TNO Electronic Products & Services (EPS) B.V.

Nederlandse Organisatie voor toegepast-natuurwetenschappelijk onderzoek / Netherlands Organisation for Applied Scientific Research

Smidshornerweg 18
P.O. Box 15
9822 ZG Niekerk
The Netherlands

www.tno.nl

T +31 594 505005
F +31 594 504804
E info@eps.tno.nl

Return address: P.O. Box 15, 9822 ZG Niekerk, The Netherlands

Agere Systems Nederland B.V.
Attn.: dhr. W. Kerkhof
Zadelstede 1-10
3430 AT Nieuwegein
The Netherlands

Subject
FCC SAR question IMRCB1102

Date
March 22, 2004

Our reference
04K0261

Your reference
IMRCB1102 EA421029

Our General Terms and Conditions, as filed at the Chamber of Commerce in Groningen, are applicable to all orders given to TNO Electronic Products & Services (EPS) B.V.

TNO Electronic Products & Services (EPS) B.V. is registered at the Chamber of Commerce in Groningen with no. 27247331.

Dear mr. Kerkhof,

As requested please find below my answers to the FCC questions related to RF exposure report on Cardbus Card with FCCID IMRCB1102, our project nr 03111701. I have copied the relevant portions from the original e-mail from the FCC and inserted my answers where applicable.

3) FYI SAR pg 17 table is missing 5.825 row.
Answer 3) This was a formatting error and is corrected in revised report.

5) In EA421029 EMC reports pg 7 or 8 show modulations and bit rates tested - please submit similar list and rationale for modes & rates tested in SAR report (QAM, PSK, etc.).
Answer to Q5) A list with tested bitrates and rationale has been added to the revised testreport. See section 7.1

7) Please provide more details of 5ghz SAR liquid if available, e.g., list ingredients, spec. sheet, reference data.
Answer to Q7) The liquid recipes are not(yet) available. The University of Bristol is still improving the performance and stability of the liquids. They are known to contain organic surfactants (TWEEN-20, TWEEN-80) and anorganic salts. The liquids are considered non-hazardous and have improved dielectric stability(both in time and with temperature) as compared to DBGE and triton based recipes. The contact details are
Medical Physics Department
University of Bristol, Bristol Haemotology & Oncology Centre
Horfield road, Bristol BS2 8 ED, United Kingdom
Tel. 44 117 928 2469.
.

Nederlandse Organisatie voor
toegepast-natuurwetenschappelijk
onderzoek / Netherlands Organisation
for Applied Scientific Research

8) SAR report has uncertainty tables for 2.45 and 5.8 GHz - any differences for 5.3 GHz?

Answer to Q8) There are two issues which could cause differences in uncertainty at 5.3 GHz as compared to 5.8. One is that during the probe calibration the used waveguide was known to have a slightly higher return loss at 5.3 as compared to 5.8. This could increase uncertainty. IndexSAR, the manufacturer of the probe, estimates the `difference` *in undertainty is less than 5%. The other issue is that liquid measurements probably have lower uncertainty at 5.3 GHz as compared to 5.8 GHz, but again not less than 5% difference in uncertainty. All in all the overall uncertainty is judged to be similar at 5.3 GHz.*

I trust these answers are sufficient. Should any unclarities remain, please do not hesitate to contact me. I will be happy to answer any further question you may have.

Best regards,
TNO Electronic Products & Services (EPS) B.V.

Jaap Schuurmans, B.Sc.E.E.
Senior Engineer EMC/Telecom