November 17, 2018

TCB
Applications Examiner

RE: Modular Approval for SKEG Product Development FCC ID: 2AQ2P-IHB

Dear Application Examiner:

Regarding Part 15 Unlicensed Modular Transmitter Approval, the following requirements called out in FCC Public Notice DA 00-1407 are observed:

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 SKEG Product Development model INTELLIHEAD NFC RADIO MODULE does not having shielding over the RF circuitry. The module was tested as is without shielding and the test results show that the module meets the requirements without the shielding in place. SKEG Product Development will oversee installation of the radio module into the host device or will provide training/control methods to ensure the radio module is install in a way that will not invalid the test results. A Limited Modular Approval is requested due to the fact that no RF shielding is present.

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 overmodulation.

The SKEG Product Development model INTELLIHEAD NFC RADIO MODULE controls the data flow to the transmitter section compliant with Part 15 requirements.

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 Host device will provide the necessary rated voltage source to the SKEG Product Development model INTELLIHEAD NFC RADIO MODULE. SKEG Product Development will oversee installation of the radio module into the host device or will provide training/control methods to ensure the radio module is install in a way that will not invalid the test results. A Limited Modular Approval is requested due to the fact that no self regulating power supply is present.

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.

For this application the SKEG Product Development model INTELLIHEAD NFC RADIO MODULE employs a unique antenna connector only.

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 module itself was tested while connected to an Eval Board. The Eval Board was provided as a means to communicate with the radio through the serial connection. Nothing on the Eval Board contributes to the performance of the radio, therefore the radio is considered to have been tested in a standalone configuration.

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 SKEG Product Development model INTELLIHEAD NFC RADIO MODULE consists of a printed circuit board, which is labeled with the FCC identification number. This PCB can be mounted in a host of devices and each device that this PCB utilizes will have the FCC ID number visible to the consumer.

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 SKEG Product Development model INTELLIHEAD NFC RADIO MODULE comes equipped with embedded firmware that controls these parameters.

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 module will be evaluated for compliance with the applicable RF exposure requirement. A separate exhibit with test results showing compliance will be provided if RF exposure requirements are applicable to the radio. Low Power Devices tested under specific rules parts may not be required to show compliance to RF exposure limits.

Regards,

Sandi McEnery
Agent for SKEG Product Development