



2/20/09

Nemko Canada Inc
303 River Road
Ottawa, Ontario, Canada
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Attn: Director of Certification

FCC ID: J26-500004
IC: 5843A-500004

Request Limited Modular Authority

We hereby request Limited Modular Approval based on the numbered requirements identified below as we address them to be included in our application for equipment authorization.

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.

[CA] The CalAmp Core Module device meets this requirement by the use of an RF shield which encases the 802.15 Ember solution and power amplifier. The chipset, oscillators, and associated circuitry are entirely resident under a continuous metal shield assembly, designed for EMI mitigation, with designated ground and interfaces.

Please reference device photos supplied with the document package for shield placement and assembly.

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.

[CA] The CalAmp Core Module device meets this requirement by routing all WPAN data payload through the central processor. The dedicated inputs of the 802.15 modulator are exclusively driven and buffered by the processor UART logic, which inherently prohibits non-compatible data rates or modulation types from being introduced to the transmitter circuitry.

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.

[CA] The CalAmp Core Module device meets this requirement by utilizing a dedicated, on-board 3.3V switching power supply which regulates from a wide range of external DC power supply conditions. The module input is designed for overvoltage protection and conducted EMI suppression. The module has been tested and verified as compliant against Part 15 conducted emissions.

Please refer to sheet 10 of the supplied schematic for details on the Core Module power regulation.

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.

[CA] The CalAmp Core Module device meets this requirement by incorporating a U.FL antenna interface on the module. This module interface requires a unique coaxial feed assembly direct to the external antenna, which is approved for use as required in the relevant Sections.

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)).

[CA] The CalAmp Core Module device meets this requirement by having been tested against, and found to be compliant with, Part 15 Class B conducted and radiated requirements in a “stand-alone” module configuration. Ferrites were not used for any cable assemblies to achieve compliance.

Please refer to supplied Nemko report for compliance details.

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.

[CA] The CalAmp Core Module device meets this requirement by attaching an FCC label, with FCC ID, on the 802.15 transceiver shield during production of that assembly

CalAmp will control the design, manufacture and test of products that utilize the Core Module, such as the WiMetry AMI Concentrator or WiMetry 888 Cellular Router.

As a result, CalAmp will insure that all such products and assemblies will include appropriate FCC information on external labels for ALL modular approved devices installed and activated within the enclosure.

Please see FCC label document supplied.

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.

[CA] CalAmp will control the design, manufacture and test of products that utilize the Core Module. As a result, CalAmp will insure compliance to any specific rule or operating requirements applicable to the 802.15 transmitter circuitry, and as approved by the results of this filing.

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.

[CA] CalAmp will provide all required RF Exposure statements in User Documentation for any equipment or product that incorporates the Core Module.

Please see supplied preliminary copy of the WiMetry Concentrator User's Manual for example.

[CA] CalAmp seeks Limited Modular Approval for the WiMetry Core Module device based on our ability to satisfy, in full or in part, the requirements listed above, and additionally from our ability to control the manufacture, installation, usage, and thus compliance to the FCC Part 15 requirements.

The CalAmp WiMetry Core Module will not be sold as a stand-alone PWA module to an external customer. CalAmp anticipates utilizing the Core Module as a data communications engine for the following products or applications:

- Advanced Metering Infrastructure Data Concentrator
- Supervisory Control and Data Acquisition Modem
- Stand-alone Cellular Router
- WiMAX Base Station/Router
- Mobile Resource Management Communications Device

In each case, the Core Module will be manufactured and installed by CalAmp into an external enclosure suitable for the application. The Core Module's 802.15 transceiver electronics will remain unmodified from the design disclosed in this filing (or subsequent permissive changes). Additionally, the U.FL/coaxial antenna interface design/install and external antenna requirements remain under CalAmp control and thus consistent with the Core Module approvals.

Sincerely,

A handwritten signature in black ink, appearing to read 'MA', with a long horizontal line extending to the right.

Mark Anderson
Director of Engineering
CalAmp, Corp