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Lähettäjä:oetech@fccsun27w.fcc.govLähetetty:25. syyskuuta 2015 19:47Vastaanottaja:Yeh, John (Taipei)Aihe:Response to Inquiry to FCC (Tracking Number 162598)



Office of Engineering and Technology

Inquiry on 06/03/2015 : Inquiry: Hello Sir

The

device is a portable device with RFID/WLAN/BT functions. This device is intended for reading RFID tags and visible encoded information tags. The attachments include the specified maximum power, antenna location, and operation description. Based on the operation description, whether only extremity exposure will be required? If only extremity exposure is required, what is your suggested test plan? Which surfaces/configurations/distance shall we test? Ps. the RFID antenna may be unload based on the use condition shown in operation description. Besides, we define the position for your reference.

Thanks

---Reply from Customer on 06/11/2015---

Hello Sir Do you have any further comments for the test configuration? thanks

---Reply from Customer on 06/16/2015---

Hello Sir Do you need more information to evaluate it? thank you

### FCC response on 06/25/2015

If the WLAN antennas can transmit when attached to the body there might be 1 gram SAR issues to resolve. For the RFID, you should consider using duty factor to meet the stand-alone SAR test exclusion threshold in Section 4.3.1 in KDB 447498. You would need to utilize the default of 5mm test distance.

---Reply from Customer on 07/09/2015---

Hello Sir

Thanks.

We have asked the manufacturer to provide the maximum duty factor of RFID.

Q1. For WLAN backside/edge SAR testing at 5mm, whether we shall take off the RFID antenna to test it or attached the RFID antenna to test it(like plot 3 shown)?

Q2. If 1g-SAR for body has been measured at 5mm, 10g-SAR for limb will not be required, right? Q3. If RFID SAR test can't be excluded, whether we shall test RFID inner surface at 5mm and RFID outer surface at 5mm is not required?

Q4. If Q3 is true, how to test SAR for RFID inner surface at 5mm?(it is hard to position the RFID inner surface to phantom at 5mm when operating at the maximum RFID open angle, like plot 4 shown.)

Thank you

# FCC response on 07/21/2015

Q1] We normally do not recommend physically modifying the device if at all possible. Positioning the device near the phantom as shown might be possible, but the SAR probe needs to be able to actually reach that area of the phantom.

Q2] That is correct.

Q3] That is undetermined at this time.

Q4] Again, it is undetermined. Hopefully, the RFID can be excluded from SAR testing through low duty factor.

---Reply from Customer on 08/22/2015---

Hello Sir It seems that RFID can't be excluded from SAR testing through low duty factor. We would like to do SAR testing for RFID directly. What is the RFID SAR testing configuration?(Please refer to Q3 and Q4) thank you

---Reply from Customer on 08/29/2015---

Hello Sir Do you have further comment for this case(RFID)? thank you

---Reply from Customer on 09/08/2015---

Hello Sir

About RFID antenna, whether only extremity exposure need to be considered?

If yes, is testing SAR with RFID outersurface(of plot 3) touch the phantom applicable?

Based on the radiation pattern of RFIDantenna(please refer to the attached antenna report p.45~56), the main lobedirection would toward outside the RFID outer surface (of plot 3), so it looksthat the stronger radiation will be generated from RFID outer surface than that of inner surface.

Besides, since the RFID's open angle can'tbe open so large, and the limitation of SAR system(phantom), the inner surfacemay be waived from testing when outer surface has been tested.

Of course, we will test the two kinds of RFID antenna configurations, one is closed up and the other is open up(lookslike vertical).(p.9 in user guide)

Please give us the further guidance to letus proceed SAR testing.

Very appreciated!

## FCC response on 09/15/2015

For the RFID antenna, only extremity exposure (10g SAR) needs to be tested.

Both the RFID inner and outer surfaces need to be tested at 0mm test separation distance as the hand can touch both surfaces. The RFID outer surface can rest against the flat SAR phantom. For the RFID inner surface, you will have to find a way to utilize a portion of the phantom for testing. As stated in original response to Question 1, the SAR probe needs to be able to actually reach that area of the phantom.

---Reply from Customer on 09/20/2015---

Hello Sir

For the RFID inner surface, we loose the screws and make the RFID's open angle bigger than normal use condition.

In case 1, make the RFID inner surface touch the phantom and let all of the RFID antenna below the phantom. In this case, the cube is inside the SAR area scan and SAR value are 0.811(1g) and 0.608(10g) respectively.

In case 2, make the RFID inner surface touch the phantom and let most of the RFID antenna below the phantom. In this case, the cube is still inside the SAR area scan but cube postion is moved near the phantom edge, SAR value are 0.552(1g) and 0.410(10g) respectively.

We position the EUT like that because the protrusion height on the RFID antenna edge is 10mm. Would you accept case 1 or 2 or both?

thank you

### FCC response on 09/25/2015

Thank you for replying and including the SAR test setup photos and scans. We will accept both cases; please include both in the SAR report.

### **Attachment Details:**

user manual antenna location Tx power Do not reply to this message. Please select the <u>Reply to an Inquiry Response</u> link from the OET Inquiry System to add any additional information pertaining to this inquiry.