



Test Report No.: SA190902W001



# 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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## 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

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

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

3. The EUT matched the following reticle:

<b>RETICLE</b>	
<b>BRAND:</b>	Huachen
<b>MODEL:</b>	HC-WX02
<b>SIGNAL LINE:</b>	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 <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposure</b>				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f <sup>2</sup>	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f <sup>2</sup>	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

$$Pd = (Pout * G) / (4 * Pi * R^2)$$

where

Pd = power density in mW/cm<sup>2</sup>

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 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 <sup>2</sup> )	limit (mW/cm <sup>2</sup> )	PASS / FAIL
<b>WIFI 2.4G</b>	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 <sup>2</sup> )	limit (mW/cm <sup>2</sup> )	PASS / FAIL
<b>WCDMA II</b>	1850-1910	RMC12.2K	2	23.5	223.87	0.0706	1.00	PASS
<b>WCDMA V</b>	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 <sup>2</sup> )	limit (mW/cm <sup>2</sup> )	PASS / FAIL
<b>Band4</b>	1710-1755	QPSK	2	23.5	223.87	0.0706	1.00	PASS
<b>Band5</b>	824-849	QPSK	2.5	23.5	223.87	0.0792	0.55	PASS
<b>Band7</b>	2500-2570	QPSK	2	23.5	223.87	0.0706	1.00	PASS
<b>Band66</b>	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 <sup>2</sup> )	limit (mW/cm <sup>2</sup> )	Power Density / Limit	Total Power Density / Limit	MPE Limit	PASS / FAIL
<b>WIFI 2.4G</b>	2412-2462	0.0994	1	0.0994	0.1883	1.000	PASS
<b>Band66</b>	1710-1780	0.0889	1	0.0889			

--END--