



January 25, 2016

Federal Communications Commission

Authorization and Evaluation Division
1435 Oakland Mills Road

**Subject: Monnit Corporation declaration for compliance with FCC PART 15
UNLICENSED MODULAR TRANSMITTER APPROVAL of Sec 15.212
& Pubic Notice # DA 00-1407**

FCC ID: ZTL-G2SC1

Dear Si/Madam:

Monnit Corporation hereby confirms that the following requirements per FCC PART 15 Unlicensed Modular Transmitter Approval of Sec 15.212 & Pubic Notice # DA 00-1407 are met for Modular Approval certification. The module denoted as ZTL-G2SC1 is an FHSS IOT digital wireless platform for telemetry and other data transmission. This letter addresses the information required by points one through eight of 47 CFR 12.2.212.

1. "The modular transmitter must have its own RF shielding."

YES – The transmitter radio section of the G2SC1 module consists of RF shielding that is RF/EMI suppression tape. The properties of this material include a conductive grid printed with metallic ink. The grid size is 0.1 inch square; affecting all energies below 80 GHz. The shielding material comes with a 1.9 mil acrylic-based adhesive which adherers the shield to the top and sides of the transmitter radio section. The PCB is an integral part of the shield, being designed with solid ground planes under and surrounding the transmitter. Also, to ensure that the sides remain covered, an additional layer of acrylic-like adhesive is applied to the shield to firmly secure it in place. This permanently attaches the shield to the module. Any integrator is instructed to not tamper with the shield.

The shield is applied by Monnit Corporation exclusively. Its placement methodology and material properties have been specified according to good engineering practices to provide an effective conducting surface to reduce unwanted electric fields entering or exiting the RF section. This shielding method has been tested to completely comply with the requirement to prevent the transmitter from RF coupling with the host platform.

2. "The modular transmitter must have buffered modulation/data inputs."

YES – The G2SC1 has buffered data inputs that pass through an embedded processor responsible to manage Modulation and data rates. It is not possible to present the module with data in a fashion that will cause the module to over-modulate or become excessive.

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3. “The modular transmitter must have its own power supply regulation.”

YES – The G2SC1 can be powered by a 2.0 – 3.8 VDC source (battery, or external line). The main SoC IC (CC1310) contains a total of 4 regulators for different SoC subsystems. Two of these regulators are dedicated to the rail supplying the radio. The radio is always limited to this range internally and cannot be affected by external voltage fluctuations. This includes situations where the maximum/minimum voltage specification is violated.

4. “The modular transmitter must comply with the antenna requirements of Section 15.203 and 15.204(c).”

The modular device complies with all FCC antenna requirements. The G2SC1 offers a wire and U.FL style RF connector interface. This requires either a permanently attached antenna, or will be offered with a UFL to RP-SMA cable that is a non-standard attachment method. Both methods meet FCC requirements. A list of usable antennas is included in the user’s manual and provided in the antenna report included with the certification submission.

5. “The modular transmitter must be tested in a stand-alone configuration.”

As described in the technical report exhibit and the test set up photos of the test report included in the filing for FCC equipment authorization, the G2SC1 module was tested as a stand-alone device. Please see the report included with the certification submission.

6. “The modular transmitter must be equipped with either a permanently affixed label or must be capable of electronically displaying the FCC identification number.”

The FCC ID and model number is labeled on every modular device. FCC ID label and location exhibit has been included which shows the exact location of the label. Since the FCC ID number will not be visible when the module is installed inside the host device, another label with the same FCC ID is applied to the exterior of the final enclosure. Some examples of these additional labels have also been included in this submission.

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.”

The G2SC1 complies with all specific rules such as modulation scheme, modulation type, bandwidth, antenna requirements, power supply regulation, suppression of spurious emissions, and so on. A detailed user manual is provided with every G2SC which instructs the user to maintain compliance as per the requirements of the Commission. The



manual also cautions the user not to make any changes or modifications not approved by the party responsible for compliance. Please see the operating description exhibit for further details to understand how the G2SC complies with specific rules and operating requirements as per FCC.

8. "The modular transmitter must comply with any applicable RF exposure requirements in its final configuration."

The G2SC1 is compliant with all applicable RF exposure requirements and is operated in a manner that ensures the public is not exposed to radio frequency in excess of Federal Communication Commission's guidelines. Please see the RF exposure exhibit.

Dated: 1/13/16

By Bradley Walters

 
(Signature) (Print Name)

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