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Sunnyview MPE Calculation - OET Bulletin 65
FCC ID: SVF-SUNNYVIEW

The FCC requires that the calculated MPE be equal to or less than a given limit dependent on frequency at a distance of 20 cm from a device to the body of a user.
The MPE calculation as given in FCC OET Bulletin 65, page 19 is used to calculate the safe operating distance for the user.
The transmitter operation for the Sunnyview covers 2412- 2462MHz and 2402-2480MHz operating bands.
The following FCC Rule Parts are applicable:
Part 1.1310 – Radiofrequency radiation exposure limits
Part 2.1091(c) – Radiofrequency radiation exposure evaluation: mobile devices

Reference KDB447498D01:

8) Transmitters and modules for use in mobile exposure conditions that allow simultaneous transmission

(a) Transmitters and modules certified for mobile or portable exposure conditions and categorically excluded by § 2.1091(c) can be incorporated in mobile host devices without further testing or certification when:
The closest separation among all simultaneous transmitting antennas is ≥ 20 cm; or
The antenna separation distance and MPE compliance boundary requirements that enable all simultaneous transmitting antennas incorporated within the host to comply with MPE limits are specified in the application filing of at least one of the certified transmitters

incorporated in the host device. In addition, when transmitters certified for portable use are incorporated in a mobile host device the antenna(s) must be ≥ 5 cm from all other simultaneous transmitting antennas.

CONSIDERATIONS

The Sunnyview device has simultaneously operating transmitters:

Values (2412 - 2462MHz)

P = 0.041W; R = 20cm

G= 0.5dBm (x1.12)

Values: (2402 - 2408MHz)

P = 0.023W; R = 20cm

G= 0.5dBm (x1.12)

ie: Re § 2.1091(c) mobile exposure conditions are categorically excluded as ERP is less than 3W, and KDB447498D01 8(a) is applicable.

CALCULATION

Considering 2412 - 2462MHz operation (maximum power) as worst case MPE:

From OET Bulletin 65 the following far field power density equation is applicable:

$S = EIRP/4 \pi R^2$

Where S = Power density

EIRP = Effective Isotropically Radiated Power (EIRP = P x G)

P = Conducted Transmitter Power

G = Antenna Gain (relative to an isotropic radiator)

R = distance to the centre of radiation of the antenna

Requirement

From table 1 (b) - Limits for General Population/ Uncontrolled Exposure of

FCC Rule Part 1.1310 for 1,500-100,000MHz

$S = 1.0\ mW/cm^2$

Calculation for 20cm safe distance

$S = EIRP/4 \pi R^2$

$S = 0.041 \times 1.12/(12.56 \times 20^2)$

$= 0.046/ 5024$

$S = 0.00001$ mW/cm²

Conclusion

The Sunnyview at 20 cm meets the required RF exposure requirements.

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i. A.

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