Testing Laboratory 1190

FCC RADIO EXPOSURE TEST REPORT

FCC ID	:	2AVFNLCE122
Equipment	:	LTE-TDD CPE
Brand Name	:	Leax
Model Name	:	LCE122
Applicant	:	Leax Arkivator Telecom USA Inc. 833 E Arapaho Rd. Suite 203 Richardson, TX 75081
Manufacturer	:	Leax Arkivator Telecom USA Inc. 833 E Arapaho Rd. Suite 203 Richardson, TX 75081
Standard	:	47 CFR Part 2.1091

The product was received on Mar. 13, 2020, and testing was started from Mar. 25, 2020 and completed on Mar. 31, 2020. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in 47 CFR Part 2.1091 and shown compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Sam Chen

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
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History of this test report

Report No.	Version	Description	Issued Date
FA031307	01	Initial issue of report	Apr. 29, 2020

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
2	-	Exposure evaluation	PASS	-

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Sam Chen

Report Producer: Viola Huang

1 General Description

1.1 EUT General Information

RF General Information			
Evaluation Mode	**TX Frequency (MHz)**	**RX Frequency (MHz)**	**Modulation Type**
LTE Band 48	**<Single-carrier>** 10 MHz: 3555 MHz ~ 3695 MHz 20 MHz: 3560 MHz ~ 3690 MHz **<Multi-carrier and/or CA>** **For non-contiguous** 10 MHz+10 MHz: 3555 + 3695 10 MHz+ 20 MHz: 3555 + 3690 20 MHz+10 MHz: 3560 + 3695 20 MHz+20 MHz: 3560 + 3690 **For contiguous** 10 MHz+20 MHz: 3555.5 + 3569.9 / 3615.6+ 3630 / 3675.6 + 3690 20 MHz+10 MHz: 3560.1 + 3574.4 / 3620.1+3645.5 / 3680.1 + 3694.5 20 MHz+20 MHz: 3560 + 3579.8 / 3615.1 + 3634.9 / 3670.2 + 3690	**<Single-carrier>** 10 MHz: 3555 MHz ~ 3695 MHz 20 MHz: 3560 MHz ~ 3690 MHz **<Multi-carrier and/or CA>** **For non-contiguous** 10 MHz+10 MHz: 3555 + 3695 10 MHz+ 20 MHz: 3555 + 3690 20 MHz+10 MHz: 3560 + 3695 20 MHz+20 MHz: 3560 + 3690 **For contiguous** 10 MHz+20 MHz: 3555.5 + 3569.9 / 3615.6+ 3630 / 3675.6 + 3690 20 MHz+10 MHz: 3560.1 + 3574.4 / 3620.1+3645.5 / 3680.1 + 3694.5 20 MHz+20 MHz: 3560 + 3579.8 / 3615.1 + 3634.9 / 3670.2 + 3690	For TX QPSK / 16QAM / 64QAM For RX QPSK / 16QAM / 64QAM / 256QAM

1.2 Testing Location

Testing Location			
☐	HWA YA	ADD :	No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.
		TEL : 886-3-327-3456	FAX : 886-3-327-0973
☒	JHUBEI	ADD :	No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C.
		TEL : 886-3-656-9065	FAX : 886-3-656-9085

Test site Designation No. TW0006 with FCC.

Test site registered number IC 4086D with Industry Canada.

2 Maximum Permissible Exposure

2.1 Limit of Maximum Permissible Exposure

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm²)	Averaging Time |E|²,|H|² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm²)	Averaging Time |E|²,|H|² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

2.2 MPE Calculation Method

The MPE was calculated at 27 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

E (V/m) = $\frac{\sqrt{30 \times P \times G}}{d}$ Power Density: *Pd* (W/m²) = $\frac{E^2}{377}$

E = Electric field (V/m)

P = RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

Pd = $\frac{30 \times P \times G}{377 \times d^2}$

2.3 Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

<Single-carrier>

Band 48_LTE_20MHz_(16QAM)

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm^2)	S Limit (mW/cm^2)
3560MHz	14.00	24.81	38.81	0.50	39.31	8.53100	27	0.93122	1.00000

<Multi-carrier and/or CA>

For non-contiguous

Band 48_LTE _20MHz+20MHz_(64QAM)

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm^2)	S Limit (mW/cm^2)
3560MHz+3690MHz	14.00	23.87	37.87	0.50	38.37	6.87068	27	0.74998	1.00000

For contiguous

Band 48_LTE _20MHz+20MHz_(QPSK)

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm^2)	S Limit (mW/cm^2)
3560MHz+3579.8MHz	14.00	24.22	38.22	0.50	38.72	7.44732	27	0.81293	1.00000

Note: The above antenna gain was declared by manufacturer.

————THE END————