

INTERTEK TESTING SERVICES

RF Exposure

The Equipment under Test (EUT) is a wireless adapter for the SUPER GAMEPAD FOR SNES CLASSIC model: DGUN-2960 operating at 2.4GHz band. It is powered by DC 3.3V (Uii port) via NES Classic Edition Host Unit which can be powered by adapter with AC 120V/60Hz input. For more detail information pls. refer to the user manual.

Antenna Type: Integral antenna.

Antenna Gain: 0dBi.

The normal radiated output power (e.i.r.p) is: -13.0dBm (tolerance: +/- 3dB).

The normal conducted output power is: -13.0dBm (tolerance: +/- 3dB).

Modulation Type: GFSK.

According to the KDB 447498:

The Maximum peak radiated emission for the EUT is 83.6dBμV/m at 3m in the frequency 2405MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -11.63dBm

which is within the production variation.

The Minimum peak radiated emission for the EUT is 80.2dBμV/m at 3m in the frequency 2475MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -15.03dBm

which is within the production variation.

The maximum conducted output power specified is -10.0dBm = 0.1mW

The source- based time-averaging conducted output power

= $0.1 \cdot \text{Duty cycle mW}$ < 0.1mW (Duty cycle < 100%)

The SAR Exclusion Threshold Level:

= $3.0 \cdot (\text{min. test separation distance, mm}) / \sqrt{\text{freq. in GHz}}$

= $3.0 \cdot 5 / \sqrt{2.475}$ mW

= 9.53 mW

Since the source-based time-averaging conducted output power is well below the SAR low threshold level, so the EUT is considered to comply with SAR requirement without testing.

Simultaneous SAR Considerations:

Since the Equipment under Test (EUT) can be operated with the transmitter of Wii™ Classic controller, Simultaneous transmission need to be estimated.

According to the KDB 447498:

The maximum conducted power for EUT is -10.0dBm = 0.1mW;

The maximum conducted power for Wii™ Classic controller is 1.63mW. (Basing on FCC ID:POO-WC45)

In the simultaneous transmissions, the EUT estimated SAR value:

$$\begin{aligned} &= (\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm}) * [\text{sqrt}(\text{freq. in GHz})/7.5] \text{ W/kg} \\ &= 0.1/5 * [\text{sqrt}(2.475)/7.5] \text{ W/kg} \\ &= 0.004 \text{ W/kg} \end{aligned}$$

In the simultaneous transmissions, the Wii Classic controller estimated SAR value:

$$\begin{aligned} &= (\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm}) * [\text{sqrt}(\text{freq. in GHz})/7.5] \text{ W/kg} \\ &= 1.63/5 * [\text{sqrt}(2.475)/7.5] \text{ W/kg} \\ &= 0.068 \text{ W/kg} \end{aligned}$$

Sum of 1-g SAR of all simultaneously transmission operating mode:

$$\begin{aligned} &\text{The EUT estimated SAR} + \text{transmitter of Wii Classic controller estimated SAR} \\ &= 0.004 + 0.068 \text{ W/kg} \\ &= 0.072 \text{ W/kg} \leq 0.4 \text{ W/kg} \end{aligned}$$

The SAR Exclusion Threshold Level: $\leq 0.4 \text{ W/kg}$