

RF EXPOSURE REPORT



Report No.: 15070892-FCC-H2

Supersede Report No.: N/A

Applicant	SENMAX INC.	
Product Name	LTE Phone	
Model No.	Carbon	
Serial No.	N/A	
Test Standard	FCC 2.1093:2014	
Test Date	October 10 to October 29, 2015	
Issue Date	October 29, 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:

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
15070892-FCC-H2	NONE	Original	October 29, 2015

2. Customer information

Applicant Name	SENMAX INC.
Applicant Add	2300 GRAYSON DR # 1611 GRAPEVINE, TX 76051
Manufacturer	SENMAX INC.
Manufacturer Add	2300 GRAYSON DR # 1611 GRAPEVINE, TX 76051

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: LTE Phone

Main Model: Carbon

Serial Model: N/A

Date EUT received: October 09, 2015

Test Date(s): October 10 to October 29, 2015

Antenna Gain:

GSM850: -7.22 dBi
PCS1900: -2.93 dBi
UMTS-FDD Band V: -7.22 dBi
UMTS-FDD Band IV: -2.55 dBi
UMTS-FDD Band II: -2.93 dBi
Bluetooth/BLE: -2.94 dBi
WiFi: -2.94 dBi
LTE Band 2: -3.96 dBi
LTE Band 4: -2.33 dBi
LTE Band 7: -2.54 dBi
LTE Band 17: -8.25 dBi
GPS: -3.56 dBi

Type of Modulation:

GSM / GPRS: GMSK
EGPRS: GMSK, 8PSK
UMTS-FDD: QPSK, 16QAM
802.11b/g/n: DSSS, OFDM
Bluetooth: GFSK, $\pi/4$ QPSK, 8DPSK
BLE: GFSK
LTE Band: QPSK, 16QAM
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 IV TX: 1712.4 ~ 1752.6 MHz;

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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

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

Battery:

Spec:3.8V,2850mAh

Adapter:

Model:TPA-955100UU

Input: 100-240V; 50/60Hz; 150mA

Output: DC 5.0V,1000mA

Input Power:

Port:

Power Port, Earphone Port, USB Port

Trade Name :



GPRS/EGPRS Multi-slot class

8/10/12

FCC ID:

2AF99CARBON

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:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f_{\text{(GHz)}}}] \leq 3.0$ for 1-g SAR and ≤ 7.5 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	Freq (MHz)	Conducted Power (dBm)	Tune Up Power (dBm)	Max Tune Up Power (dBm)	Max Tune Up Power (mW)	Result	Limit
GFSK	Low	2402	-3.177	-3±1	-2	0.631	0.20	3
	Mid	2441	-0.882	-1±1	0	1.000	0.31	3
	High	2480	-0.377	-1±1	0	1.000	0.31	3
π /4 DQPSK	Low	2402	-3.782	-3±1	-2	0.631	0.20	3
	Mid	2441	-1.690	-1±1	0	1.000	0.31	3
	High	2480	-1.091	-1±1	0	1.000	0.31	3
8-DPSK	Low	2402	-3.831	-3±1	-2	0.631	0.20	3
	Mid	2441	-1.524	-1±1	0	1.000	0.31	3
	High	2480	-0.923	-1±1	0	1.000	0.31	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	7.31	8±1	9	7.943	2.47	3
	Mid	2437	8.25	8±1	9	7.943	2.48	3
	High	2462	7.69	8±1	9	7.943	2.49	3
802.11g	Low	2412	7.94	8±1	9	7.943	2.47	3
	Mid	2437	8.37	8±1	9	7.943	2.48	3
	High	2462	8.44	8±1	9	7.943	2.49	3
802.11n (20M)	Low	2412	8.24	8±1	9	7.943	2.47	3
	Mid	2437	8.69	8±1	9	7.943	2.48	3
	High	2462	8.61	8±1	9	7.943	2.49	3
802.11n (40M)	Low	2422	7.72	8±1	9	7.943	2.47	3
	Mid	2437	8.37	8±1	9	7.943	2.48	3
	High	2452	8.24	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	-10.357	-10±1	-9	0.126	0.04	3
	Mid	2440	-8.224	-8±1	-7	0.200	0.06	3
	High	2480	-7.952	-8±1	-7	0.200	0.06	3

Result: Compliance

No SAR measurement is required.