28 Aug 2006

Stuart Beck,
Director of Certification,
Nemko Canada Inc.,
303 River Road,
Ottawa, Ontario K1V 1H2

Dear Stuart,

RE: Industry Canada Submission 4309B-915B and FCC Submission KIN-915B

Wave Wireless is applying for a Limited Modular Approval for the 915B radio, since we expect to use this radio in several final products. These final products will all be manufactured by Wave Wireless only. This letter should provide sufficient justification for both FCC and IC.

In accordance with FCC directive DA 00-1407 (June 26, 2000) "Part 15 Unlicensed Modular Transmitter Approval", I have addressed each of the numbered requirements below. Those that apply to IC's RSS-Gen Issue 1 Sept. 2005, section 7.1.1 are marked with an asterisk and the relevent paragraph number in 7.1.1.

1. "The modular transmitter must have its own RF shielding". (*1) There are two shields on the radio, one covering the receiver and transmitter circuitry and one covering the local oscillator. Proof that these shields prevent coupling of the RF circuitry and any wiring is provided in the test report showing the results of testing the bare circuit card assembly without any housing.
2. "The modular transmitter must have buffered modulation/data inputs". (*2) The radio accepts data from an Ethernet port only. The radio processors buffer this data and generate modulated signals internally to the radio. The user cannot over modulate or exceed the data rates set by the RF design.
3. "The modular transmitter must have its own power supply regulation". (*3 which also require its own local reference oscillator). The 915B uses an external AC to 48 VDC power supply to regulate all power coming from the AC lines before it gets to the Circuit Card Assembly. This power supply is included in all testing of this radio. It provides isolation between the radio and the AC lines. Beyond that, there are voltage regulators and power filters on-board the radio to reduce any conducted emissions to the 48 VDC line. Furthermore, the 915B has its own local reference oscillator, which is located under its own RF shield.
4. "The modular transmitter must comply with the antenna requirements of Section 15.203 and 15.204(c)". Versions of the 915B radio and its final products may use standard RF connectors requiring Professional Installations only. It is for this reason alone that we are applying for a Limited Modular Approval instead of a full modular approval.
    a. For IC only: "The certification submission contains a detailed description of the configuration of all antennas that will be used with the module". (*4) This submission includes three antennas, which are detailed in the functional overview as well as the document "TN138 – 915B Radio Operational Requirements". As well the data sheets for the 3 antennas used for testing are included. We are aware

that we require a permissive change to our certification before we can use other antenna types with this radio, although antennas of the same type but lower gain than those in this submission are permissible.

5. "The modular transmitter must be tested in a stand-alone configuration". The 915B is tested as a bare circuit card assembly (CCA). AC power is passed to the AC to 48 VDC power supply and hence to the CCA. The power supply is specified as a necessary accessory for this radio. All testing includes the power supply.
6. "The modular transmitter must be labeled with its own FCC ID number, and, if the FCC ID is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module". See "FCC - 915B Product Label.pdf", submitted as part of the documentation package, to see the format and location of both the label on the radio itself as well as label on the packaged radio.
7. "The modular transmitter must comply with any specific rule or operating requirements applicable to the transmitter and the manufacturer must provide adequate instructions along with the module to explain any such requirements". See "TN138 – 915B Radio Operational Requirements", submitted as part of the documentation package, for specific requirements, such as antenna types acceptable, installation requirements, etc.
8. "The modular transmitter must comply with any applicable RF exposure requirements". See "TN138 – 915B Radio Operational Requirements", submitted as part of the documentation package, for specific requirements, such as antenna types acceptable, required cable losses and separation requirements.

Wave Wireless is applying for a Limited Module Approval for the 915B since future versions of this product will be completely under Wave Wireless's control by being the manufacturer and integrator ourselves. Furthermore, all manuals or installations guides for these products warn the user that there are no servicable parts inside the product and opening the product will void any warranties. All of this is clearly spelled out in the document "TN138 – 915B Radio Operational Requirements".

Your Truly,

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