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**RF exposure requirements – ZTE MF30**

Dear Reviewer,

The maximum measured power output is

GSM 850:33.04dBm

GSM 1900:30.93dBm

UMTS 850: 22.24dBm

UMTS 1900: 22.85dBm

802.11b/g: 19.50dBm

the maximum antenna gain for integral antenna is

GSM 850:-1.1dBi

GSM 1900:1.9dBi

UMTS 850: -1.1dBi

UMTS 1900: 1.9dBi

802.11b/g: 1.2dBi

The maximum permissible exposure is defined in 47 CFR 1.1310 with 1 mW/cm<sup>2</sup>.

The Transmitter is using external antennas that operate at 20 cm or more from nearby persons.

The maximum permitted level is calculated using the general equation:

$$S = P' / 4\pi R^2$$

$$\text{GSM 850: } P' = 33.04\text{dBm} + (-1.1\text{dBi}) = 31.94\text{dBm} = 1563\text{mW}$$

$$\text{GSM1900: } P' = 30.93\text{dBm} + 1.9\text{dBi} = 32.83\text{dBm} = 1918\text{mW}$$

$$\text{UMTS850: } P' = 22.24\text{dBm} + (-1.1\text{dBi}) = 21.14\text{dBm} = 130\text{mW}$$

$$\text{UMTS1900: } P' = 22.85\text{dBm} + 1.9\text{dBi} = 24.75\text{dBm} = 298\text{mW}$$

$$\text{802.11b/g: } P' = 19.50\text{dBm} + 1.2\text{dBi} = 20.7\text{dBm} = 117\text{mW}$$

$$R = 20\text{cm}$$

$$\pi = 3.1416$$

Solving for S, the power density at 20 cm is

$$\text{GSM 850: } \mathbf{0.310\text{mW/cm}^2}$$

$$\text{GSM1900: } \mathbf{0.381\text{mW/cm}^2}$$

$$\text{UMTS850: } \mathbf{0.025\text{mW/cm}^2}$$

$$\text{UMTS1900: } \mathbf{0.059\text{mW/cm}^2}$$

$$\text{802.11b/g: } \mathbf{0.023\text{mW/cm}^2}$$

For simultaneous transmission, maximum value is

$$\text{GSM1900} + \text{802.11b/g} = 0.381\text{mW/cm}^2 + 0.023\text{mW/cm}^2 = \mathbf{0.404\text{mW/cm}^2}$$

So the limit is kept.

Best Regard.

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