

FccID: H9PLA2400

WLAN PC Card, 1 Mbps, CR-1

Conf Num: EA99056

Class II Permissive Change

Correspondence # 17264

Date Emailed: 12/5/00

Question 1

The WARNING and CAUTION statements indicated in the reply have some conflicts and inconsistencies. The proposed statements (included in text boxes) should indicate that the operating requirements are for meeting FCC RF exposure compliance; that is, "To comply with FCC ..." instead of "To confirm to ...".

Answer:

The word confirm does not appear anywhere in any of the text boxes. The word used is conform. The word conform is a synonym of the word comply.

From webster.com "conform: to be obedient or compliant -- usually used with to

b : to act in accordance with prevailing standards "

This wording was accepted in the past. The meaning is the same. Please accept it.

Question 2

The operating instructions and warning statement indicated in the manual of the body-worn printer for the Zebra antenna is insufficient for users who do not have access to such instructions to satisfy RF exposure compliance. The photo included in the reply indicates the device may be used by consumers in stores. When it is worn with a shoulder strap, there is a high potential for consumers to wear the device with the antenna facing their body or using the strap in other manners to carry this device. In order for this warning statements to be useful, it should be placed on the final product operating with this transmitter. The specific operating requirements and separation distance must be indicated on the label. The warning label should be located so that the RF exposure info is visible to persons requiring this info to satisfy compliance, in an easily readable and understandable format. Depending on the operating configurations and separation distance, if it is determined that SAR test data is needed to show compliance, this antenna configuration should be filed under a new filing with its own FCC ID.

Answer:

This device is only to be used by trained employees that have access to the instructions. It is not marketed to the general public nor used by them. This printer is used for pricing labels as the photo shows.

Question 3

The RF exposure info for the Zebra antenna indicates the antenna could be as close as 8 cm of a person's body. The reply included operating instructions indicates the printer, by design, should provide about 10 cm of separation but advise users to avoid prolonged exposure at close than 5 cm. No supporting information or test data has been submitted that identifies whether the exposure conditions at closer than 5 cm is non-compliant or should be avoided. If the device can provide 10 cm separation by design, why should users be worried about maintaining at least 5 cm separation. However, the 10 cm is in conflict with the 8 cm indicated in the previously submitted info. Body-worn operating configurations are required to satisfy SAR requirements. Whether SAR test data may be needed to demonstrate compliance is highly dependent on the separation distance between the antenna and its user's body. At close range, a difference of 0.5 cm could result in 50% difference in SAR. These discrepancies must be clarified in order to determine if SAR compliance could become an issue. Please provide the smallest measured distance between the antenna and the outer surface of the printer, on the side(s) that could be carried next to the user. Please also identify the location of the WARNING label to be placed on this device. An example warning statement for general users may read - WARNING: To comply with FCC RF exposure requirements, this device must be carried at the waist, with the supplied belt-clip or shoulder strap to provide a least xx cm between the antenna installed within this device and the user's body during transmission (provided there is sufficient separation distance and SAR data is not needed to show compliance).

Answer:

The operating instructions did not say that the printer would provide 10 cm of separation. They say the printer is 10.2 cm wide. The minimum measured distance from the operators body to the antenna is 8 cm. Their is no conflict.

The power density limit as shown in OET bulliten 65 table 1b (I'm using the general population limit) is 1 mW/cm².

$$S=P * G/4*\pi*r^2$$

$$P=500 \text{ mW} * .32 = 160 \text{ mW}$$

$$G=10^{(1.9/10)} = 1.55$$

$$R=\text{sqr}(P*G/4*\pi) = 4.44 \text{ cm}$$

Question 4

The EIRP indicated in the antenna summary for the Zebra antenna is incorrect. The MPE distance for the Motorola antenna has been estimated using incorrect EIRP.

Answer:

$$\text{EIRP} = P * G = 160 * 1.55 = 248 \text{ mW}$$

This differs from the 247.5 mW listed in the table because the table calculation uses more decimal places for cable loss.

For the Motorola antenna even though it is a mobile device it uses the portable duty factor:

$$R = \sqrt{500 * .32 * 10^{((1.2 - .08) / 10) / 4 * \pi}}$$

R = 4.06 cm again the difference is due to number of decimal places used in the calculation.

Question 5

FYI - The revised antenna summary list appears to indicate the hand-held products are for occupational use. This should not be interpreted as occupational exposure limits may apply to these devices. In order for occupational limits to be applicable, persons exposed must operate such transmitters for work related use only and they must have appropriate training so that they will have the knowledge to control their exposure conditions and duration to satisfy the higher occupational exposure limit. This transmitter will require additional supporting info to qualify for occupational exposure requirements.

Answer:**Question 6**

The previous Permissive Change was approved for 6 hand-held and one belt-worn configurations. The antenna summary provided in the current filing indicates there are 9 antenna configurations for the previous Class II filing; please clarify discrepancies.

Answer:

Two of the nine were previously withdrawn. I have uploaded a corrected list.

Question 7

Note: Peak conducted output is 500 mW

Proposed Grant Condition - This Class II Permissive Change filing adds 2 antenna configurations to previous filings, including a hand-held only terminals and a body-worn configurations. Antennas used for this transmitter must operate with a duty factor not exceeding 60% for access point (fixed) configurations and not exceeding 32 % for all other configurations, according to the design and network protocol requirements, for satisfying RF exposure compliance. An RF exposure label as accepted for this filing must be displayed on the body-worn printer. The conditions stated in the original filing are also applicable to the antenna configurations in this Permissive Change filing.

Answer:

Please remove "An RF exposure label as accepted for this filing must be displayed on the body-worn printer."