

FCC ID: NZLUAHLCA

RF Exposure/ S A R Statement

Applicant: Gentex Corporation

Model: UAHLCA

Calculations:

The following information provides the minimum separation distance for the antenna as part of the design for the "UAHLCA" as calculated from the FCC OET Bulletin 65, Appendix A, Table (B) Limits for General Population/Uncontrolled Exposure. This calculation is based on the highest EIRP possible from the system, considering maximum power and antenna gain, and considering an $f/1500\text{mW}/\text{cm}^2$ ($0.601\text{mW}/\text{cm}^2$) uncontrolled exposure limit. The power density formula used was:

$$S = (P \cdot G) / (4 \cdot \pi \cdot r^2)$$

Where

P = -1.36 dBm (Maximum DTS Power Output Power)

G = 2.5dBi (Numerical Antenna Gain, 2.5dBi)

R = 20.0cm

(P+G) = 1.14dBm + 1 (max tune-up tolerance)

Converting 2.14dBm to mW = 1.63mW

The Power Density S = $0.0003\text{mW}/\text{cm}^2$

This is less than the above limit as well as the RSS-102 limit in Section 2.5 Table 1 for a separation distance of 20mm of 30mW.

Where

P = -16.57 dBm (Maximum DSS Power Output Power)

G = 7.8dBi (Numerical Antenna Gain, 2.5dBi)

R = 20.0cm

(P+G) = -8.77dBm + 1 (max tune-up tolerance)

Converting -7.77dBm to mW = 0.17mW

The Power Density S = $0.00003\text{mW}/\text{cm}^2$

This is less than the above limit as well as the RSS-102 limit in Section 2.5 Table 1 for a separation distance of 20mm of 30mW.

Where

P = -7.87 dBm (Maximum DSC Power Output Power)

G = 0dBi (Numerical Antenna Gain, 2.5dBi)

R = 20.0cm

(P+G) = -7.87dBm + 1 (max tune-up tolerance)

Converting -6.87dBm to mW = 0.21mW

The Power Density S = $0.00004\text{mW}/\text{cm}^2$

This is less than the above limit as well as the RSS-102 limit in Section 2.5 Table 1 for a separation distance of 20mm of 30mW.

Simultaneous Transmission: $.0003 + .00003 + .00004 = 0.00037\text{mW}/\text{cm}^2$

