

The Device is a **mobile** Two Position switch for periodic TX applications. Two Position switch is suitable for commercial and residential indoor application.

Two Position switch is evaluated for RF radiation exposure according to the provisions of FCC §2.1091, MPE guidelines identified in FCC §1.1310 and FCC KDB 447498:2015.

**Limits for General Population/Uncontrolled Exposure: 47 CFR 1.1310 Table 1 (B)**

**LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)**

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f <sup>2</sup>	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1.500-100.000			1.0	30

Where  $f$  is in MHz

The worst-case scenario is provided at 431.06 MHz.

The maximum power density exposure is:

$$S = 0.287 \text{ mW/cm}^2, \text{ for uncontrolled exposure}$$

Measured Radiated field strength is for fundamental frequencies 431.06 MHz and 433.06 MHz

Frequency (MHz)	Measured Radiated Peak Field Strength (E) (dB $\mu$ V/m)	Radiated EIRP EIRP(dBm)=[E(dB $\mu$ V/m) - 95.3]	EIRP (mW)
431.06	85.04	-10.26	0.0942
433.06	84.33	-10.97	0.0800
<b>Worst Case scenario</b>			
As per Tune Procedure absolute max TX power	Transmit power (dBm)	Transmit antenna Gain (dBi)	EIRP (dBm)
	10	-6	4
		<b>2.512</b>	

Using worst case scenario, the highest calculated EIRP value for the pulsed transmitter was rounded up to **2.5 mW**.

Using the highest transmitted power general equation, at a distance of 20 cm

$$S = EIRP / (4 \pi R^2)$$

Where: S, power density in 'mW/cm<sup>2</sup>'

EIRP, Effective Isotropic Radiated Power in 'mW'

R, distance to the center of the radiation of the antenna in 'cm'

The RF exposure from the radio is less than the limit specified as shown below and meets the exemption criteria.

$$0.000497359 \text{ mW/cm}^2 = (2.5 \text{ mW}) / (4 \times \pi \times 20^2)$$

$$S = 0.0005 \text{ mW/cm}^2 \quad <<< 0.287 \text{ mW/cm}^2 \text{ (max limit)}$$

The manufacturer manual specified a minimum safe distance of **20 cm**.