

# RF EXPOSURE REPORT



Report No.: 17071442-FCC-H2

Supersede Report No.: N/A

Applicant	MFOURTEL MEXICO S.A. DE C.V.	
Product Name	Smart Phone	
Model No.	M4 B2	
Serial No.	N/A	
Test Standard	FCC 2.1093:2016	
Test Date	December 22, 2017 to January 24, 2018	
Issue Date	January 25, 2018	
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"/>
Aaron Liang	David Huang	
Aaron Liang 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
17071442-FCC-H2	NONE	Original	January 25, 2018

## 2. Customer information

Applicant Name	MFOURTEL MEXICO S.A. DE C.V.
Applicant Add	Av. Ejército Nacional 436 Piso 3 Chapultepec Morales Miguel Hidalgo Distrito Federal 11570.
Manufacturer	CK Telecom Limited
Manufacturer Add	Technology Road.High-Tech Development Zone. Heyuan, Guangdong,P.R.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:	Smart Phone
Main Model:	M4 B2
Serial Model:	N/A
Date EUT received:	December 21, 2017
Test Date(s):	December 22, 2017 to January 24, 2018
Antenna Gain:	<p>GSM850: -3dBi</p> <p>PCS1900: -1dBi</p> <p>UMTS-FDD Band V: -3dBi</p> <p>UMTS-FDD Band II: -1dBi</p> <p>LTE Band II: -1dBi</p> <p>LTE Band IV: -3dBi</p> <p>LTE Band VII: 0 dBi</p> <p>LTE Band XII: -4dBi</p> <p>Bluetooth/BLE: 1dBi</p> <p>WIFI: 1dBi</p> <p>GPS: -1dBi</p>
Antenna Type:	PIFA Antenna
Type of Modulation:	<p>GSM / GPRS: GMSK</p> <p>EGPRS: GMSK,8PSK</p> <p>UMTS-FDD: QPSK</p> <p>LTE Band: QPSK, 16QAM</p> <p>802.11b/g/n: DSSS, OFDM</p> <p>Bluetooth: GFSK, π /4DQPSK, 8DPSK</p> <p>BLE: GFSK</p> <p>GPS:BPSK</p>
RF Operating Frequency (ies):	<p>GSM850 TX: 824.2 ~ 848.8 MHz; RX: 869.2 ~ 893.8 MHz</p> <p>PCS1900 TX: 1850.2 ~ 1909.8 MHz; RX: 1930.2 ~ 1989.8 MHz</p> <p>UMTS-FDD Band V TX: 826.4 ~ 846.6 MHz; RX: 871.4 ~ 891.6 MHz</p> <p>UMTS-FDD Band II TX: 1852.4 ~ 1907.6 MHz;</p>

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RX: 1932.4 ~ 1987.6 MHz

LTE Band II TX: 1850.7 ~ 1909.3MHz; RX : 1930.7 ~ 1989.3 MHz

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

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

LTE Band XII TX: 699.7 ~ 715.3 MHz; RX : 729.7~ 745.3MHz

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: M4

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

Input Power: Output: DC 5V, 1000mA

Battery:

Model: M2400A

Spec: 3.7V, 2400mAh, 8.88Wh

Trade Name : M4

GPRS/EGPRS Multi-slot class 8/10/11/12

FCC ID: CLNM4B2

## 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:

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

- $f_{(\text{GHz})}$  is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before 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	4.631	5±1	6	3.981	1.23	3
	Mid	2441	5.955	5±1	6	3.981	1.24	3
	High	2480	5.217	5±1	6	3.981	1.25	3
π/4 DQPSK	Low	2402	5.550	5±1	6	3.981	1.23	3
	Mid	2441	5.156	5±1	6	3.981	1.24	3
	High	2480	5.395	5±1	6	3.981	1.25	3
8-DPSK	Low	2402	5.559	5±1	6	3.981	1.23	3
	Mid	2441	5.126	5±1	6	3.981	1.24	3
	High	2480	5.371	5±1	6	3.981	1.25	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	-4.756	-4±1	-3	0.501	0.16	3
	Mid	2440	-4.293	-4±1	-3	0.501	0.16	3
	High	2480	-4.280	-4±1	-3	0.501	0.16	3

**Result:** Compliance

No SAR measurement is required.