

Date: January 25, 2005

## ATTESTATION FOR MODULAR APPROVAL Ref FCC ID: HN2-C30XX

Telecommunication Certification Body (and/or) Federal Communications Commission Authorization and Evaluation Division 7435 Oakland Mills Road Columbia, Maryland 21046



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## Gentlemen:

In order to obtain a modular transmitter approval, a cover letter requesting modular approval must be submitted and the 8 numbered requirements identified below must be addressed in the application for equipment authorization.

1. The modular transmitter must have its own RF shielding. This is intended to ensure that the module does not have to rely upon the shielding provided by the device into which it is installed in order for all modular transmitter emissions to comply with Part 15 limits. It is also intended to prevent coupling between the RF circuitry of the module and any wires or circuits in the device into which the module is installed. Such coupling may result in non-compliant operation.

The C30XX radio is supplied with a shielding assembly. The radio is shown in this report reveals the transmitter emissions comply with the limits defined by the regulatory agencies.

2. The modular transmitter must have buffered modulation/data inputs (if such inputs are provided) to ensure that the module will comply with Part 15 requirements under conditions of excessive data rates or over-modulation.

The radio board operates using digital technology. The C30XX radio buffering eliminates the ability to over-modulate the radio under all conditions.

3. The modular transmitter must have its own power supply regulation. This is intended to ensure that the module will comply with Part 15 requirements regardless of the design of the power supplying circuitry in the device into which the module is installed.

On board voltage regulation is documented within the block diagram and schematic.

4. The modular transmitter must comply with the antenna requirements of Section 15.203 and 15.204(c). The antenna must either be permanently attached or employ a "unique" antenna coupler (at all connections between the module and the antenna, including the cable). Any antenna used with the module must be approved with the module, either at the time of initial authorization or through a Class II permissive change. The "professional installation" provision of Section 15.203 may not be applied to modules.

The antenna shown within this report shows a printed circuit mounted antenna. There is a version of the radio that allows external antenna connection. The antennas defined for use will be as stated with the report. In the event antennas not described are used, the appropriate FCC and Industry Canada approvals will be pursued prior to marketing and sales.

5. The modular transmitter must be tested in a stand-alone configuration, i.e., the module must not be inside another device during testing. This is intended to demonstrate that the module is capable of complying with Part 15 emission limits regardless of the device into which it is eventually installed. Unless the transmitter module will be battery powered, it must comply with the AC line conducted requirements found in Section 15.207. AC or DC power lines and data input/output lines connected to the module must not contain ferrites, unless they will be marketed with the module (see Section 15.27(a)). The length of these lines shall be length typical of actual use or, if that length is unknown, at least 10 centimeters to insure that there is no coupling between the case of the module and supporting equipment. Any accessories, peripherals, or support equipment connected to the module during testing shall be unmodified or commercially available (see Section 15.31(i)).

Testing herein shows the radio external 10-cm from the host controller. The setup photographs show no ferrites or decoupling devices to reduce emissions of the module. AC power line conducted emissions is shown within for the final product. Reports are included that represent the final installation of the radio when marketed by Intermec Technologies.

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. This exterior label can use wording such as the following: "Contains Transmitter Module FCC ID: XYZMODEL1" or "Contains FCC ID: XYZMODEL1." Any similar wording that expresses the same meaning may be used. The Grantee may either provide such a label, an example of which must be included in the application for equipment authorization, or, must provide adequate instructions along with the module which explain this requirement. In the latter case, a copy of these instructions must be included in the application for equipment authorization.

Enclosed within this report are label diagrams with similar verbiage shown above. The module will show the FCC ID. If when integrated the radio module identifier is not visible, the exterior will show the "Contains TX FCC ID:" text.

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. A copy of these instructions must be included in the application for equipment authorization. For example, there are very strict operational and timing requirements that must be met before a transmitter is authorized for operation under Section 15.231. For instance, data transmission is prohibited, except for

operation under Section 15.231(e), in which case there are separate field strength level and timing requirements. Compliance with these requirements must be assured.

The radio operates as a Bluetooth compliant device. The operation protocol and timing meet operation requirements defined within FCC 15.247 and Canada RSS-210.

8. The modular transmitter must comply with any applicable RF exposure requirements. For example, FCC Rules in Sections 2.1091, 2.1093 and specific Sections of Part 15, including 15.319(i), 15.407(f), 15.253(f) and 15.255(g), require that Unlicensed PCS, UNII and millimeter wave devices perform routine environmental evaluation for RF Exposure to demonstrate compliance. In addition, spread spectrum transmitters operating under Section 15.247 are required to address RF Exposure compliance in accordance with Section 15.247(b)(4). Modular transmitters approved under other Sections of Part 15, when necessary, may also need to address certain RF Exposure concerns, typically by providing specific installation and operating instructions for users, installers and other interested parties to ensure compliance.

The RF exposures for the antenna show compliance to FCC and Canada regulations. The exposure calculations and installation details are defined for mobile devices only. Additional antennas approved via permissive changes will address the RF safety concerns as defined within the regulations. It is requested this certification be for portable applications as well with the safe distance for approval being greater than 2.5-cm. In the event the radio antenna is placed closer, testing for SAR and the appropriate Class II Permissive Change reports will be submitted to document the RF Exposure testing and information to the user.

Please contact me by telephone at (319) 846-2415 or by e-mail (Dave.Fry@Intermec.com) if there are questions or additional information needed concerning this attestation.

Sincerely,

EMC Engineer