SAR test exclusion considerations

FCC Regulation(s): Part 1.1307
Guidance Applied: KDB 447498 D04v01

Part 1.1307(b)(3)Determination of exemption.
(i) For single RF sources (i.e., any single fixed RF source, mobile device, or portable device, as defined in paragraph (b)(2) of this section): A single RF source is exempt if:
(A) The available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(ii)(A) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(ii)(A);
(B) Or 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);

The output power of the EUT is as below.

Mode	Frequency (MHz)	Measured average power(dBm)	Max tune-up power(dBm)	Max tune-up power(mW)	Part 1.1307(b)(3)(i)(A) Requirement(mW)
UWB	6489.6	-23.38	-21.5	0.007	1.000
Bluetooth LE(1Mbps)	2402.0	-11.98	-10.5	0.089	1.000

Note 1: The conducted average power was measured using a wideband gated RF power meter and gate parameters was adjusted such that the power is measured only when the EUT is transmitting at its maximum power.
Note 2: Please refer to the operation description for Max target power.

WLAN and BLE cannot transmit at the same time.

Conclusion: SAR evaluation for general population exposure conditions by measurement or numerical simulation is not required