



No. 1 Workshop, M-10, Middle section, Science & Technology Park,
Shenzhen, Guangdong, China 518057

Telephone: +86 (0) 755 2601 2053

Fax: +86 (0) 755 2671 0594

Email: ee.shenzhen@sgs.com

Report No.: SZEM171001078504

Page: 1 of 7

1 Cover Page

RF MPE REPORT

Application No.:	SZEM1710010785CR (SHEM1706003684CR)
Applicant:	Philips (China) investment Co. Ltd.
FCC:	2ANX9-AC5659
IC ID:	23301-AC5659
Equipment Under Test (EUT): NOTE: The following sample(s) was/were submitted and identified by the client as	
Product Name:	AIR PURIFIER
Model No.(EUT):	AC5659/40
Standards:	FCC Rules 47 CFR §2.1091 KDB447498 D01 General RF Exposure Guidance v06 RSS-102 Issue 5 (March 2015)
Date of Receipt:	2017-06-20
Date of Test:	2017-06-26 to 2017-07-09
Date of Issue:	2017-11-15
Test Result:	Pass*

* In the configuration tested, the EUT detailed in this report complied with the standards specified above.





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. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction. documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

Revision Record				
Version	Chapter	Date	Modifier	Remark
00	/	2017-11-15	/	Original

Authorized for issue by:			
Tested By			
	<hr/>	Foray Chen /Project Engineer	Date
			2017-07-10
Checked By			
	<hr/>	Eric Fu /Reviewer	Date
			2017-07-10

2 Contents

	Page
1 COVER PAGE.....	1
2 CONTENTS	3
3 GENERAL INFORMATION	4
3.1 CLIENT INFORMATION.....	4
3.1 GENERAL DESCRIPTION OF E.U.T.	4
3.2 TECHNICAL SPECIFICATIONS	4
3.3 TEST LOCATION	5
3.4 TEST FACILITY.....	5
4 TEST STANDARDS AND LIMITS.....	6
4.1 FCC RADIOFREQUENCY RADIATION EXPOSURE LIMITS:	6
4.2 IC RADIOFREQUENCY RADIATION EXPOSURE LIMITS:.....	6
5 MEASUREMENT AND CALCULATION	7
5.1 MAXIMUM TRANSMIT POWER	7
5.2 MPE CALCULATION.....	7

3 General Information

3.1 Client Information

Applicant:	Philips (China) investment Co. Ltd.
Address of Applicant:	Philips Innovation Campus Shanghai No.1 Building, 10, Lane 888, Tian Lin Road Shanghai, PRC,
Manufacturer:	Philips (China) investment Co. Ltd.
Address of Manufacturer:	Philips Innovation Campus Shanghai No.1 Building, 10, Lane 888, Tian Lin Road Shanghai, PRC,
Factory:	GUANG DONG XINBAO ELECTRICAL APPLIANCES HOLDINGS CO., LTD.
Address of Factory:	Zhenghe South Road, Leliu Town, Shunde District, Foshan City, Guangdong Province, China.

3.1 General Description of E.U.T.

Product Description:	Fixed product with 2.4G WiFi function
Rated Input:	AC 120V 60Hz
Test Voltage:	AC 120V 60Hz

3.2 Technical Specifications

Operation Frequency:	802.11 b/g/n(HT20): 2412MHz-2462MHz
Modulation Technique:	802.11 b DSSS(CCK, DQPSK, DBPSK) 802.11 g/n(HT20) OFDM(64QAM, 16QAM, QPSK, BPSK)
Data Rate:	802.11b: 1/2/5.5/11Mbps, 802.11g: 6/9/12/18/24/36/48/54Mbps 802.11n: MCS0-15 up to 300Mbps
Number of Channel:	802.11 b/g/n(HT20): 11
Antenna Type:	PCB Antenna
Antenna Gain:	-1.6 dBi

3.3 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

3.4 Test Facility

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

- **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab 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.

- **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

- **VCCI**

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

- **FCC – Registration No.: 556682**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 556682.

- **Industry Canada (IC)**

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

4 Test Standards and Limits

4.1 FCC Radiofrequency radiation exposure limits:

According to §1.1310, 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

4.2 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

5 Measurement and Calculation

5.1 Maximum transmit power

The Power Data is based on the RF Test Report SZEM171001078503

Test Mode	Channel	Power[dBm]	Power[mW]
11B	2412	22.91	195.43
11B	2437	22.65	184.08
11B	2462	23.12	205.12
11G	2412	21.22	132.43
11G	2437	21.41	138.36
11G	2462	21.7	147.91
11N20SISO	2412	21.22	132.43
11N20SISO	2437	21.37	137.09
11N20SISO	2462	21.75	149.62

5.2 MPE Calculation

The Max Conducted Peak Output Power is 23.12dBm (205.12mW) in highest channel;

For FCC:

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

Note:

1) P (Watts) = Power Input to antenna = $10^{\frac{dBm}{10}} / 1000$

2) R = distance to the center of radiation of antenna (in meter) = 20cm

3) MPE limit = 1mW/cm²

$$S = \frac{P}{4R^2\pi} = \frac{205.12}{4 \times 400 \times 3.14} = 0.0408 \text{ mW/cm}^2$$

For IC:

$$E.I.R.P. = P * G = 0.20512 \times 0.69 = 0.14W < 2.68W$$

So the device is exclusion from SAR test.

--End of the Report--