



## **SignalFire Telemetry Modular Transmitter Answers**

**FCC ID: W8VSFTS300LNA**

Section 15.212

This application is for limited modular approval. The module is to be installed only into SignalFire products or products designed by SignalFire for 3<sup>rd</sup> parties. The module will not be marketed as a stand alone product.

- 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 is intended only for use by SignalFire Telemetry within a complete product and will not be sold as a standalone module. The module PCB has been designed with an integrated shield ground plane to ensure that it does not have to rely upon external shielding. All testing was completed on the module without any additional shielding and found to be within the part 15 limits. A limited approval is requested relaxing the requirement for a shield is requested, as control of the module integration to ensure compliance will be maintained. Since module control is maintained the module will be integrated in a manner that does not expose the top side of the module to any potential sources to noise within the product.

- 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.*

All I/O to the module are buffered from the radio. There is not direct way an input (or output) pin can modulate the radio or change its output. There is no direct connection from any I/O pin to the radio transmitter.

See the block diagram for more detail.

- iii. *The modular transmitter must have its own power supply regulation.*

All power inputs are regulated by linear regulators. See the block diagram for more detail.

- iv. *The modular transmitter must comply with the antenna and transmission system requirements of Sections 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 Section 15.203 is not applicable to modules but can apply to limited modular approvals under paragraph (b) of this section.*

The antenna connection for this module is an SMA connector internal to the required housing (see the shielding item above) and access is not allowed or easily accomplished. The module is not a standalone product and will always be sold as a system with either a "unique" external antenna connection or a permanently attached antenna. Refer to the manual for approved antennas. This limited module approval uses the "professional installation" provision of Section 15.203 as SignalFire products are professionally installed.

- 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 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 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 Section 15.31(i)).*

The module may be powered by both a battery and/or an external power supply. The module will be powered with an AC/DC power supply for AC conducted measurements. The module was tested in a stand-alone configuration.

- 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 module will have a label permanently printed on the radio board, and the FCC declaration appears in the product manual. Refer to the product manual for product labeling instructions.

- 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.*

An instruction manual is included with the application for authorization. The module meets all applicable 15.247 requirements.

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

The module meets 2.1091 of the FCC rules for RF exposure as a mobile device. Instructions and warnings are included in the product manual.



Alfred C. Hamilton  
President

SignalFire Telemetry, Inc  
A-403, 43 Broad Street  
Hudson, Ma. 01749 USA

www.signalfire.com  
(978) 212 2868