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Maximum Permissible Exposure Calculations

Calculations prepared for:
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Model Number: M64700-50
FCC Identification:

Fundamental Operating Frequency: 794 MHz to 806 MHz

Maximum Rated Output Power: 25 Watts (43.98 dBm)
Measured Maximum Output Power: 25 Watts (43.98 dBm)
(Antenna terminal, 794MHz, 800MHz and 806MHz, ERP)

MPE limit in accordance with FCC part 1.1310, Table 1 (B)
Limit for Maximum permissible exposure: (B) Limit for General population/uncontrolled Exposure.
The limit is f/1500 mW/cm^2 where f = frequency in MHz.
Worst case limit is at 794MHz which gives a limit of 0.5293 mW/cm^2.
According to the customer, the worst case antenna to be used has 0 dBi gain.
EIRP=43.98 dBm + 0 dBi=43.98 dBm EIRP

Avg Power Output (Watts)	Distance (meter)	Power Density (W/m^2)	Power Density (mW/cm^2)	Limit (mW/Cm^2)	Result
12.5	1	0.9947	0.0095	0.5293	Pass

P

ower Density (W/M^2) = $(30 * P_t * G) / (d^2 * Zo)$

P_t = Power Delivered to the Antenna
G = Antenna Gain
d = Distance in meters
Zo = Impedance of Free Space = 377 Ω

According to the customer, the normal separation distance is 100cm from all persons. The antenna is mounted to the exterior of a police vehicle and actual measurements made on a vehicle came up with a 100cm distance from the externally located antenna and the internally located personnel. According to the customer, the EUT duty cycle would typically be less than 0.1% and maybe 1% as a worst case scenario. As can be seen from the MPE results in the above table, this device passes the limits specified in 1.1310 at a distance of 100 cm at the rated output power of 25 Watts even when using a 50% duty cycle.