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Request for Limited Modular Approval

Date May 5, 2015

Federal Communications Commission
Office of Engineering and Technology
Equipment Authorization Division
7345 Oakland Mills Rd.
Columbia Maryland 21046

RE: Certification Application FCC ID N6SLFSQR

To Whom It May Concern:

In reference to FCC ID N6SLFSQR, Gilbarco is requesting Limited Modular Approval. The product does not meet requirements 1 (module shielding) and 3 (on board power supply regulation). It fully complies with the remaining Modular Requirements.

The numbered requirements for Modular Approval are addressed below

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 module does not have its own RF shielding. It is intended for professional installation into a specific model of Gilbarco fuel dispenser behind a locked door only. It is not sold to, installed by or accessible by the public. It is only installed at the Gilbarco factory, or by Gilbarco certified authorized service technicians. The host dispenser model into which this module will be installed is tested to insure continued compliance with Part 15 requirements. Gilbarco retains control of the installation and service of this device and the host ensuring full compliance of the end product.

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 modular transmitter communicates via serial data lines to the M01560 MicroReader/Antenna assembly. These lines pass transponder serial numbers and on/off commands for the recognition light. There are no commands or signals from the host device that can change performance and RFID functionality of the Texas Instruments MicroReader on the M01560 assembly. One TTL line connects the module PCA to the fuel dispenser. It passes transponder serial number and authentication code to the dispenser electronics for communication to the point-of-sale (POS) system for credit verification. Once the credit is verified, the POS system instructs the transmitter module to keep the recognition light on or to shut it off. Excessive data rates do not alter the RF characteristics of the module.

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 module does not have its own power supply regulation. It is powered by the dispenser regulated DC power supply. It is installed into a specific model of Gilbarco fuel dispenser behind locked door only. It is not used with power supplies other than those tested and approved by Gilbarco. It is only installed at the Gilbarco factory, or by certified authorized service technicians. The host dispenser models into which this module will be installed are tested to insure continued compliance with Part 15 requirements. Gilbarco retains control of the installation, service and power supply of this product. If the power supply failure mode caused an increase in the DC voltage output, the transmitter field strength will not increase. The activating circuit will not work and the transmitter is rendered inoperable.

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.

The antenna is permanently attached to the transmitter circuit. The M01560 employs an integral PCB trace magnetic loop antenna.

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)).

As the photographs and report indicates, the device was tested in a stand-alone configuration and not inside another device. It does not contain any ferrites that will not be marketed with the module. The device was tested with cables of a length typical of actual use that are greater than 10 centimeters long. The support equipment connected to the module via RS-232 com port for testing purposes was an unmodified laptop PC.

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 modular transmitter will be labeled with its own FCC ID number. It will be permanently affixed to the on the LFSQR Assembly, p/n M01560. This label is not visible when it is installed inside another device, therefore an exterior label is provided with the required text. A separate file in this submission shows labels (with verbiage) as well as their locations on the product.

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.

Intentional radiator N6SLFSQR meets the requirements of Section 15.209. There is no tune-up procedure nor any operation parameters that can be changed by the installer. No special instructions are required to insure this intentional radiator continues to comply with the FCC rules other than the statement that modifications may not be made to this device “without the written consent of Gilbarco Inc. Unauthorized modifications may void the authority granted under Federal Communications Commission Rules permitting the operation of this device”. This statement is located in the installation manual, which has been sent as part of this grant submittal.

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 modular transmitter operates at 134.2 kHz with less than 0.5 Watt ERP and is, therefore, excluded from Section 1.1307(b) of the FCC rules and the RF exposure requirements (300 kHz – 100 GHz, per FCC OET Bulletin 65).

Sincerely,

Bob Sykes
EMC Engineer
Gilbarco Inc.