

RADIO FREQUENCY EXPOSURE EVALUATION

General Information

Applicant : Savant Technologies LLC, dba GE Lighting, a Savant company
EUT Description : In-wall Outlet
Model No. : COTLSTD2PM2W1
Radio Tech : BLE 4.2, IEEE 802.11 b/g/n.

Description of Test Facility

Name of Firm : Audix Technology (Shanghai) Co., Ltd.
Site Location : 3F, Building 34, No. 680 Guiping Rd.,
Caohejing, Hi-Tech Park, Shanghai 200233, China
NVLAP, Lab Code : 200371-0
FCC Designation Number : CN5027
Test Firm Registration Number: 954668

Evaluation Method

KDB 447498 D04 Interim General RF Exposure Guidance v01

Applicable Standard:

KDB 447498 D04 v01:

Section 2.1.3: SAR-Based Exemption.

A more comprehensive exemption, considering a variable power threshold that depends on both the separation distance and power, is provided in § 1.1307(b)(3)(i)(B). This exemption is applicable to the frequency range between 300 MHz and 6 GHz, with test separation distances between 0.5 cm and 40 cm, and for all RF sources in fixed, mobile, and portable device exposure conditions. Accordingly, a RF source is considered an RF exempt device if its available maximum time-averaged (matched conducted) power or its effective radiated power (ERP), whichever is greater, are below a specified threshold. This exemption threshold was derived based on general population 1-g SAR requirements and is detailed in Appendix C.

FCC CFR 47 §1.1307(b)(3)(i)(B):

A single RF source is exempt if the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold P_{th} (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by:

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

Where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right) \text{ and } f \text{ is in GHz;}$$

and

$$ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$$

d = the separation distance (cm);

RF Exposure evaluation:

Mode	Frequency	Max output power		Ant. Gain	Max E.I.R.P		P _{th}
	MHz	dBm	mW	dBi	dBm	mW	mW
BLE	2442	16.405	43.70	0.5	16.905	49.034	3060
11b	2412	17.57	57.15	0.5	18.07	64.121	3060
11g	2437	16.66	46.34	0.5	17.16	52.000	3060
11n20	2437	15.73	37.41	0.5	16.23	41.976	3060

Note1: For this EUT, and the separation distance is 20 cm. And the Bluetooth and WIFI can not transmit at the same time.

Note2: The Conducted output power and Maximum EIRP both no greater than the threshold P_{th}, that meets the exemption, the RF exposure evaluation is not required.

-END-