RF EXPOSURE REPORT

FCC ID: 2AVFNLCE4121M

Test Report No……..:	RF231214003-03-004
Product(s) Name……...:	LTE Indoor CPE
Model(s)……..:	LCE4121M
Trade Mark……....:	X-Link
Applicant……..:	Leax Arkivator Telecom USA Inc.
Address……..…...:	833 E Arapaho Rd. Suite 203 Richardson, TX 75081
Receipt Date……..:	2023.12.20
Test Date……....:	2023.12.28~2024.01.22
Issued Date……..…:	2024.02.04
Standards……..:	FCC Guidelines for Human Exposure IEEE C95.1
	FCC Title 47 Part 2.1091
	KDB 447498 D01 General RF Exposure Guidance v06
Testing Laboratory……:	Shenzhen Haiyun Standard Technical Co., Ltd.

Prepared By:	Checked By:	Approved By:	
Black Ding	Tim Zhang	Misue Su	
Black Ding	Tim.zhang	Misue Su	

History of this test report

Original Report Issue Date: 2024.02.04

● No additional attachment

○ Additional attachments were issued following record

Attachment No.	Issue Date	Description

1.. MPE CALCULATION METHOD

Radio Frequency Exposure Limit

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm²)
300-1,500	--	--	f/1500
1,500-100,000	--	--	1.0

Calculation Method of RF Safety Distance:

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

where:
S = power density
P = power input to the antenna
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna

Table for Filed Antenna

For 2.4GWiFi

Antenna gain		Antenna Type
Ant1: 3.1dBi	Ant2: 2.37dBi	PCB antenna

For 5GWiFi:

Antenna gain		Antenna Type
Ant1: 1.84dBi	Ant2: 2.74dBi	PCB antenna

For WACDMA&LTE:

Operating Mode	Antenna gain	Antenna Type
WCDMA Band V	1.75dBi	PCB Antenna
WCDMA Band IV	3.17dBi	PCB Antenna
WCDMA Band II	1.94dBi	PCB Antenna
LTE Band 2	1.94dBi	PCB Antenna
LTE Band 4	3.17dBi	PCB Antenna
LTE Band 5	1.75dBi	PCB Antenna
LTE Band 7	5.12dBi	PCB Antenna
LTE Band 12	3.39dBi	PCB Antenna
LTE Band 13	2.00dBi	PCB Antenna
LTE Band 17	3.39dBi	PCB Antenna
LTE Band 25	1.94dBi	PCB Antenna
LTE Band 26	1.75dBi	PCB Antenna
LTE Band 30	5.77dBi	PCB Antenna
LTE Band 41	5.48dBi	PCB Antenna
LTE Band 66	3.17dBi	PCB Antenna
LTE Band 71	3.39dBi	PCB Antenna
LTE CA_5B	1.75dBi	PCB Antenna
LTE CA_7C	5.12dBi	PCB Antenna
LTE CA_41C	5.48dBi	PCB Antenna
LTE Band 14	1.98dBi	PCB Antenna
LTE Band 26	1.68dBi	PCB Antenna
LTE Band 48	3.14dBi	PCB Antenna

2.. TEST RESULTS

Worst case as below

Operating Mode	Freq.	Maximum conducted output power	Directional Antenna Gain	Calculated maximum EIRP		MPE Limit	MPE Value
	(MHz)	(dBm)	(dBi)	(dBm)	(mW)	(mW/cm^2)	
2.4G Wifi ant1	2412-2462	12.27	3.10	15.37	34.43	1	0.007
2.4G Wifi ant2	2412-2462	12.06	2.37	14.43	27.73	1	0.005
5G Wifi ant1	5180-5825	15.34	1.84	17.18	52.23	1	0.010
5G Wifi ant2	5180-5825	15.42	2.74	18.16	65.46	1	0.013

Operating Mode	Freq.	Tune-up power	Directional Antenna Gain	Calculated maximum EIRP		MPE Limit	MPE Value
	(MHz)	(dBm)	(dBi)	(dBm)	(mW)	(mW/cm^2)	
WCDMA Band V	824-849	24.5	1.75	26.25	421.70	0.549	0.084
WCDMA Band IV	1710-1755	24.5	3.17	27.67	584.79	1	0.116
WCDMA Band II	1850-1910	24.5	1.94	26.44	440.55	1	0.088
LTE Band 2	1850-1910	24.0	1.94	25.94	392.64	1	0.078
LTE Band 4	1710-1755	24.0	3.17	27.17	521.19	1	0.104
LTE Band 5	824-849	24.0	1.75	25.75	375.84	0.549	0.075
LTE Band 7	2500-2570	24.0	5.12	29.12	816.58	1	0.162
LTE Band 12	699-716	24.0	3.39	27.39	548.28	0.466	0.109
LTE Band 13	777-787	24.0	2.00	26.00	398.11	0.518	0.079
LTE Band 17	704-716	24.0	3.39	27.39	548.28	0.469	0.109
LTE Band 25	1850-1915	24.0	1.94	25.94	392.64	1	0.078
LTE Band 26	824-849	24.0	1.75	25.75	375.84	0.549	0.075
LTE Band 30	2305-2315	24.0	5.77	29.77	948.42	1	0.189
LTE Band 41	2496-2690	27.0	5.48	32.48	1770.11	1	0.352
LTE Band 66	1710-1780	24.0	3.17	27.17	521.19	1	0.104
LTE Band 71	663-698	24.0	3.39	27.39	548.28	0.442	0.109
LTE CA_5B	824-849	23.5	1.75	25.25	334.97	0.549	0.067
LTE CA_7C	2500-2570	23.5	5.12	28.62	727.78	1	0.145
LTE CA_41C	2496-2690	23.5	5.48	28.98	790.68	1	0.157
LTE Band 14	788-798	24.0	1.98	25.98	396.28	0.525	0.079
LTE Band 26	814-849	24.0	1.68	25.68	369.83	0.543	0.074
LTE Band 48	3550-3700	24.0	3.14	27.14	517.61	1	0.103

Note: 1. The calculated distance is 20 cm.
2. The 2.4G Wifi function can transmit at the same time with the 5G Wifi function and LTE function
3. The WCDMA function can not transmit at the same time with the LTE function

Simultaneous transmitting consideration

The ratio= $MPE_{2.4G\ Wifi\ ant1}$/limit+ $MPE_{2.4G\ Wifi\ ant2}$/limit +$MPE_{5G\ Wifi\ ant1}$/limit+$MPE_{5G\ Wifi\ ant2}$/limit+$MPE_{LTE\ Band71}$/limit
=0.007/1+0.005/1+0.010/1+0.013/1+0.109/0.442=0.282<1.0

Result: Complies

Statement

1. The report is invalid without the official seal or special seal of Shenzhen Haiyun Standard Technology Co., Ltd. (hereinafter referred to as the unit).

2. The report is invalid without the signature of the approver.

3. The report is invalid if altered arbitrarily.

4. The report shall not be partially copied without the written approval of the unit.

5. The reported test results are only valid for the tested samples.

6. If there is any objection to the test report, it shall be submitted to the test unit within 15 days from the date of receiving the report, and the overdue shall not be accepted.

Shenzhen Haiyun Standard Technology Co., Ltd.

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(END OF REPORT)