



Date: October 23, 2015

Federal Communications Commission  
Equipment Approval Services  
P.O. Box 35815  
Pittsburgh, PA 15251-3315

Applicant: C2Ag LLC  
PO BOX 315  
Archie, MO 64725

Equipment: ISN-1 FCC ID: 2AFK4-ISN1  
CFR Rules: Part 2 and 15.247 (Limited Modular Transmitter)

Re: Limited Modular transmitter approval

Gentlemen:

As required in CFR 47 15.212 regarding unlicensed modular transmitter approval, the following information has been addressed. The transmitter module is a complete RF transmitter containing its own reference oscillator, power supply, etc. The connections available on the module are for authorized antenna systems, power and data interface only. Below please find information, addressing each requirement of 47CFR paragraph 15.212.

Per CFR 47 15.212

- (i) The radioelements of the modular transmitter must have their own shielding. The physical crystal and tuning capacitors may be located external to the shielded radioelements.  
Clarification: The ISN-1 does not contain shielding, therefore a limited modular approval is requested. The module is designed exclusively for C2Ag products, and the ISN-1 as a standalone module meets all of the compliance requirements.
- (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.  
Clarification: The ISN-1 buffers the modulation and data inputs ensuring compliance with regulations.
- (iii) The modular transmitter must have its own power supply regulation.  
Clarification: The ISN-1 incorporates regulators to ensure operation in specified range.
- (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.  
Clarification: The ISN-1 contains a separate custom antenna assembly provided by C2Ag, LLC. This equipment is professionally installed by C2Ag, LLC and the antenna assembly is only available from C2Ag, LLC.
- (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)).

Clarification: The ISN-1 was tested in a stand-alone configuration without an enclosure. The ISN-1 is a battery powered device with no provisions for connection to AC mains power.

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

Clarification: The ISN-1 has required labeling placed on the module and instruction for placement on exterior of end product.

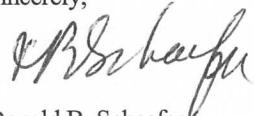
(vii) The modular transmitter must comply with any specific rules or operating requirements that ordinarily apply to complete transmitter and manufacturer must provide adequate instructions along with module to explain any such requirements.

Clarification: The ISN-1 complies with all specific applicable rules and regulatory precautions are addressed in manual.

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

Clarification: The ISN-1 complies with applicable RF exposure requirements. Installation and RF exposure precautions are addressed in manual.

Sincerely,



Donald B. Schaefer  
Chief Engineer  
C2Ag, LLC