

Date: August 2, 2012

To: Federal Communications Commission
7435 Oakland Mills Road
Columbia, MD 21046

Re: Modular Approval Letter for Fluke FWCS Radio Module

To Whom It May Concern:

In accordance with Section 15.212 (b), Fluke Corporation believes it has met all of the requirements set out in that document for the granting of single modular approval. Specifically, the criteria set out in that document are addressed below in bold:

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 Fluke FWCS radio module has its own shielding covering all critical RF components. This can be seen in the photographs included in the accompanying test report.

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 Fluke FWCS radio module has buffered modulation/data inputs provided by the Ti CC2530F128 transceiver IC component.

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 Fluke FWCS radio module incorporates its own supply regulation and the Ti TPS 77028 IC component provides this.

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 Class II permissive change. The “professional installation” provision of Section 15.203 may not be applied to modules.

The Fluke FWCS radio module employs a “unique” antenna coupler (at all connections between the module and the antenna, including the cable). All antennas have been verified at the time of initial authorization.

5. The modular transmitter must be tested in a stand-alone configuration, i.e., the module must not be inside another device during the 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)).

Fluke FWCS radio module was tested with a test jig and Fluke FWCS radio module does not employ any ferrites.

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 Fluke FWCS radio module is fitted with its own Fluke label and the FCC ID number is enclosure on products that contain the module.

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 Section 15.231(e), in which case there are separate field strength level and timing requirements. Compliance with these requirements must be assured.

The modules have been tested to comply with all rules under Part 15.247 The compliance is assured by the design of the device and the user is unable to intervene to cause the device to operate incorrectly.

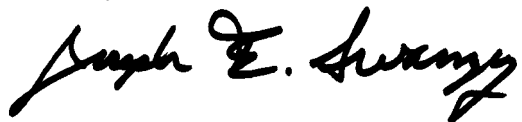
8. The modular transmitter must comply with any applicable RF exposure requirements. For example, FCC Rules Sections 2.1091, 2.1093 and specific Sections of Part 15, including 15.319(i), 15.407(f), 15.253(f) and 15.255(g), require that Unlicensed PCS, UNII and millimeter wave devices perform routine 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 device complies FCC RF Exposure compliance requirements. Test lab shall provide RF Exposure compliance document.

8. A limited modular approval may be granted for single or split modular transmitters that do not comply with all of the above requirements, e.g., shielding, minimum signaling amplitude, buffered modulation/data inputs, or power supply regulation, if the manufacturer can demonstrate by alternative means in the application for equipment authorization that the modular transmitter meets all the applicable Part 15 requirements under the operating conditions in which the transmitter will be used. Limited modular approval also may be granted in those instances where compliance with RF exposure rules is demonstrated only for particular product configurations. The applicant for certification must state how control of the end product into which the module will be installed will be maintained such that full compliance of the end product is always ensured.

The Fluke FWCS radio module complied with Section 15.212 modular approval stand-alone configuration, i.e., the module was tested with the help of test jig. FWCS radio module shall be installed in Fluke devices and is always under the control of Fluke Corporation. Fluke Corporation ensures compliance through manufacturing of its end products and, through professional installation and user manuals are controlled by Fluke Corporation and regulatory compliance is also ensured.

Sincerely,



Joseph E. Swanzy, PE
Product Evaluation Manager
Fluke Corporation
6920 Seaway Blvd.
(425)446-5626
Everett, WA 98203
USA