

RF exposure information

Product information from applicant

Applicant	:	Renesas Electronics Corporation
Applicant address	:	3-2-24 Toyosu, Koto-ku, Tokyo 135-0061, Japan
FCC ID	:	2AEMXRX23W8DLN
ISED ID	:	20194-RX23W8DLN
Product description	:	RX23W module
Operating frequency range	:	2402 - 2480 MHz
Nominal Output power	:	4.0dBm (Manufacture specification)
Peak output power (Measured)	:	3.28dBm @2.402GHz, 3.12dBm @2.442GHz, 3.04dBm @2.480GHz (1Mbps) 3.30dBm @2.402GHz, 3.16dBm @2.442GHz, 3.04dBm @2.480GHz (2Mbps)
Maximum antenna gain	:	-7.3 dBi

Analysis for portable use

For FCC

Standalone SAR test exclusion considerations are defined in the KDB 447498 Chapter 4.3.1. 1-g head or body SAR exclusion threshold is defined with formula.

$[(\text{Max. power of channel, mW}) / (\text{Min. test separation distance, mm})] * [\sqrt{f \text{ [GHz]}}] \leq 3.0$ for 1-g SAR

The maximum Conducted Peak Output Power is 4.0dBm (Manufacture specification).

4.0dBm logarithmic terms covert to numeric result is nearby 2.5mW

General RF Exposure (worst) = $(2.5\text{mW} / 5\text{mm}) * \sqrt{2.480\text{GHz}} = 0.787 \leq 3.0$

RX23W module meets the SAR exclusion. So SAR evaluation is not needed.

For ISED

SAR evaluation is required if the separation distance between the user and/or bystander and the antenna and/or radiating element of the device is less than or equal to 20 cm, except when the device operates at or below the applicable output power level (adjusted for tune-up tolerance) for the specified separation distance defined in RSS-102 Table 1.

Output power level is $2.5\text{mW} < 4\text{mW}$ (Exemption limits at separation distance of $\leq 5\text{mm}$ @2450MHz)

RX23W module meets the SAR exclusion. So SAR evaluation is not needed.