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Report No.: SHEM160800543703

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## 1 Cover Page

# ***RF Exposure Evaluation Report***

<b>Application No.:</b>	SHEM1608005437CR
<b>Applicant:</b>	Hansong (Nanjing) Technology Ltd.
<b>FCC ID:</b>	XCO-PS163
<b>IC :</b>	7756A-PS163
<b>Equipment Under Test (EUT):</b>	
<b>NOTE:</b> The following sample(s) submitted was/were identified on behalf of the client as	
<b>Product Name:</b>	Speaker
<b>Model No.:</b>	MiniPod Bluetooth MKII
<b>Standards:</b>	FCC Rules 47 CFR §2.1091 KDB447498 D01 General RF Exposure Guidance v06 RSS-102 Issue 5 (March 2015)
<b>Date of Receipt:</b>	2016-08-15
<b>Date of Test:</b>	2016-08-17 to 2016-09-23
<b>Date of Issue:</b>	2016-10-09
<b>Test Result:</b>	<b>Pass*</b>

\* In the configuration tested, the EUT complied with the standards specified above.



**Parlam Zhan**  
**E&E Section Manager**  
**SGS-CSTC (Shanghai) Co., Ltd.**

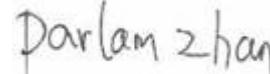
The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

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## 2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
00	/	2016-10-09	/	Original

Authorized for issue by:			
Engineer		Eddy Zong	
		Print Name	
Clerk		Vincent Zhu	
		Print Name	
Reviewer		Parlam Zhan	
		Print Name	

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## 4 General Information

### 4.1 Client Information

Applicant:	Hansong (Nanjing) Technology Ltd.
Address of Applicant:	8th Kangping Road, Jiangning Economy and Technology Development Zone, Nanjing, 211106, China
Manufacturer:	EET Group A/S
Address of Manufacturer:	Bregnerødvej 133, 3460 Birkerød, Denmark
Factory:	Hansong (Nanjing) Technology Ltd.
Address of Factory:	8th Kangping Road, Jiangning Economy and Technology Development Zone, Nanjing, 211106, China

### 4.2 General Description of E.U.T.

Product Description:	Fixed product with BT function
Brand Name:	PODSPEAKERS
Test Voltage:	AC 120V, 60Hz

### 4.3 Details of E.U.T.

Operation Frequency:	2402-2480MHz
Modulation Technique:	BT 2.1+EDR/3.0+HS : GFSK, π/4DQPSK, 8DPSK BT 4.0 BLE: GFSK
Number of Channel:	BT 2.1+EDR/3.0+HS :79 BT 4.0 BLE: 40
Antenna Type:	PIFA Antenna
Antenna Gain:	2 dbi

#### **4.4 Test Location**

All tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.  
588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China.  
Tel: +86 21 6191 5666  
Fax: +86 21 6191 5678

#### **4.5 Test Facility**

The test facility is recognized, certified, or accredited by the following organizations:

- CNAS (No. CNAS L0599)**

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- FCC – Registration No.: 402683**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered and fully described in a report filed with the Federal Communications Commission (FCC). The acceptance letter from the FCC is maintained in our files. Registration No.: 402683.

- Industry Canada (IC) – IC Assigned Code: 8617A**

The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 8617A-1.

- VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-3868, C-4336, T-2221, G-830 respectively.

## 5 Test Standards and Limits

### 5.1 FCC Radiofrequency radiation exposure limits:

According to §1.1310, the limit for general population/uncontrolled exposures

Frequency	Power density(mW/cm <sup>2</sup> )	Averaging time(minutes)
300MHz~1.5GHz	f/1500	30
1.5GHz~100GHz	1.0	30

### 5.2 IC Radiofrequency radiation exposure limits:

According to RSS-102 section 2.5.2, RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

below 20 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);

- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than  $4.49/f^{0.5}$  W (adjusted for tune-up tolerance), where  $f$  is in MHz;
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than  $1.31 \times 10^{-2} f^{0.6834}$  W (adjusted for tune-up tolerance), where  $f$  is in MHz;
- at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).

For 2.4G device, the limit of worse case is 2.68 W

## 6 Measurement and Calculation

### 6.1 Maximum transmit power

The Power Data is based on the RF Test Report SHEM160800543701 & SHEM160800543702

For BT 4.0:

Test mode	Channel	Peak Power (dBm)	Peak Power (mW)
GFSK	2402	1.73	1.49
	2440	3.15	2.07
	2480	3.29	2.13

BT 2.1+EDR/3.0+HS:

Test Mode	Test Frequency (MHz)	Output Power (dBm)	Reading Power (mW)
GFSK	2402	0.08	1.02
	2441	0.95	1.24
	2480	0	1.00
$\pi/4$ DQPSK	2402	0.39	1.09
	2441	-0.55	0.88
	2480	0.47	1.11
8DPSK	2402	0.44	1.11
	2441	-0.13	0.97
	2480	0.85	1.22

## 6.2 MPE Calculation

The Max Conducted Peak Output Power is 2.13mW in High channel of BT 4.0;

The best case gain of the antenna is 2dBi. 2dB logarithmic terms convert to numeric result is nearly 1.58

For FCC:

According to the formula  $S = \frac{PG}{4R^2\pi}$ , we can calculate S which is MPE.

Note:

- 1) P (Watts)
- 2) G (Antenna gain in numeric)
- 3) R = distance to the center of radiation of antenna (in meter) = 20cm
- 4) MPE limit = 1mW/cm<sup>2</sup>

$$S = \frac{PG}{4R^2\pi} = \frac{2.13 \times 1.58}{4 \times 400 \times 3.14} = 0.00067 \text{ mW/cm}^2 < 1 \text{ mW/cm}^2$$

For IC:

$$E.I.R.P. = P \times G = 3.365 \text{ mW} < 2.68 \text{ W}$$

So the device is exclusion from SAR test.

## 7 EUT Constructional Details

Refer to the < MiniPod Bluetooth MKII \_External Photos > & < MiniPod Bluetooth MKII \_Internal Photos >.

**--End of the Report--**