

# Radiofrequency radiation exposure evaluation: mobile devices

RESULT: Pass

### **Test Specification**

Test item : Kiosk

Identification / Type No. : InBody Touch

FCC ID : F6OINBODYTOUCH IC : 22967-INBODYTOUCH

Test standard : CFR47 FCC Part 2: Section 2.1091

CFR47 FCC Part 1: Section 1.1310 FCC KDB Publication 447498 D04 RSS-102 Issue 6 December 15 2023

#### > FCC requirements

**FCC requirement:** Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 20cm normally can be maintained between the user and the device.

### MPE Calculation Method according to KDB 447498 D04

TABLE B.1—THRESHOLDS FOR SINGLE RF SOURCES SUBJECT TO ROUTINE ENVIRONMENTAL EVALUATION

RF Source Frequency			Minimum Distance			Threshold ERP	
f <sub>L</sub> MHz		<i>f</i> н МНz	$\lambda_L / 2\pi$		$\lambda_{\rm H}$ / $2\pi$	W	
0.3	-	1.34	159 m	_	35.6 m	1,920 R <sup>2</sup>	
1.34	1	30	35.6 m	_	1.6 m	3,450 R <sup>2</sup> /f <sup>2</sup>	
30	-	300	1.6 m	-	159 mm	3.83 R <sup>2</sup>	
300	-	1,500	159 mm	_	31.8 mm	0.0128 R <sup>2</sup> f	
1,500	1	100,00	31.8 mm	1	0.5 mm	19.2R <sup>2</sup>	

Subscripts L and H are low and high;  $\lambda$  is wavelength. From § 1.1307(b)(3)(i)(C), modified by adding Minimum Distance columns.

$$P_{\text{th }}(\text{mW}) = ERP_{20 \text{ cm}}(\text{mW}) = \begin{cases} 2040f & 0.3 \text{ GHz} \le f < 1.5 \text{ GHz} \\ \\ 3060 & 1.5 \text{ GHz} \le f \le 6 \text{ GHz} \end{cases}$$
(B. 1)



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

where

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

# a) EUT RF Exposure Evaluation operations, Worst Case mode

Test Mode	Measured Power (dBm)	Measured Power (mW)	Minimum Separation Distances (cm)	Limit (mW)
BLE	7.26	5.32		3060
BR+EDR	10.01	10.02	20	
2.4GHz band Wi-Fi	14.34	27.16	20	
5.8GHz band Wi-Fi	8.83	7.63		

> IC requirements: The EUT shall comply with the requirement of RSS-102 section 4 Exposure Limits.

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

- below 20 MHz<sup>6</sup> and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);
- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than  $4.49/f^{0.5}$  W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than  $1.31 \times 10^{-2} f^{0.6834}$  W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the e.i.r.p. was derived.

# a) EUT RF Exposure Evaluation standalone operations, Worst Case mode

Test Mode	Maximum e.i.r.p (dBm)	Maximum e.i.r.p (W)	Limit (W)
2.4GHz band Wi-Fi	15.10	0.032	2.68
5.8GHz band Wi-Fi	8.56	0.007	4.88

"RF Radiation Exposure Statement Caution: This Transmitter must be installed to provide a separation distance of at least 20 cm from all persons."