

# RF EXPOSURE REPORT



Report No.: 16071183-FCC-H2

Supersede Report No.: N/A

Applicant	NEG TECHNOLOGY CO., LIMITED		
Product Name	Mobile Phone		
Model No.	SMART O2		
Serial No.	N/A		
Test Standard	FCC 2.1093:2015		
Test Date	September 23 to October 16, 2016		
Issue Date	October 17, 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

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

South Side of Zhoushi Road, Bao'an District, Shenzhen, Guangdong China 518108

Phone: +86 0755 2601 4629801 Email: [China@siemic.com.cn](mailto:China@siemic.com.cn)

## 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
16071183-FCC-H2	NONE	Original	October 17, 2016

## 2. Customer information

Applicant Name	NEG TECHNOLOGY CO., LIMITED
Applicant Add	Rm 1406, Block B, Jinsejiali, Jingtian south road, Futian district, Shenzhen, China
Manufacturer	NEG TECHNOLOGY CO., LIMITED
Manufacturer Add	Rm 1406, Block B, Jinsejiali, Jingtian south road, Futian district, Shenzhen, 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.	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: SMART O2  
  
 Serial Model: N/A  
  
 Date EUT received: September 22, 2016  
  
 Test Date(s): September 23 to October 16, 2016  
  
 Antenna Gain:  
 GSM850: -0.45dBi  
 PCS1900: -0.53dBi  
 UMTS-FDD Band V: -0.46dBi  
 UMTS-FDD Band II: -0.51dBi  
 LTE Band IV: -0.51dBi  
 Bluetooth/BLE/WIFI: -1.1dBi  
 GPS: -1.5dBi  
  
 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: Power Port, Earphone Port, USB Port

Adapter:  
Model: SMART O2  
Input: AC100-240V~50/60Hz, 0.15A

Input Power: **DC 5.0V,1000mA**  
Battery: **Model: SMART O2**  
**Spec: 3.8V,2300mAh(8.74Wh)**  
**Voltage limited of charging: 4.35V**

Trade Name : **OWN**

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

FCC ID: 2AAZ8-SMARTO2

## 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	<b>6.308</b>	6±1	7	5.012	1.55	3
	Mid	2441	<b>5.576</b>	6±1	7	5.012	1.57	3
	High	2480	<b>5.604</b>	6±1	7	5.012	1.58	3
$\pi/4$ DQPSK	Low	2402	<b>5.318</b>	5±1	6	3.981	1.23	3
	Mid	2441	<b>5.152</b>	5±1	6	3.981	1.24	3
	High	2480	<b>5.053</b>	5±1	6	3.981	1.25	3
8-DPSK	Low	2402	<b>5.542</b>	5±1	6	3.981	1.23	3
	Mid	2441	<b>5.093</b>	5±1	6	3.981	1.24	3
	High	2480	<b>5.208</b>	5±1	6	3.981	1.25	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	<b>8.36</b>	8±1	9	7.943	2.47	3
	Mid	2442	<b>7.68</b>	8±1	9	7.943	2.48	3
	High	2472	<b>8.21</b>	8±1	9	7.943	2.49	3
802.11g	Low	2412	<b>8.60</b>	8±1	9	7.943	2.47	3
	Mid	2442	<b>8.08</b>	8±1	9	7.943	2.48	3
	High	2472	<b>7.94</b>	8±1	9	7.943	2.49	3
802.11n (20M)	Low	2412	<b>8.38</b>	8±1	9	7.943	2.47	3
	Mid	2442	<b>8.17</b>	8±1	9	7.943	2.48	3
	High	2472	<b>8.69</b>	8±1	9	7.943	2.49	3
802.11n (40M)	Low	2422	<b>8.16</b>	8±1	9	7.943	2.47	3
	Mid	2442	<b>7.67</b>	8±1	9	7.943	2.48	3
	High	2462	<b>7.89</b>	8±1	9	7.943	2.49	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	-2.239	-3±1	-2	0.631	0.20	3
	Mid	2440	<b>-2.152</b>	-3±1	-2	0.631	0.20	3
	High	2480	-3.928	-3±1	-2	0.631	0.20	3

**Result:** Compliance

No SAR measurement is required.