

Subject:

RE: Response to Inquiry to FCC (Tracking Number 455003)

From: oetech@fccsun27w.fcc.gov [<mailto:oetech@fccsun27w.fcc.gov>]

Sent: Wednesday, June 27, 2012 1:01 PM

To: Nicholas Abbondante Intertek

Subject: Response to Inquiry to FCC (Tracking Number 455003)



Office of Engineering and Technology

Inquiry on 06/19/2012 :

Inquiry:

Per the FCC guidance on the March 2012 TCB conference call, the FCC has requested that for portable devices subject to routine RF exposure evaluation under 2.1093 for which no SAR report will be provided, including those which meet the 60/f exemption, a PBA inquiry must be submitted to address RF exposure. In compliance with this requirement, this PBA requests approval of the following RF exposure exemption for a portable device worn on body due to low output power. Additionally this PBA requests guidance on the appropriate test configuration to be used for the device.

The client, Adidas has developed a 2.4 GHz band 802.15.4 protocol radio for use in a body worn POD device. The POD has three usage scenarios. One is charging, docked in a charging system, in which configuration the 802.15.4 POD transmitter is not active and there is no RF exposure question. The second usage is undocked, standalone use, such as placed on a table, which as a mobile configuration would not require SAR testing and would be handled through MPE analysis. The third usage scenario is with the POD docked in a player worn shirt, in a portable configuration on the torso of a user. Please reference the included ?POD and Shirt.pdf? file which gives a visual representation of the POD and Shirt.

The player worn shirt contains leads which connect electrically to the POD when docked in the shirt, and which relay biometric information to the POD to be broadcast over the 802.15.4 radio. Therefore this configuration is electrically different from the standalone POD configuration. Please confirm that testing of the shirt mode is required due to the addition of the electrical leads present in the shirt, and if the FCC agrees that testing of the shirt mode is required, please indicate how the shirt should be arranged during testing. Should the shirt be placed flat on the table, or should the shirt be placed on a wooden or plastic test fixture to hold it upright as it would be in normal use when worn on the body? Further, Adidas has expressed an interest in placing the shirt on a torso simulator filled with tissue simulation fluid for the 15.247 testing and has requested the FCC's opinion on this technique.

Initial test results for the 802.15.4 radio in the POD device indicate an EIRP of 5.52 dBm when tested standalone without the shirt leads attached. 802.15.4 radios operated under 47CFR FCC Part 15 Subpart C 15.247 are subject to routine RF exposure evaluation and the peak EIRP of 5.52 dBm (3.6 mW) is below the 60/f average power exemption threshold of 25 mW. The usage type for this device would be ?General Population/Uncontrolled? therefore the averaging time allowed for RF exposure is 6 minutes, however it is not necessary to average the power as the peak is well below the exemption threshold. If the low power results are maintained in the configuration with the shirt attached, it is expected that the POD device would comply with the RF exposure requirements through exemption and

a SAR report would not be required. This is not taking into account any averaging, which would further reduce the output power.

Please indicate whether the FCC agrees with the basis for RF exposure exemption and please also indicate the preferred approach to compliance of the configuration with the POD docked in the body worn shirt.

FCC response on 06/27/2012

Devices authorized under FCC Rule §15.247 are not subject to the requirement to perform routine SAR evaluation to demonstrate compliance. Devices submitted to TCBs for approval must meet the 60/f(GHz) mW output power threshold in order to be eligible for SAR test exclusion.

The maximum output power of the DUT (3.6 mW) meets the threshold for SAR exclusion and SAR testing for the DUT may be omitted.

Based upon your description, the leads imbedded in the shirt do not radiate. If this is the case, the addition of electrical leads in the shirt does not necessitate additional RF exposure testing.

Please be reminded that the entire assembly, with leads, needs to be tested for EMC compliance. Please consult ANSI C63.4, Section 6.1.4 for general guidance.

Attachment Details:

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