

RF EXPOSURE EVALUATION

Applicant : SJ system

Applicant Address : #362-15, Daeya-dong, Siheung-si, Gyeonggi-do, 429-010 Korea

Kind of Product : Paging Transmitter

Equipment model name : SC-100T

Antenna type : Helical antenna Gain: 0dBi

Frequency Range : 450.025 ~ 468.870 MHz



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** MPE Calculations **

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the user. The MPE calculation for this exposure is shown below.

The peak radiated output power (ERP) is calculated as follows:

$EIR = P + G$ $EIR = 32.03\text{dBm}$	Where, P = Power input to the antenna (mW) G = Power gain of the antenna (dBi)
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The numeric gain(G) of the antenna with a gain specified in dB is determined by:

$$G = \text{Log}^{-1} (\text{dB antenna gain} / 10)$$

$$G = \text{Log}^{-1} (0 / 10)$$

$$G = 1$$

Power density at the specific separation:

$S = PG/(4R^2\pi)$ $S = ((1595 * 1) / (4 * 20^2 * \pi))$ $S = 0.3177 \text{ mW/cm}^2$	Where, S = Maximum power density (mW/cm^2) P = Power input to the antenna (mW) G = Numeric power gain of the antenna R = Distance to the center of the radiation of the antenna (20cm = limit for MPE)
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The Maximum permissible exposure (MPE) for the general population as 0.3 mW/cm^2 .

For a Channel Frequency : 457.575MHz

Estimated safe separation:

$R = \sqrt{(PG / 4\pi)}$ $R = \sqrt{(1595 * 1 / 4\pi)}$ $R = 11.27 \text{ cm}$	Where, P = Power input to the antenna (mW) G = Numeric power gain of the antenna R = Distance to the center of the radiation of the antenna (20cm = limit for MPE)
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