



SAR Evaluation REPORT

For

Applicant : Honey Bee (Hong Kong) Ltd.

Address : Flat L,12/F,Phase 4, Kwun Tong Industrial Centre, 436-446 Kwun Tong Road,Kowloon, Hong Kong

Product Name : VitaSound PAE

Model Name : PAE-380, PAE-100, PAE-500

Brand Name : VitaSound

FCC ID : S9X-HB-1121

Report No. : STS131008F2A

Date of Issue : November 9,2013

Issued by : Shenzhen Super Test Service Technology Co., Ltd.

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1. VERIFICATION OF CONFORMITY

Equipment Under Test: VitaSound PAE
Brand Name: VitaSound
Model Number: PAE-380
Series Model Name: PAE-100, PAE-500
Difference description: Only for market segment
IC: S9X-HB-1121
Applicant: Honey Bee (Hong Kong) Ltd.
Flat L,12/F,Phase 4, Kwun Tong Industrial Centre, 436-446 Kwun Tong Road,Kowloon, Hong Kong
Manufacturer: Shantou S.E.Z. Honey Bee Electronics Co., Ltd.
5/F, Blk 3, Zhu Hua Industrial Zone, Li Shui Zhuang, Zhong Qu, Long Hu Qu, Shantou City, Guangdong Province, China
Technical Standards: 47 CFR Part 1.1307(2011)
47 CFR Part 2.1093(2011)
KDB447498D01 General RF Exposure Guidance v05
File Number: STS131008F2A
Date of test: October 23,2013~ November 9, 2013
Deviation: None
Condition of Test Sample: Normal
Test Result: PASS

The above equipment was tested by STS for compliance with the requirements set forth in FCC rules and the Technical Standards mentioned above. This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment and the level of the immunity endurance of the equipment are within the compliance requirements.

The test results of this report relate only to the tested sample identified in this report.

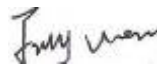
Tested by (+ signature):



Zhang Ling

November 9, 2013

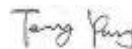
Review by (+ signature):



July Wen

November 9, 2013

Approved by (+ signature):



Terry Yang

November 9, 2013

2. GENERAL INFORMATION

2.1 Product Information

Product	VitaSound PAE
Applicant Company	Honey Bee (Hong Kong) Ltd.
Applicant Address	Flat L, 12/F, Phase 4, Kwun Tong Industrial Centre, 436-446 Kwun Tong Road, Kowloon, Hong Kong
Manufacturer Company	Shantou S.E.Z. Honey Bee Electronics Co., Ltd.
Manufacturer Address	5/F, Blk 3, Zhu Hua Industrial Zone, Li Shui Zhuang, Zhong Qu, Long Hu Qu, Shantou City, Guangdong Province, China
Brand Name	VitaSound
Model Number	PAE-380
Frequency Range	2402MHz -2480MHz
Modulation Technique	GFSK(1Mbps), II/4-DQPSK(2Mbps), 8-DPSK(3Mbps), Bluetooth 4.0: GFSK
Channel Number	Bluetooth :79, Bluetooth v4.0-LE:40
Antenna Type:	0.0 dBi, PCB Antenna
Power Supply	DC 3.7V by battery (charged by DC 5V form Adapter)
Temperature Range:	0°C ~ 35°C

NOTE:

1. For a more detailed features description about the EUT, please refer to User's Manual.

3. TEST FACILITY

3.1 TEST FACILITY

Test Site:	Compliance Certification Services Inc. (Kun shan) Laboratory
Location:	No.10 Weiye Rd, Innovation park, Eco&Tec,Development Zone, Kunshan City, Jiangsu, China
Description:	<p>There is one 3m semi-anechoic an area test sites and two line conducted labs for final test. The Open Area Test Sites and the Line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4:2009 and CISPR 16 requirements.</p> <p>The FCC Registration Number is 238958.</p> <p>The CNAS Registration Number is CNAS L4354.</p>
Site Filing:	The site description is on file with the Federal Communications Commission, 7435 Oakland Mills Road, Columbia, MD 21046.
Instrument Tolerance:	All measuring equipment is in accord with ANSI C63.4:2009 and CISPR 16 requirements that meet industry regulatory agency and accreditation agency requirement.
Ground Plane:	Two conductive reference ground planes were used during the Line Conducted Emission, one in vertical and the other in horizontal. The dimensions of these ground planes are as below. The vertical ground plane was placed distancing 40 cm to the rear of the wooden test table on where the EUT and the support equipment were placed during test. The horizontal ground plane projected 50 cm beyond the footprint of the EUT system and distanced 80 cm to the wooden test table. For Radiated Emission Test, one horizontal conductive ground plane extended at least 1m beyond the periphery of the EUT and the largest measuring antenna, and covered the entire area between the EUT and the antenna. It has no holes or gaps having longitudinal dimensions larger than one-tenth of a wavelength at the highest frequency of measurement up to 1GHz.

4. SAR Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Standard Requirement

15.247 b(4) requirement:

The conducted power limit specified in paragraph (b) of this section is based on the use of antenna with directional gains that do not exceed 6dBi, Except as shown in paragraph (c) of this section. If transmitting antennas of directional gains greater than 6dBi are used. The conducted output power from the intentional radiator shall be reduced below the stated values in paragraph b(1),b(2) and b(3) of the section as appropriate by the amount in dB that the directional gain of the antenna exceeds 6dBi.

4.1.2 Limits

According to KDB447498D01 General RF Exposure Guidance v05

The 1-g and 10-g SAR test exclusion thresholds for 100MHz to 6GHz at test separation distances ≤ 50 mm are determined by:

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

$f(\text{GHz})$ is the RF channel transmit frequency in GHz;

Power and distance are rounded to the nearest mW and mm before calculation

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100MHz and 6GHz. When the minimum test separation distance is < 5 mm, a distance of 5mm is applied to determine SAR test exclusion.

4.1.3 EUT RF Exposure

1. For Bluetooth model:

The Max Conducted Output Power is 5.44 dBm in highest channel (2.480GHz);

The best case gain of the antenna is 0.0dBi;

The minimum test separation distance is 5 mm.

S_0 , $EIRP = 5.44\text{dBm} + 0.0\text{dBi} = 5.44\text{dBm}$

5.44dBm logarithmic terms convert to numeric result is nearly 3.50mW.

According to the formula, calculate the EIRP test result:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] * [\sqrt{f(\text{GHz})}]$

General RF Exposure $= (3.50\text{mW} / 5\text{mm}) * \sqrt{2.480\text{GHz}} = 0.445$ ①

SAR requirement: $S=3.0$ ②;

①<②,

So RF exposure is PASS and the SAR report is not required.

2.For Bluetooth v4.0 model:

The Max Conducted Output Power is 4.01 dBm in highest channel (2.480GHz);

The best case gain of the antenna is 0.0dBi;

The minimum test separation distance is 5 mm.

S_0 , EIRP=4.01dBm+0.0dBi=4.01dBm

4.01dBm logarithmic terms convert to numeric result is nearly 2.52mW.

According to the formula, calculate the EIRP test result:

$[(\text{max.power of channel, including tune-up tolerance,mW})/(\text{min.test separation distance,mm})] * [\sqrt{f(\text{GHz})}]$

General RF Exposure=(2.52mW/5mm)* $\sqrt{2.480\text{GHz}}$ =0.320 ①

SAR requirement: $S=3.0$ ②;

①<②,

So RF exposure is PASS and the SAR report is not required.

-----END OF REPORT-----