Exhibit: RF Exposure – FCC

FCC ID: 2AJLM-UNT1422

Report File #: 7169006767-000

RF Exposure – FCC

The device is a mobile device intended to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure and the body of the user or nearby persons.

The EUT contains a 13.56 MHz transmitter and a 125 kHz transmitter. Simultaneous operation of the two transmitters is possible and therefore antenna co-location testing is also evaluated.

Radiofrequency Radiation Exposure Evaluation: Mobile Devices

Mobile devices shall be evaluated for RF radiation exposure according to the provisions of FCC §2.1091 and the MPE guidelines identified in FCC §1.1310.

As per FCC §1.1310 Table 1(B), the limit for Maximum Permissible Exposure (MPE) to radiofrequency electromagnetic fields for General Population/Uncontrolled Exposure in the frequency range of 0.3 MHz to 1.34 MHz is 100 mW/cm^2, and in the frequency range of 1.34 MHz to 30 MHz is $180/f^2$ mW/cm^2. Where f = frequency in MHz.

Limits are not defined for frequencies < 0.3MHz, however the output power of the 125 kHz transmitter is low. The limit for MPE at 300 kHz is applied to determine compliance.

Therefore, the limits for this device are as follows:

MPE Limits	
Frequency	**Limit**
125 kHz	100 mW/cm^2
13.56 MHz	0.979 mW/cm^2

The power density formula is given by:

$$P_d = (EIRP) / (4\pi R^2)$$

Where,
P_d = Power density in mW/cm^2
EIRP = Equivalent Isotropic Radiated Power = E(dBuV) – 95.2
π = 3.1416
R = Separation distance in cm

MPE Calculation: 125 kHz Transmitter

The 125 kHz transmitter has a maximum radiated output power of 75.74 dBµV (at 3m) which equals to an EIRP of (75.74 – 95.2) = -19.46 dBm or 0.01132 mW.
For a distance of 20cm, the power density is:

$$P_d = (0.01132\ mW) / (4 * 3.1416 * (20cm)^2)$$
$$P_d = 0.000002253\ mW/cm^2$$

The device passes the requirement. The calculated power density of 0.000002253 mW/cm^2 is below the 100 mW/cm^2 limit.

MPE Calculation: 13.56MHz Transmitter

The 13.56MHz transmitter has a maximum radiated output power of 63.42 dBµV (at 3m) which equals to an EIRP of (63.42 – 95.2) = -31.78 dBm or 0.0006637 mW.
For a distance of 20cm, the power density is:

$$P_d = (0.0006637mW) / (4 * 3.1416 * (20cm)^2)$$
$$P_d = 0.0000001320\ mW/cm^2$$

The device passes the requirement. The calculated power density of 0.0000001320 mW/cm^2 is below the 0.979 mW/cm^2 limit.

Calculations for simultaneous transmission device

As per FCC KDB447498 7.2:

> *Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneous transmitting antennas incorporated in a host device, based on the calculated/estimated, numerically modeled or measured field strengths or power density, is ≤ 1.0.*

MPE ratio = Ratio of power density to MPE limit, at the test frequency = P_d / (MPE limit)

MPE ratio for 125 kHz transmitter =
0.000002253 mW/cm^2 / 100 mW/cm^2 = 0.00000002253

MPE ratio for 13.56 MHz transmitter =
0.0000001320 mW/cm^2 / 100 mW/cm^2 = 0.000000001320

0.00000002253 + 0.000000001320 = 0.00000002385 < 1.0
MPE test exclusion applies for simultaneous transmission.