

FCC SAR Exclusion Report



Product name : AeroGuard
Applicant : Plymovent Goup BV
FCC ID : 2BCUH-AG001
ISED ID : 31300-AG001

Test report No. : P000300707 009 Ver 1.0

Laboratory information

Accreditation

Kiwa Nederland B.V. complies with the accreditation criteria for test laboratories as laid down in ISO/IEC 17025:2017. The accreditation covers the quality system of the laboratory as well as the specific activities as described in the authorized annex bearing the accreditation number L248 and is granted by the Dutch Council For Accreditation (RvA: Raad voor Accreditatie).

Kiwa Nederland B.V. is designated by the FCC as an Accredited Test Firm for compliance testing of equipment subject to Certification under Parts 15 & 18. The Designation number is: NL0001.

Kiwa Nederland B.V. is a Wireless Device Testing laboratory recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements.
The Industry Canada company number for Kiwa Nederland B.V. is: 4173A. The CABID is NL0001.

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Documentation

The test report must always be reproduced in full; reproduction of an excerpt only is subject to written approval of the testing laboratory. The documentation of the testing performed on the tested devices is archived for 10 years at Kiwa Nederland B.V.

Testing Location

Test Site	Kiwa Nederland B.V.
Test Site location	Wilmersdorf 50 7327 AC Apeldoorn The Netherlands Tel. +31 88998 3393
Test Site FCC	NL0001
CABID	NL0001

Revision History

Version	Date	Remarks	By
v0.50	08-01-2024	First draft	MK
v1.00	11-01-2024	Final release	MK

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1 General Description

1.1 Applicant

Client name:	Plymovent Group BV
Address:	Koraalstraat 9, 1812 RK Alkmaar
Telephone:	+31(0)72 7504600
E-mail:	Thomas.friso@plymovent.com
Contact name:	T. Friso

1.2 Manufacturer

Manufacturer name:	Plymovent Group BV
Address:	Koraalstraat 9, 1812 RK Alkmaar
Telephone:	+31(0)72 7504600
E-mail:	Thomas.friso@plymovent.com
Contact name:	T. Friso

1.3 Tested Equipment Under Test (EUT)

Product name:	AeroGuard
Brand name:	Plymovent
FCC ID:	2BCUH-AG001
IC:	31300-AG001
Product description:	Air Quality monitoring device
Variant model(s):	--
Batch and/or serial No.	Radiated sample serial: 20869358 Conducted sample serial: 20869424
Software version:	Operating system: V0.5.0 Application: V0.4.3 Application-LED: V0.2.0 Bluetooth: V0.1.1
Hardware version:	01PLYAQMTOTC9C
Date of receipt	25-09-2023
Tests started:	26-09-2023
Testing ended:	05-10-2023

1.4

Applicable standards

47 CFR § 1.1307 (b)(1)(i)(A)

1.5 Conclusions

The sample of the product showed **NO NON-COMPLIANCES** to the specifications stated in paragraph 1.4 of this report.

The results of the test as stated in this report, are exclusively applicable to the product items as identified in this report. Kiwa Nederland B.V. accepts no responsibility for any properties of product items in this test report, which are not supported by the tests as specified in paragraph 1.4 *"Applicable standards"*.

Assessment is performed by:

Name : ing. M.H. Khan

Review of assessment methods and report by:

Name : ing. R. van Barneveld

The above conclusions have been verified by the following signatory:

Date : 15-01-2024

Name : ing. R. van Barneveld

Function : Test Engineer

Signature :

A handwritten signature in blue ink, consisting of a stylized 'R' followed by several horizontal strokes.

2 SAR exclusion Evaluation

2.1 Transmitter specifications

Transmitter 1 (802.11b) ¹

Variable (unit)	Value	Symbol
Conducted time-averaged output power (mW)	45.92	P
Time-averaged output power ERP (mW)	72.78	P _{ERP}
Operating frequency range (MHz)	2412	f
Separation distance (cm)	20	d
Separation distance (m)	0.2	R

Transmitter 2 (BLE) ¹

Variable (unit)	Value	Symbol
Conducted time-averaged output power (mW)	3.601	P
Time-averaged output power ERP (mW)	5.707	P _{ERP}
Operating frequency range (MHz)	2480	f
Separation distance (cm)	20	d
Separation distance (m)	0.2	R

Notes

- 1) From Kiwa Nederland B.V. report no. P000300707 001

2.2 Evaluation calculations

Transmitter 1

Transmitter 1 is evaluated according to method B of KDB 447498 D04 v01

Method B:

$$P_{th}(mW) = \begin{cases} ERP_{20cm} \left(\frac{d}{20cm} \right)^x & d \leq 20 \text{ cm} \\ ERP_{20cm} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

Where:

$$x = -\log_{10} \left(\frac{60}{ERP_{20cm} * \sqrt{f}} \right)$$

$$ERP_{20cm}(mW) = \begin{cases} 2040 * f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6.0 \text{ GHz} \end{cases}$$

Filling in the values of d (cm) and f (GHz) as reported in clause 2.1 in the equations above gives the result:

P_{th} = 3060 mW

P or P_{ERP} = 72.78 mW which is less than the calculated P_{th} so the EUT complies with the SAR based exemption requirement.

Transmitter 2

Transmitter 2 is evaluated according to method B of KDB 447498 D04 v01

Method B:

$$P_{th}(mW) = \begin{cases} ERP_{20cm} \left(\frac{d}{20cm} \right)^x & d \leq 20 \text{ cm} \\ ERP_{20cm} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

Where:

$$x = -\log_{10} \left(\frac{60}{ERP_{20cm} * \sqrt{f}} \right)$$

$$ERP_{20cm}(mW) = \begin{cases} 2040 * f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6.0 \text{ GHz} \end{cases}$$

Filling in the values of d (cm) and f (GHz) as reported in clause 2.1 in the equations above gives the result:

$P_{th} = 3060 \text{ mW}$

P or $P_{ERP} = 5.707 \text{ mW}$ which is less than the calculated P_{th} so the EUT complies with the SAR based exemption requirement.

Device cannot transmit BLE and WiFi simultaneously.

2.3 Conclusion

Since the EUT does not cause exposure in excess of the general population limit, no additional mitigation actions are required.

<<END OF REPORT>>