

RF EXPOSURE REPORT



Applicant:	Corporativo Lanix S.A. de C.V.
Address:	Carretera Internacional Hermosillo-Nogales KM 8.5, 83160, Hermosillo, Sonora, México

Manufacturer or Supplier:	Corporativo Lanix S.A. de C.V.
Address:	Carretera Internacional Hermosillo-Nogales KM 8.5, 83160, Hermosillo, Sonora, México
Product:	LTE MODEM
Brand Name:	Lanix
Model Name:	B02
FCC ID:	ZC4B02
Date of tests:	Sep. 03, 2019 ~ Oct. 11, 2019

The submitted sample of the above equipment has been tested for according to the requirements of the following standards:

- ☒ IEEE C95.1
- ☒ FCC Part 2.1091
- ☒ KDB 447498 D01 General RF Exposure Guidance v06

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Alex Chen Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
	
Date: Oct. 18, 2019	Date: Oct. 18, 2019

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Test Report No.: SA190902W001

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA190902W001	Original release	Oct. 18, 2019

1 GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF EUT

PRODUCT	LTE MODEM	
MODEL NAME	Lanix	
NOMINAL VOLTAGE	B02	
OPERATING TEMPERATURE RANGE	0 ~ 40°C	
MODULATION TYPE	WLAN	CCK, DQPSK, DBPSK for DSSS 16QAM, QPSK, BPSK for OFDM
	WCDMA	BPSK/QPSK
	LTE	QPSK, 16QAM
OPERATING FREQUENCY	WIFI 2.4G	2412~ 2462MHz for 11b/g/n(HT20) 2422~ 2452MHz for 11b/g/n(HT40)
	WCDMA	1852.4-1907.6MHz (FOR WCDMA II) 826.4-846.6MHz (FOR WCDMA V)
	LTE	1710.7MHz ~ 1754.3MHz (FOR LTE Band4) 824.7MHz ~ 848.3MHz (FOR LTE Band5) 2502.5MHz-2567.5MHz (FOR LTE Band7) 1710.7MHz – 1779.3MHz (FOR LTE Band66)
ANTENNA GAIN	WLAN 2.4G	PCB Antenna with 2dBi gain
	WCDMA II	Fixed Internal Antenna with 2dBi gain
	WCDMA V	Fixed Internal Antenna with 2.5dBi gain
	LTE Band 4	Fixed Internal Antenna with 2dBi gain
	LTE Band 5	Fixed Internal Antenna with 2.5dBi gain
	LTE Band 7	Fixed Internal Antenna with 2dBi gain
	LTE Band 66	Fixed Internal Antenna with 3dBi gain
HW VERSION	PS05I_1_21	
SW VERSION	PS05INT2_N21_AP_V003	
CABLE SUPPLIED	N/A	
ACCESSORY DEVICES	Refer to note as below	



NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. The EUT was powered by the following adapter:

ADAPTER	
BRAND:	LANIX
MODEL:	RD1201000-C55-91MG
INPUT:	AC 100-240V, 0.6mA
OUTPUT:	DC 12(10.8-13.2)V, 1000mA

3. The EUT matched the following reticle:

RETICLE	
BRAND:	Huachen
MODEL:	HC-WX02
SIGNAL LINE:	1.0 METER

2 RF EXPOSURE

2.1 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)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	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
(B) 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

2.2 MPE CALCULATION FORMULA

$$P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$$

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm



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2.3 CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

**2.4 CALCULATION RESULT OF MAXIMUM CONDUCTED POWER****WIFI**

Mode	Frequency (MHz)	Operating Mode	Antenna Gain (dBi)	Tune-up Power (dBm)	Tune-up Power (mW)	Power Density (mW/cm ²)	limit (mW/cm ²)	PASS / FAIL
WIFI 2.4G	2412-2462	11n20	2	25.0	316.23	0.0994	1.00	PASS

WCDMA

Mode	Frequency (MHz)	Operating Mode	Antenna Gain (dBi)	Tune-up Power (dBm)	Tune-up Power (mW)	Power Density (mW/cm ²)	limit (mW/cm ²)	PASS / FAIL
WCDMA II	1850-1910	RMC12.2K	2	23.5	223.87	0.0706	1.00	PASS
WCDMA V	824-849	RMC12.2K	2.5	23.0	199.53	0.0706	0.55	PASS

LTE

Mode	Frequency (MHz)	Operating Mode	Antenna Gain (dBi)	Tune-up Power (dBm)	Tune-up Power (mW)	Power Density (mW/cm ²)	limit (mW/cm ²)	PASS / FAIL
Band4	1710-1755	QPSK	2	23.5	223.87	0.0706	1.00	PASS
Band5	824-849	QPSK	2.5	23.5	223.87	0.0792	0.55	PASS
Band7	2500-2570	QPSK	2	23.5	223.87	0.0706	1.00	PASS
Band66	1710-1780	QPSK	3	23.5	223.87	0.0889	1.00	PASS

2.5 CONCLUSION OF SIMULTANEOUS TRANSMITTER

Both of the WLAN and plug-in device can transmit simultaneously, the formula of calculated the MPE is:

$$CPD1/LPD1+CPD2/LPD2+.....etc. < 1$$

CPD = Calculation power density

LPD = Limit of power density

Therefore the worst-case situation is $0.0994/1.00+0.0889/1.00=0.1883$, which is less than "1", This confirmed that the device comply with FCC 1.1310 MPE limit.

Band	Frequency (MHz)	Power Density (mW/cm ²)	limit (mW/cm ²)	Power Density / Limit	Total Power Density / Limit	MPE Limit	PASS / FAIL
WIFI 2.4G	2412-2462	0.0994	1	0.0994	0.1883	1.000	PASS
Band66	1710-1780	0.0889	1	0.0889			

--END--