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Request for Modular Approval

Dear TCB Reviewer;

We would like to request a modular approval for FCC ID OBH-28170. The 8-criteria for modular approval listed in FCC Part 15.212 have been met. Please see the justification for each of these below in red text:

(1) Single modular transmitters must meet the following requirements to obtain a modular transmitter approval.

(i) The radio elements of the modular transmitter must have their own shielding. The physical crystal and tuning capacitors may be located external to the shielded radio elements.

The module utilizes a shield over the transmitter. Please see the external and internal photo exhibits for objective evidence.

(ii) 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 SX1272 RFIC transmitter chip has from Semtech has its own data buffering. Please see section 4.1.2.3 of the provided data sheet (under operational description) for objective evidence.

(iii) The modular transmitter must have its own power supply regulation.

The SX1272 has an internal regulator on the VR_PA pin which provides power to the transmit stage when transmitting. This regulator ensures that a constant voltage is applied to the power amplifier, guaranteeing a level power output regardless of input voltage.

(iv) The modular transmitter must comply with the antenna and transmission system requirements of §§15.203, 15.204(b) 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). The “professional installation” provision of §15.203 is not applicable to modules but can apply to limited modular approvals under paragraph (b) of this section.

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EUT was tested with an antenna. The datasheet is provided.

(v) The modular transmitter must be tested in a stand-alone configuration, *i.e.*, the module must not be inside another device during testing for compliance with part 15 requirements. Unless the transmitter module will be battery powered, it must comply with the AC line conducted requirements found in §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 §15.27(a)). The length of these lines shall be the 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 and commercially available (see §15.31(i)).

The transmitters was tested in a non-metallic test fixture so that it was in a stand-alone configuration. Please see the test setup photos.

(vi) The modular transmitter must be equipped with either a permanently affixed label or must be capable of electronically displaying its FCC identification number.

The label is permanently affixed to the module shield. See Label exhibit.

(vii) The modular transmitter must comply with any specific rules or operating requirements that ordinarily apply to a complete 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.

The user's manual provides instructions for testing and labelling in Section 13.1.1. The test report shows measurements to demonstrate compliance.

(viii) The modular transmitter must comply with any applicable RF exposure requirements in its final configuration.

See the RF exposure exhibit. Additional instructions are provided in the user's manual, Section 3.

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Thank you,

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