RADIO FREQUENCY EXPOSURE EVALATION

Evaluation Method

KDB 447498 D04 Interim General RF Exposure Guidance v01

Applicable Standard:

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:

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

Where

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

and

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

d = the separation distance (cm);

SAR evaluation:

<Passed>

Mode	Frequency	Max output power		Ant. Gain	Max E.I.R.P		P_{th}
	MHz	dBm	mW	dBi	dBm	mW	mW
Zigbee	2405	-0.427	0.91	1.49	1.063	1.277	3060

Note1: For this EUT, that is a mobile devices, and the separation distance is 20 cm.
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.

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