RF EXPOSURE REPORT

Report No.: 17070384-FCC-H2-V1

Supersede Report No.: N/A

Applicant	Power Idea Technology (Shenzhen) Co., Ltd.
Product Name	WCDMA Digital Mobile Phone
Model No.	RG160
Serial No.	RG400
Test Standard	FCC 2.1093:2016
Test Date	May 27 to August 06, 2017
Issue Date	August 24, 2017
Test Result	☑ Pass ☐ Fail
Equipment complied with the specification	☑
Equipment did not comply with the specification	☐

Loren 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

Zone A, Floor 1, Building 2 Wan Ye Long Technology Park

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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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CONTENTS

1. Report Revision History

Report No.	Report Version	Description	Issue Date
17070384-FCC-H2	NONE	Original	August 07, 2017
17070384-FCC-H2-V1	V1	P5 Changed the FCC Test Site No.	August 24, 2017

2. Customer information

Applicant Name	Power Idea Technology (Shenzhen) Co., Ltd.
Applicant Add	4th Floor, A Section , Languang Science&technology Building , No.7 Xinxi RD , Hi-Tech Industrial Park North , Nanshan District , ShenZhen , P.R.C.
Manufacturer	Power Idea Technology (Shenzhen) Co., Ltd.
Manufacturer Add	4th Floor, A Section , Languang Science&technology Building , No.7 Xinxi RD , Hi-Tech Industrial Park North , Nanshan District , ShenZhen , P.R.C.

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:	WCDMA Digital Mobile Phone
Main Model:	RG160
Serial Model:	RG400
Date EUT received:	May 26, 2017
Test Date(s):	May 27 to August 06, 2017
Antenna Gain:	GSM850: -1.5dBi PCS1900: 1.7dBi UMTS-FDD Band V: -1.5dBi UMTS-FDD Band II: 2.0dBi WIFI: 2.9dBi Bluetooth/BLE: 2.9dBi GPS: 1.9dBi
Antenna Type:	PIFA antenna
Type of Modulation:	GSM / GPRS: GMSK EGPRS: GMSK UMTS-FDD: QPSK 802.11b/g/n: DSSS, OFDM Bluetooth: GFSK, π /4DQPSK, 8DPSK BLE: GFSK GPS:BPSK
RF Operating Frequency (ies):	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 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

Number of Channels:	GSM 850: 124CH PCS1900: 299CH UMTS-FDD Band V : 102CH UMTS-FDD Band II : 277CH WIFI :802.11b/g/n(20M): 11CH WIFI :802.11n(40M): 7CH Bluetooth: 79CH BLE: 40CH GPS:1CH
Port:	USB Port, Earphone Port
Input Power:	Adapter: Model: HKC0055010-2D Input: AC100-240V~50/60Hz, 0.2A Output: DC 5.0V, 1.0A Battery Model: BL180DI Spec: 3.7V/1800mAh(6.66Wh) Charge Limit: 4.2Vdc
Trade Name :	N/A
GPRS/EGPRS Multi-slot class	8/10/12
FCC ID:	ZLE-RG160

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*)] · [$\sqrt{f_{(GHz)}}$] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR,[16] where

- $f_{(GHz)}$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation[17]
- 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.

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	2.025	2±1	3	1.995	0.62	3
	Mid	2441	1.805	2±1	3	1.995	0.62	3
	High	2480	2.389	2±1	3	1.995	0.63	3
π /4 DQPSK	Low	2402	1.836	2±1	3	1.995	0.62	3
	Mid	2441	1.670	2±1	3	1.995	0.62	3
	High	2480	2.208	2±1	3	1.995	0.63	3
8-DPSK	Low	2402	1.889	2±1	3	1.995	0.62	3
	Mid	2441	1.774	2±1	3	1.995	0.62	3
	High	2480	2.376	2±1	3	1.995	0.63	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	8.88	8.5±1	9.5	8.913	2.77	3
	Mid	2437	9.09	8.5±1	9.5	8.913	2.78	3
	High	2462	9.18	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	8.62	8.5±1	9.5	8.913	2.78	3
	High	2462	9.08	8.5±1	9.5	8.913	2.80	3
802.11n (20M)	Low	2412	8.77	8.5±1	9.5	8.913	2.77	3
	Mid	2437	8.67	8.5±1	9.5	8.913	2.78	3
	High	2462	8.92	8.5±1	9.5	8.913	2.80	3
802.11n (40M)	Low	2422	8.51	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	2452	8.44	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	-5.731	-5±1	-4	0.398	0.12	3
	Mid	2440	-5.679	-5±1	-4	0.398	0.12	3
	High	2480	-5.278	-5±1	-4	0.398	0.13	3

Result: Compliance

No SAR measurement is required.