

# 1 Safety Human Exposure

## 1.1 Radio Frequency Exposure Compliance

### 1.1.1 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, section 7

➤ **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 447498 v06**

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

Where:

S = power density (mW/cm<sup>2</sup>)

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)

From the peak RF output power, the minimum mobile separation distance, d=20 cm, as well as the antenna gain (Max. 7dBi), the RF power density can be calculated as below:

$$S_{(mW/cm^2)} = PG/4\pi R^2$$

**a) EUT RF Exposure Evaluation operations, Worst Case mode**

Test Mode	Peak Power (dBm)	Antenna Gain (dBi)	e.i.r.p (dBm)	$S_{(mW/cm^2)} = PG/4\pi R^2$	Limit (mW/cm <sup>2</sup> )
BLE	-0.75	-0.8	-1.55	0.00014	1.0
LTE band 2	24.0	0.5	24.5	0.05610	

Note: Maximum antenna gain declared by the client.

**b) Simultaneous mode**

BLE+LTE:  $0.00014/1 + 0.05610/1 = 0.05624 < 1.0$ , compliant.

**“RF Radiation Exposure Statement Caution: This Transmitter must be installed to provide a separation distance of at least 20 cm from all persons.”**