

# RF EXPOSURE REPORT



Report No.: 15050027-FCC-H2

Supersede Report No.: N/A

Applicant	b mobile HK Limited	
Product Name	Mobile phone	
Model No.	AX1030	
Serial No.	AX1020	
Test Standard	FCC 2.1093:2014	
Test Date	July 10 to July 27, 2015	
Issue Date	August 10, 2015	
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"/>	
<i>Winnie Zhang</i>	<i>David Huang</i>	
Winnie Zhang 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:

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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

Test Report	15050027-FCC-H2
Page	3 of 11

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# CONTENTS

1. REPORT REVISION HISTORY .....	5
2. CUSTOMER INFORMATION .....	5
3. TEST SITE INFORMATION.....	5
4. EQUIPMENT UNDER TEST (EUT) INFORMATION .....	6
5. FCC §2.1093 - RADIOFREQUENCY RADIATION EXPOSURE EVALUATION: PORTABLE DEVICES.	9
5.1 RF EXPOSURE.....	9
5.2 TEST RESULT .....	10

## 1. Report Revision History

Report No.	Report Version	Description	Issue Date
15050027-FCC-H2	NONE	Original	August 10, 2015

## 2. Customer information

Applicant Name	b mobile HK Limited
Applicant Add	Flat 18; 14/F Block 1; Golden Industrial Building;16-26 Kwai Tak Street; Kwai Chung;New Territories; Hong Kong
Manufacturer	b mobile HK Limited
Manufacturer Add	Flat 18; 14/F Block 1; Golden Industrial Building;16-26 Kwai Tak Street; Kwai Chung;New Territories; Hong Kong

## 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:	Mobile phone
Main Model:	AX1030
Serial Model:	AX1020
Date EUT received:	July 09, 2015
Test Date(s):	July 10 to July 27, 2015
Antenna Gain:	<p>GSM850: 1.4 dBi  PCS1900: 1.7 dBi  UMTS-FDD Band IV: 1.7 dBi  UMTS-FDD Band V: 1.7 dBi  UMTS-FDD Band II: 1.7 dBi  Bluetooth/BLE: 1.9 dBi  WIFI: 1.8 dBi  LTE Band 2: 1.7 dBi  LTE Band 4: 1.6 dBi  LTE Band 7: 1.9 dBi  LTE Band 17: 1.5 dBi  GPS:2 dBi</p>
Type of Modulation:	<p>GSM / GPRS: GMSK  EGPRS: GMSK, 8PSK  UMTS-FDD: QPSK, 16QAM  802.11b/g/n: DSSS, OFDM  Bluetooth: GFSK, <math>\pi</math> /4DQPSK, 8DPSK  BLE: GFSK  LTE Band: QPSK, 16QAM  GPS:BPSK</p>
RF Operating Frequency (ies):	<p>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 IV TX:1712.4 ~ 1752.6 MHz;</p>

Test Report	15050027-FCC-H2
Page	7 of 11

RX : 2112.4 ~ 2152.6 MHz

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

RX: 1932.4 ~ 1987.6 MHz

WiFi:802.11b/g/n(20M): 2412-2472 MHz

WiFi:802.11n(40M): 2422-2462 MHz

Bluetooth& BLE: 2402-2480 MHz

LTE Band 2 TX: 1852.5 ~ 1907.5 MHz; RX : 1932.5 ~ 1987.5 MHz

LTE Band 4 TX: 1712.5 ~ 1752.5 MHz; RX : 2112.5 ~ 2152.5 MHz

LTE Band 7 TX: 2502.5 ~ 2567.5 MHz; RX : 2622.5 ~ 2687.5 MHz

LTE Band 17 TX: 706.5 ~ 713.5 MHz; RX : 736.5 ~ 743.5 MHz

GPS RX:1575.42 MHz

GSM 850: 124CH

PCS1900: 299CH

UMTS-FDD Band V : 102CH

UMTS-FDD Band IV: 202CH

UMTS-FDD Band II : 277CH

Number of Channels:

WiFi :802.11b/g/n(20M): 13CH

WiFi :802.11n(40M): 9CH

Bluetooth: 79CH

BLE: 40CH

GPS:1CH

Port:

Power Port, Earphone Port, USB Port

Battery:

Model: A4505

Spec:1950mAh,7.215Wh

Voltage:3.7Vdc

Input Power:

Charging Voltage: 4.35Vdc

Adapter:

Model:N/A

Input: 100-240V; 50/60Hz;0.15A

Output: 5.0V; 1A

Trade Name :

Bmobile

GPRS/EGPRS Multi-slot class

8/10/12

FCC ID:

ZSW-30-012

Test Report	15050027-FCC-H2
Page	8 of 11

Date EUT received: July 09, 2015



## 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	Freq (MHz)	Conducted Power (dBm)	Tune Up Power (dBm)	Max Tune Up Power (dBm)	Max Tune Up Power (mW)	Result	Limit
GFSK	Low	2402	3.804	3±1	4	2.512	0.78	3
	Mid	2441	5.829	5±1	6	3.981	1.24	3
	High	2480	3.133	3±1	4	2.512	0.79	3
π /4 DQPSK	Low	2402	3.075	3±1	4	2.512	0.78	3
	Mid	2441	5.188	5±1	6	3.981	1.24	3
	High	2480	2.447	2±1	3	1.995	0.63	3
8-DPSK	Low	2402	3.205	3±1	4	2.512	0.78	3
	Mid	2441	5.342	5±1	6	3.981	1.24	3
	High	2480	2.639	2±1	3	1.995	0.63	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	9.40	8.5±1	9.5	8.913	2.77	3
	Mid	2437	9.44	8.5±1	9.5	8.913	2.78	3
	High	2462	8.94	8.5±1	9.5	8.913	2.80	3
802.11g	Low	2412	8.86	8.5±1	9.5	8.913	2.77	3
	Mid	2437	8.81	8.5±1	9.5	8.913	2.78	3
	High	2462	7.77	8.5±1	9.5	8.913	2.80	3
802.11n (20M)	Low	2412	8.86	8.5±1	9.5	8.913	2.77	3
	Mid	2437	8.84	8.5±1	9.5	8.913	2.78	3
	High	2462	8.55	8.5±1	9.5	8.913	2.80	3
802.11n (40M)	Low	2422	8.29	8.5±1	9.5	8.913	2.77	3
	Mid	2437	9.22	8.5±1	9.5	8.913	2.78	3
	High	2452	8.30	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	-3.545	-3±1	-2	0.631	0.20	3
	Mid	2440	-1.249	-2±1	-1	0.794	0.25	3
	High	2480	-3.803	-3±1	-2	0.631	0.20	3

**Result:** Compliance

No SAR measurement is required.