



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

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Report No.: SHEM140800195903
Page: 1 of 7

1 Cover Page

FCC MPE REPORT

Application No.:	SHEM1408001959RF
Applicant:	Lenbrook Industries Limited
FCC ID:	SVC-PSBVS21
IC ID:	152C-PSBVS21
Equipment Under Test (EUT): NOTE: The following sample(s) submitted was/were identified on behalf of the client as	
Product Name:	PSB Speakers Powered Soundbar
Model No.(EUT):	ALPHA VS21
Standards:	FCC Rules 47 CFR §2.1091 KDB447498 D01 General RF Exposure Guidance
Date of Receipt:	August 05, 2014
Date of Test:	August 22, 2014 to August 27, 2014
Date of Issue:	September 09, 2014
Test Result:	Pass*

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



Tony Wu
E&E Section Manager

SGS-CSTC (Shanghai) Co., Ltd.

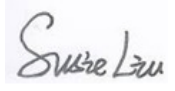
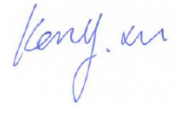
The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant 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		September 09, 2014		Original

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

3 Contents

	Page
1 COVER PAGE	1
2 VERSION	2
3 CONTENTS	3
4 GENERAL INFORMATION	4
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
5 TEST STANDARDS AND LIMITS.....	6
6 MEASUREMENT AND CALCULATION	6
6.1 MAXIMUM TRANSMIT POWER	6
6.2 MPE CALCULATION	7
7 EUT CONSTRUCTIONAL DETAILS.....	7

4 General Information

4.1 Client Information

Applicant:	Lenbrook Industries Limited
Address of Applicant:	633 Granite Court, Pickering Ontario, L1W3K1, Canada
Manufacturer:	Lenbrook Industries Limited
Address of Manufacturer:	633 Granite Court, Pickering Ontario, L1W3K1, Canada
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
Brand Name:	PSB Speakers
Power Supply:	AC 100-240V 50/60Hz
Rated Max Power:	80W

4.3 Details of E.U.T.

Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	3.0+HS
Modulation Technique:	FHSS(GFSK, $\pi/4$ DQPSK, 8DPSK)
Number of Channel:	79
Antenna Type	Integral
Antenna Gain	2 dBi

4.4 Test Location

All tests were performed at SGS E&E EMC lab

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No.588 West Jindu Road, Songjiang District, Shanghai, China. 201612.

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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: 2017-07-14.

- **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-1. Expiry Date: 2017-06-18.

- **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

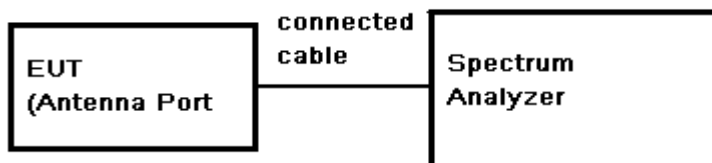
Frequency	Power density(mW/cm ²)	Averaging time(minutes)
300MHz~1.5GHz	f/1500	30
1.5GHz~100GHz	1.0	30

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 Data:

For BT:

Test mode	Channel	Reading Peak Power (dBm)	Cable Loss (dB)	Peak Power (dBm)	Peak Power (mW)	Peak Power Limit (dBm)	Result
GFSK	Low	-2.82	0.5	-2.32	0.59	30	PASS
	Mid	2.64	0.5	3.14	2.06	30	PASS
	High	1.93	0.5	2.43	1.75	30	PASS
π/4DQPSK	Low	-2.36	0.5	-1.86	0.65	30	PASS
	Mid	1.54	0.5	2.04	1.60	30	PASS
	High	1.57	0.5	2.07	1.61	30	PASS
8DPSK	Low	-2.28	0.5	-1.78	0.66	30	PASS
	Mid	1.96	0.5	2.46	1.76	30	PASS
	High	1.25	0.5	1.75	1.50	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/cm²

The Max Conducted Peak Output Power is 2.06mW 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

$$\text{So, } S = \frac{PG}{4R^2\pi} = \frac{2.06 \times 1.58}{4 \times 400 \times 3.14} = 0.0006 \text{ mW/cm}^2$$

According to the KDB447498 D01 section 7.2 determine the device is exclusion from SAR test.

7 EUT Constructional Details

Refer to the < ALPHA VS21_External Photos > & < ALPHA VS21_Internal Photos>.

--End of the Report--