FCC ID: WLHBAS-1000 **ATTACHMENT**

** MPE Calculations for GSM 850**

The MPE calculation for this exposure is shown below.

The peak radiated output power (EIRP) is calculated as follows:

EIRP = P + G EIRP = 31.8 dBm + 2dBi EIRP = 33.8 dBm	Where, P = Power input to the antenna (mW) G = Power gain of the antenna (dBi)

Power density at the specific separation:

$S = PG/(4R^2\pi)$ $S = (1513.56*1.58) / (4 * 20^2 * \pi)$ $S = 0.4775\ mW/cm^2$	Where, S = Maximum power density (mW/cm^2) P = Power input to the antenna (mW) G = Numeric power gain of the antenna R = Distance to the center of the radiation of the antenna (20cm = limit for MPE)

The Maximum permissible exposure (MPE) for the general population is 1 mW/cm^2 .

The power density does not exceed the 1 mW/cm^2 limit.

Therefore, the exposure condition is compliant with FCC rules.

Estimated safe separation:

$R = \sqrt{(PG / 4\pi)}$ $R = \sqrt{(1513.56*1.58/ 4\pi)}$ R = 13.82Cm	Where, P = Power input to the antenna (mW) G = Numeric power gain of the antenna R = Distance to the center of the radiation of the antenna (20cm = limit for MPE)

The numeric gain(G) of the antenna with a gain specified in dB is determined by:

$G = Log^{-1}$ (dB antenna gain / 10)

$G = Log^{-1}$ (2 / 10)

G = 1.58

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** MPE Calculations for GSM 1900**

The MPE calculation for this exposure is shown below.

The peak radiated output power (EIRP) is calculated as follows:

EIRP = P + G EIRP = 29.3 dBm + 1dBi EIRP = 30.3 dBm	Where, P = Power input to the antenna (mW) G = Power gain of the antenna (dBi)

Power density at the specific separation:

$S = PG/(4R^2\pi)$ $S = (851.14*1.26) / (4 * 20^2 * \pi)$ $S = 0.2113\ mW/cm^2$	Where, S = Maximum power density (mW/cm^2) P = Power input to the antenna (mW) G = Numeric power gain of the antenna R = Distance to the center of the radiation of the antenna (20cm = limit for MPE)

The Maximum permissible exposure (MPE) for the general population is 1 mW/cm^2 .

The power density does not exceed the 1 mW/cm^2 limit.

Therefore, the exposure condition is compliant with FCC rules.

Estimated safe separation:

$R = \sqrt{(PG / 4\pi)}$ $R = \sqrt{(851.14*1.26/ 4\pi)}$ R = 9.24Cm	Where, P = Power input to the antenna (mW) G = Numeric power gain of the antenna R = Distance to the center of the radiation of the antenna (20cm = limit for MPE)

The numeric gain(G) of the antenna with a gain specified in dB is determined by:

$G = Log^{-1}$ (dB antenna gain / 10)

$G = Log^{-1}$ (1 / 10)

G = 1.26