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ATCB
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Subject
Cover letter

Date
August 26, 2009.

Our reference
17_CU_ATCB007918_comme
nts-and-answers

Your reference
ATCB007918

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Our General Terms and Conditions, as filed at the Chamber of Commerce in Groningen, are applicable to all orders given to TÜV Rheinland EPS B.V.

TÜV Rheinland EPS B.V. is registered at the Chamber of Commerce in Groningen with no. 27247331.

Dear Mr. Fabina,

Related to your comments based on our request for certification for the following product,

FCC ID : CGD-SF-CU
IC : 1444A-SFCU
Brand : Nedap
Model : Control Unit
Description : 2.4 GHz Wireless Control Unit

we would like to provide you with the following information:

Question 1:

The FCC test report and the IC test report do not show compliance with the 15.209 field strength limits in Section 15.249(d) of the FCC Rules or Section A2.9(b) of RSS-210. These sections require the emissions at the 2400 and 2483.5 MHz band edges to be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation (IC uses the same standard but uses different wording). Both the low and high channel frequencies are close to the band edges and no evidence has been provided that the emissions at the band edges meet these requirements. For reference, please see the marker delta method attached. Please demonstrate compliance with this requirement in an amended test report for the FCC and IC.

Answer 1:

Thanks for the info, the results are added in the revised testreport for FCC and IC. See 13_09040201_CGD-SFCU_fcc01_Rev01.pdf pages 16 and 17 and 13_1444A-SFCU_ic01_report_rev01.pdf pages 18 and 19.

Question 2:

The FCC test report does not show compliance with the requirements from Section 15.215(c) of the FCC Rules. This section requires that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. The FCC test report contains no occupied bandwidth plots of the modulated emission of the low and high channel showing all modulation products remain inside the 2400 and 2483.5 MHz band edges. The occupied bandwidth plots in the IC test report could be used if the 2400 and

2483.5 MHz band edges could be located and shown to be outside the -20 dB bandwidth of the modulated emission. Please demonstrate compliance with this requirement in an amended FCC test report.

Answer 2:

Thanks for the info, the results are added in the revised testreport for FCC. See 13_09040201_CGD-SFCU_fcc01_Rev01.pdf pages 18 and 19.

Question 3:

Section 4.2 of ANSI C63.4-2003 specifies a 1 MHz resolution bandwidth (RBW) for radiated emission measurements above 1000 MHz but Note 10 on Page 13 of 18 of the submitted test report states that a RBW of 120 kHz was used for peak radiated emission measurements both below and above 1000 MHz. Please address this issue by either measuring the radiated emissions above 1000 MHz with the correct RBW or correcting this statement in an amended test report.

Answer3:

This was on error, the RBW should have been noted as 1 MHz. This is corrected in the revised test report, also the numbering of the notes on that page (page 13) is now corrected.
(see 13_09040201_CGD-SF-CU_fcc01_report_Rev01.pdf).

Question 4:

The IC test report is missing AC line conducted emissions and spurious radiated test results for the 2.4 GHz receiver in accordance with Sections 7.2.2 and 7.2.3 of RSS-Gen. See also Section 4.10 of RSS-Gen. Please provide an amended test report with these measurements for IC.

Answer 4:

Tests are not performed and the results are added in the revised testreport see 13_1444A-SFCU_ic01_report_rev01.pdf

Question 5:

Please describe how the occupied bandwidth measurements were made for IC. IC has allowed either of two methods for measuring occupied bandwidth: (1) set a reference level with the unmodulated carrier and then measure the occupied bandwidth at points 20 dB below this reference level or (2) use a 99 % occupied bandwidth setting on the spectrum analyzer. I cannot determine how the reported results were obtained.

Answer 5:

The test is performed with the implemented internal function of the Rohde & Schwarz Spectrum Analyzer FSP40.

Question 6:

The submitted Canadian representative letter is not acceptable because it was signed by the applicant and not the Canadian representative. The applicant cannot attest to the fact that the Canadian representative agrees to serve as the representative for this device. Please submit another Canadian representative letter signed by the Canadian representative.

Answer 6:

Corrected, see 04_1444A-SFCU_Canadian-Representative.pdf

Question 7:

The IC application form indicates that this transmitter emission is not modulated by using a NON emission designator on the form. However Section 2.2 of the submitted test report states that the carrier was modulated. Please provide an operational description exhibit with more information on the type of modulation used by this transmitter and correct the IC application form emission designator to agree with this description.

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Answer 7:

I checked this issue and thought of the following emission designation: M1D, this seems to me as most correct. It's a GFSK system with max. 1Mbps datarate. See nRF2410rev1_1.pdf and 03_1444A-SFCU_IC-Application_Rev02.pdf

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Question 8:

The applicant address shown on the FCC Website for Grantee Code CGD does not agree with the applicant address on the FCC application form. I cannot change the address on the grant because that is automatically filled in when I enter CGD as the Grantee Code on the FCC application form on the FCC Website. If you want the address on the grant to match the address on your FCC application form submitted to ATCB, you must contact the FCC to have the Grantee Code information corrected. For help in getting this information corrected, please contact Mr. Marianne Bosley by email at marianne@atcb.com.

Answer 8:

It is known to us and the applicant that the address is not consistent and i already informed the applicant on this issue but they don't seem to make a priority out of this. I will suggest doing it for them with some help from Mrs. Bosley.

Question 9:

For Your Information – Neither the FCC nor IC has frequency stability requirements for this transmitter which operates under Section 15.249 of the FCC Rules and Section A2.9 of RSS-210. See Section 2.1 of RSS-210 for further explanation of the IC requirements. Please note that I have ignored these measurements for both the FCC and IC applications.

Answer 9:

Thanks for the info and i will use that info in the future. Thanks for ignoring the measurement data and i have deleted those parts from the test report. (see 13_09040201_CGD-SF-CU_fcc01_report_rev01.pdf).

Question 10:

For Your Information – The FCC has no peak (detector function) radiated emission limits between 30 MHz and 1000 MHz. All radiated emission limits in this frequency range are based on a CISPR quasi-peak (detector function) limit. Therefore the peak (detector function) radiated emission limits between 30 MHz and 1000 MHz shown on pages 13 and 14 of 18 in the submitted test report are wrong. I have ignored these limits in this instance but please make a note of this for future FCC applications.

Answer 10:

Thanks for the info, i look at 15.249 (e) now in a different way. I assumed that in all cases the peak values had to be measured so including below 1000 MHz. I corrected it and will take better care of it for future applications. (see 13_09040201_CGD-SF-CU_fcc01_report_rev01.pdf)

Best regards,
TÜV Rheinland EPS B.V.

R. van der Meer
Test Engineer

