

US Tech Test Report:
FCC ID:
Test Report Number:
Issue Date:
Customer:
Model:

FCC Part 15 Certification
2AB5RHUB522
26-0133
August 24, 2026
SwipeSense, Inc.
HUB522

Maximum Public Exposure to RF (MPE) CFR 15.247 (i), CFR 1.1310 (e)

The maximum exposure level to the public from the RF power of the EUT shall not exceed a power density, **S** as per the respective limits in Table 1 below, at a distance, d, of 20 cm (Mobile condition) from the EUT.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

Therefore, for:

MPE for 2400 MHz – 2483.5 MHz for Bluetooth LE:

Limit: 1.0 mW/cm²

Peak Power (dBm) = 4.7 dBm

Peak Power (Watts) = 0.00295 W

Gain of Transmit Antenna = +0.7 dBi = 1.17 numeric(Highest Gain

Antenna)

d = Distance = 20 cm = 0.2 m

$$\begin{aligned} S &= (PG/4\pi d^2) = EIRP/4A = 0.00295(1.17)/4*\pi*0.2*0.2 \\ &= 0.0035/0.5030 = 0.00696 \text{ W/m}^2 \\ &= (0.00696 \text{ W/m}^2) (1\text{m}^2/\text{W}) (0.1 \text{ mW/cm}^2) \\ &= 0.000696 \text{ mW/cm}^2 \end{aligned}$$

which is << less than S = 1.0 mW/cm²

Separation Distance = 20 cm.

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MPE for 2400 MHz – 2483.5 MHz for 2.4 GHz:

Limit: 1.0 mW/cm²
Peak Power (dBm) = 14.32 dBm
Peak Power (Watts) = 0.02704 W
Gain of Transmit Antenna = +0.7 dBi = 1.17 numeric(Highest Gain
Antenna)
d = Distance = 20 cm = 0.2 m

$$\begin{aligned} S &= (PG / 4\pi d^2) = EIRP / 4A = 0.027(1.17) / 4 * \pi * 0.2 * 0.2 \\ &= 0.0316 / 0.5030 = 0.0628 \text{ W/m}^2 \\ &= (0.0628 \text{ W/m}^2) (1\text{m}^2/\text{W}) (0.1 \text{ mW/cm}^2) \\ &= 0.00628 \text{ mW/cm}^2 \end{aligned}$$

which is << less than S = 1.0 mW/cm²

Separation Distance = 20 cm.

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Simultaneous MPE (BLE + 2.4 GHz):

The contributions from each exemption in conjunction with the measured SAR shall be used to determine the simultaneous transmission according to the formula in 47 CFR 1.1307(b)(3)(ii)(B). The Sum of the applicable items for SAR-based, MPE-based and measured SAR, or MPE shall be less than 1, to determine simultaneous exposure compliance.

$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{Exposure Limit_k} \leq 1$	
$a =$	number of fixed, mobile, or portable RF sources claiming exemption using paragraph (b)(3)(i)(B) of this section for P_{th} , including existing exempt transmitters and those being added.
$b =$	number of fixed, mobile, or portable RF sources claiming exemption using paragraph (b)(3)(i)(C) of this section for Threshold ERP, including existing exempt transmitters and those being added.
$c =$	number of existing fixed, mobile, or portable RF sources with known evaluation for the specified minimum distance including existing evaluated transmitters.
$P_i =$	the available maximum time-averaged power or the ERP, whichever is greater, for fixed, mobile, or portable RF source i at a distance between 0.5 cm and 40 cm (inclusive).
$P_{th,i} =$	the exemption threshold power (P_{th}) according to paragraph (b)(3)(i)(B) of this section for fixed, mobile, or portable RF source i .
$ERP_j =$	the ERP of fixed, mobile, or portable RF source j .
$ERP_{th,j} =$	exemption threshold ERP for fixed, mobile, or portable RF source j , at a distance of at least $\lambda/2\pi$ according to the applicable formula of paragraph (b)(3)(i)(C) of this section.
$Evaluated_k =$	the maximum reported SAR or MPE of fixed, mobile, or portable RF source k either in the device or at the transmitter site from an existing evaluation at the location of exposure.
$Exposure Limit_k =$	either the general population/uncontrolled maximum permissible exposure (MPE) or specific absorption rate (SAR) limit for each fixed, mobile, or portable RF source k , as applicable from § 1.1310 of this chapter .

$$\text{BLE} + 2.4 \text{ GHz Radio} = 0.000696 + 0.00628 = 0.00698 < 1$$