

RF EXPOSURE REPORT



Report No.: 16070816-FCC-H2

Supersede Report No.: N/A

Applicant	MOBIWIRE MOBILES (NINGBO) CO.,LTD	
Product Name	4G LTE SMARTPHONE	
Model No.	N551	
Serial No.	N/A	
Test Standard	FCC 2.1093:2015	
Test Date	July 19 to August 14, 2016	
Issue Date	August 15, 2016	
Test Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Equipment complied with the specification <input checked="" type="checkbox"/>		
Equipment did not comply with the specification <input type="checkbox"/>		
Loren Luo	David Huang	
Loren Luo Test Engineer	David Huang Checked By	
This test report may be reproduced in full only 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
16070816-FCC-H2	NONE	Original	August 15, 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
Lab Address	Zone A, Floor 1, Building 2 Wan Ye Long Technology Park 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

4. Equipment under Test (EUT) Information

Description of EUT: 4G LTE SMARTPHONE

Main Model: N551

Serial Model: N/A

Date EUT received: July 18, 2016

Test Date(s): July 19 to August 14, 2016

GSM850: -3dBi

PCS1900: -1dBi

UMTS-FDD Band V: -3dBi

Antenna Gain: UMTS-FDD Band II: -1dBi

LTE Band IV: -3dBi

Bluetooth/BLE/WIFI: -1dBi

GPS: -1dBi

Antenna Type: PIFA antenna

GSM / GPRS: GMSK

EGPRS: GMSK, 8PSK

UMTS-FDD: QPSK

LTE Band: QPSK, 16QAM

802.11b/g/n: DSSS, OFDM

Bluetooth: GFSK, π/4DQPSK, 8DPSK

BLE: GFSK

GPS: BPSK

Type of Modulation:

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: 1712.5 ~ 1752.5 MHz; RX : 2112.5 ~ 2152.5 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 Power: Input: AC100-240V~50/60Hz,150mA
Output: DC 5.0V,1000mA
Battery:
Spec: 3.8V,3000mAh(11.4Wh)

Trade Name : Noblex

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

FCC ID: 2ADA4N551

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:

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

- $f_{(\text{GHz})}$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation¹⁷
- The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum *test separation distance* is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum *test separation distance* is < 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.

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

P= Maximum turn-up power in mW

F= Channel frequency in GHz

D= Minimum test separation distance in mm

5.2 Test Result

Bluetooth Mode:

Modulation	CH	Frequency (MHz)	Conducted Power (dBm)	Tune Up Power (dBm)	Max Tune Up Power (dBm)	Max Tune Up Power (mW)	Result	Limit
GFSK	Low	2402	4.457	4±1	5	3.162	0.98	3
	Mid	2441	4.368	4±1	5	3.162	0.99	3
	High	2480	3.949	4±1	5	3.162	1.00	3
$\pi/4$ DQPSK	Low	2402	3.800	4±1	5	3.162	0.98	3
	Mid	2441	3.807	4±1	5	3.162	0.99	3
	High	2480	3.368	4±1	5	3.162	1.00	3
8-DPSK	Low	2402	3.915	4±1	5	3.162	0.98	3
	Mid	2441	3.919	4±1	5	3.162	0.99	3
	High	2480	3.351	4±1	5	3.162	1.00	3

WIFI Mode:

Modulation	CH	Frequency (MHz)	Conducted Power (dBm)	Tune Up Power (dBm)	Max Tune Up Power (dBm)	Max Tune Up Power (mW)	Result	Limit
802.11b	Low	2412	9.12	8.5±1	9.5	8.913	2.77	3
	Mid	2442	8.64	8.5±1	9.5	8.913	2.78	3
	High	2472	8.86	8.5±1	9.5	8.913	2.80	3
802.11g	Low	2412	8.73	8.5±1	9.5	8.913	2.77	3
	Mid	2442	8.68	8.5±1	9.5	8.913	2.78	3
	High	2472	8.30	8.5±1	9.5	8.913	2.80	3
802.11n (20M)	Low	2412	8.76	8.5±1	9.5	8.913	2.77	3
	Mid	2442	8.35	8.5±1	9.5	8.913	2.78	3
	High	2472	8.84	8.5±1	9.5	8.913	2.80	3
802.11n (40M)	Low	2422	8.61	8.5±1	9.5	8.913	2.77	3
	Mid	2442	9.24	8.5±1	9.5	8.913	2.78	3
	High	2462	8.73	8.5±1	9.5	8.913	2.79	3

BLE Mode:

Modulation	CH	Freq (MHz)	Conducted Power (dBm)	Tune Up Power (dBm)	Max Tune Up Power (dBm)	Max Tune Up Power (mW)	Result	Limit
GFSK	Low	2402	-2.452	-2±1	-1	0.794	0.25	3
	Mid	2440	-1.961	-2±1	-1	0.794	0.25	3
	High	2480	-2.855	-2±1	-1	0.794	0.25	3

Result: Compliance

No SAR measurement is required.