

23rd November, 2009

With Reference to KDB447498v04

Item 4(c)(iii)(1):

‘Hand SAR is required for hand-held and hand-operated devices with output power $> 1000.[f(\text{GHz})]^{-0.5}$ mW that are designed with the hand operating closer than 5 cm from the antenna during normal use.’

Antennas Present:

GSM/UMTS 850 and 1900Mhz Bands;
WiFi 802.11 2.4 GHz Band;
Bluetooth 2.4 GHz Band
RFID 13.56 MHz

a. GSM/UMTS 850 and 1900Mhz Bands:

The hand operates no closer than 6.4cm – see Appendix A. Therefore the requirements of item 4(c)(iii)(1) are satisfied without SAR testing.

b. WiFi 802.11 & Bluetooth 2.4 GHz Bands:

The antennas are closer than 5cm from the hand. However, substituting 2.4GHz into the equation:

$$1000.[2.4]^{-0.5} \text{ mW} = 645\text{mW}$$

As the maximum power output of the 802.11 and Bluetooth are 80mW and 2.5mW, respectively, item 4(c)(iii)(1) is satisfied without SAR testing.

c. RFID 13.56Mhz Band:

The hand operates no closer than 5cm – see Appendix A. Therefore the requirements of item 4(c)(iii)(1) are satisfied without SAR testing. Also, substituting 0.01356GHz into the equation:

$$1000.[0.01356]^{-0.5} \text{ mW} = 8588\text{mW}$$

As the maximum power output of the 13.56Mhz antenna is 250mW item 4(c)(iii)(1) is satisfied without SAR testing.

Item 4(c)(iii)(3):

‘Body SAR is required for hand-held and hand-operated or wrist, feet and ankle worn devices that operate closer than 5 cm to the body and the output power is $> 300.[f(\text{GHz})]^{-0.5}$ mW.’

The device is not operated $< 20\text{cm}$ from the body therefore Item 4(c)(iii)(3) is satisfied without SAR testing.

Appendix A

23rd November, 2009



23rd November, 2009

VIEW SHOWING POSITION OF RFID ANTENNA

