



American Telecommunications Certification Body Inc.

6731 Whittier Ave, McLean, VA 22101

February 6, 2004

RE: Nokia Denmark A/S

FCC ID: QTKRH-28

I have a few comments on this Application.

- 1.) FYI: Cellphones that contain both an Unlicensed Bluetooth transmitter as well as either a Part 22 or Part 24 Licensed transmitter are issued a Grant of Equipment Authorization as a Composite device. The Rules and exhibit requirements for Unlicensed transmitters are slightly different than Licensed. Please compare 2.1033(b) with 2.1033(c).
- 2.) The Operational Description is very good in its description of the Part 24 Licensed radio transmitter, but does not even mention the Part 15 Bluetooth transmitter. Please supply an updated operational description.
- 3.) For clarity, could you please provide separate the Schematics and Block Diagram for both the Bluetooth and a GSM 850/1900 transmitter sections? Please upload these revised documents to the ATCB website.
- 4.) FYI: The FCC no longer requires Block Edge measurements for each individual block. It is only necessary to supply the Band Edge measurements for either Part 22 or Part 24. This was discussed this fall in the monthly TCB phone meetings.
- 5.) Please provide additional Internal Photos identifying only the Bluetooth transmitter. It would be satisfactory to simply highlight a specific section of the internal photo views already supplied.
- 6.) Please provide an attestation letter to the fact that this device is operational in the US only in the 824-849 and 1850-1910 MHz bands.
- 7.) Information required by 2.1033(c)(8) appears to be missing. Please supply. If I have missed this, my apologies.
- 8.) A justification for the requested emission designator [a justification for 2.1033(c)(4) required information] appears to be missing. Please provide this information.
- 9.) It is not clear that transmitter radiated spurious emissions were measured properly to the 10th harmonic. Since GSM uses a 1:8 time domain pulsed carrier, broadband scans are of concern. Please describe how the signal is accurately captured within the limitations of a swept spectrum measurement system. FYI: I propose a table of values for all frequencies to the 10th harmonic be used. In those cases when no signal is found a simple noise floor measurement would be satisfactory. Since you claim in your test methodology that these values are already recorded, this should be a simple table to create. Be sure to show the amplitude of the signal generator, reference level seen on the measuring instrument, and the correction factor of the antennas.
- 10.) The photographs (Exhibit 6) appear to show a USB cable, Is this device capable of connection to a computer? If so, then this may also qualify as a computer peripheral under Part 15B. Please advise.
- 11.) FYI: Spectrum analyzers typically have fallen out of favor with the Commission for conducted Part 15.247 RF Power measurements. In the future please provide data using a more accurate absolute measurement technique.

William H. Graff
President and Director of Engineering

[mailto: whgraff@AmericanTCB.com](mailto:whgraff@AmericanTCB.com)

The items indicated above must be submitted before processing can continue on the above referenced application. Failure to provide the requested information may result in application termination. Correspondence should be considered part of the permanent submission and may be viewed from the Internet after a Grant of Equipment Authorization is issued.

Please do not respond to this correspondence using the email reply button. In order for your response to be processed expeditiously, you must submit your documents through the AmericanTCB.com website. 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 sender.