Federal Communications Commission
445 Twelfth St., S.W.
Washington, D.C. 20554

Dear sirs,

Nomadio, Inc. is seeking FCC authorization of our Sensor Transceiver as a part 15 unlicensed modular transmitter approval. The requirements of the FCC public notice DA 00-1407 are met.

The Transceiver meets all of the requirements for modular approval:

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 satisfies the RF shielding requirement. The external case of the Transceiver, which encloses all internal circuitry, is coated with RF shield material (Sanpro Silver Lining™).

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 module interface consists of an IC whose data inputs are buffered within the package. See Exhibit 4, schematic diagram. This interface prevents excessive data rates or over-modulation.

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 contains its own voltage supply regulation. Changes in the supply voltage (for example caused by temperature changes or other effects) do not affect the internal operating voltage. See schematic diagram, Exhibit 4.

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 transceiver uses a "unique" antenna coupler (reverse polarity SMA) to ensure it can only be used with the antenna used for compliance testing. See external photos.

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)).*

The transceiver was tested in a standalone configuration. Since the unit cannot be powered using AC power, testing was accomplished using a standard battery holder with leads of over 10 centimeters and 4 standard AA batteries. No other equipment was connected to the module during compliance testing. See photos of test configuration in FCC test report Exhibit.

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.*

The transceiver is labeled with it's own FCC ID number. See attached Exhibit with label example.

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 transceiver has been tested to comply with Section 15.247. No user configuration is required.

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 transceiver has been tested to comply with all applicable RF exposure requirements. The maximum measured power output is 8mW, the maximum antenna gain is 1.9dBi (see also FCC test report Exhibit).

The maximum permissible exposure is defined in the 47CFR 1.1310 as 1 mW/cm2. The distance from the EUT's transmitting antenna where the exposure level reaches the maximum permitted level is calculated using the general equation:

$$S = P * G / 4\pi R^2$$

Smax = 1mW/cm2, P=8mW, linear power gain relative to the isotropic radiator = 2dBi = 1.55 linear gain, R= distance in cm.

Solving for R, the 1mW/cm^2 limit is reached in a distance of approximately 1cm from the transmitting antenna.

The module has been integrated in a way that the minimum distance of 1cm is ensured so a statement in the users manual is not necessary.

If you have any further questions please feel free to contact us.

Thank you,

Alexander Gizis
CEO
Nomadio, Inc.