



# SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

588 West Jindu Road, Songjiang District, Shanghai, China  
Telephone: +86 (0) 21 6191 5666  
Fax: +86 (0) 21 6191 5678  
ee.shanghai@sgs.com

Report No.: SHEM130800162605  
Page: 1 of 9

## 1 Cover Page

# FCC MPE REPORT

Application No.:	SHEM1308001626RF
Applicant:	Hansong (Nanjing) Technology Ltd.
Manufacturer:	Vifa Denmark A/S
FCC ID:	XCO-VIFANORDIC
IC:	7756A-VIFANORDIC
<b>Equipment Under Test (EUT):</b> <b>NOTE:</b> The following sample(s) submitted was/were identified on behalf of the client as	
Product Name:	Active wireless loudspeaker
Model No.(EUT):	VIFA010, VIFA020
Standards:	FCC Rules 47 CFR §2.1091 KDB447498 D01 General RF Exposure Guidance
Date of Receipt:	November 01, 2013
Date of Test:	October 30, 2013 to November 04, 2013
Date of Issue:	November 28, 2013
Test Result:	<b>Pass*</b>

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



Tony Wu  
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	/	November 28, 2013	/	Original

Authorized for issue by:				
Engineer		Eddy Zong		
		Print Name		
Clerk		Susie Liu		
		Print Name		
Reviewer		Keny Xu		
		Print Name		

### 3 Contents

	Page
<b>1 COVER PAGE .....</b>	<b>1</b>
<b>2 VERSION.....</b>	<b>2</b>
<b>3 CONTENTS .....</b>	<b>3</b>
<b>4 GENERAL INFORMATION.....</b>	<b>4</b>
4.1 CLIENT INFORMATION.....	4
4.2 GENERAL DESCRIPTION OF E.U.T.....	4
4.3 DETAILS OF E.U.T.....	4
4.4 TEST LOCATION .....	5
4.5 TEST FACILITY .....	5
<b>5 TEST STANDARDS AND LIMITS.....</b>	<b>6</b>
<b>6 MEASUREMENT AND CALCULATION.....</b>	<b>7</b>
6.1 MAXIMUM TRANSMIT POWER .....	7
6.2 MPE CALCULATION .....	8
<b>7 EUT CONSTRUCTIONAL DETAILS.....</b>	<b>9</b>

## 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:	Vifa Denmark A/S
Address of Manufacturer:	Mariendalsvej 2A, DK8800 Viborg, Denmark
Factory:	Guoguang Electric Co., Ltd
Address of Factory:	No.8 Jinghu Road, Xinhua Street, Huadu Reg, Guangzhou, China

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

Product Name:	Active wireless loudspeaker
Model No.(EUT):	VIFA010, VIFA020
Brand Name:	Vifa
Product Description:	Mobile Product

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

Operation Frequency:	BT: 2402MHz~2480MHz DTS: 2412MHz-2462MHz
Bluetooth Version:	3.0+EDR
Modulation Technique:	BT: FHSS(GFSK, $\pi/4$ DQPSK, 8DPSK) DTS: 802.11b: DSSS(CCK, DQPSK, DBPSK) 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK)
Number of Channel:	BT: 79 DTS: 11
Antenna Type	BT: Integral DTS: Integral(the two PIFA antennas are not working simultaneously.)
Antenna Gain	2 dBi
Power Supply:	AC100-240V 50/60Hz
Cable Type:	About 150cm length (2Wires)
Engineering mode:	Using test software to control EUT working in continuous transmitting, and select channel and modulation type

#### 4.4 Test Location

All tests were performed at SGS E&E EMC lab  
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.  
No.588 West Jindu Road, Songjiang District, Shanghai, China. 201612.  
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. Date of expiry: 2014-07-26.

- **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, Expiry Date: 2015-02-22.

- **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. Expiry Date: 2014-09-20.

- **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 and C-4336 respectively. Date of Registration: 2012-05-29. Date of Expiry: 2015-05-28.

## 5 Test Standards and Limits

According to §1.1310 Radiofrequency radiation exposure limits:

The limit for general population/uncontrolled exposures

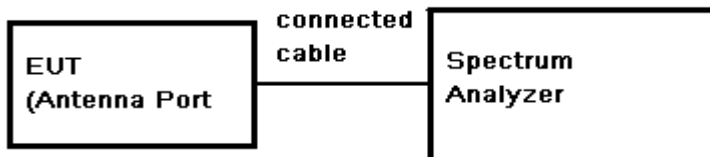
Frequency	Power density( $\text{mW}/\text{cm}^2$ )	Averaging time(minutes)
300MHz~1.5GHz	$f/1500$	30
1.5GHz~100GHz	1.0	30

## 6 Measurement and Calculation

### 6.1 Maximum transmit power

**EUT Operation:** Test in fixing frequency operating mode at lowest, middle and highest frequency.

**Test Configuration:**



**Test Results record:**

**For BT:**

Test mode	Channel	Reading Peak Power (dBm)	Cable Loss (dB)	Output Peak Power (dBm)	Output Peak Power (mW)	Peak Power Limit (dBm)	Result
GFSK	Low	1.29	0.5	1.79	1.11	30	PASS
	Mid	1.88	0.5	<b>2.38</b>	<b>1.73</b>	30	PASS
	High	0.44	0.5	0.94	1.24	30	PASS
$\pi/4$ DQPSK	Low	0.85	0.5	1.35	1.36	30	PASS
	Mid	1.60	0.5	2.1	1.62	30	PASS
	High	1.40	0.5	1.9	1.55	30	PASS
8DPSK	Low	1.00	0.5	1.5	1.41	30	PASS
	Mid	1.06	0.5	1.56	1.43	30	PASS
	High	1.84	0.5	2.34	1.71	30	PASS

**For DTS:**

**Antenna A**

Test mode	Channel	Reading Peak Power (dBm)	Cable Loss (dB)	Output Peak Power (dBm)	Output Peak Power (mW)	Peak Power Limit (dBm)	Result
802.11b	Low	20.54	0.5	21.04	127.06	30	PASS
	Mid	20.53	0.5	21.13	129.72	30	PASS
	High	20.53	0.5	21.03	126.77	30	PASS
802.11g	Low	22.22	0.5	<b>22.72</b>	<b>187.07</b>	30	PASS
	Mid	22.13	0.5	22.63	183.23	30	PASS
	High	21.96	0.5	22.46	176.20	30	PASS

### Antenna B

Test mode	Channel	Reading Peak Power (dBm)	Cable Loss (dB)	Output Peak Power (dBm)	Output Peak Power (mW)	Peak Power Limit (dBm)	Result
802.11b	Low	20.42	0.5	20.92	123.59	30	PASS
	Mid	20.52	0.5	21.12	129.42	30	PASS
	High	20.55	0.5	21.15	130.32	30	PASS
802.11g	Low	22.03	0.5	22.53	179.06	30	PASS
	Mid	21.99	0.5	22.49	177.42	30	PASS
	High	21.98	0.5	22.48	177.01	30	PASS

## 6.2 MPE Calculation

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

Note:

- 1)  $P$  (Watts) = Power Input to antenna =  $10^{\frac{dBm}{10}} / 1000$
- 2)  $G$  (Antenna gain in numeric) =  $10^{\text{(Antenna gain in dBi) / 10}}$
- 3)  $R$  = distance to the center of radiation of antenna (in meter) = 20cm
- 4) MPE limit = 1mW/cm<sup>2</sup>

For BT:

The Max Conducted Peak Output Power is 1.73mW in middle channel of GFSK;

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

$$\text{So, } S = \frac{PG}{4R^2\pi} = \frac{1.73 \times 1.58}{4 \times 400 \times 3.14} = 0.001 \text{ mW/cm}^2$$

For DTS:

The Max Conducted Peak Output Power is 187.07mW in lowest channel of 802.11g;

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

$$\text{So, } S = \frac{PG}{4R^2\pi} = \frac{187.07 \times 1.58}{4 \times 400 \times 3.14} = 0.059 \text{ mW/cm}^2$$

The BT and the DTS modules can't simultaneous transmitting at frequency 2.4GHz band, according to the KDB447498 D01 section 7.2 determine the device is exclusion from SAR test.



## **7 EUT Constructional Details**

Refer to the < VIFA\_External Photos-FCC > & < VIFA\_Internal Photos-FCC >.

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