



COMPANY NAME: TOPAZ3, L.L.C..
 EUT: SM-3450 MOBILE RADIO
 CLIENT REFERENCE NUMBER: QRTL00-316
 WORK ORDER NUMBER: 2000301
 FCC ID: 07KSM3450U2

11 FCC Rules and Regulations Part 1.1307, 1.1310, 2.1091, 2.1093: RF EXPOSURES

The manufacturer does not specify or sale any antenna with the radio identified in this report.

The maximum distance, from the antenna at which MPE is met or exceeded, is calculated from the equation relating field strength E in V/m, transmit power P in Watts, transmit antenna numeric gain G , and separation distance in meters:

$$E(V/m) = \frac{\sqrt{30 \times P \times G}}{d}$$

$$\text{Power density: } P_d (mW/cm^2) = \frac{E^2}{3770}$$

Limit for occupational/controlled exposure (at 440 MHz) = f(MHz)/300 mW/cm²

Limit for general population/uncontrolled exposure (at 440 MHz) = f(MHz)/1500 mW/cm²

11.1 MPE Calculation

Antennae: Typical land mobile antenna available on the market and commonly chosen by end-users for vehicle application.

11.1.1 MPE RADII FOR UHF BAND (440 - 470 MHz¹) FOR OCCUPATIONAL/CONTROLLED EXPOSURE

Frequency 440 MHz Limit Occ. 1.47

Power ^B	dBd Antenna Gain ^C													
(Watt)	0		1		2		3		4		5		6	
	cm	in	cm	in	cm	in	cm	in	cm	in	cm	in	cm	in
10	30	12	33	13	38	15	42	17	47	19	53	21	59	23
30	52	20	58	23	65	26	73	29	82	32	92	36	103	41
40	60	24	67	26	75	30	84	33	94	37	106	42	119	47

NOTE:

^A = Distances are calculated for the largest (worst-case) MPE radii

^B = Power delivered to antenna

^C = Gains are compared to an ideal 1/2-wave dipole (0 dBd = 2.15 dBi)

11.1.2 MPE RADII FOR UHF BAND (440 - 470 MHz¹) FOR GENERAL POPULATION/UNCONTROLLED EXPOSURE

Limit Gen 0.29

Power ^B	dBd Antenna Gain ^C													
(Watt)	0		1		2		3		4		5		6	
	cm	in	cm	in	cm	in	cm	in	cm	in	cm	in	cm	in
10	67	26	75	30	84	33	95	37	106	42	119	47	134	53
30	116	46	130	51	146	57	164	65	184	72	207	81	232	91
40	134	53	151	59	169	67	190	75	213	84	239	94	268	106

NOTE:

^A = Distances are calculated for the largest (worst-case) MPE radii

^B = Power delivered to antenna

^C = Gains are compared to an ideal 1/2-wave dipole (0 dBd = 2.15 dBi)

Instructions will be placed in the user manual instructing installers and users to maintain the MPE distances during operation of the EUT. It is the responsibility of the licensee, when applying for a license, to demonstrate compliance with the FCC RF exposures requirements (MPE) using an antenna different from those specified by the manufacturer and reported on file at the FCC.