RF EXPOSURE REPORT

Report No.: 17070432-FCC-H

Supersede Report No.: N/A

Applicant	SHENZHEN HANGSHENG ELECTRONICS CO.,LTD
Product Name	E-Canter Navigation
Model No.	HS-N1196
Serial No.	N/A
Test Standard	FCC 2.1093:2016
Test Date	June 10 to July 05, 2017
Issue Date	July 06, 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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1. Report Revision History

Report No.	Report Version	Description	Issue Date
17070432-FCC-H	NONE	Original	July 06, 2017

2. Customer information

Applicant Name	SHENZHEN HANGSHENG ELECTRONICS CO.,LTD
Applicant Add	Hangsheng Industrial Park, Fuyuan Yi Road,Heping Village, Fuyong Town,Baoan District,Shenzhen ,China
Manufacturer	SHENZHEN HANGSHENG ELECTRONICS CO.,LTD
Manufacturer Add	Hangsheng Industrial Park, Fuyuan Yi Road,Heping Village, Fuyong Town,Baoan 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:	E-Canter Navigation
Main Model:	HS-N1196
Serial Model:	N/A
Date EUT received:	June 09, 2017
Test Date(s):	June 10 to July 05, 2017
Antenna Gain:	Bluetooth: 3dBi GPS: 18dBi
Antenna Type:	BT: Chip Antenna GPS: Patch antenna
Type of Modulation:	Bluetooth: GFSK, π /4DQPSK, 8DPSK GPS:BPSK
RF Operating Frequency (ies):	Bluetooth: 2402-2480 MHz GPS: 1575.42 MHz
Number of Channels:	Bluetooth: 79CH GPS:1CH
Port:	The radio antenna Connector, GPS antenna Connector, Power supply and sound signal Connector (Note: USB Connector, HDMI data Connector, 3g/CAM Connector and TPMS/astern rear view are not used)
Input Power:	DC Input:12V 10A USB Output:5V 500mA
Trade Name :	HSAE
FCC ID:	Y9TN1196

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	3.513	4±1	5	3.162	0.98	3
	Mid	2441	4.205	4±1	5	3.162	0.99	3
	High	2480	4.519	4±1	5	3.162	1.00	3
π /4 DQPSK	Low	2402	2.359	3.3±1	4.3	2.692	0.83	3
	Mid	2441	3.717	3.3±1	4.3	2.692	0.84	3
	High	2480	4.037	3.3±1	4.3	2.692	0.85	3
8-DPSK	Low	2402	2.603	3.5±1	4.5	2.818	0.87	3
	Mid	2441	3.833	3.5±1	4.5	2.818	0.88	3
	High	2480	4.182	3.5±1	4.5	2.818	0.89	3

Result: Compliance

No SAR measurement is required.