# 6  Safety Human Exposure

## 6.1 Radio Frequency Exposure Compliance

### 6.1.1 Electromagnetic Fields

**RESULT:**                                                                                                                **Pass**

**Test Specification**

Test standard                                          :    CFR47 FCC Part 2: Section 2.1091
CFR47 FCC Part 1: Section 1.1310
FCC KDB Publication 447498 v06
FCC KDB Publication 865664 D01 v01r04
FCC KDB Publication 865664 D02 v01r02
RSS-102 Issue 5 March 2015

➢  **FCC requirements**

**FCC requirement:** 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 limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 20cm normally can be maintained between the user and the device.

**MPE Calculation Method according to KDB 865664 D01**

Power Density: $S_{(mW/cm^2)} = PG/4\pi R^2$ or $EIRP/4\pi R^2$

Where:

$S$ = power density (mW/cm$^2$)

$P$ = power input to the antenna (mW)

$G$ = power gain of the antenna in the direction of interest relative to an isotropic radiator

$R$ = distance to the center of radiation of the antenna (cm)

**The nominal maximum conducted output power specified:**

2.4GHz FHSS: 20.00 dBm

Wi-Fi 802.11 b/g/n: 22.00 dBm

From the peak RF output power, the minimum mobile separation distance, d=20 cm, as well as the antenna gain (Max. 0.0 dBi for 2.4GHz FHSS, 0.0 dBi for Wi-Fi 802.11 b/g/n), the RF power density can be calculated as below:

For 2.4GHz FHSS: $S_{(mW/cm^2)} = PG/4\pi R^2 = 0.005$ mW/cm$^2$

For Wi-Fi 802.11 b/g/n: $S_{(mW/cm^2)} = PG/4\pi R^2 = 0.016$ mW/cm$^2$

**Limits for Maximum Permissible Exposure (MPE) according to FCC Part 1.1310:**

1.0 mW/cm$^2$