# RF EXPOSURE REPORT



Report No.: 16070815-FCC-H2
Supersede Report No.: N/A

Applicant	MOBIWIRE MOBILES (NINGBO) CO.,LTD		
Product Name	4G LTE SMARTPHONE		
Model No.	N503		
Serial No.	N/A		
Test Standard	FCC 2.109	3:2015	
Test Date	August 09 to September 05, 2016		
Issue Date	September 07, 2016		
Test Result	Pass Fail		
Equipment complied with the specification			
Equipment did not comply with the specification			
LOVEN LUO David Huang			
Loren Luo Test Engineer		David Huang Checked By	

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Test result presented in this test report is applicable to the tested sample only

#### Issued by:

#### SIEMIC (SHENZHEN-CHINA) LABORATORIES

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### **Laboratories Introduction**

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.



In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

#### **Accreditations for Conformity Assessment**

Country/Region	Scope
USA	EMC, RF/Wireless, SAR, Telecom
Canada	EMC, RF/Wireless, SAR, Telecom
Taiwan	EMC, RF, Telecom, SAR, Safety
Hong Kong	RF/Wireless, SAR, Telecom
Australia	EMC, RF, Telecom, SAR, Safety
Korea	EMI, EMS, RF, SAR, Telecom, Safety
Japan	EMI, RF/Wireless, SAR, Telecom
Singapore	EMC, RF, SAR, Telecom
Europe	EMC, RF, SAR, Telecom, Safety



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# 1. Report Revision History

Report No.	Report Version	Description	Issue Date
16070815-FCC-H2	NONE	Original	September 07,
10070013-FCC-H2	NONE	Original	2016

# 2. Customer information

Applicant Name	MOBIWIRE MOBILES (NINGBO) CO.,LTD
Applicant Add	No.999,Dacheng East Road,Fenghua City,Zhejiang
Manufacturer	MOBIWIRE MOBILES (NINGBO) CO.,LTD
Manufacturer Add	No.999,Dacheng East Road,Fenghua City,Zhejiang

# 3. Test site information

Lab performing tests	SIEMIC (Shenzhen-China) LABORATORIES	
	Zone A, Floor 1, Building 2 Wan Ye Long Technology Park	
Lab Address	South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China	
	518108	
FCC Test Site No.	718246	
IC Test Site No.	4842E-1	
Test Software	Radiated Emission Program-To Shenzhen v2.0	



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## 4. Equipment under Test (EUT) Information

Main Model: N503

Serial Model: N/A

Date EUT received: August 08, 2016

Test Date(s): August 09 to September 05, 2016

GSM850: 0dBi

PCS1900: 1dBi

Antenna Gain: UMTS-FDD Band II: 1dBi

LTE Band IV: 0.5dBi

Bluetooth/BLE/WIFI: -3dBi

UMTS-FDD Band V: 0dBi

GPS: -3dBi

Antenna Type: PIFA antenna

GSM / GPRS: GMSK

EGPRS: GMSK,8PSK

UMTS-FDD: QPSK

Type of Modulation: LTE Band: QPSK, 16QAM

802.11b/g/n: DSSS, OFDM

Bluetooth: GFSK, π /4DQPSK, 8DPSK

BLE: GFSK GPS:BPSK



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GSM850 TX: 824.2 ~ 848.8 MHz; RX: 869.2 ~ 893.8 MHz

PCS1900 TX: 1850.2 ~ 1909.8 MHz; RX: 1930.2 ~ 1989.8 MHz

UMTS-FDD Band V TX: 826.4 ~ 846.6 MHz; RX: 871.4 ~ 891.6 MHz

UMTS-FDD Band II TX:1852.4 ~ 1907.6 MHz;

RX: 1932.4 ~ 1987.6 MHz

RF Operating Frequency (ies):

LTE Band IV TX: 1710.7 ~ 1754.3 MHz; RX: 2110.7 ~ 2154.3 MHz

WIFI: 802.11b/g/n(20M): 2412-2462 MHz WIFI: 802.11n(40M): 2422-2452 MHz Bluetooth& BLE: 2402-2480 MHz

GPS: 1575.42 MHz

GSM 850: 124CH PCS1900: 299CH

UMTS-FDD Band V: 102CH UMTS-FDD Band II: 277CH

Number of Channels: WIFI :802.11b/g/n(20M): 11CH

WIFI:802.11n(40M): 7CH

Bluetooth: 79CH

BLE: 40CH GPS:1CH

Port: Power Port, Earphone Port, USB Port

Adapter:

Model: S005UA0500100

Input: AC100-240V~50/60Hz,150mA

Input Power:
Output: DC 5.0V,1000mA

Battery:

Spec: 3.8V,2270mAh(8.63Wh)

Trade Name: Noblex

GPRS/EGPRS Multi-slot class 8/10/12

FCC ID: 2ADA4N503



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# 5. FCC §2.1093 - Radiofrequency radiation exposure evaluation: portable devices.

#### 5.1 RF Exposure

#### Standard Requirement:

According to §15.247 (i) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]  $\cdot [\sqrt{f_{(GHz)}}] \le 3.0$  for 1-g SAR and  $\le 7.5$  for 10-g extremity SAR,  $^{16}$  where

- f<sub>(GHz)</sub> is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation<sup>17</sup>
- The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is  $\leq 50$  mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is  $\leq 5$  mm, a distance of 5 mm is applied to determine SAR test exclusion.

Routine SAR evaluation refers to that specifically required by § 2.1093, using measurements or computer simulation. When routine SAR evaluation is not required, portable transmitters with output power greater than the applicable low threshold require SAR evaluation to qualify for TCB approval.

result =  $P\sqrt{F}/D$ 

P= Maximum turn-up power in mW

F= Channel frequency in GHz

D= Minimum test separation distance in mm



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### 5.2 Test Result

#### **Bluetooth Mode:**

Modulation	СН	Freque ncy	Conducted Power	Tune Up Power	Max Tune Up Power	Max Tune Up Power	Result	Limit
		(MHz)	(dBm)	(dBm)	(dBm)	(mW)		
	Low	2402	-0.464	-1±1	0	1.000	0.31	3
GFSK	Mid	2441	-1.540	-1±1	0	1.000	0.31	3
	High	2480	-0.041	-1±1	0	1.000	0.31	3
π /4 DQPSK	Low	2402	-1.222	-1.5±1	-0.5	0.891	0.28	3
	Mid	2441	-2.084	-1.5±1	-0.5	0.891	0.28	3
	High	2480	-0.891	-1.5±1	-0.5	0.891	0.28	3
8-DPSK	Low	2402	-1.048	-1.5±1	-0.5	0.891	0.28	3
	Mid	2441	-1.919	-1.5±1	-0.5	0.891	0.28	3
	High	2480	-0.649	-1.5±1	-0.5	0.891	0.28	3

### WIFI Mode:

		Freque	Conducted	Tune Up	Max Tune	Max Tune		
Modulation	СН	ncy	Power	Power	Up Power	Up Power	Result	Limit
		(MHz)	(dBm)	(dBm)	(dBm)	(mW)		
	Low	2412	8.31	8.5±1	9.5	8.913	2.77	3
802.11b	Mid	2442	8.63	8.5±1	9.5	8.913	2.78	3
	High	2472	8.51	8.5±1	9.5	8.913	2.80	3
802.11g	Low	2412	8.48	8.5±1	9.5	8.913	2.77	3
	Mid	2442	8.61	8.5±1	9.5	8.913	2.78	3
	High	2472	8.36	8.5±1	9.5	8.913	2.80	3
000 44-	Low	2412	8.27	8.5±1	9.5	8.913	2.77	3
802.11n (20M)	Mid	2442	8.73	8.5±1	9.5	8.913	2.78	3
	High	2472	8.48	8.5±1	9.5	8.913	2.80	3
802.11n (40M)	Low	2422	8.54	8.5±1	9.5	8.913	2.77	3
	Mid	2442	8.16	8.5±1	9.5	8.913	2.78	3
	High	2462	8.24	8.5±1	9.5	8.913	2.79	3



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#### BLE Mode:

Modulation	СН	Freq (MHz)	Conducted Power (dBm)	Tune Up Power (dBm)	Max Tune Up Power (dBm)	Max Tune Up Power (mW)	Result	Limit
GFSK	Low	2402	-6.090	-6±1	-5	0.316	0.10	3
	Mid	2440	-6.315	-6±1	-5	0.316	0.10	3
	High	2480	-6.422	-6±1	-5	0.316	0.10	3

Result: Compliance

No SAR measurement is required.