July 5 , 2007

Equipment Authorisation Division
Federal Communications Commission
7435 Oakland Mills Road
Columbia, MD 21046

FCC ID: VFH-WISE250
Product Name: WiSE250

Request for Modular Transmitter Approval

With respect to public notice DA 00-1407, we request that our product named "WiSE250" with proposed FCC ID VFH-WISE250 be granted modular transmitter approval.

Below the numbered requirements of the public notice are addressed.

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 module employs a steel can that encases all of the RF circuitry. No other shielding is required on the part of the integrator of the radio module.

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 modulation of the transmitter is not directly controlled by any of the inputs/connections on the module. A microcontroller reads data over a serial UART port and based on correct data being received transmits radio messages. Excessive data rates and/or over-modulation of any of the connections on the module will NOT result in unintended operation of the transmitter.

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.

The module employs an onboard 1.8V low drop out linear voltage regulator. The output of this regulator is used to supply all radio transmitting circuitry. In

addition, extra noise filtering and decoupling is provided on board the radio module.

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 module utilizes a “unique” edge mounted MMCX jack to connect the antenna to the transmitter. Two types of antennas have been tested for the purposes of the initial authorization. These are the only antennas listed for use with the module in the user’s/integration guide.

The first antenna type is a monopole whip antenna with an MMCX plug connector; this is the primary antenna type of the radio module. The second type of antenna is a dipole with an RP-SMA connector. An MMCX plug to RP-SMA connector is provided when the dipole antenna is used.

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)).

This testing has been done with the initial certification application.

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.

Instructions have been provided in the modules user guide.

COPY FROM THE USER GUIDE

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.

COPY FROM USER GUIDE
When integrating the WiSE250 into your own product you must only use the approved antenna(s) with the module to maintain the FCC and IC certification. You must operate the module according to the specifications listed in the data sheet/user guide.
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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 maximum output power of the transmitter is 3.2mW and complies with Section 15.247(b)(4).