



RF exposure requirements – ZTE MF210

Dear Reviewer,

The maximum measured power output is

GSM 850:30.58dBm

GSM 1900:27.72dBm

UMTS 850: 25.75dBm

UMTS 1900: 24.47dBm

the maximum antenna gain for integral antenna is

GSM 850:-1.6dBi

GSM 1900:1.12dBi

UMTS 850: -1.6dBi

UMTS 1900: 1.12dBi

The maximum permissible exposure is defined in 47 CFR 1.1310 with 1 mW/cm².

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:

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

$$\text{GSM 850: } P' = 30.58\text{dBm} + (-1.6\text{dBi}) = 28.98\text{dBm} = 791\text{mW}$$

$$\text{GSM1900: } P' = 27.72\text{dBm} + 1.12\text{dBi} = 28.84\text{dBm} = 766\text{mW}$$

$$\text{UMTS850: } P' = 25.75\text{dBm} + (-1.6\text{dBi}) = 24.15\text{dBm} = 260\text{mW}$$

$$\text{UMTS1900: } P' = 24.47\text{dBm} + 1.12\text{dBi} = 25.59\text{dBm} = 362\text{mW}$$

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

$$\pi = 3.1416$$

Solving for S, the power density at 20 cm is

$$\text{GSM 850: } \mathbf{0.157\text{mW/ cm}^2}$$

$$\text{GSM1900: } \mathbf{0.152\text{mW/ cm}^2}$$

$$\text{UMTS850: } \mathbf{0.052\text{mW/ cm}^2}$$

$$\text{UMTS1900: } \mathbf{0.072\text{mW/ cm}^2}$$

So the limit is kept.

Best Regard.

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Xue Zhen

Telecommunication Metrology Center of MIIT

No 52 Huayuanbei Road, Haidian District Beijing P.R.China 100083