

FCC LIMITED MODULAR APPROVAL REQUEST

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To: FCC Authorization & Evaluation Division
7435 Oakland Mills Road
Columbia, MD 21045-0429

From: Dean A. Tjaden Jr.
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Subject: Request for Limited Modular Approval for FCC ID: VOH-62831853

To Whom It May Concern:

Pursuant to FCC Public Notice DA 00-1407, June 26, 2000, Dickson Company hereby requests Limited Modular Approval for FCC ID: VOH-62831853.

The following response addresses the needs to demonstrate compliance with this Public Notice.

- 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.

Shielding:

The RF section of the module is contained on one circuit board that is connected to the Main PCB by a dual inline connector. Both sides of the module PCB have ground planes that are heavily interconnected with via's.

- 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.

Buffered Modulation:

Data from the host does not directly modulate the transmitter. Data is sent as SPI buss commands. The microprocessor uses these commands to generate the modulation. Please see the Theory of Operation and Block Diagram.

- 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.

Power Supply:

The RF Module is not for sale or use outside the Dickson Company. It is only to be used in products designed and manufactured by or for the Dickson Company. The module receives its power from the host circuit board. The host circuit board has its own 3.3V regulator from which the transmitter module is powered. In addition there are bypass capacitors for noise filtering and reduction on the module PCB.

- 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.

Antenna Requirements:

The antenna is etched onto the module PCB. There are no attachment points for external antennae.

- 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)).

Test as a Module:

The Module is not to be sold as a module. It is intended only for Dickson Company internal use.

- 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.

Labeling:

Every module will be labeled with the following:

FCC ID: VOH- 62831853
Dickson Company

Since the module is internal to the completed product, and not visible to the user, a label with the following notice will be placed on the outside of the case for all products containing the module:

Contains FCC ID: VOH- 62831853

- 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 held strength level and timing requirements. Compliance with these requirements must be assured.

RF Module Installation:

Dickson Company Module Installation Instructions Sheet is part of this FCC Filing. Please refer to the "RF Module Installation Instructions".

- 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.

RF Exposure Requirements:

Not applicable to this RFID Transceiver

Sincerely,

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