

From: JaeWook Choi [jaychoi@mail.com]
Sent: Friday, June 13, 2003 4:04 PM
To: mkuo@ccsemc.com
Cc: Victor Kee
Subject: Fw: Atheros Communications, Inc. FCC ID:PPD-AR5BCB-00031, AN03T2922

> Hi Mr. Green,
>

> Finding my replies to item Q1 ~ Q6 below and the attached is the
> revised SAR report as per replies.

>
> Regards,
> JaeWook Choi
> UltraTech Labs.

>
> =====
> = File Info
> =====
> ACI-005-SAR-RPT.pdf (2.27 MB)

> > Question #1: Page 6 of test report listed the separation distances for
> each

> > of three notebook computer in various position. With these information
in

> > mind and related such information to section 4.3.1 of test report.
Please

> > explain the following :

> >

> > a. section 4.3.1.1 photo description : " Top (keyboard) of the host PC
> > faced toward the phantom -6mm (Card-to-Top)+a mm> "

> >

> > Please explain what is the meaning of "+a mm>". What is the value of
&mm.

> >

A1-a) During the prescans, the minimum separation distance was determined for safety compliance. Since the three different host laptop PCs have different dimensions, we decided to specify the separation distance between phantom and D.U.T. (Card) by noting the distance between the card and the top(or bottom) of the host PC as well as the distance between the top(or bottom) of the host PC and phantom. Alpha in the photo description of section 4.3.1.1 represented the distance between the top of the host PC and the phantom and it was varied to determine the minimum safety distance while the 6 mm was a fixed number and dependent on the host laptop PC used for testing.

> > b. section 4.4.1 description " Bottom of Host PC faced toward the
phantom

> > 10mm (3+7) separation distance (card-to-phantom). 3 mm is the
> > separation distance from card-to-bottom. Please explain 7mm separation
> > distance in relate to page 17 of test setup photo.

> >

Aa-b) 7 mm is the gap between the bottom of the host PC and the phantom surface as describe in A1-a). Thus it is alpha mm in setup photo. We used the various thickness of the teflon pieces to maintain the distance while

testing.

> > c. section 4.4.1 description " body-worn (by stander) ". Based upon the
> > test setup photo, at this position, the SAR evaluation is done to simulate
> > lap held position not the by stander. Please consider to change the
> > wordings.
> >

A1-c) It will be revised.

> > Question #2: Measurement uncertainty , section 5.10.1.1 of test report.
> The
> > combined standard uncertainty for lg is 14.3 but the expanded uncertainty
> > with 95% confidence (K=2) is 210.93. Please explain the way to calculate
> > the expanded uncertainty.
> >

A2) It is typo caused by the "Replace All" feature in MS-Word. It will be corrected to 28.5.

> > Question #3: What is the liquid depth used during SAR measurement ?
> >

A3) It was 150 mm as shown in the setup photo (Pg21.)

> > Question #4: Liquid Calibration : per Appendix D page 42 of OET 65
> > Supplemental C, "the tissue media should be checked at the beginning of a
> > series of SAR measurement to determine if the dielectric parameters are
> > within the tolerances of the specified target value... Per the test
> report,
> > liquid calibration was done on 05/30 but the actual measurements were made
> > in the period of 06/4- 06/05. Please address this measurement procedure
> > issue.
> >

A4) As our routine procedure, the tissue parameter were verified on a daily basis using HP open coaxial dielectric probe kit and the parameters were verified to confirm that they were within +-5% from target values. Because of the rushed nature of the report, the date was overlooked therefore the correction will be made.

> > Question #5: The liquid permittivity and conductivity values used during
> > final SAR measurement do not agree with liquid calibration values.
Please
> > explain.
> >

A5) 54.9 (+3.6 %, target value: 52.7) as dielectric constant and 1.95 S/m (+0.0%, target value: 1.95 S/m) as conductivity were shown on page 9, on page 82 and in final test results.

> > Question #6: System Verification : per Appendix D page 43 of OET 65
> > supplemental C,:" When SAR measurement are performed, the entire
> measurement
> > system should be checked daily within the device transmitting frequency
> > range to verify system accuracy.". The system verification was
performed
> on
> > 05/30 but the actual measurements were made in the period of 06/04 -
> 06/05.
> > Please address this measurement procedure issue.

A6) The complete system verification as described in IEEE1528 was performed prior to obtaining measurements for this project. The date was overlooked therefore the correction will be made. The system had also been checked in freespace as described in section 5.6.2 Free space calibration of the report to verify the system accuracy prior to beginning the measurement procedure per daily basis.

----- Original Message -----

From: "Victor Kee" <vic@ultratech-labs.com>

To: <jaychoi@mail.com>

Sent: Friday, June 13, 2003 4:32 PM

Subject: Fw: Atheros Communications, Inc. FCC ID:PPD-AR5BCB-00031, AN03T2922

>
> ----- Original Message -----
> From: "Mike Kuo" <MKUO@CCSEMC.com>
> To: <vic@ultratech-labs.com>
> Cc: "Michael Green (E-mail)" <mgreen@atheros.com>
> Sent: Friday, June 13, 2003 3:35 PM
> Subject: Atheros Communications, Inc. FCC ID:PPD-AR5BCB-00031, AN03T2922
>
>

> > SAR portion of review:

> >

> > Question #1: Page 6 of test report listed the separation distances for
> each

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in

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> > separation distance from card-to-bottom. Please explain 7mm separation

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> > issue.
> >
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Please
> > explain.
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> > Question #6: System Verification : per Appendix D page 43 of OET 65
> > supplemental C,:" When SAR measurement are performed, the entire
> measurement
> > system should be checked daily within the device transmitting frequency
> > range to verify system accuracy.". The system verification was performed
> on
> > 05/30 but the actual measurements were made in the period of 06/04 -
> 06/05.
> > Please address this measurement procedure issue.
> >
> > Administrative issues:
> >
> > Question #7: Due to the separation distance used during the SAR
> evaluation,
> > when this device is used with typical laptop computer, the laptop
computer
> > shall be able to provide at least 1 cm (10mm) separation distance
> between
> > the transmitting antenna to body of user or near by person. Please
revise
> > Page 44 of user manual with the following statement " This device has
been
> > tested for compliance with FCC RF Exposure (SAR) limits in the typical
> > laptop computer configuration and this device can be used in desktop or

> > laptop computers with side mounted PCMCIA slots which can provide 1cm
> > separation distance from the antenna to the body of user or near by
> person."
> > Please provide revised user manual.
> >
> > Best Regards
> >
> > Mike Kuo / Compliance Certification Services
> > The items indicated above must be submitted before processing can
continue
> > on the above referenced application. Failure to provide the requested
> > information within 30 days of the original e-mail date may result in
> > application dismissal and forfeiture of the filing fee. Also, please
note
> > that partial responses increase processing time and should not be
> submitted.
> > Any questions about the content of this correspondence should be
directed
> to
> > the e-mail address listed below the name of the sender.
> >
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