MPE Calculation / RF Exposure

Product: Compact KIOSK
Applicant: GAUSYS
Model: HS101
Address: 4 floor #401, 606 Seobusaet-gil, Geumcheon-gu, Seoul, Korea
FCC ID: 2AVYI-HS101

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 the device to the body of the user. According to §2.1091, §2.1093 and §1.1307(b), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

▣WLAN

Classfication The antenna of this product is at least 20 cm away from the body of the user. So this product is classified as mobile device.

Max. tune-up power(dBm)

802.11b	802.11g	802.11n(HT20)
16.83	14.75	14.26

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

Where S = Power density

EIRP = Effective Isotropically Radiated Power

R = distance to the centre of radiation of the antenna

Values S = 1.0 mW/cm^2 for General population uncontrolled exposure (FCC Part 1.1310 Radiofrequency radiation exposure limits)

S = 1.0 mW/cm^2

PT = 16.83 dBm (48.19 mW) : measured maximum output power

G = Antenna gain = -0.55 dBi (0.881 in linear terms)

EIRP = PT x G

R = 20 cm

Calculation EIRP = 48.19 x 0.881 = 42.46 mW

S = 42.46/12.56 x (20)^2 = 42.46/5024

S = 0.00845 mW/cm^2

Conclusion **This confirms compliance to the required radio frequency radiation exposure limit of 1.0 mW/cm^2 at 20 cm operation.**

▣BT

Classfication The antenna of this product is at least 20 cm away from the body of the user. So this product is classified as mobile device.

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

Where

S = Power density

EIRP = Effective Isotropically Radiated Power

R = distance to the centre of radiation of the antenna

Values

S = 1.0 mW/cm^2 for General population uncontrolled exposure (FCC Part 1.1310 Radiofrequency radiation exposure limits)

S = 1.0 mW/cm^2

PT(BDR/EDR) = -11.47 dBm (0.07 mW) : measured maximum output power

G = Antenna gain = -0.55 dBi (0.881 in linear terms)

EIRP = PT x G

R = 20 cm

Calculation

EIRP(BDR/EDR) = 0.07 x 0.881 = 0.06 mW

S(BDR/EDR) = 0.06/12.56 x (20)^2 = 0.06/5024

S(BDR/EDR**) = 0.00001 mW/cm^2**

Conclusion **This confirms compliance to the required radio frequency radiation exposure limit of 1.0 mW/cm^2 at 20 cm operation.**