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ATCB
Attn.: Mr. Timothy R. Johnson
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Subject
Comments

Date
April 01, 2008.

Our reference
19_W6O-102020A
_comments-and-answers

Your reference
ATCB032409

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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. Johnson,

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

FCC ID : W6O-102020A
Brand : NOFIQ Systems BV
Model : N20-BASE_HUB
Description : 2.4 GHz IEEE 802.15 ZigBee Fire control & indicating apparatus

we would like to provide you with the following information:

Question 1:

Due to various concerns recently seen about proper authority being given to others for FCC and/or IC matters, the agency letter should be signed by someone traceable to have the proper authority.

For instance, the FCC site shows G.M. de Groot as the correct contact of authority for FCC matters. Therefore the agency letters should be signed by this contact or alternatively a letter showing who he has "deputized" (i.e. Nando Koelewijn) to sign on his behalf may be provided as well.

Answer 1:

Although the contact of authority for FCC matters should have been changed, a letter has been added where a representative for the FCC matters has been deputized (see 18_W6O-102020A_FCC_deputy.pdf)

Question 2:

The authorization letter from the applicant should define whom at TÜV is authorized to sign paperwork on their behalf – not just the Labs name.

Answer 2:

A corrected authorization letter has been added. A responsible person at TÜV Rheinland EPS B.V. has been appointed.
(see 01_W6O-102020A_Authorization_letter_mod.pdf)

Question 3:

Section 3.2 of the report still references the data in 5.1 as RF conducted. Please review. Additionally, kindly show how the limits of -41.2 & -21.2 dBm were derived..

Answer 3:

Measurements were performed in radiated method (for the transmit signal) and conducted method (for the band edges).

When measuring the field strength of the transmitter signal, this field strength was 1 to 2 dB below that expected for an output power of -5.4 dBm + 3 dBi

antenna gain (lower than 92.8 dBuV/m @ 3 meters). So the antenna gain seems to be lower than the declared 3 dBi.

Therefore, a worst case conducted measurement was performed with an antenna gain assumed to be 3 dBi, to be sure that the EUT also meets the requirements with an antenna gain of 3 dBi as follows:

The EUT was connected to the spectrum analyzer.

In free space, 54 dBuV/m @ 3 meters is obtained with an EIRP of -41.2 dBm (and 74 dBuV/m @ 3 meters is obtained with an EIRP of -21.2 dBm for peak values).

An offset correction was set to obtain worst case values, this correction is calculated as follows:

Antenna gain (dBi): +3 dBi

Worst case ground reflection (OATS) : +6 dB

Cable losses: +0.5 dB

Offset factor is the addition of the 3 values: $3 + 6 + 0.5 = 9.5$ dB

The output power of the EUT increased with this offset value of 9.5 dB should be lower than -41.2 dBm (for average, -21.2 dBm for peak values) to be sure that the EUT meets the requirements with an antenna gain of 3 dBi and maximum possible ground reflection on the OATS.

The highest transmit frequency of the EUT is very close to the band edge. As the EUT did pass the test with a measurement bandwidth of 1 MHz, there was no need to use the marker-delta method. However, when the marker-delta method would have been used, the margin to the limit would be much better. Schematic has been changed and indicates REV-SMA meaning reversed SMA connector.

Question 4:

FYI... The 731 form cites an equipment type of DSS but this type of device should be a DTS device given the test data shown. DSS is reserved for frequency hopping systems under 15.247. DTS is for Digital Transmission Systems utilize all other digital modulations under 15.247.

Answer 4:

A corrected 731 form has been submitted.
(see 04_W6O-102020A_Form731_mod.pdf)

Best regards,
TÜV Rheinland EPS B.V.



P. de Beer
Approvals & Quality Manager

Date
March 13, 2008

Our reference
17_W6O-102020A
_comments-and-answers

Your reference
ATCB022009

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