RF Exposure Evaluation
FCC 2.1091

UHF Radio:

The EUT is a wireless device used in a mobile application and will be at least 30 cm from any body part of the user or nearby persons.

The maximum calculated EIRP is 32.9 dBm (or 1.95 W). 1.95W was the UHF EIRP measured with the EUT simultaneously transmitting with Bluetooth radio.

Using the formula for the Power Density, $S = EIRP/ 4\pi D^2$, the distance D, where the Maximum Permissible Exposure (MPE) satisfies the FCC 1.1310 limit for General Population/Uncontrolled Exposure, can be calculated as:

$$D \geq \sqrt{(EIRP/ 4\pi S)}$$

According to FCC 1.1310, the MPE Limit at 410 MHz is 2.73 W/m^2, therefore $D \geq 0.24$ m.

A statement that a minimum separation distance of 30 cm between the antenna and persons is included in the User's Manual.

Bluetooth Radio:

The EUT is a wireless device used in a mobile application and will be at least 30 cm from any body part of the user or nearby persons.

The maximum conducted power is 0.0dBm (1mW); the antenna 4dBi gain; therefore, to comply with the requirements for RF Exposure, the MPE is calculated.

The maximum Peak EIRP calculated is as 4.0dBm or 2.51mW. 2.51mW was the Bluetooth EIRP measured with the EUT simultaneously transmitting with UHF radio.

The Power Density can be calculated using the formula
$$S = EIRP/ 4\pi D^2$$

Where: S is Power Density in W/m^2
            D is the distance from the antenna.

It is considered that 30cm is the minimum distance that a user can go near the EUT which is installed inside a host.

At 0.3 m, S = 0.00222 W/m^2, which is below the MPE Limit of 10 W/m^2

A statement that a minimum separation distance of 30 cm between the antenna and persons is included in the User's Manual.