

FCC SAR Exclusion Report

Product name : BI-PS005
Applicant : Velux A/S
FCC ID : XSG832644

Test report No. : 200501094 002 FCC RF exposure Ver 1.0

Laboratory information

Accreditation

Telefication 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 L021 and is granted on 30 November 1990 by the Dutch Council For Accreditation (RvA: Raad voor Accreditatie).

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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 Telefication Netherlands.

Testing Location

Test Site	Telefication BV
Test Site location Wilmsdorf 50 7327 AC Apeldoorn The Netherlands	Edisonstraat 12a 6902 PK Zevenaar The Netherlands Tel. +31889983600 Fax. +31316583189

Test Site	Kiwa Telefication BV
Test Site location	Wilmsdorf 50 7327 AC Apeldoorn The Netherlands Tel. +31 88998 3393
Test Site FCC	NL0001

Revision History

Version	Date	Remarks	By
v1.00	18-01-2021	Release version	PvW

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1 General Description

1.1 Applicant

Client name:	Velux A/S
Address:	Bækgaardsvej 40
Zip code:	6900, Skjern, Denmark
Telephone:	+45 3058 1588
E-mail:	j.a.m.thomsen@velux.com
Contact name:	Mr. Jens Aksel Thomsen

1.2 Manufacturer

Manufacturer name:	Velux A/S
Address:	Bækgaardsvej 40
Zip code:	6900, Skjern, Denmark
Telephone:	+45 3058 1588
E-mail:	j.a.m.thomsen@velux.com
Contact name:	Mr. Jens Aksel Thomsen

1.3 Tested Equipment Under Test (EUT)

Product name:	BI-PS005
Brand name:	VELUX
FCC ID:	XSG832644
IC ID:	8642A-832644
Product type:	Power supply for Velux products (window opener and curtains)
Model(s):	BI-PS005
Batch and/or serial No.	--
Software version:	Build 14
Hardware version:	Control PCB: Version 2 PSU: Version 5
Date of receipt:	04-09-2020
Tests started:	05-10-2020
Testing ended:	19-11-2020

1.4 SAR Measurement Evaluation

1.4.1 Maximum Output Power

The maximum radiated power including tune-up tolerance is shown as below.

Mode	Max power level
Zigbee	9.2 dBm*

* from Telefication report 200501094 002.

Power is measured with the device was in standby mode, with the transmitter continuously transmitting.

1.4.2 SAR Testing Exclusions

According to KDB 447498 D01, the SAR test exclusion condition is based on source-based time-averaged maximum conducted output power, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions. The SAR exclusion threshold is determined by the following formula.

- For the test separation distance ≤ 50 mm

$$\frac{\text{Max. Tune up Power}_{(\text{mW})}}{\text{Min. Test Separation Distance}_{(\text{mm})}} \times \sqrt{f_{(\text{GHz})}} \leq 3.0$$

When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

- For the test separation distance > 50 mm, and the frequency at 100 MHz to 1500 MHz

$$\left[(\text{Threshold at 50 mm in Step 1}) + (\text{Test Separation Distance} - 50 \text{ mm}) \times \left(\frac{f_{(\text{MHz})}}{150} \right) \right]_{(\text{mW})}$$

- For the test separation distance > 50 mm, and the frequency at > 1500 MHz to 6 GHz

$$[(\text{Threshold at 50 mm in Step 1}) + (\text{Test Separation Distance} - 50 \text{ mm}) \times 10]_{(\text{mW})}$$

Mode	Max. Tune-up Power (dBm)	Max. Tune-up Power (mW)	Ant. to Surface (mm)	Calculated Result	Require SAR Testing?
Zigbee	9.2	8.3	20	0.65	No

Note:

- When separation distance ≤ 50 mm and the calculated result shown in above table is ≤ 3.0 , the SAR testing exclusion is applied.
- When separation distance > 50 mm and the device output power is less than the calculated result (power threshold, mW) shown in above table, the SAR testing exclusion is applied.

1.5 Summary

Since the SAR testing for all device orientations apply SAR test exclusion per KDB 447498, SAR testing for this device is not required.