5473A Clouds Rest Road : Mariposa, CA 95338 : Phone 209-966-5420 : Fax 209-742-6133

Maximum Permissible Exposure Calculations

Calculations prepared for:
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Model Number: M64450G25
FCC Identification:

Fundamental Operating Frequency: 450 MHz to 505.5 MHz

Maximum Rated Output Power: 45 Watts (46.53 dBm)
Measured Maximum Output Power: 44.7 Watts (46.50 dBm)
(Antenna terminal, 505.5 MHz, 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 450 MHz which gives a limit of 0.300 mW/cm^2.
According to the customer, the worst case antenna to be used has 0 dBi gain.
EIRP=46.50 dBm + 0 dBi=46.50 dBm

Avg Power Output (Watts)	Distance (meter)	Power Density (W/m^2)	Power Density (mW/cm^2)	Limit (mW/Cm^2)	Result
22.5	1	1.7905	0.1790	0.3000	Pass

Power 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 100 cm from all persons. The antenna is mounted to the exterior of a police vehicle and actual measurements made on the vehicle came up with a 100 cm 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 the worst case scenario. As can be seen from the MPE results, this device passes the limits specified in 1.1310 at a distance of 100 cm and at the rated output power of 45 Watts even using a 50% duty cycle.