

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

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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
16071183-FCC-H2	NONE	Original	October 17, 2016

2. Customer information

Applicant Name	NEG TECHNOLOGY CO., LIMITED
Applicant Add	Rm 1406, Block B, Jinsejiari, Jingtian south road, Futian district, Shenzhen, China
Manufacturer	NEG TECHNOLOGY CO., LIMITED
Manufacturer Add	Rm 1406, Block B, Jinsejiari, 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:

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

ECC ID:

2AA78-SMART02

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:

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

- $f_{(\text{GHz})}$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation¹⁷
- 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.

$$\text{result} = P\sqrt{F} / D$$

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