*G)/(4*Pi*R^2)$

Where

Pd = power density in mW/cm²

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

For Uncontrolled Environment, the MPE limit of 1500MHz to 100000MHz is 1.0 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

5.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.



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5.1.3 EUT RF Exposure Evaluation

1) Test Results

For LTE Band 41:

The max tune-up tolerance power Into Antenna & RF Exposure Evaluation Distance:

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 = 1000 cm (mW/cm²)	Limit (mW/cm²)	MPE Ratios	Result
17	50.119	53.8	239883.3	0.9567	1.0	0.9567	PASS

Note: Refer to report No. SZEM201001052202 or EUT test Max Conducted Peak Output Power value. The distancer (5th column) calculated from the Fries transmission formula is far greater than 1000 cm separation requirement.

Since the SAR Exclusion Threshold Level is well below the SAR low threshold level, so the EUT is considered to comply with SAR requirement without testing.

- End of the Report -



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