

1.1310 & 2.1091(mobile) or 2.1093(portable) / RSS-102 Sec 4.2-Canada Safety Code 6; Table 5**Maximum Permissible Exposure (MPE)**

Radiofrequency radiation exposure limits. - The criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radiofrequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of §2.1093 of this chapter.

1.1307 (b) In addition to the actions listed in paragraph (a) of this section, Commission actions granting construction permits, licenses to transmit or renewals thereof, equipment authorizations or modifications in existing facilities, require the preparation of an Environmental Assessment (EA) if the particular facility, operation or transmitter would cause human exposure to levels of radiofrequency radiation in excess of the limits in §§1.1310 and 2.1093 of this chapter.

Mode	unit 2070 Field strength (dbuV/m)	EIRP (dbm)	unit 2072 conducted power (dbm)	conducted power (milliwatts)	antenna gain (dbi)	antenna gain numeric
AM	121.66	27.66	21.5	140	6.16	4.13
FM	122.43	28.43	24.84	300	3.59	2.29

Determine the maximum power density for the general / uncontrolled population minimum separation distance of 20 cm. ($f_{\text{MHz}} / 1500 \text{ mW/cm}^2 == f_{\text{MHz}} / 150 \text{ W/M}^2$)

The power density is calculated as:

$$P_d = \frac{P_t \times G}{4 \times \pi \times r^2}$$

P_d = power density in mW/cm^2

P_t = transmit power in milliwatts

G = numeric antenna gain

r = distance between body and transmitter in centimeters.

FCC Limits: 926.8MHz / 1500 = 0.618 mW / cm^2 @ 20cm

IC Limits: 926.8MHz / 150 = 6.18 W / M^2 (@ 0.2M)

FM Mode

Max antenna gain = 3.59 dBi = 2.29 numeric

Max TX power = 24.84 dBm = 300 milliwatts

results: $P_D = (300 \times 2.29) / (4 \times \pi \times 20\text{cm}^2) = 0.137 \text{ mW} / \text{cm}^2 @ 20 \text{ cm}$
 $\text{W/m}^2 = 10 \text{ times mW/cm}^2 = 1.37 \text{ W/M}^2 @ 0.2 \text{ M}$

AM Mode

Max antenna gain = 6.16 dBi = 4.13 numeric

Max TX power = 21.5 dBm = 140 milliwatts

results: $P_D = (140 \times 4.13) / (4 \times \pi \times 20\text{cm}^2) = .115 \text{ mW} / \text{cm}^2 @ 20 \text{ cm}$
 $\text{W/m}^2 = 10 \text{ times mW/cm}^2 = 1.15 \text{ W/M}^2 @ 0.2 \text{ M}$

These results are not in excess of the limits set forth in the rules, therefore an EA is not required.