

Radio frequency radiation exposure evaluation: portable devices

RESULT :

Pass

Test Specification

Test item	: Remote Controlled Wheel
Identification / Type No.	: W-9430
FCC ID	: W3Z-W9430
IC	: 6817C-W9430
Test standard	: CFR47 FCC Part 2: Section 2.1093 FCC KDB Publication 447498 D04

Calculation Method according to KDB 447498 D04

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases} \quad (\text{B. 2})$$

where

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

and f is in GHz, d is the separation distance (cm), and ERP20cm is per Formula (B.1). The example values shown in Table B.2 are for illustration only.

For 2.4G SRD

$$E.I.R.P = 92.24 - 95.2 = -2.96\text{dBm}$$

$$ERP = -2.96 - 2.15 = -5.11\text{dBm}$$

FCC Measurement Record:

Test Mode	Conducted Power (dBm)	Conducted Power (mW)	ERP (dBm)	ERP (mW)	Minimum Separation Distances (mm)	Limit (mW)
2.4GHz SRD	----	----	-5.11	0.308	5	2.72

Table 11: Power limits for exemption from routine SAR evaluation based on the separation distance

Frequency (MHz)	≤ 5 mm (mW)	10 mm (mW)	15 mm (mW)	20 mm (mW)	25 mm (mW)	30 mm (mW)	35 mm (mW)	40 mm (mW)	45 mm (mW)	> 50 mm (mW)
≤ 300	45	116	139	163	189	216	246	280	319	362
450	32	71	87	104	124	147	175	208	248	296
835	21	32	41	54	72	96	129	172	228	298
1900	6	10	18	33	57	92	138	194	257	323
2450	3	7	16	32	56	89	128	170	209	245
3500	2	6	15	29	50	72	94	114	134	158
5800	1	5	13	23	32	41	54	74	102	128

ISED Measurement Record:

Test Mode	Conducted Power (dBm)	E.I.R.P (dBm)	E.I.R.P (mW)	Minimum Separation Distances (mm)	Limit (mW)
2.4GHz SRD	---	-2.96	0.506	5	3

For ISED, output power level shall be the higher of the maximum conducted or effective isotropic radiated power (e.i.r.p.) source-based, time-averaged output power.

Hence the EUT is excluded from SAR evaluation if the distance between the antenna and the human body is equal or above one of the minimum distances depicted in the tables above, depending on the wireless protocol in use, in accordance with FCC KDB Publication 447498 D04 and RSS-102 Issue 6.