

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

FCC Part 15 Certification
2AB5RCOM621
23-0088
June 20, 2023
SwipeSense, Inc.
Communication Hub

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) = 1.86 dBm

Peak Power (Watts) = 0.0015 W

Gain of Transmit Antenna = +1.83 dB_i = 1.52 numeric (Highest Gain Antenna)

d = Distance = 20 cm = 0.2 m

$$\begin{aligned} S &= (PG / 4\pi d^2) = EIRP/4A = 0.0015(1.52)/4\pi \cdot 0.2^2 \\ &= 0.00228/0.5030 = 0.00453 \text{ W/m}^2 \\ &= (0.00453 \text{ W/m}^2) (1\text{m}^2/\text{W}) (0.1 \text{ mW/cm}^2) \\ &= 0.000453 \text{ mW/cm}^2 \end{aligned}$$

which is << less than S = 1.0 mW/cm²