

INTERTEK TESTING SERVICES

RF Exposure

The Equipment Under Test (EUT) is a Scanner with Wi-Fi function operating at 2412-2462MHz. 11 channels with 5MHz channel spacing for 802.11b/g/n-HT20. The EUT is powered by DC5V,1.5A (power by AC to DC adaptor). For more detailed features description, please refer to the user's manual.

WIFI Function:

Modulation Type: CCK, BPSK, QPSK, 16QAM, 64QAM, DQPSK, DBPSK

Antenna Type: Internal antenna

Antenna Gain: 2.9 dBi

The nominal conducted output power specified: 20dBm (Tolerance: +/- 3dB)

The maximum conducted output power for the EUT is 22.61dBm in the frequency 2412MHz at IEEE 802.11g which is within the production variation.

The minimum conducted output power for the EUT is 17.7dBm in the frequency 2462MHz at IEEE 802.11b which is within the production variation.

According to FCC Part 2.1091, this unlicensed transmitting devices is categorically excluded from routine environmental evaluation for RF exposure prior to equipment authorization or use, According to the KDB 447498 and OET 65, the simple calculation as below:

The source-based time averaged maximum radiated power = 23dBm+2.9dBi
=25.9dBm = 389.05mW

From above data, the exposed power density at a distance (R) of 20cm from the center of radiation of the antenna for 2.4GHz WIFI band can be calculated according to OET 65 as follow:

$$= 389.05\text{mW} / 4\pi R^2$$
$$= 0.0397 \text{ mW/cm}^2$$

The MPE limit is 1.0 mW/cm² for general population and uncontrolled exposure in the 2.4GHz Wi-Fi frequency range according to FCC Part 1.1310. As the measured power density at 20cm from the transmitter is lower than the MPE limit, the compliance to the MPE limit can be ensured by indicating the minimum 20cm separation between the transmitter's radiating structure and body of the user or nearby persons.