

# RF EXPOSURE REPORT



Report No.: 17070667-FCC-H2

Supersede Report No.: N/A

Applicant	MOBIWIRE MOBILES (NINGBO) CO.,LTD	
Product Name	4G Smartphone	
Model No.	N504	
Serial No.	N/A	
Test Standard	FCC 2.1093:2016	
Test Date	August 11 to September 05, 2017	
Issue Date	September 06, 2017	
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 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
17070667-FCC-H2	NONE	Original	September 06, 2017

## 2. Customer information

Applicant Name	MOBIWIRE MOBILES (NINGBO) CO.,LTD
Applicant Add	No.999,Dacheng East Road,Fenghua,Zhejiang,China
Manufacturer	Mobiwire Mobiles (Ningbo) Co.,Ltd
Manufacturer Add	Mobiwire Mobiles,No. 999 Dacheng East Road Fenghua,Zhejiang China

## 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.	535293
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 Smartphone
Main Model:	N504
Serial Model:	N/A
Date EUT received:	August 10, 2017
Test Date(s):	August 11 to September 05, 2017
Antenna Gain:	GSM850: -3dBi PCS1900: -1dBi UMTS-FDD Band V: -3dBi UMTS-FDD Band II: -0.5dBi LTE Band IV: -1dBi WIFI: 0dBi Bluetooth/BLE: 0dBi GPS: 0dBi
Antenna Type:	PIFA Antenna
Type of Modulation:	GSM / GPRS: GMSK EGPRS: GMSK, 8PSK UMTS-FDD: QPSK LTE Band: QPSK, 16QAM 802.11b/g/n: DSSS, OFDM Bluetooth: GFSK, $\pi/4$ DQPSK, 8DPSK BLE: GFSK GPS: BPSK

	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:	USB Port, Earphone Port
	Adapter:
	Model: S005UA0500100
Input Power:	Input: AC100-240V~50/60Hz,150mA
	Output: DC 5.0V,1000mA
	Battery:
	Spec: 3.8V, 8.17Wh, 2150mAh
Trade Name :	NOBLEX
GPRS/EGPRS Multi-slot class	8/10/12
FCC ID:	2ADA4N504

## 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*  $\leq 50$  mm are determined by:

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

- $f_{\text{(GHz)}}$  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  $< 5$  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	1.476	1.8±1	2.8	1.905	0.59	3
	Mid	2441	1.833	1.8±1	2.8	1.905	0.60	3
	High	2480	2.207	1.8±1	2.8	1.905	0.60	3
$\pi$ /4 DQPSK	Low	2402	0.531	1±1	2	1.585	0.49	3
	Mid	2441	1.280	1±1	2	1.585	0.50	3
	High	2480	1.401	1±1	2	1.585	0.50	3
8-DPSK	Low	2402	0.622	1±1	2	1.585	0.49	3
	Mid	2441	1.414	1±1	2	1.585	0.50	3
	High	2480	1.753	1±1	2	1.585	0.50	3

### WIFI Mode:

Modulation	CH	Freq (MHz)	Conducted Power (dBm)	Tune Up Power (dBm)	Max Tune Up Power (dBm)	Max Tune Up Power (mW)	Result	Limit
802.11b	Low	2412	8.69	8.5±1	9.5	8.913	2.77	3
	Mid	2437	8.53	8.5±1	9.5	8.913	2.78	3
	High	2462	<b>8.73</b>	8.5±1	9.5	8.913	2.80	3
802.11g	Low	2412	8.72	8.5±1	9.5	8.913	2.77	3
	Mid	2437	8.62	8.5±1	9.5	8.913	2.78	3
	High	2462	<b>8.86</b>	8.5±1	9.5	8.913	2.80	3
802.11n (20M)	Low	2412	8.57	8.5±1	9.5	8.913	2.77	3
	Mid	2437	8.69	8.5±1	9.5	8.913	2.78	3
	High	2462	<b>8.77</b>	8.5±1	9.5	8.913	2.80	3
802.11n (40M)	Low	2422	<b>8.84</b>	8.5±1	9.5	8.913	2.77	3
	Mid	2437	8.65	8.5±1	9.5	8.913	2.78	3
	High	2452	8.67	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	1.264	1.6±1	2.6	1.820	0.56	3
	Mid	2440	1.729	1.6±1	2.6	1.820	0.57	3
	High	2480	1.934	1.6±1	2.6	1.820	0.57	3

**Result:** Compliance

No SAR measurement is required.